

## APPENDIX 6.4: OPERATIONAL PHASE ASSESSMENT RESULTS

### Predicted NO<sub>2</sub>, CO, NMP and Ethyl Carbonate Concentrations for Existing Sensitive Human Receptors

#### *Predicted NO<sub>2</sub> Concentrations*

6.4.1 The predicted NO<sub>2</sub> concentrations for the existing sensitive receptors and points across the receptor grid, for each year of meteorological data, are shown in Figures 6.4/1 to 6.4/5, below. The highest results for the receptors considered are highlighted in red.

**Figure 6.4/1: 2018 Meteorological Data**

| RECEPTOR | ADDRESS                         | GRID REFERENCE |           | SHORT TERM 99.79th PERCENTILE |                        |                        |                        |                        | LONG TERM              |                        |                        |                        |                        |
|----------|---------------------------------|----------------|-----------|-------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|          |                                 |                |           | PC 99.79th %ile               | PC                     | PEC                    | PC/AQO                 | PEC/AQO                | PC                     | PC                     | PEC                    | PC/AQO                 | PEC/AQO                |
|          |                                 |                |           | NO <sub>x</sub> 1 HOUR        | NO <sub>2</sub> 1 HOUR | NO <sub>2</sub> 1 HOUR | NO <sub>2</sub> 1 HOUR | NO <sub>2</sub> 1 HOUR | NO <sub>x</sub> ANNUAL | NO <sub>2</sub> ANNUAL | NO <sub>2</sub> ANNUAL | NO <sub>2</sub> ANNUAL | NO <sub>2</sub> ANNUAL |
|          |                                 | X              | Y         | µg/m <sup>3</sup>             | µg/m <sup>3</sup>      | µg/m <sup>3</sup>      | %                      | %                      | µg/m <sup>3</sup>      | µg/m <sup>3</sup>      | µg/m <sup>3</sup>      | %                      | %                      |
| ESR 1    | Hylton Bridge Farm              | 433347.47      | 559511.37 | 42.61                         | <b>21.31</b>           | 43.01                  | <b>10.65</b>           | 21.51                  | 1.46                   | 1.46                   | 12.32                  | 3.66                   | 30.79                  |
| ESR 2    | Property along Downhill Lane    | 433325.17      | 559682.26 | 32.25                         | 16.13                  | 37.83                  | 8.06                   | 18.92                  | 1.13                   | 1.13                   | 11.99                  | 2.83                   | 29.96                  |
| ESR 3    | Property off Washington Road    | 433964.30      | 559014.14 | 28.06                         | 14.03                  | 35.74                  | 7.02                   | 17.87                  | 1.17                   | 1.17                   | 12.03                  | 2.93                   | 30.06                  |
| ESR 4    | Property along Boston Crescent  | 434421.17      | 559599.51 | 19.62                         | 9.81                   | 38.49                  | 4.91                   | 19.24                  | 0.64                   | 0.64                   | 14.97                  | 1.59                   | 37.43                  |
| ESR 5    | Property along Baltimore Avenue | 434627.56      | 559171.12 | 18.93                         | 9.46                   | 38.14                  | 4.73                   | 19.07                  | 0.64                   | 0.64                   | 14.98                  | 1.60                   | 37.45                  |
| ESR 6    | Property along Ferryboat Lane   | 434701.01      | 558783.56 | 12.84                         | 6.42                   | 51.07                  | 3.21                   | 25.54                  | 0.51                   | 0.51                   | 22.84                  | 1.28                   | 57.10                  |
| ESR 7    | Property at Seven Houses        | 432334.01      | 557786.97 | 13.25                         | 6.62                   | 32.70                  | 3.31                   | 16.35                  | 0.18                   | 0.18                   | 13.22                  | 0.46                   | 33.06                  |
| ESR 8    | Property along Sulgrave Road    | 431863.91      | 558150.44 | 11.91                         | 5.96                   | 31.89                  | 2.98                   | 15.95                  | 0.19                   | 0.19                   | 13.16                  | 0.48                   | 32.90                  |
| ESR 9    | Property along Watcombe Close   | 431633.25      | 558996.97 | 14.44                         | 7.22                   | 33.15                  | 3.61                   | 16.58                  | 0.21                   | 0.21                   | 13.18                  | 0.53                   | 32.95                  |
| ESR 10   | East House Farm                 | 431811.19      | 559417.59 | 22.01                         | 11.01                  | 32.23                  | 5.50                   | 16.11                  | 0.28                   | 0.28                   | 10.89                  | 0.70                   | 27.22                  |
| ESR 11   | Property along Follingsby Lane  | 432337.30      | 559964.76 | 19.11                         | 9.55                   | 29.81                  | 4.78                   | 14.90                  | 0.32                   | 0.32                   | 10.45                  | 0.80                   | 26.11                  |

Figure 6.4/2: 2019 Meteorological Data

| RECEPTOR | ADDRESS                         | GRID REFERENCE    |                   | SHORT TERM 99.79th PERCENTILE |                        |                        |                        |                        | LONG TERM              |                        |                        |                        |                        |
|----------|---------------------------------|-------------------|-------------------|-------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|          |                                 |                   |                   | PC 99.79th %ile               | PC                     | PEC                    | PC/AQO                 | PEC/AQO                | PC                     | PC                     | PEC                    | PC/AQO                 | PEC/AQO                |
|          |                                 |                   |                   | NO <sub>x</sub> 1 HOUR        | NO <sub>2</sub> 1 HOUR | NO <sub>2</sub> 1 HOUR | NO <sub>2</sub> 1 HOUR | NO <sub>2</sub> 1 HOUR | NO <sub>x</sub> ANNUAL | NO <sub>2</sub> ANNUAL | NO <sub>2</sub> ANNUAL | NO <sub>2</sub> ANNUAL | NO <sub>2</sub> ANNUAL |
| X        | Y                               | µg/m <sup>3</sup> | µg/m <sup>3</sup> | µg/m <sup>3</sup>             | %                      | %                      | µg/m <sup>3</sup>      | µg/m <sup>3</sup>      | µg/m <sup>3</sup>      | %                      | %                      |                        |                        |
| ESR 1    | Hylton Bridge Farm              | 433347.47         | 559511.37         | 38.45                         | 19.22                  | 40.93                  | 9.61                   | 20.47                  | 1.65                   | 1.65                   | 12.50                  | 4.11                   | 31.25                  |
| ESR 2    | Property along Downhill Lane    | 433325.17         | 559682.26         | 33.66                         | 16.83                  | 38.54                  | 8.42                   | 19.27                  | 1.17                   | 1.17                   | 12.02                  | 2.93                   | 30.06                  |
| ESR 3    | Property off Washington Road    | 433964.30         | 559014.14         | 26.23                         | 13.11                  | 34.82                  | 6.56                   | 17.41                  | 1.21                   | 1.21                   | 12.07                  | 3.04                   | 30.17                  |
| ESR 4    | Property along Boston Crescent  | 434421.17         | 559599.51         | 20.74                         | 10.37                  | 39.05                  | 5.19                   | 19.52                  | 0.72                   | 0.72                   | 15.06                  | 1.81                   | 37.65                  |
| ESR 5    | Property along Baltimore Avenue | 434627.56         | 559171.12         | 17.43                         | 8.71                   | 37.39                  | 4.36                   | 18.69                  | 0.67                   | 0.67                   | 15.00                  | 1.66                   | 37.50                  |
| ESR 6    | Property along Ferryboat Lane   | 434701.01         | 558783.56         | 15.43                         | 7.71                   | 52.37                  | 3.86                   | 26.18                  | 0.47                   | 0.47                   | 22.80                  | 1.17                   | 56.99                  |
| ESR 7    | Property at Seven Houses        | 432334.01         | 557786.97         | 9.80                          | 4.90                   | 30.98                  | 2.45                   | 15.49                  | 0.13                   | 0.13                   | 13.17                  | 0.33                   | 32.93                  |
| ESR 8    | Property along Sulgrave Road    | 431863.91         | 558150.44         | 10.31                         | 5.15                   | 31.09                  | 2.58                   | 15.54                  | 0.15                   | 0.15                   | 13.12                  | 0.37                   | 32.79                  |
| ESR 9    | Property along Watcombe Close   | 431633.25         | 558996.97         | 11.74                         | 5.87                   | 31.81                  | 2.94                   | 15.90                  | 0.16                   | 0.16                   | 13.13                  | 0.40                   | 32.82                  |
| ESR 10   | East House Farm                 | 431811.19         | 559417.59         | 15.32                         | 7.66                   | 28.88                  | 3.83                   | 14.44                  | 0.24                   | 0.24                   | 10.85                  | 0.60                   | 27.13                  |
| ESR 11   | Property along Follingsby Lane  | 432337.30         | 559964.76         | 20.85                         | 10.42                  | 30.68                  | 5.21                   | 15.34                  | 0.35                   | 0.35                   | 10.47                  | 0.87                   | 26.18                  |

Figure 6.4/3: 2020 Meteorological Data

| RECEPTOR | ADDRESS                         | GRID REFERENCE    |                   | SHORT TERM 99.79th PERCENTILE |                        |                        |                        |                        | LONG TERM              |                        |                        |                        |                        |
|----------|---------------------------------|-------------------|-------------------|-------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|          |                                 |                   |                   | PC 99.79th %ile               | PC                     | PEC                    | PC/AQO                 | PEC/AQO                | PC                     | PC                     | PEC                    | PC/AQO                 | PEC/AQO                |
|          |                                 |                   |                   | NO <sub>x</sub> 1 HOUR        | NO <sub>2</sub> 1 HOUR | NO <sub>2</sub> 1 HOUR | NO <sub>2</sub> 1 HOUR | NO <sub>2</sub> 1 HOUR | NO <sub>x</sub> ANNUAL | NO <sub>2</sub> ANNUAL | NO <sub>2</sub> ANNUAL | NO <sub>2</sub> ANNUAL | NO <sub>2</sub> ANNUAL |
| X        | Y                               | µg/m <sup>3</sup> | µg/m <sup>3</sup> | µg/m <sup>3</sup>             | %                      | %                      | µg/m <sup>3</sup>      | µg/m <sup>3</sup>      | µg/m <sup>3</sup>      | %                      | %                      |                        |                        |
| ESR 1    | Hylton Bridge Farm              | 433347.47         | 559511.37         | 37.57                         | 18.79                  | 40.49                  | 9.39                   | 20.25                  | 1.45                   | 1.45                   | 12.30                  | 3.62                   | 30.75                  |
| ESR 2    | Property along Downhill Lane    | 433325.17         | 559682.26         | 31.21                         | 15.60                  | 37.31                  | 7.80                   | 18.66                  | 1.15                   | 1.15                   | 12.01                  | 2.88                   | 30.02                  |
| ESR 3    | Property off Washington Road    | 433964.30         | 559014.14         | 25.15                         | 12.57                  | 34.28                  | 6.29                   | 17.14                  | 1.22                   | 1.22                   | 12.07                  | 3.05                   | 30.19                  |
| ESR 4    | Property along Boston Crescent  | 434421.17         | 559599.51         | 20.65                         | 10.32                  | 39.00                  | 5.16                   | 19.50                  | 0.63                   | 0.63                   | 14.97                  | 1.58                   | 37.42                  |
| ESR 5    | Property along Baltimore Avenue | 434627.56         | 559171.12         | 15.57                         | 7.79                   | 36.46                  | 3.89                   | 18.23                  | 0.67                   | 0.67                   | 15.00                  | 1.67                   | 37.51                  |
| ESR 6    | Property along Ferryboat Lane   | 434701.01         | 558783.56         | 13.11                         | 6.56                   | 51.21                  | 3.28                   | 25.61                  | 0.49                   | 0.49                   | 22.82                  | 1.23                   | 57.05                  |
| ESR 7    | Property at Seven Houses        | 432334.01         | 557786.97         | 13.62                         | 6.81                   | 32.89                  | 3.40                   | 16.44                  | 0.20                   | 0.20                   | 13.24                  | 0.49                   | 33.09                  |
| ESR 8    | Property along Sulgrave Road    | 431863.91         | 558150.44         | 12.92                         | 6.46                   | 32.40                  | 3.23                   | 16.20                  | 0.20                   | 0.20                   | 13.17                  | 0.51                   | 32.93                  |
| ESR 9    | Property along Watcombe Close   | 431633.25         | 558996.97         | 11.85                         | 5.92                   | 31.86                  | 2.96                   | 15.93                  | 0.15                   | 0.15                   | 13.12                  | 0.38                   | 32.80                  |
| ESR 10   | East House Farm                 | 431811.19         | 559417.59         | 15.61                         | 7.80                   | 29.03                  | 3.90                   | 14.51                  | 0.16                   | 0.16                   | 10.77                  | 0.39                   | 26.92                  |
| ESR 11   | Property along Follingsby Lane  | 432337.30         | 559964.76         | 18.21                         | 9.11                   | 29.36                  | 4.55                   | 14.68                  | 0.27                   | 0.27                   | 10.39                  | 0.67                   | 25.98                  |

Figure 6.4/4: 2021 Meteorological Data

| RECEPTOR | ADDRESS                         | GRID REFERENCE    |                   | SHORT TERM 99.79th PERCENTILE |                        |                        |                        |                        | LONG TERM              |                        |                        |                        |                        |
|----------|---------------------------------|-------------------|-------------------|-------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|          |                                 |                   |                   | PC 99.79th %ile               | PC                     | PEC                    | PC/AQO                 | PEC/AQO                | PC                     | PC                     | PEC                    | PC/AQO                 | PEC/AQO                |
|          |                                 |                   |                   | NO <sub>x</sub> 1 HOUR        | NO <sub>2</sub> 1 HOUR | NO <sub>2</sub> 1 HOUR | NO <sub>2</sub> 1 HOUR | NO <sub>2</sub> 1 HOUR | NO <sub>x</sub> ANNUAL | NO <sub>2</sub> ANNUAL | NO <sub>2</sub> ANNUAL | NO <sub>2</sub> ANNUAL | NO <sub>2</sub> ANNUAL |
| X        | Y                               | µg/m <sup>3</sup> | µg/m <sup>3</sup> | µg/m <sup>3</sup>             | %                      | %                      | µg/m <sup>3</sup>      | µg/m <sup>3</sup>      | µg/m <sup>3</sup>      | %                      | %                      |                        |                        |
| ESR 1    | Hylton Bridge Farm              | 433347.47         | 559511.37         | 40.87                         | 20.43                  | 42.14                  | 10.22                  | 21.07                  | 1.58                   | 1.58                   | 12.44                  | 3.96                   | 31.09                  |
| ESR 2    | Property along Downhill Lane    | 433325.17         | 559682.26         | 31.99                         | 16.00                  | 37.70                  | 8.00                   | 18.85                  | 1.15                   | 1.15                   | 12.01                  | 2.88                   | 30.02                  |
| ESR 3    | Property off Washington Road    | 433964.30         | 559014.14         | 29.25                         | 14.63                  | 36.33                  | 7.31                   | 18.17                  | 1.26                   | 1.26                   | 12.11                  | 3.14                   | 30.28                  |
| ESR 4    | Property along Boston Crescent  | 434421.17         | 559599.51         | 21.31                         | 10.65                  | 39.33                  | 5.33                   | 19.66                  | 0.72                   | 0.72                   | 15.06                  | 1.81                   | 37.65                  |
| ESR 5    | Property along Baltimore Avenue | 434627.56         | 559171.12         | 17.39                         | 8.69                   | 37.37                  | 4.35                   | 18.68                  | 0.71                   | 0.71                   | 15.04                  | 1.76                   | 37.61                  |
| ESR 6    | Property along Ferryboat Lane   | 434701.01         | 558783.56         | 16.51                         | 8.25                   | 52.91                  | 4.13                   | 26.46                  | 0.52                   | 0.52                   | 22.85                  | 1.31                   | 57.13                  |
| ESR 7    | Property at Seven Houses        | 432334.01         | 557786.97         | 17.54                         | 8.77                   | 34.85                  | 4.39                   | 17.42                  | 0.22                   | 0.22                   | 13.26                  | 0.56                   | 33.16                  |
| ESR 8    | Property along Sulgrave Road    | 431863.91         | 558150.44         | 17.81                         | 8.91                   | 34.84                  | 4.45                   | 17.42                  | 0.25                   | 0.25                   | 13.21                  | 0.61                   | 33.04                  |
| ESR 9    | Property along Watcombe Close   | 431633.25         | 558996.97         | 20.04                         | 10.02                  | 35.96                  | 5.01                   | 17.98                  | 0.28                   | 0.28                   | 13.24                  | 0.69                   | 33.11                  |
| ESR 10   | East House Farm                 | 431811.19         | 559417.59         | 22.79                         | 11.39                  | 32.62                  | 5.70                   | 16.31                  | 0.27                   | 0.27                   | 10.88                  | 0.68                   | 27.21                  |
| ESR 11   | Property along Follingsby Lane  | 432337.30         | 559964.76         | 17.50                         | 8.75                   | 29.00                  | 4.38                   | 14.50                  | 0.24                   | 0.24                   | 10.36                  | 0.60                   | 25.91                  |

Figure 6.4/5: 2022 Meteorological Data

| RECEPTOR | ADDRESS                         | GRID REFERENCE    |                   | SHORT TERM 99.79th PERCENTILE |                        |                        |                        |                        | LONG TERM              |                        |                        |                        |                        |
|----------|---------------------------------|-------------------|-------------------|-------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|          |                                 |                   |                   | PC 99.79th %ile               | PC                     | PEC                    | PC/AQO                 | PEC/AQO                | PC                     | PC                     | PEC                    | PC/AQO                 | PEC/AQO                |
|          |                                 |                   |                   | NO <sub>x</sub> 1 HOUR        | NO <sub>2</sub> 1 HOUR | NO <sub>2</sub> 1 HOUR | NO <sub>2</sub> 1 HOUR | NO <sub>2</sub> 1 HOUR | NO <sub>x</sub> ANNUAL | NO <sub>2</sub> ANNUAL | NO <sub>2</sub> ANNUAL | NO <sub>2</sub> ANNUAL | NO <sub>2</sub> ANNUAL |
| X        | Y                               | µg/m <sup>3</sup> | µg/m <sup>3</sup> | µg/m <sup>3</sup>             | %                      | %                      | µg/m <sup>3</sup>      | µg/m <sup>3</sup>      | µg/m <sup>3</sup>      | %                      | %                      |                        |                        |
| ESR 1    | Hylton Bridge Farm              | 433347.47         | 559511.37         | 36.92                         | 18.46                  | 40.17                  | 9.23                   | 20.08                  | 1.60                   | 1.60                   | 12.45                  | 3.99                   | 31.13                  |
| ESR 2    | Property along Downhill Lane    | 433325.17         | 559682.26         | 31.17                         | 15.59                  | 37.29                  | 7.79                   | 18.65                  | 1.19                   | 1.19                   | 12.05                  | 2.98                   | 30.11                  |
| ESR 3    | Property off Washington Road    | 433964.30         | 559014.14         | 28.50                         | 14.25                  | 35.96                  | 7.12                   | 17.98                  | 1.29                   | 1.29                   | 12.14                  | 3.22                   | 30.35                  |
| ESR 4    | Property along Boston Crescent  | 434421.17         | 559599.51         | 22.75                         | 11.38                  | 40.05                  | 5.69                   | 20.03                  | 0.73                   | 0.73                   | 15.06                  | 1.81                   | 37.65                  |
| ESR 5    | Property along Baltimore Avenue | 434627.56         | 559171.12         | 18.37                         | 9.19                   | 37.86                  | 4.59                   | 18.93                  | 0.71                   | 0.71                   | 15.05                  | 1.78                   | 37.62                  |
| ESR 6    | Property along Ferryboat Lane   | 434701.01         | 558783.56         | 16.13                         | 8.07                   | 52.72                  | 4.03                   | 26.36                  | 0.54                   | 0.54                   | 22.86                  | 1.34                   | 57.16                  |
| ESR 7    | Property at Seven Houses        | 432334.01         | 557786.97         | 12.63                         | 6.31                   | 32.39                  | 3.16                   | 16.20                  | 0.18                   | 0.18                   | 13.22                  | 0.45                   | 33.05                  |
| ESR 8    | Property along Sulgrave Road    | 431863.91         | 558150.44         | 12.13                         | 6.06                   | 32.00                  | 3.03                   | 16.00                  | 0.15                   | 0.15                   | 13.12                  | 0.37                   | 32.79                  |
| ESR 9    | Property along Watcombe Close   | 431633.25         | 558996.97         | 12.08                         | 6.04                   | 31.98                  | 3.02                   | 15.99                  | 0.15                   | 0.15                   | 13.12                  | 0.37                   | 32.79                  |
| ESR 10   | East House Farm                 | 431811.19         | 559417.59         | 12.86                         | 6.43                   | 27.65                  | 3.21                   | 13.83                  | 0.17                   | 0.17                   | 10.78                  | 0.42                   | 26.95                  |
| ESR 11   | Property along Follingsby Lane  | 432337.30         | 559964.76         | 20.86                         | 10.43                  | 30.68                  | 5.22                   | 15.34                  | 0.30                   | 0.30                   | 10.43                  | 0.75                   | 26.07                  |

**Predicted CO Concentrations**

6.4.2 The predicted CO concentrations for the existing sensitive receptors and points across the receptor grid, for each year of meteorological data, are shown in Figures 6.4/6 to 6.4/10, below. The highest results for the receptors considered are highlighted in red.

**Figure 6.4/6: 2018 Meteorological Data**

| RECEPTOR | ADDRESS                         | GRID REFERENCE |           | SHORT TERM               |                        |                        |        |         |
|----------|---------------------------------|----------------|-----------|--------------------------|------------------------|------------------------|--------|---------|
|          |                                 |                |           | PC                       | PC                     | PEC                    | PC/AQO | PEC/AQO |
|          |                                 |                |           | 8 HOUR                   | 8 HOUR                 | 8 HOUR                 | 8 HOUR | 8 HOUR  |
|          |                                 | X              | Y         | $\mu\text{g}/\text{m}^3$ | $\text{mg}/\text{m}^3$ | $\text{mg}/\text{m}^3$ | %      | %       |
| ESR 1    | Hylton Bridge Farm              | 433347.47      | 559511.37 | 3.77                     | 0.0038                 | 0.19                   | 0.04   | 1.90    |
| ESR 2    | Property along Downhill Lane    | 433325.17      | 559682.26 | 4.08                     | 0.0041                 | 0.19                   | 0.04   | 1.90    |
| ESR 3    | Property off Washington Road    | 433964.30      | 559014.14 | 2.40                     | 0.0024                 | 0.19                   | 0.02   | 1.88    |
| ESR 4    | Property along Boston Crescent  | 434421.17      | 559599.51 | 1.98                     | 0.0020                 | 0.18                   | 0.02   | 1.84    |
| ESR 5    | Property along Baltimore Avenue | 434627.56      | 559171.12 | 1.85                     | 0.0018                 | 0.18                   | 0.02   | 1.84    |
| ESR 6    | Property along Ferryboat Lane   | 434701.01      | 558783.56 | 1.65                     | 0.0017                 | 0.19                   | 0.02   | 1.86    |
| ESR 7    | Property at Seven Houses        | 432334.01      | 557786.97 | 1.72                     | 0.0017                 | 0.19                   | 0.02   | 1.90    |
| ESR 8    | Property along Sulgrave Road    | 431863.91      | 558150.44 | 1.38                     | 0.0014                 | 0.19                   | 0.01   | 1.87    |
| ESR 9    | Property along Watcombe Close   | 431633.25      | 558996.97 | 1.43                     | 0.0014                 | 0.19                   | 0.01   | 1.87    |
| ESR 10   | East House Farm                 | 431811.19      | 559417.59 | 1.88                     | 0.0019                 | 0.19                   | 0.02   | 1.86    |
| ESR 11   | Property along Follingsby Lane  | 432337.30      | 559964.76 | 1.52                     | 0.0015                 | 0.19                   | 0.02   | 1.86    |

**Figure 6.4/7: 2019 Meteorological Data**

| RECEPTOR | ADDRESS                         | GRID REFERENCE |           | SHORT TERM               |                        |                        |        |         |
|----------|---------------------------------|----------------|-----------|--------------------------|------------------------|------------------------|--------|---------|
|          |                                 |                |           | PC                       | PC                     | PEC                    | PC/AQO | PEC/AQO |
|          |                                 |                |           | 8 HOUR                   | 8 HOUR                 | 8 HOUR                 | 8 HOUR | 8 HOUR  |
|          |                                 | X              | Y         | $\mu\text{g}/\text{m}^3$ | $\text{mg}/\text{m}^3$ | $\text{mg}/\text{m}^3$ | %      | %       |
| ESR 1    | Hylton Bridge Farm              | 433347.47      | 559511.37 | 3.79                     | 0.0038                 | 0.19                   | 0.04   | 1.90    |
| ESR 2    | Property along Downhill Lane    | 433325.17      | 559682.26 | 2.63                     | 0.0026                 | 0.19                   | 0.03   | 1.88    |
| ESR 3    | Property off Washington Road    | 433964.30      | 559014.14 | 2.56                     | 0.0026                 | 0.19                   | 0.03   | 1.88    |
| ESR 4    | Property along Boston Crescent  | 434421.17      | 559599.51 | 2.66                     | 0.0027                 | 0.18                   | 0.03   | 1.85    |
| ESR 5    | Property along Baltimore Avenue | 434627.56      | 559171.12 | 1.75                     | 0.0017                 | 0.18                   | 0.02   | 1.84    |
| ESR 6    | Property along Ferryboat Lane   | 434701.01      | 558783.56 | 1.57                     | 0.0016                 | 0.19                   | 0.02   | 1.86    |
| ESR 7    | Property at Seven Houses        | 432334.01      | 557786.97 | 1.00                     | 0.0010                 | 0.19                   | 0.01   | 1.90    |
| ESR 8    | Property along Sulgrave Road    | 431863.91      | 558150.44 | 1.51                     | 0.0015                 | 0.19                   | 0.02   | 1.87    |
| ESR 9    | Property along Watcombe Close   | 431633.25      | 558996.97 | 0.95                     | 0.0009                 | 0.19                   | 0.01   | 1.87    |
| ESR 10   | East House Farm                 | 431811.19      | 559417.59 | 1.36                     | 0.0014                 | 0.19                   | 0.01   | 1.85    |
| ESR 11   | Property along Follingsby Lane  | 432337.30      | 559964.76 | 2.47                     | 0.0025                 | 0.19                   | 0.02   | 1.87    |

**Figure 6.4/8: 2020 Meteorological Data**

| RECEPTOR | ADDRESS                         | GRID REFERENCE |           | SHORT TERM               |                        |                        |        |         |
|----------|---------------------------------|----------------|-----------|--------------------------|------------------------|------------------------|--------|---------|
|          |                                 |                |           | PC                       | PC                     | PEC                    | PC/AQO | PEC/AQO |
|          |                                 |                |           | 8 HOUR                   | 8 HOUR                 | 8 HOUR                 | 8 HOUR | 8 HOUR  |
|          |                                 | X              | Y         | $\mu\text{g}/\text{m}^3$ | $\text{mg}/\text{m}^3$ | $\text{mg}/\text{m}^3$ | %      | %       |
| ESR 1    | Hylton Bridge Farm              | 433347.47      | 559511.37 | 3.27                     | 0.0033                 | 0.1891                 | 0.0327 | 1.8909  |
| ESR 2    | Property along Downhill Lane    | 433325.17      | 559682.26 | 3.19                     | 0.0032                 | 0.1890                 | 0.0319 | 1.8900  |
| ESR 3    | Property off Washington Road    | 433964.30      | 559014.14 | 2.83                     | 0.0028                 | 0.1886                 | 0.0283 | 1.8864  |
| ESR 4    | Property along Boston Crescent  | 434421.17      | 559599.51 | 2.62                     | 0.0026                 | 0.1848                 | 0.0262 | 1.8482  |
| ESR 5    | Property along Baltimore Avenue | 434627.56      | 559171.12 | 1.57                     | 0.0016                 | 0.1838                 | 0.0157 | 1.8377  |
| ESR 6    | Property along Ferryboat Lane   | 434701.01      | 558783.56 | 1.68                     | 0.0017                 | 0.1857                 | 0.0168 | 1.8568  |
| ESR 7    | Property at Seven Houses        | 432334.01      | 557786.97 | 1.39                     | 0.0014                 | 0.1899                 | 0.0139 | 1.8991  |
| ESR 8    | Property along Sulgrave Road    | 431863.91      | 558150.44 | 1.37                     | 0.0014                 | 0.1872                 | 0.0137 | 1.8718  |
| ESR 9    | Property along Watcombe Close   | 431633.25      | 558996.97 | 1.56                     | 0.0016                 | 0.1874                 | 0.0156 | 1.8738  |
| ESR 10   | East House Farm                 | 431811.19      | 559417.59 | 1.55                     | 0.0016                 | 0.1856                 | 0.0155 | 1.8556  |
| ESR 11   | Property along Follingsby Lane  | 432337.30      | 559964.76 | 1.58                     | 0.0016                 | 0.1865                 | 0.0158 | 1.8649  |

**Figure 6.4/9: 2021 Meteorological Data**

| RECEPTOR | ADDRESS                         | GRID REFERENCE |           | SHORT TERM               |                        |                        |               |               |
|----------|---------------------------------|----------------|-----------|--------------------------|------------------------|------------------------|---------------|---------------|
|          |                                 |                |           | PC                       | PC                     | PEC                    | PC/AQO        | PEC/AQO       |
|          |                                 |                |           | 8 HOUR                   | 8 HOUR                 | 8 HOUR                 | 8 HOUR        | 8 HOUR        |
|          |                                 | X              | Y         | $\mu\text{g}/\text{m}^3$ | $\text{mg}/\text{m}^3$ | $\text{mg}/\text{m}^3$ | %             | %             |
| ESR 1    | Hylton Bridge Farm              | 433347.47      | 559511.37 | 6.62                     | <b>0.0066</b>          | <b>0.1924</b>          | <b>0.0662</b> | <b>1.9243</b> |
| ESR 2    | Property along Downhill Lane    | 433325.17      | 559682.26 | 4.23                     | 0.0042                 | 0.1900                 | 0.0423        | 1.9004        |
| ESR 3    | Property off Washington Road    | 433964.30      | 559014.14 | 2.38                     | 0.0024                 | 0.1882                 | 0.0238        | 1.8819        |
| ESR 4    | Property along Boston Crescent  | 434421.17      | 559599.51 | 1.95                     | 0.0020                 | 0.1842                 | 0.0195        | 1.8416        |
| ESR 5    | Property along Baltimore Avenue | 434627.56      | 559171.12 | 1.78                     | 0.0018                 | 0.1840                 | 0.0178        | 1.8398        |
| ESR 6    | Property along Ferryboat Lane   | 434701.01      | 558783.56 | 1.30                     | 0.0013                 | 0.1853                 | 0.0130        | 1.8531        |
| ESR 7    | Property at Seven Houses        | 432334.01      | 557786.97 | 3.03                     | 0.0030                 | 0.1915                 | 0.0303        | 1.9154        |
| ESR 8    | Property along Sulgrave Road    | 431863.91      | 558150.44 | 2.29                     | 0.0023                 | 0.1881                 | 0.0229        | 1.8810        |
| ESR 9    | Property along Watcombe Close   | 431633.25      | 558996.97 | 2.69                     | 0.0027                 | 0.1885                 | 0.0269        | 1.8850        |
| ESR 10   | East House Farm                 | 431811.19      | 559417.59 | 2.67                     | 0.0027                 | 0.1867                 | 0.0267        | 1.8668        |
| ESR 11   | Property along Follingsby Lane  | 432337.30      | 559964.76 | 1.83                     | 0.0018                 | 0.1867                 | 0.0183        | 1.8674        |

**Figure 6.4/10: 2022 Meteorological Data**

| RECEPTOR | ADDRESS                         | GRID REFERENCE |           | SHORT TERM               |                        |                        |        |         |
|----------|---------------------------------|----------------|-----------|--------------------------|------------------------|------------------------|--------|---------|
|          |                                 |                |           | PC                       | PC                     | PEC                    | PC/AQO | PEC/AQO |
|          |                                 |                |           | 8 HOUR                   | 8 HOUR                 | 8 HOUR                 | 8 HOUR | 8 HOUR  |
|          |                                 | X              | Y         | $\mu\text{g}/\text{m}^3$ | $\text{mg}/\text{m}^3$ | $\text{mg}/\text{m}^3$ | %      | %       |
| ESR 1    | Hylton Bridge Farm              | 433347.47      | 559511.37 | 3.62                     | 0.0036                 | 0.1894                 | 0.0362 | 1.8944  |
| ESR 2    | Property along Downhill Lane    | 433325.17      | 559682.26 | 4.42                     | 0.0044                 | 0.1902                 | 0.0442 | 1.9023  |
| ESR 3    | Property off Washington Road    | 433964.30      | 559014.14 | 2.50                     | 0.0025                 | 0.1883                 | 0.0250 | 1.8831  |
| ESR 4    | Property along Boston Crescent  | 434421.17      | 559599.51 | 2.15                     | 0.0022                 | 0.1844                 | 0.0215 | 1.8436  |
| ESR 5    | Property along Baltimore Avenue | 434627.56      | 559171.12 | 1.62                     | 0.0016                 | 0.1838                 | 0.0162 | 1.8382  |
| ESR 6    | Property along Ferryboat Lane   | 434701.01      | 558783.56 | 1.66                     | 0.0017                 | 0.1857                 | 0.0166 | 1.8567  |
| ESR 7    | Property at Seven Houses        | 432334.01      | 557786.97 | 1.46                     | 0.0015                 | 0.1900                 | 0.0146 | 1.8997  |
| ESR 8    | Property along Sulgrave Road    | 431863.91      | 558150.44 | 1.28                     | 0.0013                 | 0.1871                 | 0.0128 | 1.8710  |
| ESR 9    | Property along Watcombe Close   | 431633.25      | 558996.97 | 1.73                     | 0.0017                 | 0.1875                 | 0.0173 | 1.8755  |
| ESR 10   | East House Farm                 | 431811.19      | 559417.59 | 2.16                     | 0.0022                 | 0.1862                 | 0.0216 | 1.8617  |
| ESR 11   | Property along Follingsby Lane  | 432337.30      | 559964.76 | 3.05                     | 0.0030                 | 0.1880                 | 0.0305 | 1.8796  |

### Predicted NMP Concentrations

6.4.3 The predicted NMP concentrations for the existing sensitive receptors and points across the receptor grid, for each year of meteorological data, are shown in Figures 6.4/11 to 6.4/15, below. The highest results for the receptors considered are highlighted in red.

**Figure 6.4/11: 2018 Meteorological Data**

| RECEPTOR | ADDRESS                         | GRID REFERENCE |           | LONG TERM ANNUAL MEAN    |                          |        |         |
|----------|---------------------------------|----------------|-----------|--------------------------|--------------------------|--------|---------|
|          |                                 |                |           | PC                       | PEC                      | PC/AQO | PEC/AQO |
|          |                                 |                |           | ANNUAL                   | ANNUAL                   | ANNUAL | ANNUAL  |
|          |                                 | X              | Y         | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | %      | %       |
| ESR 1    | Hylton Bridge Farm              | 433347.47      | 559511.37 | 0.2449                   | 0.72                     | 4.90   | 14.41   |
| ESR 2    | Property along Downhill Lane    | 433325.17      | 559682.26 | 0.2058                   | 0.68                     | 4.12   | 13.63   |
| ESR 3    | Property off Washington Road    | 433964.30      | 559014.14 | 0.1918                   | 0.67                     | 3.84   | 13.35   |
| ESR 4    | Property along Boston Crescent  | 434421.17      | 559599.51 | 0.1123                   | 0.54                     | 2.25   | 10.85   |
| ESR 5    | Property along Baltimore Avenue | 434627.56      | 559171.12 | 0.1138                   | 0.54                     | 2.28   | 10.88   |
| ESR 6    | Property along Ferryboat Lane   | 434701.01      | 558783.56 | 0.0989                   | 0.53                     | 1.98   | 10.60   |
| ESR 7    | Property at Seven Houses        | 432334.01      | 557786.97 | 0.0389                   | 0.48                     | 0.78   | 9.65    |
| ESR 8    | Property along Sulgrave Road    | 431863.91      | 558150.44 | 0.0429                   | 0.52                     | 0.86   | 10.38   |
| ESR 9    | Property along Watcombe Close   | 431633.25      | 558996.97 | 0.0489                   | 0.52                     | 0.98   | 10.50   |
| ESR 10   | East House Farm                 | 431811.19      | 559417.59 | 0.0608                   | 0.53                     | 1.22   | 10.59   |
| ESR 11   | Property along Follingsby Lane  | 432337.30      | 559964.76 | 0.0669                   | 0.54                     | 1.34   | 10.77   |

**Figure 6.4/12: 2019 Meteorological Data**

| RECEPTOR | ADDRESS                         | GRID REFERENCE |           | LONG TERM ANNUAL MEAN    |                          |             |              |
|----------|---------------------------------|----------------|-----------|--------------------------|--------------------------|-------------|--------------|
|          |                                 |                |           | PC                       | PEC                      | PC/AQO      | PEC/AQO      |
|          |                                 |                |           | ANNUAL                   | ANNUAL                   | ANNUAL      | ANNUAL       |
|          |                                 | X              | Y         | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | %           | %            |
| ESR 1    | Hylton Bridge Farm              | 433347.47      | 559511.37 | <b>0.2810</b>            | <b>0.76</b>              | <b>5.62</b> | <b>15.13</b> |
| ESR 2    | Property along Downhill Lane    | 433325.17      | 559682.26 | 0.2162                   | 0.69                     | 4.32        | 13.83        |
| ESR 3    | Property off Washington Road    | 433964.30      | 559014.14 | 0.2025                   | 0.68                     | 4.05        | 13.56        |
| ESR 4    | Property along Boston Crescent  | 434421.17      | 559599.51 | 0.1279                   | 0.56                     | 2.56        | 11.16        |
| ESR 5    | Property along Baltimore Avenue | 434627.56      | 559171.12 | 0.1168                   | 0.55                     | 2.34        | 10.94        |
| ESR 6    | Property along Ferryboat Lane   | 434701.01      | 558783.56 | 0.0936                   | 0.52                     | 1.87        | 10.49        |
| ESR 7    | Property at Seven Houses        | 432334.01      | 557786.97 | 0.0278                   | 0.47                     | 0.56        | 9.43         |
| ESR 8    | Property along Sulgrave Road    | 431863.91      | 558150.44 | 0.0331                   | 0.51                     | 0.66        | 10.18        |
| ESR 9    | Property along Watcombe Close   | 431633.25      | 558996.97 | 0.0391                   | 0.52                     | 0.78        | 10.30        |
| ESR 10   | East House Farm                 | 431811.19      | 559417.59 | 0.0494                   | 0.52                     | 0.99        | 10.36        |
| ESR 11   | Property along Follingsby Lane  | 432337.30      | 559964.76 | 0.0728                   | 0.54                     | 1.46        | 10.88        |

**Figure 6.4/13: 2020 Meteorological Data**

| RECEPTOR | ADDRESS                         | GRID REFERENCE |           | LONG TERM ANNUAL MEAN    |                          |        |         |
|----------|---------------------------------|----------------|-----------|--------------------------|--------------------------|--------|---------|
|          |                                 |                |           | PC                       | PEC                      | PC/AQO | PEC/AQO |
|          |                                 |                |           | ANNUAL                   | ANNUAL                   | ANNUAL | ANNUAL  |
|          |                                 | X              | Y         | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | %      | %       |
| ESR 1    | Hylton Bridge Farm              | 433347.47      | 559511.37 | 0.2370                   | 0.71                     | 4.74   | 14.25   |
| ESR 2    | Property along Downhill Lane    | 433325.17      | 559682.26 | 0.1962                   | 0.67                     | 3.92   | 13.43   |
| ESR 3    | Property off Washington Road    | 433964.30      | 559014.14 | 0.1952                   | 0.67                     | 3.90   | 13.41   |
| ESR 4    | Property along Boston Crescent  | 434421.17      | 559599.51 | 0.1112                   | 0.54                     | 2.22   | 10.83   |
| ESR 5    | Property along Baltimore Avenue | 434627.56      | 559171.12 | 0.1159                   | 0.55                     | 2.32   | 10.92   |
| ESR 6    | Property along Ferryboat Lane   | 434701.01      | 558783.56 | 0.0970                   | 0.53                     | 1.94   | 10.56   |
| ESR 7    | Property at Seven Houses        | 432334.01      | 557786.97 | 0.0418                   | 0.49                     | 0.84   | 9.71    |
| ESR 8    | Property along Sulgrave Road    | 431863.91      | 558150.44 | 0.0449                   | 0.52                     | 0.90   | 10.42   |
| ESR 9    | Property along Watcombe Close   | 431633.25      | 558996.97 | 0.0349                   | 0.51                     | 0.70   | 10.22   |
| ESR 10   | East House Farm                 | 431811.19      | 559417.59 | 0.0348                   | 0.50                     | 0.70   | 10.07   |
| ESR 11   | Property along Follingsby Lane  | 432337.30      | 559964.76 | 0.0567                   | 0.53                     | 1.13   | 10.56   |



**Figure 6.4/14: 2021 Meteorological Data**

| RECEPTOR | ADDRESS                         | GRID REFERENCE |           | LONG TERM ANNUAL MEAN    |                          |        |         |
|----------|---------------------------------|----------------|-----------|--------------------------|--------------------------|--------|---------|
|          |                                 |                |           | PC                       | PEC                      | PC/AQO | PEC/AQO |
|          |                                 |                |           | ANNUAL                   | ANNUAL                   | ANNUAL | ANNUAL  |
|          |                                 | X              | Y         | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | %      | %       |
| ESR 1    | Hylton Bridge Farm              | 433347.47      | 559511.37 | 0.2731                   | 0.75                     | 5.46   | 14.97   |
| ESR 2    | Property along Downhill Lane    | 433325.17      | 559682.26 | 0.2149                   | 0.69                     | 4.30   | 13.81   |
| ESR 3    | Property off Washington Road    | 433964.30      | 559014.14 | 0.2118                   | 0.69                     | 4.24   | 13.74   |
| ESR 4    | Property along Boston Crescent  | 434421.17      | 559599.51 | 0.1307                   | 0.56                     | 2.61   | 11.22   |
| ESR 5    | Property along Baltimore Avenue | 434627.56      | 559171.12 | 0.1248                   | 0.56                     | 2.50   | 11.10   |
| ESR 6    | Property along Ferryboat Lane   | 434701.01      | 558783.56 | 0.1048                   | 0.54                     | 2.10   | 10.71   |
| ESR 7    | Property at Seven Houses        | 432334.01      | 557786.97 | 0.0483                   | 0.49                     | 0.97   | 9.84    |
| ESR 8    | Property along Sulgrave Road    | 431863.91      | 558150.44 | 0.0547                   | 0.53                     | 1.09   | 10.62   |
| ESR 9    | Property along Watcombe Close   | 431633.25      | 558996.97 | 0.0644                   | 0.54                     | 1.29   | 10.81   |
| ESR 10   | East House Farm                 | 431811.19      | 559417.59 | 0.0559                   | 0.52                     | 1.12   | 10.49   |
| ESR 11   | Property along Follingsby Lane  | 432337.30      | 559964.76 | 0.0519                   | 0.52                     | 1.04   | 10.47   |

**Figure 6.4/15: 2022 Meteorological Data**

| RECEPTOR | ADDRESS                         | GRID REFERENCE |           | LONG TERM ANNUAL MEAN    |                          |        |         |
|----------|---------------------------------|----------------|-----------|--------------------------|--------------------------|--------|---------|
|          |                                 |                |           | PC                       | PEC                      | PC/AQO | PEC/AQO |
|          |                                 |                |           | ANNUAL                   | ANNUAL                   | ANNUAL | ANNUAL  |
|          |                                 | X              | Y         | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | %      | %       |
| ESR 1    | Hylton Bridge Farm              | 433347.47      | 559511.37 | 0.2644                   | 0.74                     | 5.29   | 14.80   |
| ESR 2    | Property along Downhill Lane    | 433325.17      | 559682.26 | 0.2084                   | 0.68                     | 4.17   | 13.68   |
| ESR 3    | Property off Washington Road    | 433964.30      | 559014.14 | 0.2105                   | 0.69                     | 4.21   | 13.72   |
| ESR 4    | Property along Boston Crescent  | 434421.17      | 559599.51 | 0.1289                   | 0.56                     | 2.58   | 11.18   |
| ESR 5    | Property along Baltimore Avenue | 434627.56      | 559171.12 | 0.1228                   | 0.55                     | 2.46   | 11.06   |
| ESR 6    | Property along Ferryboat Lane   | 434701.01      | 558783.56 | 0.1025                   | 0.53                     | 2.05   | 10.67   |
| ESR 7    | Property at Seven Houses        | 432334.01      | 557786.97 | 0.0339                   | 0.48                     | 0.68   | 9.55    |
| ESR 8    | Property along Sulgrave Road    | 431863.91      | 558150.44 | 0.0337                   | 0.51                     | 0.67   | 10.20   |
| ESR 9    | Property along Watcombe Close   | 431633.25      | 558996.97 | 0.0352                   | 0.51                     | 0.70   | 10.23   |
| ESR 10   | East House Farm                 | 431811.19      | 559417.59 | 0.0356                   | 0.50                     | 0.71   | 10.09   |
| ESR 11   | Property along Follingsby Lane  | 432337.30      | 559964.76 | 0.0651                   | 0.54                     | 1.30   | 10.73   |

### Predicted Ethyl Carbonate Concentrations

6.4.4 The predicted Ethyl Carbonate concentrations for the existing sensitive receptors and points across the receptor grid, for each year of meteorological data, are shown in Figures 6.4/16 to 6.4/20, below. The highest results for the receptors considered are highlighted in red.

Figure 6.4/16: 2018 Meteorological Data

| RECEPTOR | ADDRESS                         | GRID REFERENCE |           | LONG TERM ANNUAL MEAN |                   |        |         |
|----------|---------------------------------|----------------|-----------|-----------------------|-------------------|--------|---------|
|          |                                 |                |           | PC                    | PEC               | PC/AQO | PEC/AQO |
|          |                                 |                |           | ANNUAL                | ANNUAL            | ANNUAL | ANNUAL  |
|          |                                 | X              | Y         | µg/m <sup>3</sup>     | µg/m <sup>3</sup> | %      | %       |
| ESR 1    | Hylton Bridge Farm              | 433347.47      | 559511.37 | 0.35                  | 0.83              | 7.08   | 16.59   |
| ESR 2    | Property along Downhill Lane    | 433325.17      | 559682.26 | 0.31                  | 0.78              | 6.15   | 15.66   |
| ESR 3    | Property off Washington Road    | 433964.30      | 559014.14 | 0.25                  | 0.73              | 5.01   | 14.52   |
| ESR 4    | Property along Boston Crescent  | 434421.17      | 559599.51 | 0.16                  | 0.59              | 3.11   | 11.71   |
| ESR 5    | Property along Baltimore Avenue | 434627.56      | 559171.12 | 0.15                  | 0.58              | 3.02   | 11.62   |
| ESR 6    | Property along Ferryboat Lane   | 434701.01      | 558783.56 | 0.13                  | 0.57              | 2.69   | 11.31   |
| ESR 7    | Property at Seven Houses        | 432334.01      | 557786.97 | 0.05                  | 0.50              | 1.03   | 9.90    |
| ESR 8    | Property along Sulgrave Road    | 431863.91      | 558150.44 | 0.06                  | 0.53              | 1.16   | 10.69   |
| ESR 9    | Property along Watcombe Close   | 431633.25      | 558996.97 | 0.07                  | 0.54              | 1.32   | 10.84   |
| ESR 10   | East House Farm                 | 431811.19      | 559417.59 | 0.08                  | 0.55              | 1.64   | 11.01   |
| ESR 11   | Property along Follingsby Lane  | 432337.30      | 559964.76 | 0.09                  | 0.56              | 1.85   | 11.28   |

**Figure 6.4/17: 2019 Meteorological Data**

| RECEPTOR | ADDRESS                         | GRID REFERENCE |           | LONG TERM ANNUAL MEAN |                   |        |         |
|----------|---------------------------------|----------------|-----------|-----------------------|-------------------|--------|---------|
|          |                                 |                |           | PC                    | PEC               | PC/AQO | PEC/AQO |
|          |                                 |                |           | ANNUAL                | ANNUAL            | ANNUAL | ANNUAL  |
|          |                                 | X              | Y         | µg/m <sup>3</sup>     | µg/m <sup>3</sup> | %      | %       |
| ESR 1    | Hylton Bridge Farm              | 433347.47      | 559511.37 | 0.41                  | 0.89              | 8.22   | 17.73   |
| ESR 2    | Property along Downhill Lane    | 433325.17      | 559682.26 | 0.32                  | 0.80              | 6.46   | 15.97   |
| ESR 3    | Property off Washington Road    | 433964.30      | 559014.14 | 0.26                  | 0.74              | 5.22   | 14.73   |
| ESR 4    | Property along Boston Crescent  | 434421.17      | 559599.51 | 0.18                  | 0.61              | 3.57   | 12.17   |
| ESR 5    | Property along Baltimore Avenue | 434627.56      | 559171.12 | 0.16                  | 0.59              | 3.10   | 11.71   |
| ESR 6    | Property along Ferryboat Lane   | 434701.01      | 558783.56 | 0.13                  | 0.56              | 2.55   | 11.17   |
| ESR 7    | Property at Seven Houses        | 432334.01      | 557786.97 | 0.04                  | 0.48              | 0.74   | 9.61    |
| ESR 8    | Property along Sulgrave Road    | 431863.91      | 558150.44 | 0.04                  | 0.52              | 0.90   | 10.42   |
| ESR 9    | Property along Watcombe Close   | 431633.25      | 558996.97 | 0.05                  | 0.53              | 1.02   | 10.55   |
| ESR 10   | East House Farm                 | 431811.19      | 559417.59 | 0.07                  | 0.53              | 1.32   | 10.70   |
| ESR 11   | Property along Follingsby Lane  | 432337.30      | 559964.76 | 0.10                  | 0.57              | 2.01   | 11.44   |

**Figure 6.4/18: 2020 Meteorological Data**

| RECEPTOR | ADDRESS                         | GRID REFERENCE |           | LONG TERM ANNUAL MEAN |                   |        |         |
|----------|---------------------------------|----------------|-----------|-----------------------|-------------------|--------|---------|
|          |                                 |                |           | PC                    | PEC               | PC/AQO | PEC/AQO |
|          |                                 |                |           | ANNUAL                | ANNUAL            | ANNUAL | ANNUAL  |
|          |                                 | X              | Y         | µg/m <sup>3</sup>     | µg/m <sup>3</sup> | %      | %       |
| ESR 1    | Hylton Bridge Farm              | 433347.47      | 559511.37 | 0.35                  | 0.82              | 6.90   | 16.41   |
| ESR 2    | Property along Downhill Lane    | 433325.17      | 559682.26 | 0.29                  | 0.77              | 5.83   | 15.33   |
| ESR 3    | Property off Washington Road    | 433964.30      | 559014.14 | 0.25                  | 0.73              | 5.10   | 14.61   |
| ESR 4    | Property along Boston Crescent  | 434421.17      | 559599.51 | 0.15                  | 0.58              | 3.09   | 11.69   |
| ESR 5    | Property along Baltimore Avenue | 434627.56      | 559171.12 | 0.15                  | 0.58              | 3.09   | 11.70   |
| ESR 6    | Property along Ferryboat Lane   | 434701.01      | 558783.56 | 0.13                  | 0.56              | 2.63   | 11.25   |
| ESR 7    | Property at Seven Houses        | 432334.01      | 557786.97 | 0.06                  | 0.50              | 1.12   | 10.00   |
| ESR 8    | Property along Sulgrave Road    | 431863.91      | 558150.44 | 0.06                  | 0.54              | 1.25   | 10.77   |
| ESR 9    | Property along Watcombe Close   | 431633.25      | 558996.97 | 0.05                  | 0.52              | 0.95   | 10.47   |
| ESR 10   | East House Farm                 | 431811.19      | 559417.59 | 0.05                  | 0.52              | 0.93   | 10.30   |
| ESR 11   | Property along Follingsby Lane  | 432337.30      | 559964.76 | 0.08                  | 0.55              | 1.56   | 10.99   |

**Figure 6.4/19: 2021 Meteorological Data**

| RECEPTOR | ADDRESS                         | GRID REFERENCE |           | LONG TERM ANNUAL MEAN    |                          |        |         |
|----------|---------------------------------|----------------|-----------|--------------------------|--------------------------|--------|---------|
|          |                                 |                |           | PC                       | PEC                      | PC/AQO | PEC/AQO |
|          |                                 |                |           | ANNUAL                   | ANNUAL                   | ANNUAL | ANNUAL  |
|          |                                 | X              | Y         | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | %      | %       |
| ESR 1    | Hylton Bridge Farm              | 433347.47      | 559511.37 | 0.40                     | 0.87                     | 7.95   | 17.46   |
| ESR 2    | Property along Downhill Lane    | 433325.17      | 559682.26 | 0.33                     | 0.80                     | 6.52   | 16.02   |
| ESR 3    | Property off Washington Road    | 433964.30      | 559014.14 | 0.27                     | 0.75                     | 5.44   | 14.95   |
| ESR 4    | Property along Boston Crescent  | 434421.17      | 559599.51 | 0.18                     | 0.61                     | 3.66   | 12.26   |
| ESR 5    | Property along Baltimore Avenue | 434627.56      | 559171.12 | 0.17                     | 0.60                     | 3.31   | 11.92   |
| ESR 6    | Property along Ferryboat Lane   | 434701.01      | 558783.56 | 0.14                     | 0.57                     | 2.86   | 11.48   |
| ESR 7    | Property at Seven Houses        | 432334.01      | 557786.97 | 0.06                     | 0.51                     | 1.29   | 10.16   |
| ESR 8    | Property along Sulgrave Road    | 431863.91      | 558150.44 | 0.07                     | 0.55                     | 1.50   | 11.02   |
| ESR 9    | Property along Watcombe Close   | 431633.25      | 558996.97 | 0.09                     | 0.56                     | 1.73   | 11.25   |
| ESR 10   | East House Farm                 | 431811.19      | 559417.59 | 0.08                     | 0.54                     | 1.51   | 10.89   |
| ESR 11   | Property along Follingsby Lane  | 432337.30      | 559964.76 | 0.07                     | 0.54                     | 1.44   | 10.87   |

Figure 6.4/20: 2022 Meteorological Data

| RECEPTOR | ADDRESS                         | GRID REFERENCE |           | LONG TERM ANNUAL MEAN    |                          |        |         |
|----------|---------------------------------|----------------|-----------|--------------------------|--------------------------|--------|---------|
|          |                                 |                |           | PC                       | PEC                      | PC/AQO | PEC/AQO |
|          |                                 |                |           | ANNUAL                   | ANNUAL                   | ANNUAL | ANNUAL  |
|          |                                 | X              | Y         | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | %      | %       |
| ESR 1    | Hylton Bridge Farm              | 433347.47      | 559511.37 | 0.39                     | 0.86                     | 7.76   | 17.27   |
| ESR 2    | Property along Downhill Lane    | 433325.17      | 559682.26 | 0.31                     | 0.79                     | 6.24   | 15.75   |
| ESR 3    | Property off Washington Road    | 433964.30      | 559014.14 | 0.27                     | 0.75                     | 5.44   | 14.94   |
| ESR 4    | Property along Boston Crescent  | 434421.17      | 559599.51 | 0.18                     | 0.61                     | 3.54   | 12.14   |
| ESR 5    | Property along Baltimore Avenue | 434627.56      | 559171.12 | 0.16                     | 0.59                     | 3.23   | 11.84   |
| ESR 6    | Property along Ferryboat Lane   | 434701.01      | 558783.56 | 0.14                     | 0.57                     | 2.83   | 11.45   |
| ESR 7    | Property at Seven Houses        | 432334.01      | 557786.97 | 0.05                     | 0.49                     | 0.94   | 9.81    |
| ESR 8    | Property along Sulgrave Road    | 431863.91      | 558150.44 | 0.05                     | 0.52                     | 0.93   | 10.45   |
| ESR 9    | Property along Watcombe Close   | 431633.25      | 558996.97 | 0.05                     | 0.52                     | 0.94   | 10.46   |
| ESR 10   | East House Farm                 | 431811.19      | 559417.59 | 0.05                     | 0.52                     | 0.95   | 10.32   |
| ESR 11   | Property along Follingsby Lane  | 432337.30      | 559964.76 | 0.09                     | 0.56                     | 1.81   | 11.24   |

### Predicted DiEthyl Carbonate Concentrations

6.4.5 The predicted Ethyl Carbonate concentrations for the existing sensitive receptors and points across the receptor grid, for each year of meteorological data, are shown in Figures 6.4/21 to 6.4/25, below. The highest results for the receptors considered are highlighted in red.

**Figure 6.4/21: 2018 Meteorological Data**

| RECEPTOR | ADDRESS                         | GRID REFERENCE |           | LONG TERM ANNUAL MEAN    |                          |        |         |
|----------|---------------------------------|----------------|-----------|--------------------------|--------------------------|--------|---------|
|          |                                 |                |           | PC                       | PEC                      | PC/AQO | PEC/AQO |
|          |                                 |                |           | ANNUAL                   | ANNUAL                   | ANNUAL | ANNUAL  |
|          |                                 | X              | Y         | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | %      | %       |
| ESR 1    | Hylton Bridge Farm              | 433347.47      | 559511.37 | 0.19                     | 0.67                     | 3.87   | 13.38   |
| ESR 2    | Property along Downhill Lane    | 433325.17      | 559682.26 | 0.16                     | 0.63                     | 3.18   | 12.68   |
| ESR 3    | Property off Washington Road    | 433964.30      | 559014.14 | 0.27                     | 0.75                     | 5.48   | 14.99   |
| ESR 4    | Property along Boston Crescent  | 434421.17      | 559599.51 | 0.12                     | 0.55                     | 2.35   | 10.96   |
| ESR 5    | Property along Baltimore Avenue | 434627.56      | 559171.12 | 0.13                     | 0.56                     | 2.62   | 11.22   |
| ESR 6    | Property along Ferryboat Lane   | 434701.01      | 558783.56 | 0.11                     | 0.54                     | 2.18   | 10.80   |
| ESR 7    | Property at Seven Houses        | 432334.01      | 557786.97 | 0.04                     | 0.48                     | 0.71   | 9.58    |
| ESR 8    | Property along Sulgrave Road    | 431863.91      | 558150.44 | 0.04                     | 0.52                     | 0.79   | 10.31   |
| ESR 9    | Property along Watcombe Close   | 431633.25      | 558996.97 | 0.04                     | 0.52                     | 0.87   | 10.39   |
| ESR 10   | East House Farm                 | 431811.19      | 559417.59 | 0.06                     | 0.53                     | 1.23   | 10.61   |
| ESR 11   | Property along Follingsby Lane  | 432337.30      | 559964.76 | 0.06                     | 0.53                     | 1.16   | 10.59   |

**Figure 6.4/22: 2019 Meteorological Data**

| RECEPTOR | ADDRESS                         | GRID REFERENCE           |                          | LONG TERM ANNUAL MEAN |        |        |         |
|----------|---------------------------------|--------------------------|--------------------------|-----------------------|--------|--------|---------|
|          |                                 |                          |                          | PC                    | PEC    | PC/AQO | PEC/AQO |
|          |                                 |                          |                          | ANNUAL                | ANNUAL | ANNUAL | ANNUAL  |
| X        | Y                               | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | %                     | %      |        |         |
| ESR 1    | Hylton Bridge Farm              | 433347.47                | 559511.37                | 0.20                  | 0.68   | 4.05   | 13.56   |
| ESR 2    | Property along Downhill Lane    | 433325.17                | 559682.26                | 0.17                  | 0.64   | 3.31   | 12.82   |
| ESR 3    | Property off Washington Road    | 433964.30                | 559014.14                | 0.29                  | 0.77   | 5.80   | 15.30   |
| ESR 4    | Property along Boston Crescent  | 434421.17                | 559599.51                | 0.15                  | 0.58   | 2.98   | 11.59   |
| ESR 5    | Property along Baltimore Avenue | 434627.56                | 559171.12                | 0.13                  | 0.56   | 2.65   | 11.26   |
| ESR 6    | Property along Ferryboat Lane   | 434701.01                | 558783.56                | 0.11                  | 0.54   | 2.17   | 10.79   |
| ESR 7    | Property at Seven Houses        | 432334.01                | 557786.97                | 0.03                  | 0.47   | 0.53   | 9.40    |
| ESR 8    | Property along Sulgrave Road    | 431863.91                | 558150.44                | 0.03                  | 0.51   | 0.61   | 10.14   |
| ESR 9    | Property along Watcombe Close   | 431633.25                | 558996.97                | 0.03                  | 0.51   | 0.70   | 10.22   |
| ESR 10   | East House Farm                 | 431811.19                | 559417.59                | 0.05                  | 0.52   | 0.98   | 10.35   |
| ESR 11   | Property along Follingsby Lane  | 432337.30                | 559964.76                | 0.06                  | 0.53   | 1.19   | 10.62   |

**Figure 6.4/23: 2020 Meteorological Data**

| RECEPTOR | ADDRESS                         | GRID REFERENCE           |                          | LONG TERM ANNUAL MEAN |        |        |         |
|----------|---------------------------------|--------------------------|--------------------------|-----------------------|--------|--------|---------|
|          |                                 |                          |                          | PC                    | PEC    | PC/AQO | PEC/AQO |
|          |                                 |                          |                          | ANNUAL                | ANNUAL | ANNUAL | ANNUAL  |
| X        | Y                               | $\mu\text{g}/\text{m}^3$ | $\mu\text{g}/\text{m}^3$ | %                     | %      |        |         |
| ESR 1    | Hylton Bridge Farm              | 433347.47                | 559511.37                | 0.20                  | 0.67   | 3.95   | 13.45   |
| ESR 2    | Property along Downhill Lane    | 433325.17                | 559682.26                | 0.16                  | 0.64   | 3.22   | 12.72   |
| ESR 3    | Property off Washington Road    | 433964.30                | 559014.14                | 0.29                  | 0.76   | 5.76   | 15.27   |
| ESR 4    | Property along Boston Crescent  | 434421.17                | 559599.51                | 0.12                  | 0.55   | 2.36   | 10.97   |
| ESR 5    | Property along Baltimore Avenue | 434627.56                | 559171.12                | 0.13                  | 0.56   | 2.68   | 11.29   |
| ESR 6    | Property along Ferryboat Lane   | 434701.01                | 558783.56                | 0.11                  | 0.54   | 2.26   | 10.88   |
| ESR 7    | Property at Seven Houses        | 432334.01                | 557786.97                | 0.04                  | 0.48   | 0.78   | 9.66    |
| ESR 8    | Property along Sulgrave Road    | 431863.91                | 558150.44                | 0.04                  | 0.52   | 0.87   | 10.39   |
| ESR 9    | Property along Watcombe Close   | 431633.25                | 558996.97                | 0.03                  | 0.51   | 0.60   | 10.12   |
| ESR 10   | East House Farm                 | 431811.19                | 559417.59                | 0.03                  | 0.50   | 0.69   | 10.07   |
| ESR 11   | Property along Follingsby Lane  | 432337.30                | 559964.76                | 0.05                  | 0.52   | 0.98   | 10.40   |

**Figure 6.4/24: 2021 Meteorological Data**

| RECEPTOR | ADDRESS                         | GRID REFERENCE    |                   | LONG TERM ANNUAL MEAN |             |             |              |
|----------|---------------------------------|-------------------|-------------------|-----------------------|-------------|-------------|--------------|
|          |                                 |                   |                   | PC                    | PEC         | PC/AQO      | PEC/AQO      |
|          |                                 |                   |                   | ANNUAL                | ANNUAL      | ANNUAL      | ANNUAL       |
| X        | Y                               | µg/m <sup>3</sup> | µg/m <sup>3</sup> | %                     | %           |             |              |
| ESR 1    | Hylton Bridge Farm              | 433347.47         | 559511.37         | 0.19                  | 0.67        | 3.83        | 13.34        |
| ESR 2    | Property along Downhill Lane    | 433325.17         | 559682.26         | 0.16                  | 0.63        | 3.13        | 12.64        |
| ESR 3    | Property off Washington Road    | 433964.30         | 559014.14         | <b>0.30</b>           | <b>0.78</b> | <b>6.04</b> | <b>15.55</b> |
| ESR 4    | Property along Boston Crescent  | 434421.17         | 559599.51         | 0.14                  | 0.57        | 2.89        | 11.49        |
| ESR 5    | Property along Baltimore Avenue | 434627.56         | 559171.12         | 0.15                  | 0.58        | 2.91        | 11.52        |
| ESR 6    | Property along Ferryboat Lane   | 434701.01         | 558783.56         | 0.12                  | 0.55        | 2.47        | 11.09        |
| ESR 7    | Property at Seven Houses        | 432334.01         | 557786.97         | 0.04                  | 0.49        | 0.86        | 9.73         |
| ESR 8    | Property along Sulgrave Road    | 431863.91         | 558150.44         | 0.05                  | 0.52        | 0.97        | 10.49        |
| ESR 9    | Property along Watcombe Close   | 431633.25         | 558996.97         | 0.05                  | 0.53        | 1.04        | 10.57        |
| ESR 10   | East House Farm                 | 431811.19         | 559417.59         | 0.05                  | 0.52        | 1.06        | 10.44        |
| ESR 11   | Property along Follingsby Lane  | 432337.30         | 559964.76         | 0.05                  | 0.52        | 0.97        | 10.40        |

**Figure 6.4/25: 2022 Meteorological Data**

| RECEPTOR | ADDRESS                         | GRID REFERENCE    |                   | LONG TERM ANNUAL MEAN |        |        |         |
|----------|---------------------------------|-------------------|-------------------|-----------------------|--------|--------|---------|
|          |                                 |                   |                   | PC                    | PEC    | PC/AQO | PEC/AQO |
|          |                                 |                   |                   | ANNUAL                | ANNUAL | ANNUAL | ANNUAL  |
| X        | Y                               | µg/m <sup>3</sup> | µg/m <sup>3</sup> | %                     | %      |        |         |
| ESR 1    | Hylton Bridge Farm              | 433347.47         | 559511.37         | 0.20                  | 0.68   | 4.09   | 13.60   |
| ESR 2    | Property along Downhill Lane    | 433325.17         | 559682.26         | 0.17                  | 0.64   | 3.32   | 12.83   |
| ESR 3    | Property off Washington Road    | 433964.30         | 559014.14         | 0.30                  | 0.78   | 6.02   | 15.53   |
| ESR 4    | Property along Boston Crescent  | 434421.17         | 559599.51         | 0.14                  | 0.57   | 2.81   | 11.41   |
| ESR 5    | Property along Baltimore Avenue | 434627.56         | 559171.12         | 0.14                  | 0.58   | 2.89   | 11.50   |
| ESR 6    | Property along Ferryboat Lane   | 434701.01         | 558783.56         | 0.12                  | 0.55   | 2.38   | 11.00   |
| ESR 7    | Property at Seven Houses        | 432334.01         | 557786.97         | 0.04                  | 0.48   | 0.71   | 9.58    |
| ESR 8    | Property along Sulgrave Road    | 431863.91         | 558150.44         | 0.03                  | 0.50   | 0.57   | 10.09   |
| ESR 9    | Property along Watcombe Close   | 431633.25         | 558996.97         | 0.03                  | 0.51   | 0.58   | 10.10   |
| ESR 10   | East House Farm                 | 431811.19         | 559417.59         | 0.03                  | 0.50   | 0.68   | 10.05   |
| ESR 11   | Property along Follingsby Lane  | 432337.30         | 559964.76         | 0.06                  | 0.53   | 1.20   | 10.63   |

### Predicted NO<sub>2</sub> Concentrations and Deposition Rates for Existing Sensitive Ecological Receptor Points

6.4.6 The predicted NO<sub>2</sub> concentrations as a percentage of the relevant critical levels for the existing sensitive receptor points within the considered designated habitat sites, for each year of meteorological data, are shown in Figures 6.4/26 to 6.4/28, below. The highest results for the receptor points considered are underlined.

Figure 6.4/26: Barmston Pond LNR

|       | Nox Annual Mean as % of Critical Level |       |       |              |       | Nox 24 Hour Mean as % of Critical Level |       |       |              |       |
|-------|--|-------|-------|--------------|-------|---|-------|-------|--------------|-------|
|       | 2018                                   | 2019  | 2020  | 2021         | 2022  | 2018                                    | 2019  | 2020  | 2021         | 2022  |
| ECO 1 | 0.48%                                  | 0.37% | 0.46% | 0.61%        | 0.34% | 3.80%                                   | 2.77% | 3.21% | 4.51%        | 3.30% |
| ECO 2 | 0.52%                                  | 0.37% | 0.50% | 0.65%        | 0.35% | 3.60%                                   | 2.92% | 2.59% | 4.36%        | 2.73% |
| ECO 3 | 0.57%                                  | 0.38% | 0.55% | <u>0.68%</u> | 0.43% | 3.16%                                   | 2.68% | 2.99% | 4.30%        | 3.98% |
| ECO 4 | 0.48%                                  | 0.31% | 0.48% | 0.53%        | 0.43% | 3.64%                                   | 2.22% | 2.21% | <u>5.69%</u> | 3.88% |
| ECO 5 | 0.37%                                  | 0.24% | 0.38% | 0.41%        | 0.33% | 2.51%                                   | 1.50% | 2.25% | 3.64%        | 2.89% |

Figure 6.4/27: Hylton Dene LNR

|        | Nox Annual Mean as % of Critical Level |       |       |       |              | Nox 24 Hour Mean as % of Critical Level |       |       |       |              |
|--------|--|-------|-------|-------|--------------|---|-------|-------|-------|--------------|
|        | 2018                                   | 2019  | 2020  | 2021  | 2022         | 2018                                    | 2019  | 2020  | 2021  | 2022         |
| ECO 6  | 0.81%                                  | 0.81% | 0.60% | 0.94% | 0.86%        | 4.55%                                   | 3.89% | 5.29% | 3.56% | <u>5.77%</u> |
| ECO 7  | 0.98%                                  | 0.86% | 0.74% | 1.01% | 1.07%        | 4.19%                                   | 4.25% | 4.15% | 3.29% | 5.09%        |
| ECO 8  | 1.12%                                  | 0.90% | 0.87% | 1.05% | <u>1.17%</u> | 5.48%                                   | 3.24% | 4.07% | 2.67% | 4.25%        |
| ECO 9  | 1.09%                                  | 0.87% | 0.89% | 0.99% | 1.11%        | 5.28%                                   | 2.80% | 3.49% | 2.63% | 3.32%        |
| ECO 10 | 1.01%                                  | 0.90% | 0.94% | 1.02% | 1.04%        | 3.43%                                   | 2.47% | 3.71% | 2.46% | 3.04%        |



Figure 6.4/28: Northumbria Coast Ramsar site/SPA

|        | Nox Annual Mean as % of Critical Level |       |       |              |       | Nox 24 Hour Mean as % of Critical Level |       |       |              |       |
|--------|--|-------|-------|--------------|-------|---|-------|-------|--------------|-------|
|        | 2018                                   | 2019  | 2020  | 2021         | 2022  | 2018                                    | 2019  | 2020  | 2021         | 2022  |
| ECO 11 | 0.03%                                  | 0.03% | 0.03% | 0.03%        | 0.03% | 0.27%                                   | 0.40% | 0.40% | 0.20%        | 0.21% |
| ECO 12 | 0.03%                                  | 0.03% | 0.03% | 0.03%        | 0.03% | 0.31%                                   | 0.47% | 0.46% | 0.23%        | 0.27% |
| ECO 13 | 0.04%                                  | 0.03% | 0.03% | 0.04%        | 0.04% | 0.39%                                   | 0.27% | 0.36% | 0.29%        | 0.26% |
| ECO 14 | 0.06%                                  | 0.05% | 0.04% | 0.06%        | 0.06% | 0.37%                                   | 0.45% | 0.39% | 0.42%        | 0.53% |
| ECO 15 | 0.18%                                  | 0.18% | 0.18% | 0.20%        | 0.19% | 0.41%                                   | 0.81% | 0.65% | 0.71%        | 0.63% |
| ECO 16 | 0.18%                                  | 0.18% | 0.18% | <b>0.21%</b> | 0.19% | 0.47%                                   | 0.59% | 0.48% | <b>0.87%</b> | 0.50% |
| ECO 17 | 0.15%                                  | 0.16% | 0.17% | 0.18%        | 0.17% | 0.33%                                   | 0.36% | 0.53% | 0.61%        | 0.51% |
| ECO 18 | 0.14%                                  | 0.17% | 0.17% | 0.17%        | 0.16% | 0.32%                                   | 0.43% | 0.54% | 0.62%        | 0.56% |
| ECO 19 | 0.13%                                  | 0.15% | 0.15% | 0.15%        | 0.14% | 0.37%                                   | 0.40% | 0.57% | 0.52%        | 0.42% |
| ECO 20 | 0.12%                                  | 0.13% | 0.13% | 0.13%        | 0.13% | 0.31%                                   | 0.44% | 0.50% | 0.43%        | 0.36% |
| ECO 21 | 0.10%                                  | 0.12% | 0.11% | 0.11%        | 0.11% | 0.31%                                   | 0.29% | 0.34% | 0.39%        | 0.27% |
| ECO 25 | 0.06%                                  | 0.05% | 0.08% | 0.06%        | 0.07% | 0.35%                                   | 0.23% | 0.30% | 0.37%        | 0.28% |
| ECO 26 | 0.06%                                  | 0.05% | 0.06% | 0.06%        | 0.07% | 0.31%                                   | 0.26% | 0.27% | 0.22%        | 0.30% |
| ECO 27 | 0.04%                                  | 0.04% | 0.05% | 0.04%        | 0.06% | 0.21%                                   | 0.19% | 0.24% | 0.24%        | 0.34% |

6.4.7 As discussed within ES Chapter 6, High Woods Local Wildlife Site (LWS) lies outside of the Uniform Cartesian Receptor Grid included in the model and, therefore, the highest results for the nearby Barmston Pond Local Nature Reserve (LNR) have been applied to the LWS as a robust approach.

6.4.8 For the assessment of the Severn Houses LWS, the results of the closest grid point to the site have been used (432350, 557800). The highest modelling results were observed when using the 2021 meteorological data.

6.4.9 For the assessment of Elliscope Farm East/Hylton Bridge candidate LWS, the results of the closest grid point to the site have been used (433550, 559850). The highest modelling results were observed when using the 2022 meteorological data.

6.4.10 The results for all LWSs considered in the assessment are included in Section 6.5 of ES Chapter 6.

6.4.11 The predicted nutrient nitrogen and acid deposition as a percentage of the relevant critical loads for the existing sensitive receptor points within the considered designated habitat sites, for each year of meteorological data, are shown in Figures 6.4/29 to 6.4/31, below. The highest results for the receptor points considered are underlined.

Figure 6.4/29: Barmston Pond LNR

|       | NN Deposition Rate as % of Critical Load |       |       |              |       | PC as % of CLMaxN |       |       |              |       |
|-------|--|-------|-------|--------------|-------|-------------------|-------|-------|--------------|-------|
|       | 2018                                     | 2019  | 2020  | 2021         | 2022  | 2018              | 2019  | 2020  | 2021         | 2022  |
| ECO 1 | 0.41%                                    | 0.32% | 0.40% | 0.53%        | 0.29% | 0.11%             | 0.08% | 0.10% | 0.14%        | 0.08% |
| ECO 2 | 0.45%                                    | 0.32% | 0.43% | 0.56%        | 0.31% | 0.12%             | 0.08% | 0.11% | 0.15%        | 0.08% |
| ECO 3 | 0.49%                                    | 0.33% | 0.47% | <u>0.59%</u> | 0.37% | 0.13%             | 0.09% | 0.12% | <u>0.15%</u> | 0.10% |
| ECO 4 | 0.41%                                    | 0.26% | 0.42% | 0.46%        | 0.37% | 0.11%             | 0.07% | 0.11% | 0.12%        | 0.10% |
| ECO 5 | 0.32%                                    | 0.21% | 0.32% | 0.36%        | 0.29% | 0.08%             | 0.05% | 0.08% | 0.09%        | 0.07% |

Figure 6.4/30: Hylton Dene LNR

|        | NN Deposition Rate as % of Critical Load |       |       |       |              | PC as % of CLMaxN |       |       |       |              |
|--------|--|-------|-------|-------|--------------|-------------------|-------|-------|-------|--------------|
|        | 2018                                     | 2019  | 2020  | 2021  | 2022         | 2018              | 2019  | 2020  | 2021  | 2022         |
| ECO 6  | 0.70%                                    | 0.70% | 0.52% | 0.81% | 0.74%        | 0.18%             | 0.18% | 0.14% | 0.21% | 0.19%        |
| ECO 7  | 0.85%                                    | 0.74% | 0.64% | 0.88% | 0.92%        | 0.22%             | 0.19% | 0.17% | 0.23% | 0.24%        |
| ECO 8  | 0.97%                                    | 0.78% | 0.75% | 0.91% | <u>1.01%</u> | 0.25%             | 0.20% | 0.20% | 0.24% | <u>0.26%</u> |
| ECO 9  | 0.94%                                    | 0.75% | 0.77% | 0.86% | 0.96%        | 0.25%             | 0.20% | 0.20% | 0.22% | 0.25%        |
| ECO 10 | 0.87%                                    | 0.78% | 0.82% | 0.88% | 0.90%        | 0.23%             | 0.20% | 0.21% | 0.23% | 0.24%        |

Figure 6.4/26: Northumbria Coast Ramsar site/SPA

|        | NN Deposition Rate as % of Critical Load |       |       |              |       | PC as % of CLMaxN |       |       |              |       |
|--------|--|-------|-------|--------------|-------|-------------------|-------|-------|--------------|-------|
|        | 2018                                     | 2019  | 2020  | 2021         | 2022  | 2018              | 2019  | 2020  | 2021         | 2022  |
| ECO 11 | 0.03%                                    | 0.02% | 0.02% | 0.03%        | 0.02% | 0.00%             | 0.00% | 0.00% | 0.00%        | 0.00% |
| ECO 12 | 0.03%                                    | 0.03% | 0.02% | 0.03%        | 0.03% | 0.00%             | 0.00% | 0.00% | 0.00%        | 0.00% |
| ECO 13 | 0.03%                                    | 0.03% | 0.03% | 0.04%        | 0.03% | 0.00%             | 0.00% | 0.00% | 0.00%        | 0.00% |
| ECO 14 | 0.05%                                    | 0.04% | 0.04% | 0.05%        | 0.05% | 0.00%             | 0.00% | 0.00% | 0.00%        | 0.00% |
| ECO 15 | 0.15%                                    | 0.15% | 0.16% | 0.17%        | 0.16% | 0.01%             | 0.01% | 0.01% | 0.01%        | 0.01% |
| ECO 16 | 0.16%                                    | 0.15% | 0.16% | <b>0.18%</b> | 0.16% | 0.01%             | 0.01% | 0.01% | <b>0.01%</b> | 0.01% |
| ECO 17 | 0.13%                                    | 0.14% | 0.15% | 0.15%        | 0.14% | 0.01%             | 0.01% | 0.01% | 0.01%        | 0.01% |
| ECO 18 | 0.12%                                    | 0.14% | 0.14% | 0.14%        | 0.13% | 0.01%             | 0.01% | 0.01% | 0.01%        | 0.01% |
| ECO 19 | 0.11%                                    | 0.13% | 0.13% | 0.13%        | 0.12% | 0.01%             | 0.01% | 0.01% | 0.01%        | 0.01% |
| ECO 20 | 0.10%                                    | 0.12% | 0.11% | 0.11%        | 0.11% | 0.01%             | 0.01% | 0.01% | 0.01%        | 0.01% |
| ECO 21 | 0.09%                                    | 0.10% | 0.09% | 0.09%        | 0.10% | 0.01%             | 0.01% | 0.01% | 0.01%        | 0.01% |
| ECO 25 | 0.05%                                    | 0.05% | 0.07% | 0.05%        | 0.06% | 0.00%             | 0.00% | 0.00% | 0.00%        | 0.00% |
| ECO 26 | 0.05%                                    | 0.04% | 0.05% | 0.05%        | 0.06% | 0.00%             | 0.00% | 0.00% | 0.00%        | 0.00% |
| ECO 27 | 0.04%                                    | 0.04% | 0.04% | 0.03%        | 0.05% | 0.00%             | 0.00% | 0.00% | 0.00%        | 0.00% |

6.4.12 The results for all LWSs and candidate LWSs considered in the assessment are included in section 6.5 of ES Chapter 6.