

Viridor, Grundon and Ford EfW

# Ford Circular Technology Park – Ford ERF and WSFT

Plume Visibility Modelling Results

## 1 Introduction

This technical note presents the results of the plume visibility modelling. The ADMS dispersion model used for the detailed modelling of process emissions includes a function to model the visible plume, and this has been used to determine the extent of the plume from the stack. All inputs to the model are presented in Appendix C3.

The following parameters have been calculated:

- The length of the longest visible plume;
- The number of visible plumes during daylight hours;
- The percentage of modelled daylight hours with any visible plume; and
- Percentage of visible plumes with a length of more than:
  - 20m;
  - 50m;
  - 100; and
  - 200m.

## 2 Results

The following tables set out the results of the modelling for the five years of meteorological data.

*Table 1: Summary*

	2014	2015	2016	2017	2018	Average
Length of longest visible plume	391	375	427	451	375	404
% of modelled daylight hours with any visible plume	23.2%	24.4%	25.5%	23.0%	28.3%	24.9%
% visible plumes > 20m length	84.7%	82.0%	84.0%	86.8%	88.6%	85.2%
% visible plumes > 50m length	51.9%	47.8%	46.6%	55.2%	61.1%	52.5%
% visible plumes > 100m length	19.7%	18.8%	18.7%	25.0%	24.4%	21.3%
% visible plumes > 200m length	3.5%	3.2%	3.7%	4.4%	5.7%	4.1%

Table 2: Breakdown

Year	2014	2015	2016	2017	2018	Average
Total number of visible plumes in daylight hours	1001	1074	1115	1007	1226	1084.6
% of modelled daylight hours with any visible plumes	23.2%	24.4%	25.5%	23.0%	28.3%	24.9%
<b>Number of visible plumes in daylight hours</b>						
>20m from stack	848	881	937	874	1086	925
>50m from stack	520	513	520	556	749	572
>100m from stack	197	202	208	252	299	232
>200m from stack	35	34	41	44	70	45
<b>Percentage of daylight hours a plume is visible</b>						
>20m from stack	19.6%	20.0%	21.4%	20.0%	25.1%	21.2%
>50m from stack	12.0%	11.6%	11.9%	12.7%	17.3%	13.1%
>100m from stack	4.6%	4.6%	4.8%	5.8%	6.9%	5.3%
>200m from stack	0.8%	0.8%	0.9%	1.0%	1.6%	1.0%
<b>Percentage of visible plumes which the length is</b>						
>20m from stack	84.7%	82.0%	84.0%	86.8%	88.6%	85.2%
>50m from stack	51.9%	47.8%	46.6%	55.2%	61.1%	52.5%
>100m from stack	19.7%	18.8%	18.7%	25.0%	24.4%	21.3%
>200m from stack	3.5%	3.2%	3.7%	4.4%	5.7%	4.1%

Yours sincerely

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