

Biomass Boilers at Waste Drying Plant, Gibson Lane, Melton, Hull, HU14 3HH

Air Quality Assessment and Odour Assessment – the 1st and 2nd Schedule 5 Update

23rd July 2021

PRESENTED TO

Eco-Power Environmental Ltd

Gibson Lane
Melton, Hull
HU14 3HH

PRESENTED BY

NALO, Tetra Tech

Executive Park, Avalon Way, Anstey,
Leicester, LE7 7GR

P +44 (0)116 234 8000
NALO.UK@tetrattech.com

Prepared by:

Dr Zhiyuan Yang 23rd July 2021
Principal Environmental Consultant

Reviewed by:

Matthew Smith 23rd July 2021
Principal Environmental Consultant

Authorised by:

Nigel Mann
Director 23rd July 2021

REVISION HISTORY

Issue	Date	Status
1	22 nd November 2019	First Issue (Report reference: A115848)
2	24 th January 2020	Second Issue – inclusive of (1) odour assessment for dryer floor operations; (2) Responses to the comments from Senior Environmental Control Officer of Yorkshire Council by the Investigations of potential increase of short-term impact on the receptors by the waiting traffic adjacent to the level crossing on Gibson Lane (Report reference: A115848)
3	14 th February 2020	Third Issue – Minor Amendment (Report reference: A115848)
4	25 th March 2021	Fourth Issue – inclusive of responses to the EA's Notice of request for more information (the 1 st Schedule 5 Request) in respect of the air quality assessment and odour assessment (Report reference: 784-B027125)
5	23 rd July 2021	Fifth Issue – inclusive of (1) Responses to the EA's Notice of request for more information (the 2 nd Schedule 5 Request) in respect of the air quality assessment and odour assessment (Report reference: 784-B027125); (2) Dust and particulate emission monitoring from the drying floor stacks; (3) Air dispersion modelling of particulate emission impacts from the drying floor stacks; and (4) Revising the dispersion modelling assessment using installed Exodraft chimney fan data, in accordance with the scheduled task in Tetra Tech technical Memo titled "Response to the Environment Agency's Information Request in the email dated 28 th May 2021 (No. 2)", dated 23 rd June 2021.

TABLE OF CONTENTS

1.0 INTRODUCTION	12
1.1 Site Location and Context.....	12
1.2 Report Revision History	15
1.2.1 The First, Second and Third Issues of the Report.....	15
1.2.2 The Fourth Report Update – In Response to the 1 st Schedule 5	15
1.2.3 The Fifth Report Update – In Response to the 2 nd Schedule 5.....	16
2.0 POLICY AND LEGISLATIVE CONTEXT	37
2.1 Documents consulted.....	37
2.2 Air quality legislative framework.....	38
2.3 Planning and policy guidance	40
3.0 ASSESSMENT METHODOLOGY	42
3.1 Determining the impact magnitude of the air quality effects	42
4.0 BASELINE CONDITIONS	44
4.1 Air quality review	44
4.2 Baseline/background concentrations inclusive of contributins from traffic emissions	45
5.0 DETAILED DISPERSION MODELLING METHODOLOGY	46
5.1 Modelling parameter and averaging period	46
5.2 Sensitivie receptors.....	47
5.3 Emission Sources	49
5.3.1 Emission Sources from Boilers.....	49
5.3.2 Particulate Emissions the Drying Floor Stacks.....	51
5.3.3 Emission Sources for Cumulative Impact Assessment.....	53
5.4 Model Scenarios	56
5.5 Meteorological Data	56
5.6 Surface Characteristics	59
5.7 Buildings in the Modelling Assessment.....	59
5.8 Treatment of Terrain	60
5.9 NO _x to NO ₂ conversion	60
5.10 Modelling Uncertainty.....	61
6.0 DETAILED MODELLING ASSESSMENT RESULTS: PROTECTION OF HUMAN HEALTH	62
6.1 Nitrogen Dioxide (NO ₂) – Scenario 1	62
6.2 Particulate Matter (PM ₁₀) – Scenario 1	70

6.3 Particulate Matter (PM _{2.5})	74
6.4 Carbon monoxide (co).....	75
6.5 Nitrogen Dioxide (NO ₂) – Scenario 2 (Worst Case Operations)	76
7.0 HABITAT ASSESSMENT	84
7.1 Predicted nitrogen oxide concentrations – Scenario 1	84
7.2 Predicted nitrogen oxide concentrations – Scenario 2	86
8.0 CUMULATIVE IMPACT ASSESSMETN RESULTS FOR THE PROTECTION HUMAN HEALTH.....	89
8.1 Nitrogen Dioxide (NO ₂) – Cumulative Assessment.....	89
8.2 Particulate Matter (PM ₁₀) – Cumulative Assessment.....	98
8.3 Particulate Matter (PM _{2.5}) – Cumulative Assessment	105
8.4 Carbon monoxide (CO) – Cumulative Assessment	108
8.5 Short-Term No ₂ – Cumulative Assessment Including Level Crossing Traffic.....	109
9.0 ODOUR ASSESSMENT FOR DRYING FLOOR AND BOILER OPERATINON	114
9.1 Process Descriptions	114
9.2 Odour Benchmarks	115
9.3 Odour Emission Sources	117
9.3.1 Odour Emission from Drying Floor	117
9.3.2 Odour Emissions from Wood Fuelled Boilers Stacks.....	118
9.4 Odour Assessment Receptors.....	119
9.5 Odour Modelling Assessment Results	122
9.6 Sensitivity Analysis – Inter-Annual Variability	125
10.0 ODOUR COMPLAINT RECORDS.....	126
10.1 Complaint Records.....	126
11.0 CONCLUSIONS	128

LIST OF TABLES

Table 2-1. Air Quality Standards, Objectives, Limit and Target Values.....	39
Table 3-1. Impact Descriptors for Individual Receptors	43
Table 4-1. Monitored Annual Mean NO ₂ Concentrations.....	44
Table 5-1. Monitored Annual Mean NO ₂ Concentrations.....	46
Table 5-2. Modelled Sensitive Receptors for Industrial Emission Assessment	47
Table 5-3. Orlan Super 130 kW _{th} Biomass Boiler Stack Emissions.....	50
Table 5-4. A Summary of Particulate Matter Monitoring Results	52
Table 5-5. Drying Floor Stack Emissions	53
Table 5-6. Kalvis 0.95 MW _{th} Biomass Boilers Stack Emissions and Stack Parameters.....	54
Table 5-7. Summary of Stack Discharge Conditions (Flue 1&2 Combined) (after WSP Report, January 2018) ...	56
Table 5-8. Locations and Heights of Building Used in the Model	59

Table 6-1. Maximum Long-Term (Annual Mean) Concentrations of NO ₂ – Scenario 1.....	62
Table 6-2. Long-Term (Annual Mean) Concentrations of NO ₂ and Impact Description of Effects at Receptors - Scenario 1.....	63
Table 6-3. Maximum Short-Term (1-Hour Mean, 99.79th Percentile) Concentrations of NO ₂ – Scenario 1.....	64
Table 6-4. Maximum Short-Term (1-Hour Mean, 99.79th Percentile) Concentrations of NO ₂ at Receptors.....	65
Table 6-5 The Long-Term (Annual Mean) Concentrations of PM ₁₀ and Significance of Effects at Key Receptors – Scenario 1.....	70
Table 6-6 The Short-Term (24-Hour Mean) Concentrations of PM ₁₀ at Key Receptors – Scenario 1.....	71
Table 6-7 The Long-Term (Annual Mean) Concentrations of PM _{2.5} and Significance of Effects at Key Receptors.....	74
Table 6-8. Summary of Predicted CO Concentrations.....	75
Table 6-9. Long-Term (Annual Mean) Concentrations of NO ₂ and Impact Description of Effects at Receptors - Scenario 2.....	77
Table 6-10. Maximum Short-Term (1-Hour Mean, 99.79th Percentile) Concentrations of NO ₂ at Receptors – Scenario 2.....	78
Table 7-1. Summary of Cumulative Predicted NO _x Concentrations for Protection of Vegetation and Ecosystems – Scenario 1.....	84
Table 7-2. Long-Term (Annual Mean) Concentrations of NO ₂ and Impact Description of Effects at Receptors – Scenario 1.....	85
Table 7-3. Summary of Cumulative Predicted NO _x Concentrations for Protection of Vegetation and Ecosystems – Scenario 2.....	86
Table 7-4. Long-Term (Annual Mean) Concentrations of NO ₂ and Impact Description of Effects at Receptors – Scenario 2.....	87
Table 8-1. Long-Term (Annual Mean) Concentrations of NO ₂ and Impact Description of Effects at Receptors – Cumulative Assessment.....	90
Table 8-2 Summary of the Predicted Short-Term NO ₂ Concentrations at Discrete Receptors – Cumulative Assessment.....	93
Table 8-3. The Long-Term (Annual Mean) Concentrations of PM ₁₀ and Impact Description of Effects at Receptors – Cumulative Assessment.....	99
Table 8-4 The Short-Term (24-Hour Mean) Concentrations of PM ₁₀ at Key Receptors – Cumulative Assessment.....	102
Table 8-5. The Long-Term (Annual Mean) Concentrations of PM _{2.5} and Impact Description of Effects at Receptors – Cumulative Assessment.....	106
Table 8-6. Summary of Predicted CO Concentrations – Cumulative Assessment.....	108
Table 8-7. Summary of the Predicted Short-Term NO ₂ Concentrations at Discrete Receptors including the waiting Traffic.....	112
Table 9-1 H4 Benchmark Odour Criteria.....	115
Table 9-2 Proposed odour effect descriptors for impacts predicted by modelling –“Most Offensive ”odours.....	116
Table 9-3 Proposed odour effect descriptors for impacts predicted by modelling –“Moderately Offensive” odours.....	117
Table 9-4 Odour Emissions from Drying Floor for the Assessment and Stack Parameters.....	118
Table 9-5. Orlan Super 130 kW _{th} Biomass Boiler Stack Odour Emissions and Stack Parameters.....	119
Table 9-6. Modelled Sensitive Receptors for Odour Assessment.....	120
Table 9-7. The 98 th %ile Maximum Short-Term (Hourly) Concentrations of Odour.....	122
Table 9-8. Modelled Sensitive Receptors for Odour Assessment.....	123
Table 9-9. Sensitivity Analysis.....	125
Table 10-1 Complaints by Months and Years.....	126
Table A 11-1. Traffic Data.....	130
Table A 11-2. ADMS Roads Model Inputs.....	131
Table A 11-3. Modelled Existing Sensitive Receptor Locations.....	132

Table A 11-4. Comparison of Roadside Modelling & Monitoring Results for NO ₂	132
Table A 11-5. Predicted 2018 Annual Average Concentrations of NO ₂	133

LIST OF FIGURES

Figure 1-1. Site location.....	12
Figure 1-2. Indicative Site Boundary.....	13
Figure 1-3. Site Layout	14
Figure 1-4. Plant Layout, Dated 29 th June 2021	19
Figure 5-1. Receptor, Buildings and Modelled Emission Locations	48
Figure 5-2. Eco-Power Biomass Boiler Stack Locations	51
Figure 5-3. Drying Floor Emission Stacks	52
Figure 5-4. Kalvis Boiler Stack Locations and ERF Emission Point.....	55
Figure 5-5. Meteorological Data/Windrose 2016 to 2018.....	57
Figure 5-6. Buildings for the Modelling	60
Figure 6-1. Predicted Ground level Long-Term NO ₂ Concentrations (PC) from the Operation of Eco-Power Boilers (2017 Met Data) – Scenario 1	66
Figure 6-2. Predicted Ground Level Short-Term NO ₂ Concentrations (PC, 1-Hour Mean, 99.79 th Percentile) from the Operation of Eco-Power Boilers (2018 Met Data) – Scenario 1.....	67
Figure 6-3. Predicted Ground level Long-Term NO _x Concentrations (PC) from the Operation of Eco-Power Boilers (2017 Met Data) – Scenario 1	68
Figure 6-4. Predicted Ground level Short-Term NO _x Concentrations (PC) from the Operation of Eco-Power Boilers (2018 Met Data) – Scenario 1	69
Figure 6-5. Predicted Long-Term PM ₁₀ Concentrations (PC) from the Operation of Eco-Power Boilers (2017 Met Data) – Scenario 1.....	73
Figure 6-6. Predicted Ground level Long-Term NO ₂ Concentrations (PC) from the Operation of Eco-Power Boilers (2017 Met Data) – Scenario 2	80
Figure 6-7. Predicted Ground Level Short-Term NO ₂ Concentrations (PC, 1-Hour Mean, 99.79 th Percentile) from the Operation of Eco-Power Boilers (2018 Met Data) – Scenario 2.....	81
Figure 6-8. Predicted Ground level Long-Term NO _x Concentrations (PC) from the Operation of Eco-Power Boilers (2017 Met Data) – Scenario 2	82
Figure 6-9. Predicted Ground level Short-Term (24 hr) NO _x Concentrations (PC) from the Operation of Eco-Power Boilers (2018 Met Data) – Scenario 2	83
Figure 8-1. Predicted Long-Term NO ₂ Concentrations (PC) from the Cumulative Assessment – Including Emissions from Eco-Power Boilers, Transwaste Kalvis Boilers and ERF (2017 Met Data)	95
Figure 8-2. Predicted Short-Term NO ₂ Concentrations (PC, 1-Hour Mean, 99.79 th Percentile) from the Cumulative Assessment – Including Emissions from Eco-Power Boilers, Transwaste Kalvis Boilers and ERF (2018 Met Data)	96
Figure 8-3. Predicted Ground level Long-Term NO _x Concentrations (PC) for the Cumulative Assessment – Including Emissions from Eco-Power Boilers, Transwaste Kalvis Boilers and ERF (2017 Met Data)	97
Figure 8-4. Predicted Ground level Short-Term (24 hr) NO _x Concentrations (PC) for the Cumulative Assessment – Including Emissions from Eco-Power Boilers, Transwaste Kalvis Boilers and ERF (2018 Met Data)	98
Figure 8-5. Predicted Long-Term PM ₁₀ Concentrations (PC) from the Cumulative Assessment – Including Emissions from Eco-Power Boilers, Transwaste Kalvis Boilers and ERF (2017 Met Data)	104
Figure 8-6. HGV Emission Source Locations	110
Figure 9-1. Sensitive Receptor Locations for Odour Assessment.....	121
Figure 9-2. Predicted the 98 th %ile Short-Term (Hourly) Concentrations of Odour.....	124
Figure A 11-1. ADMS Traffic Modelling Assessment Area Including Receptors Locations	134

APPENDICES

APPENDIX A	BASELINE TRAFFIC AIR QUALITY MODELLING	130
APPENDIX B	THE 1 ST EA SCHEDULE 5 LETTER.....	135
APPENDIX C	A SUMMARY OF TETRA TECH'S RESPONSE TO THE 1 ST EA SCHEDULE 5 REQUEST	141
APPENDIX D	THE 2 ND EA SCHEDULE 5 LETTER	144
APPENDIX E	REPORT FOR THE PERIODIC MONITORING OF EMISSION TO AIR BY REDWING ENVIRONMENTAL LTD	153
APPENDIX F	ODOUR COMPLAINT RECORDS.....	176
APPENDIX G	REPORT TERMS & CONDITIONS.....	252

ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
AADT	Annual Average Daily Traffic
ADMS	An advanced distribution management system
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
AQAL	the Air Quality Assessment Level
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
AQO	Air Quality Objectives
AQS	Air Quality Standards
CHP	Combined Heat and Power
CL	Critical Level
CO	Carbon Monoxide
DEFRA	Department for Environment Food & Rural Affairs
EAL	Environmental Assessment Limits
EC	European Commission
EFT	The Emissions Factors Toolkit
EPUK	Environmental Protection UK
EU	European Union
EPAQS	The Expert Panel on Air Quality Standards
IAQM	The Institute of Air Quality Management
ISC3	The Industrial Source Complex
LA	Environmental Assessment Limits
LAQM	Local Air Quality Management
NGR	The United Kingdom National Grid Reference
NO	Nitric Oxide
NO ₂	Nitrogen Dioxide
PC	Process Contribution
MHCLG	the Ministry for Housing, Communities and Local Government
NPPF	The National Planning Policy Framework
OS	the UK Ordnance Survey
PEC	Predicted Environment Concentration
PPG	Planning Policy Guidance
PPS	Planning Policy Statements
SAC	Special Areas of Conservation

Acronyms/Abbreviations	Definition
SPA	Special Protection Area
SSSI	Sites of Special Scientific Interest
VOC	Volatile organic compounds
WHO	World Health Organization
UK	The United Kingdom

EXECUTIVE SUMMARY

Eco-Power Environmental Limited commissioned Tetra Tech (formerly WYG) to update an air quality assessment to meet the EA's Schedule 5 request of "Notice of request for more information". The air quality assessment assessed the impact from 41 proposed Orlan Super 130 kW Biomass boilers at Waste Drying Plant, at Gibson Lane, Melton, Hull, HU14 3HH.

Eco-Power's Biomass Boiler Emission Impact Assessment

The predicted long-term and short-term NO₂, PM₁₀, PM_{2.5} and CO, concentrations from the emissions of the operation of the proposed Orlan Super 130 kW Biomass boilers are all below the relevant AQOs for the protection of human health.

The significance of effects on the emissions on the ground level receptors from the boiler operations with respect to long-term NO₂, PM₁₀ and PM_{2.5} is determined to be 'negligible'.

Habitat Assessment

The annual mean and daily (24 hour mean) NO_x PEC at the ecological receptors from Eco-Power's boiler operations are below the relevant critical level for the protection of vegetation and Ecosystems. The NO_x impacts from the proposed development on the ecological receptors are insignificant.

The process contribution (PC, as predicted by the detailed dispersion model) from Eco-Power biomass boiler operations is <1% of the relevant critical level or load (CL) and it can be considered inconsequential. It does not need to be included in an in-combination (cumulative) habitat assessment.

Cumulative Impact Assessment for the Protection of Human Health

Cumulative impact assessment for the protection of human health has been undertaken including the emission sources adjacent to Eco-Power biomass boilers and the emission sources in the cumulative assessment include:

- (1) 41 Orlan Super 130 kW_{th} biomass boilers proposed by Eco-Powers;
- (2) Three Kalvis 0.95 MW_{th} biomass boilers operated by Transwaste Ltd; and
- (3) Two emission flues at Energy Recovery Facility (ERF) operated by HRS Energy.

The predicted cumulative long-term and short-term NO₂, PM₁₀, PM_{2.5} and CO, concentrations from the cumulative emission source considered are all below the relevant AQOs for the protection of human health.

The significance of cumulative effects on the emissions on the ground level receptors from the emission source considered with respect to long-term NO₂, PM₁₀ and PM_{2.5} is determined to be 'negligible'.

Odour Impact Assessment from Biomass Boilers and Drying Floor Operations

The odour emissions from the biomass boilers and a Perry Belt Drier (drying floor) operations were assessed and the maximum predicted odour concentration at sensitive/residential receptors is below the odour benchmark. The odour effects from the site operations on the sensitive receptors are insignificant.

The proposed development is not considered to be contrary to any of the national and local planning policies.

1.0 INTRODUCTION

Eco-Power Environmental Limited commissioned Tetra Tech (formerly WYG) to undertake an air quality assessment to support a planning application of the installation of 41 proposed Orlan Super 130 kW Biomass boilers Biomass Boilers at Waste Drying Plant, at Gibson Lane, Melton, Hull, HU14 3HH.

1.1 SITE LOCATION AND CONTEXT

The United Kingdom National Grid Reference (NGR) of the site is approximately 496730, 425530. The site is bounded by farmland to the west and industrial/commercial uses to the north, east and south. Reference should be made to **Figure 1-1** for a map of the proposed development site and surrounding area and the indicative site boundary is shown in **Figure 1-2**. The site layout is presented in **Figure 1-3**.

Figure 1-3.

Figure 1-1. Site location

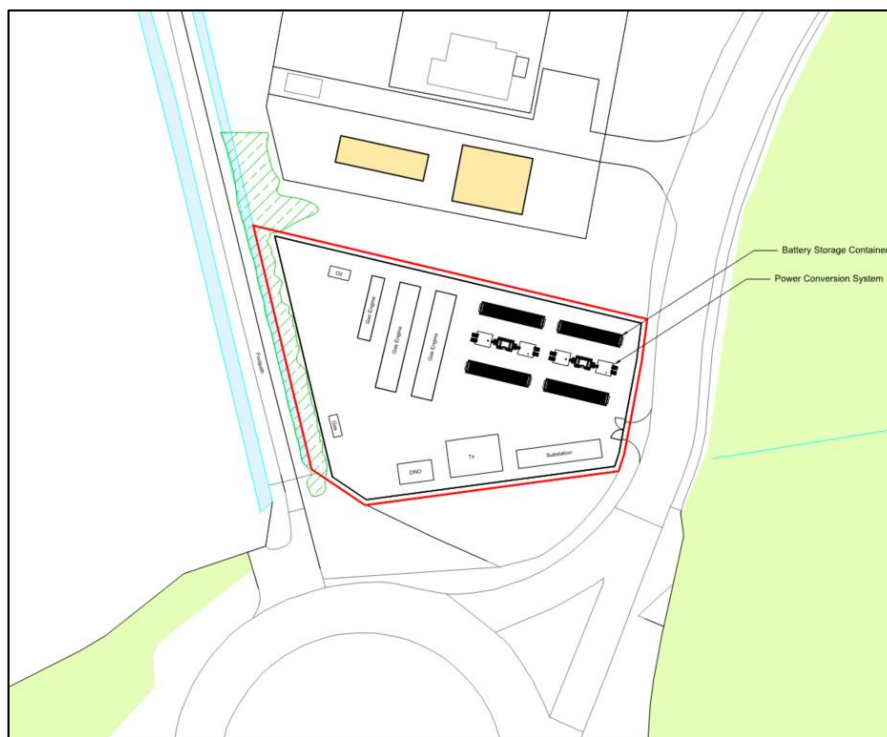


Figure 1-2. Indicative Site Boundary

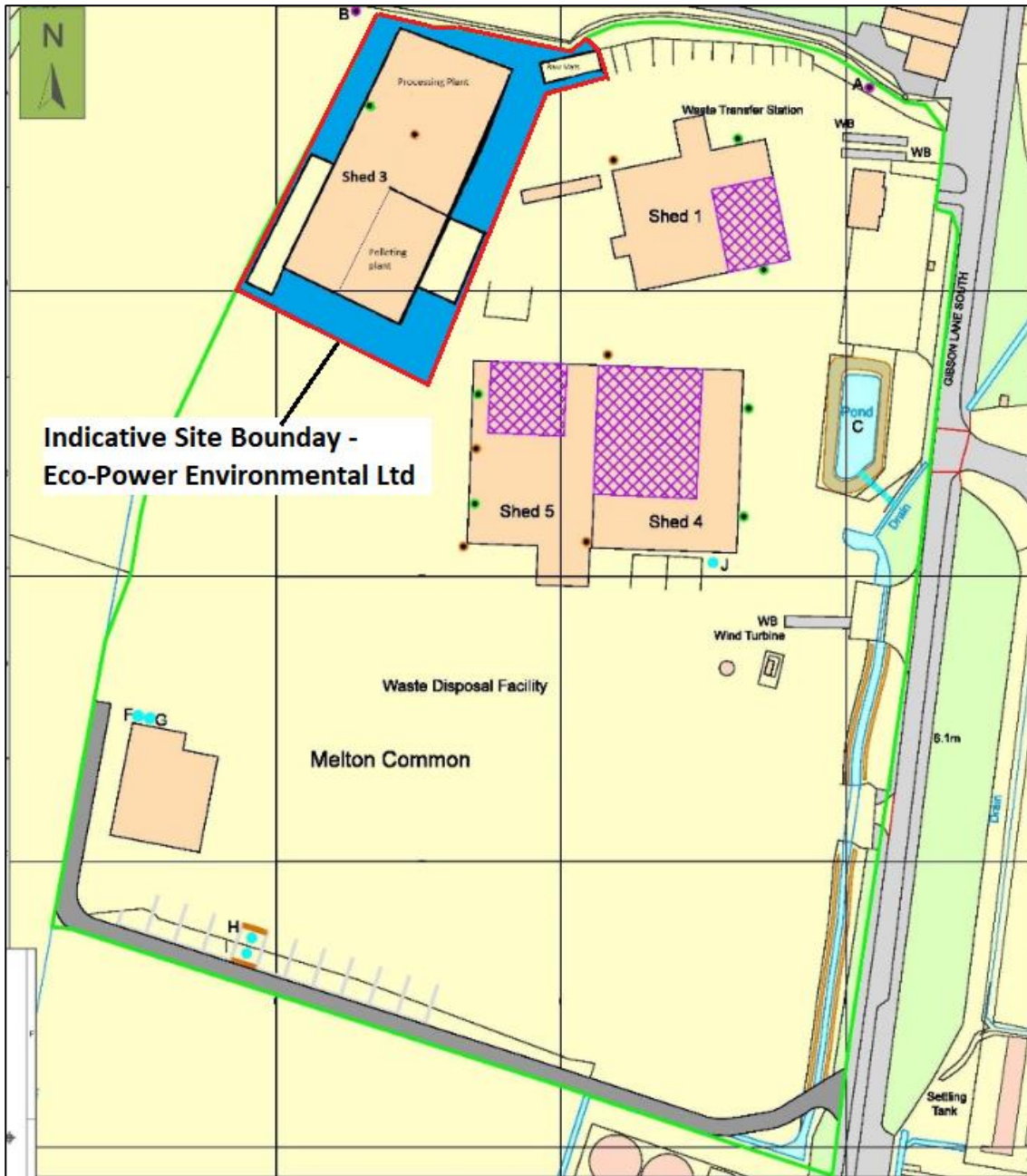
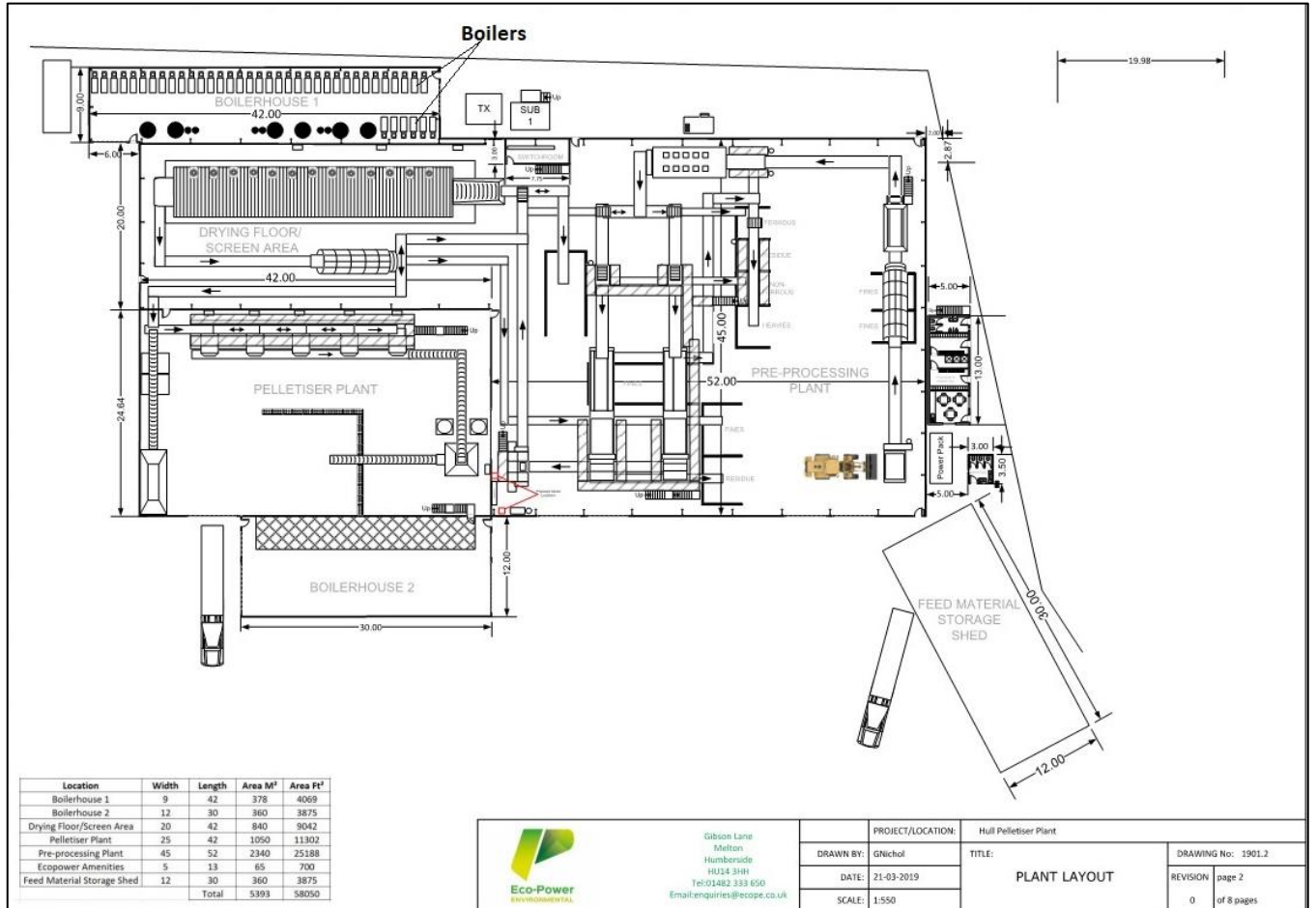


Figure 1-3. Site Layout



The following stages have been undertaken as part of this assessment:

- Baseline evaluation;
- Identification of receptors, including ecological receptors;
- Baseline traffic air quality modelling to determine NO₂ pollutant levels to consider emissions from traffic;
- Assessment of potential air quality impacts from the operation of biomass boilers at Eco-Power plant;
- Cumulative impact assessment from adjacent industrial points sources, including Transwaste's biomass boilers and Energy Recovery Facility;
- Assessment of impact on the ecological receptors using 'IAQM's guide to the assessment of air quality impacts on designated nature conservation sites'; and,
- Odour assessment from the biomass boilers and drying floor operations.

The objective of the air quality assessment is to determine whether the impacts from engine emissions meet the required air quality standards (AQSS), AQOs, or air quality environmental assessment limits (EALs) for the protection of human health and for the protection of vegetation and ecosystems.

1.2 REPORT REVISION HISTORY

1.2.1 The First, Second and Third Issues of the Report

Tetra Tech has produced three versions of the air quality assessment and odour assessment report: the first issue dated on the 22nd November 2019, report reference A115848.

The second issue date on the 24th January 2020, report reference A115848. The second issue of the air quality assessment report includes an odour assessment from the drying floor operations and Tetra Tech's (WYG's) responses to the comments from Mr Philip Hill, Senior Environmental Control Officer of Yorkshire Council. Mr Hill contacted WYG with regards to the potential increased short-term impact from the waiting traffic at the level crossing at Gibson Lane on residential receptors.

The third issues of the reports are produced with minor amendment on the 14th February 2020.

1.2.2 The Fourth Report Update – In Response to the 1st Schedule 5

After reviewing the third issue of the report, Mr Matthew Woollin, Environmental Officer, Permitting and Support Centre, Quadrant 2, 99 Parkway Avenue, Parkway Business Park, Sheffield S9 4WF, issued a letter on the 22nd January 2011, requires to provide the information detailed in the 1st schedule 5 request. The information is required in order to determine the application for a permit duly made on 21st October 2020 (Application number:

EPR/MP3107PP/A001). The 1st Schedule 5 letter requests the addition information on both odour modelling assessment and odour management plan (OMP). The details of the copy of the letter are presented in Appendix B.

A summary of the EA's 1st Schedule requests and a summary of the Tetra Tech responses are presented in Appendix C.

1.2.3 The Fifth Report Update – In Response to the 2nd Schedule 5

Following the issue of the fourth report update, Mr Matthew Woollin, Environmental Officer, Permitting and Support Centre, Quadrant 2, 99 Parkway Avenue, Parkway Business Park, Sheffield S9 4WF, issued a letter on the 22nd March 2011, requires to provide the information the 2nd schedule 5 request.

The 2nd Schedule 5 letter requests the addition information, inclusive of Emissions Management Plan (EMP), Noise Management Plan (NMP), Pest Management Plan (PMP), Environmental Permitting Technical Requirement (EPTR, Section 10: Compliance with BAT Conclusions).

A copy of the 2nd Schedule 5 letter is presented in Appendix D.

The Emission Management Plan (EMP) has been updated in accordance with the 2nd schedule 5 request in a standalone document. A summary of Tetra Tech's responses to the 2nd schedule 5 request is presented below.

In response the requests for Noise Management Plan (NMP), a standalone document has been produced inclusive of a 72-hour Updated Baseline Noise Survey, Noise Assessment and Noise Management Plan.

The Pest Management Plan (PMP) has been updated in accordance with the 2nd schedule 5 request in a standalone document. A summary of Tetra Tech's responses to the 2nd schedule 5 request is presented below.

The fifth issue of the report has included the updates and revisions of:

- 1 **Summary of Responses to the EA's Notice of request for more information (the 2nd Schedule 5 Request);**
- 2 **Dust and particulate emission monitoring from the drying floor stacks;**
- 3 **Air dispersion modelling of particulate emission impacts from the drying floor stacks; and**
- 4 **Revising the dispersion modelling assessment using installed Exodraft chimney fan data, in accordance with the scheduled task in Tetra Tack technical Memo titled "Response to the Environment Agency's Information Request in the email dated 28th May 2021 (No. 2)", dated on the 23rd June 2021.**

The EA's 2nd Schedule 5 requests are presented in *italic* and the Tetra Tech's responses are in **blue** below.

Schedule

1. *Please submit further information in relation to the drying of the SRF. Please include the following as a minimum:*
 - *Full details of the drying technique used i.e. full details of dimensions and volume that can be treated at any one time;*
 - *Provide full detail of the drying temperatures, duration, moisture content control and desired output level;*
 - *What moisture level in waste triggers the requirement for it to be dried;*
 - *How much waste can be dried per day?*

Reason: It is not clear how the drying process works in practice and is managed to ensure minimum fire risk and optimum moisture content. Without output parameters how can energy efficiency of the drying facility/wood fuelled appliances be controlled and maximised.

Tetra Tech (Tt) Response (1):

- *Full details of the drying technique used i.e. full details of dimensions and volume that can be treated at any one time;*

Perry Dryer model: Belt Dryer – BD405 Assembly Model BD3030FE-RH;

Perry Dryer Dimensions: Length:38m; Width:3395mm; Height:3493mm (highest point);

Dryer capacity: 20T per hour.

- *Provide full detail of the drying temperatures, duration, moisture content control and desired output level;*

The Perry Belt Drier is designed to drying almost any non-flowing product.

Air is drawn down through the product bed which keeps the product tight to the belt, improving drying efficiency.

A dust extraction system has been installed on the plant which processes the waste before it enters the drying floor. The system is a Heaton Green, ECONOTUBE T598/40x12L Extraction system, which is fitted with a 70000m³/hr fan with over 20 extraction points, the unit extracts the dust out of each waste transfer point where dust is created. The dust collects in the filter unit bags outside which are emptied and moved off site in a trailer.

With regard to drying floor operations, all particulates are contained inside the drying floor due to the air having to pass through a fine mesh conveyor belt before it leaves the drying floor and therefore the air from the stacks is clean warm air containing water vapour.

Hot air temperature: 80 Degrees – 90 Degrees.

Duration of the material on the belt: Average 7 minutes.

Material moisture content: Infeed 18-25%.

Material moisture content after drying (desired output level): 10.5%.

The exhaust gas temperature inside the Perry Belt Drier stack is 5552 °C. (Redwing Environmental Ltd Dust monitoring report, the 17th June 2021).

- *What moisture level in waste triggers the requirement for it to be dried;*

When greater than 11.5%

- *How much waste can be dried per day?*

22 hours of run time @20 tonnes per hour; or 440 tonnes per day.

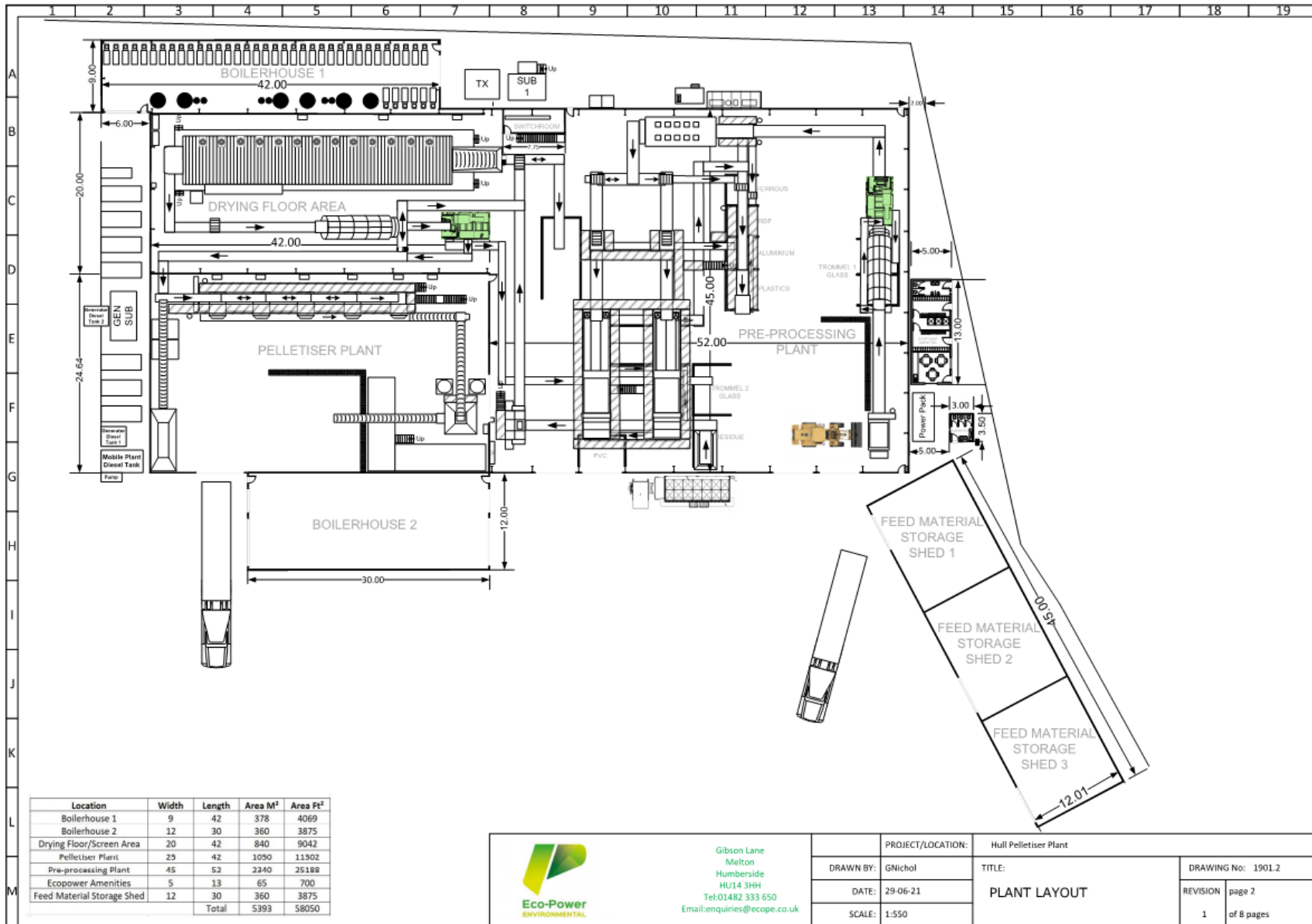
2. *Provide an up-to-date plan of the site to replace the site layout plan (and other appropriate site plans referenced in management plans).*

Reason: The design of the waste reception shed has changed since the permit application was submitted

Tetra Tech (Tt) Response (2):

An up-to-date plant layout is presented below.

Figure 1-4. Plant Layout, Dated 29th June 2021



3. *Clarify the maximum period of time that waste will be stored in the non-conforming waste quarantine area before it is removed.*

Reason: the non-technical summary in section 4.2.7 states that waste will be stored in the quarantine area intended for non-conforming wastes for up to 5 days. If the waste is odorous or poses a risk due to pests, then this may result in a risk of pollution

Tetra Tech (Tt) Response (3):

The materials pending treatment will be stored for:

- 3 days in warmer months (from April to October) as the site is using rotate sheds procedure; and
- 7 days from November to March.

4. *Provide details for the type of facilities that will use the RDF/SRF produced by the waste treatment process and how these represent a recovery operation.*

Reason: Incinerating waste is a disposal activity. Incinerators can be re-classified as a recovery operation if they get R1 status. No details have been provided as to the type or status of the sites likely to burn the RDF/SRF produced by the treatment process. The application applies for a Schedule 5.4 A (1) (b) (ii) activity but does not explain how the RDF/SRF produced by pre-treatment of waste for incineration or co-incineration will be subsequently used for Recovery or a mix of recovery and disposal of non-hazardous waste. Where RDF/SRF is used in a process that is not a recovery operation then it may be more appropriate to permit the pre-treatment activity as a Schedule 5.4 A (1) (a) (iii) activity (Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day).

Tetra Tech (Tt) Response (4):

No waste is burned in the boilers, only virgin wood briquettes

All facilities supplied with RDF/SRF have R1 status. A list of these can be provided if required.

Emissions management Plan (EMP)

We require a revised emissions management plan which has been amended to address the requirements of the questions below. Please refer to our online emissions management plan guidance:

www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit (Updated October 2020).

The Emission Management Plan (EMP) has been updated in accordance with the 2nd schedule 5 request in a standalone document. A summary of Tetra Tech's responses to the 2nd schedule 5 request is presented below.

5. *Explain why dust produced by the emissions from the wood fuelled appliances has not been included as a source.*

Reason: In Section 4, Potential Sources no consideration is given to dust emissions from flue gases from the 41 wood fuelled appliances.

Tetra Tech (Tt) Response (5):

In Tetra Tech's air quality assessment report (the fourth issue, dated on the 25th March 2021), the impacts of the PM₁₀ and PM_{2.5} emissions from the wood fuelled appliances have been assessed for two boiler operations scenarios (35 boilers and 41 boilers).

Dust from the wood fuelled appliances has been modelled as PM₁₀ and PM_{2.5}. A particulate concentration of 40 mg/m³ at 10% O₂ at boiler stack that was reported in the Testing report results, Test Report 32-0119, 2011-10-31, has been used in the modelling.

- 6. Review and update the list of receptors used in the EMP including justifying why a 500 metre radius has been used as cut-off distance for potential sensitive receptors given that the nature of the dust from use of wood fuelled appliances and treatment (including drying) of the proposed wastes is different to that for dust from quarries.*

Reason: No consideration given to the public footpath immediately adjacent to the north of the site. No consideration given to new development taking place to the North East of the site on Brickyard Lane.

Tetra Tech (Tt) Response (6):

A 500 metre radius is to comply with the requirement of the EA's Guidance of 'Control and monitor emissions for your environmental permit - How you must control and monitor emissions from your activities that may cause pollution', 17 May 2021.

Section of "Emissions management plan for dust".

- within 500m of a sensitive receptor such as a home, school, hospital or nursing home, food preparation facility or similar*

In the particulate air dispersion modelling, the selected receptors are located more than 500 m away from the site.

The receptors of the public footpath immediately adjacent to the north of the site and the new development taking place to the North East of the site on Brickyard Lane have been included in the modelling assessment. (Section 5.2).

Particulate emissions from the drying floor stacks have been assessed based on the measured particulate matter concentrations within the stacks (Section 5.3.2), using dispersion modelling.

- 7. Review the proposed monitoring locations given in figure 4 of the EMP*

Tetra Tech (Tt) Response (7):

Figure 4 of EMP (Figure 7-1 of this update) has been updated inclusive of the public footpath receptors.

8. *Review the dust emissions from the drying of waste and how these can be monitored and minimised*

Reason: The drying process involves blowing warm air through shredded waste and discharging via stacks without any dust monitoring or abatement.

Tetra Tech (Tt) Response (8):

As discussed in Response (1), A dust extraction system has been installed on the plant which processes the waste before it enters the drying floor. The system is a Heaton Green, ECONOTUBE T598/40x12L Extraction system, which is fitted with a 70000m³/hr fan with over 20 extraction points, the unit extracts the dust out of each waste transfer point where dust is created. The dust collects in the filter unit bags outside which are emptied and moved off site in a trailer.

With regard to drying floor operations, all particulates are contained inside the drying floor due to the air having to pass through a fine mesh conveyor belt before it leaves the drying floor and therefore the air from the stacks is clean warm air containing water vapour.

Redwing Environmental Ltd has undertaken air monitoring survey of particulate matter emissions on the 18th May 2021.

The total particulate matter at reference conditions range 1.2 to 2.9 mg/m³. The concentration is well below 50 mg/m³, which is a common emission limit for total particulate matter (Redwing Report for the Periodic Monitoring of Emissions to Air, date of report 17th June 2021). Furthermore, the total particulate matter at reference conditions is also below the 10 mg/m³, which is stated in the BAT Conclusions. Table 6.3 of BAT no25 of the BAT Conclusions stats:

*“BAT-associated emission level (BAT-AEL) for channelled dust emissions to air from the mechanical treatment of waste Parameter Unit BAT-AEL (Average over the sampling period) Dust mg/Nm³ 2-5 (1) (1)
When a fabric filter is not applicable, the upper end of the range is 10 mg/Nm³.”*

9. *Review and update the options available for dust control measures.*

Reason:

- *No consideration given to use of fast acting doors for entrances*
- *No consideration given to use of negative pressure system for dust extraction*
- *No consideration given to use of dust abatement within the building*
- *No consideration given to use of abatement for dust vented to atmosphere by the operation of wood fuelled appliances and the drying of waste*
- *No consideration given to use of dust monitoring (other than visual checks) or suppression within or outside the building other than use of spraying of surfacing in extreme conditions*

Tetra Tech (Tt) Response (9):

Fast acting roller doors have been fitted everywhere.

The extraction system covers the whole plant covering all dusty transfer points. There is no dust extraction inside the drying floor as there is no dust created as the material is on a slow-moving bed within the floor.

There is extraction on the infeed and outfeed to the drying floor including the process before and after the drying floor.

Dust abatement within the building: as discussed in Responses (1) and (8). The dust abatement includes constant dust cleaning.

The dust monitoring at drying floor stacks has been undertaken by Redwing Environmental Ltd on the 18th May 2021. Dust impact from the stacks has been assessed using dispersion modelling.

The fast-acting roller doors have been fitted and the door will keep closed when not being used.

10. *Provide a clear monitoring plan to demonstrate how you will monitor all sources to ensure emissions remain under control including a review of the monitoring measures proposed for dust at the site. This must include:*

- *Defined triggers to indicate when action must be taken to bring fugitive emissions back under control.*
- *Identification of monitoring points and justification as to why these are appropriate taking into account high risk receptors.*
- *Monitoring technique, frequency and time of monitoring accounting for high risk operating periods.*
- *Monitoring check sheet that takes into account the above.*

Tetra Tech (Tt) Response (10):

The trigger level includes the dust being escaped off site during the daily visual dust monitoring.

Figure 4 of site monitoring location of EMP (Figure 7.1 of this report) has been updated including the footpath receptors.

Table 7-1 of this report presented the monitoring of all emission sources of EMP.

Shredding takes place inside the process building with visual dust monitoring at site boundary

Palletisation is taking place inside shed 2 with visual dust monitoring at site boundary

Monitoring drying waste:

- Dust monitoring drying floor stacks;
- Frequency: BAT 8 requires “once every six months”. However, BAT 8 said: (1) Monitoring frequencies may be reduced if the emission levels are proven to be sufficiently stable.
- Particulate monitoring of 3 stacks (out of 13 stacks) will be taken place once 12 months. Frequency could be reduced to biannually if the emission levels are stable.

Total suspended particulate (TSP) level monitoring within the process building:

- Equipment – Osiris light scatter MCERTS Particulate monitor;
- Duration – 1-hour period;
- Frequency – once every 12 months.

11. *Describe the contingency plans you will put in place to bring fugitive emissions back under control in the event day to day measures are failing and emissions exceed triggers defined in the monitoring plan. You must identify and describe a contingency measure for each individual source and define triggers for implementing and stopping the contingency measures once the emission is deemed to be back under control.*

Reason: The EMP does not provide a detailed contingency plan for the individual sources on site. Section 7.2 refers to Table 14 as containing a detailed contingency plan, there is not a Table 14 in the EMP. However, Table 64 does provide some very general contingency measures but it would not be possible for an operative to understand what actions they must take for individual sources to bring emissions back under control or what would trigger the use of the very basic contingency measures.

Tetra Tech (Tt) Response (11):

Table 14 of the EMP (Table 7-1) of this report has been included and updated. Details of the monitoring frequency for drying floor stacks have been presented.

12. *Review the control measures listed in the site monitoring contingency plan and the emergency scenario contingency measures of the EMP*

Reason: The contingency plan does not contain any active control measures for dust within the building or potentially found within the emissions for the wood burning appliances or drying process, therefore if dust does prove to be an issue there are no control mitigation methods other than suspending operations.

Tetra Tech (Tt) Response (12):

Active control measures for dust within the building include “a dust extraction system has been installed on the plant which processes the waste before it enters the drying floor”.

For drying process, all particulates are contained inside the drying floor due to the air having to pass through a fine mesh conveyor belt before it leaves the drying floor and therefore the air from the stacks is clean warm air containing water vapour.

13. *In addition to annually, confirm the timescales for when the EMP will be reviewed in the event that control measures fail.*

Reason: In section 9 of the EMP you state that the EMP will be reviewed annually and if control measures fail or are inadequate, however no timescale or further detail of how this will be measured/implemented is given.

Tetra Tech (Tt) Response (13):

The EMP will be reviewed annually or following any changes in operations which have the potential to increase the level of exposure to surrounding sensitive receptors.

Any complaint is upheld whereby a review of the plan will be carried out and any improvements made.

14. *Confirm what actions will be taken in the event of a complaint/s in relation to corrective and preventive measures.*

Reason: Section 8 of the EMP describes the complaints procedure. In section 8.2.3.1 you describe certain corrective and preventive measures, these are very basic measures and given the commitment to implementing measures within 1-3 days these may not be adequate to control dust generation/escape, robust control measures would reduce the risk of the site having to suspend operations as per section 8.2.7.1 of the EMP.

Tetra Tech (Tt) Response (14):

Section 8.2 of the report has been updated.

15. Explain how the company will interact with the local community to better understand possible impacts from the site.

Reason: In section 8 of the EMP you have stated how you will respond to complaints which includes investigation and substantiation of the complaint. However, you have not explained how you will engage with the community following a complaint and the steps that will be taken to pro-actively engage the community to prevent complaints in the first instance.

Tetra Tech (Tt) Response (15):

Section 8.2.6 has been updated to include the actions:

Feedback to residents

If the site is causing an impact on local businesses steps will be taken to reassure them that issue is being dealt with, discussions of the action taken, and they will be informed of progress and outcome.

Noise Management Plan (NMP)

Tetra Tech (Tt) Response (NMP):

Questions No.16 to No. 30 are related to the noise management plan. The noise survey and noise modelling assessment has been undertaken and presented in a stand-alone report.

Pest Management Plan (PMP)

An updated version of the PMP is required to include revisions that address the questions below:

31. Provide details regarding the design of the quarantine area for non-conforming wastes as shown on the fire prevention and mitigation plan

Reason: Reference is made in 5.4.7 of the PMP to non-conforming wastes being diverted to an outside quarantine area despite section 5.2.1 stating that no wastes will be stored externally. Given the nature of the proposed wastes and the possible reasons for rejection how will risks from the wastes be minimised by the containment measures for the quarantine area?

Tetra Tech (Tt) Response (31):

Response to the Schedule 5 comment:

The Section 5.2.1 (the first issue of the report, the first paragraph in Section 5.2 in this update) has been updated as “No storage or processing for the accepted waste will be undertaken externally at the installation. Operations are to be conducted within buildings fitted with roller shutter doors. The quarantines waste will be kept in the trucks waiting to be moved out of the site. the quarantines waste loaded trucks will be parked at the quarantine area. Therefore, no quarantined wastes will be stored externally.”

32. Define the term “summer months”.

Reason: Section 5.8.1 of the PMP states that storage times for SRF and RDF will be a maximum of 1 week during summer months. Although the term “summer months” is used in Table 8 it is not clear if this applies throughout the PMP.

Tetra Tech (Tt) Response (32):

Summer months are defined as May to September.

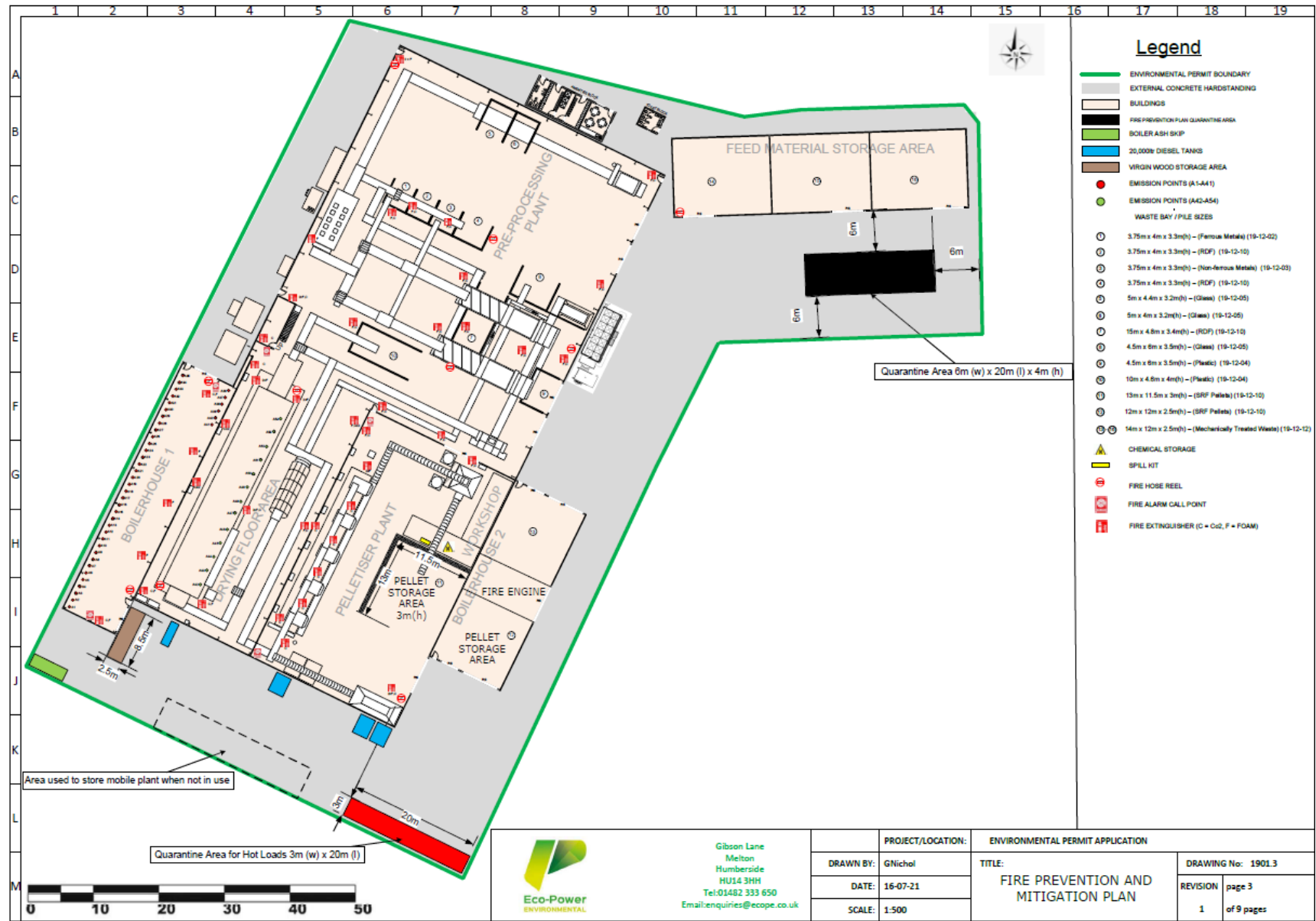
33. Provide an updated site plan as currently shown in “fire prevention and mitigation plan” that includes labelling for the waste storage bays.

Reason: The current labelling approach refers to list of waste codes rather than a written description of the waste. We need clarity on what the bays will be used to store i.e. fines from processing of feedstock, processed waste awaiting palletisation etc.

Tetra Tech (Tt) Response (33):

The updated site plan is shown in **Figure 1-5** below.

Figure 1-5. Fire Prevention and Mitigation Plan



34. Provide detail on the storage of feed material and the various outputs from the processing of feed material, including:

- How long the materials will be stored for;
- What monitoring for pests will take place?
- What management to prevent or control pests will take place?

Reason: the storage of waste pending treatment in the feed material store poses a risk from pests, especially in warmer weather when the waste may have been stored off site long enough for fly infestations to start before waste is accepted at the site and residual food stuffs pose a clear risk from attracting scavengers. Similarly, the fines from the processing of the above although stored in the main treatment building pose a risk from fly infestation and from attracting scavengers, given the waste will be stored in a building it is likely to be attractive to pests throughout the year. Section 7 of the PMP (Emergency Scenarios) details that wastes may be stored at the site for up to 3 months in the period November to March. Whereas Section 5.2.2 states that the maximum storage time will be 1 week. There are therefore conflicting timescales for waste storage within the PMP. Waste storage times need be kept to a minimum as a primary control measure for pests, this is especially important for unprocessed wastes and waste fines.

Tetra Tech (Tt) Response (34):

- 3 days in warmer months (from April to October) as the site is using rotate sheds procedure;
- 7 days from November to March (updated in the second paragraph in Section 5.2 in this update);
- Section 6 of PMP has detailed what monitoring for pests will take place.
- As presented in the Section 5.9 of the this PMP update, “the specialist pest management company ensures that the appropriate controls are being implemented to prevent pest nuisance problems occurring”.

35. Clarify where waste brought to site will be stored prior to processing

Reason: Table 4 of section 3 of the PMP states that storage of waste prior to processing will take place in Boiler House 2, this is supported by drawing “fire prevention and mitigation plan” which shows wastes with List of Waste codes 19 12 10 and 19 12 12 as being in Boiler house 2. Whereas, Section 5.4.4 of the PMP states that all wastes (unprocessed) will be stored in a waste storage building (presumably the feed material store). It is not clear therefore which area will be used for the storage of unprocessed wastes.

Tetra Tech (Tt) Response (35):

Feed material storage sheds 1, 2, 3 and Boiler House 2 as in Table 3-1 of this update.

36. Clarify where SRF and RDF produced from waste processed at the site will be stored.

Reason: Drawing “fire prevention and mitigation plan” shows wastes with List of Waste codes 19 12 10 and 19 12 12 as being in Boiler house 2. This suggest that Boiler House 2 may be used for storing unprocessed waste and or RDF/SRF it is therefore not clear where the pelletized waste or RDF from the permitted activity will be stored. The above drawing suggests there is a risk of interaction/contamination from a high-risk material (unprocessed waste) with lower risk material (SRF/RDF).

Tetra Tech (Tt) Response (36):

The locations are shown on the attached revised Fire Prevention and Mitigation Plan. All unprocessed waste is stored in separate bays which prevents interaction/contamination.

37. Explain what actions will be taken to understand and minimise the age of the waste brought to site and where high-risk waste is identified what measures will be taken to control these risks.

Reason: The primary method that can be used to minimise the risk of pests is to control as much as possible the age of the waste i.e. minimize as much as possible the time between the initial production of the waste and it’s processing into SRF/RDF. Given that the wastes proposed for this site are wastes arising from the processing of waste at other waste management facilities then there is a greater risk that some of the material could have already been exposed to pests and therefore pose an imminent risk of pests once deposited i.e. fly infestations. We therefore expect robust control measures that mitigate this risk as much as possible.

Tetra Tech (Tt) Response (37):

Section 5.10 was added on to include following actions.

The risk of fly infestation will be high during periods of hot weather, as the incoming waste is likely to be infested and fly development will be rapid. Parts of the site where the process generates elevated temperatures may be at risk of infestation throughout the year. The control measures will be used to minimise the rises:

- Monitor adult fly and larval numbers in key areas of site.
- Ensure swift processing of waste and avoid extended storage of unprocessed waste.
- Refuse the waste if it’s likely to cause fly infestation - this would be dealt with as a waste acceptance issue under the conditions of the permit.
- Use sheeting or other containment when storing waste/waste products that are highly attractive to flies.
- Where possible, reduce fly movement out of the building e.g. use fast roller doors and maintaining negative air-pressure within waste treatment areas to reduce fly egress.
- Ensure site staff are trained in fly monitoring, and aware of the importance of fly prevention.

38. Explain how the company will interact with the local community to better understand possible impacts from the site.

Reason: In section 8.1 of the PMP you have stated how you will respond to complaints which includes investigation and substantiation of the complaint. However, you have not explained how you will engage with the community following a complaint and the steps that will be taken to pro-actively engage the community to prevent complaints in the first instance.

Tetra Tech (Tt) Response (38):

Section 8.3.4 was added to including following actions.

Feedback to residents

Discuss the action taken with the affected residents. Advise them that treatment is likely to take several weeks to be fully effective, and they should continue to monitor until otherwise advised or they are confident the problem has been resolved.

Follow up visits to site

For sites where action was required, revisit the site within two weeks to assess the implementation of agreed actions and their effectiveness.

If the action taken on the site is inadequate or ineffective continue to work to address the problems. Ask yourself the following questions:

- Are there issues that were missed at the initial visit?
- Are there fly breeding areas that were overlooked, for example, lesser housefly larvae can be very difficult to locate?
- Does there appear to be resistance to the insecticide products used?
- Are there other significant fly-breeding sites nearby which have not yet been investigated?

Conclusion

Once the problem is resolved, advise all parties of the outcome of the investigation, action taken and proposals to avoid a recurrence. Advise complainants to contact us again if problems recur.

Environmental Permitting Technical Requirements (EPTR), Section 10; compliance with BAT conclusions

Reference is made separately in this schedule in relation to the applicability of BAT as a consideration in developing the EMP and NMP.

When referring to BAT in the following questions, the BAT documents of reference are:

Sector Guidance Note IPPC S5.06 Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste (S5.06);

Best Available Techniques (BAT) Reference Document for Waste Treatment Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) (2018); and

BAT conclusions for waste treatment 2010/75/EU dated August 2018.

39. *Explain how waste pre-acceptance and acceptance procedures will control the acceptance of waste so as to limit the odour rate emissions to those utilized in any odour model used to understand risk.*

Reason: the conclusions used in the odour assessment report rely on a certain level of odour rate emission from the drying process. The risk of odour from incoming waste will be determined by their composition. The suggested list of wastes to be accepted at the site include 19 12 12 wastes. The written description proposed for 19 12 12 wastes mean that they could potentially include a range of odorous materials. Robust waste pre-acceptance and acceptance as referenced in BAT no 2 should include controls as to how waste inputs will be managed to match the predicted odour rate emissions used in modelling.

Tetra Tech (Tt) Response (39):

Following techniques will be used:

- Set up and implement waste characterisation and pre-acceptance procedures:

The procedures aim to ensure the technical suitability of waste treatment operations for a particular waste prior to the arrival of the waste at the plant. They include procedures to collect information about the waste input and may include waste sampling and characterisation to achieve sufficient knowledge of the waste composition. Waste pre-acceptance procedures are risk-based considering, for example, the hazardous properties of the waste, the risks posed by the waste in terms of process safety, occupational safety and environmental impact, as well as the information provided by the previous waste holder(s).

- Set up and implement waste acceptance procedures:

Acceptance procedures aim to confirm the characteristics of the waste, as identified in the pre-acceptance stage. These procedures define the elements to be verified upon the arrival of the waste at the plant as well as the waste acceptance and rejection criteria. They may include waste sampling, inspection and analysis. Waste acceptance procedures are risk-based considering, for example, the hazardous properties of the waste, the risks posed by the waste in terms of process safety, occupational safety and environmental impact, as well as the information provided by the previous waste holder(s).

40. *Demonstrate how the waste reception proposal meets the requirement of BAT no 4.*

Reason: The proposed operation involves tipping waste in a storage shed and then moving this waste to another reception area prior to treatment. BAT no 4 requires that “the storage is located in such a way so as to eliminate or minimise the unnecessary handling of wastes within the plant (e.g. the same wastes are handled twice or more or the transport distances on site are unnecessarily long).”

Tetra Tech (Tt) Response (40):

Following techniques will be used:

- Adequate storage capacity. The measures are taken to avoid accumulation of waste, such as:

- The maximum waste storage capacity is clearly established and not exceeded taking into account the characteristics of the wastes (e.g., regarding the risk of fire) and the treatment capacity;
 - The quantity of waste stored is regularly monitored against the maximum allowed storage capacity;
 - The maximum residence time of waste is clearly established.
- Safe storage operation. This includes measures such as:
 - Equipment used for loading, unloading and storing waste is clearly documented and labelled;
 - Wastes known to be sensitive to heat, light, air, water, etc. are protected from such ambient conditions;
 - Containers and drums are fit for purpose and stored securely.

41. *Clearly define the maximum storage times for all waste streams accepted and generated at the site.*

Reason: reference is made the FPP, EPTR, and OMP to storage times for wastes. BAT no 4 requires that “the maximum residence time of waste is clearly established.”

Tetra Tech (Tt) Response (41):

The maximum residence time of waste 3 days. There is a limited storage capacity on site, so all waste is moved off in trailers.

42. *Explain how you will monitor use of water, energy, diesel fuel and biomass on an at least annual basis.*

Reason: BAT no 11 requires for a minimum annual monitoring of water, energy and raw materials.

Tetra Tech (Tt) Response (42):

Following methodologies will be used:

- To use water meter for annual usage of meter;
- To use electricity meter for recording;
- For diesel fuel usage, using weekly invoices; and
- For biomass usage, all biomass is supplied from a group company. The delivery tonnage of each load is recorded.

Energy Efficiency

43. Demonstrate that the installation can meet the Indicative BAT requirements in section 2.7 of SGN5.06 and BAT no 23 of the BAT conclusions for waste treatment (2010/75/EU) 2018. You must provide the following as a minimum in accordance with BAT:

- A comprehensive breakdown of the energy consumption and generation by individual source and the associated environmental emissions – see section 2.7.1 of SGN5.06

- The proposed measures for improvement of energy efficiency – see section 2.7.2 of SGN5.06
- Demonstrate the degree to which the further energy-efficiency measures identified in the implementation plan have been taken into consideration and justify where they have not – see section 2.7.3 of SGN5.06.

Reason: Section 9 of the EPTR document addresses the energy efficiency measures at the installation, however it does not provide the level of detail or documentation required to demonstrate that the installation will be operated in accordance with BAT. For example, reference is made to the likely need for 936,000 litres of diesel fuel (the majority likely needed for electrical generation) but a figure of only 21.49 tonnes of CO² is used in table 4 (energy consumption).

Tetra Tech (Tt) Response (43):

- *A comprehensive breakdown of the energy consumption and generation by individual source and the associated environmental emissions – see section 2.7.1 of SGN5.06*
1. Annual electricity from public supply: 5,460 MWh/year
 2. Annual diesel fuel usage: Generator fuel usage per year = 2,270,000 Litres.
Mobile plant fuel usage per year = 230,000 Litres/year
 3. Virgin wood biomass fuel: 6,700 tonnes/year
- *The proposed measures for improvement of energy efficiency – see section 2.7.2 of SGN5.06*
1. **Operating, maintenance and housekeeping measures will be in place in the following areas to improve energy efficiency.**

Compressed gas systems of two small Air Conditioning units: 1 for control room, 1 for switch room (leaks, procedures for use);

- steam distribution systems (leaks/year, traps, insulation);
 - space heating and hot-water systems;
 - lubrication to avoid high-friction losses;
 - boiler operation and maintenance, e.g. using Exodraft fans at boiler stacks;
 - other maintenance relevant to the activities within the installation;
2. **Basic low-cost physical techniques will be in place to avoid gross inefficiencies.**

The physical techniques include insulation and containment methods, such as seals and self-fast-closing doors;

- The physical techniques include the avoidance of unnecessary discharge of heated water or air (e.g. by fitting simple control systems such as timers and sensors).
3. **Following energy management techniques will be in place.**

Operations and maintenance:

- Effective operational and maintenance systems should be employed on all aspects of the process whose failure could impact on the environment, in particular,
- documented procedures to control operations that may have an adverse impact on the environment; for example, forms of daily odour sniffing and daily dust visual observations.
- documented procedures for monitoring emissions or impacts;
- a preventative maintenance programme covering all plant, whose failure could lead to impact on the environment, including regular inspection of major 'non-productive' items such as tanks, pipework, retaining walls, bunds ducts and filters.

4. Energy Efficiency Plan: Estimate the CO₂ savings: using H1 software tool to generate the numbers.

a. Saving the natural gas consumptions. Equivalent CO₂ reduction.

By using 6700 tonnes of virgin wood biomass fuel instead of the natural gas fossil fuel, the annual reduction of the CO₂ by fossil fuel can be estimated as:

- 6700 tonnes of virgin wood biomass per year;
- Biomass wood CV 19.1 MJ/kg;
- Wood fuel: 6,700,000 kg/yr; or 127,970,000 MJ/year;
- 1MWh = 3,600 MJ
- Biomass energy: 35,547.22 MWh/year.
- The equivalent energy generated by natural gas will produce 6,754 tonnes/year of CO₂ (based on the EA's H1 software tool).

Therefore, using biomass boilers will prevent 6,754 tonnes/year of CO₂ from the natural gas fossil fuel.

- *Demonstrate the degree to which the further energy-efficiency measures identified in the implementation plan have been taken into consideration and justify where they have not – see section 2.7.3 of SGN5.06.*
 1. Generation of energy from renewable and biomass fuels:
 2. Wood biomass has a very low sulphur content compared to that of coal, oil and peat. The sulphur content in stem wood is about 0.01 percent, in bark 0.02-0.1 percent, and in needles 0.04-0.2 percent of dry mass. In practice, when burning wood, the total amount of SO₂ emissions is very small or unsubstantial
 3. Using high efficiency boiler: 92% efficiency at full load.

Energy Efficiency Plan (section 2.7.1 of SGN5.06)

The following table shows the CO₂ emissions associated with the site operations

Energy Efficiency Measures	CO ₂ Emissions (tonnes)	
	Annual	Lifetime (20 years)
Wood Biomass	6,754	135,080
Diesel (from generators)	6,042	120,840
Diesel (mobile plant)	612	12,240
Electricity from public supply	2,175	43,500

44. Specifically demonstrate why 41 130KWth wood fuelled boilers are more efficient than one or two larger boilers for drying waste and why alternatives to provide both heat and power were not considered.

You must compare the following:

- The energy consumption and associated emissions
- The energy efficiency
- Which engine technology is the best option?

Reason: You propose to use 41 Angus Orland (Orligno?) Super 130kw biomass boilers, resulting. The total net rated thermal input for the plant equates to 5.33MW, which could be achieved using larger, more efficient plant. An attempt has been made to justify why a large number of smaller boilers are the most efficient in accordance with indicative BAT energy efficiency measures, this is not satisfactory given that other options such as use of heat stores linked to a larger boiler could be available and does not account for issues with start- up/cool down of a large number of smaller units. No consideration appears to have been made to alternatives to wood fuelled boilers such as natural gas that are more suited to fluctuating load demands. Furthermore, as there is a requirement for both electricity and heat consideration could have been given to the use of alternatives such combined heat and power (CHP) units to provide both as referenced as possible BAT in Section 2.7.3 of S5.06.

Tetra Tech (Tt) Response (44):

The selections of the installation of 41 Angus Orland Super 130kw biomass boilers are based on that this option provides more flexibilities to meet the fluctuating heat load demands than using a large boiler in the operations.

The heat demand fluctuates depending on the heat required to dry wetter incoming material and during periods of hot and cold external air temperatures. This is due to there being a greater need for heat to dry materials with a higher moisture content. Also, there is a greater heat demand to raise the temperature of external air going into the heat exchangers during periods of cold weather than mild or hot weather. The need to vary heat supply therefore changes throughout the year, generally being higher in winter months (when external air temperatures are lower and incoming waste is wetter) than in summer months (when air temperatures are higher and incoming waste is dryer).

The 41 biomass boilers have been organized in 6 working groups, 5 groups consisting of 7 boilers each, and one group consisting of 6 boilers. An Angus Orlan Super 130kw biomass boiler is able to achieve 92% efficiency at full load. The aims are to have each running boilers to run at full load to produce the high efficiency.

To meet the fluctuating heat load demand, single or multiple systems are taken out of operation for maintenance and to reduce heat supply to accommodate changes in heat demand from the drying plant. For example, a single system may be taken out of use to allow it to be maintained while still running the other 5 systems to maintain production. If we were using one or two large boilers instead of six systems, then all production would have to stop while this was being done.

Several alternative boiler options have been considered during the planning stage. A single large boiler would produce a range of 84% to 92% efficiency. The efficiency of a large boiler could be lower as to 84% efficiency if not running at full load.

With regards to the selection of fuels and the combined heat and power (CHP) units, the benefit of the use of biomass fuel instead of natural gas is to reduce the carbon emissions from the fossil fuel.

2.0 POLICY AND LEGISLATIVE CONTEXT

The following assessment has been undertaken in accordance with the legislation and best practice guidance as stated below.

2.1 DOCUMENTS CONSULTED

The following documents were consulted during the undertaking of this assessment:

Legislation and Best Practice Guidance

- National Planning Policy Framework, Ministry for Housing, Communities and Local Government, Revised February 2019;
- Planning Practice Guidance: Air Quality, Ministry for Housing, Communities and Local Government, November 2019;
- The Air Quality Standards Regulations (Amendments), 2016,
- The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, Defra, 2007;
- The Environment Act, 1995;
- Local Air Quality Management Technical Guidance LAQM.TG16, Defra, 2018;
- Design Manual for Roads and Bridges, Volume 11, Section 3, Part 1, LA 105 Air quality, Highways England, November 2019
- Land-Use Planning & Development Control: Planning for Air Quality, EPUK & IAQM, 2017;
- Guidance on the Assessment of Dust from Demolition and Construction, IAQM, 2014;
- Local Air Quality Management Note on Projecting NO₂ concentrations, DEFRA, April 2012; and
- A Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites (Version 1.0), IAQM, June 2019.

Websites Consulted

- Google maps (maps.google.co.uk);
- The UK National Air Quality Archive (www.airquality.co.uk);
- Department for Transport Matrix (www.dft.gov.uk/matrix);
- emapsite.com;
- Multi-Agency Geographic Information for the Countryside (<http://magic.defra.gov.uk/>);
- Planning Practice Guidance (<http://planningguidance.planningportal.gov.uk/>); and

- East Riding Council website <http://www.eastriding.gov.uk>.

Site Specific Reference Documents

- East Riding Local Plan (2012-2029) (Adopted April 2016).
- 2018 Air Quality annual status Report (ASRR), East Riding of Yorkshire Council, June 2018.

2.2 AIR QUALITY LEGISLATIVE FRAMEWORK

European Legislation

European air quality legislation is consolidated under Directive 2008/50/EC, which came into force on 11th June 2008. This Directive consolidates previous legislation which was designed to deal with specific pollutants in a consistent manner and provides new air quality objectives for fine particulates. The consolidated Directives include:

- Directive 1999/30/EC – the First Air Quality "Daughter" Directive – sets ambient air limit values for NO₂ and oxides of nitrogen, sulphur dioxide, lead and PM₁₀;
- Directive 2000/69/EC – the Second Air Quality "Daughter" Directive – sets ambient air limit values for benzene and carbon monoxide; and,
- Directive 2002/3/EC – the Third Air Quality "Daughter" Directive – seeks to establish long-term objectives, target values, an alert threshold and an information threshold for concentrations of ozone in ambient air.

The fourth daughter Directive was not included within the consolidation and is described as:

- Directive 2004/107/EC – sets health-based limits on polycyclic aromatic hydrocarbons, cadmium, arsenic, nickel and mercury, for which there is a requirement to reduce exposure to as low as reasonably achievable.

UK Legislation

The Air Quality Standards Regulations (Amendments 2016) seek to simplify air quality regulation and provide a new transposition of the Air Quality Framework Directive, First, Second and Third Daughter Directives and also transpose the Fourth Daughter Directive within the UK. The Air Quality Limit Values are transposed into the updated Regulations as Air Quality Standards, with attainment dates in line with the European Directives. SI 2010 No. 1001, Part 7 Regulation 31 extends powers, under Section 85(5) of the Environment Act (1995), for the Secretary of State to give directions to Environmental Assessment Limits (LAs) for the implementation of these Directives.

The UK Air Quality Strategy is the method for implementation of the air quality limit values in England, Scotland, Wales and Northern Ireland and provides a framework for improving air quality and protecting human health from the effects of pollution.

For each nominated pollutant, the Air Quality Strategy sets clear, measurable, outdoor air quality standards and target dates by which these must be achieved; the combined standard and target date is referred to as the Air

Quality Objective (AQO) for that pollutant. Adopted national standards are based on the recommendations of the Expert Panel on Air Quality Standards (EPAQS) and have been translated into a set of Statutory Objectives within the Air Quality (England) Regulations (2000) SI 928, and subsequent amendments.

The AQOs for pollutants included within the Air Quality Strategy and assessed as part of the scope of this report are presented in **Table 2-1** along with European Commission (EC) Directive Limits and World Health Organisation (WHO) Guidelines.

Table 2-1. Air Quality Standards, Objectives, Limit and Target Values.

Pollutant	Applies	Objectives	Concentration Measured as	Date to be achieved and maintained thereafter	European Obligations	Date to be achieved and maintained thereafter	New or existing
NO ₂	UK	200µg/m ³ not to be exceeded more than 18 times a year	1-Hour Mean	31 st December 2005	200µg/m ³ not to be exceeded more than 18 times a year	1 st January 2010	Retain Existing
	UK	40µg/m ³	Annual Mean	31 st December 2005	40µg/m ³	1 st January 2010	
CO	UK	10mg/m ³	Maximum daily 8 Hour Mean	31 st December 2004	10mg/m ³ Maximum daily 8 hour mean	1 st January 2005	Retain Existing

Within the context of this assessment, the annual mean objectives are those against which facades of residential receptors will be assessed and the short-term objectives apply to all other receptor locations, where people may be exposed over a short duration, both residential and non-residential such as using gardens, balconies, walking along streets, using playgrounds, footpaths or external areas of employment uses.

Local Air Quality Management

Under Section 82 of the Environment Act (1995) (Part IV) Local Authorities (LAs) are required to periodically review and assess air quality within their area of jurisdiction under the system of Local Air Quality Management (LAQM). This review and assessment of air quality involves assessing present and likely future air quality against the AQOs. If it is predicted that levels at the façade of buildings where members of the public are regularly present (normally residential properties) are likely to be exceeded, the LA is required to declare an Air Quality Management Area (AQMA). For each AQMA, the LA is required to produce an Air Quality Action Plan (AQAP), the objective of which is to reduce pollutant concentrations in pursuit of the AQOs.

2.3 PLANNING AND POLICY GUIDANCE

National Policy

The National Planning Policy Framework (NPPF), revised February 2019, principally brings together and summarises the suite of Planning Policy Statements (PPS) and Planning Policy Guidance (PPG) which previously guided planning policy making. The NPPF states that:

'Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas or Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic or travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan.'

The Planning Practice Guidance (PPG) web-based resource was launched by the Ministry for Housing, Communities and Local Government (MHCLG) on 6 March 2014 to support the National Planning Policy Framework and make it more accessible. A review of PPG: Air Quality identified the following guidance:

'When deciding whether air quality is relevant to a planning application, local planning authorities should consider whether the development would:

Significantly affect traffic in the immediate vicinity of the proposed development site or further afield. This could be by generating or increasing traffic congestion; significantly changing traffic volumes, vehicle speed or both; or significantly altering the traffic composition on local roads. Other matters to consider include whether the proposal involves the development of a bus station, coach or lorry park; adds to turnover in a large car park; or result in construction sites that would generate large Heavy Goods Vehicle flows over a period of a year or more.

Introduce new point sources of air pollution. This could include furnaces which require prior notification to local authorities; or extraction systems (including chimneys) which require approval under pollution control legislation or biomass boilers or biomass-fuelled CHP plant; centralised boilers or CHP plant burning other fuels within or close to an air quality management area or introduce relevant combustion within a Smoke Control Area.

Expose people to existing sources of air pollutants. This could be by building new homes, workplaces or other development in places with poor air quality.

Give rise to potentially significant impact (such as dust) during construction for nearby sensitive locations.

Affect biodiversity. In particular, is it likely to result in deposition or concentration of pollutants that significantly affect a European-designated wildlife site and is not directly connected with or necessary to the management of the site, or does it otherwise affect biodiversity, particularly designated wildlife sites.'

Local Policy

The East Riding Local Plan 2012 – 2029, Adopted April 2016, comprises a number of different documents with policies to address key planning issues, as well policies that allocate land for specific uses.

The East Riding Local Plan has been reviewed and the following policy was deemed relevant:

Policy EC5: Supporting the energy sector

A. Proposals for the development of the energy sector, excluding wind energy, will be supported where any significant adverse impacts are addressed satisfactorily, and the residual harm is outweighed by the wider benefits of the proposal. Developments and their associated infrastructure should be acceptable in terms of:

- 1. The cumulative impact of the proposal with other existing and proposed energy sector developments;*
- 2. The character and sensitivity of landscapes to accommodate energy development, with particular consideration to the identified Important Landscape Areas,*
- 3. The effects of development on:*
 - i. local amenity, including noise, air and water quality, traffic, vibration, dust and visual impact.*

3.0 ASSESSMENT METHODOLOGY

The potential environmental effects of the operational phase of the proposed development are identified as far as current knowledge of the site and development allows. The significance of potential environmental effects is assessed according to the latest guidance produced by EPUK and IAQM in January 2017.

3.1 DETERMINING THE IMPACT MAGNITUDE OF THE AIR QUALITY EFFECTS

The impact magnitude of the effects during the operational phase of the development is based on the latest guidance produced by EPUK and IAQM in January 2017. The guidance provides a basis for a consistent approach that could be used by all parties associated with the planning process to professionally judge the overall significance of the air quality effects based on severity of air quality impacts.

The following rationale is used in determining the severity of the air quality effects at individual receptors:

1. The change in concentration of air pollutants, air quality effects, are quantified and evaluated in the context of AQOs. The impacts are provided as a percentage of the Air Quality Assessment Level (AQAL), which may be an AQO, EU limit or target value, or a Natural Resources Wales Assessment Level (NRWAL);
2. The absolute concentrations are also considered in terms of the AQAL and are divided into categories for long term concentration. The categories are based on the sensitivity of the individual receptor in terms of harm potential. The degree of harm potential to change increases as absolute concentrations are close to or above the AQAL;
3. Severity of the effect is described as qualitative descriptors; negligible, slight, moderate or substantial, by taking into account in combination the harm potential and air quality effect. This means that a small increase at a receptor which is already close to or above the AQAL will have higher severity compared to a relatively large change at a receptor which is significantly below the AQAL;
4. The impacts can be adverse when pollutant concentrations increase or beneficial when concentration decrease as a result of development;
5. The judgement of overall significance of the effects is then based on severity of effects on all the individual receptors considered; and,
6. Where a development is not resulting in any change in emissions itself, the significance of effect is based on the effect of surrounding sources on new residents or users of the development, i.e., will they be exposed to levels above the AQAL.

Table 3-1. Impact Descriptors for Individual Receptors

Long term average concentration at receptor in assessment year	% Change in concentration relative to AQAL			
	1	2-5	6-10	>10
≤75% of AQAL	Negligible	Negligible	Slight	Moderate
76-94% of AQAL	Negligible	Slight	Moderate	Moderate
95-102% of AQAL	Slight	Moderate	Moderate	Substantial
103-109 of AQAL	Moderate	Moderate	Substantial	Substantial
≥110 of AQAL	Moderate	Substantial	Substantial	Substantial

In accordance with explanation note 2 of Table 6.3 of the EPUK & IAQM guidance, the Table is intended to be used by rounding the change in percentage pollutant concentration to whole numbers, which then makes it clearer which cell the impact falls within. The user is encouraged to treat the numbers with recognition of their likely accuracy and not assume a false level of precision. Changes of 0%, i.e. less than 0.5%, will be described as Negligible.

4.0 BASELINE CONDITIONS

4.1 AIR QUALITY REVIEW

This section provides a review of the existing air quality in the vicinity of the proposed development site in order to provide a benchmark against which to assess potential air quality impacts of the proposed development. Baseline air quality in the vicinity of the proposed development site has been defined from a number of sources, as described in the following sections.

Local Air Quality Management (LAQM)

As required under section 82 of the Environment Act 1995, East Riding of Yorkshire Council (ERYC) has conducted an ongoing exercise to review and assess air quality within its area of jurisdiction.

East Riding of Yorkshire currently does not have any Air Quality Management Areas (AQMAS).

Air Quality Monitoring

Monitoring of air quality within the ERYC is conducted through non-continuous monitoring methods. These have been reviewed in order to provide an indication of existing air quality in the area surrounding the proposed development site.

Continuous Monitoring

East Riding of Yorkshire did not carry out any automatic (continuous) monitoring for any pollutants in 2017.

Non - Continuous Monitoring

ERYC operates a network of 77 passive diffusion tubes. The most recent monitoring data have recorded NO₂ concentrations within ERYC in 2017. The closest diffusion tube is located next to A63 approximately 900m north from the proposed site boundary.

The representative diffusion tube data within the site area are from 2017 which is presented in **Table 4-1**.

Table 4-1. Monitored Annual Mean NO₂ Concentrations

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Distance to Kerb of Nearest Road (m)	NO ₂ Annual Mean Concentration (µg/m ³) 2018
1	Gibson Lane North (footbridge), Melton	Roadside	497094	426482	29	29
28	A63/Gibson Lane North, Welton	Roadside	497107	426463	4.3	52
35	A63 East (The Old Foundry), Welton	Roadside	495736	427033	10	50
45	A63 West (Pool Bank Farm), Welton	Roadside	495833	426926	9	35
72	A63 West (Melton Grange), Melton	Roadside	497332	426384	4	36

As indicated in Table above, the roadside diffusion tubes (28 and 35) next to A63 were above the relevant AQO ($40 \mu\text{g}/\text{m}^3$ annual mean) in 2017.

ERYC LAQM Annual Status Report 2018 states that:

“Tubes No.28 & No.35 were highlighted in the ASR 2017 and are located adjacent to the A63, the main connecting route from the M62 towards Hull (see Fig’s 4 and 5). This eastern extremity of the M62/A63 corridor can experience significant levels of congestion, particularly during peak hours as it carries a high volume of not only cars but also HGV’s serving businesses and the nearby ports of Hull and Goole.

As previously reported in the ASR 2017, tube No.28 recorded a decrease in annual mean NO_2 concentration of 13% ($61 \mu\text{g}/\text{m}^3$ to $53 \mu\text{g}/\text{m}^3$) between 2013 and 2014, followed by a further 4% decrease between 2014 and 2015, from $53 \mu\text{g}/\text{m}^3$ to $49 \mu\text{g}/\text{m}^3$. In 2016, this tube again shows a significant decrease of 6% from $49 \mu\text{g}/\text{m}^3$ to $46 \mu\text{g}/\text{m}^3$. However between 2016 and 2017 there has been a 13% increase from $46 \mu\text{g}/\text{m}^3$ to $52 \mu\text{g}/\text{m}^3$. The reasons for such an increase aren’t immediately apparent, but it is likely down to a combination of meteorological conditions and traffic volumes.

Tube No.35 returned an annual mean of $48 \mu\text{g}/\text{m}^3$ in 2015 and 2016. In 2017 this has increased by 4% to $50 \mu\text{g}/\text{m}^3$.

When subjected to the Defra “ NO_2 fall-off with distance calculator”, the predicted annual mean NO_2 concentrations at the nearest relevant receptor locations for tubes No.28 and No.35 are both within the $40 \mu\text{g}/\text{m}^3$ objective, at $33.5 \mu\text{g}/\text{m}^3$ and $38.7 \mu\text{g}/\text{m}^3$ respectively.”

The monitoring data from the diffusion tubes Table 4.1 have been used in the traffic emission modelling to determine baseline pollutant levels for the assessment.

4.2 BASELINE/BACKGROUND CONCENTRATIONS INCLUSIVE OF CONTRIBUTIONS FROM TRAFFIC EMISSIONS

ADMS Roads has been used to undertake a verified baseline modelling to determine baseline pollutant levels at the selected receptor locations by considering emissions from traffic. Details of the background concentrations used in this assessment are provided in Appendix A.

5.0 DETAILED DISPERSION MODELLING METHODOLOGY

In order to consider the air quality impacts of the engines on the local air quality, a quantitative assessment using the third generation Breeze AERMOD dispersion model has been undertaken. AERMOD is a development from the ISC3 dispersion model and incorporates improved dispersion algorithms and pre-processors to integrate the impact of meteorology and topography within the modelling output.

The model uses hourly meteorological data to define conditions for plume rise, transport, diffusion and deposition. It estimates the concentration for each source and receptor combination for each hour of input meteorology and calculates user-selected short-term averages.

5.1 MODELLING PARAMETER AND AVERAGING PERIOD

The dispersion modelling has assessed cumulative impact of emissions from the engine taking into consideration of the operation of the proposed installation.

The same averaging period should be used for comparison of emissions against environmental standards. For example, most long-term standards are expressed as an annual mean and many short-term standards as an hourly mean. Note that there are certain exceptions to this which are important when considering compliance with statutory EQS. The averaging period associated with the relevant modelled pollution are detailed in **Table 5-1**.

Table 5-1. Monitored Annual Mean NO₂ Concentrations

Parameter	Modelled As	
	Short Term	Long Term
NO ₂	99.79 th percentile (%ile) 1-hour mean	Annual Mean
PM ₁₀	90.41 th percentile (%ile) 24-hour mean	Annual Mean
PM _{2.5}	-	Annual Mean
CO	8-hour running mean	-

NO₂ background concentrations are taken from ADMS Road modelling results, which includes the contribution from the traffic emissions.

For short term averaging periods, the following UK Defra methodology, for example, has been followed:

For 1-hour NO₂ concentrations:

- 99.79th percentile(%ile) 1-hour Process Contribution NO₂ + 2 x (annual mean background contribution NO₂).

5.2 SENSITIVE RECEPTORS

Discrete (Individual) Receptors

The discrete sensitive receptors identified for the purposes of this air quality assessment are contained in **Table 5-2** and shown further in **Figure 5-1**. The assessment has also been undertaken to determine the potential impacts at those selected receptors.

It should be noted that these do not represent an exhaustive list of all receptors within the vicinity of the Site, rather they are worst case representative locations within and adjacent to the site.

Table 5-2. Modelled Sensitive Receptors for Industrial Emission Assessment

Site ID	Discrete Sensitive Receptor	UK NGR (m)	
		X	Y
D1	100 Gibson Lane South	496955	425795
D2	88 Gibson Lane South	496966	425882
D3	54 Gibson Lane	497015	426249
D4	The Coach House, Melton Grange, Main Road	497209	426365
D5	21 Brickyard Lane	497442	426144
D6	25 the triangle, North Ferriby	498166	425622
D7	Lowcroft Farm, Lowfield Lane	496343	426287
D8	South Hunsley School, 41 East Dale Road	496689	426616
D9	62 Common Lane	495613	426302
D10	79 Plantation Drive	497983	426212
D11	75 Southfield Drive	498268	425278
D12	87 Riverview Avenue	498219	425426
D13	29 Marine Avenue	498340	425491
D14	12 Plantation Drive	498106	425838
D15	66 Plantation Drive	498019	426081
D16	10 Ashdale Park	498243	426085
D17	New Development NE Brickyard Lane 1	497150	425722
D18	New Development NE Brickyard Lane 2	497316	425687
D19	Footpath SW	496525	425447
D20	Footpath W	496572	425534
D21	Footpath NW	496640	425616
D22	Footpath North 1	496695	425609

D23	Footpath North 2	496768	425597
D24	Footpath NE	496849	425596
D25	Humber Estuary SPA, SAC, Ramsar, SSSI 1	495737	424661
D26	Humber Estuary SPA, SAC, Ramsar, SSSI 2	496260	424641
D27	Humber Estuary SPA, SAC, Ramsar, SSSI 3	496719	424633
D28	Humber Estuary SPA, SAC, Ramsar, SSSI 4	497218	424746
D29	Humber Estuary SPA, SAC, Ramsar, SSSI 5	498147	425020

Figure 5-1. Receptor, Buildings and Modelled Emission Locations



Cartesian Grid Receptor

Cartesian receptor grid was used in the model in order to produce the concentration contour lines. The Cartesian receptor grid consists of receptors identified by their x (east-west) and y (north-south) coordinates. A grid was

constructed with grid spacing (x, y) of 50m x 50m over an area covering 4000m by 4000m with south-west corner UK NGR (m) of 495100,423600.

Ecological Receptors for Industrial Emission Assessment

The guidance 'Air emissions risk assessment for your environmental permit' (Defra and Environment Agency, 2 August 2016) states that assessments should consider the impact on the conservation areas by:

Examining if there are any of the following within 10km of your site (or within 15km for coal or oil-fired power stations):

- Special Protection Areas (SPAs);
- Special Areas of Conservation (SACs); and
- Ramsar sites (protected wetlands).

Examining if there are any of the following within 2km of your site:

- Sites of Special Scientific Interest (SSSIs); and
- Local Nature Sites (ancient woods, local wildlife sites and national and local nature reserves).

Some larger (greater than 50 megawatt) emitters may be required to screen to 15km for European sites and to 10km or 15km for SSSIs.

Following a review, three ecological site located close to the site was identified as below.

- Humber Estuary SPA, SAC, Ramsar, SSSI – Located approximately 900 m south of the boiler house at its closest point;

The identified ecological site has been included as receptor in the assessment.

There is a Melton Bottom Chalk Pit SSSI located to the north of the boiler house. This site, however, is not included in the assessment as it is identified as of importance only for geology.

5.3 EMISSION SOURCES

5.3.1 Emission Sources from Boilers

This air quality assessment for the plant has been based on the installation of 41 Orlan Super 130 kW_n biomass boilers.

The emissions from the boilers have been calculated using the information on its specifications and a boiler emission testing report. The pollutant mass emission rates used within AERMOD are presented in **Table 5-3**.

Table 5-3. Orlan Super 130 kW_{th} Biomass Boiler Stack Emissions

Parameter	Angus Orlan Super 130 kW Boiler (Each Boiler)	Unit
Fuel Consumptions	24.5 ^a	kg/hr
Fuel Humidity	15 ^a	%
CV (Net, Dry basis)	19.1 ^b	MJ/kg
Dry Flue gas Volume at 10% of O ₂	479 ^b	m ³ /MJ
NO _x Emission rate	145 mg/m ³ at 10% O ₂ ^c	mg/m ³
PM ₁₀ Emission rate	40 mg/m ³ at 10% O ₂ ^c	mg/m ³
CO Emission rate	1928 mg/m ³ at 10% O ₂ ^c	mg/m ³
Mass NO _x Emission rate	27.6	g/hr
	0.00767	g/s
Mass PM ₁₀ Emission rate	7.6	g/hr
	0.0021	g/s
Mass CO Emission rate	367.3	g/hr
	0.1020	g/s
Stack Gas Temperature	160 ^a	°C
Modelled Stack Gas Temperature after Exodraft fan with fresh air in	30	°C
Stack Volumetric Flow Rate at 10% O ₂ and 0 C°	190.5	m ³ /hr
Stack Oxygen content	6.1 ^c	%
Stack moisture content	15 ^d	%
Boiler stack volume at 160 °C	302.19	m ³ /hr
	0.08	m ³ /s
Using Exodraft fan RSV014	2350	m ³ /hr
	0.653	m ³ /s
Fresh air in	2047.81	m ³ /hr
	0.573	m ³ /s
Exodraft fan top velocity	4.6 ^e	m/s
Calculated exodraft fan top openings	0.142	m ²
Modelled stack diameter	0.425	m
Stack Height	12.5	m

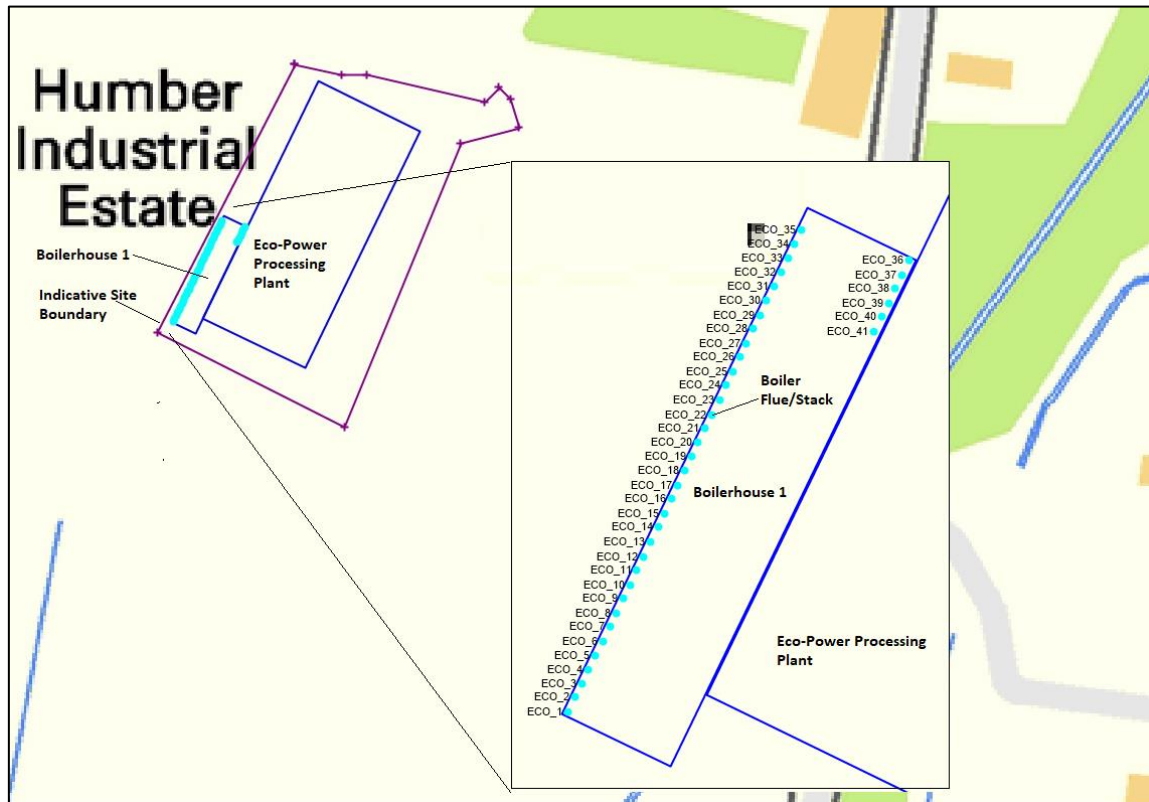
Note:

- (a) Orlan Super 130 kW_{th} Biomass Boiler Instruction Manual and technical data;
 (b) Derived from the AEA report of "Conversion of biomass boiler emission concentration data for comparison with renewable heat incentive emission criteria", Ref: AEA/ED46626/AEA/R/3296, May 2012;
 (c) Data from the Test Report of 32 – 0119, 31/10/2011;
 (d) GLA air quality report of Biomass and CHP Emission standards, March 2013; and
 (e) Client provided data.

The impact from the boiler emissions has been assessed assuming simultaneous operation of biomass boilers for 8,760 hours per annum and it produces a worst-case assessment.

Figure 5-2. illustrates the location of the modelled emission points for the Orlan Super 130 kW_{th} biomass boilers boiler stacks.

Figure 5-2. Eco-Power Biomass Boiler Stack Locations



5.3.2 Particulate Emissions the Drying Floor Stacks

Redwing Environmental Ltd has undertaken air monitoring survey of particulate matter emissions on the 18th May 2021. The report is presented in Appendix E.

There are total 13 drying floor stacks (presented in **Figure 5-3**). The particulate matter monitoring has been undertaken at the drying floor stack No. 2 (at the north end), the drying floor stack No. 6 (in the middle stack), and the drying floor stack No. 12 (at the south end).

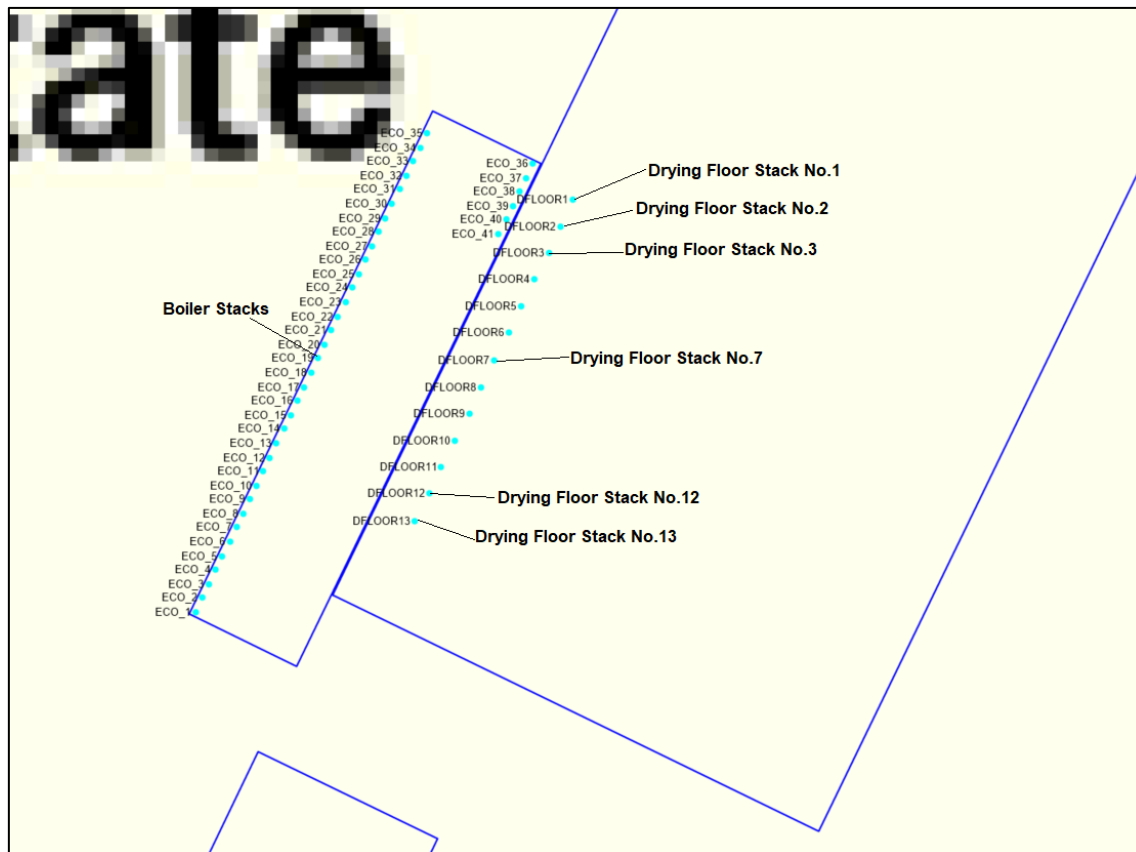
Table 5-4. A Summary of Particulate Matter Monitoring Results

Emission Point Reference Stack No.	Average Total Particulate Matter at reference condition (mg/m ³)	Average Velocity (m/s)	Average Flow Rate (m ³ /Hour)
Dryer Stack No. 2	2.2 ± 0.6	5.5	4716
Dryer Stack No. 6	2.9 ± 0.8	6.0	5086
Dryer Stack No. 12	1.2 ± 0.4	5.3	4557

The total particulate matter at reference conditions range 1.2 to 2.9 mg/m³. The concentration is well below 50 mg/m³, which is a common emission limit for total particulate matter (Redwing Report for the Periodic Monitoring of Emissions to Air, date of report 17th June 2021). Furthermore, the total particulate matter at reference conditions is also below the 10 mg/m³, which is stated in the BAT Conclusions. Table 6.3 of BAT no25 of the BAT Conclusions stats:

*“BAT-associated emission level (BAT-AEL) for channelled dust emissions to air from the mechanical treatment of waste Parameter Unit BAT-AEL (Average over the sampling period) Dust mg/Nm³ 2-5 (1) (1)
When a fabric filter is not applicable, the upper end of the range is 10 mg/Nm³.*

Figure 5-3. Drying Floor Emission Stacks



The emissions from the drying floor stacks have been calculated using the measured maximum concentration and the maximum flow rate.

The pollutant mass emission rates used within AERMOD are presented in **Table 5-5**.

Table 5-5. Drying Floor Stack Emissions

Parameter	Drying Floor Stack Emission (Each Stack)	Unit
Number of the Stacks	13	-
Stack Flow Rate	5,086 ^a	m ³ /hr
	1.412	m ³ /s
Total Particulate Emission rate (modelled as PM ₁₀)	2.9 ± 0.8 ^a	mg/m ³
	3.7 (modelled as Maximum)	
Mass Total Particulate Emission rate (modelled as PM ₁₀)	5.23	mg/s
	0.005227	g/s
Stack Gas Temperature	55.52 ^a	°C
Stack Gas Exit velocity	5.0	m/s
Stack diameter	0.6	m
Stack Height	13.15	m

Note:

(a) Redwing Environmental Ltd's air monitoring survey report of particulate matter emissions on the 18th May 2021.

The impact from the boiler emissions has been assessed assuming simultaneous operation of drying floor stack for 8,760 hours per annum and it produces a worst-case assessment.

5.3.3 Emission Sources for Cumulative Impact Assessment

Cumulative impact assessment has been undertaken by assessing the adjacent industrial points sources, including Transwaste's biomass boilers and Energy Recovery Facility.

Transwaste Ltd operates on the Gibson Lane site and recently received planning permission for three 0.95 MWth biomass boilers burning waste wood and providing process heating for on-site Refuse Derived Fuel (RDF) and Solid Recovered Fuel (SRF) waste treatment processes.

An energy recovery facility (ERF), operated by HRS Energy, was recently granted planning permission at the Gibson Lane site, and will utilise some of the RDF and SRF produced on site to generate electricity for export to the National Grid. The energy recovery facility consists of two emission flues/stacks and it is proposed one stack encases of two flows. Within the modelling assessment, both flues have been modelled as a single stack source of emissions. The energy recovery facility has currently got planning approval, to operate an increase stack height of 55m above ground level.

Therefore, following emission sources have been included in the cumulative assessment:

- (1) 41 Orlan Super 130 kW_{th} biomass boilers proposed by Eco-Powers;
- (2) Three Kalvis 0.95 MW_{th} biomass boilers operated by Transwaste Ltd; and
- (3) Two emission flues operated by HRS Energy.

Emission Calculations for Kalvis 0.95 MW_{th} Biomass Boilers

The emissions from the Kalvis biomass boilers have been calculated using the information on its specifications and a boiler emission testing report. The pollutant mass emission rates used within AERMOD and stack gas parameters are presented in **Table 5-6**.

Table 5-6. Kalvis 0.95 MW_{th} Biomass Boilers Stack Emissions and Stack Parameters

Parameter	Kalvis 0.95 MW _{th} Biomass Boiler (Each Boiler)	Unit
Fuel Consumptions	419 ^a	kg/hr
Fuel Humidity	31 ^{a, d}	%
Calorific Value (Dry base)	2407 ^d	Kcal/kg
Calculated CV (Net, Dry basis)	10.07	MJ/kg
Dry Flue gas Volume at 10% of O ₂ for Wood	479 ^b	m ³ /MJ
NO _x Emission rate	183 to 269 mg/m ³ at 10% O ₂ ^d	mg/m ³
PM ₁₀ Emission rate	51 mg/m ³ at 10% O ₂ ^d	mg/m ³
CO Emission rate	675 to 995 mg/m ³ at 10% O ₂ ^d	mg/m ³
Mass NO _x Emission rate	513 ^e	g/hr
Mass PM ₁₀ Emission rate	103.1	g/hr
Mass CO Emission rate	2011.1 ^f	g/hr
Stack Gas Temperature	185 ^a	°C
Stack Volumetric Flow Rate at 10% O ₂ and 0 C°	2021.2	m ³ /hr
Stack Oxygen content	6.1 ^g	%
Stack moisture content	15 ^h	%
Modelled stack diameter	0.48 ^a	m
Stack velocity	4.41	m/s
Stack Height	11.0	m

Note:

- (a) Biomass Boiler technical data;
- (b) The emission limit from Defra Guidance (an AEA Report for Defra) "Conversion of biomass boiler emission concentration data for comparison with renewable heat incentive emission criteria", Ref: AEA/ED46626/AEA/R/3296, May 2012;
- (c) Gas volumetric flow rates have been derived from the AEA report of "Conversion of biomass boiler emission concentration data for comparison with renewable heat incentive emission criteria", Ref: AEA/ED46626/AEA/R/3296, May 2012;
- (d) Data from the Test Report No. 11/10-LG, 28/04/2010;
- (e) Calculated to meet the emission limit of 150g/GJ in the Guidance of "Conversion of biomass boiler emission concentration data for comparison with renewable heat incentive emission criteria", Ref: AEA/ED46626/AEA/R/3296, May 20122;
- (f) Using the maximum of measured concentration for a worst-case assessment;
- (g) Using Orlan Super 130 kW_{th} Biomass Boiler; and
- (h) GLA air quality report of Biomass and CHP Emission standards, March 2013.

The impact from the boiler emissions has been assessed assuming simultaneous operation of biomass boilers for 8,760 hours per annum and it produces a worst-case assessment.

Figure 5-4 below, illustrates the location of the modelled emission points for the Kalvis boiler stacks.

Figure 5-4. Kalvis Boiler Stack Locations and ERF Emission Point



Emission Calculations for Energy Recovery Facility (ERF)

The emission data for energy recovery facility are taken from the report of “Air quality assessment for planning variation, Melton Energy from Waste Plant, HRS Energy”, produced by WSP, project No. 70042100, January 2018.

The stack emissions and stack parameters are presented in **Table 5-7** below.

Table 5-7. Summary of Stack Discharge Conditions (Flue 1&2 Combined) (after WSP Report, January 2018)

Parameter	Energy Recovery Facility Flue 1 & 2 Assessed as a Single Point	Unit
Stack Gas Temperature	150	°C
Volumetric Flow Rate dry, 11% O ₂ and 0 C°	52	Nm ³ /s
Stack volumetric Flow Rate 18.11% H ₂ O, 4.97% O ₂ and 150 C°	61.14	Am ³ /s
Stack Efflux velocity	19.86	m/s
Modelled stack diameter	1.98	m
Stack Height	55	m
Mass NO _x Emission rate (based on half hourly average concentrations)	10.399	g/s
Mass PM ₁₀ Emission rate (based on half hourly average concentrations)	0.78	g/s
Mass CO Emission rate (Assume 5 times of NO _x)	51.995	g/s
Stack OS Grid Reference	X: 496710, Y:425461	

The impact from the facility emissions has been assessed assuming simultaneous operations for 8,760 hours per annum and it produces a worst-case assessment.

Figure 5-4 illustrates the location of the modelled emission point for the ERF stacks.

5.4 MODEL SCENARIOS

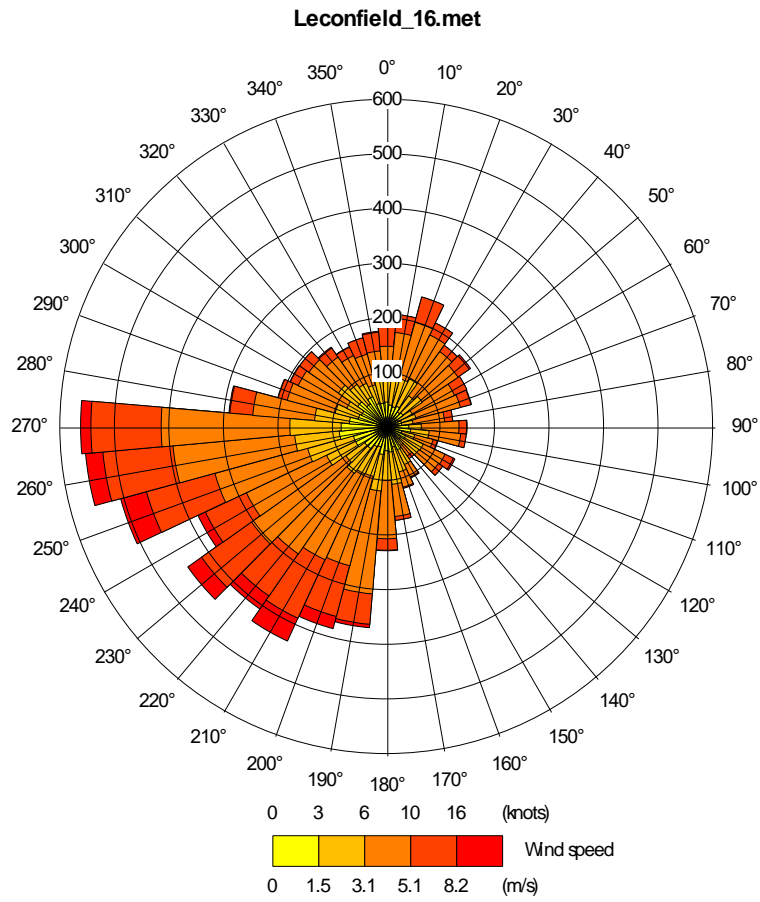
Two operations scenarios have been assessed for Eco-Power's biomass boilers.

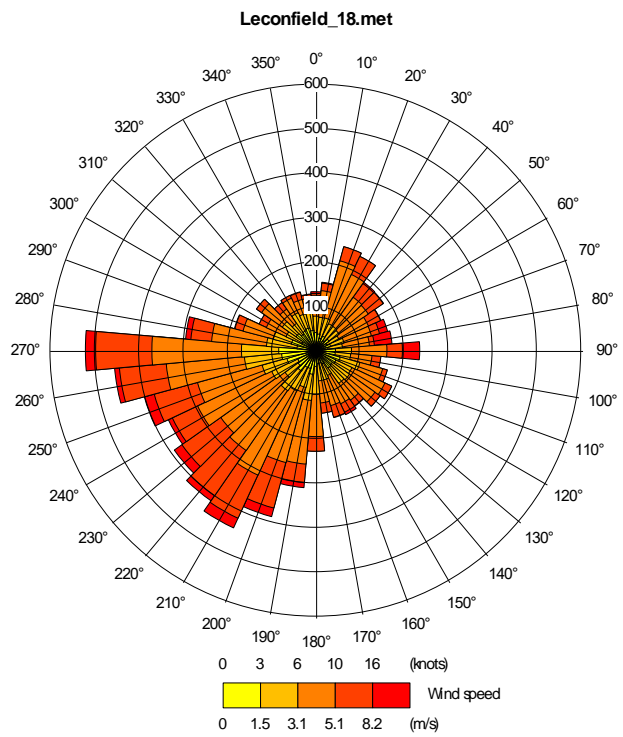
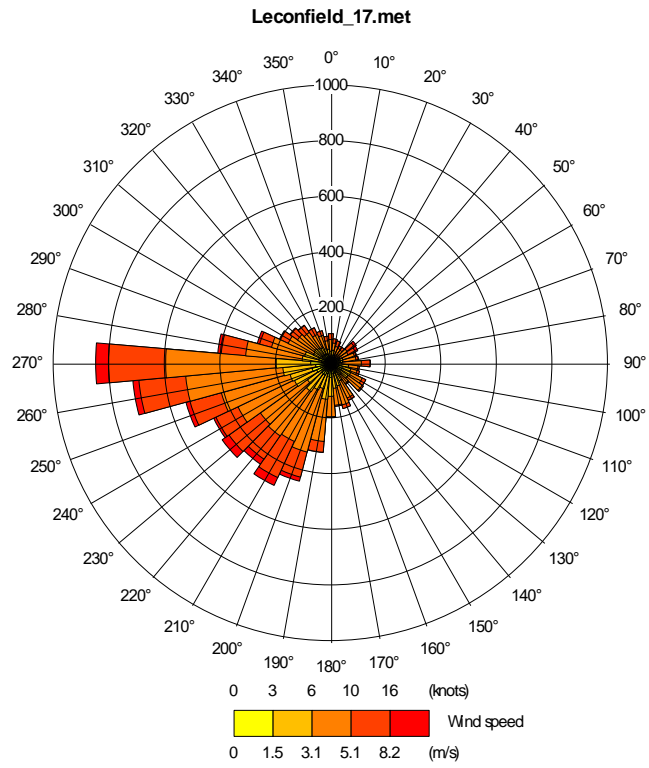
- Scenario 1 – normal operation scenario. The design heat demand of the associated Eco-Power drying plant only requires 35 Orlan Super 130 kW_{th} biomass boilers to be operate at any one time.
- Scenario 2 – theoretical worst-case scenario. It is theoretically possible for all 41 Orlan Super 130 kW_{th} biomass boilers to operate and this scenario is to provide a worst-case assessment.

5.5 METEOROLOGICAL DATA

The 3-year meteorological data (2016, 2017 and 2018) used in the assessment is derived from Leconfield weather station, which is considered representative of conditions within the vicinity of the site, with all the complete parameters necessary for the AERMOD model. Reference should be made to **Figure 5-5** for an illustration of the prevalent wind conditions at the Leconfield weather station.

Figure 5-5. Meteorological Data/Windrose 2016 to 2018





5.6 SURFACE CHARACTERISTICS

The land uses surrounding the Site are mostly described as farmland and commercial uses. A surface roughness value of 0.5m for open suburbia area/commercial uses and a surface roughness value of 0.3m for farmland area have been used in the modelling for a worst-case assessment.

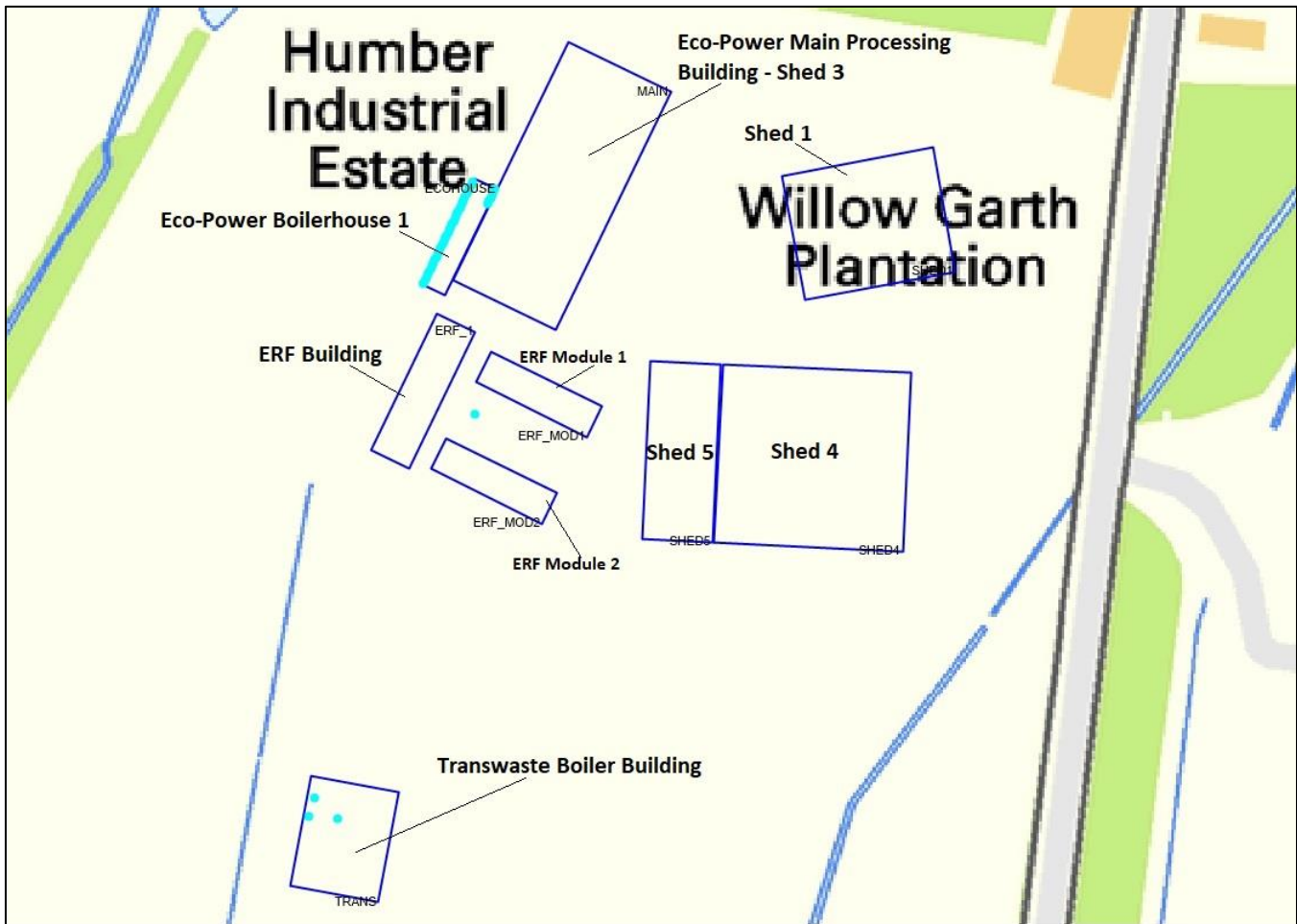
5.7 BUILDINGS IN THE MODELLING ASSESSMENT

Buildings nearby or immediately adjacent to the stack could potentially cause building downwash effects on emission sources and have therefore been modelled for the proposed development and for all other three development sites. The locations and dimensions of the buildings used in the model are given in **Table 5-8** and illustrated in **Figure 5-6**.

Table 5-8. Locations and Heights of Building Used in the Model

Name	UK NGR (m)		Height (m)	
	X	Y		
1	Eco-Power Boiler House	496691	425508	8.0
2	Eco-Power Shed 3 - Main Processing Plant	496702	425509	12.15
3	Shed 1	496819	425546	12.5
4	Shed 4	496798	425479	12.5
5	Shed 5	496772	425480	12.5
6	ERF Power Module	496673	425449	24.0
7	ERF Boiler Module 1	496716	425483	24.0
8	ERF Boiler Module 2	496700	425453	24.0
9	Transwaste Boiler Building	496651	425333	6.7

Figure 5-6. Buildings for the Modelling



5.8 TREATMENT OF TERRAIN

The presence of steep terrain can influence the dispersion of emissions and the resulting pollutant concentrations. USEPA guidance indicates that terrain effects should be considered if the gradient exceeds 1:10. A digital terrain file in the UK Ordnance Survey (OS) Landranger format (.NTF) has been used in the assessment.

5.9 NO_x TO NO₂ CONVERSION

Emissions of NO_x from combustion processes are predominantly in the form of NO. Excess oxygen in the combustion gases and further atmospheric reactions cause the oxidation of NO to NO₂. Given the short travel time to the areas of maximum concentration and the rate of reaction to convert NO to NO₂, it is unlikely that more than

30% of the NO_x is present at ground level as NO₂. This conversion factor is based on comparison of ambient NO and NO₂ continuous measurements evaluated over recent years.

Ground level NO_x concentrations have been predicted through dispersion modelling. NO₂ concentrations reported in the results section assume 70% conversion from NO_x to NO₂ for annual means and a 35% conversion for short term (hourly) concentrations, based upon EA methodology¹.

5.10 MODELLING UNCERTAINTY

Uncertainty in dispersion modelling predictions can be associated with a variety of factors, including:

- Model uncertainty - due to model limitations;
- Data uncertainty - including emissions estimates, background estimates and meteorology; and,
- Variability - randomness of measurements used.

However, potential uncertainties in model results have been minimised as far as practicable and worst-case inputs considered in order to provide a robust assessment. This included the following:

- Choice of model - AERMOD is a commonly used atmospheric dispersion model and results have been verified through a number of studies to ensure predictions are as accurate as possible.
- Facility operating parameters - Operational parameters were provided for the facility.
- Background concentrations - Background pollutant concentrations were obtained from a number of recognised sources in order to consider baseline levels in the vicinity of the site, as detailed within the main report text.
- Variability - All model inputs are as accurate as possible and worst-case conditions have been considered where necessary in order to ensure a robust assessment of potential pollutant concentrations.

¹ Conversion Ratios for NO_x and NO₂, Environment Agency, updated.

6.0 DETAILED MODELLING ASSESSMENT RESULTS: PROTECTION OF HUMAN HEALTH

The detailed modelling assessment of process emissions for the proposed Eco-Power boiler operations was undertaken using the input parameters detailed in Section 5.

All predicted concentrations have been compared to the relevant environmental assessment criteria, as detailed in Sections 2 and 3.

6.1 NITROGEN DIOXIDE (NO₂) – SCENARIO 1

Long-Term (Annual Mean) NO₂ – Scenario 1

The long-term emissions of NO₂ from the source considered were assessed for all 3 years of meteorological data. The maximum process contributions (PCs) within the modelled receptor locations and their associated predicted environmental concentrations (PECs) are compared against the relevant AQO, in **Table 6-1**.

From the meteorological dataset, the year resulting in maximum long-term NO₂ PC concentration was identified as 2017. The predicted maximum PC occurs at the receptor location of 100 Gibson Lane South (D1).

The maximum NO₂ PC in Table 6.1 is 1.23 µg/m³ and the associated NO₂ PEC is 12.50µg/m³, which is below the relevant long-term AQS of 40 µg/m³ for the protection of human health.

Table 6-1. Maximum Long-Term (Annual Mean) Concentrations of NO₂ – Scenario 1

	Year	Process Contribution (PC) (µg/m ³)	PC as %age of AQO	Traffic Background (µg/m ³)	PEC (PC + Background) (µg/m ³)	Easting (m)	Northing (m)
NO ₂	2016	1.14	2.85	11.27	12.42	496955	425795
NO ₂	2017	1.23	3.06	11.27	12.50	496955	425795
NO ₂	2018	1.20	3.00	11.27	12.47	496955	425795

Table 6-2 presents a summary of the predicted nitrogen dioxide concentrations, both PCs and PECs, at the modelled receptors locations.

The impact description of changes associated with the operations of the engines with respect to annual mean NO₂ exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised below.

Table 6-2. Long-Term (Annual Mean) Concentrations of NO₂ and Impact Description of Effects at Receptors - Scenario 1

Receptors		Predicted Annual Mean Concentration (µg/m ³) – 2017 Met Data, and NO ₂ Impact Description at Receptors						
ID	Name	Process Contribution (PC) (µg/m ³)	PC as %age of AQO	Traffic Background (µg/m ³)	PEC (PC + Background) (µg/m ³)	PEC as percentage of AQO	PEC as percentage of AQO	Impact Descriptor
D1	100 Gibson Lane South	0.34	0.85	14.84	15.18	37.9%	0.34	Negligible
D2	88 Gibson Lane South	0.36	0.90	14.84	15.20	38.0%	0.36	Negligible
D3	54 Gibson Lane	0.32	0.79	12.09	12.41	31.0%	0.32	Negligible
D4	The Coach House, Melton Grange, Main Road	0.27	0.67	14.55	14.82	37.0%	0.27	Negligible
D5	21 Brickyard Lane	0.26	0.64	14.55	14.81	37.0%	0.26	Negligible
D6	25 the triangle, North Ferriby	0.10	0.24	13.26	13.36	33.4%	0.10	Negligible
D7	Lowcroft Farm, Lowfield Lane	0.24	0.59	14.84	15.07	37.7%	0.24	Negligible
D8	South Hunsley School, 41 East Dale Road	0.19	0.48	12.09	12.28	30.7%	0.19	Negligible
D9	62 Common Lane	0.26	0.65	14.84	15.10	37.7%	0.26	Negligible
D10	79 Plantation Drive	0.25	0.64	14.84	15.09	37.7%	0.25	Negligible
D11	75 Southfield Drive	0.29	0.72	14.84	15.13	37.8%	0.29	Negligible
D12	87 Riverview Avenue ^a	0.26	0.66	14.84	15.10	37.8%	0.26	Negligible
D13	29 Marine Avenue	0.23	0.57	14.84	15.06	37.7%	0.23	Negligible
D14	12 Plantation Drive	1.00	2.50	11.27	12.27	30.7%	1.00	Negligible
D15	66 Plantation Drive	0.79	1.97	11.27	12.06	30.2%	0.79	Negligible
D16	10 Ashdale Park	0.34	0.85	14.84	15.18	37.9%	0.34	Negligible
D17	New Development NE Brickyard Lane 1	0.36	0.90	14.84	15.20	38.0%	0.36	Negligible
D18	New Development NE Brickyard Lane 2	0.32	0.79	12.09	12.41	31.0%	0.32	Negligible
AQO		40 µg/m³						

Note:

- (a) The background data for receptors D12 to D16 are assumed to be the same as receptor D10 for a worst-case assessment; and
 (b) The background data for receptors D17 to D18 are assumed to be the same as receptor D1 for a worst-case assessment.

The percentage changes in process contribution of NO₂ relative to the AQAL as a result of the facility operations at all receptor locations, with respect to NO₂ exposure, are determined to be 3.06% or less. The impact is determined to be 'negligible', based on the methodology outlined in Section 3. The effect of the facility operations on the local area is considered to be insignificant.

The predicted long-term NO₂ concentrations from the facility operations are considered acceptable for the protection of human health.

Short-Term (1-Hour Mean) NO₂ – Scenario 1

The short-term emissions of NO₂ from the source considered were assessed for all 3 years of meteorological data. The maximum PCs within the modelled receptor locations and their associated PECs are compared against the relevant AQS, in **Table 6-3**.

From the meteorological dataset, the year resulting in maximum short-term NO₂ PC concentration was identified during 2018. The predicted maximum short-term PC occurs at the receptor location of the footpath to the north of the site (D23).

The highest short-term NO₂ PC in Table 6.3 is 77.67 µg/m³ and the associated short-term NO₂ PEC is 100.22 µg/m³, which is below the relevant short-term AQO of 200 µg/m³ for the protection of human health.

Table 6-3. Maximum Short-Term (1-Hour Mean, 99.79th Percentile) Concentrations of NO₂ – Scenario 1

	Year	Process Contribution (PC) (µg/m ³)	PC as %age of AQO	Traffic Background (µg/m ³)	PEC (PC + Background) (µg/m ³)	Easting (m)	Northing (m)
NO ₂	2016	77.48	38.74	22.55	100.03	496768	425597
NO ₂	2017	70.42	35.21	22.55	92.97	496768	425597
NO ₂	2018	77.67	38.84	22.55	100.22	496768	425597
AQOs	200 µg/m³						

The short-term NO₂ PEC concentrations have been calculated at each of the discrete receptors listed for the worst meteorological year of 2017 and these results are detailed in **Table 6-4**.

Table 6-4. Maximum Short-Term (1-Hour Mean, 99.79th Percentile) Concentrations of NO₂ at Receptors

Receptors		Predicted 1-hour Mean (99.79 th Percentile) Concentration (µg/m ³) – 2018 Met Data				
ID	Name	Process Contribution (PC) (µg/m ³)	PC as %age of AQO	Traffic Background (µg/m ³)	PEC (PC + Background) (µg/m ³)	PEC as percentage of AQO
D1	100 Gibson Lane South	24.02	12.01	22.55	46.57	23.28
D2	88 Gibson Lane South	18.39	9.19	22.55	40.94	20.47
D3	54 Gibson Lane	14.44	7.22	29.67	44.11	22.06
D4	The Coach House, Melton Grange, Main Road	9.65	4.82	29.67	39.32	19.66
D5	21 Brickyard Lane	11.32	5.66	29.67	41.00	20.50
D6	25 the triangle, North Ferriby	6.83	3.42	24.18	31.01	15.51
D7	Lowcroft Farm, Lowfield Lane	15.96	7.98	29.10	45.06	22.53
D8	South Hunsley School, 41 East Dale Road	10.78	5.39	29.10	39.89	19.94
D9	62 Common Lane	7.13	3.56	26.52	33.65	16.82
D10	79 Plantation Drive	5.07	2.54	29.67	34.75	17.37
D11	75 Southfield Drive	5.65	2.83	24.18	29.83	14.92
D12	87 Riverview Avenue	6.63	3.32	29.67	36.31	18.15
D13	29 Marine Avenue	6.14	3.07	29.67	35.82	17.91
D14	12 Plantation Drive	7.48	3.74	29.67	37.16	18.58
D15	66 Plantation Drive	7.55	3.77	29.67	37.22	18.61
D16	10 Ashdale Park	6.70	3.35	29.67	36.38	18.19
D17	New Development NE Brickyard Lane 1	15.27	7.63	22.55	37.82	18.91
D18	New Development NE Brickyard Lane 2	14.40	7.20	22.55	36.95	18.47
D19	Footpath SW	32.97	16.48	22.55	55.52	27.76
D20	Footpath W	39.12	19.56	22.55	61.67	30.83
D21	Footpath NW	41.67	20.84	22.55	64.22	32.11
D22	Footpath North 1	38.56	19.28	22.55	61.10	30.55
D23	Footpath North 2	77.67	38.84	22.55	100.22	50.11
D24	Footpath NE	38.33	19.16	22.55	60.88	30.44
AQOs		200 µg/m³				

Note:

- (a) The background data for receptors D12 to D16 are assumed to be the same as receptor D10 for a worst-case assessment; and
 (b) The background data for receptors D17 to D24 are assumed to be the same as receptor D1 for a worst-case assessment.

As shown in **Table 6-4**, there are no exceedances of the short-term NO₂ AQO at any of the identified sensitive receptors. The predicted impacts are significantly below the AQO of 200 µg/m³.

Therefore, the predicted short-term NO₂ concentrations from the facility operations are considered acceptable for the protection of human health.

The contour plots of the predicted long-term and short-term ground level PCs of NO₂ for all receptors, including discrete and grid receptors are presented in **Figure 6-1** and **Figure 6-2**. The contour plots show that the predicted maximum concentrations occur adjacent to the emission sources, with a predicted decrease in concentration with the increased distance from the stacks.

The contour plots of the predicted long-term ground level PCs of NO_x and 24-hr NO_x for all receptors, including discrete and grid receptors are presented in **Figure 6-3** and **Figure 6-4**.

Figure 6-1. Predicted Ground level Long-Term NO₂ Concentrations (PC) from the Operation of Eco-Power Boilers (2017 Met Data) – Scenario 1

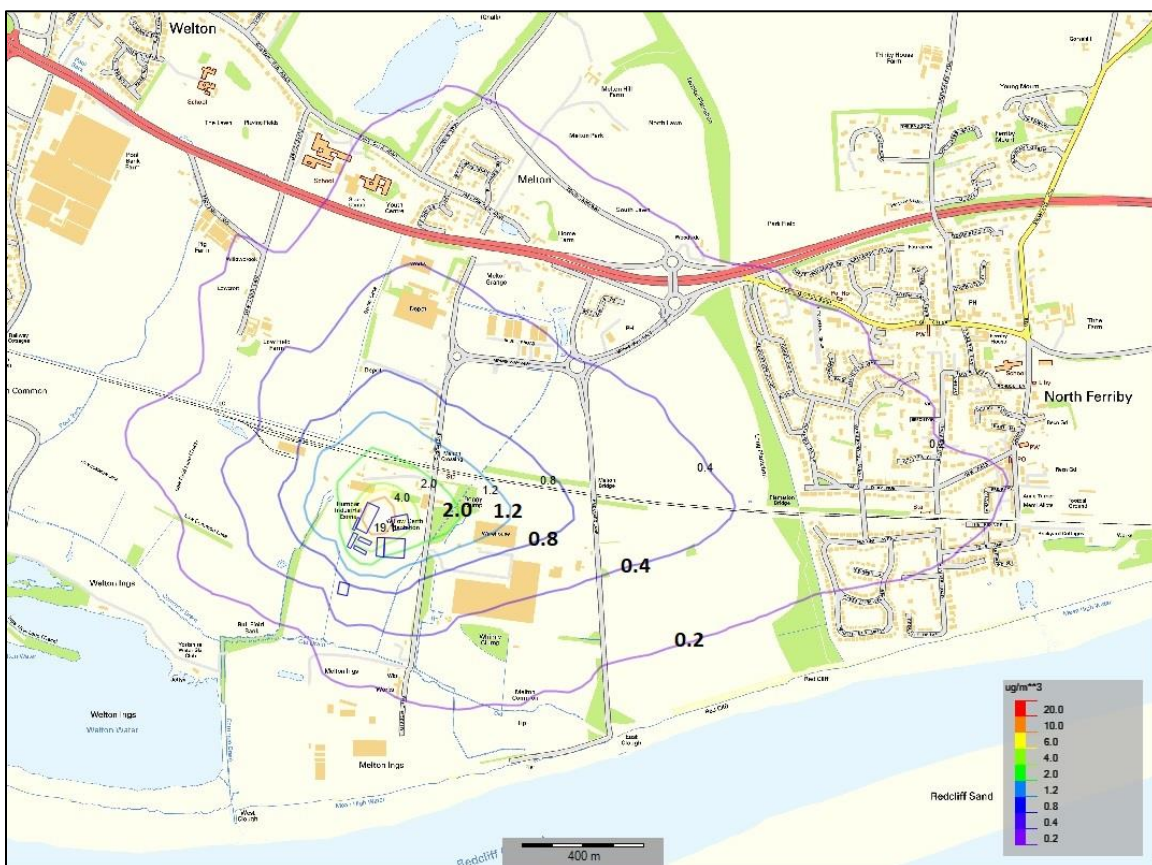


Figure 6-2. Predicted Ground Level Short-Term NO₂ Concentrations (PC, 1-Hour Mean, 99.79th Percentile) from the Operation of Eco-Power Boilers (2018 Met Data) – Scenario 1

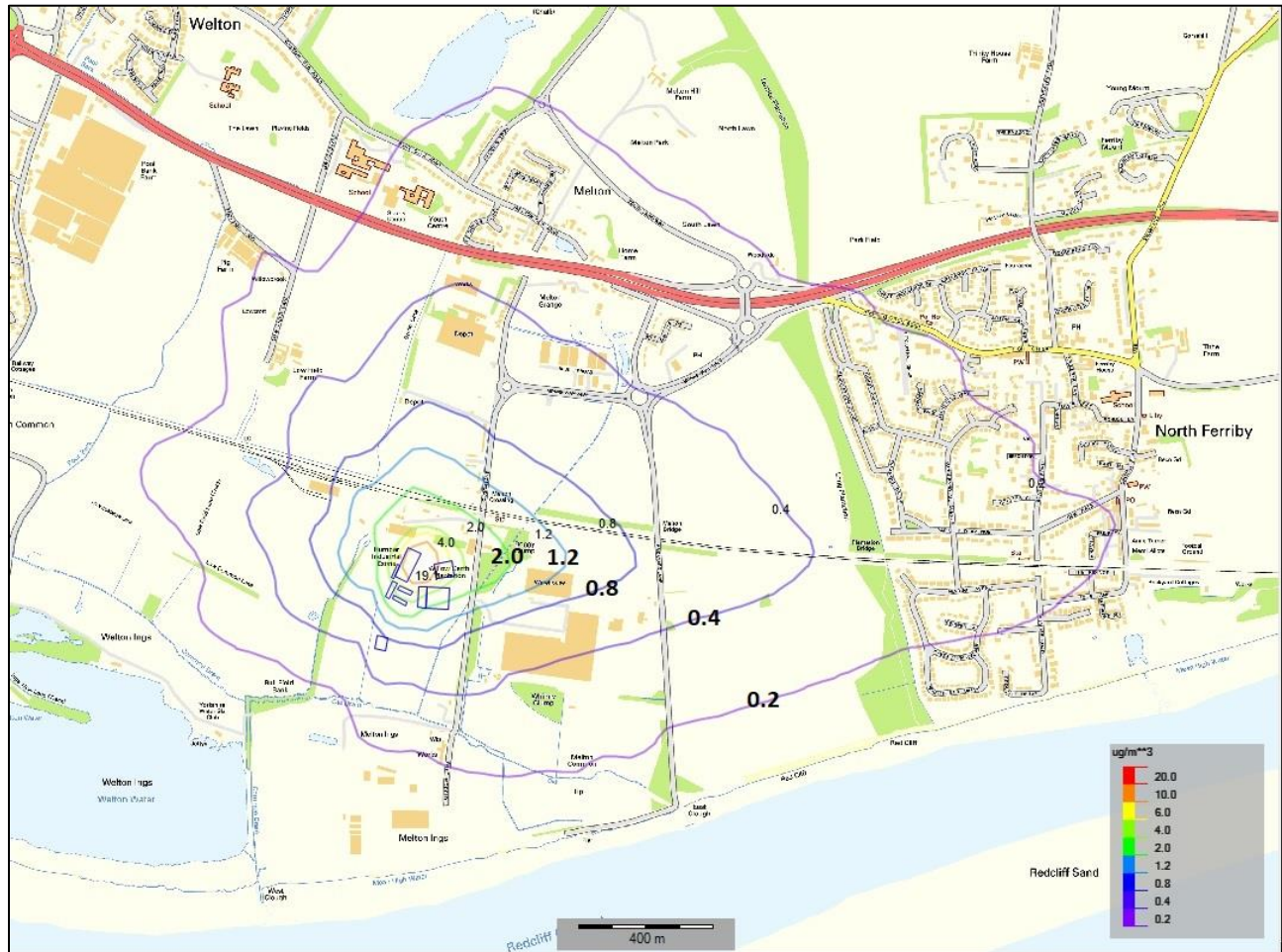


Figure 6-3. Predicted Ground level Long-Term NO_x Concentrations (PC) from the Operation of Eco-Power Boilers (2017 Met Data) – Scenario 1

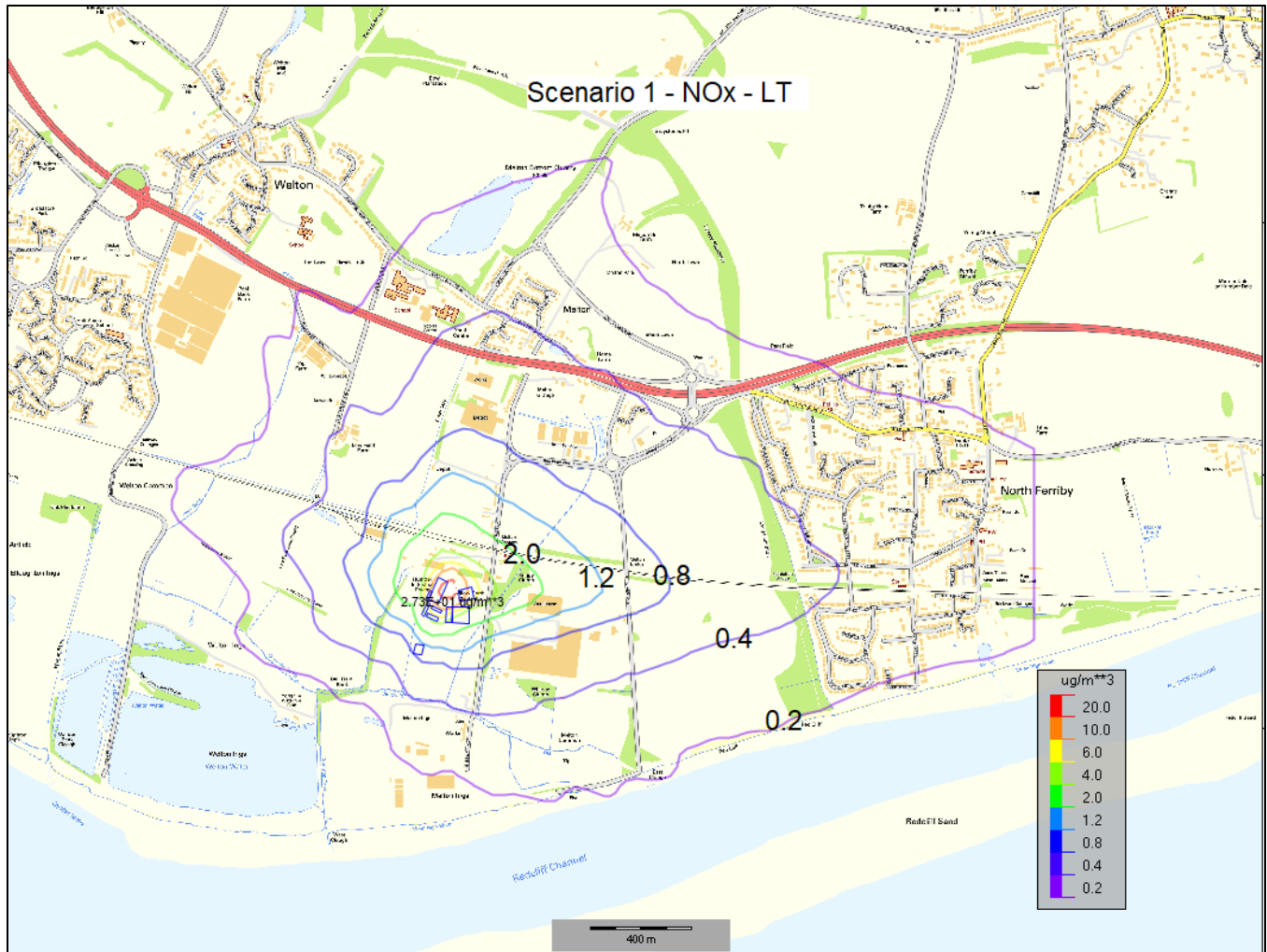
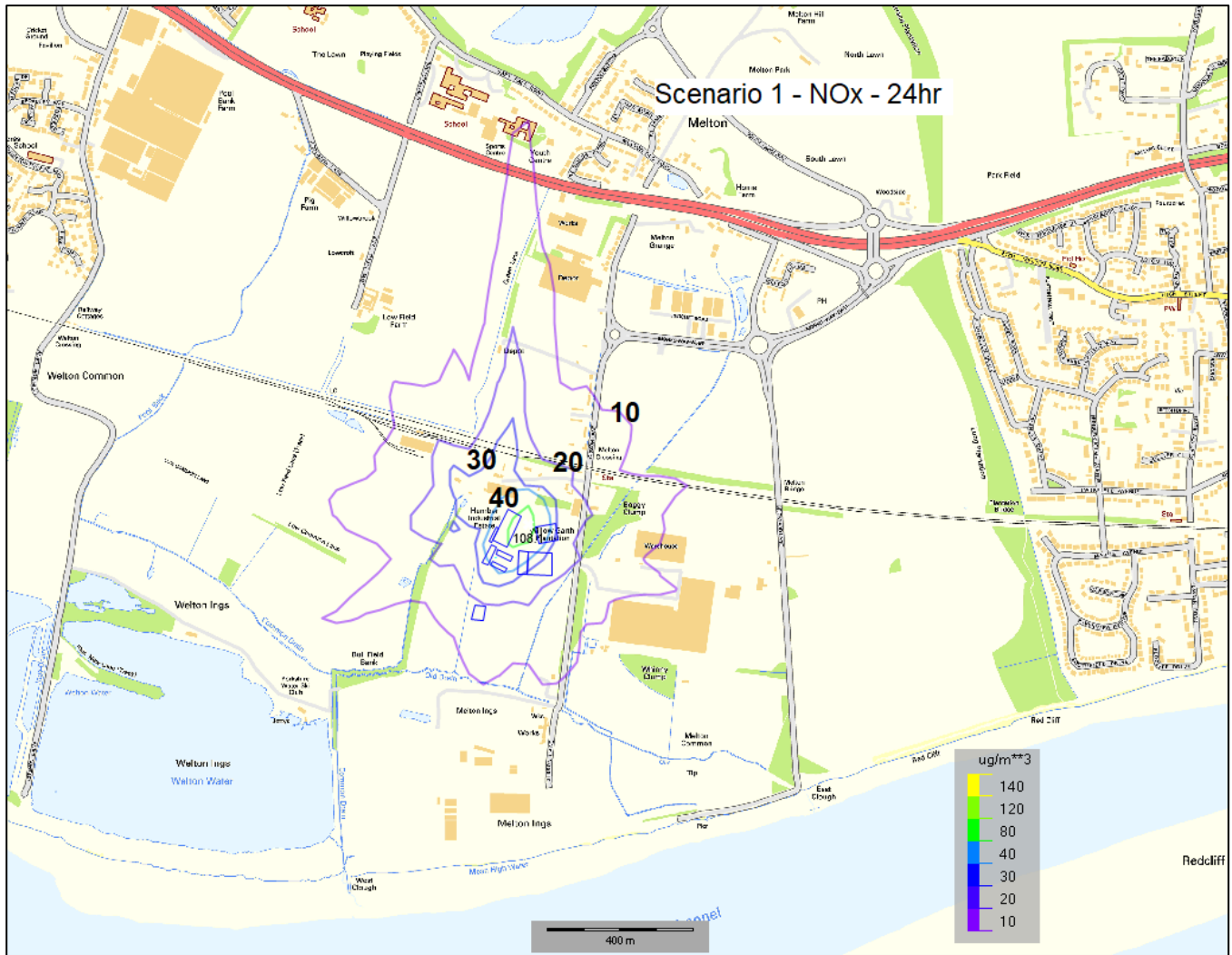


Figure 6-4. Predicted Ground level Short-Term NO_x Concentrations (PC) from the Operation of Eco-Power Boilers (2018 Met Data) – Scenario 1



6.2 PARTICULATE MATTER (PM₁₀) – SCENARIO 1

Long-Term (Annual Mean) PM₁₀

The predicted long-term PCs and PECs from 2017 meteorological data, the year resulting in maximum long-term PM₁₀ PC concentration, at receptor locations are compared against the relevant AQS, in **Table 6-5** below.

Table 6-5 The Long-Term (Annual Mean) Concentrations of PM₁₀ and Significance of Effects at Key Receptors – Scenario 1

Receptors		Predicted Annual Mean Concentration (µg/m ³) – 2017 Met Data, and PM ₁₀ Significance Impacts at Receptors						
ID	Name	Process Contribution (PC) (µg/m ³)	PC as %age of AQO	Traffic Background (µg/m ³)	PEC (PC + Background) (µg/m ³)	PEC as percentage of AQO	PEC as percentage of AQAL	Impact Descriptor
D1	100 Gibson Lane South	0.48	1.20	13.78	14.25	35.6%	<75% of AQAL	Negligible
D2	88 Gibson Lane South	0.36	0.90	13.78	14.14	35.3%	<75% of AQAL	Negligible
D3	54 Gibson Lane	0.19	0.48	15.08	15.28	38.2%	<75% of AQAL	Negligible
D4	The Coach House, Melton Grange, Main Road	0.13	0.33	15.08	15.22	38.0%	<75% of AQAL	Negligible
D5	21 Brickyard Lane	0.14	0.35	15.08	15.22	38.1%	<75% of AQAL	Negligible
D6	25 the triangle, North Ferriby	0.12	0.31	13.52	13.64	34.1%	<75% of AQAL	Negligible
D7	Lowcroft Farm, Lowfield Lane	0.11	0.26	15.73	15.83	39.6%	<75% of AQAL	Negligible
D8	South Hunsley School, 41 East Dale Road	0.10	0.25	15.73	15.83	39.6%	<75% of AQAL	Negligible
D9	62 Common Lane	0.04	0.10	14.72	14.76	36.9%	<75% of AQAL	Negligible
D10	79 Plantation Drive	0.09	0.23	15.08	15.18	37.9%	<75% of AQAL	Negligible
D11	75 Southfield Drive	0.08	0.19	13.52	13.59	34.0%	<75% of AQAL	Negligible
D12	87 Riverview Avenue ^a	0.10	0.26	15.08	15.19	38.0%	<75% of AQAL	Negligible
D13	29 Marine Avenue	0.10	0.25	15.08	15.18	38.0%	<75% of AQAL	Negligible
D14	12 Plantation Drive	0.11	0.28	15.08	15.20	38.0%	<75% of AQAL	Negligible
D15	66 Plantation Drive	0.10	0.26	15.08	15.19	38.0%	<75% of AQAL	Negligible
D16	10 Ashdale Park	0.09	0.22	15.08	15.17	37.9%	<75% of AQAL	Negligible

D17	New Development NE Brickyard Lane 1	0.39	0.98	13.78	14.17	35.4%	<75% of AQAL	Negligible
D18	New Development NE Brickyard Lane 2	0.31	0.77	13.78	14.08	35.2%	<75% of AQAL	Negligible
AQO		40 µg/m³						

Note:

- (a) The background data for receptors D12 to D16 are assumed to be the same as receptor D10 for a worst-case assessment; and
 (b) The background data for receptors D17 to D18 are assumed to be the same as receptor D1 for a worst-case assessment.

As shown in **Table 6-5**, there are no exceedances of the long-term NO₂ AQO at any of the identified sensitive receptors. The predicted impacts are significantly below the AQO of 40 µg/m³.

The percentage change in process concentrations relative to the AQAL as a result of the boiler operations at all receptor locations, with respect to PM₁₀ exposure, are determined to be 1.20% or less. The impact is determined to be 'insignificant', based on the methodology outlined in Section 3.

Therefore, the predicted long-term PM₁₀ concentrations from the Site are considered acceptable for the protection of human health.

Short-Term (24-Hour Mean) PM₁₀

The predicted short-term PCs and PECs from 2018 meteorological data, the year resulting in maximum short-term NO₂ PC concentration, at receptor locations are compared against the relevant AQS, in **Table 6-6**.

Table 6-6 The Short-Term (24-Hour Mean) Concentrations of PM₁₀ at Key Receptors – Scenario 1

Receptors		Predicted 24-Hour Mean (90.41 th Percentile) Concentration (µg/m ³) – 2018 Met Data at Receptors				
ID	Name	Process Contribution (PC) (µg/m ³)	PC as %age of AQO	Traffic Background (µg/m ³)	PEC (PC + Background) (µg/m ³)	PEC as percentage of AQO
D1	100 Gibson Lane South	1.44	2.87	13.78	15.21	30.42
D2	88 Gibson Lane South	1.04	2.09	13.78	14.82	29.64
D3	54 Gibson Lane	0.56	1.13	15.08	15.65	31.29
D4	The Coach House, Melton Grange, Main Road	0.38	0.77	15.08	15.47	30.94
D5	21 Brickyard Lane	0.40	0.81	15.08	15.49	30.97
D6	25 the triangle, North Ferriby	0.29	0.58	13.52	13.81	27.62
D7	Lowcroft Farm, Lowfield Lane	0.35	0.70	15.73	16.08	32.16
D8	South Hunsley School, 41 East Dale Road	0.30	0.60	15.73	16.03	32.06
D9	62 Common Lane	0.16	0.33	14.72	14.88	29.76

D10	79 Plantation Drive	0.23	0.47	15.08	15.32	30.63
D11	75 Southfield Drive	0.19	0.39	13.52	13.71	27.42
D12	87 Riverview Avenue ^a	0.29	0.57	15.08	15.37	30.74
D13	29 Marine Avenue	0.26	0.53	15.08	15.35	30.70
D14	12 Plantation Drive	0.30	0.61	15.08	15.39	30.77
D15	66 Plantation Drive	0.28	0.55	15.08	15.36	30.72
D16	10 Ashdale Park	0.21	0.43	15.08	15.30	30.60
D17	New Development NE Brickyard Lane 1	0.89	1.78	13.78	14.67	29.33
D18	New Development NE Brickyard Lane 2	0.71	1.43	13.78	14.49	28.98
AQOs	50 µg/m³					

Note:

- (a) The background data for receptors D12 to D16 are assumed to be the same as receptor D10 for a worst-case assessment; and
- (b) The background data for receptors D17 to D18 are assumed to be the same as receptor D1 for a worst-case assessment.

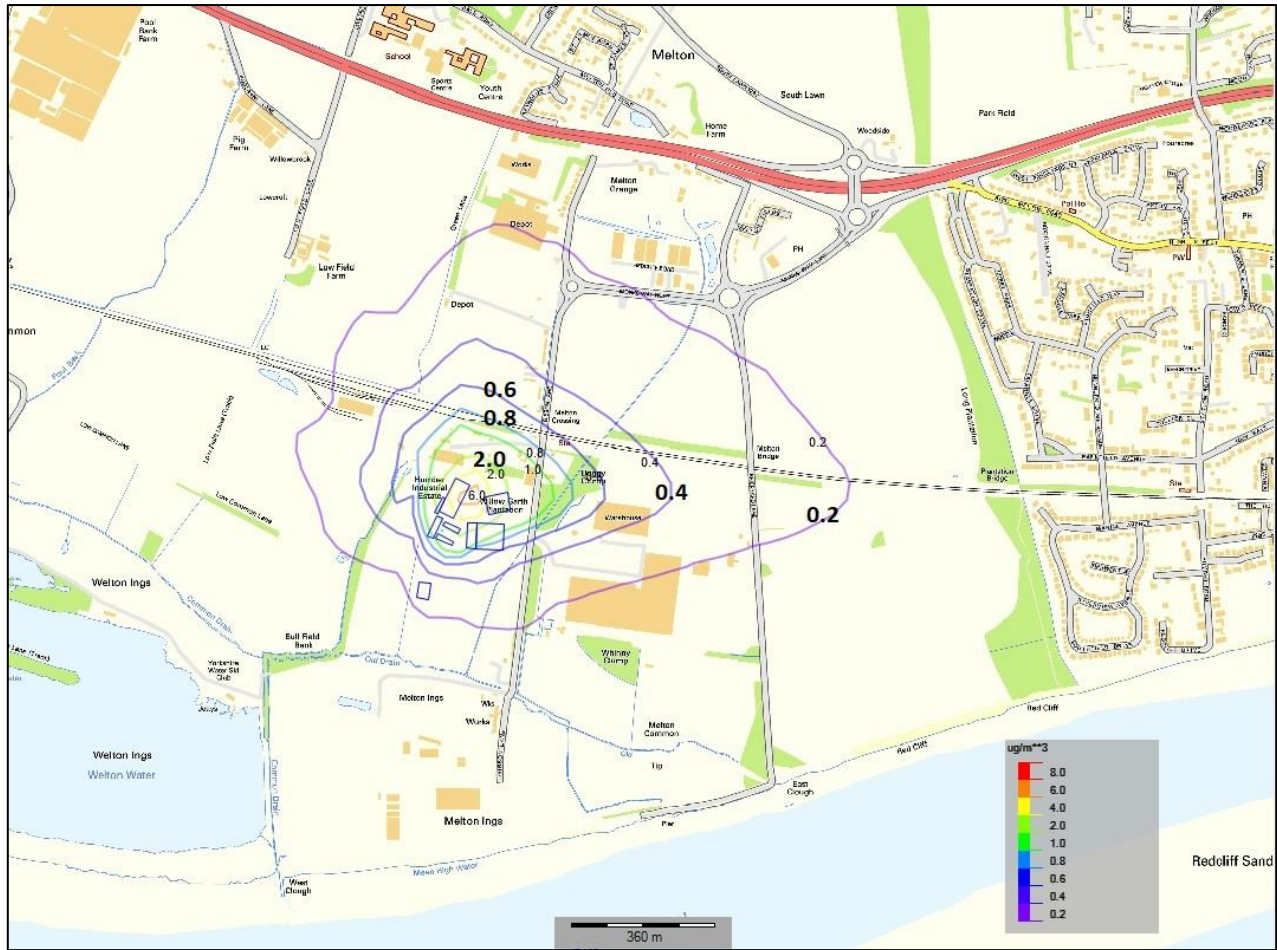
As shown in **Table 6-6**, there are no exceedances of the short-term NO₂ AQO at any of the identified sensitive receptors. The predicted impacts are significantly below the AQO of 50 µg/m³.

Therefore, the predicted short-term PM₁₀ concentrations from the boiler operations are considered acceptable for the protection of human health.

The contour plots of the predicted long-term ground level PCs of PM₁₀ for all receptors, including discrete and grid receptors are presented in **Figure 6-5**. The contour plots show that the predicted maximum concentrations occur adjacent to the emission source, with a predicted decrease in concentration with the increased distance from the stack.

The contour plots of the predicted short-term ground level PCs of PM₁₀ for all receptors, including discrete and grid receptors are not presented as the PCs are well below 10% of relevant AQO.

Figure 6-5. Predicted Long-Term PM₁₀ Concentrations (PC) from the Operation of Eco-Power Boilers (2017 Met Data) – Scenario 1



6.3 PARTICULATE MATTER (PM_{2.5})

A worst-case scenario assumption of 100% of PM₁₀ to be PM_{2.5} has been made in the assessment. The predicted long-term PCs of PM_{2.5} and the significance of changes associated with the operations of the boilers with respect to annual mean PM_{2.5} exposure has been presented and assessed in Table 6.7.

Table 6-7 The Long-Term (Annual Mean) Concentrations of PM_{2.5} and Significance of Effects at Key Receptors

Receptors		Predicted Annual Mean Concentration (µg/m ³) – 2017 Met Data, and PM _{2.5} Significance Impacts at Receptors						
ID	Name	Process Contribution (PC) (µg/m ³)	PC as %age of AQO	Traffic Background (µg/m ³)	PEC (PC + Background) (µg/m ³)	PEC as percentage of AQO	PEC as percentage of AQO	Impact Descriptor
D1	100 Gibson Lane South	0.48	1.92	8.85	9.33	37.3%	<75% of AQAL	Negligible
D2	88 Gibson Lane South	0.36	1.45	8.85	9.21	36.8%	<75% of AQAL	Negligible
D3	54 Gibson Lane	0.19	0.77	9.63	9.82	39.3%	<75% of AQAL	Negligible
D4	The Coach House, Melton Grange, Main Road	0.13	0.54	9.63	9.76	39.0%	<75% of AQAL	Negligible
D5	21 Brickyard Lane	0.14	0.56	9.63	9.77	39.1%	<75% of AQAL	Negligible
D6	25 the triangle, North Ferriby	0.12	0.49	8.91	9.03	36.1%	<75% of AQAL	Negligible
D7	Lowcroft Farm, Lowfield Lane	0.11	0.42	9.91	10.02	40.1%	<75% of AQAL	Negligible
D8	South Hunsley School, 41 East Dale Road	0.10	0.40	9.91	10.01	40.1%	<75% of AQAL	Negligible
D9	62 Common Lane	0.04	0.15	9.49	9.53	38.1%	<75% of AQAL	Negligible
D10	79 Plantation Drive	0.09	0.37	9.63	9.72	38.9%	<75% of AQAL	Negligible
D11	75 Southfield Drive	0.08	0.30	8.91	8.99	35.9%	<75% of AQAL	Negligible
D12	87 Riverview Avenue ^a	0.10	0.41	9.63	9.73	38.9%	<75% of AQAL	Negligible
D13	29 Marine Avenue	0.10	0.40	9.63	9.73	38.9%	<75% of AQAL	Negligible
D14	12 Plantation Drive	0.11	0.45	9.63	9.74	39.0%	<75% of AQAL	Negligible

D15	66 Plantation Drive	0.10	0.41	9.63	9.73	38.9%	<75% of AQAL	Negligible
D16	10 Ashdale Park	0.09	0.36	9.63	9.71	38.9%	<75% of AQAL	Negligible
D17	New Development NE Brickyard Lane 1	0.39	1.56	8.85	9.24	36.9%	<75% of AQAL	Negligible
D18	New Development NE Brickyard Lane 2	0.31	1.24	8.85	9.16	36.6%	<75% of AQAL	Negligible
AQO		25µg/m³						

Note:

- (a) The background data for receptors D12 to D16 are assumed to be the same as receptor D10 for a worst-case assessment; and
 (b) The background data for receptors D17 to D18 are assumed to be the same as receptor D1 for a worst-case assessment.

As shown in **Table 6-7**, there are no exceedances of the short-term NO₂ AQO at any of the identified sensitive receptors. The predicted impacts are significantly below the AQO of 25 µg/m³.

The percentage change in process concentrations relative to the AQAL as a result of the boiler operations at all receptor locations, with respect to PM_{2.5} exposure, are determined to be 1.92% or less. The significance is determined to be 'negligible', based on the methodology outlined in Section 3.

Therefore, the predicted long-term PM_{2.5} concentrations from the Site are considered acceptable for the protection of human health.

6.4 CARBON MONOXIDE (CO)

Predicted ground level short-term (8-hour running mean) CO concentrations were assessed against the relevant AQO using 2018 met data (the year resulting in maximum short-term PC concentration). The results of the model predictions at each discrete receptor, inclusive of background, are summarised in

Table 6-8.

Table 6-8. Summary of Predicted CO Concentrations

Receptors		Predicted 8-hour Mean Concentration (µg/m ³) – 2018 Met Data		
ID	Name	Process Contribution (PC) (µg/m ³)	PC as %age of AQO	PEC (a) (PC + Background) (µg/m ³)
D1	100 Gibson Lane South	428.59	428.59	4.29
D2	88 Gibson Lane South	300.86	300.86	3.01
D3	54 Gibson Lane	229.76	229.76	2.30
D4	The Coach House, Melton Grange, Main Road	149.7	149.70	1.50

D5	21 Brickyard Lane	106.23	106.23	1.06
D6	25 the triangle, North Ferriby	119.44	119.44	1.19
D7	Lowcroft Farm, Lowfield Lane	171.79	171.79	1.72
D8	South Hunsley School, 41 East Dale Road	145.93	145.93	1.46
D9	62 Common Lane	84.471	84.47	0.84
D10	79 Plantation Drive	61.746	61.75	0.62
D11	75 Southfield Drive	61.396	61.40	0.61
D12	87 Riverview Avenue	85.942	85.94	0.86
D13	29 Marine Avenue	96.132	96.13	0.96
D14	12 Plantation Drive	112.91	112.91	1.13
D15	66 Plantation Drive	89.8	89.80	0.90
D16	10 Ashdale Park	103.7	103.70	1.04
D17	New Development NE Brickyard Lane 1	215.22	215.22	2.15
D18	New Development NE Brickyard Lane 2	251.47	251.47	2.51
AQO		10000		

Note:

^(a) Inclusive of Background concentration of 134µg/m³

As indicated in **Table 6-8**, the maximum predicted 8-hour running mean CO process contributions (PC) at receptors is 428.59 µg/m³ when using 2018 met data. The predicted 8-hour running mean PCs of CO at the modelled discrete receptors are well below 4.29% of the short-term AQO, which are considered insignificant.

The maximum PEC of 8-hour running mean CO emissions is 562.59 µg /m³, which does not exceed the relevant short-term AQS of 10000 µg/m³. Therefore, the short-term PECs of CO at all receptors are below the relevant short-term AQS of 10000 µg/m³ for the protection of human health.

6.5 NITROGEN DIOXIDE (NO₂) – SCENARIO 2 (WORST CASE OPERATIONS)

For Scenario 2, only the impact of the nitrogen dioxide on the receptors has been assessment. Other pollutants, such as, PM₁₀, PM_{2.5} and CO have not included in the assessment due to the impacts of those pollutants from the normal operation scenario are well below the relevant AQO.

Predicted long-term (annual mean) PCs and PECs of NO₂ concentrations were assessed against the relevant AQO using 2017 met data (the year resulting in maximum long-term PC concentration). The results of the model predictions at each discrete receptor, inclusive of background, are summarised in Table 6.9.

Table 6-9. Long-Term (Annual Mean) Concentrations of NO₂ and Impact Description of Effects at Receptors - Scenario 2

Receptors		Predicted Annual Mean Concentration (µg/m ³) – 2017 Met Data, and NO ₂ Impact Description at Receptors						
ID	Name	Process Contribution (PC) (µg/m ³)	PC as %age of AQO	Traffic Background (µg/m ³)	PEC (PC + Background) (µg/m ³)	PEC as percentage of AQO	PEC as percentage of AQO	Impact Descriptor
D1	100 Gibson Lane South	1.45	3.62	11.27	12.72	31.8%	≤ 75 of AQO	Negligible
D2	88 Gibson Lane South	1.11	2.76	11.27	12.38	31.0%	≤ 75 of AQO	Negligible
D3	54 Gibson Lane	0.58	1.46	14.84	15.42	38.6%	≤ 75 of AQO	Negligible
D4	The Coach House, Melton Grange, Main Road	0.41	1.03	14.84	15.25	38.1%	≤ 75 of AQO	Negligible
D5	21 Brickyard Lane	0.42	1.05	14.84	15.26	38.1%	≤ 75 of AQO	Negligible
D6	25 the triangle, North Ferriby	0.37	0.93	12.09	12.46	31.2%	≤ 75 of AQO	Negligible
D7	Lowcroft Farm, Lowfield Lane	0.31	0.77	14.55	14.86	37.1%	≤ 75 of AQO	Negligible
D8	South Hunsley School, 41 East Dale Road	0.30	0.74	14.55	14.85	37.1%	≤ 75 of AQO	Negligible
D9	62 Common Lane	0.11	0.28	13.26	13.37	33.4%	≤ 75 of AQO	Negligible
D10	79 Plantation Drive	0.28	0.70	14.84	15.12	37.8%	≤ 75 of AQO	Negligible
D11	75 Southfield Drive	0.23	0.56	12.09	12.32	30.8%	≤ 75 of AQO	Negligible
D12	87 Riverview Avenue ^a	0.31	0.77	14.84	15.14	37.9%	≤ 75 of AQO	Negligible
D13	29 Marine Avenue	0.30	0.75	14.84	15.14	37.8%	≤ 75 of AQO	Negligible
D14	12 Plantation Drive	0.34	0.85	14.84	15.18	37.9%	≤ 75 of AQO	Negligible
D15	66 Plantation Drive	0.31	0.78	14.84	15.15	37.9%	≤ 75 of AQO	Negligible
D16	10 Ashdale Park	0.27	0.67	14.84	15.10	37.8%	≤ 75 of AQO	Negligible
D17	New Development NE Brickyard Lane 1	1.19	2.97	11.27	12.46	31.2%	≤ 75 of AQO	Negligible
D18	New Development NE Brickyard Lane 2	0.94	2.35	11.27	12.21	30.5%	≤ 75 of AQO	Negligible
AQO		40 µg/m³						

Note:

- (a) The background data for receptors D12 to D16 are assumed to be the same as receptor D10 for a worst-case assessment; and
 (b) The background data for receptors D17 to D18 are assumed to be the same as receptor D1 for a worst-case assessment.

There are no exceedances of the long-term NO₂ AQO at any of the identified sensitive receptors for Scenario 2. The predicted impacts are significantly below the AQO of 40µg/m³.

The percentage changes in process contribution of NO₂ relative to the AQAL as a result of the boiler operations at all receptor locations, with respect to NO₂ exposure, are determined to be 3.62% or less. The impact is determined to be 'negligible', based on the methodology outlined in Section 3. The effect of the proposed boiler operations on the local area is considered to be insignificant for Scenario 2.

The predicted long-term NO₂ concentrations from the proposed development are considered acceptable for the protection of human health for Scenario 2.

Short-Term (1-Hour Mean) NO₂ – Scenario 2

Predicted short-term (1hour mean) PCs and PECs of NO₂ concentrations were assessed against the relevant AQO using 2018 met data (the year resulting in maximum long-term PC concentration). The results of the model predictions at each discrete receptor, inclusive of background, are summarised in Table 6.10.

Table 6-10. Maximum Short-Term (1-Hour Mean, 99.79th Percentile) Concentrations of NO₂ at Receptors – Scenario 2

Receptors		Predicted 1-hour Mean (99.79 th Percentile) Concentration (µg/m ³) – 2018 Met Data				
ID	Name	Process Contribution (PC) (µg/m ³)	PC as %age of AQO	Traffic Background (µg/m ³)	PEC (PC + Background) (µg/m ³)	PEC as percentage of AQO
D1	100 Gibson Lane South	27.50	13.75	22.55	50.05	25.02
D2	88 Gibson Lane South	21.97	10.98	22.55	44.52	22.26
D3	54 Gibson Lane	17.55	8.77	29.67	47.22	23.61
D4	The Coach House, Melton Grange, Main Road	11.56	5.78	29.67	41.23	20.62
D5	21 Brickyard Lane	13.27	6.63	29.67	42.94	21.47
D6	25 the triangle, North Ferriby	8.02	4.01	24.18	32.20	16.10
D7	Lowcroft Farm, Lowfield Lane	18.16	9.08	29.10	47.26	23.63
D8	South Hunsley School, 41 East Dale Road	12.05	6.03	29.10	41.15	20.58
D9	62 Common Lane	8.54	4.27	26.52	35.06	17.53
D10	79 Plantation Drive	5.95	2.97	29.67	35.62	17.81
D11	75 Southfield Drive	6.60	3.30	24.18	30.77	15.39
D12	87 Riverview Avenue	7.96	3.98	29.67	37.64	18.82
D13	29 Marine Avenue	7.43	3.71	29.67	37.10	18.55

D14	12 Plantation Drive	8.95	4.47	29.67	38.62	19.31
D15	66 Plantation Drive	8.87	4.43	29.67	38.54	19.27
D16	10 Ashdale Park	7.96	3.98	29.67	37.64	18.82
D17	New Development NE Brickyard Lane 1	18.55	9.27	22.55	41.10	20.55
D18	New Development NE Brickyard Lane 2	17.32	8.66	22.55	39.87	19.94
D19	Footpath SW	37.65	18.82	22.55	60.20	30.10
D20	Footpath W	44.36	22.18	22.55	66.91	33.45
D21	Footpath NW	42.75	21.37	22.55	65.29	32.65
D22	Footpath North 1	41.70	20.85	22.55	64.24	32.12
D23	Footpath North 2	91.82	45.91	22.55	114.37	57.18
D24	Footpath NE	46.09	23.04	22.55	68.64	34.32
AQOs		200 µg/m³				

Note:

- (a) The background data for receptors D12 to D16 are assumed to be the same as receptor D10 for a worst-case assessment.
- (b) The background data for receptors D17 to D24 are assumed to be the same as receptor D1 for a worst-case assessment.

As shown in **Table 6-4**, there are no exceedances of the short-term NO₂ AQO at any of the identified sensitive receptors. The predicted impacts are significantly below the AQO of 200 µg/m³.

Therefore, the predicted short-term NO₂ concentrations from the facility operations are considered acceptable for the protection of human health.

The contour plots of the predicted long-term and short-term ground level PCs of NO₂ for all receptors, including discrete and grid receptors are presented in **Figure 6-6** and **Figure 6-7**. The contour plots show that the predicted maximum concentrations occur adjacent to the emission sources, with a predicted decrease in concentration with the increased distance from the stacks.

The contour plots of the predicted long-term ground level PCs of NO_x and 24-hr NO_x for all receptors, including discrete and grid receptors are presented in **Figure 6-8** and

Figure 6-9.

Figure 6-6. Predicted Ground level Long-Term NO₂ Concentrations (PC) from the Operation of Eco-Power Boilers (2017 Met Data) – Scenario 2

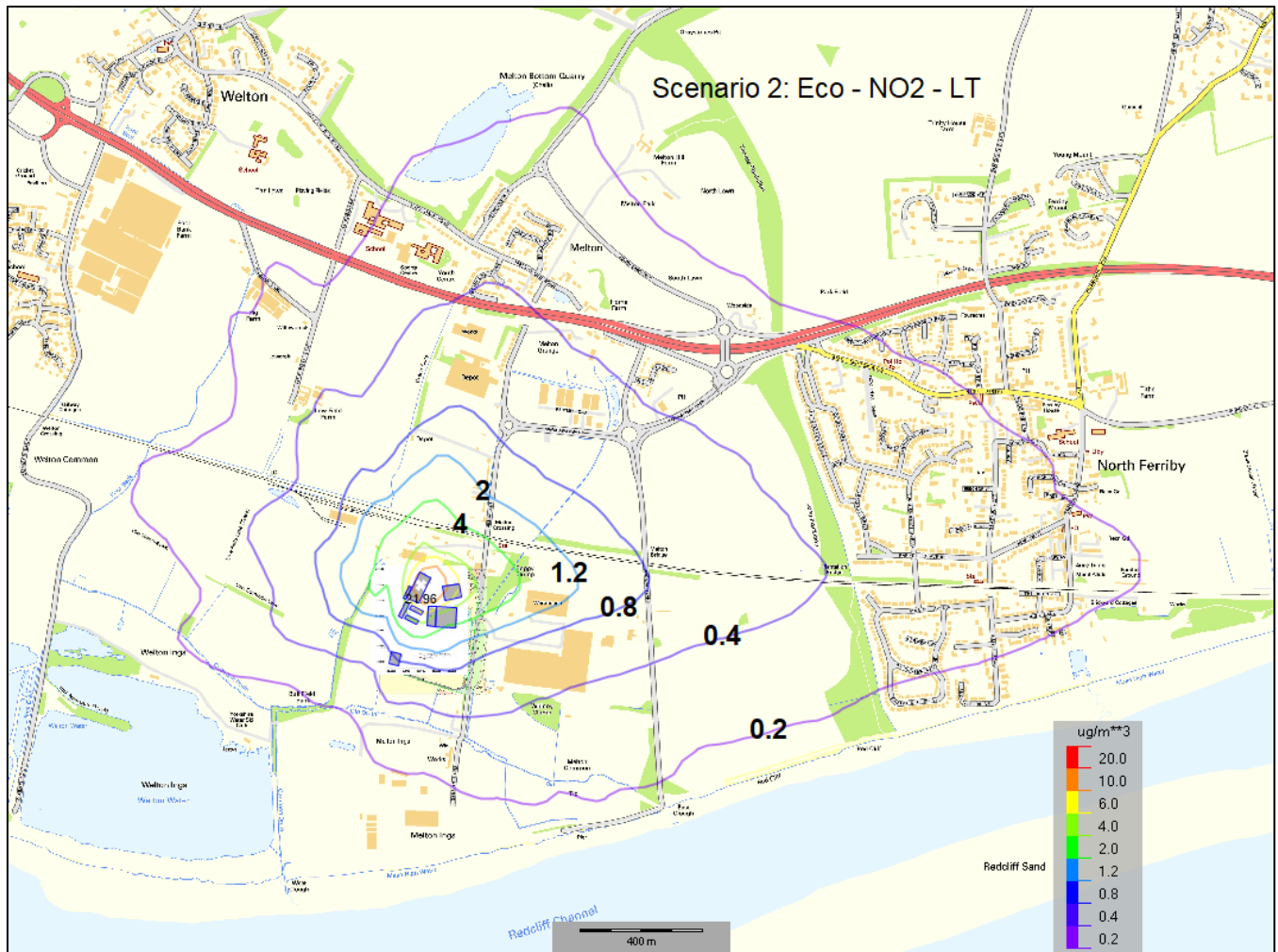


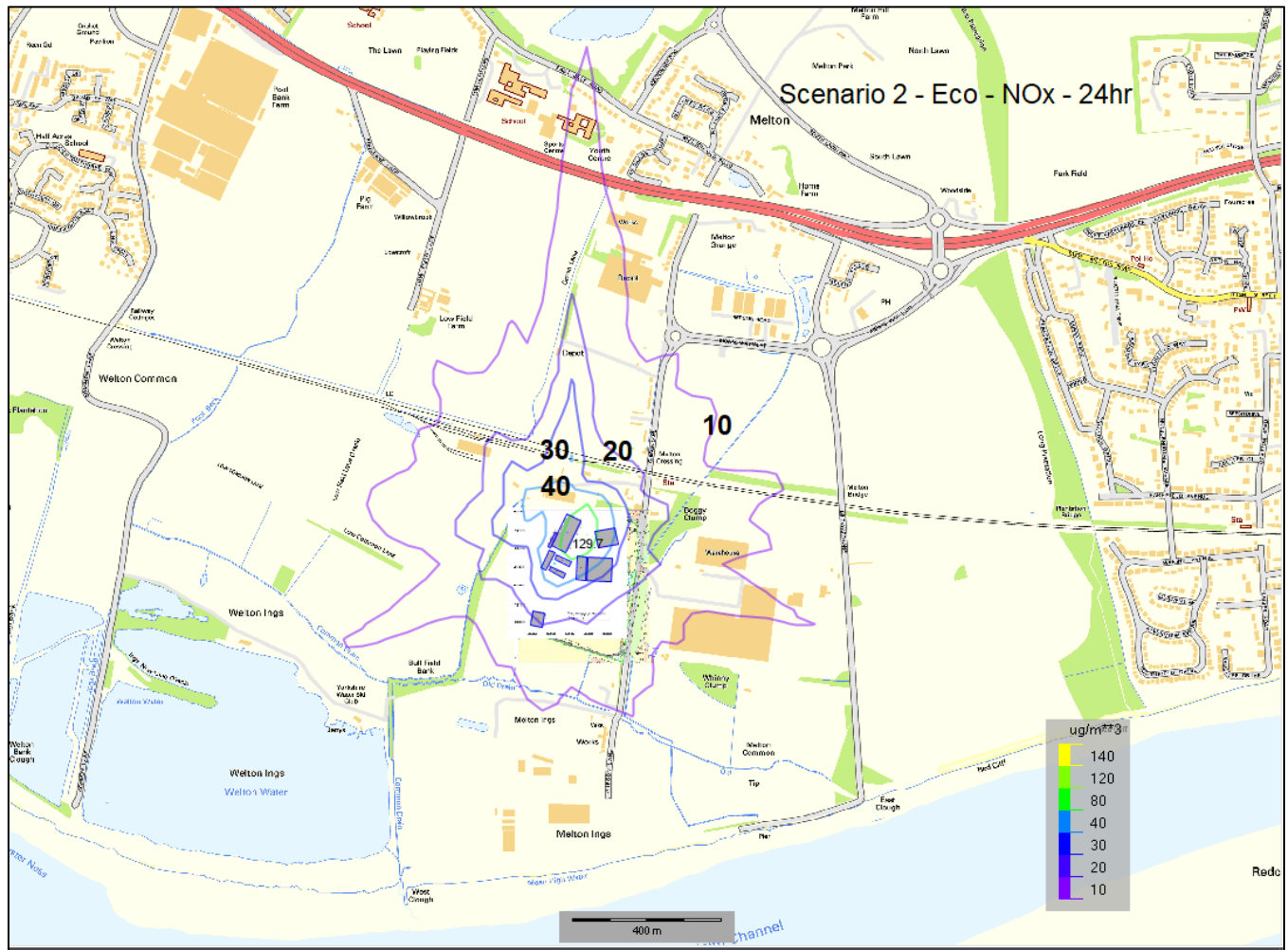
Figure 6-7. Predicted Ground Level Short-Term NO₂ Concentrations (PC, 1-Hour Mean, 99.79th Percentile) from the Operation of Eco-Power Boilers (2018 Met Data) – Scenario 2



Figure 6-8. Predicted Ground level Long-Term NO_x Concentrations (PC) from the Operation of Eco-Power Boilers (2017 Met Data) – Scenario 2



Figure 6-9. Predicted Ground level Short-Term (24 hr) NO_x Concentrations (PC) from the Operation of Eco-Power Boilers (2018 Met Data) – Scenario 2



7.0 HABITAT ASSESSMENT

The habitat assessment has been undertaken for the following identified nature conservation areas.

- Humber Estuary SPA, SAC, Ramsar, SSSI;

The long-term and short-term concentrations among those ecological sites have been calculated for habitat assessment against relevant critical loads, using 2017 met data (the year resulting in maximum long-term and short-term PC concentrations).

7.1 PREDICTED NITROGEN OXIDE CONCENTRATIONS – SCENARIO 1

Predicted Nitrogen Oxide Concentrations Compared to Critical Levels of Long-Term and Short-Term NO_x (as NO₂)

Table 7-1 presents a summary of the predicted nitrogen oxide concentrations using 2017 and 2018 met data (the year resulting in maximum long-term and short-term PC concentrations respectively) at the Humber Estuary ecological receptor locations.

Table 7-1. Summary of Cumulative Predicted NO_x Concentrations for Protection of Vegetation and Ecosystems – Scenario 1

Ecological Receptor		Predicted Annual Mean Concentration (µg/m ³)				Predicted 24-hour Mean Concentration (µg/m ³)			
		Process Contribution (PC) (µg/m ³)	PC as %age of AQO	Background (µg/m ³)	PEC (PC + Background) (µg/m ³)	Process Contribution (PC) (µg/m ³)	PC as %age of AQO	Background (µg/m ³)	PEC (PC + Background) (µg/m ³)
E1	Humber Estuary SPA, SAC, Ramsar, SSSI 1	0.06	0.19	14.25	14.31	1.77	2.37	16.82	18.59
E2	Humber Estuary SPA, SAC, Ramsar, SSSI 2	0.08	0.27	14.82	14.90	4.46	5.95	17.49	21.95
E3	Humber Estuary SPA, SAC, Ramsar, SSSI 3	0.15	0.50	14.82	14.97	4.48	5.97	17.49	21.97
E4	Humber Estuary SPA, SAC, Ramsar, SSSI 4	0.22	0.72	14.78	15.00	4.57	6.09	17.44	22.01
E5	Humber Estuary SPA, SAC, Ramsar, SSSI 5	0.20	0.66	16.60	16.80	2.67	3.56	19.59	22.26
AQO/Critical Level (CL)		30 ^(e)				75 ^(d)			

Note:

^(a) Inclusive of Background concentrations. The Background concentration was taken from <http://www.apis.ac.uk/>.

^(b) The Inclusive of Background concentration^s. The Background concentration was taken from <http://www.apis.ac.uk/>.

^(c) The AQO of 30 µg/m³ is the annual standard for the protection of vegetation and ecosystems; and

^(d) The AQO of 75 µg/m³ is the daily standard for the protection of vegetation and ecosystems.

The annual mean NO_x (as NO₂) PEC at the ecological receptor locations are below the annual mean critical level of 30 µg/m³ for the protection of vegetation and Ecosystems.

The NO_x daily (24 hour) predicted environmental concentration at all ecological receptor locations are well below the daily mean critical levels of 75 µg/m³ for the protection of vegetation and Ecosystems.

The significance of changes associated with the operations of the facility with respect to annual mean NO_x (as NO₂) exposure at the ecological receptors has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in **Table 7-2**.

Table 7-2. Long-Term (Annual Mean) Concentrations of NO₂ and Impact Description of Effects at Receptors – Scenario 1

Receptors		Predicted Annual Mean Concentration (µg/m ³) – 2018 Met Data, and NO ₂ Impact Description at Receptors						
ID	Name	Process Contribution (PC) (µg/m ³)	PC as %age of AQO	Traffic Background (µg/m ³)	PEC (PC + Background) (µg/m ³)	PEC as percentage of AQO	PEC as percentage of AQO	Impact Descriptor
E1	Humber Estuary SPA, SAC, Ramsar, SSSI 1	0.06	0.19	14.25	14.31	47.69	≤75% % of AQAL	Negligible
E2	Humber Estuary SPA, SAC, Ramsar, SSSI 2	0.08	0.27	14.82	14.90	49.67	≤75% % of AQAL	Negligible
E3	Humber Estuary SPA, SAC, Ramsar, SSSI 3	0.15	0.50	14.82	14.97	49.90	≤75% % of AQAL	Negligible
E4	Humber Estuary SPA, SAC, Ramsar, SSSI 4	0.22	0.72	14.78	15.00	49.99	≤75% % of AQAL	Negligible
E5	Humber Estuary SPA, SAC, Ramsar, SSSI 5	0.20	0.66	16.60	16.80	55.99	≤75% % of AQAL	Negligible

The percentage change in long-term process concentrations relative to the AQAL as a result of the proposed development at all ecological receptor locations, with respect to NO_x (as NO₂) exposure, are determined to be 0.69% or less. The significance is to be ‘negligible’ for all ecological receptor locations, based on the methodology outlined in Section 3.

As the percentage change in long-term process concentrations relative to the AQAL is below 1% of the relevant critical level for the protection of vegetation and Ecosystems, the long-term process contributions have been screened out against the relevant standard/critical level. The nitrogen deposition assessment has not been undertaken.

Furthermore, Guidance of “A guide to the assessment of air quality impacts on designated nature conservation sites, May 2020, states that:

“5.5.2.3 In March 2015, AQTAG (Air quality Technical Advisory Group) clarified to the planning inspectorate that ‘for installations other than intensive pig and poultry farms, AQTAG is confident that a process contribution (PC, as predicted by H1 or a detailed dispersion model) <1% of the relevant critical level or load (CL) can be considered inconsequential and does not need to be included in an in-combination assessment”.

Therefore, in-combination habitat assessment (cumulative habitat assessment including other proposed development) does not need to be undertaken.

In summary, the NO₂ impacts from the proposed development are insignificant on all ecological receptors for Scenario 1.

7.2 PREDICTED NITROGEN OXIDE CONCENTRATIONS – SCENARIO 2

Predicted Nitrogen Oxide Concentrations Compared to Critical Levels of Long-Term and Short-Term NO_x (as NO₂)

Table 7-3 presents a summary of the predicted nitrogen oxide concentrations using 2017 and 2018 met data (the year resulting in maximum long-term and short-term PC concentrations respectively) at the Humber Estuary ecological receptor locations.

Table 7-3. Summary of Cumulative Predicted NO_x Concentrations for Protection of Vegetation and Ecosystems – Scenario 2

Ecological Receptor		Predicted Annual Mean Concentration (µg/m ³)				Predicted 24-hour Mean Concentration (µg/m ³)			
		Process Contribution (PC) (µg/m ³)	PC as %age of AQO	Background (µg/m ³)	PEC (PC + Background) (µg/m ³)	Process Contribution (PC) (µg/m ³)	PC as %age of AQO	Background (µg/m ³)	PEC (PC + Background) (µg/m ³)
E1	Humber Estuary SPA, SAC, Ramsar, SSSI 1	0.07	0.22	14.25	14.32	2.08	2.08	2.77	16.82
E2	Humber Estuary SPA, SAC, Ramsar, SSSI 2	0.09	0.31	14.82	14.91	5.25	5.25	7.01	17.49
E3	Humber Estuary SPA, SAC, Ramsar, SSSI 3	0.17	0.58	14.82	14.99	5.20	5.20	6.93	17.49
E4	Humber Estuary SPA, SAC, Ramsar, SSSI 4	0.25	0.83	14.78	15.03	5.31	5.31	7.08	17.44
E5	Humber Estuary SPA, SAC, Ramsar, SSSI 5	0.23	0.77	16.60	16.83	3.13	3.13	4.18	19.59
AQO/Critical Level (CL)		30 ^(e)				75 ^(d)			

Note:

^(a) Inclusive of Background concentrations. The Background concentration was taken from <http://www.apis.ac.uk/>.

^(b) The Inclusive of Background concentration^s. The Background concentration was taken from <http://www.apis.ac.uk/>.

^(c) The AQO of 30 µg/m³ is the annual standard for the protection of vegetation and ecosystems; and

^(d) The AQO of 75 µg/m³ is the daily standard for the protection of vegetation and ecosystems.

The annual mean NO_x (as NO₂) PEC at the ecological receptor locations are below the annual mean critical level of 30 µg/m³ for the protection of vegetation and Ecosystems.

The NO_x daily (24 hour) predicted environmental concentration at all ecological receptor locations are well below the daily mean critical levels of 75 µg/m³ for the protection of vegetation and Ecosystems.

The significance of changes associated with the operations of the facility with respect to annual mean NO_x (as NO₂) exposure at the ecological receptors has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in **Table 7-4**.

Table 7-4. Long-Term (Annual Mean) Concentrations of NO₂ and Impact Description of Effects at Receptors – Scenario 2

Receptors		Predicted Annual Mean Concentration (µg/m ³) – 2018 Met Data, and NO ₂ Impact Description at Receptors						
ID	Name	Process Contribution (PC) (µg/m ³)	PC as %age of AQO	Traffic Background (µg/m ³)	PEC (PC + Background) (µg/m ³)	PEC as percentage of AQO	PEC as percentage of AQO	Impact Descriptor
E1	Humber Estuary SPA, SAC, Ramsar, SSSI 1	0.07	0.22	14.25	14.32	47.72	≤75% % of AQAL	Negligible
E2	Humber Estuary SPA, SAC, Ramsar, SSSI 2	0.09	0.31	14.82	14.91	49.71	≤75% % of AQAL	Negligible
E3	Humber Estuary SPA, SAC, Ramsar, SSSI 3	0.17	0.58	14.82	14.99	49.98	≤75% % of AQAL	Negligible
E4	Humber Estuary SPA, SAC, Ramsar, SSSI 4	0.25	0.83	14.78	15.03	50.10	≤75% % of AQAL	Negligible
E5	Humber Estuary SPA, SAC, Ramsar, SSSI 5	0.23	0.77	16.60	16.83	56.11	≤75% % of AQAL	Negligible

The percentage change in long-term process concentrations relative to the AQAL as a result of the proposed development at all ecological receptor locations, with respect to NO_x (as NO₂) exposure, are determined to be 0.80% or less. The significance is to be 'negligible' for all ecological receptor locations, based on the methodology outlined in Section 3.

As the percentage change in long-term process concentrations relative to the AQAL is below 1% of the relevant critical level for the protection of vegetation and Ecosystems, the long-term process contributions have been screened out against the relevant standard/critical level. The nitrogen deposition assessment has not been undertaken.

Furthermore, Guidance of “A guide to the assessment of air quality impacts on designated nature conservation sites, May 2020, states that:

“5.5.2.3 In March 2015. AQTAG (Air quality Technical Advisory Group) clarified to the planning inspectorate that ‘for installations other than intensive pig and poultry farms, AQTAG is confident that a process contribution (PC, as predicted by H1 or a detailed dispersion model) <1% of the relevant critical level or load (CL) can be considered inconsequential and does not need to be included in an in-combination assessment”.

Therefore, in-combination habitat assessment (cumulative habitat assessment including other proposed development) does not need to be undertaken.

In summary, the NO₂ impacts from the proposed development are insignificant on all ecological receptors for Scenario 2.

8.0 CUMULATIVE IMPACT ASSESSMENT RESULTS FOR THE PROTECTION HUMAN HEALTH

Cumulative impact assessment for the protection human health has been undertaken by assessing the adjacent industrial points sources, including Transwaste's biomass boilers and Energy Recovery Facility.

Following emission sources have been included in the cumulative assessment:

- (1) 41 Orlan Super 130 kW_{th} biomass boilers proposed by Eco-Powers and 41 boilers are in operations;
- (2) Three Kalvis 0.95 MW_{th} biomass boilers operated by Transwaste Ltd; and
- (3) Two emission flues at Energy Recovery Facility (ERF) operated by HRS Energy.

All predicted concentrations using 2017 and 2018 met data (the year resulting in maximum long-term and short-term PC concentrations from Eco-Power biomass boiler operations respectively) have been compared to the relevant environmental assessment criteria, as detailed in Sections 2 and 3.

8.1 NITROGEN DIOXIDE (NO₂) – CUMULATIVE ASSESSMENT

Long-Term (Annual Mean) NO₂ – Cumulative Assessment

Predicted long-term (annual mean) PCs and PECs of NO₂ concentrations were assessed against the relevant AQO using 2017 met data (the year resulting in maximum long-term PC concentration from Eco-Power biomass boiler operations). The results of the model predictions at each discrete receptor, inclusive of background, are summarised in **Table 8-1**.

The impact description of changes associated with the operations of the all emission sources (with 41 Orlan Super 130 kW_{th} Biomass Boilers) with respect to annual mean NO₂ exposure has been assessed with reference to the criteria in Section 3. The outcomes of the assessment are summarised in **Table 8-1**.

Table 8-1. Long-Term (Annual Mean) Concentrations of NO₂ and Impact Description of Effects at Receptors – Cumulative Assessment

Receptors		Predicted Annual Mean Concentration (µg/m ³) – 2017 Met Data, and NO ₂ Impact Description at Receptors									
		Process Contribution (PC) (µg/m ³)				Total PC as percentage of AQO (%)	Background from the Traffic assessment	Total PEC (PC + Background)	Total PEC as percentage of AQO	PEC as percentage of AQO	Impact Descriptor
ID	Name	Eco-Power Boilers	Three Kalvis Boilers	ERF	Total						
D1	100 Gibson Lane South	1.45	0.86	0.27	2.58	6.45	11.27	17.72	44.29%	≤ 75 of AQO	Slight
D2	88 Gibson Lane South	1.11	0.66	0.35	2.12	5.29	11.27	16.56	41.40%	≤ 75 of AQO	Negligible
D3	54 Gibson Lane	0.58	0.29	0.39	1.26	3.16	14.84	18.00	44.99%	≤ 75 of AQO	Negligible
D4	The Coach House, Melton Grange, Main Road	0.41	0.24	0.38	1.03	2.58	14.84	17.42	43.54%	≤ 75 of AQO	Negligible
D5	21 Brickyard Lane	0.42	0.27	0.38	1.07	2.68	14.84	17.52	43.79%	≤ 75 of AQO	Negligible
D6	25 the triangle, North Ferriby	0.37	0.27	0.4	1.04	2.61	12.09	14.70	36.74%	≤ 75 of AQO	Negligible
D7	Lowcroft Farm, Lowfield Lane	0.31	0.11	0.15	0.57	1.42	14.55	15.97	39.93%	≤ 75 of AQO	Negligible
D8	South Hunsley School, 41 East Dale Road	0.30	0.14	0.15	0.59	1.46	14.55	16.01	40.04%	≤ 75 of AQO	Negligible
D9	62 Common Lane	0.11	0.06	0.1	0.27	0.68	13.26	13.94	34.86%	≤ 75 of AQO	Negligible
D10	79 Plantation Drive	0.28	0.2	0.28	0.76	1.90	14.84	16.74	41.84%	≤ 75 of AQO	Negligible
D11	75 Southfield Drive	0.23	0.26	0.33	0.82	2.04	12.09	14.13	35.32%	≤ 75 of AQO	Negligible
D12	87 Riverview Avenue ^a	0.31	0.29	0.38	0.98	2.44	14.84	17.28	43.21%	≤ 75 of AQO	Negligible

Air Quality Assessment

Gibson Lane, Hull, HU14 3HH

D13	29 Marine Avenue	0.30	0.26	0.36	0.92	2.30	14.84	17.14	42.84%	≤ 75 of AQO	Negligible
D14	12 Plantation Drive	0.34	0.22	0.35	0.91	2.28	14.84	17.12	42.80%	≤ 75 of AQO	Negligible
D15	66 Plantation Drive	0.31	0.21	0.3	0.82	2.06	14.84	16.90	42.24%	≤ 75 of AQO	Negligible
D16	10 Ashdale Park	0.27	0.2	0.27	0.74	1.84	14.84	16.68	41.71%	≤ 75 of AQO	Negligible
D17	New Development NE Brickyard Lane 1	1.19	0.79	0.37	2.35	5.87	11.27	17.14	42.86%	≤ 75 of AQO	Negligible
D18	New Development NE Brickyard Lane 2	0.94	0.65	0.50	2.08	5.21	11.27	16.48	41.20%	≤ 75 of AQO	Negligible
AQO							40 µg/m³				

Note:

- (a) The background data for receptors D12 to D16 are assumed to be the same as receptor D10 for a worst-case assessment; and
- (b) The background data for receptors D17 to D18 are assumed to be the same as receptor D1 for a worst-case assessment.

The predicted cumulative long-term NO₂ PECs at selected receptor locations are below the relevant long-term AQS of 40 µg/m³ for the protection of human health.

The percentage changes in process contribution of NO₂ relative to the AQAL as a result of the emission emissions at all receptor locations, with respect to NO₂ exposure, are determined to be 6.45% or less. The impact is determined to be 'slight' at one receptor and to be 'negligible' at remaining receptors, based on the methodology outlined in Section 3. The effect of the proposed boiler operations on the local area is considered to be insignificant.

The predicted cumulative long-term NO₂ concentrations from the proposed development are considered acceptable for the protection of human health.

Short-Term (1-Hour Mean) NO₂ – Cumulative Assessment

The short-term cumulative NO₂ PEC concentrations have been calculated at each of the discrete receptors listed for the worst meteorological year of 2018 and these results are detailed in Table 8.2.

Table 8-2 Summary of the Predicted Short-Term NO₂ Concentrations at Discrete Receptors – Cumulative Assessment

Receptors		Predicted 1-hour Mean (99.79 th Percentile) Concentration (µg/m ³) – 2018 Met Data							
		Process Contribution (PC) (µg/m ³)				Total PC as percentage of AQO (%)	Background from the Traffic assessment	Total PEC (PC +Background)	Total PEC as percentage of AQO
ID	Name	Eco-Power Boilers	Three Kalvis Boilers	ERF	Total				
D1	100 Gibson Lane South	27.50	13.6	4.04	45.14	22.57	22.55	67.69	33.84
D2	88 Gibson Lane South	21.97	10.9	4.54	37.41	18.70	22.55	59.96	29.98
D3	54 Gibson Lane	17.55	4.06	4.13	25.74	12.87	29.67	55.41	27.71
D4	The Coach House, Melton Grange, Main Road	11.56	4.31	3.82	19.69	9.84	29.67	49.36	24.68
D5	21 Brickyard Lane	13.27	4	3.86	21.13	10.56	29.67	50.80	25.40
D6	25 the triangle, North Ferriby	8.02	3.42	2.82	14.26	7.13	24.18	38.44	19.22
D7	Lowcroft Farm, Lowfield Lane	18.16	2.87	4.16	25.19	12.60	29.10	54.29	27.15
D8	South Hunsley School, 41 East Dale Road	12.05	4.17	3.47	19.69	9.85	29.10	48.79	24.40
D9	62 Common Lane	8.54	3.96	2.5	15.00	7.50	26.52	41.52	20.76
D10	79 Plantation Drive	5.95	3.85	2.74	12.54	6.27	29.67	42.21	21.11
D11	75 Southfield Drive	6.60	3.43	2.63	12.66	6.33	24.18	36.83	18.42
D12	87 Riverview Avenue ^a	7.96	3.28	2.93	14.17	7.09	29.67	43.85	21.92
D13	29 Marine Avenue	7.43	2.99	2.9	13.32	6.66	29.67	42.99	21.50
D14	12 Plantation Drive	8.95	3.25	2.82	15.02	7.51	29.67	44.69	22.35
D15	66 Plantation Drive	8.87	3.46	2.72	15.05	7.52	29.67	44.72	22.36
D16	10 Ashdale Park	7.96	3.95	2.79	14.70	7.35	29.67	44.38	22.19
D17	New Development NE Brickyard Lane 1	18.55	0.32	0.17	19.04	9.52	22.55	41.59	20.80

Air Quality Assessment

Gibson Lane, Hull, HU14 3HH

D18	New Development NE Brickyard Lane 2	17.32	0.24	0.20	17.77	8.88	22.55	40.31	20.16
D19	Footpath SW	37.65	0.97	0.04	38.65	19.33	22.55	61.20	30.60
D20	Footpath W	44.36	0.69	0.02	45.07	22.54	22.55	67.62	33.81
D21	Footpath NW	42.75	0.56	0.03	43.34	21.67	22.55	65.88	32.94
D22	Footpath North 1	41.70	0.89	0.02	42.61	21.30	22.55	65.16	32.58
D23	Footpath North 2	91.82	1.07	0.02	92.91	46.45	22.55	115.46	57.73
D24	Footpath NE	46.09	0.97	0.03	47.09	23.55	22.55	69.64	34.82
AQO		200 µg/m³							

Note:

- (a) The background data for receptors D12 to D16 are assumed to be the same as receptor D10 for a worst-case assessment; and
- (b) The background data for receptors D17 to D24 are assumed to be the same as receptor D1 for a worst-case assessment.

As shown in Table 8.2 there are no exceedances of the short-term NO₂ AQO at any of the identified sensitive receptors. The predicted cumulative impacts are significantly below the AQO of 200 µg/m³.

Therefore, the predicted cumulative short-term NO₂ concentrations from the cumulative emission sources are considered acceptable for the protection of human health.

The contour plots of the predicted cumulative long-term and short-term ground level PCs of NO₂ for all receptors, including discrete and grid receptors are presented in **Figure 8-1.** and **Error! Reference source not found..** The contour plots show that the predicted maximum concentrations occur adjacent to the emission source, with a predicted decrease in concentration with the increased distance from the stack.

The contour plots of the predicted long-term ground level PCs of NO_x and 24-hr NO_x for all receptors, including discrete and grid receptors for the cumulative assessment are presented in **Figure 8-3** and

Figure 8-4.

Figure 8-1. Predicted Long-Term NO₂ Concentrations (PC) from the Cumulative Assessment – Including Emissions from Eco-Power Boilers, Transwaste Kalvis Boilers and ERF (2017 Met Data)



Figure 8-2. Predicted Short-Term NO₂ Concentrations (PC, 1-Hour Mean, 99.79th Percentile) from the Cumulative Assessment – Including Emissions from Eco-Power Boilers, Transwaste Kalvis Boilers and ERF (2018 Met Data)

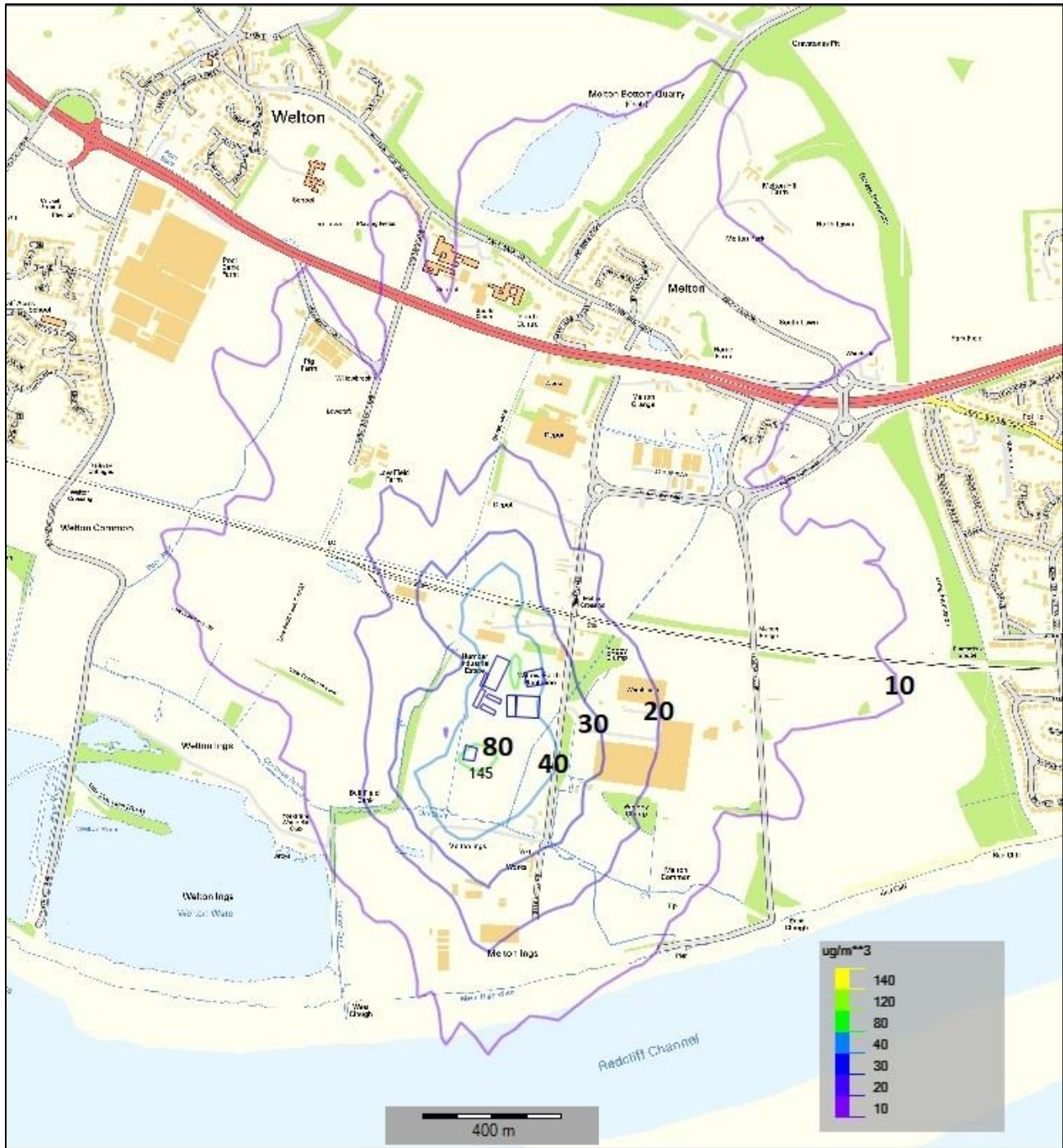


Figure 8-3. Predicted Ground level Long-Term NO_x Concentrations (PC) for the Cumulative Assessment – Including Emissions from Eco-Power Boilers, Transwaste Kalvis Boilers and ERF (2017 Met Data)

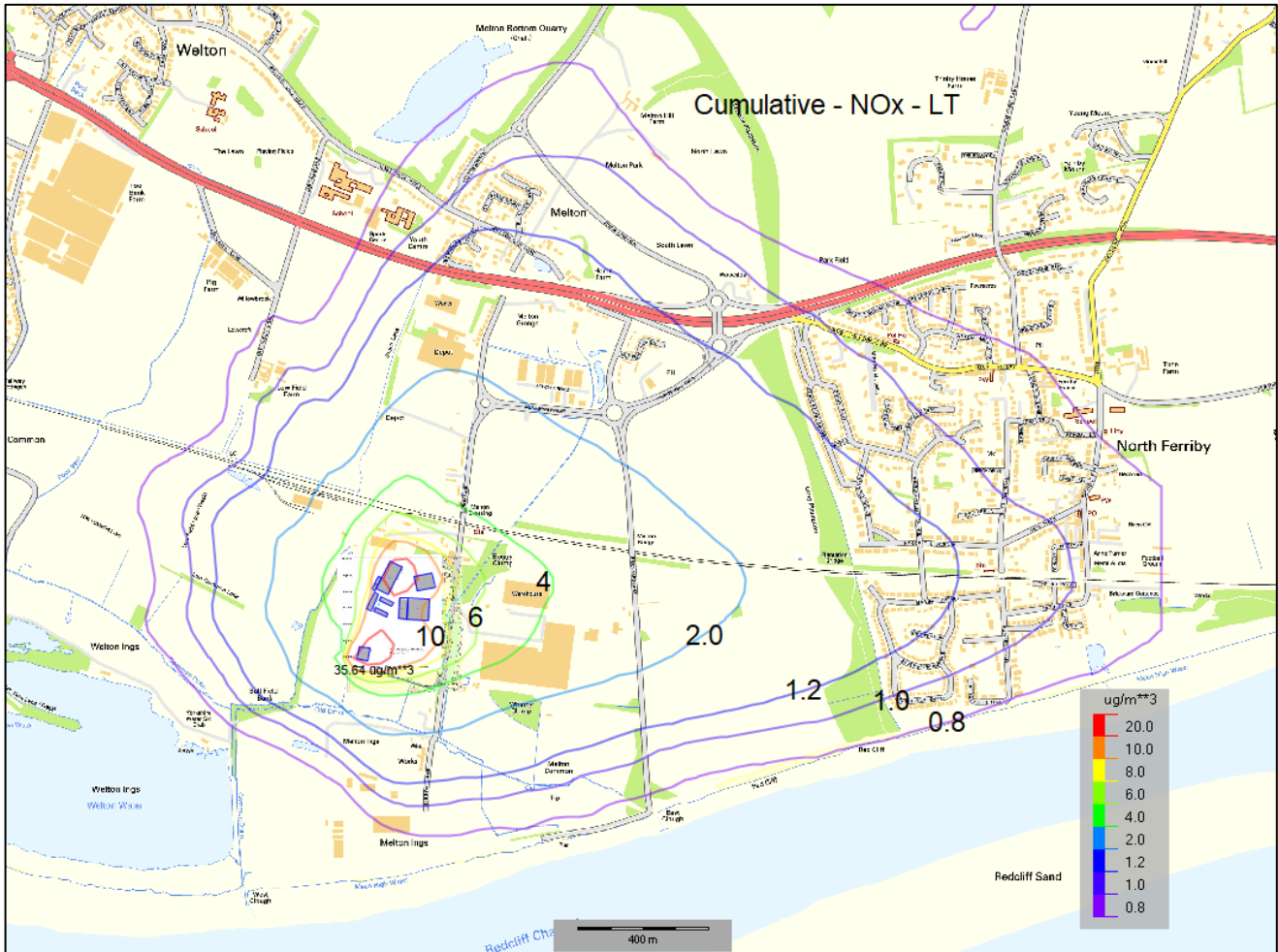
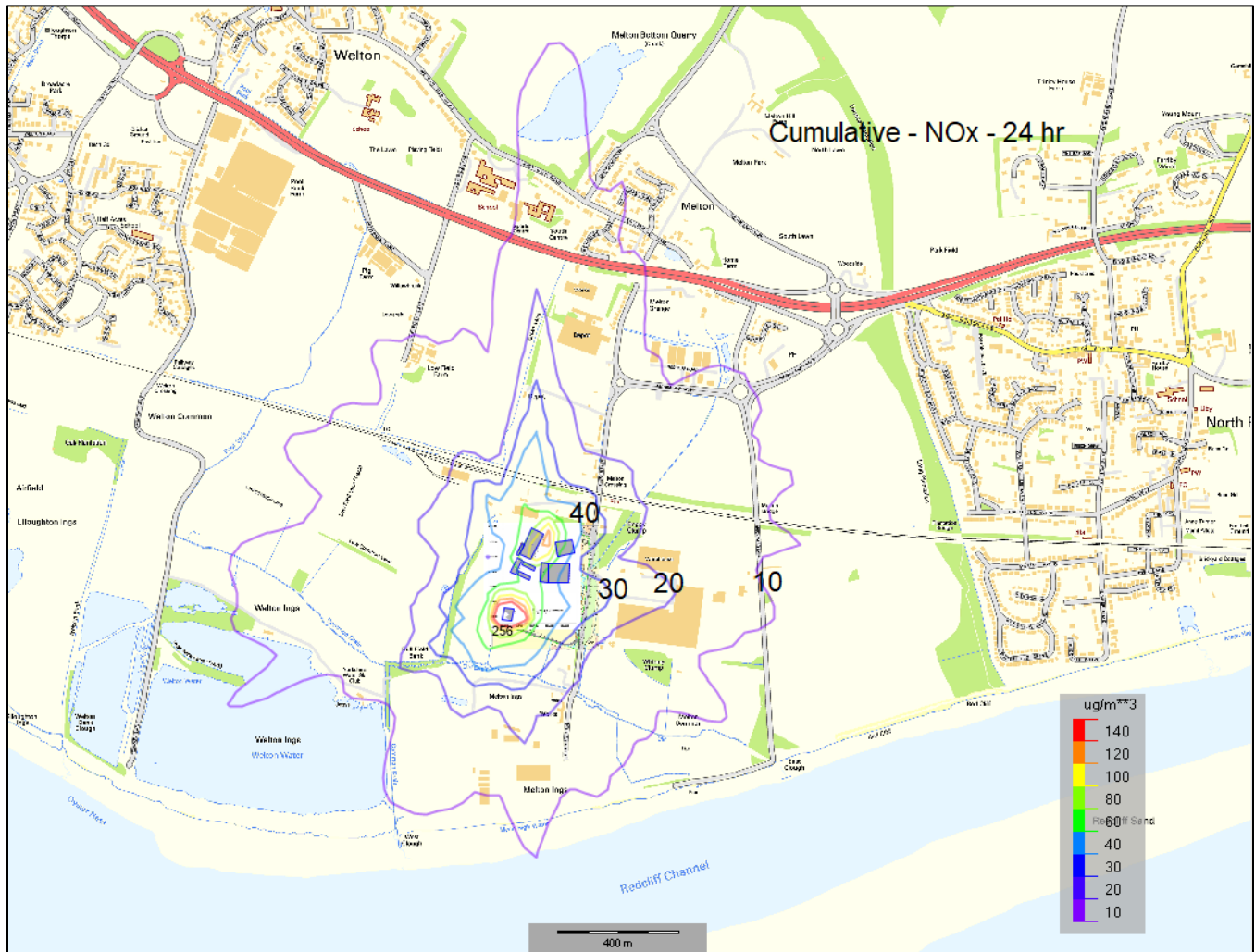


Figure 8-4. Predicted Ground level Short-Term (24 hr) NO_x Concentrations (PC) for the Cumulative Assessment – Including Emissions from Eco-Power Boilers, Transwaste Kalvis Boilers and ERF (2018 Met Data)



8.2 PARTICULATE MATTER (PM₁₀) – CUMULATIVE ASSESSMENT

Long-Term (Annual Mean) PM₁₀– Cumulative Assessment

The predicted long-term cumulative PCs and PECs from 2017 meteorological data, the year resulting in maximum long-term NO₂ PC concentration from Eco-Power biomass boiler operations, at receptor locations are compared against the relevant AQS, in Table 8.3.

Table 8-3. The Long-Term (Annual Mean) Concentrations of PM₁₀ and Impact Description of Effects at Receptors – Cumulative Assessment

Receptors		Predicted Annual Mean Concentration (µg/m ³) – 2017 Met Data, and PM ₁₀ Impact Description at Receptors									
		Process Contribution (PC) (µg/m ³)				Total PC as percentage of AQO (%)	Background from the Traffic assessment	Total PEC (PC+Background)	Total PEC as percentage of AQO	PEC as percentage of AQO	Impact Descriptor
ID	Name	Eco-Power Boilers + Drying Floor Stacks	Three Kalvis Boilers	ERF	Total						
D1	100 Gibson Lane South	0.89	0.25	0.03	1.17	2.92	13.78	16.69	41.74%	≤ 75 of AQO	Negligible
D2	88 Gibson Lane South	0.70	0.19	0.04	0.93	2.33	13.78	16.10	40.25%	≤ 75 of AQO	Negligible
D3	54 Gibson Lane	0.33	0.08	0.04	0.45	1.12	15.08	16.20	40.51%	≤ 75 of AQO	Negligible
D4	The Coach House, Melton Grange, Main Road	0.26	0.07	0.04	0.37	0.92	15.08	16.00	40.01%	≤ 75 of AQO	Negligible
D5	21 Brickyard Lane	0.25	0.08	0.04	0.37	0.93	15.08	16.01	40.03%	≤ 75 of AQO	Negligible
D6	25 the triangle, North Ferriby	0.22	0.08	0.04	0.34	0.86	13.52	14.38	35.94%	≤ 75 of AQO	Negligible
D7	Lowcroft Farm, Lowfield Lane	0.17	0.03	0.02	0.22	0.56	15.73	16.29	40.72%	≤ 75 of AQO	Negligible
D8	South Hunsley School, 41 East Dale Road	0.16	0.04	0.02	0.22	0.56	15.73	16.29	40.72%	≤ 75 of AQO	Negligible
D9	62 Common Lane	0.06	0.02	0.01	0.09	0.23	14.72	14.95	37.37%	≤ 75 of AQO	Negligible
D10	79 Plantation Drive	0.16	0.06	0.03	0.25	0.64	15.08	15.72	39.30%	≤ 75 of AQO	Negligible
D11	75 Southfield Drive	0.13	0.07	0.04	0.24	0.61	13.52	14.13	35.32%	≤ 75 of AQO	Negligible

Air Quality Assessment

Gibson Lane, Hull, HU14 3HH

D12	87 Riverview Avenue ^a	0.18	0.08	0.04	0.30	0.76	15.08	15.84	39.61%	≤ 75 of AQO	Negligible	
D13	29 Marine Avenue	0.18	0.07	0.04	0.29	0.72	15.08	15.80	39.51%	≤ 75 of AQO	Negligible	
D14	12 Plantation Drive	0.20	0.06	0.04	0.30	0.76	15.08	15.84	39.61%	≤ 75 of AQO	Negligible	
D15	66 Plantation Drive	0.19	0.06	0.03	0.28	0.69	15.08	15.77	39.43%	≤ 75 of AQO	Negligible	
D16	10 Ashdale Park	0.16	0.06	0.03	0.25	0.62	15.08	15.70	39.25%	≤ 75 of AQO	Negligible	
D17	New Development NE Brickyard Lane 1	0.74	0.16	0.16	1.06	2.64	13.78	16.41	41.04%	≤ 75 of AQO	Negligible	
D18	New Development NE Brickyard Lane 2	0.58	0.13	0.13	0.84	2.11	13.78	15.88	39.70%	≤ 75 of AQO	Negligible	
AQO								40 µg/m³				

Note:

- (a) The background data for receptors D12 to D16 are assumed to be the same as receptor D10 for a worst-case assessment; and
- (b) The background data for receptors D17 to D18 are assumed to be the same as receptor D1 for a worst-case assessment.

As shown in Table 8.3, there are no exceedances of the long-term NO₂ AQO at any of the identified sensitive receptors. The predicted cumulative impacts are significantly below the AQO of 40 µg/m³.

The percentage change in process concentrations relative to the AQAL as a result of the cumulative emission sources at all receptor locations, with respect to PM₁₀ exposure, are determined to be 2.09% or less. The significance is determined to be 'negligible', based on the methodology outlined in Section 3.

Therefore, the predicted cumulative long-term PM₁₀ concentrations from the Site are considered acceptable for the protection of human health.

Short-Term (24-Hour Mean) PM₁₀ – Cumulative Assessment

The predicted short-term PCs and PECs from 2018 meteorological data, the year resulting in maximum short-term NO₂ PC concentration from Eco-Power biomass boiler operations, at receptor locations are compared against the relevant AQS, in Table 8.4.

Table 8-4 The Short-Term (24-Hour Mean) Concentrations of PM₁₀ at Key Receptors – Cumulative Assessment

Receptors		Predicted 24-Hour Mean (90.41 th Percentile) Concentration (µg/m ³) – 2018 Met Data at Receptors							
		Process Contribution (PC) (µg/m ³)				Total PC as percentage of AQO (%)	Background from the Traffic assessment	Total PEC (PC + Background)	Total PEC as percentage of AQO
ID	Name	Eco-Power Boilers + Drying Floor Stacks	Three Kalvis Boilers	ERF	Total				
D1	100 Gibson Lane South	2.64	0.69	0.09	3.42	8.54	13.78	22.31	55.78%
D2	88 Gibson Lane South	2.04	0.58	0.11	2.73	6.82	13.78	20.60	51.50%
D3	54 Gibson Lane	0.97	0.22	0.11	1.30	3.26	15.08	18.34	45.85%
D4	The Coach House, Melton Grange, Main Road	0.75	0.22	0.12	1.09	2.73	15.08	17.82	44.54%
D5	21 Brickyard Lane	0.69	0.19	0.13	1.01	2.52	15.08	17.61	44.01%
D6	25 the triangle, North Ferriby	0.53	0.15	0.1	0.78	1.94	13.52	15.46	38.65%
D7	Lowcroft Farm, Lowfield Lane	0.60	0.1	0.06	0.76	1.91	15.73	17.64	44.10%
D8	South Hunsley School, 41 East Dale Road	0.49	0.14	0.05	0.68	1.71	15.73	17.44	43.59%
D9	62 Common Lane	0.28	0.07	0.05	0.40	0.99	14.72	15.71	39.27%
D10	79 Plantation Drive	0.42	0.15	0.08	0.65	1.63	15.08	16.71	41.78%
D11	75 Southfield Drive	0.35	0.17	0.08	0.60	1.51	13.52	15.03	37.57%
D12	87 Riverview Avenue ^a	0.50	0.17	0.1	0.77	1.93	15.08	17.01	42.53%
D13	29 Marine Avenue	0.46	0.15	0.09	0.70	1.76	15.08	16.84	42.11%
D14	12 Plantation Drive	0.54	0.14	0.09	0.77	1.93	15.08	17.02	42.54%

Air Quality Assessment

Gibson Lane, Hull, HU14 3HH

D15	66 Plantation Drive	0.49	0.15	0.09	0.73	1.83	15.08	16.92	42.29%
D16	10 Ashdale Park	0.38	0.14	0.08	0.60	1.51	15.08	16.59	41.47%
D17	New Development NE Brickyard Lane 1	1.67	0.55	0.12	2.35	5.87	13.78	19.65	49.12%
D18	New Development NE Brickyard Lane 2	1.32	0.42	0.16	1.90	4.75	13.78	18.53	46.32%
AQO		50 µg/m³							

Note:

- (a) The background data for receptors D12 to D16 are assumed to be the same as receptor D10 for a worst-case assessment; and
- (b) The background data for receptors D17 to D18 are assumed to be the same as receptor D1 for a worst-case assessment.

As shown in Table 8.4, there are no exceedances of the short-term NO₂ AQO at any of the identified sensitive receptors. The predicted cumulative impacts are significantly below the AQO of 50 µg/m³.

Therefore, the predicted cumulative short-term PM₁₀ concentrations from the all source emissions are considered acceptable for the protection of human health.

The contour plots of the predicted cumulative long-term ground level PCs of PM₁₀ for all receptors, including discrete and grid receptors are presented in **Figure 8-5**. The contour plots show that the predicted maximum concentrations occur adjacent to the emission source, with a predicted decrease in concentration with the increased distance from the stack.

Figure 8-5. Predicted Long-Term PM₁₀ Concentrations (PC) from the Cumulative Assessment – Including Emissions from Eco-Power Boilers, Transwaste Kalvis Boilers and ERF (2017 Met Data)



The contour plots of the predicted cumulative short-term ground level PCs of PM₁₀ for all receptors, including discrete and grid receptors are not presented as the cumulative PCs are well below 10% of relevant AQO.

8.3 PARTICULATE MATTER (PM_{2.5}) – CUMULATIVE ASSESSMENT

A worst-case scenario assumption of 100% of PM₁₀ to be PM_{2.5} has been made in the cumulative assessment. The predicted long-term PCs of PM_{2.5} and the significance of changes associated with the operations of the all sources considered with respect to annual mean PM_{2.5} exposure has been presented and assessed in **Table 8-5**.

Table 8-5. The Long-Term (Annual Mean) Concentrations of PM_{2.5} and Impact Description of Effects at Receptors – Cumulative Assessment

Receptors		Predicted Annual Mean Concentration (µg/m ³) – 2017 Met Data, and PM _{12.5} Impact Description at Receptors									
		Process Contribution (PC) (µg/m ³)				Total PC as percentage of AQO (%)	Background from the Traffic assessment	Total PEC (PC +Background)	Total PEC as percentage of AQO	PEC as percentage of AQO	Impact Descriptor
ID	Name	Eco-Power Boilers + Drying Floor Stacks	Three Kalvis Boilers	ERF	Total						
D1	100 Gibson Lane South	0.89	0.25	0.03	1.17	4.67	8.85	13.52	54.07%	≤ 75 of AQO	Negligible
D2	88 Gibson Lane South	0.70	0.19	0.04	0.93	3.72	8.85	12.57	50.28%	≤ 75 of AQO	Negligible
D3	54 Gibson Lane	0.33	0.08	0.04	0.45	1.79	9.63	11.42	45.68%	≤ 75 of AQO	Negligible
D4	The Coach House, Melton Grange, Main Road	0.26	0.07	0.04	0.37	1.47	9.63	11.10	44.39%	≤ 75 of AQO	Negligible
D5	21 Brickyard Lane	0.25	0.08	0.04	0.37	1.49	9.63	11.11	44.45%	≤ 75 of AQO	Negligible
D6	25 the triangle, North Ferriby	0.22	0.08	0.04	0.34	1.38	8.91	10.29	41.15%	≤ 75 of AQO	Negligible
D7	Lowcroft Farm, Lowfield Lane	0.17	0.03	0.02	0.22	0.89	9.91	10.81	43.23%	≤ 75 of AQO	Negligible
D8	South Hunsley School, 41 East Dale Road	0.16	0.04	0.02	0.22	0.89	9.91	10.81	43.22%	≤ 75 of AQO	Negligible
D9	62 Common Lane	0.06	0.02	0.01	0.09	0.37	9.49	9.85	39.42%	≤ 75 of AQO	Negligible
D10	79 Plantation Drive	0.16	0.06	0.03	0.25	1.02	9.63	10.64	42.58%	≤ 75 of AQO	Negligible
D11	75 Southfield Drive	0.13	0.07	0.04	0.24	0.98	8.91	9.89	39.54%	≤ 75 of AQO	Negligible
D12	87 Riverview Avenue ^a	0.18	0.08	0.04	0.30	1.22	9.63	10.84	43.37%	≤ 75 of AQO	Negligible
D13	29 Marine Avenue	0.18	0.07	0.04	0.29	1.15	9.63	10.78	43.12%	≤ 75 of AQO	Negligible
D14	12 Plantation Drive	0.20	0.06	0.04	0.30	1.22	9.63	10.84	43.38%	≤ 75 of AQO	Negligible
D15	66 Plantation Drive	0.19	0.06	0.03	0.28	1.10	9.63	10.73	42.91%	≤ 75 of AQO	Negligible
D16	10 Ashdale Park	0.16	0.06	0.03	0.25	0.99	9.63	10.61	42.45%	≤ 75 of AQO	Negligible

Air Quality Assessment

Gibson Lane, Hull, HU14 3HH

D17	New Development NE Brickyard Lane 1	0.74	0.16	0.16	1.06	4.22	8.85	13.07	52.28%	≤ 75 of AQO	Negligible
D18	New Development NE Brickyard Lane 2	0.58	0.13	0.13	0.84	3.37	8.85	12.22	48.87%	≤ 75 of AQO	Negligible
AQO						25 µg/m³					

Note:

- (a) The background data for receptors D12 to D16 are assumed to be the same as receptor D10 for a worst-case assessment; and
- (b) The background data for receptors D17 to D18 are assumed to be the same as receptor D1 for a worst-case assessment.

As shown in Table 8.5, there are no exceedances of the short-term NO₂ AQO at any of the identified sensitive receptors. The predicted impacts are significantly below the AQO of 25 µg/m³.

The percentage change in process concentrations relative to the AQAL as a result of the boiler operations at all receptor locations, with respect to PM_{2.5} exposure, are determined to be 3.35% or less. The significance is determined to be 'negligible', based on the methodology outlined in Section 3.

Therefore, the predicted cumulative long-term PM_{2.5} concentrations from the all emission sources considered are considered acceptable for the protection of human health.

8.4 CARBON MONOXIDE (CO) – CUMULATIVE ASSESSMENT

Predicted ground level short-term (8-hour running mean) CO concentrations were assessed against the relevant AQO using 2018 met data (the year resulting in maximum short-term PC concentration). The results of the model predictions at each discrete receptor, inclusive of background, are summarised in **Table 8-6**.

Table 8-6. Summary of Predicted CO Concentrations – Cumulative Assessment

Receptors		Predicted Maximum 8-hour Running Mean Concentration (µg/m ³)						
		Process Contrib'tn (PC)				PC as %age of AQO	PEC	PEC as %age of AQO
ID	Name	Eco-Power Boilers	Three Kalvis Boilers	ERF	Total			
D1	100 Gibson Lane South	489.77	78.61	39.52	607.90	6.08	741.90	7.42
D2	88 Gibson Lane South	368.09	50.39	46.68	465.16	4.65	599.16	5.99
D3	54 Gibson Lane	275.92	23.75	50.75	350.42	3.50	484.42	4.84
D4	The Coach House, Melton Grange, Main Road	181.14	23.04	39.68	243.86	2.44	377.86	3.78
D5	21 Brickyard Lane	123.89	18.62	47.84	190.35	1.90	324.35	3.24
D6	25 the triangle, North Ferriby	143.87	23.98	28.97	196.82	1.97	330.82	3.31
D7	Lowcroft Farm, Lowfield Lane	197.72	14.02	61.03	272.77	2.73	406.77	4.07
D8	South Hunsley School, 41 East Dale Road	164.31	25	35.82	225.13	2.25	359.13	3.59
D9	62 Common Lane	99.16	21.77	47.38	168.31	1.68	302.31	3.02
D10	79 Plantation Drive	72.84	20.48	28.74	122.06	1.22	256.06	2.56
D11	75 Southfield Drive	73.64	18.95	29.56	122.15	1.22	256.15	2.56
D12	87 Riverview Avenue	101.87	16.55	30.29	148.71	1.49	282.71	2.83
D13	29 Marine Avenue	111.60	14.69	24.36	150.65	1.51	284.65	2.85
D14	12 Plantation Drive	135.14	13.6	28.8	177.54	1.78	311.54	3.12
D15	66 Plantation Drive	107.83	17.19	28.4	153.42	1.53	287.42	2.87

D16	10 Ashdale Park	123.06	12.26	23.48	158.80	1.59	292.80	2.93
D17	New Development NE Brickyard Lane 1	258.97	61.70	42.00	362.67	3.63	496.67	4.97
D18	New Development NE Brickyard Lane 2	302.98	42.01	52.43	397.43	3.97	531.43	5.31
AQOs	10000							

Note:

^(a) Inclusive of Background concentration of 134µg/m³

The maximum predicted cumulative 8-hour running mean CO process contributions (PC) at receptors is 607.90µg/m³ when using 2018 met data. The predicted cumulative 8-hour running mean PCs of CO at the modelled discrete receptors are well below 6.08% of the short-term AQO, which are considered insignificant.

The maximum cumulative PEC of 8-hour running mean CO emissions is 741.90 µg /m³, which does not exceed the relevant short-term AQS of 10000 µg/m³. Therefore, the cumulative short-term PECs of CO at all receptors are below the relevant short-term AQS of 10000 µg/m³ for the protection of human health.

8.5 SHORT-TERM NO₂ – CUMULATIVE ASSESSMENT INCLUDING LEVEL CROSSING TRAFFIC

Investigations of the potential increase of the short-term impact on receptors from level crossing related waiting traffic has been undertaken.

Mr Philip Hill, Senior Environmental Control Officer of Yorkshire Council has reviewed the first issue of this air quality assessment report. Mr Hill has contacted to WYG with comments of additional studies of the potential increased short-term impact from the waiting traffic at the level crossing at Gibson Lane on the residential receptors.

Additional air quality modelling has been used to determine the pollutant levels from the waiting traffic at the level crossing.

The waiting traffic emissions have been modelled by assuming a worst-case total of 22 HGVs being idle on both side of the railway line on Gibson Lane.

The idle traffic NO_x emissions have been based on following data:

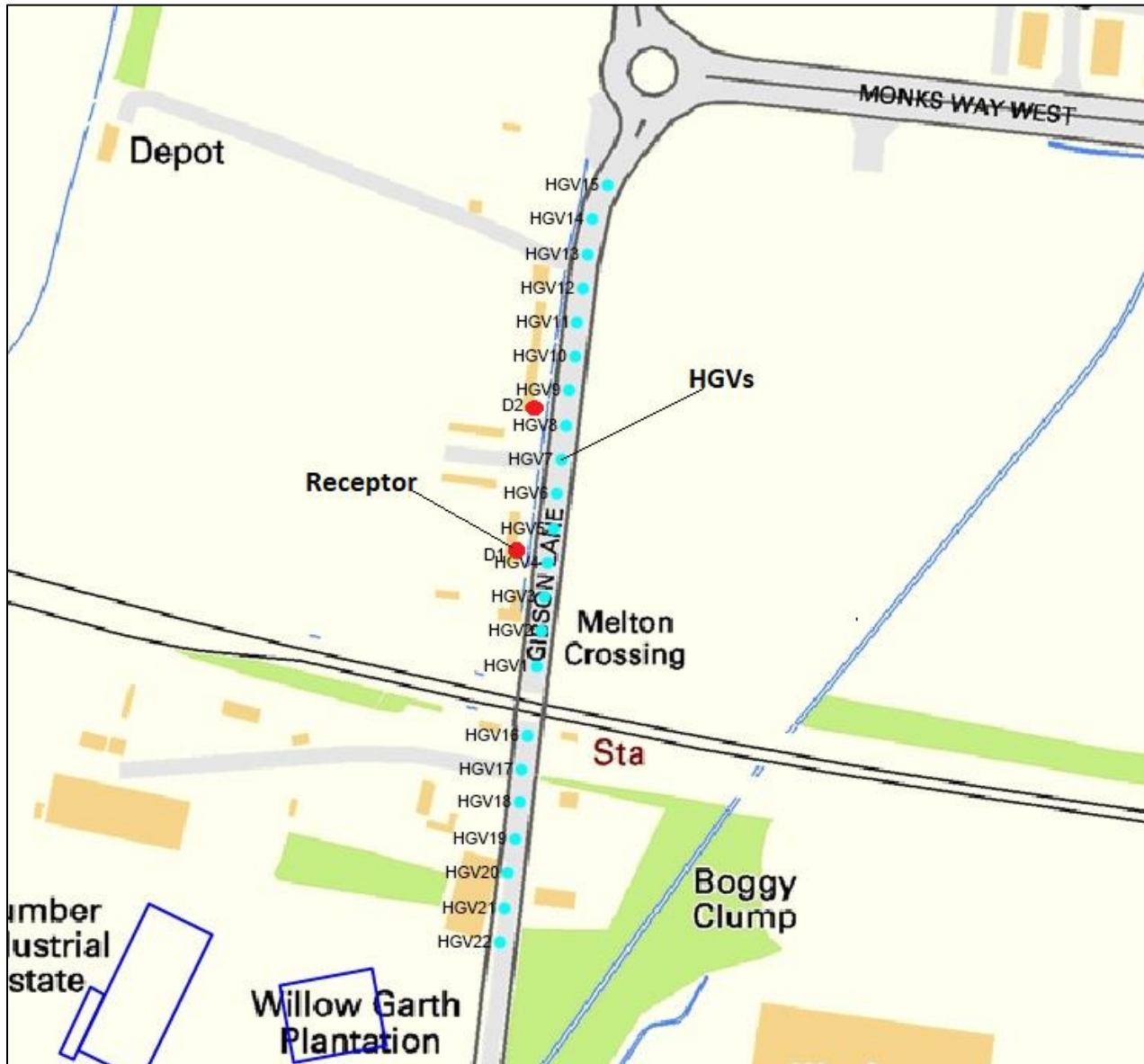
- (1) Number of HGV's: 22;
- (2) Length for HGV's: 17m;
- (3) Idle diesel car NO_x emission rate: 4.5 g/hr ^a;
- (4) A diesel car fuel consumption: 0.65 litter/hr;
- (5) Idle diesel HGV NO_x emission rate: 13.86 g/hr;

Note:

- (a) Source: "Road tunnels: vehicle emissions and air demand for ventilation", Technical committee D.5 Road Tunnels, 2019R02EN.

The HGV emission source locations and the receptor locations are presented in **Figure 8-6**. below:

Figure 8-6. HGV Emission Source Locations



Short-Term (1-Hour Mean) NO₂ – Cumulative Assessment including the Waiting Traffic

The predicted short-term NO₂ PC from the waiting traffic are 17.09 µg/m³ and 22.34 µg/m³ at 100 Gibson Lone South (R1) and at 88 Gibson Lane South (R2) respectively.

The total of the predicted cumulative short-term NO₂ PEC, including (1) the waiting traffic (2) Eco-Power boiler, (3) three Kalvis boilers, (4) Two emission flues at the ERF, and (5) the background (including normal traffic emissions), at 100 Gibson Lone South (R1) and at 88 Gibson Lane South (R2) is presented in **Table 8-7**.

Table 8-7. Summary of the Predicted Short-Term NO₂ Concentrations at Discrete Receptors including the waiting Traffic

Receptors		Predicted Maximum 8-hour Running Mean Concentration (µg/m ³)								
		Process Contrib'tn (PC)					PC as %age of AQO	Background from the Traffic assessment	PEC ^(a) (PC +Background)	PEC as percentage of AQO
ID	Name	Waiting Traffic	Eco-Power Boilers	Three Kalvis Boilers	ERF	Total				
D1	100 Gibson Lane South	17.09	19.70	13.60	4.04	54.43	27.22	22.55	76.98	38.49
D2	88 Gibson Lane South	22.34	16.65	10.90	4.54	54.43	27.22	22.55	76.98	38.49
AQOs		200 µg/m ³								

Note:

(a) Inclusive of Background concentrations from the traffic assessment.

As shown in Table 8.7, there are no exceedances of the short-term NO₂ AQO at 100 Gibson Lane South (R1) and at 88 Gibson Lane South (R2). The predicted cumulative impacts including the waiting traffic contributions are significantly below the AQO of 200 µg/m³.

9.0 ODOUR ASSESSMENT FOR DRYING FLOOR AND BOILER OPERATINON

9.1 PROCESS DESCRIPTIONS

The Perry Belt Drier (drying floor) is ideally suited to drying almost any non-flowing product or more granular products that require a lower throughput capacity. Popular applications have included waste materials, such as woodchip.

Air is drawn down through the product bed/waste materials which keeps the product tight to the belt, improving drying efficiency & reducing product loss through fans via product lift.

The proposed dryer has a throughput capacity of 14.8 tonnes per hour on SRF 100kg/m³ (dry output 13,300 kg per hour). The overall drying section length is 33 m.

There are 6 heat exchanger units and each unit has a heated air volume of approximately 50,000 m³/hr. It is proposed to install 13 emission stacks to disperse the exhausted air volumes. Definition of Odour Impact and Effect

Following major regulations/guidance/guidelines have been used in the assessment:

- Guidance on the assessment of odour for planning, IAQM, July 2018; and
- H4 Odour Management, How to comply with your environmental permit, March 2011.

IEMA Guidelines for Environmental Impact Assessment (2004) recommend a clear progression from the characterisation of “impact” to the assessment of the significance of the “effect” taking into account the evaluation of the sensitivity and value of the receptors. The guidelines emphasise the need to clearly define at the outset how the two terms will be used and then to apply them in a consistent fashion. In this IAQM guidance, the following definitions are used:

- **Impacts** – these are changes to the environment attributable to the development proposal.
- **Effects** – these are the results of the changes on specific receptors.
- **Receptors** - are the users of the adjacent land, which may vary in their sensitivity to odour.

An increase in odour levels (the impact) would therefore cause a particular effect (e.g. loss of amenity) if the adjacent land use was residential, and perhaps a lesser effect if the adjacent land use was an industrial facility.

9.2 ODOUR BENCHMARKS

Environment Agency Guidance H4 Odour Management (March 2011) and the latest Institute of Air Quality Management (IAQM) Guidance on the Assessment of Odour for Planning (July 2018) provides a methodology for assessing the impacts of odour based on the combinations of field odour survey observations and odour dispersion modelling.

The modelling method (if used) calculates the 98th percentile of hourly average odour concentrations ($C_{98, 1\text{-hour}}$) over a year, (i.e. the levels exceeded for 2% of the time) with the results being expressed as European Odour Unit contours on a map. The exposure contours can then be used to check unacceptable levels of odour pollution against exposure benchmarks at sensitive receptor locations.

The H4 benchmarks are based on the 98th percentile of hourly averages and they are presented in Table 9.1.

Table 9-1 H4 Benchmark Odour Criteria

Criterion C_{98} ouE/m^3	Offensiveness	Odour Emission Sources
1.5	Most offensive odours	Processes involving decaying animal or fish remains Processes involving septic effluent or sludge Biological landfill odours
3.0	Moderately offensive odours	Intensive livestock rearing Fat frying (food processing) Sugar beet processing Well aerated green waste composting
6.0	Less offensive odours	Brewery Confectionery Coffee

The latest IAQM guidance states that the predictive, quantitative approach involves obtaining estimates of the odour source emission rate, use of the emissions in a dispersion model to predict 98th percentile concentration at sensitive receptors and comparison of these with criteria that have evolved from research and survey work. At the present time, this remains an accepted technique and the IAQM supports this.

IAQM confirm that in the absence of comprehensive dose-response information the assessor should allow the derivation of exact C_{98} concentration metrics for different types of odour, IAQM is *'of the opinion that the practitioner should observe, from the various scientific studies, case law and practical examples of the investigation of odour annoyance cases, that in any specific case, an appropriate criterion could lie somewhere in the range of 1 to 10 ouE/m^3 as a 98th percentile of hourly mean odour concentrations.*

Taking into account the available scientific evidence and the collective experience of IAQM members involved in drafting this guidance, the odour concentration change descriptors together with impact descriptors in Table 9.2 are proposed by IAQM for an odour at the offensive end of the spectrum. These adopt the C98 as the appropriate frequency metric, encompasses the 1 to 10 ouE/m³ concentration range referred to above and also considers also the potential sensitivity of different receptors. It is also consistent in format and concept with other guidance in the air quality field.

For odours that are less unpleasant, the level of odour exposure required to elicit the same effect may be somewhat higher, requiring professional judgement to be applied. For example, odours from sewage treatment works plant operating normally, i.e. non-septic conditions, would not be expected to be at the ‘most offensive’ end of the spectrum (Table 9.1) and can be considered on par with ‘moderately offensive’ odours such as intensive livestock rearing. Table 9.3 below shows the impact descriptors proposed for a ‘moderately offensive’ odour.’

Table 9-2 Proposed odour effect descriptors for impacts predicted by modelling - “Most Offensive ”odours

Odour Exposure Level C ₉₈ , ou _E /m ³	Receptor Sensitivity		
	Low	Medium	High
≥10	Moderate	Substantial	Substantial
5-<10	Moderate	Moderate	Substantial
3-<5	Slight	Moderate	Moderate
1.5-<3	Negligible	Slight	Moderate
0.5-<1.5	Negligible	Negligible	Slight
<0.5	Negligible	Negligible	Negligible

It should be noted that the Table applies equally to cases where there are increases and decreases in odour exposure as a result of this development, in which case the appropriate terms “adverse” or “beneficial ”should be added to the descriptors.

Table 9-3 Proposed odour effect descriptors for impacts predicted by modelling - “Moderately Offensive” odours

Odour Exposure Level $C_{98}, \text{OU}_E/\text{m}^3$	Receptor Sensitivity		
	Low	Medium	High
≥ 10	Moderate	Substantial	Substantial
5-<10	Slight	Moderate	Moderate
3-<5	Negligible	Slight	Moderate
1.5-<3	Negligible	Negligible	Slight
0.5-<1.5	Negligible	Negligible	Negligible
<0.5	Negligible	Negligible	Negligible

It should be noted that the Table applies equally to cases where there are increases and decreases in odour exposure as a result of this development, in which case the appropriate terms “adverse” or “beneficial” should be added to the descriptors.

A benchmark odour criterion of 3.0 OU_E/m^3 for moderately offensive odours has been used in this assessment.

9.3 ODOUR EMISSION SOURCES

9.3.1 Odour Emission from Drying Floor

The odour emissions from drying floor activities have been assessed by using 13 odour point sources within the model.

For odour emission rate estimations, it is assumed that odour will be continuously emitted from the waste on the drying belt and odour concentrations at the exhaust air after heat exchanger is 212 OU_E/m^3 , which is equivalent to the odour outlet concentrations for biofilters treating biowaste odour (sniffer report: Understanding biofilter performance and determining emission concentration under operation conditions, Final Report – project Number ER36, June 2014).

The odour emissions used within AERMOD and stack gas parameters are presented in Table 9.4.

Table 9-4 Odour Emissions from Drying Floor for the Assessment and Stack Parameters

Parameter	Drying Belt and Odour Emissions (Each Stack)	Unit
Belt Width	3	m
Overall Drying Section length	33	m
No. of Stacks	13	-
Stack Flow Rate	5,086 ^a	m ³ /hr
	1.412	m ³ /s
Odour concentration in Exhaust Air ^a	500 ^b	OU _E /m ³
Odour Emission Rate per Stack	707	OU _E /s
Total Odour Emission Rate from 13 Stacks	707 x 13 = 9191	OU _E /s
Stack Diameter	0.6	m
Stack velocity	5.0	m/s
Stack Height	13.15	m

Note:

- (a) Redwing Environmental Ltd's air monitoring survey report of particulate matter emissions on the 18th May 2021, and
 (b) Sniffer report: Understanding biofilter performance and determining emission concentration under operation conditions, Final Report – project Number ER36, June 2014.

A total odour emissions of 9,191 OU_E/s from 13 exhaust stacks has been used in modelling for the assessment.

9.3.2 Odour Emissions from Wood Fuelled Boilers Stacks

Odour emissions from 41 Orlan Super 130 kW_h biomass boiler operations have been assessed.

The odour emissions from the wood fuelled boilers have been derived from information on the paper “Odor, gaseous and PM₁₀ emissions from small scale combustion of wood types indigenous to Central Europe, by Magdalena Kistler, May 2012. The average odour concentration of hardwood smoke is 2,087 OU_E/m³ and the average odour concentration of softwood smoke is 3,036 OU_E/m³. The odour concentration of softwood smoke of 3,036 OU_E/m³ has been used in the assessment.

The odour mass emission rates used within AERMOD and stack gas parameters are presented in **Table 9-5**.

Table 9-5. Orlan Super 130 kW_{th} Biomass Boiler Stack Odour Emissions and Stack Parameters

Parameter	Angus Orlan Super 130 kW Boiler (each boiler)	Unit
Number of Boiler	41	-
Fuel Consumptions	24.5 ^a	kg/hr
Fuel Humidity	15 ^a	%
CV (Net, Dry basis)	19.1 ^b	MJ/kg
Dry Flue gas Volume at 10% of O ₂	479 ^b	m ³ /MJ
Stack Gas Temperature	160 ^a	°C
Stack Volumetric Flow Rate at 10% O ₂ and 0 C°	190.5	m ³ /hr
Odour concentration	3036	OU _E /m ³
Odour emission rate	578,358	OU _E /hr
Odour emission rate	160.7	OU _E /s
Stack Oxygen content	6.1 ^c	%
Stack moisture content	15 ^d	%
Modelled stack diameter	0.2 ^e	m
Stack velocity	6.4 ^e	m/s
Stack Height	12.5	m

Notes:

Note:

- (a) Orlan Super 130 kW_{th} Biomass Boiler Instruction Manual and technical data;
- (b) Derived from the AEA report of "Conversion of biomass boiler emission concentration data for comparison with renewable heat incentive emission criteria", Ref: AEA/ED46626/AEA/R/3296, May 2012;
- (c) Data from the Test Report of 32 – 0119, 31/10/2011;
- (d) GLA air quality report of Biomass and CHP Emission standards, March 2013; and
- (e) Stack diameter and efflux velocity (after applications of exodraft fan to increase the velocity).

9.4 ODOUR ASSESSMENT RECEPTORS

In addition to the selected receptors of 25 the Triangle, North Ferriby (D6), 79 Plantation Drive (D10) and 75 Southfield Drive (D11), five additional receptors in the North Ferriby have been added to the list of sensitive receptors for the odour assessment.

Table 9-6. Modelled Sensitive Receptors for Odour Assessment

Site ID	Discrete Sensitive Receptor	UK NGR (m)	
		X	Y
D1	100 Gibson Lane South	496955	425795
D2	88 Gibson Lane South	496966	425882
D3	54 Gibson Lane	497015	426249
D4	The Coach House, Melton Grange, Main Road	497209	426365
D5	21 Brickyard Lane	497442	426144
D6	25 the triangle, North Ferriby	498166	425622
D7	Lowcroft Farm, Lowfield Lane	496343	426287
D8	South Hunsley School, 41 East Dale Road	496689	426616
D9	62 Common Lane	495613	426302
D10	79 Plantation Drive	497983	426212
D11	75 Southfield Drive	498268	425278
D12	87 Riverview Avenue	498219	425426
D13	29 Marine Avenue	498340	425491
D14	12 Plantation Drive	498106	425838
D15	66 Plantation Drive	498019	426081
D16	10 Ashdale Park	498243	426085
D17	New Development NE Brickyard Lane 1	497150	425722
D18	New Development NE Brickyard Lane 2	497316	425687

Figure 9-1. Sensitive Receptor Locations for Odour Assessment



9.5 ODOUR MODELLING ASSESSMENT RESULTS

The detailed computational modelling assessment of odour impact was undertaken using the input parameters detailed in Section 9.3.

All predicted odour concentrations have been compared to the relevant environmental assessment criteria, as detailed in Section 9.2.

The results of the model predictions at each discrete receptor using three met data are summarised in **Table 9-7**. The results are presented at the 98th %ile of hourly averages (Environment Agency, March 2011).

Table 9-7. The 98th %ile Maximum Short-Term (Hourly) Concentrations of Odour

Site ID	Discrete Sensitive Receptor	Predicted Hourly PEC OU _E /m ³		
		2016 Met Data	2017 Met Data	2018 Met Data
D1	100 Gibson Lane South	0.84	1.00	0.94
D2	88 Gibson Lane South	0.68	0.86	0.80
D3	54 Gibson Lane	0.25	0.39	0.35
D4	The Coach House, Melton Grange, Main Road	0.18	0.27	0.27
D5	21 Brickyard Lane	0.18	0.27	0.23
D6	25 the triangle, North Ferriby	0.15	0.24	0.22
D7	Lowcroft Farm, Lowfield Lane	0.09	0.13	0.12
D8	South Hunsley School, 41 East Dale Road	0.11	0.12	0.11
D9	62 Common Lane	0.03	0.05	0.06
D10	79 Plantation Drive	0.12	0.18	0.15
D11	75 Southfield Drive	0.11	0.16	0.13
D12	87 Riverview Avenue	0.13	0.21	0.18
D13	29 Marine Avenue	0.13	0.21	0.19
D14	12 Plantation Drive	0.15	0.22	0.20
D15	66 Plantation Drive	0.13	0.21	0.14
D16	10 Ashdale Park	0.12	0.17	0.12
D17	New Development NE Brickyard Lane 1	0.84	1.00	0.94
D18	New Development NE Brickyard Lane 2	0.68	0.86	0.80

Notes:

- 1 There is no background for odour and hence the PC = PEC.

The odour emissions from the sources considered were assessed for all 3 years of meteorological data. The results indicate that the maximum predicted odour concentration at sensitive/residential receptors using three years of meteorological data is 1.00 OU_E/m³, which occurs along on 100 Gibson Lane South and does not exceed the 3.0 OU_E/m³ assessment level at the 98th %ile.

Odour Effects on the Receptors

The magnitudes of odour effects on receptors for 2017, the year resulting in maximum total short-term odour concentrations, are presented in **Table 9-8**.

The residential dwellings are assessed as high sensitivity receptors.

Table 9-8. Modelled Sensitive Receptors for Odour Assessment

Site ID	Discrete Sensitive Receptor	Predicted Hourly PEC OU _E /m ³	Odour Effect on High Sensitive Receptors
		2017 Met Data	2017 Met Data
D1	100 Gibson Lane South	1.00	Slight
D2	88 Gibson Lane South	0.86	Slight
D3	54 Gibson Lane	0.39	Negligible
D4	The Coach House, Melton Grange, Main Road	0.27	Negligible
D5	21 Brickyard Lane	0.27	Negligible
D6	25 the triangle, North Ferriby	0.24	Negligible
D7	Lowcroft Farm, Lowfield Lane	0.13	Negligible
D8	South Hunsley School, 41 East Dale Road	0.12	Negligible
D9	62 Common Lane	0.05	Negligible
D10	79 Plantation Drive	0.18	Negligible
D11	75 Southfield Drive	0.16	Negligible
D12	87 Riverview Avenue	0.21	Negligible
D13	29 Marine Avenue	0.21	Negligible
D14	12 Plantation Drive	0.22	Negligible
D15	66 Plantation Drive	0.21	Negligible
D16	10 Ashdale Park	0.17	Negligible

The results indicate that the predicted odour concentrations at the existing residential receptors using 2017 meteorological data range from 0.12OU_E/m³ to 1.00 OU_E/m³.

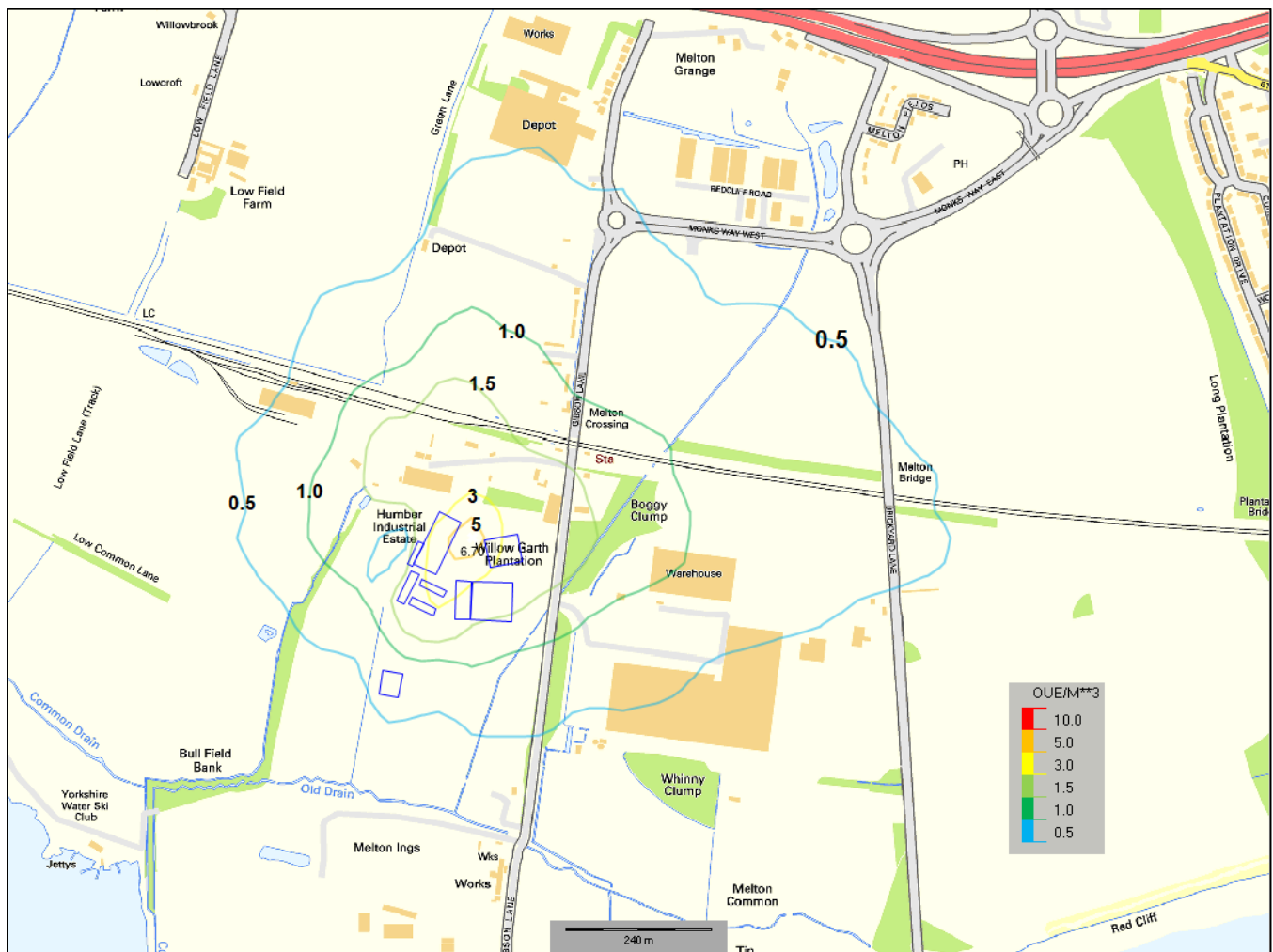
The odour effects at the receptors are predicted to be 'Slight' to 'Negligible'.

Therefore, the predicted short-term odour emissions from the Site are considered acceptable.

From the meteorological dataset, the year resulting in maximum odour concentration was identified as 2017. The contour plot of the predicted odour concentrations using 2017 meteorological data both inside and outside the site boundary is presented in **Figure 9-2.**

Figure 9-2. shows that the predicted maximum concentrations occur adjacent to the northern boundary of the composting pad area, with a predicted decrease in concentration with the increased distance from the odour sources.

Figure 9-2. Predicted the 98th percentile Short-Term (Hourly) Concentrations of Odour



9.6 SENSITIVITY ANALYSIS – INTER-ANNUAL VARIABILITY

The short-term odour emissions from the modelled sources have been assessed for the 3 complete years of meteorological data. The model sensitivity to inter-annual variation of meteorological conditions was calculated by using the following equation:

$$\% \text{ Variation} = \frac{[(\text{Maximum mean} - \text{Minimum mean}) \div 2] \times 100}{[(\text{Maximum mean} + \text{Minimum mean}) \div 2]}$$

In the above equation “mean” refers to the true mean for all of the concentrations calculated by the model at all discrete receptors and grid receptors. Results are shown for short-term odour PC in **Table 9-9**.

Table 9-9. Sensitivity Analysis

Parameter	3 Year of Meteorological Date			% Variation
	2016 Met Data	2017 Met Data	2018 Met Data	
Short-term Odour PC (OU _E /m ³)	0.270	0.288	0.291	3.78

The sensitivity analysis indicates that for the emissions of odour and all 3 years of meteorological data the percentage variations were 3.78%.

10.0 ODOUR COMPLAINT RECORDS

10.1 COMPLAINT RECORDS

The last five year's odour complaint occurred within 2 km of the site have been obtained from the Environment Agency. Each of the recorded odour complaint from the 19th February 2016 to the 17th January 2021 has been investigated according to the time of complaint, the distance to the site, wind direction, weather conditions, characteristic of the smell, and intensity of the odour.

The details of recorded complaints are presented in Table B1 in Appendix B.

Table 10-1 shows the monthly complaints from February 2016 to January 2021.

Table 10-1 Complaints by Months and Years

Month / Year	2016	2017	2018	2019	2020	2021
January	N/A	0	0	5	12	1
February	1	0	0	3	3	N/A
March	0	2	0	4	1	N/A
April	0	0	0	0	2	N/A
May	1	1	0	2	5	N/A
June	1	1	0	4	1	N/A
July	0	0	0	8	15	N/A
August	0	2	0	86	8	N/A
September	9	1	0	22	10	N/A
October	0	2	7	10	1	N/A
November	1	0	4	3	7	N/A
December	0	1	0	8	0	N/A
Total	13	10	11	155	65	1

It can be seen that there are total 255 complaints recorded between February 2016 and January 2021.

The number of complaints remain low and consistence between 2016 to 2018 with an average of 11 complaints per year.

There was a big jump of complaint number in 2019, especially in August 2019. There were over 80 complaints in August along. The complaint numbers reduced in 2020 but are considered to be high compared with the year between 2016 to 2018.

Analyses of the information of “Description of Smell”, it can be found that most complaint odours/smells are related to the rotting waste/four odour/rubbish tip odour/rotting household refuse/decomposing material. As the waste drying plant will be drying the waste such as, waste wood, paper and plastic, but not having any food waste and household waste, it is unlikely that those odour complaints are related to the Eco-Power’s waste drying plant operations.

Further analyses of the information of “Description of Smell” indicated that there was a total of 24 complaints relate to “smoke smell”. Those complaints occurred between the 5th August 2019 and the 17th January 2021 and are presented in Table B2 in Appendix B. However, the Eco-Power has confirmed that when those complaints occurred the boilers were not in the operations and those complaints were unlikely related to Eco-Power’s boiler operations.

The updated odour details the procedures to undertake a substantiated complaint, for example, reviewing the site activities, the daily odour diary log, wind direction, descriptions of the smell at the site boundary (if applicable).

11.0 CONCLUSIONS

Eco-Power Environmental Limited commissioned Tetra Tech (formerly WYG) to update an air quality assessment to meet the EA's schedule 5 request of "Notice of request for more information". The air quality assessment assessed the impact from 41 proposed Orlan Super 130 kW Biomass boilers at Waste Drying Plant, at Gibson Lane, Melton, Hull, HU14 3HH.

Eco-Power's Biomass Boiler Emission Impact Assessment

The predicted long-term and short-term NO₂, PM₁₀, PM_{2.5} and CO, concentrations from the emissions of the operation of the proposed Orlan Super 130 kW Biomass boilers are all below the relevant AQOs for the protection of human health.

The significance of effects on the emissions on the ground level receptors from the boiler operations with respect to long-term NO₂, PM₁₀ and PM_{2.5} is determined to be 'negligible'.

Habitat Assessment

The annual mean and daily (24 hour mean) NO_x PEC at the ecological receptors from Eco-Power's boiler operations are below the relevant critical level for the protection of vegetation and Ecosystems. The NO_x impacts from the proposed development on the ecological receptors are insignificant.

The process contribution (PC, as predicted by the detailed dispersion model) from Eco-Power biomass boiler operations is <1% of the relevant critical level or load (CL) and it can be considered inconsequential. It does not need to be included in an in-combination (cumulative) habitat assessment.

Cumulative Impact Assessment for the Protection of Human Health

Cumulative impact assessment for the protection of human health has been undertaken including the emission sources adjacent to Eco-Power biomass boilers and the emission sources in the cumulative assessment include:

- (1) 41 Orlan Super 130 kW_{th} biomass boilers proposed by Eco-Powers;
- (2) Three Kalvis 0.95 MW_{th} biomass boilers operated by Transwaste Ltd; and
- (3) Two emission flues at Energy Recovery Facility (ERF) operated by HRS Energy.

The predicted cumulative long-term and short-term NO₂, PM₁₀, PM_{2.5} and CO, concentrations from the cumulative emission source considered are all below the relevant AQOs for the protection of human health.

The significance of cumulative effects on the emissions on the ground level receptors from the emission source considered with respect to long-term NO₂, PM₁₀ and PM_{2.5} is determined to be 'negligible'.

Odour Impact Assessment from Biomass Boilers and Drying Floor Operations

The odour emissions from the 41 biomass boilers and a Perry Belt Drier (drying floor) operations were assessed and the maximum predicted odour concentration at sensitive/residential receptors is below the odour benchmark. The odour effects from the site operations on the sensitive receptors are insignificant.

The odour management plan has been updated in a separate stand-alone document.

The proposed development is not considered to be contrary to any of the national and local planning policies.

APPENDIX A BASELINE TRAFFIC AIR QUALITY MODELLING

Traffic Air Quality ADMS Model Inputs

The traffic air quality modelling assessment has utilised:

- ADMS-Roads 5.0;
- Backgrounds determined from the non-Modelled Roadside Contribution;
- 2018 Leconfield Meteorological Data;
- Emissions Factor Toolkit (v10.1, August 2020);
- NO_x to NO₂ calculator (v8.1.); and,
- 2018 AADT Traffic Data downloaded from the Department for Transport.

The inputs for the traffic model are as follows in Tables

Table A 11-1 and

Table A 11-2.

The traffic data has been utilised to assess the corresponding receptors within the assessment. These are outlined in

Table A 11-1.

Air quality assessment areas, including ADMS road sources and receptor locations are presented in Figure A1.

Table A 11-1. Traffic Data

Link	Speed (km/h)	2018	
		AADT	HGV %
The Manorway (South of Site)	48	585	18.35
The Manorway (West of Site)	80	2,338	18.35
The Manorway (West of Springhouse Road)	80	2,338	18.35
The Manorway (West of London Gateway Drive)	80	10,314	10.54
Stanford Road	48	11,966	7.55
A13 Stanford-le-Hope Bypass	112	61,467	6.08
B1420 Church road	48	7,160	0.80

Table A 11-2. ADMS Roads Model Inputs.

Parameter	Description	Input Value
Chemistry	A facility within ADMS-Roads to calculate the chemical reactions in the atmosphere between Nitric Oxide (NO), NO ₂ , Ozone (O ₃) and Volatile organic compounds (VOCs).	No atmospheric chemistry parameters included
Meteorology	Representative meteorological data from a local source	Leconfield , hourly sequential data
Surface Roughness	A setting to define the surface roughness of the model area based upon its location.	0.5m representing a typical surface roughness for Parkland, open suburbia
Latitude	Allows the location of the model area to be set	United Kingdom = 51.51
Monin-Obukhov Length	This allows a measure of the stability of the atmosphere within the model area to be specified depending upon its character.	Mixed Urban / Industrial= 30m .
Elevation of Road	Allows the height of the road link above ground level to be specified.	All road links were set at ground level = 0m .
Road Width	Allows the width of the road link to be specified.	Road width used depended on data obtained from OS map data for the specific road link
Topography	This enables complex terrain data to be included within the model in order to account for turbulence and plume spread effects of topography	No topographical information used
Time Varied Emissions	This enables daily, weekly or monthly variations in emissions to be applied to road sources	No time varied emissions used
Road Type	Allows the effect of different types of roads to be assessed.	Urban (Not London) settings were used for the relevant links
Road Speeds	Enables individual road speeds to be added for each road link	Based on national speed limits
Canyon Height	Allows the model to take account turbulent flow patterns occurring inside a street with relatively tall buildings on both sides, known as a "street canyon".	No canyons used within the model
Road Source Emissions	Road source emission rates are calculated from traffic flow data using the in-built EFT database of traffic emission factors.	The EFT Version 10.0 (2020) dataset was used.
Year	Predicted EFT emissions rates depend on the year of emission.	2018 data for verification and baseline operational phase assessment

Table A 11-3. Modelled Existing Sensitive Receptor Locations

Discrete Sensitive Receptors		Receptor Height (m)
AERMOD ID /ADMS ID	Name	
D1	Great Garlands Farm	1.5
D2	Old Garlands Farm	1.5
D3	3-4 Ainsworth Cottages	1.5
D4	School House, Herd Lane	1.5
D5	1 Ship Cottages, Wharf Road	1.5
D6	Whitehall Farm	1.5
D7	16 Merricks Lane,	1.5
D8	88 Brackendale Avenue	1.5
D9	Rookery Farm	1.5
D10	Northwick Farm	1.5
D11	7 Koln Close	1.5
D12	6 Haven Quays	1.5

This data has been input into the ADMS Roads 4.1 model and the model has been verified to local monitoring data.

Table A 11-4. Comparison of Roadside Modelling & Monitoring Results for NO₂

Tube location	NO ₂ µg/m ³		
	Monitored NO ₂	Modelled NO ₂	Difference (%)
TK3	29.28	26.59	-9.18
PKSL	29.35	31.81	8.38

The final verified model has produced output at the monitoring locations being within 10% of the monitoring results, as recommended by TG16 guidance.

The final verification model correlation coefficient (representing the model uncertainty) is 1.00². This figure demonstrates that the model predictions were in line with the road traffic emissions at the monitoring locations.

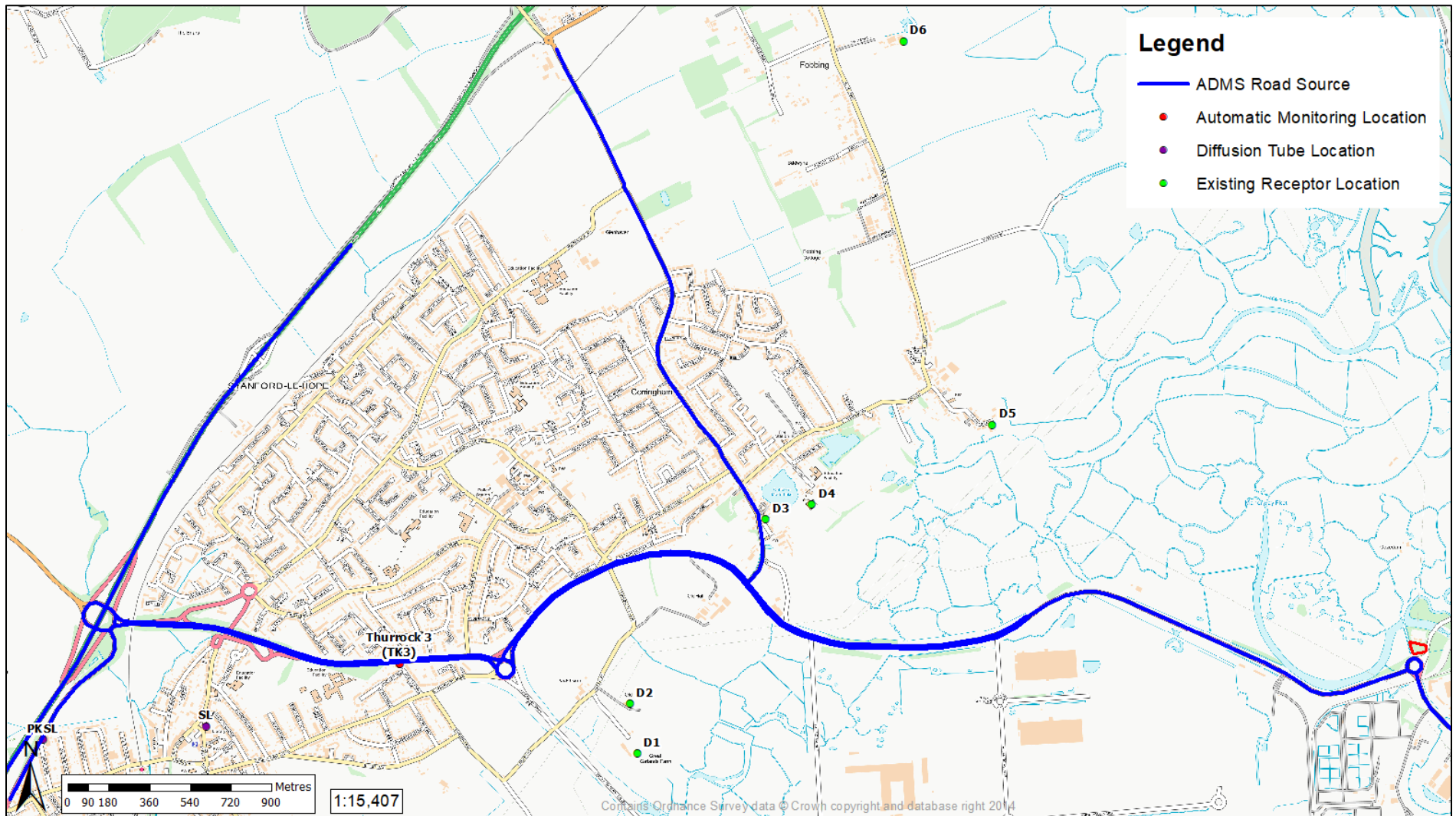
The modelled baseline concentrations of NO₂ are outlined in **Table A 11-5**.

² This was achieved by applying a model correction factor of 1.50 to roadside predicted NO_x concentrations before converting to NO₂.

Table A 11-5. Predicted 2018 Annual Average Concentrations of NO₂

Discrete Sensitive Receptors		Modelled Baseline (2018) Pollutant Concentrations (µg/m ³)
AERMOD ID /ADMS ID	Name	NO ₂
D1	Great Garlands Farm	15.84
D2	Old Garlands Farm	15.89
D3	3-4 Ainsworth Cottages	17.93
D4	School House, Herd Lane	15.50
D5	1 Ship Cottages, Wharf Road	15.34
D6	Whitehall Farm	14.94
D7	16 Merricks Lane,	15.75
D8	88 Brackendale Avenue	14.83
D9	Rookery Farm	14.43
D10	Northwick Farm	15.36
D11	7 Koln Close	17.79
D12	6 Haven Quays	17.00

Figure A 11-1. ADMS Traffic Modelling Assessment Area Including Receptors Locations



APPENDIX B THE 1ST EA SCHEDULE 5 LETTER

Notice of request for more information

The Environmental Permitting (England & Wales) Regulations 2016

Company Director

Eco-Power Environmental (Hull) Limited

Bankwood Lane Industrial Estate

Bankwood Lane

Roslington Doncaster

South Yorkshire

DN11 0PS

Application number: EPR/MP3107PP/A001

The Environment Agency, in exercise of its powers under paragraph 4 of Part 1 of Schedule 5 of the above Regulations, requires you to provide the information detailed in the attached schedule. The information is required in order to determine your application for a permit duly made on 21st October 2020.

Send the information to either the email or postal address below by 19/03/2021. If we do not receive this information by the date specified, then we may treat your application as having been withdrawn or it may be refused. If this happens you may lose your application fee.

Email address: psc@environment-agency.gov.uk.

Postal address:

Permitting and Support Centre
Quadrant 2

99 Parkway Avenue
Parkway Business Park
Sheffield

S9 4WF

Name	Date
Matthew Woollin	22/01/2021

Authorised on behalf of the Environment Agency

Notes

These notes do not form part of this notice.

Please note that we charge £1,200 where we have to send a third or subsequent information notice in relation to the same issue. We consider this to be the first notice on the issues covered in this notice.

Fire Prevention Plan

You must consider the 'Fire Prevention Plans: environmental permits' guidance (updated 09/01/2020) insert date of latest update on [GOV.UK](https://www.gov.uk), hereafter referred to as the guidance, and come to your own view as to what proposals you consider will meet the objectives to:

- minimise the likelihood of a fire happening;
- aim for a fire to be extinguished within 4 hours; and
- minimise the spread of fire within the site and to neighboring sites.

You can follow the measures set out in the guidance and if you do so you will meet the objectives of the guidance and we are likely to approve your Fire Prevention Plan (FPP). If you do not include these measures, you can propose alternative measures to meet the objectives. We will technically assess your alternative measures and, if we are satisfied that they meet the objectives, we can approve the FPP.

If your proposals do not meet the measures in the guidance, you should explain in detail the alternative measures you intend to take and how those measures can meet the objectives. This applies to each of the information requests in the attached schedule.

The notes in italics that appear after information requests in the attached schedule do not form part of the notice. The notes are intended to assist you in providing a full response

Schedule

Fire Prevention Plan

Adequate answers to the following are required for the FPP to pass assessment:

1. Provide details which show you have considered and mitigated for materials on site which are not covered by the guidance but still pose a fire risk (e.g. combustible liquids or hazardous materials). This includes any gas cylinders, fuel tanks, aerosols and chemicals on site. These materials should be shown on the site plan and confirmed to be adequately separated from combustible wastes.
2. Your FPP needs to ensure the fire prevention measures will be put in place and used on site. Provide details of regular training exercises on site to test how well your plan works and to ensure that staff understand all the requirements of it. This should include training in day-to-day operation (e.g. stockpile management), as well as incident response.
3. Your site plan is currently missing:
 - a. The location of fixed plant or where mobile plant is stored when not in use
4. Provide detail of security measures on site in relation to CCTV. The design, installation and maintenance must be covered by an appropriate [UKAS-accredited](#) third party certification scheme.
5. Confirm electricians on site will be fully certified by a qualified electrician and outline the written procedures in place that set out regular maintenance.
6. Confirm that a fire watch will monitor the site at regular intervals during the working day, to detect signs of a fire from hot exhausts or engines and outline the regularity of these intervals.
7. Confirm and provide details of a quarantine area for hot loads.
8. Provide details of how external heating during hot weather will be taken into account and confirm that waste will be shaded from direct sunlight if required and/or any other techniques that will be in place to enable heat generated within the pile to be released.
9. Provide details which show that fire walls and bays are designed to resist fire (both radiative heat and flaming) and have a fire resistance period of at least 120 minutes to allow waste to be isolated. Fire walls must show compliance with all factors outlined in Section 11.2 of the guidance.
10. Provide details of the quarantine area(s) on site. The quarantine area(s) must be within the boundary of the site for which the permit applies and be large enough to hold at least 50% of the volume of the largest pile. The quarantine calculation assumes $6 \times 10 \times 4 = 240$ cubic metres but waste would not be in a bay so more likely to be 120m, needs to be 224 cubic metres to meet the requirements. Confirm a separation distance of at least 6 metres around the quarantined waste will be in place.
11. Provide details of the detection system on site. The detection system should be proportionate to the nature and scale of waste management activities you carry out and the associated risks. For all automated systems the design, installation and maintenance should be covered by an appropriate UKAS-accredited third-party certification scheme. If the system is not accredited, provide details as to why not and outline how the system will work on site. Provide details of the suppression system on site, ensuring the design, installation and maintenance of all automated suppression equipment is covered by an appropriate UKAS-accredited third-party certification scheme. If the system is not

accredited, provide details as to why not and outline how the system will work on site.

12. Provide details of how you have designed your site to allow for active firefighting, outlining the procedures in place in the event of a fire.
13. Provide site specific calculations for water supply in accordance with the guidance. You need to account for a worst-case scenario, which is defined as your largest waste pile catching fire. As a guide, a water supply of at least 2,000 litres a minute for a minimum of 3 hours is needed to tackle a 300 cubic metre pile of combustible material (this equates to approximately 6.7 litres/minute for every 1m³ of material). Reference is made to 9000l/min of water being available from hydrants, but no information provided to justify this. Previous fires at this site have shown the hydrants have limited flow capacity.
14. Provide details of how incoming wastes will be diverted to alternative sites during a fire. You need to show a plan is in place for how you will notify those who may be affected by a fire, such as nearby residents and businesses. Provide details of how you will clear and decontaminate the site following a fire and the steps you will take before the site can become operational again.

Odour management plan (OMP)/Environmental Permitting Technical Requirements (odour only)

15. Add North Ferriby to the list of sensitive receptors.
16. Explain the reasoning behind the assumption made about the odour emission value for emissions from the drying process used in modelling impact.
17. Modelling should be re-run with a higher odour emission value.
18. Re-run the model to account for reduced benchmark due to a sensitised population.
19. Consider alternate odour monitoring location points, especially in the North Ferriby area.
20. Confirm the location and purposes of the monitoring locations on figure 2 of the OMP that appear to be within or on top of the building.
21. The OMP needs to consider the risk of odour generated by the operation of the wood fuelled boilers.
22. Revise the OMP review triggers to account for information provided by complaint investigation and actual impact of the proposed activity (especially use of wood fuelled boilers and drying line).
23. Provide detail as to how public engagement will be initiated and encouraged.
24. Provide indicative examples for how odour from the boilers or drying could be reduced if determined to be the source of odour.
25. Define what represents a substantiated complaint.

26. This application seeks to add a drying activity using wood fuelled appliances to provide heat. Please revise your best available techniques assessment (BAT assessment) to ensure that all the necessary procedures and operating techniques are updated to include the wood fuelled appliances and drying activity of the SRF. Please ensure that it addresses all the requirements of the Waste Treatment BAT conclusions¹. Namely; please revise BAT 10, 12 and 13 to ensure you have adequate monitoring and management of odours on the site with regards to emissions from the wood fuelled appliances and the drying of SRF.

Notes on OMP review/review of BAT in relation to odour

The proposed activity seeks to replace part of an existing permitted operation, there is a history of odour complaints relating to the existing site. The assessment of risk in the odour management plan (OMP) should take account of the complaints history, this is important when seeking to understand and model risk.

The sensitive receptor boundary is set at 1km from the site, this does not take account of North Ferriby; a village with a history of odour complaints, especially important for the north western side of the village which is down wind of the proposed activity for a significant proportion of time using the wind rose submitted in the OMP.

The proposed drying activity involves subjecting waste to a range of processes that are normally minimised in an effort to reduce odour. Such as shredding, heating and increasing the rate of evaporation. By doing this the output will be a gaseous stream that could be odorous. The modelling relies on an assumption that the odour rate emissions of the drying activity will be the same as that from a Biofilter (212 Odour units/cubic metre).

When modelling odour it is assumed that the odour will be moderately offensive when determining the benchmark level, as there is an already sensitised population then this should be accounted for and the benchmark reduced.

Two of the primary potential sources of odour will be the emission stacks from the boilers and drying plant. The proposed odour monitoring locations (Figure 2 OMP) are unlikely to monitor any odour from these as the emissions may not have fully mixed or reached ground level.

There are 2 distinct potentially odorous point source emissions:

- *Emissions from wood fuelled appliances*
- *Emissions from drying of waste*

These have distinct and different natures and risks i.e. emissions from waste drying will be moisture rich. In Guidance for the Treatment and Transfer of Hazardous Waste and Non- Hazardous Waste S5.06, reference is made to the difficulty this raises with plume dispersion and recommends investigation of methods to reduce moisture content before discharge. Whereas emissions from the wood fuelled appliances will be dry, with the proposed fuelling arrangements in process controls of the appliances is hard to quantify in relation to minimising emissions (stop/start nature of fuelling and use). There is an inadequate investigation/explanation made in the OMP as to how odour from the 2 sources mentioned here could be reduced.

The OMP includes as assessment of predicted odour concentrations that includes the suggested contribution from the drying line. There is also predicted concentrations of certain emissions from

¹Waste Treatment BAT Conclusion. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018D1147&from=EN>

the wood fuelled boilers. This does not include a consideration of the odour from the heating appliances, given that combined thermal input for these are over 5MW of thermal capacity, fuelled by the manual loading of wood then there is a clear risk of the odour of smoke. This is supported by complaint history within the last few months which have shown a new pattern of complaints of a burning/wood smoke nature.

The plan of proposed monitoring locations includes 2 locations that appear to be either within the building or on top of the building.

The OMP includes a commitment to review after 12 months to ensure continued effectiveness. As the proposed activity includes a new process (wood fuelled boilers and drying line) then this is a long time to wait to review a plan.

Community liaison is described in a reactive manner depending on request to attend, given the complaint history active engagement is preferable.

Corrective measures are detailed in the report. No mention is made of measures that could be taken if emissions from use of wood fired boilers or the drying line are determined to be the source of the odour. Corrective measures are described as being considered following a substantiated complaint.

BAT requirements particularly of relevance being:

BAT 10; monitoring of odour in cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated.

BAT 12; OMP to contain - an odour prevention and reduction programme designed to identify the source(s); to characterise the contributions of the sources; and to implement prevention and/or reduction measures.

BAT 13; In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to use one or a combination of the techniques given.

End of the 1st Schedule 5.

APPENDIX C A SUMMARY OF TETRA TECH'S RESPONSE TO THE 1ST EA SCHEDULE 5 REQUEST

After reviewing the third issue of the report, Mr Matthew Woollin, Environmental Officer, Permitting and Support Centre, Quadrant 2, 99 Parkway Avenue, Parkway Business Park, Sheffield S9 4WF, issued a letter on the 22nd January 2011, requesting the information detailed in the attached schedule. The information is required in order to determine the application for a permit duly made on 21st October 2020 (Application number: EPR/MP3107PP/A001).

The 1st Schedule 5 letter requests the addition information on both odour modelling assessment and odour management plan (OMP). The details of the copy of the letter are presented in Appendix B.

This air quality assessment and odour assessment report has been revised to meet the 1st EA's Schedule 5 requirement with regard to "Odour management plan (OMP)/Environmental Permitting Technical Requirements (odour only)". The EA's requests are presented in *italic* and the Tetra Tech's responses are in **blue** below.

16. Add North Ferriby to the list of sensitive receptors.

Tetra Tech (Tt) Response (16):

Receptors of at locations of 25 the triangle, North Ferriby (D6), 79 Plantation Drive (D10) and 75 Southfield Drive (D11) are the North Ferriby receptors. Five additional receptors (D12 to D16) have been added at North Ferriby area for the assessment.

17. Explain the reasoning behind the assumption made about the odour emission value for emissions from the drying process used in modelling impact.

Tetra Tech (Tt) Response (17):

The odour emission value from the drying process used in the modeling impact is 212 OU_E/m³, which is equivalent to the odour outlet concentrations for biofilters treating biowaste odour (sniffer report: Understanding biofilter performance and determining emission concentration under operation conditions, Final Report – project Number ER36, June 2014).

A higher odour emission value of 500 OU_E/m³ (which is more than double of the 212 OU_E/m³) has been used in the assessment.

18. Modelling should be re-run with a higher odour emission value.

Tetra Tech (Tt) Response (18):

A higher odour emission value of 500 OU_E/m³ (more than double of the 212 OU_E/m³) for the drying floor operations has been used in the assessment.

19. Re-run the model to account for reduced benchmark due to a sensitised population.

Tetra Tech (Tt) Response (19):

H4 guidance has set up the odour benchmark criteria based on the offensiveness of the odour. As the waste drying plant will be drying the waste such as, waste wood, paper and plastic, but not having any food waste and household waste, the potential odour can be classified as “moderately offensive odours”. The benchmark odour criterion of 3.0 O_{Ue}/m³ for moderately offensive odours are considered to be appropriate for this assessment. In addition, a “high” receptor sensitivity, for example, residential dwellings, has been used in the assessment.

20. *Consider alternate odour monitoring location points, especially in the North Ferriby area.*

Tetra Tech (Tt) Response (20):

Alternate odour monitoring location points have been presented in the revised Odour Management Plan (OMP). The revised OMP, which is based on the Eco-Power Environmental OMP dated March 2020, Ref: Eco 09.03.2020/OMP, will be presented in a stand-alone document.

21. *Confirm the location and purposes of the monitoring locations on figure 2 of the OMP that appear to be within or on top of the building.*

Tetra Tech (Tt) Response (21):

The odour monitoring location points have been presented in the revised Odour Management Plan (OMP). The revised OMP, which is based on the Eco-Power Environmental OMP dated March 2020, Ref: Eco 09.03.2020/OMP, will be presented in a stand-alone document.

22. *The OMP needs to consider the risk of odour generated by the operation of the wood fuelled boilers.*

Tetra Tech (Tt) Response (22):

Odour emissions from the operation of the wood fuelled boilers has been assessed and the results have been included in Chapter 9 of this assessment update. The operational measures to reduce the odour emissions from the boilers have been presented in the revised Odour Management Plan (OMP).

23. *Revise the OMP review triggers to account for information provided by complaint investigation and actual impact of the proposed activity (especially use of wood fuelled boilers and drying line).*

Tetra Tech (Tt) Response (23):

The last five year's odour complaint occurred within 2 km of the site have been obtained from the Environment Agency. Each of the recorded odour complaint from the 19th February 2016 to the 17th January 2021 has been investigated according to the time of complaint, the distance to the site, wind direction, weather conditions, characteristic of the smell, and intensity of the odour.

The investigations indicated that the odour complaints are most likely coming from neighboring operations at Transwaste facility. The detailed odour complaint analyses results are presented in Chapter 10 of this report.

Odour triggers for the operations of wood fuelled boilers and drying line have been presented in the revised Odour Management Plan (OMP).

24. *Provide detail as to how public engagement will be initiated and encouraged.*

Tetra Tech (Tt) Response (24):

The public engagement has been discussed and presented in the revised Odour Management Plan (OMP).

25. *Provide indicative examples for how odour from the boilers or drying could be reduced if determined to be the source of odour.*

Tetra Tech (Tt) Response (25):

The examples for how odour from the boilers or drying could be reduced if determined to be the source of odour have been discussed and presented in the revised Odour Management Plan (OMP).

26. *Define what represents a substantiated complaint.*

Tetra Tech (Tt) Response (26):

The definition of a substantiated complaint and the odour complaint investigation procedures have been discussed and presented in the revised Odour Management Plan (OMP).

27. *This application seeks to add a drying activity using wood fuelled appliances to provide heat. Please revise your best available techniques assessment (BAT assessment) to ensure that all the necessary procedures and operating techniques are updated to include the wood fuelled appliances and drying activity of the SRF. Please ensure that it addresses all the requirements of the Waste Treatment BAT conclusions¹. Namely; please revise BAT 10, 12 and 13 to ensure you have adequate monitoring and management of odours on the site with regards to emissions from the wood fuelled appliances and the drying of SRF.*

Tetra Tech (Tt) Response (26):

All the necessary procedures and operating techniques are updated to include the wood fuelled appliances and drying activity of the SRF have been discussed and presented in the revised Odour Management Plan (OMP). The revised OMP includes details of the BAT 10, 12, 13 to ensure that there is adequate monitoring and management of odours on the site with regards to emissions from the wood fuelled appliances and the drying of SRF.

BAT 10; monitoring of odour in cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated.

BAT 12; OMP to contain - an odour prevention and reduction program designed to identify the source(s); to characterise the contributions of the sources; and to implement prevention and/or reduction measures.

BAT 13; In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to use one or a combination of the techniques given.

APPENDIX D THE 2ND EA SCHEDULE 5 LETTER

Notice of request for more information

The Environmental Permitting (England & Wales) Regulations 2016

Company Director

Eco-Power Environmental (Hull) Ltd

Bankwood Lane Industrial Estate

Bankwood Lane

Rossington Doncaster South Yorkshire DN11 0PS

Application number: EPR/MP3107PP/A001

The Environment Agency, in exercise of its powers under paragraph 4 of Part 1 of Schedule 5 of the above Regulations, requires you to provide the information detailed in the attached schedule. The information is required in order to determine your application for a permit duly made 21st October 2020.

Send the information to either the email or postal address below by 17/05/2021. If we do not receive this information by the date specified then we may treat your application as having been withdrawn or it may be refused. If this happens you may lose your application fee.

Email address: psc@environment-agency.gov.uk.

Postal address:

Permitting and Support Centre

Quadrant 2

99 Parkway Avenue

Parkway Business Park

Sheffield

S9 4WF

Name	Date
Matthew Woollin	22/03/2021

Authorised on behalf of the Environment Agency

Notes

These notes do not form part of this notice.

Please note that we charge £1,200 where we have to send a third or subsequent information notice in relation to the same issue. We consider this to be the first notice on the issues covered in this notice.

Schedule

5. Please submit further information in relation to the drying of the SRF. Please include the following as a minimum:

- Full details of the drying technique used i.e. full details of dimensions and volume that can be treated at any one time;
- Provide full detail of the drying temperatures, duration, moisture content control and desired output level;
- What moisture level in waste triggers the requirement for it to be dried;
- How much waste can be dried per day?

Reason: It is not clear how the drying process works in practice and is managed to ensure minimum fire risk and optimum moisture content. Without output parameters how can energy efficiency of the drying facility/wood fuelled appliances be controlled and maximised.

6. Provide an up-to-date plan of the site to replace the site layout plan (and other appropriate site plans referenced in management plans).

Reason: The design of the waste reception shed has changed since the permit application was submitted

7. Clarify the maximum period of time that waste will be stored in the non-conforming waste quarantine area before it is removed.

Reason: the non-technical summary in section 4.2.7 states that waste will be stored in the quarantine area intended for non-conforming wastes for up to 5 days. If the waste is odorous or poses a risk due to pests, then this may result in a risk of pollution.

8. Provide details for the type of facilities that will use the RDF/SRF produced by the waste treatment process and how these represent a recovery operation.

Reason: Incinerating waste is a disposal activity. Incinerators can be re-classified as a recovery operation if they get R1 status. No details have been provided as to the type or status of the sites likely to burn the RDF/SRF produced by the treatment process. The application applies for a Schedule 5.4 A (1) (b) (ii) activity but does not explain how the RDF/SRF produced by pre-treatment of waste for incineration or co-incineration will be subsequently used for Recovery or a mix of recovery and disposal of non-hazardous waste. Where RDF/SRF is used in a process that is not a recovery operation then it may be more appropriate to permit the pre-treatment activity as a Schedule 5.4 A (1) (a) (iii) activity (Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day).

Emissions management Plan (EMP)

We require a revised emissions management plan which has been amended to address the requirements of the questions below. Please refer to our online emissions management plan guidance:

www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit (Updated October 2020).

9. Explain why dust produced by the emissions from the wood fuelled appliances has not been included as a source.

Reason: In Section 4, Potential Sources no consideration is given to dust emissions from flue gases from the 41 wood fuelled appliances.

10. Review and update the list of receptors used in the EMP including justifying why a 500 metre radius has been used as cut-off distance for potential sensitive receptors given that the nature of the dust from use

of wood fuelled appliances and treatment (including drying) of the proposed wastes is different to that for dust from quarries.

Reason: No consideration given to the public footpath immediately adjacent to the north of the site. No consideration given to new development taking place to the North East of the site on Brickyard Lane.

11. Review the proposed monitoring locations given in figure 4 of the EMP

Reason: The public footpath has not been considered as a monitoring location despite it being susceptible to heavy dust particles and fugitive emissions from the building fabric.

12. Review the dust emissions from the drying of waste and how these can be monitored and minimised

Reason: The drying process involves blowing warm air through shredded waste and discharging via stacks without any dust monitoring or abatement.

13. Review and update the options available for dust control measures.

Reason:

- *No consideration given to use of fast acting doors for entrances*
- *No consideration given to use of negative pressure system for dust extraction*
- *No consideration given to use of dust abatement within the building*
- *No consideration given to use of abatement for dust vented to atmosphere by the operation of wood fuelled appliances and the drying of waste*
- *No consideration given to use of dust monitoring (other than visual checks) or suppression within or outside the building other than use of spraying of surfacing in extreme conditions*

14. Provide a clear monitoring plan to demonstrate how you will monitor all sources to ensure emissions remain under control including a review of the monitoring measures proposed for dust at the site. This must include:

- Defined triggers to indicate when action must be taken to bring fugitive emissions back under control.
- Identification of monitoring points and justification as to why these are appropriate taking into account high risk receptors.
- Monitoring technique, frequency and time of monitoring accounting for high risk operating periods.
- Monitoring check sheet that takes into account the above.

Reason: Table 53 of the EMP identifies that visual inspection will be carried out which may need to be increased during high risk operations/during prolonged dry/windy conditions and a site monitoring check sheet is provided in Appendix II. The check sheet does not provide any specific detail about what should be monitored, where monitoring will take place and when, nor does it identify the triggers for taking any specific actions. Despite proposing to operate a potentially dusty process no consideration has been given to anything other than visual dust monitoring. You must take into the account the BAT conclusions for the mechanical treatment of wastes in BAT no 8, BAT no 14 and BAT no 25 in the BAT conclusions for waste treatment document (2010/75/EU) 2018. This must include shredding, drying and pelletisation of wastes as a minimum.

15. Describe the contingency plans you will put in place to bring fugitive emissions back under control in the event day to day measures are failing and emissions exceed triggers defined in the monitoring plan. You must identify and describe a contingency measure for each individual source and define triggers for implementing and stopping the contingency measures once the emission is deemed to be back under control.

Reason: The EMP does not provide a detailed contingency plan for the individual sources on site. Section 7.2 refers to Table 14 as containing a detailed contingency plan, there is not a Table 14 in the EMP. However, Table 64 does provide some very general contingency measures but it would not be possible for an operative to understand what actions they must take for individual sources to bring emissions back under control or what would trigger the use of the very basic contingency measures.

16. Review the control measures listed in the site monitoring contingency plan and the emergency scenario contingency measures of the EMP

Reason: The contingency plan does not contain any active control measures for dust within the building or potentially found within the emissions for the wood burning appliances or drying process, therefore if dust does prove to be an issue there are no control mitigation methods other than suspending operations.

17. In addition to annually, confirm the timescales for when the EMP will be reviewed in the event that control measures fail.

Reason: In section 9 of the EMP you state that the EMP will be reviewed annually and if control measures fail or are inadequate, however no timescale or further detail of how this will be measured/implemented is given.

18. Confirm what actions will be taken in the event of a complaint/s in relation to corrective and preventive measures.

Reason: Section 8 of the EMP describes the complaints procedure. In section 8.2.3.1 you describe certain corrective and preventive measures, these are very basic measures and given the commitment to implementing measures within 1-3 days these may not be adequate to control dust generation/escape, robust control measures would reduce the risk of the site having to suspend operations as per section 8.2.7.1 of the EMP.

19. Explain how the company will interact with the local community to better understand possible impacts from the site.

Reason: Reason: In section 8 of the EMP you have stated how you will respond to complaints which includes investigation and substantiation of the complaint. However, you have not explained how you will engage with the community following a complaint and the steps that will be taken to pro-actively engage the community to prevent complaints in the first instance.

Noise Management Plan (NMP)

We require a revised noise management plan which has been amended to address the requirements of the questions below. Please refer to our online noise guidance:

<https://www.gov.uk/government/publications/environmental-permitting-h3-part-2-noise-assessment-and-control>

20. Explain who produced the document and their qualifications that are relevant for this document

Reason: This is a specialist subject and the right assessments need to be completed to make sure this is an effective document.

21. For a noise management plan, data needs to be collected from (potential) noise sources.

Reason: To have an understanding of the effect of the installation on receptors, you need to be able to demonstrate you have effectively used BS4142 Methods for rating and assessing industrial and

commercial sound. You must take into account Best Available Techniques (BAT) reference Document for Waste Treatment 2018 which states “detailed assessments of sound power levels for individual plant items or modelling that may be necessary for either new or existing installations taking into consideration the potential for noise problems.”

22. Review and update the list of receptors used in the NMP including justifying why a 1KM radius has been used as cut-off distance for potential sensitive receptors

Reason: No consideration has been given to the potential wildlife that may be affected. No consideration has been given to the new development at Brickyard Lane. No indication how the receptors may be affected at different times of the day. Business / residents may be affected in different ways, this has not been indicated. The NMP indicated that operations will commence at 06:00, this is classed as night time by World Health Organisation (WHO) and BS4142.

23. Explain how the building has been appropriately sited and designed as stated within 5.2.1 of the NMP.

Reason: No design details have been provided for the building, and how this will minimise the impact of noise. You must also take into the account the BAT conclusions in BAT no 17 and BAT no 18 in the BAT conclusions for waste treatment document (2010/75/EU) 2018.

24. Explain what attenuation is being used to keep noise below 50dB and how this was measured. There does not seem to be any measurements to support this figure.

Reason: The proposed activities have the potential to increase noise levels within the local area, with the potential to cause noise pollution to local receptors. Not all local receptors have been identified. No evidence of how noise will be kept below 50dB.

25. Table 4 details that tipping height will be from 2 metres, however within section 8.2.3.1 a corrective measure is to reduce the tipping height to 1 metre. Why have these heights been included?

Reason: Reducing drop height is a standard approach to limiting impact noise. Justification as to the heights described within the NMP, and evidence that this will reduce the noise levels should be provided. Can 1 metre drop heights be the standard?

26. Within section 8 of the NMP, the dust complaint procedure and OMP are referenced. Please review document to reflect the NMP.

Reason: There is no need for a reference of dust complaint procedure or OMP within the NMP.

27. Confirm what actions will be taken in the event of a complaint/s in relation to corrective and preventive measures.

Reason: Section 8 of the NMP describes the complaints procedure. In section 8.2.3.1 you describe certain corrective and preventive measures, these are very basic measures and given the commitment to implementing measures within 1-3 days these may not be adequate to control noise generation/escape, robust control measures would reduce the risk of the site having to suspend operations as per section 8.2.6.1 of the NMP.

28. Explain how the company will interact with the local community to better understand possible impacts from the site.

Reason: In section 8 of the NMP you have stated how you will respond to complaints which includes investigation and substantiation of the complaint. However, you have not explained how you will engage with the community following a complaint and the steps that will be taken to pro-actively engage the community to prevent complaints in the first instance.

29. Confirm operating hours of the plant / machinery.

Reason: There is a contradiction in operating hours. In table 4 the operating times are from 06:00-18:00 (12 hours), and within Plant Operating Hours timetable, this suggests operating times will be 20 hours per day.

30. Provide details of how daily inspections will be used to monitor any increase levels in noise.

Reason: Within the noise monitoring section of the NMP, daily inspections will be undertaken to monitor any increase levels of noise, no mention of how this monitoring will be undertaken, or what monitoring equipment will be used.

31. Provide noise levels for machinery is listed within section 3.1.2.

Reason: Without having noise levels for the machinery, it is impossible to say whether this will give rise to pollution. There is also no mention of access to the building this machinery is located and whether doors are automatically closed, how long each day the doors are open, what the impact is likely to be when the doors are open or when closed.

32. In section 3.1.3 reverse beepers are mentioned. The use of broadband “squawk” for vehicles would be more appropriate.

Reason: This is a recognised method used for BAT.

33. Within section 3.1.3, the word ‘clatter’ is used. More specific detail is needed as to what may cause this noise.

Reason: This is a potential source for noise pollution, therefore more information is needed to determine if this is the case.

34. In Table 4, a figure of 50dB is used stating that noise levels will not exceed this. Evidence is needed to justify this statement.

Reason: This activity could give rise to noise pollution. Evidence is needed to show how this has been determined. Provide the data which should provide estimates of the different noise sources either from design criteria and manufacturers data or from measurements of similar equipment or a combination of both.

Pest Management Plan (PMP)

An updated version of the PMP is required to include revisions that address the questions below:

35. Provide details regarding the design of the quarantine area for non-conforming wastes as shown on the fire prevention and mitigation plan

Reason: Reference is made in 5.4.7 of the PMP to non-conforming wastes being diverted to an outside quarantine area despite section 5.2.1 stating that no wastes will be stored externally. Given the nature of the proposed wastes and the possible reasons for rejection how will risks from the wastes be minimised by the containment measures for the quarantine area?

36. Define the term “summer months”.

Reason: Section 5.8.1 of the PMP states that storage times for SRF and RDF will be a maximum of 1 week during summer months. Although the term “summer months” is used in Table 8 it is not clear if this applies throughout the PMP.

37. Provide an updated site plan as currently shown in “fire prevention and mitigation plan” that includes labelling for the waste storage bays.

Reason: The current labelling approach refers to list of waste codes rather than a written description of the waste. We need clarity on what the bays will be used to store i.e. fines from processing of feedstock, processed waste awaiting palletisation etc.

38. Provide detail on the storage of feed material and the various outputs from the processing of feed material, including:

- How long the materials will be stored for;
- What monitoring for pests will take place?
- What management to prevent or control pests will take place?

Reason: the storage of waste pending treatment in the feed material store poses a risk from pests, especially in warmer weather when the waste may have been stored off site long enough for fly infestations to start before waste is accepted at the site and residual food stuffs pose a clear risk from attracting scavengers. Similarly, the fines from the processing of the above although stored in the main treatment building pose a risk from fly infestation and from attracting scavengers, given the waste will be stored in a building it is likely to be attractive to pests throughout the year. Section 7 of the PMP (Emergency Scenarios) details that wastes may be stored at the site for up to 3 months in the period November to March. Whereas Section 5.2.2 states that the maximum storage time will be 1 week. There are therefore conflicting timescales for waste storage within the PMP. Waste storage times need be kept to a minimum as a primary control measure for pests, this is especially important for unprocessed wastes and waste fines.

39. Clarify where waste brought to site will be stored prior to processing

Reason: Table 4 of section 3 of the PMP states that storage of waste prior to processing will take place in Boiler House 2, this is supported by drawing "fire prevention and mitigation plan" which shows wastes with List of Waste codes 19 12 10 and 19 12 12 as being in Boiler house 2. Whereas, Section 5.4.4 of the PMP states that all wastes (unprocessed) will be stored in a waste storage building (presumably the feed material store). It is not clear therefore which area will be used for the storage of unprocessed wastes.

40. Clarify where SRF and RDF produced from waste processed at the site will be stored.

Reason: Drawing "fire prevention and mitigation plan" shows wastes with List of Waste codes 19 12 10 and 19 12 12 as being in Boiler house 2. This suggest that Boiler House 2 may be used for storing unprocessed waste and or RDF/SRF it is therefore not clear where the pelletized waste or RDF from the permitted activity will be stored. The above drawing suggests there is a risk of interaction/contamination from a high-risk material (unprocessed waste) with lower risk material (SRF/RDF).

41. Explain what actions will be taken to understand and minimise the age of the waste brought to site and where high-risk waste is identified what measures will be taken to control these risks.

Reason: The primary method that can be used to minimise the risk of pests is to control as much as possible the age of the waste i.e. minimize as much as possible the time between the initial production of the waste and it's processing into SRF/RDF. Given that the wastes proposed for this site are wastes arising from the processing of waste at other waste management facilities then there is a greater risk that some of the material

could have already been exposed to pests and therefore pose an imminent risk of pests once deposited i.e. fly infestations. We therefore expect robust control measures that mitigate this risk as much as possible.

42. Explain how the company will interact with the local community to better understand possible impacts from the site.

Reason: In section 8.1 of the PMP you have stated how you will respond to complaints which includes investigation and substantiation of the complaint. However, you have not explained how you will engage with the community following a complaint and the steps that will be taken to pro-actively engage the community to prevent complaints in the first instance.

Environmental Permitting Technical Requirements (EPTR), Section 10; compliance with BAT conclusions

Reference is made separately in this schedule in relation to the applicability of BAT as a consideration in developing the EMP and NMP.

When referring to BAT in the following questions, the BAT documents of reference are:

Sector Guidance Note IPPC S5.06 Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste (S5.06);

Best Available Techniques (BAT) Reference Document for Waste Treatment Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control) (2018); and

BAT conclusions for waste treatment 2010/75/EU dated August 2018.

43. Explain how waste pre-acceptance and acceptance procedures will control the acceptance of waste so as to limit the odour rate emissions to those utilized in any odour model used to understand risk.

Reason: the conclusions used in the odour assessment report rely on a certain level of odour rate emission from the drying process. The risk of odour from incoming waste will be determined by their composition. The suggested list of wastes to be accepted at the site include 19 12 12 wastes. The written description proposed for 19 12 12 wastes mean that they could potentially include a range of odorous materials. Robust waste pre-acceptance and acceptance as referenced in BAT no 2 should include controls as to how waste inputs will be managed to match the predicted odour rate emissions used in modelling.

44. Demonstrate how the waste reception proposal meets the requirement of BAT no 4.

Reason: The proposed operation involves tipping waste in a storage shed and then moving this waste to another reception area prior to treatment. BAT no 4 requires that “the storage is located in such a way so as to eliminate or minimise the unnecessary handling of wastes within the plant (e.g. the same wastes are handled twice or more or the transport distances on site are unnecessarily long).”

45. Clearly define the maximum storage times for all waste streams accepted and generated at the site.

Reason: reference is made the FPP, EPTR, and OMP to storage times for wastes. BAT no 4 requires that “the maximum residence time of waste is clearly established.”

46. Explain how you will monitor use of water, energy, diesel fuel and biomass on an at least annual basis.

Reason: BAT no 11 requires for a minimum annual monitoring of water, energy and raw materials.

Energy Efficiency

47. Demonstrate that the installation can meet the Indicative BAT requirements in section 2.7 of SGN5.06 and BAT no 23 of the BAT conclusions for waste treatment (2010/75/EU) 2018. You must provide the following as a minimum in accordance with BAT:

- A comprehensive breakdown of the energy consumption and generation by individual source and the associated environmental emissions – see section 2.7.1 of SGN5.06
- The proposed measures for improvement of energy efficiency – see section 2.7.2 of SGN5.06
- Demonstrate the degree to which the further energy-efficiency measures identified in the implementation plan have been taken into consideration and justify where they have not – see section 2.7.3 of SGN5.06.

Reason: Section 9 of the EPTR document addresses the energy efficiency measures at the installation, however it does not provide the level of detail or documentation required to demonstrate that the installation will be operated in accordance with BAT. For example, reference is made to the likely need for 936000 litres of diesel fuel (the majority likely needed for electrical generation) but a figure of only 21.49 tonnes of CO² is used in table 4 (energy consumption).

48. Specifically demonstrate why 41 130KWth wood fuelled boilers are more efficient than one or two larger boilers for drying waste and why alternatives to provide both heat and power were not considered.

You must compare the following:

- The energy consumption and associated emissions
- The energy efficiency
- Which engine technology is the best option?

Reason: You propose to use 41 Angus Orland (Orligno?) Super 130kw biomass boilers, resulting. The total net rated thermal input for the plant equates to 5.33MW, which could be achieved using larger, more efficient plant. An attempt has been made to justify why a large number of smaller boilers are the most efficient in accordance with indicative BAT energy efficiency measures, this is not satisfactory given that other options such as use of heat stores linked to a larger boiler could be available and does not account for issues with start- up/cool down of a large number of smaller units. No consideration appears to have been made to alternatives to wood fuelled boilers such as natural gas that are more suited to fluctuating load demands. Furthermore, as there is a requirement for both electricity and heat consideration could have been given to the use of alternatives such combined heat and power (CHP) units to provide both as referenced as possible BAT in Section 2.7.3 of S5.06.

End of the 2nd Schedule 5.

APPENDIX E REPORT FOR THE PERIODIC MONITORING OF EMISSION TO AIR BY REDWING ENVIRONMENTAL LTD

Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12 Redwing Environmental Ltd
Permit N°: Report Format (Executive Summary) Issued for use 20/10/10 v2

Report for the Periodic Monitoring of Emissions to Air

Part 1: Executive Summary

Permit Number:

Operator: Eco-Power Environmental (Hull) Ltd

Installation: Stacks 2, 6 & 12

Monitoring dates: 18th May 2021

Contract Number: P-RED21-054/EB/R1/Rev0


Client Organisation: Eco-Power Environmental (Hull) Ltd
Address: Gibson Lane
 North Ferriby
 Melton
 Hull, HU14 3HH

Monitoring Organisation: Redwing Environmental Ltd
Address: Unit 7, Manor Road Business Park
 Manor Road
 Atherstone
 Warwickshire
 CV9 1TE

Date of Report: 17th June 2021

Report Approved By: Elena Berek
MCERTS Registration Number: MM 02 029
 Level 2 - Technical Endorsements 1, 2, 3 & 4

Function: Director

Signed: 



Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12 *Redwing Environmental Ltd*
 Permit N°: *Report Format (Executive Summary) Issued for use 20/10/10 v2*

Contents

Part 1: Executive Summary..... 3

1.0 Monitoring Objectives 4

 1.1 Overall aim of the monitoring campaign 4

 1.2 Substances to be monitored 4

 1.3 Any Special Requirements..... 4

 1.4 Monitoring Results 5

1.5 Operating Information..... 6

1.6 Monitoring Deviations 7

2.0 Part 2: Supporting Information..... 8

APPENDIX A 10

Dryer Stack No 2, 6 & 12 – Results..... 10

 A1 - Diagram and Dimensions of the Stack 11

 A2 - Flow criteria measurements (temperature, pressure, stack gas velocity)..... 12

 A3 - Gas Homogeneity test results 15

 A4 - Gas Measurements test results (such as O₂ and CO₂)..... 15

 A5 - Water Vapour Measurements 15

 A6 - Sampling Measurements (Stack gas temperature & Velocity during sampling – Total Particulate Matter) 15

 A7 - Gas Analyser Site Calibration Measurements 18

 A8 – Instrumental Gas Analyser Results 19

 A9 – Laboratory Results 19

 A10 – Calculations..... 20

 A11 – Uncertainty Budgets 22

 Total Particulate Matter – Uncertainty 22

 A12 - Method Outline..... 23



Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12 *Redwing Environmental Ltd*
 Permit N°: Report Format (Executive Summary) Issued for use 20/10/10 v2

Part 1: Executive Summary

The following document details the emissions to air monitoring survey undertaken by Elena Berek and Philip Butler of Redwing Environmental Ltd at Eco-Power Environmental (Hull) Ltd on the 18th May 2021. All results pertain to the dates monitored only.

A summary of results is shown below:-

Emission point reference Stack N°	Average Total Particulate Matter at reference conditions (mg/m ³)	Average velocity (m/s)	Average flow rate (m ³ .hour)
Dryer Stack No 2	2.2 ± 0.6	5.5	4716
Dryer Stack No 6	2.9 ± 0.8	6.0	5086
Dryer Stack No 12	1.2 ± 0.4	5.3	4557
Emission Limit Value	*50	N/A	N/A

Note 1: Reference conditions are standard temperature, pressure and dry

* Emission limit is a guideline only. 50mg/m³ is a common emission limit for total particulate matter.



Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12 *Redwing Environmental Ltd*
 Permit N°: Report Format (Executive Summary) Issued for use 20/10/10 v2

1.0 Monitoring Objectives

1.1 Overall aim of the monitoring campaign

The exhausts listed below were monitored with respect to Q-RED21-054EBv0 for the compliance check monitoring of emissions to air for Eco-power Environmental (Hull) Ltd.

1.2 Substances to be monitored

The substances requested for monitoring at each emission point are listed below:

Table 1 - Monitoring Programme

Emission Point Reference / Parameters required	Total Particulate Matter	Velocity & Temperature profile
Dryer Stack No 2	✓	✓
Dryer Stack No 6	✓	✓
Dryer Stack No 12	✓	✓

1.3 Any Special Requirements

Three stacks to be monitored simultaneously.



Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12
Permit N°:

Redwing Environmental Ltd
Report Format (Executive Summary) Issued for use 20/10/10 v2

1.4 Monitoring Results

Emission Point Reference	Substance to be Monitored	*Emission Limit Value	Periodic Monitoring Result	Uncertainty expressed at 95% confidence	Units	Reference Conditions 273 K, 101.3 kPa	Date of Sampling	Start and End Times	Monitoring Method Reference	Operating Status
Dryer Stack No 2	Total Particulate Matter	50	2.2	± 0.6	mg/m ³	273K, 101.3kPa and wet	18/05/21	1055 - 1155	BS EN 13284-1	Normal
Dryer Stack No 6	Total Particulate Matter	50	2.9	± 0.8	mg/m ³					
Dryer Stack No 12	Total Particulate Matter	50	1.2	± 0.4	mg/m ³					

* Emission limit based on common limit for Total Particulate Matter



Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12
Permit N°:

Redwing Environmental Ltd
Report Format (Executive Summary) Issued for use 20/10/10 v2

1.5 Operating Information

Emission Point Reference	Date	Process Type (batch or continuous)	Process Duration	Fuel	Feedstock	Abatement	Normal load, throughput or continuous rating of the plant	Comparison of Operator CEMS and Periodic Monitoring Results			
								Substance	CEMS Results	Periodic Monitoring Results	Units
Dryer Stack No 2	18/05/21	Continuous	N/A	Gas	N/A	Dryer	N/A	Total particulate matter	N/A	2.2	mg/m ³
Dryer Stack No 6	18/05/21	Continuous	N/A	Gas	N/A	Dryer	N/A	Total particulate matter	N/A	2.9	mg/m ³
Dryer Stack No 12	18/05/21	Continuous	N/A	Gas	N/A	Dryer	N/A	Total particulate matter	N/A	1.2	mg/m ³

P-RED21-054/EB/R1/Rev0 - May 2021
Page 6 of 24



Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12
 Permit N°:

Redwing Environmental Ltd
 Report Format (Executive Summary) Issued for use 20/10/10 v2

1.6 Monitoring Deviations

Emission Point Reference	Were any required substances not monitored (Substance deviation)	Were any substances monitored but didn't follow specified method (Monitoring Deviations)	Other Relevant Issues
Dryer Stack No 2	N/A	Single sample port on vertical duct so the number of traverses were doubled	N/A
Dryer Stack No 6	N/A	Single sample port on vertical duct so the number of traverses were doubled	N/A
Dryer Stack No 12	N/A	Single sample port on vertical duct so the number of traverses were doubled	N/A



Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12 Redwing Environmental Ltd
Permit N°: Report Format (Supporting Information) Issued for use 20/10/10 v2

2.0 Part 2: Supporting Information

Appendix 1: Site Team Details

Elena Berek – Team Leader
MM 02 029 MCerts Level 2 TE1, TE2, TE3 & TE4

Philip Butler – Environmental Trainee
MM 02 016

Monitoring organisation method and Technical Procedure details

Substances Monitored	Standard reference number	Technical Procedure
Velocity	ISO 10780 & BS EN 13284-1	TP-RED04-02
Total Particulate Matter	BS EN 13284-1	TP-RED04-04



Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12 Redwing Environmental Ltd
 Permit N°: Report Format (Supporting Information) Issued for use 20/10/10 v2

Equipment Checklist

Equipment used		
Pollutant	Apparatus	Model
Temperature	Digital thermometer	RED 0349 & 0351
	Thermocouple	K type RED 0418
Velocity	Manometer	RED 0400
	Pitot	RED 0408
Total Particulate Matter	Zambelli & Graseby	RED 0258, RED 0010 & Graseby



Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12 *Redwing Environmental Ltd*
Permit N°: *Report Format (Supporting Information) Issued for use 20/10/10 v2*

APPENDIX A

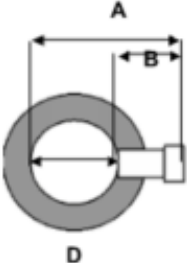
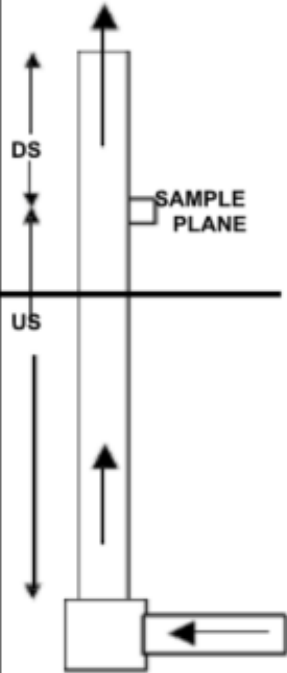
Dryer Stack No 2, 6 & 12 – Results

P-RED21-054/EB/R1/Rev0 - May 2021
Page 10 of 24



Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12 Permit N°: Redwing Environmental Ltd Report Format (Supporting Information) Issued for use 20/10/10 v2

A1 - Diagram and Dimensions of the Stack

		<p>Dryer Stack No 2, 6 7 12</p> <p>A – 0.55m B – 0.0m D = A – B = 0.55m</p> <p>DS = >5 DD US = >5 DD</p>
<p>SKETCH OF SAMPLING POINT</p> <p>Sample point was on the horizontal duct joining the vertical duct to atmosphere</p>	<p>S = No of Hydraulic DD downstream from sample plane</p> <p>US = No of Hydraulic DD upstream of sample plane</p>	



Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12 Redwing Environmental Ltd
 Permit N°: Report Format (Supporting Information) Issued for use 20/10/10 v2

A2 - Flow criteria measurements (temperature, pressure, stack gas velocity)

Client		Eco-power Environmental (Hull) Ltd					
Site Address		Gibson Lane, Hull, HU14 3HH					
Job Number		P-RED21-054					
Date		18 May 2021					
Operator(s)		E. Birk & P. Edder					
Stack Reference	Stack No 2	Isokinetic Sample Positions (No. multiply by diameter to obtain sample points)					
		1	2	3	4	5	6
Number of Stacks	1	2	25.00	Sampling Plane Diagram			
Stack Configuration	Round	3	75.00				
Dimensions (mm)	0.55	4	52.50				
Orifice Diameter (if applicable) (mm)		5	N/A				
Number of Sample Ports	1	6	N/A				
Number of Samples per Axis / Port	4.00	7	N/A				
Nozzle Diameter (mm)	0.0	8	N/A				
Needle Area (m²)	0.0000004	Average Isokinetic Flow Rate (litres/min)			Axis 1	Axis 2	
Stack Area (m²)	0.236				15.02	N/A	
Pitot Coefficient	0.88	Pitot Calibration Due Date			November 2021		Atmos. Pressure (kPa)
Position	Distance	Axis 1	Temperature	Baro Test	Axis 2	Temperature	Baro Test
No.	(mm)	(m)	(°C)	(")	(m)	(°C)	(")
1	0.00	23	55.2	2.7			
2	0.75	24	55.2	3.2			
3	41.25	17	55.2	3.2			
4	51.50	21	55.2	3.0			
5	N/A						
6	N/A						
7	N/A						
8	N/A						
Average		21	55.2				
Mean Flow Gas Temp (in 8) T _g = (Mean T ₁ + Mean T ₂)/2 =						122.22	
Permitted Range of gas temperature readings (°C) = (0.95T _g - 27) to (1.05T _g + 27) =						38.79 to 73.61	
Highest Velocity Reading (m/s)						6.6	
Lowest Velocity Reading (m/s)						4.5	
Ratio Highest/Lowest (Max permitted = 3:1)						1.25:1	
On-site Checklist							
Initial Leak Check	<0.2	End of test run	<0.2	Start of 2 nd run	N/A	End of 2 nd run	N/A
Acceptable Leak Check = 2% Vol (m/s)	0.33			Manometer Leak Check		OK	
Range of Gas Temp	OK			Pitot Leak Check		OK	
Passed minimum Velocity measurements (2:1)	YES			Overall Isokinetic Ratio (%) (must be 95 to 115%)		Run 1	Run 2
Negative Local Flow Present, YES or NO (Yes = Fail)	NO			Are there sufficient rolls and lock board? (YES, NO or N/A)		95.9	N/A
Is the Pitot probe greater than 5m? (YES, NO or N/A)	NO			Is the area in front of the sample line the length of the probe + 1 metre? (YES or NO)			YES
Passed Highest to Lowest Velocity (3:1)	YES						
Site Equipment Used							
Pitot Reference	RED 0400			Manometer Reference		RED 0400	
Thermometer Reference	RED 03493351			Thermocouple Reference		RED 0417	
Balance Reference	N/A			Sampling Pump Reference		RED 0358	
Tape Measure Reference	RED 0123			Barometer Reference		RED 0402	
DSM Thermocouple	RED 0250			Impinger Orifice Thermocouple		N/A	
Calipers	RED 0261			Condenser Thermocouple		N/A	



Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12 **Redwing Environmental Ltd**
Permit N°: **Report Format (Supporting Information) Issued for use 20/10/10 v2**

Client		Eco-power Environmental (Hull) Ltd													
Site Address		Gibson Lane, HU14 3HH													
Job Number		P-RED21-054													
Date		18th May 2021													
Operator(s)		E. Davis & P. Esher													
Stack Reference		Stack No 1		Nozzle Sample Positions (%) multiply by diameter to obtain sample points				Sampling Plane Diagram							
Number of Stacks		1		1		0.70									
Stack Configuration		Round		2		25.00									
Diameter (mm)		5.03		3		75.00									
Outlet Diameter (if applicable) (mm)				4		95.00									
Number of Sample Ports		1		5		NA									
Number of Samples per Axis / Port		4.00		6		NA									
Nozzle Diameter (mm)		0.0		7		NA									
Nozzle Area (m²)		0.000000m		8		NA									
Stack Area (m²)		0.200000m		Average Isokinetic Flow Rate (m³/min)				Axis 1		Axis 2					
Pilot Calibration Due Date		0.200						17.60		NA					
Pilot Calibration		0.00		November 2021				Atmos. Pressure (hPa)							
Position		Distance		Axis 1		Temperature		Swell Test		Axis 2		Temperature		Swell Test	
No.		(mm)		(µm)		(°C)		(°)		(µm)		(°C)		(°)	
1		3.69		27		54.6		3.1						Static Pressure (m)	
2		13.75		35		54.6		3.2						17.0	
3		41.25		23		54.7		3.2						1 Axis	
4		51.32		24		54.7		3.0						2 Axis	
5		NA												Velocity of Flow (m/s)	
6		NA												1.00	
7		NA												NA	
8		NA												Volume Flow Rate (m³/h)	
Averages		25		54.7										1.40	
Mean Flow Gas Temp (in K) T _g = ((Mean T ₁ + Mean T ₂)/2) + 273.15														Reduced Flow	
Permitted Range of gas temperature readings (°C) = ((0.85T _g - 273) to (1.05T _g - 273))														NA	
Highest Velocity Reading (m/s)		=												327.65	
Lowest Velocity Reading (m/s)		=												36.27	
Ratio Highest/Lowest (Max permitted = 3:1)														to	
														71.83	
														3.4	
														5.7	
														1.12 - 1	
On-site Checks															
Initial Leak Check		-0.2		End of 1 st run		-0.2		Start of 2 nd run		NA		End of 2 nd run		NA	
Acceptable Leak Check ± 2% Vol (m/s)		0.36						Manometer Leak Check						OK	
Range of Gas Temp		OK						Pilot Leak Check						OK	
Passed minimum Velocity requirements (m/s)		YES						Overall Isokinetic Ratio (%) (must be 95 to 110%)		Run 1		Run 2			
Negative Local Flow Pressure YES or NO (Yes = Fail)		NO						Are there sufficient rods and lock loose? (YES, NO or N/A)		100.0		NA			
Is the Platform area greater than 5m ² ? (YES, NO or N/A)		NO						Is the area in front of the sample line the length of the probe + 1 metre? (YES or NO)						NO	
Passed Minimum Isokinetic Velocity (3:1)		YES												YES	
Site Equipment Used															
Pilot Reference		RED 0460		Manometer Reference		RED 0460		Thermocouple Reference		RED 0467		Sampling Pump Reference		RED 0010	
Thermometer Reference		RED 03490301		Thermocouple Reference		RED 0467		Sampling Pump Reference		RED 0010		Barometer Reference		RED 0462	
Balance Reference		NA		Thermocouple Reference		RED 0467		Sampling Pump Reference		RED 0010		Barometer Reference		RED 0462	
Tape Measure Reference		RED 0123		Thermocouple Reference		RED 0467		Sampling Pump Reference		RED 0010		Barometer Reference		RED 0462	
Dew Thermocouple		RED 0258		Thermocouple Reference		RED 0467		Sampling Pump Reference		RED 0010		Barometer Reference		RED 0462	
Calipers		RED 0261		Thermocouple Reference		RED 0467		Sampling Pump Reference		RED 0010		Barometer Reference		RED 0462	



Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12 Redwing Environmental Ltd
 Permit N^o: Report Format (Supporting Information) Issued for use 20/10/10 v2

Client		Eco-power Environmental (Hull) Ltd									
Site Address		Gibson Lane, Hull, HU14 3HH									
Job Number		P-RED21-054									
Date		09-May-2021									
Operator(s)		E. Davis & P. Butler									
Stack Reference	Stack No 12	Isokinetic Sample Positions (% multiply by diameter to obtain sample points)									
		1	2	3	4						
Number of Stacks	1	2	25.00								
Stack Configuration	Round	3	75.00								
Dimensions (mm)	335	4	93.30								
Outlet Diameter (if applicable) (metres)		5	N/A								
Number of Sample Ports	1	6	N/A								
Number of Samples per Axis / Port	4.00	7	N/A								
Nozzle Diameter (mm)	8.0	8	N/A								
Nozzle Area (m ²)	0.0005024	Average Isokinetic Flow Rate (litres/min)						Axis 1	Axis 2		
Stack Area (m ²)	0.238							10.00	N/A		
Pitot Coefficient	0.88	Pitot Calibration Due Date						November 2021			
Position	Distance (mm)	Axis 1 (mm)	Temperature (°C)	Swirl Test (°)	Axis 2 (mm)	Temperature (°C)	Swirl Test (°)	Atmos. Pressure (kPa)			
								101.2			
No.	1	3.60	17	56.7	3.0	3.0	3.0	Static Pressure (kPa)			
								17.0			
2	13.75	21	56.7	3.2	3.2	3.2	1 Axis		2 Axis		
							Velocity of flow (m/s)				
3	41.25	19	56.7	3.2	3.2	3.2	0.33		N/A		
							Volume Flow Rate (m ³ /s)				
4	51.33	27	56.7	3.0	3.0	3.0	1.27		N/A		
							Reduced Exit				
5	N/A										
							Average		20	56.7	
6	N/A						Mean Flow Gas Temp. (in K) T _g = ((Mean T1 + Mean T2)/2) + 273.15		335.75		
							Permitted Range of gas temperature readings (K) = ((957 + 273) to (1,457 + 273)) =		49.22 to 73.19		
Highest Velocity Reading (m/s)		=				=		5.0			
Lowest Velocity Reading (m/s)		=				=		4.0			
Ratio Highest/Lowest (Max permitted = 3:1)								1.27		1	
On site Checklist											
Initial Leak Check	< 0.2	End of first run	< 0.2	Start of 2 nd run	N/A	End of 2 nd run	N/A				
Acceptable Leak Check < 2% Vol (min)	6.33		Manometer Leak Check		OK		Pitot Leak Check		OK		
Range of Gas Temp	OK		Overall Isokinetic Ratio (%) (must be 95 to 115%)		Run 1		Run 2				
Passed minimum Velocity requirements (1 legal)	YES		101.2		N/A						
Stablest Level Flow Passed, YES or NO (Yes or No)	NO		No flow sufficient only and took lowest? (YES, NO or N/A)		NO						
Is the Pitot area greater than 5m ² ? (YES, NO or N/A)	NO		Is the area behind the sample less than the length of the probe + 1 metre? (YES or NO)		YES						
Passed Highest to Lowest Velocity (3:1)	YES										
Site Equipment Used											
Pitot Reference	RED 8408	Manometer Reference	RED 8409								
Thermometer Reference	RED 8249/8250	Thermocouple Reference	RED 8417								
Balance Reference	N/A	Sampling Pump Reference	Grassby								
Tape Measure Reference	RED 8123	Barometer Reference	RED 8402								
D5M Thermocouple	RED 8258	Impinger Outlet Thermocouple	N/A								
Calipers	RED 8301	Condenser Thermocouple	N/A								



Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12 Permit N°: Redwing Environmental Ltd Report Format (Supporting Information) Issued for use 20/10/10 v2

A3 - Gas Homogeneity test results

Not applicable

A4 - Gas Measurements test results (such as O₂ and CO₂)

Molecular weight of dry gas stream, M _d		
CO ₂	0.7	%
O ₂	19.5	%
Total	20.2	%
N ₂ (100 - total)	79.8	%
M _d = 0.44(%CO ₂)+0.32(%O ₂)+0.28(%N ₂)	28.892	g/gmol

A5 - Water Vapour Measurements

Not applicable (<5%)

A6 - Sampling Measurements (Stack gas temperature & Velocity during sampling – Total Particulate Matter)

Stack No	Filter ID	Site											
		B47-10021-01											
Sample Point	Probe Distance	Time	Pressure reading (Pa)	Sampling Rate (litres/min)	Dry Gas Meter Reading (litres)	Stack Gas Temperature (°C)	Dry Gas Water Temperature (°C)	Ambient Temperature (°C)	Probe Temp (°C)	Down Temp (°C)	Left Impinger Temp (°C)	Condensate Trap Temp (°C)	
Start		11:00	73	17.3	0	55.5	19	19	NA	NA	NA	NA	
		11:00	77	15.7	26	55.5	19	19					
		11:00	78	15.1	180	55.5	19	19					
		11:00	79	17.5	288	55.5	19	19					
		11:05	73	17.3	188	55.5	19	19					
		11:20	76	15.3	435	55.5	19	19					
		11:25	77	17.3	511	55.5	19	19					
		11:30	77	15.9	555	55.5	19	19					
		11:35	76	19.1	587	55.5	19	19					
		11:40	77	17.3	717	55.5	19	19					
		11:45	76	19.0	854	55.7	19	19					
		11:50	77	17.3	978	55.5	19	19					
		11:55			999								
	Finish												
Actual Sampling Time		01:55		17:34	999.0	55.05	18.95	19.05	19.0/19	19.0/19	19.0/19	19.0/19	



Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12 Redwing Environmental Ltd
 Permit N^o: Report Format (Supporting Information) Issued for use 20/10/10 v2

Stack Reference ID		Stack No 2		
		Eco-power Environmental (Hull) Ltd		
		RUN 1		
Filter Reference No	G47-180521-01			
Date	18th May 2021			
Sample Period	10:55	to	11:55	
Velocity (m/s)	5.51			
Volume flow rate of Stack gas (m ³ /hr)	4716			
Average Stack Temp (°C)	55.2			
Temp Range ± 5% (°C)	38.79	to	71.61	
Lowest Velocity Reading (m/s)	4.92			
Highest Velocity Reading (m/s)	6.03			
Ratio (less than 3:1)	1.23	:	1	
Pre-conditioning temperature of Filter (°C)	180			
Instack sampling - Max Filter temperature (°C)	55.2			
Post-conditioning temperature FilterWash (°C)	160			
Oxygen %	19.5			
Carbon Dioxide %	0.70			
Moisture (%)	1.71			
Litres sampled	999			
Corrected volume sampled - STP (m ³)	0.943			
Blank Filter Run weight gain (mg)	0.040	Blank Concentration (mg/m ³)	0.042	
Blank Wash Run weight gain (mg)	0.040		0.042	
Weighing uncertainty of balance (mg)	0.075	This must be <5% of ELV	ELV = 99	2.5
Overall Blank value (mg/m ³)	0.085	This must be <10% of ELV	ELV = 99	5.0
Particulate weight collected on filter (mg)	1.46			
Particulate weight collected in Wash (mg)	0.67			
Total Particulate weight collected (mg)	2.13			
Total Particulate Concentration, dry gas at STP (mg/m ³)	2.26			
Total Particulate Concentration, wet gas at STP (mg/m ³)	2.22			
Total Particulate Concentration corrected for 11% Oxygen, dry gas (mg/m ³)	N/A			
Total Particulate Mass Emission (kg/hour)	0.0105			



Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12 Redwing Environmental Ltd
 Permit N°: Report Format (Supporting Information) Issued for use 20/10/10 v2

Stack Reference ID		Stack No 6		
		Eco-power Environmental (Hull) Ltd		
		RUN 1		
Filter Reference No	G47-180521-03			
Date	18th May 2021			
Sample Period	10:55	to	11:55	
Velocity (m/s)	5.95			
Volume flow rate of Stack gas (m ³ /hr)	5086			
Average Stack Temp (°C)	54.7			
Temp Range ± 5% (°C)	38.27	to	71.03	
Lowest Velocity Reading (m/s)	5.72			
Highest Velocity Reading (m/s)	6.39			
Ratio (less than 3:1)	1.12	:	1	
Pre-conditioning temperature of Filter (°C)	180			
Instack sampling - Max Filter temperature (°C)	54.7			
Post-conditioning temperature FilterWash (°C)	160			
Oxygen %	19.5			
Carbon Dioxide %	0.70			
Moisture (%)	1.50			
Litres sampled	1022			
Corrected volume sampled - STP (m ³)	0.965			
Blank Filter Run weight gain (mg)	0.020	Blank Concentration (mg/m ³)	0.021	
Blank Wash Run weight gain (mg)	0.030		0.031	
Weighing uncertainty of balance (mg)	0.076	This must be <5% of ELV	ELV = 50	2.5
Overall Blank value (mg/m ³)	0.052	This must be <10% of ELV	ELV = 50	5.0
Particulate weight collected on filter (mg)	2.30			
Particulate weight collected in Wash (mg)	0.54			
Total Particulate weight collected (mg)	2.84			
Total Particulate Concentration, dry gas at STP (mg/m ³)	2.94			
Total Particulate Concentration, wet gas at STP (mg/m ³)	2.90			
Total Particulate Concentration corrected for 11% Oxygen, dry gas (mg/m ³)	N/A			
Total Particulate Mass Emission (kg/hour)	0.0147			



Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12 Redwing Environmental Ltd
 Permit N°: Report Format (Supporting Information) Issued for use 20/10/10 v2

Stack Reference ID		Stack No 12	
Eco-power Environmental (Hull) Ltd			
RUN 1			
Filter Reference No	G47-180521-05		
Date	18th May 2021		
Sample Period	10:55	to	11:55
Velocity (m/s)	5.33		
Volume flow rate of Stack gas (m³/hr)	4557		
Average Stack Temp (°C)	56.7		
Temp Range ± 5% (°C)	40.22	to	73.19
Lowest Velocity Reading (m/s)	4.93		
Highest Velocity Reading (m/s)	5.79		
Ratio (less than 3:1)	1.17	:	1
Pre-conditioning temperature of Filter (°C)	180		
Instack sampling - Max Filter temperature (°C)	56.7		
Post-conditioning temperature Filter/Wash (°C)	160		
Oxygen %	19.5		
Carbon Dioxide %	0.70		
Moisture (%)	1.92		
Litres sampled	988		
Corrected volume sampled - STP (m³)	0.933		
Blank Filter Run weight gain (mg)	0.020	Blank Concentration (mg/m³)	0.021
Blank Wash Run weight gain (mg)	0.040		0.043
Weighing uncertainty of balance (mg)	0.074	This must be <5% of ELV	ELV = 98 2.5
Overall Blank value (mg/m³)	0.064	This must be <10% of ELV	ELV = 98 5.0
Particulate weight collected on filter (mg)	0.80		
Particulate weight collected in Wash (mg)	0.34		
Total Particulate weight collected (mg)	1.14		
Total Particulate Concentration, dry gas at STP (mg/m³)	1.22		
Total Particulate Concentration, wet gas at STP (mg/m³)	1.20		
Total Particulate Concentration corrected for 11% Oxygen, dry gas (mg/m³)	N/A		
Total Particulate Mass Emission (kg/hour)	0.0055		

A7 - Gas Analyser Site Calibration Measurements

Not applicable



*Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12
Permit N°:*

*Redwing Environmental Ltd
Report Format (Supporting Information) Issued for use 20/10/10 v2*

A8 – Instrumental Gas Analyser Results

Not applicable

A9 – Laboratory Results

Not applicable



A10 – Calculations

ISOKINETIC EQUATIONS Page 1	Units															
Absolute pressure of stack gas, Ps																
Barometric pressure, P_b	102.3 kPa															
Stack static pressure, P_{static}	17.0 Pa															
$P_s = P_b + (P_{static}/1000)$	102.317 kPa															
Moisture																
$V_{mstd} = (V2 - V1) \cdot \frac{T_{std}}{T_m} \cdot \frac{P_m}{P_{std}}$ <p>Volume of gas sample through gas meter, V_m ($V2 - V1$) Average dry gas meter temperature, T_m Measured Atmospheric pressure P_m $T_{std} - 273K$ $P_{std} - 101.3kPa$</p>	<table style="width: 100%; border-collapse: collapse;"> <tr><td>$V_{mstd} =$</td><td style="text-align: center;">0.0571</td><td style="text-align: center;">m^3</td></tr> <tr><td>$P_m =$</td><td style="text-align: center;">102.3</td><td style="text-align: center;">kPa</td></tr> <tr><td>$T_m =$</td><td style="text-align: center;">289.6</td><td style="text-align: center;">$^{\circ}K$</td></tr> <tr><td>$V2 =$</td><td style="text-align: center;">0.0600</td><td style="text-align: center;">m^3</td></tr> <tr><td>$V1 =$</td><td style="text-align: center;">0.0000</td><td style="text-align: center;">m^3</td></tr> </table>	$V_{mstd} =$	0.0571	m^3	$P_m =$	102.3	kPa	$T_m =$	289.6	$^{\circ}K$	$V2 =$	0.0600	m^3	$V1 =$	0.0000	m^3
$V_{mstd} =$	0.0571	m^3														
$P_m =$	102.3	kPa														
$T_m =$	289.6	$^{\circ}K$														
$V2 =$	0.0600	m^3														
$V1 =$	0.0000	m^3														
$V_{wc}(g/m^3) = \frac{m_{wc}}{V_{mstd}}$ <p>Where V_{wc} = water vapour content in grams per cubic meter in standardised conditions of temperature and pressure and on dry basis m_{wc} = weight gain in grams</p>	<table style="width: 100%; border-collapse: collapse;"> <tr><td>$V_{wc} =$</td><td style="text-align: center;">14.0</td><td style="text-align: center;">g/m^3</td></tr> <tr><td>$m_{wc} =$</td><td style="text-align: center;">0.8</td><td style="text-align: center;">g</td></tr> <tr><td>$V_{mstd} =$</td><td style="text-align: center;">0.0571</td><td style="text-align: center;">m^3</td></tr> </table>	$V_{wc} =$	14.0	g/m^3	$m_{wc} =$	0.8	g	$V_{mstd} =$	0.0571	m^3						
$V_{wc} =$	14.0	g/m^3														
$m_{wc} =$	0.8	g														
$V_{mstd} =$	0.0571	m^3														
$V_{wc}(\%) = \frac{\frac{m_{wc}}{Mw} \cdot V_{mstd}}{\frac{m_{wc}}{Mw} \cdot V_{mstd} + V_{mstd}} \cdot 100$ <p>Where V_{wc} = The water vapour content in % volume on wet basis Mw = the molecular weight of water (18g/mol) V_{mol} = is the molar volume at standard conditions, in m^3/mol at P_{std} and T_{std} (0.0224)</p>	<table style="width: 100%; border-collapse: collapse;"> <tr><td>$V_{wc} =$</td><td style="text-align: center;">1.7</td><td style="text-align: center;">%</td></tr> <tr><td>$m_{wc} =$</td><td style="text-align: center;">0.8</td><td style="text-align: center;">g</td></tr> <tr><td>$V_{mstd} =$</td><td style="text-align: center;">0.0224</td><td style="text-align: center;">m^3</td></tr> <tr><td>$Mw =$</td><td style="text-align: center;">18</td><td style="text-align: center;">g/mol</td></tr> <tr><td>$V_{mstd} =$</td><td style="text-align: center;">0.0571</td><td style="text-align: center;">m^3</td></tr> </table>	$V_{wc} =$	1.7	%	$m_{wc} =$	0.8	g	$V_{mstd} =$	0.0224	m^3	$Mw =$	18	g/mol	$V_{mstd} =$	0.0571	m^3
$V_{wc} =$	1.7	%														
$m_{wc} =$	0.8	g														
$V_{mstd} =$	0.0224	m^3														
$Mw =$	18	g/mol														
$V_{mstd} =$	0.0571	m^3														



ISOKINETIC EQUATIONS Page 2	Run 1	Units
Velocity of stack gas to ISO 10780		
$V = K \times C \times \sqrt{(T_s \times \Delta P) / (P_s \times M_s)}$ <p> ΔP - is the mean pitot pressure difference (kPa) T_s - is the mean flue gas temperature (°K) P_s - is the absolute gas pressure (kPa) M_s - molar mass of gas 29g/gmol K - pitot tube coefficient C - 129(m/s).[kg/(kmol.K)]^{1/2} </p>	$V_{wet} =$ 5.51 m/s $V_{dry} =$ 1.31 m/s $K =$ 0.88 $C =$ 129 $T_s =$ 328.20 °K $\Delta P =$ 0.02125 kPa $P_s =$ 102.317 kPa $M_s =$ 28.892	
Actual Flow of stack gas, Q_s		
$Q_s = A \times V \times 3600$ Where A = Area of Stack & V = Velocity	$A =$ 0.24 m ² $V =$ 5.51 m/s $Q_s =$ 4716 m ³ /hour	
Sample Gas Volume, dry V_{mstd}		
$V_{mstd} = (V_2 - V_1) \times \frac{T_{std}}{T_m} \times \frac{P_m}{P_{std}}$ <p> Volume of gas sample through gas meter, V_m ($V_2 - V_1$) Average dry gas meter temperature, T_m Measured Atmospheric pressure P_m $T_{std} - 273K$ $P_{std} - 101.3kPa$ </p>	$V_{mstd} =$ 0.943 m ³ $P_m =$ 102.3 kPa $T_m =$ 18.9 °K $V_2 =$ 1.00 m ³ $V_1 =$ 0.00 m ³	
Isokinetic Sample Rate (litres/minute)		
$\text{Isokinetic Rate (l/min)} = V \times A_n \times 60 \times 1000$ $\text{Isokinetic Ratio (\%)} = \frac{\text{Actual flow rate (l/min)}}{\text{Required flow rate (l/min)}} \times 100$ <p> $V =$ Velocity (m/s) $A_n =$ Nozzle area m² </p> <p>Acceptable Isokinetic range 95 to 115%</p>	Nozzle diameter = 8.0 mm $V =$ 1.31 m/s $A_n =$ 0.00005024 m ² Isokinetic rate = 16.62 l/min Actual & required sampled volume = 999 litres 1041 litres $IR (\%) =$ 96.0 %	
Particulate Concentration, C		
$C_{dry} = \text{Total mass of particulate collected (M}_s) / V_{mstd}$ $M_f =$ mass collected on filter $M_p =$ mass collected in probe rinse $M_s =$ Total mass ($M_f + M_p$)	$M_f =$ 1.46 mg $M_p =$ 0.67 mg $M_s =$ 2.13 mg $C_{dry} =$ 2.26 mg/m ³	
$C_{wet} = (C_{dry} \times (100 - \% \text{Moisture})) / 100$	$C_{wet} =$ 2.2 mg/m ³	
Particulate Mass Emission, E		
$E = (C_{wet} \times Q_s) / 1000$	$E =$ 0.010 g/hour	



A11 – Uncertainty Budgets

Total Particulate Matter – Uncertainty

MEASUREMENT UNCERTAINTY BUDGET - TOTAL PARTICULATE MATTER						
Limit value (ELV)	Value	Units				
Measured concentration	2.26	mg.m ⁻³ (at ref conditions)				
Reference Oxygen	21	% by Volume				
Measured Quantities	Symbol	Value	Units			
Sampled Volume	V _s	1.00	m ³			
Gas Meter Temperature	T _m	291.92	K			
Sampled Gas Pressure	P _m	102.3	kPa			
Sampled Gas Humidity	H _s	0	% by volume			
Oxygen content	O ₂	19.5	% by volume			
Mass of Particulate	m	2.13	mg			
Loss	L	0.2	%			
Uncollected Mass (in-stack filter or filter)	UCM	0.04	mg			
Standard Uncertainty	Symbol	Value	Units	Uncertainty as a %	Uncertainty Required	Uncertainty Met
Sampled Volume	uV _s	0.01	m ³	1.00	± 2%	Yes
Sampled Gas Temperature	uT _m	2	K	0.69	± 1%	Yes
Sampled Gas Pressure	uP _m	0.005	kPa	0.00	± 1%	Yes
Sampled Gas Humidity	uH _s	1	% by volume	1.00	± 1%	Yes
Oxygen content	uO ₂	0.2	% by volume	1.03	± 5%	Yes
Mass of Particulate	u _m	0.06	mg	3.56	<1% of limit value	No
Loss	L	n/a	n/a	0.20	± 2%	Yes
Uncollected Mass (in-stack filter or filter)	UCM	n/a	n/a	1.88	± 10% of ELV	Yes
Parameter	Value	Units	Sensitivity Coeff	Uncertainty Contribution	Units	Uncertainty as %
Corrected Volume (STP)	V	0.943	m ³	2.39	0.04	mg.m ⁻³
Mass of Particulate	m	2.13	mg	1.00	0.08	mg.m ⁻³
Factor for O2 Correction	f _o	1.00		2.20	0.30	mg.m ⁻³
Loss	L	0.00	mg.m ⁻³	1.00	0.00	mg.m ⁻³
Uncollected mass	UCM	0.02	mg	1.00	0.02	mg.m ⁻³
Combined measurement uncertainty				3.75	0.21	mg.m ⁻³
Expanded uncertainty as percentage of measured value	27.87					
Expanded uncertainty in units of measurement (µg/m ³)	0.63					
Expanded uncertainty as percentage of limit value	1.26					



Eco-Power Environmental (Hull) Ltd – Stacks 2, 6 & 12
Permit N°:

Redwing Environmental Ltd
Report Format (Supporting Information) Issued for use 20/10/10 v2

A12 - Method Outline

Stack Velocity, Pressure and Temperature Measurements

The stack velocity, pressure and temperature were measured by full pitot traverses of the duct using the points provided. Measurements were taken at ten equally spaced points along each proposed sampling line, excluding the 5% of the effective flue diameter from the wall.

Leak tests for extractive techniques

All extractive-sampling techniques were tested for leaks before sampling proceeded. Any leaks present were eliminated prior to sampling and will be reported.

Particulate matter BS EN 13284-1: 2017

Total particulate matter was sampled using a Zambelli isokinetic sampling system in accordance with BS EN 13284-1: 2017 – Determination of Low Range Mass Concentration of dust (< 50mg/m³).

The Zambelli sampling system monitors temperature, static pressure and velocities within the duct using an S-type pitot tube and K-type thermocouple. The sampling rate is continuously monitored and adjusted relative to the duct velocity to ensure isokinetic-sampling conditions are maintained throughout the monitoring period.

Exhaust gases were drawn under isokinetic conditions from the exhaust points using the Zambelli sampling probe, particulate matter was then collected on a pre-weighed quartz filter (or most suitable filter for process) contained within the filter cassette holder, and the total particulate matter determined gravimetrically.

It is also necessary to wash the probe and nozzle out with water and then acetone between sampling and the weight of the probe washing added to that collected on the sample filter. Analysis of an acetone/water blank will be carried out and the result corrected accordingly.

The sample positions were calculated with respect to BS EN 13284-1: 2017 – Stationary source emissions – Determination of Low Range Mass Concentration of dust.

Sampling may be carried out internally or externally, the method used will be reported and provided there are no deviations from the method the uncertainty for the monitoring procedure is reported to be within the requirements specified by the Hazardous Waste Directive (HWD) as stated in the Environment Agency Technical Document M2

Uncertainty: $\pm 30\%$

Quality Assurance

Redwing Environmental Ltd is accredited to ISO 9001:2015 and ISO 14001:2015.

Disclaimer

Redwing Environmental Ltd confirms that in preparing this report all reasonable skill and care has been exercised. Unless specifically assigned or transferred within the terms of the agreement, Redwing Environmental Ltd asserts and retains all copyright, and other Intellectual Property Rights, in and over the report and its contents.

P-RED21-054/EB/R1/Rev0 - May 2021
Page 23 of 24



APPENDIX F ODOUR COMPLAINT RECORDS

Table B1 consists of the recorded odour complaint from the 19th February 2016 to the 17th January 2021, a total of 255 recorded complaints.

Table B2 consists of the recorded odour complaints relate to “smoke smell”, a total of 24 recorded complaints.

Table B1. Complaints by Months and Years

	Ref No	Reported	Location	Notification Details	Description of Smell	Location: e.g., the site (HU14 3HH) is located SSE of the odour reporter.	Wind directions at the time of reported	Likely Source from the site (HU14 3HH)? Y/N	Remarks
1	1412591	19/02/2016 15:07	Low Field Farm	Location: Melton, Hull	Yorks - Odour Location: Melton, Hull A caller is reporting an odour from Transwaste Recycling and Aggregate Ltd. The odour is putrid, like rotting waste. The odour was first noticed at 08:00am. The site is roughly 200 yards from the reporter. The odour was rated 6/6. The odour does enter the callers building with windows and doors shut. The weather has been mild with little wind.	SSE	SW		
2	1431910	04/05/2016 12:18	Low Field Farm	01904822648 ML on SR mobile	No answer@12.30, 12.51 & 12.59 01904822648 ML on SR mobile number@13.03 YORKS - Odour Complaint, Transwaste, Hull The reporter rang with regards to the odour from the above site. First noticed at 0900, rating it a four, the odour has grown in intensity through the morning and as of 1215 the odour is now a six. They described it as rotten garbage. They share a common boundary with the site and it has made one of their staff feel ill. The weather conditions are sunny with a little bit of a breeze.	SSE	S, SSW	Y	
3	1445451	20/06/2016 13:41	35, Brough	Caller reporting odour coming from	Yorks Oil Spill The caller is reporting that the occupant of 29 Swale road has a n oil leak in their car and has lost 5-6 loiterers of oil outside their house which is washing in the road drains. This has been happening since last Thursday, there is enough oil that they are tracking it into their house, and it washes down the drain. The caller doesn't know the name of the person involved	SE	SW		closest 1.4 km NW away
4	01467691 (M)	02/09/2016 10:32	Melton Hill		Yorks - Odour Caller reporting odour coming from Transwaste which is less than a mile from callers address. This has been ongoing for a couple of weeks now and almost everyday. Was originally speaking to Council who today advised them to ring EA.	S	S, SW	Y	approx. 1 km north

					<p>Odour is described as old waste plant smell such as sweet putrid smell. Odour can come inside property when the windows are open.</p>				
5	1469744	09/09/2016 13:23	Melton		<p>Yorks Odour</p> <p>The reporter is affected at present with an odour from Transwaste.</p> <p>The site is 1 mile away from the reporter</p> <p>The weather is windy and sunny</p> <p>The score of the odour is 4/6</p> <p>The doors and windows are open with the warm weather present</p> <p>The smell is constant at present.</p> <p>The smell is of the bottom of a bin at present.</p> <p>The smell was detected at 0900 am this morning as is still present.</p> <p>SR - CO. Wind direction is South Westerly so site is a potential source</p>	S	S, SSW	Y	
6	01470292 (M)	12/09/2016 12:58	Melton Hill		<p>YNE - Odour - Melton 1 of 2</p> <p>Caller reporting Trans waste in Melton near Hull for the smell of waste/bins.</p> <p>Strength is about 5/6 and can be smelled inside.</p> <p>Weather is warm and dry with a tiny bit of breeze.</p> <p>Site is about a mile and a half away.</p>	S	S	Y	
7	1470295	12/09/2016 13:00	Melton Hill		<p>YNE - Odour - Melton - 2 of 2</p> <p>Caller reporting Trans Waste in Melton near Hull for a smell of waste/bins.</p> <p>Strength was about 5/6 and could be smelled inside.</p> <p>Weather was humid and still.</p> <p>Site is about a mile and a half away.</p>	S	S	Y	
8	01470453 (M)	12/09/2016 19:02	Melton	The reporter believes it Transwaste.	<p>Yorks - Reporting the odour from what the reporter believes it Transwaste.</p> <p>It's stinks. Was bad on Friday but today it's horrendous. Had to close windows to keep the odour out. 6/6</p> <p>Wind direction 180o (Southerly). Reported is downwind of the Transwaste site Worst reporter has ever smell.</p>	S	S	Y	

					Weather - Warm and still.				
9	1470458	12/09/2016 19:13	Melton	Melton	<p>Yorkshire - Odour - Transwaste, Melton</p> <p>The caller is reporting a foul odour from Transwaste It's coming into the house with windows open It's a horrible rotting smell It's boiling hot It's the next street along The caller first noticed It's a 16/6</p>	S	S	Y	
10	1486622	22/11/2016 16:22	Melton		<p>Yorkshire - Odour - Melton</p> <p>Odour from a waste site called Transwaste on Gibson Lane</p> <p>Smells like a rubbish tip which makes you feel sick</p> <p>Caller noticed this 2 hours ago</p> <p>Caller is on the next street to the site</p> <p>Rated at a 6 on the odour scale</p> <p>The smell is not in the house, windows and doors are closed</p> <p>The weather is cold and quite still</p>	S	S	Y	
11	01505157 (M)	02/03/2017 08:30	Long Plantation	Transwaste recycling, Melton	<p>02030258149 YORKS: Odour: Transwaste recycling, Melton Described; Rotting, methane smell. Claggy. Makes you feel sick. 1st Noticed: On opening the door at 8am. Located: 0.5 mile as the crow flies. Rated; 5/6 Unable to smell inside the house, doors and windows are closed. The odour does enter the house on opening the door. Weather: No wind, but the smell makes you retch</p>	NW, W, SW	SW, W	Y	
12	1506296	07/03/2017 15:02	Unit 3a, NORTH FERRIBY	NIRS	<p>Yorks-Odour - Please Pass Letter with NIRS</p> <p>Location-Gibson Lane-Melton-East Yorkshire</p> <p>Report via EMAIL from Gardner Aerospace Ltd of noxious odour emanating from Transwaste Site next door</p> <p>It can be smelled in the offices with windows and doors closed</p> <p>Odour described as a disgusting gas and methane smell</p> <p>It is so noxious it is affecting the employees both inside and outside the building</p>	W	W, SW	Y	
13	1525113	23/05/2017 10:40	Low Field Farm		<p>Yorks - Odour via email - Melton</p> <p>Transwaste EA/EPR/BP3792LD/V006</p>	SSE	W, SW		

					<p>"We wish to register a complaint at the noisome smell that is becoming a regular occurrence in the area of our business activities.</p> <p>Origin are a pharmaceutical packaging company that relocated to a purpose built facility in 2008 on Jackson Way, Melton, HU14 3HJ.</p> <p>The arrival of Transwaste after we arrived (approximately quarter of a mile away from us) was noted with deep regret and we have become used to tolerating the regular discharge of their waste onto the roadway to and from the Melton business park. What we cannot bear however is the smell!</p> <p>The wind has been in a southerly direction today bringing putrid air directly into our warehouse. We assume such odour is from rotting food, the presence of so many seagulls (also a significant nuisance) would suggest food must be being processed at their site.</p> <p>Origin are required to operate to strict hygiene regulations in our course of business and it is lamentable that Transwaste appear to be permitted to operate with a complete disregard of the environment and those around them.</p>				
14	1532834	20/06/2017 17:00	East Clough		<p>York - Odour - Trans-Waste, Melton</p> <p>Receive via email.</p> <p>'Whilst taking a water sample today at Welton Waters I could smell something foul. It was a slightly sweet smell, level 3 out of 6 for offensiveness. It was noted that the site I was at is just west of Trans-Waste (Gibson Lane).'</p>	SE	E, NE	Y	NEAR RIVER, end of brickyard lane
15	1545191	03/08/2017 08:42	Aggregates Ltd	Melton. 1st report for AUG 2017.	<p>YOR- Odour Transwaste Gibson Lane Melton. 1st report for AUG 2017.</p> <p>'It has been reported to me this morning that there are odours allegedly from Trans Waste within our offices at Melton House.</p> <p>I do understand that you are constantly monitoring this and doing whatever you can to solve the issue.</p> <p>Thank you for your support.'</p>	S	S, SW	Y	Transwaste Gibson Lane, Melton, HU14 3HH
16	1550163	23/08/2017 14:21	North Ferriby	ODOUR: Caller reports the smell at	<p>One number engaged @ 14.37 YNE: ODOUR: Caller reports the smell at the moment from Transwaste. This was noticed at 2pm. Smell is described as a "sickly manure" odour that rates as 6/6 at the moment. Smell is obvious inside the house which is about half a mile from the site. Weather conditions are wet and overcast but quite still. Caller states that the problem has not been too bad recently until today.</p> <p>Also wishes to add that there is a significant amount of litter on the A63 slip road toward Brough which blows from the lorries as they travel away from the site. Caller feels that this litter needs to be cleared as this has been the case for several months.</p> <p>Location: Derwent Avenue, North Ferriby, E Yorks.</p>	W	W	Y	

					<p>Feedback Requested Please - 10 days advised.</p> <p>Sglenville: Site notified via email at 16:49 hours, feedback requested. .</p> <p>Chris Tute (TCM) reported back on 25/08/17 - information provided showing agricultural field between site and reporter has had land spreading activities on recently, believes odour is a result of this rather than attributable to site activities. 25/08/17 Reporter contacted at 10:26 on landline, no answer. 10:27 mobile number, message left to report any further odour reports</p>			
17	1553519	06/09/2017 11:35	Long Plantation	Ferriby	<p>YOR - Odour - Transwaste, North Ferriby</p> <p>Caller is reporting Transwaste for the odour. This is a sickly odour smell, like the tip, horrible. This was first noticed at 11:10 when the caller returned home.</p> <p>This is now inside the house, it has come through the door. The site is about a mile away. The weather is still, drizzling, warm. Caller rates it 4/6 today.</p> <p>SR - CO. Wind direction Easterly indicating site is possible source. Contacted site and asked for a report.</p>	NW, W, SW	W, SW	Y
18	1558841	02/10/2017 14:21	Transwaste	YORKS/DEBRIS & ODOUR	<p>msg@ 14:39 & 14:54 02030258149 YORKS/DEBRIS & ODOUR</p> <p>Reporter is contacting the EA regarding Melton recycling site which is about 1.5 mile away has a smell on and off depends on what the site has in</p> <p>Usually smells about a 4</p> <p>If the windows and doors closed then you can't smell anything but then you are unable to sit outside or open your windows.</p> <p>Initially phoned to complain about the vehicles that are transporting the waste along the main Station Road to the site that are not securely fastening down the waste and it is blowing all over the roads and streets, spoke with the council and police who said to phone the EA, advised the reporter that they should contact the council again.</p>	W	W	Y
19	1564904	31/10/2017 11:18	Low Field Farm	problems of dust, insects and rodents	<p>YNE: ODOUR: Caller reports the problems of dust, insects and rodents all coming from Transwaste next door to his premises. Waste is packed down into open skips using heavy plant. This is taking place close to the perimeter fence. Cannot see exactly what is happening - not sue how long the waste is stored on site before being moved on. There is a large 360-degree excavator working on the site now.</p> <p>The dust leaves a deposit on all the cars and property in the area and forces staff to keep windows closed etc.</p> <p>There is an infestation of "gnats" - bigger than ants but smaller than flies which also get into the building.</p> <p>Rentokill have been brought in to deal with the problem of rats but caller has been told that the problem seems to be getting worse - more of them.</p>	SSE	S, SW	Y

Air Quality Assessment

Gibson Lane, Hull, HU14 3HH

					Location: Gibson Lane, Melton, North Ferriby, Hull. Feedback Requested Please - 10 days advised.				
20	1574015	18/12/2017 14:00	Long Plantation		<p>YOR - odour</p> <p>Location - North Ferriby</p> <p>Caller reports odour from Trans Waste recycling facility. Odour described as "sicky, methane, like a tip". Odour first noticed now. Site is 1 mile away. Odour getting inside the house with windows shut. Weather is sunny and still. Odour rated as 6.</p>	NW, W, SW	W, SW	Y	
21	01654911 (M)	01/10/2018 17:26	Melton Hill		<p>Yorks - Odour - North Ferriby</p> <p>Caller is reporting odour coming from Transwaste Odour described as a rotting vegetation smell Site is half a mile from caller property Odour rated between 4 / 5 This was noticed on 26.09.2018 Caller states the site also left their doors open on the 23.09.2018 which they're not allowed to do Caller states the breeze was coming from the direction of Transwaste</p>	S	W, NW		Melton Hill Farm
22	1655310	03/10/2018 13:42	Long Plantation		<p>York's odour Transwaste North Ferriby</p> <p>Caller reporting that they have just arrived home and the smell from Transwaste was at their home location, usual smell, caller lives about a mile, weather today cool but no wind about 15C</p> <p>Justin Jones (CO) checked wind conditions and although very still there was some gentle wind from a W direction so possible the odour could be from the site.</p>	NW, W, SW	W, SW, S	Y	
23	1655391	03/10/2018 18:10	Melton Hill		<p>YOR Odour</p> <p>Caller is reporting the odour from Transwaste described as stomach churning rotting food waste and rated 5/6. It was noticed at 13:00 but became stronger at 17:30. It is not inside the home with the windows and door closed. The caller is 1 mile and the weather is overcast, a little bit windy with a SW wind and the caller says the odour happens regularly but tonight it is particularly bad</p> <p>P MARRIS (EMDO) - checked weather conditions on underground WSW to SW over the affected period and up to 20kmh. substantiated and passed to EMTL Kerry Backen</p>	S	SW	Y	
24	1656628	09/10/2018 16:00	Melton	- North Ferriby	<p>YOR - Odour - Trans Waste Recycling - North Ferriby</p> <p>Gibson Lane Melton, North Ferriby</p> <p>Described as a sickly rotting vegetables First noticed at 07:00 this morning and still present This has been an issue since Sunday - direction of wind has a bearing Approx. 800m Rated at 6/6</p>	S	SW	Y	

					<p>Noticeable in property - with doors windows closed Wind is a Southerly - moderate prevailing breeze, warm and dry</p> <p>Yesterday evening the site was working overnight with the shed doors opened</p>				
25	1657269	12/10/2018 10:27	Long Plantation	Ferriby	<p>YOR - Odour - Transwaste, North Ferriby</p> <p>Caller is reporting the odour from Transwaste last night at 19:30.</p> <p>There was a slight wind, it was cloudy and overcast. The smell was outdoors but very strong, the windows were closed which did stop it getting indoors. The site is about a mile away, caller lives NE of the site with the prevailing wind.</p> <p>This smelled pungent, difficult to describe, unpleasant. Caller has been down to the site previously to check it was definitely Transwaste.</p> <p>There is a high level of waste stored there, caller doesn't know if the odour is from the storage or the processing. Caller does report this quite regularly. They rate it 3/6.</p> <p>Caller believes this is a breach of the 1974 H&S work regulation, they have a NEBOSH(?) certificate.</p>	SW	W	Y	
26	1658355	17/10/2018 10:51	North Ferriby	Location: North Ferriby	<p>Yorks - Odour Location: North Ferriby</p> <p>Caller is reporting odour from Transwaste. Caller describes the odour as rotting food, silage. First noticed at 09.15 - there yesterday. Caller is reporting a mile from the site. Odour isn't inside the property, doors and windows closed. Weather conditions are cloudy, windy, dry. Caller rates the odour as a 4 on the scale.</p>	NW, W, SW	SW	Y	
27	1658559	18/10/2018 08:52	Long Plantation		<p>02030 258 149</p> <p>YOR - Odour - North Ferriby</p> <p>Odour from Transwaste</p> <p>Is a dreadful smell</p> <p>This started at 20 past 8</p> <p>Caller is a mile and a half away</p> <p>The smell gets in the house even with the windows and doors closed</p> <p>Rated at a 6</p> <p>Weather is a nice clear day</p>	NW, W, SW	W, N	Y	
28	1661492	02/11/2018 08:09	Long Plantation	Ferriby	<p>0203 0258149 - Y - Odour - North Ferriby</p> <p>The caller is reporting an odour coming from Trans Waste in North Ferriby It smells like household waste</p>	NW, W, SW	W, SW	Y	

					<p>The site is about a mile away The odour was first noticed in the last half hour The odour rates as a 5/6 The odour is not getting into the house with windows closed The weather is fairly calm</p> <p>The caller is still waiting for a call back from a previous report weeks ago</p>				
29	01662799 (M)	07/11/2018 19:23	Melton	Location: Melton	<p>YOR - Odour - Location: Melton</p> <p>1/2 Odour coming from Trans Waste Caller said the odour is a rotting veg waste. Shed doors are wide open. Caller said they are supposed to shut down at 18:00. The site is about 1/2 a mile away. Caller said they noticed it at 14:00. The caller said they odour is just outside. The caller said they can't have windows open due to the odour. The caller said is a 6/6 on the odour scale.</p>	S	S	Y	
30	1662934	08/11/2018 13:44	Low Field Farm		<p>Yorkshire - Odour -</p> <p>The reporter today is affected by a strong odour from Trans Waste, the site is about 1/2 mile away.</p> <p>The odour has invaded the work environment through door and windows closed.</p> <p>The odour is described of waste smell.</p> <p>The score of the smell 5-6 - 6</p> <p>The reporter states the smell is not acceptable at all.</p> <p>The odour is constant at present.</p> <p>The odour happens when the wind is in the SE.</p> <p>The odour has been present since 0900 am.</p> <p>The odour is happening once or twice a week at present.</p> <p>The odour issue has been happening since the site opened in 2010.</p> <p>SR - CO. Checked wind direction. Southerly wind suggesting site is possible cause of odour.</p>	SSE	S	Y	
31	1662940	08/11/2018 14:13	Low Field Farm	Odour	<p>YOR Odour</p> <p>Caller is reporting the odour from Transwaste described as rotten smell making the caller feel sick and rated as 6/6. It was noticed at 13:45 and is not inside the building with the windows and doors closed. The caller is 0.5 miles from the site and the weather is calm and dry. Caller reports that the</p>	SSE	S	Y	

					<p>odour happens regularly, every time the breeze is toward the caller.</p> <p>SR - CO. Wind direction is southerly indicating site is possible source. This is the second report in the last half hour.</p>				
32	01674492 (M)	16/01/2019 17:47	RECYCLING AND		<p>YOR - Odour - Long Plantation</p> <p>Caller reporting odour coming from Transwaste recycling site in Melton Smells like rotting rubbish Started about 16.00 today Caller is half a mile away Weather is fair and quite still Rated at 6/6 Odour is getting into callers when windows closed</p>		SW		
33	1674495	16/01/2019 18:18	Long Plantation	North Ferriby	<p>ml 18:28 - 0800 028 1886 - Y - Odour - North Ferriby</p> <p>The caller is reporting an odour coming from Trans waste in North Ferriby It smells like a bin lorry The odour was smelt from Church Lane and Grandale Garage The odour was first noticed at 16.50 The odour rates as a 3/6 The odour was smelt outside The weather is still and dry They are in breach of the consolidation work and the health and safety at work act There is a planning application for 24 hour working which the caller strongly objects to</p>	NW, W, SW	W, SW	Y	
34	1674504	16/01/2019 19:38	Long Plantation		<p>YOR - Odour - Long Plantation</p> <p>Caller reporting odour coming from Transwaste or could now be called Attero waste recycling site in Melton Caller is about 2 miles away from the site Smells like rotting rubbish Noticed today at around 16.00 Odour is outdoors and in callers car Weather is quite still today Rated at 6/6 Caller is unable to go running this evening due to the odour</p>	NW, W, SW	W, SW	Y	
35	01677237 (M)	31/01/2019 11:18	Melton West		<p>YOR - Odour - North Ferriby -</p> <p>Caller has a complaint of odour coming from Trans Waste which has changed name to Attero which is about 1 mile or 1.25 from site Home is directly in path of prevailing wind. The odour was noticed even into the village which is another mile further. First noticed at 0945 and smell is still noticeable at 11:30. Site has been subject to quite a few complaints with the councillor Julie Abraham who is the ward councillor for Beverly east riding of Yorkshire Council becoming involved Odour is mostly noticeable externally. The current weather conditions are -3.5 with no wind. overcast. with fog on the ground and relatively damp on</p>		S		Melton West park = trans Waste

					<p>road surface. Caller has rated the odour at 4 possibly 3 but this is subjective. This has persisted for some time and there has been an increase of smells and noise from the site. Caller is under the impression that it has been under the legislation for the EA improvement notices have been raised but caller hasn't seen any improvements as of yet. Caller has also noticed that they are taking food waste in which he believes they aren't permitted to do and this was divulged in the open planning committee.</p> <p>Weather checked and wind speed approx. 7mph blowing to the West, not consistent with site being source of odour but given low temperatures (around -1C) then the dissipation of odour from the site could mean that it is impacting on North Ferriby.</p> <p>Site contacted and informed of basic details of complaints and asked to investigate.</p>				
36	1677255	31/01/2019 12:19	Melton Hill		<p>YOR-Odour Location - Melton Hill</p> <p>Caller is reporting an odour that is coming from a waste processing plant called Trans Waste.</p> <p>Caller advises that the odour is a vomit smell.</p> <p>Caller advises that the odour was first noticed at 12:15.</p> <p>Caller advises that the site is approx. 1 mile away.</p> <p>Caller advises that the odour is not getting into the property but is outside.</p> <p>Caller advises that the weather is very cold / foggy / no wind.</p> <p>Caller advises that the smell intensity is a 5.</p>	S	S	Y	
37	01682738 (M)	25/02/2019 16:43	Long Plantation		<p>Odour 1st of the month York - Odour</p> <p>Site creating odour: Trans Waste on Gibson Lane, in Melton (Attaro).</p> <p>The reporter has just come into the property at 16.25 pm when exiting the car, the odour was detected.</p> <p>The site is about 1.1/4 miles away from the reporters property.</p> <p>The odour is pungent bin waste.</p> <p>The odour is 4-5/6.</p> <p>The weather is warm and sunny about 13/14 degrees</p>	NW, W, SW	SW	Y	

					<p>The odour is constant at present with no wind.</p> <p>The doors and windows need to be closed at the property.</p> <p>The last report made was 1677237, reporter states the warm weather is possibly the reason for today's odour issue.</p> <p>EMDO: 4mph SSE</p>				
38	1682957	26/02/2019 10:42	Low Field Farm	YOR - Odour - Transwaste	<p>ml 11:07 , 11.13 - 020302 58149: YOR - Odour - Transwaste</p> <p>Call received to report odour coming from Transwaste which is a general waste disposal & landfill site Caller describes the odour as smelling like a chicken farm, excrement, ammonia, a toxic smell, the odour varies from day to day Reporters place of work where the odour is being smelt is approx. a mile away from the site Caller states the odour is not in the building today but it has been in the past. The building has no windows, the odour enters through the air filtration system Weather conditions described as blue sky & still a nice & day Smell intensity scored as 3/6 today but some days it's a 6/6</p> <p>EMDO - anticyclonic wind of 1-3mph</p>	NW, W, SW	W, SW	Y	
39	1683745	28/02/2019 08:09	Long Plantation		<p>York-Odour</p> <p>Location - Long Plantation</p> <p>Caller is reporting the odour coming from Transwaste. Caller advises that the odour is a sour rotting vegetation smell.</p> <p>Caller advises that the odour was present yesterday morning and evening and still present today.</p> <p>Caller advises the odour today was first noticed at 08:00am.</p> <p>Caller advises that the odour is not getting into the property as windows are closed.</p> <p>Caller advises that the weather is foggy and quite still.</p> <p>Caller advises that the site is approx. 1 mile.</p> <p>Caller advises the smell intensity is a 4-5</p> <p>IM (CO) wind direction North Easterly 4mph, would support an odour at reporter's location.</p>	NW, W, SW	changeable	Y	
40	01685947 (M)	10/03/2019 15:02	Long Plantation		<p>YOR - odour</p> <p>Location - North Ferriby</p>	NW, W, SW	W (gust 40mph)	Y	

Air Quality Assessment

Gibson Lane, Hull, HU14 3HH

					<p>Caller reports odour from Trans Waste. Described as "sicky". Noticed now. Site is 1 mile away. Not getting inside with door and windows shut. Weather is sunny, slight breeze. Rated as 4.</p> <p>IM (EMDO) wind direction easterly at 40mph. Broadly supports an odour from the alleged source. Email sent to site as per instruction on local issues.</p>				
41	1688545	21/03/2019 15:40	Melton Hill		<p>YOR - Odour - North Ferriby</p> <p>Caller is reporting an odour from Transwaste - Gibson Lane Caller says the site is around 1 mile away Described as rotting household refuse Caller says this was noticed around 09:50 Has been intermittent - possibly due to the weather Caller says the site is operating with their doors open Caller says this is always the same with the site Caller says the odour is only noticed outdoors today Caller says the odour is 3/6 Weather described as breezy</p>	S	W, SW	Y	
42	1688588	21/03/2019 16:58	Long Plantation	Odour - Transwaste, Long Plantation	<p>MSG@17:25 08000281886 YOR - Odour - Transwaste, Long Plantation</p> <p>Call received to report odour coming from Transwaste on Gibson Waste, Long Plantation The odour is described as being like an acrid, rotting waste smell The area where it was smelt is just over 1k away from the site in question The odour comes & goes The weather conditions are described as being a clear sky, nice & warm Smell intensity scored as 5/6</p>	NW, W, SW	SW	Y	
43	1688604	21/03/2019 17:29	Melton Hill		<p>YOR - ODOUR - Melton, Cottingham -</p> <p>Caller is reporting an odour coming from the waste site Trans Waste Gibson lane Melton. Smells like a rubbish tip very rank obnoxious foul bad odour. Definitely a 3/4 in odour strength varies depending upon the wind. Generally the smell is there all the time but doesn't get in the house with doors and windows shut. Caller is about half a mile from the site but is in direct line of the winds. Today it's clear sunny slight breeze coming from west. and the westerly wind brings the odour over the whole village.</p>	S	W, SW	Y	
44	01698808 (M)	01/05/2019 10:10	Long Plantation	MAY 19, DUPLICATE UNATTENDED	<p>TRANSWASTE 1ST ODOUR FOR MAY 19, DUPLICATE UNATTENDED REPORTS TO THIS.</p> <p>YOR - Odour Caller reporting odour coming from Trans Waste in North Ferriby, was talking dog for a walk at 10.10am and smelt odour at bottom of their street. This is 1 -1.5 mile away from site. Odour described as a refuse smell</p>	NW, W, SW	SW	Y	

					Smell Intensity: 2/6 Weather Conditions: clear Not smelt odour for several weeks now but winds are back to SW winds therefore they smell the odour.				
45	1706178	30/05/2019 16:49	Long Plantation	Feedback required	<p>YOR- Odour- Trans waste Ltd- Feedback required</p> <p>Caller is reporting odour coming from Trans waste Ltd</p> <p>Caller states that the site is about a mile away</p> <p>Caller states that the odour is a strong smell of waste bin rubbish</p> <p>Caller has just noticed the odour now</p> <p>The odour is not getting in the house as the windows and doors are being kept shut</p> <p>Caller describes the weather as humid, 20 degrees, over cast and no wind</p> <p>Caller would rate the odour 3 to 4 out of 6</p> <p>CO: wind direction - SW so supports Transwaste as potential source</p>	NW, W, SW	W	Y	
46	1707240	03/06/2019 20:56	Melton		<p>YOR - Odour - 1 of 2 - Melton</p> <p>Transwaste - Gibson Lane Melton Caller observed on 3/6/19 at 8.30pm Caller advised 1km away Caller described as foul pungent rotting waste Caller has observed before Caller rated as 5 Caller advised weather is breeze from direction of the site and fine Caller cannot smell with windows closed</p>	S	S, SW	Y	
47	1707490	04/06/2019 15:11	Melton Hill	Transwaste,	<p>YOR - Odour - Melton Hill, Transwaste,</p> <p>*Hostile Site*</p> <p>Odour from Transwaste, Gibson lane, Melton. Transwaste Recycling & Aggregates Ltd EPR Lic no: EA/EPR/BP3792LD/V006 First noticed at 1230 yesterday - still an issue at 1830 yesterday. Sickly vomity smell. Rotting waste. Site is 1 mile away from caller. Odour only got inside with doors open. Weather was SW wind 14mh, sunny/overcast. Odour was 5 out of 6.</p>	S	S, W	Y	
48	1708812	09/06/2019 21:14	Low Field Farm		<p>YOR Odour</p> <p>The caller is reporting a sweet, smell described like grass cuttings coming from Transwaste in Melton. The site is</p>	SSE	changeable	Y	

					<p>around 3/4 of a mile away. Ongoing issue with odours. 4 on the smell scale. The smell was inside with a small window open.</p> <p>The smell is not there now though, there was a delay in reporting as they went to the council with this. Noticed at 08:45 on the 7th.</p> <p>Justin Jones (EMDO) checked wind data for this date and time, approx 15 mph from SSW. Wind was blowing from the site toward the reporter's property.</p>				
49	1709521	12/06/2019 08:56	Long Plantation	Noise/Suspected Permit Breach -	<p>M/L @ 09.19 - 02030 258 149 - YOR - Noise/Suspected Permit Breach - Waste Transfer Station (Previously Trans Waste)- North Ferriby, Hull</p> <p>Noise described as a constant droning noise - this is coming from the site Unsure what it causing this This is during the night - every night seven nights a week Also plant noises - reverse beepers etc. Recently there was a hammer drill noise in the early hours</p> <p>Can be heard from bed time on - lack of ambient noise makes things worse. Approx. 800m from site Audible inside property with doors and windows closed Reporter believes the site are operating out of permitted hours</p>	NW, W, SW	N		
50	1719558	17/07/2019 09:30	Melton Hill	Ferriby -	<p>YOR - Odour Complaint - North Ferriby -</p> <p>Caller reporting a household waste smell from Transwaste Recycling and Aggregates Ltd - EPR/HP3932WF</p> <p>This was first noticed from 09:15am 17/07. The smell is rated at 1 out of 6 on our scale. The site is within 1600 yards of the caller's address. The smell has not entered the caller's property, and 1 window is still open. The weather is dry, sunny, with a very gentle breeze from the south west.</p> <p>The caller wished to state that the smell on 10/07 was rated at 5 out of 6 on our scale, but they were leaving for holidays and did not report it.</p> <p>ICS - Area with Hostile Site Ref: 3146.</p>	S	changeable	Y	
52	1719872	17/07/2019 20:43	Long Plantation		<p>YOR- Odour- North Ferriby</p> <p>caller is reporting odour coming from Transwaste Recycling and Aggregates Ltd - EPR/HP3932WF. the odour is described as stale, rotting vegetation and food, landfill smell.</p> <p>the odour was first noticed 18:00 and is still present. the odour has got progressively worse over the last 18 months. the site is located about 1/4 of a mile away.</p> <p>the smell is getting inside the house, as the windows were open.</p> <p>caller has just shut all the windows.</p> <p>the weather is fairly warm, raining and fairly still.</p>	NW, W, SW	W SW	Y	

					<p>caller rates the odour as 5/6.</p> <p>RG (EMDO) wind direction from SW, suggesting Transwaste as the source of the odour</p>				
53	1720179	18/07/2019 19:53	Melton Hill	Ferriby -	<p>YOR - Odour Complaint - North Ferriby -</p> <p>Caller reporting a rotten household waste smell from Trans waste Recycling</p> <p>Caller noticed the odour at 7:30, however it has been on-going for the past 3 days and has been really bad</p> <p>Caller states that they can smell the odour all day</p> <p>Caller described the weather as, dry, wind, warm</p> <p>Caller said that the smell gets in when the windows are open,</p> <p>Caller leaves the windows open due to hot weather</p> <p>Caller would rate the odour a 4/6 yesterday it was a 5</p> <p>This was first noticed from 09:15am 17/07. The smell is rated at 1 out of 6 on our scale. The site is within 1600 yards of the caller's address.</p> <p>The smell has not entered the caller's property, and 1 window is still open. The weather is dry, sunny, with a very gentle breeze from the southwest.</p> <p>The caller wished to state that the smell on 10/07 was rated at 5 out of 6 on our scale, but they were leaving for holidays and did not report it.</p> <p>RR EMDO - site emailed and site officer copied in as per local issues</p>	S	SW	Y	
54	1721385	23/07/2019 14:06	Low Field Farm		<p>YOR - Odour - Low Field Farm</p> <p>Via Email:</p> <p>" Whilst visiting a property in Melton, Hull yesterday there was a significant foul, waste smell in the air which in my opinion needs reviewing and the source establishing in view of remedial action.</p> <p>Trust you are able to conduct the necessary review.</p> <p>My suspicion is that it was coming from Transwaste - HU14 3HH - behind the property that I was visiting. "</p>	SSE	S, SE	Y	
55	01723704 (M)	29/07/2019 11:50	Long Plantation	odour in his area of North Ferriby,	<p>YOR - Odour - Reports a very strong odour in his area of North Ferriby, from nearby Transwaste Recycling Ltd., on Gibson Lane. Described a strong 'bin' smell, and rated 4/6 in strength. First noticed outside at 09:30, the smell is not yet in the caller's property.</p>	NW, W, SW	SW	Y	

Air Quality Assessment

Gibson Lane, Hull, HU14 3HH

					P MARRIS (CO) - Emailed operator and noted wind direction light gentle westerly breeze				
56	1723888	29/07/2019 17:06	Melton Hill	odour from Transwaste in Gibson	<p>YOR: Odour. Caller is reporting the odour from Transwaste in Gibson Lane. Caller first noticed it just now after getting home. Smell is not inside the house, noticeable outside.</p> <p>Describes the smell as rotting food, rates severity as a 4/6.</p> <p>Caller is about 1 mile from the site, weather is currently 22degC, SW wind, dry.</p> <p>EMDO weather, wind from SW at 9mph, 22C</p>	S	S	Y	
57	1723913	29/07/2019 17:40	Long Plantation		<p>YOR - ODOUR - Long Plantation -</p> <p>Caller said the site is called Transwaste.</p> <p>Caller said the odour is like emptied bins on bin day.</p> <p>Caller said they noticed it today at 10am but it has been going on for months.</p> <p>Caller said the site is half a mile away.</p> <p>Caller said the odour is getting inside the property with doors and windows closed.</p> <p>Caller said the weather is bright with blue skies with a slight breeze.</p> <p>Caller rated the odour as 5.</p>	NW, W, SW	SW	Y	
58	1723956	29/07/2019 19:17	Long Plantation	Yorks - Odour from Trans Waste at	<p>Yorks - Odour from Trans Waste at Melton near North ferryby.</p> <p>Caller is reporting an odour from the Trans Waste site at Melton near to North Ferryby</p> <p>Caller describes the odour as decomposing material.</p> <p>Caller noticed this at 8am this morning and at 12 pm today.</p> <p>Caller states he's around 1 mile away from the site.</p> <p>Caller states the smell is outside and not in his premises.</p> <p>Caller states all windows and doors are closed at the moment.</p> <p>Caller stated they had heavy rain up to 8am followed by sunny periods for the rest of the day.</p> <p>Caller rated the smell as strong at a rating of 4</p>	NW, W, SW	SW	Y	
59	1726308	05/08/2019 07:43	Low Field Farm		<p>0203 0258 149</p> <p>YOR - Odour - Transwaste - North Ferryby, Hull</p> <p>Described as an odour of smoke</p>	SSE	S	Y	

					<p>First noticed at 06:20 Approx. 500m from the site Rated at 5/6 Noticeable inside the premises - doors and windows closed Weather is heavy cloud cover, slight breeze</p> <p>CO: Transwaste site on fire.</p>			
60	1726505	05/08/2019 13:34	Melton Hill		<p>Im @ 1354 0800 028 1886</p> <p>YOR. Odour.</p> <p>Caller report Trans Waste Plant are producing a bad waste tip smell. Caller can also smell smoke as if there is a fire on the site but cannot see any fire. They are about 20 minutes' walk away. 4/6 on smell scale. Sunny and breezy weather. The smell is not getting inside the house. Windows have been closed.</p>	S	SW	Y
61	1726523	05/08/2019 13:54	Long Plantation		<p>Odour - YORKS -</p> <p>Caller is reporting an odour Believed to be from the Trans waste Plant The odour is an acrid Smokey smell that gets the back of your throat, it was first noticed around 9am today but this is an ongoing problem The site is roughly 3 miles from the callers property and the odour is getting inside of the callers home, the windows are open due to hot weather The weather is described as warm and sunny at the moment and there is no breeze, this morning there was rain when the odour was first noticed. The odour is rated at a 5 or 6</p>	NW, W, SW	SW	Y
62	1726559	05/08/2019 14:49	Long Plantation		<p>YOR - Odour</p> <p>Caller reporting odour coming from Trans Waste Caller described the odour as a rotting smell Caller first noticed the odour today at around 1:30pm Caller stated that they are less than a mile away from site Caller stated that the smell is not getting inside the house Caller stated that they are keeping some windows and doors are closed but not all Caller described the weather as being slight breeze from the west Caller rated the odour as a 5</p>	NW, W, SW	SW	Y
63	1726613	05/08/2019 16:27	Melton Hill	01-Feb	<p>l/m 16:38 02030258149 Yorks - Odour 1/2 Location: North Ferriby Caller reporting an odour coming from Trans Waste Noticed around an hour ago (15:30) Described as a putrid, boggy waste odour The caller is around 2 miles away from the site Can be smelt inside the property Windows had been left open Rated at 4/6 Current weather conditions are breezy and sunny</p>	S	W	Y

64	1726619	05/08/2019 16:34	Long Plantation		<p>YOR - Odour</p> <p>North Ferriby.</p> <p>Odour coming from Transwaste. It's like a chemical type smell. First noticed at 15.30 and it's very wicked. The odour was getting into their property and they have had to close all their windows and doors. Rated as a 5. The weather is beautiful and sunny.</p>	NW, W, SW	SW	Y	
65	1726635	05/08/2019 16:57	Melton		<p>YOR - Odour - Melton</p> <p>Customer believes the odour is coming from Gibson Lane, Melton, North Ferriby, North Humberside, HU14.</p> <p>Odour described as acidic, burning waste.</p> <p>Customer saw a large fire at the site 8am 05-08-2019 but couldn't smell anything as the wind was facing the other direction.</p> <p>Customer is roughly less than a mile from the site.</p> <p>Odour is currently just outside as the caller has the windows closed.</p> <p>Weather is breezy and sunny. Wind blowing from the west.</p> <p>Odour rated 5/6.</p> <p>Wind direction according to BBC website is WSW putting reporter downwind of site</p>	S	SW	Y	
66	1726636	05/08/2019 16:57	Long Plantation	odour from Transwaste, thinks it has	<p>YOR: Odour. Caller is reporting the odour from Transwaste, thinks it has been present since lunchtime. Describes the smell as quite pungent, rotting veg.</p> <p>Caller is about 1 mile from the site. Rates severity as a 5/6.</p> <p>Smell is outside the caller's house. Weather is sunny, not a lot of wind present.</p>	NW, W, SW	SW	Y	
67	1726644	05/08/2019 17:09	Long Plantation	YOR - Odour	<p>+448000281886</p> <p>YOR - Odour</p> <p>Taking Place Near Long Plantation</p> <p>Caller reporting an odour.</p> <p>The site is called Trans Waste.</p> <p>The odour is a pungent, stale smell.</p> <p>Caller noticed the odour at 16.30.</p> <p>The site is a mile from property.</p> <p>The odour is getting inside the property, had to close windows and doors.</p> <p>Weather is intermittent and slight breeze.</p> <p>Caller would rate the odour at a 6.</p>	NW, W, SW	SW	Y	
68	1726649	05/08/2019 17:18	Long Plantation		<p>NE - Odour, Hull</p> <p>Caller reports being affected by a bad smell emitting from Transwaste in Melton, Hull, close to caller's location.</p>	NW, W, SW	SW	Y	

					<p>Caller describes the odour as "a bad smell but not at the worst it's ever been." They describe the odour as "a nasty, sickly, tip smell" - which is not thought to be associated with the recent fire onsite. Caller says that every now and then they can smell the effects of burning when the wind changes direction to coming from the site. But the sick type odour has been constant all day today and is not wind dependent.</p> <p>The underlying sick smell is rated at around 5/6 in intensity. Caller has been unable to keep the smell out of the house, as the weather is hot and humid, so all their windows have had to be open, as it's too muggy to cope with them closed.</p>				
69	1726655	05/08/2019 17:28	Long Plantation		<p>YOR - Odour Taking Place Near Long Plantation</p> <p>Caller reporting an odour. The site is called Trans Waste. The odour is like a water treatment plant when it goes wrong, a very strong smell. Caller noticed the odour at 16.45. The site is 2 miles from the property. The odour is not getting inside the property, it was at the allotments in North Ferriby. Weather is sunny and quite windy. Caller would rate the odour at 6.</p>	NW, W, SW	SW	Y	
70	1726664	05/08/2019 17:41	Long Plantation	NE - Odour, Hull	<p>+448000281886 NE - Odour, Hull</p> <p>Caller reports being affected by a bad odour emitting from Transwaste, Melton, Hull, located by their description about 5 minutes' drive away.</p> <p>The smell is described as being "pretty darned grim today" and smells a bit like they'd imagine rotten cod liver to smell.</p> <p>The smell is said to have been hanging around since getting from work at 3pm. Caller has since run some errands and come back to find the smell is still there. They rate the odour at around 4/6 for "general obnoxiousness" and says that they "can't get away from it".</p> <p>The odour is seeping into the house as the windows are all open, due to the warm, humid weather making conditions too hot to close them.</p>	NW, W, SW	SW	Y	
71	1726671	05/08/2019 18:07	Long Plantation		<p>YOR - Odour - North Ferriby</p> <p>Caller is reporting the odour from Trans Waste. This smells disgusting, it's gassy and poo-ey rubbish. Caller noticed this arriving home at 16:00 as they drove into the village on the far side. The smell is inside the house. The windows are open as it's so hot. The smell is stuck indoors so no point closing the windows. It's a lovely bright sunny day with minimal breeze.</p>	NW, W, SW	SW	Y	

Air Quality Assessment

Gibson Lane, Hull, HU14 3HH

					This site is about 1/2 a mile away maximum. Caller is rating this 5/6 it's really bad.				
72	1726894	06/08/2019 12:38	Melton Hill		<p>NEA - Odour</p> <p>Caller reporting odour coming from Transwaste described as a refuse smell Caller lives around half a mile from the site Caller noticed this around 08:00 and still present now Caller can smell the odour upstairs in the property - windows are open there Rated as a 5/6 Weather is a bright breezy day Caller also advised that the odour was present all over the weekend Caller advised that it is nuisance to keep calling us to report this</p> <p>P MARRIS (CO) - Prevailing wind in direction of reporter, email to the operator to investigate</p>	S	S	Y	
73	1726927	06/08/2019 13:38	Long Plantation		<p>YOR - Odour - Long Plantation</p> <p>The caller is reporting Trans waste for odour The odour smells noxious and nasty The caller believes the odour started about 14:00 The caller had to close all the windows from around 18:00 The caller reports that this has happened in the past before The odour was getting inside the callers home The caller lives within two miles of the site The weather was warm The odour was a 5/6 The caller would like Feedback</p>	NW, W, SW	SW	Y	
74	1726994	06/08/2019 15:27		Caller reporting foul odour from the	<p>YOR - ODOUR - MELTON</p> <p>Caller reporting foul odour from the Transwaste site, on Gibson Lane, near her address. The odour is described as being sickening, and smelling of rotten food and rubbish. Reporter states that the odour occurs on most days, but was noticed today after returning from work. The caller lives on the next street along from the site, which is about a 5-10 minute walk away. The odour is getting inside the house and requires closing of windows, caller is unable to sit in her garden. The weather at the time that the odour was noticed was warm. Caller describes the smell as being a 6/6 on the odour scale.</p> <p>P MARRIS (CO) - contacted Steve Taylor, Ash Jones to check for the odours in local area and how bad.</p>		SW		
75	1727040	06/08/2019 16:26	Long Plantation	Odour.	<p>+442030258149 - No answer - YOR. Odour.</p> <p>Caller reports a Trans Waste plant in the next village which has been producing an awful smell recently. The smell is 4/6 on smell scale. The weather is breezy and dry. The</p>	NW, W, SW	SW	Y	

					smell is getting inside the house, but they have the conservatory door open. It smells like stale refuse today.				
76	1727075	06/08/2019 17:56	Long Plantation	YOR - Odour	+448000281886 YOR - Odour Caller reporting odour coming from Transwaste described as sitting next to a rubbish bin Caller noticed this from around 17:00 Caller lives around a mile from the site Weather is humid Rated as a 4/6 Caller can slightly smell this inside the property - windows open	NW, W, SW	SW	Y	
77	1727211	07/08/2019 10:09	Melton Hill	is reporting the odour from	+442030258149 - YOR: Odour. Caller is reporting the odour from Transwaste. The site has been bad for a while, first noticed today at about 07:30, still present now. Rates severity as a 6/6. The caller describes the smell as like living next to a chicken farm, also a refuse smell. Gets inside the caller's house, but not when the windows and doors are closed. Caller is less than half a mile from the site. Weather is currently light rain, cloudy, some breeze. Sglenville, CO 07/08/19 @ 11:08 hours. two reports received, wind direction is W to WSW, 5.9 m/s. Dry, overcast, clear. Operator notified by email of odour reports at 11:45 hrs.	S	SW	Y	
78	1727242	07/08/2019 10:50	Long Plantation		020 3025 8149 YOR - Odour - Transwaste - North Ferriby, Hull Described as like a rubbish tip First noticed today at 10:00 Approx. 800m from the site Rated at 5/6 Noticeable inside property - windows slightly ajar Weather damp, slight breeze South Easterly	NW, W, SW	SW	Y	
79	1727339	07/08/2019 13:59	Long Plantation		YOR - Odour - Long Plantation Call received to report odour coming from Trans Waste The odour is described as being scorched household waste due to a fire that was at the site at the weekend The reporter picked up on the smell whilst out walking, the odour doesn't affect the reporter at their home Weather conditions are described as being bright, cloudy, warm Smell intensity is scored 4/6 Feedback is required, 10 day charter given	NW, W, SW	W	Y	
80	1727345	07/08/2019 14:14	Long Plantation		YOR - Odour - Long Plantation The caller is reporting an odour from trans waste development The odour smells of nasty waste The caller first smelt it at 14:14 The caller reports the odour could of been there all day they only opened the door	NW, W, SW	W	Y	

					<p>The caller says the windows are shut so the odour won't get inside The site is a mile and a half from the callers home This has been happening for 3 years The caller reports the odour is getting more regular now The odour is a 5/6 today</p> <p>Sglenville, CO, 07/08/19 @ 14:30. Fourth report - STaylor attending. Wind direction WSW, 6.9 m/s. Reporter downwind of the suspected source.</p>				
81	1727406	07/08/2019 16:19	Long Plantation		<p>YOR - Odour - Trans waste</p> <p>Odour described as a strong smell of rubbish Noticed at 1615 today. Not getting inside the property as the windows and doors are closed. Weather is slightly damp with very little wind. Based 1.25 miles from the site. Rated as a 3 out of 6.</p>	NW, W, SW	W	Y	
82	1727418	07/08/2019 16:32	Melton Hill	17.11: YOR: Odour. Caller is reporting	<p>0800 028 1886: Call failed at 17.03 & 17.11: YOR: Odour. Caller is reporting the odour from a site called Transwaste in Melton. Noticed at the caller's house and Ferriby High Road, which is a mile further away than the caller, who is about 1 mile away. Rates severity as a 2/6 at house, 5/6 on the High Road.</p> <p>First noticed it today at about 16:15. Describes the smell as a rotten cheese, vomit. Noticed it outside.</p> <p>Weather variable.</p> <p>P MARRIS (EMDO) - wind direction SSW 1-2mph. Numerous calls today and site officer in contact with site. Notify officer.</p>	S	W		
83	1727422	07/08/2019 16:41	44, North Ferriby	YOR - SMELL - North Ferriby	<p>0800 028 1886: Call Failed at 17.12: YOR - SMELL - North Ferriby</p> <p>Caller wanted to report smell from Transwaste, Gibson Lane in Melton Caller said the smell had gone worse from last call at 1615hrs - NIRS REF: 01727406 Caller said it was strong smell of rubbish and rotting food Caller said they had first noticed smell around 1615hrs and it had gone considerably stronger Caller said the site was about one and quarter miles from where they were Caller said the smell was making them not open the windows Caller said there was hardly any wind, slightly overcast and slightly damp, Caller said the smell was about 4-5. Customer said this had been going on for years and nothing seems to be happening. Caller said they asked for feedback and said this was 3rd call this week I asked caller to call us for feedback but they insisted that</p>	W	W	Y	

					<p>they will wait for call from EA with feedback</p> <p>P MARRIS (EMDO) - wind direction SSW 1-2mph. Numerous calls today and site officer in contact with site. Notify officer.</p>				
84	1727489	07/08/2019 21:13	Long Plantation	Ferriby -	<p>YOR - Odour Complaint - North Ferriby -</p> <p>Caller reporting a rotting bin waste smell from Transwaste Recycling and Aggregates Ltd - EPR/HP3932WF</p> <p>This was first noticed today between 16:00pm and 16:30pm 07/08. The site is within 1 mile of the caller's address. The smell is rated at 5 out of 6 on our scale. The smell has not entered the caller's property as they have had to close their windows. The caller has cancelled their run. The weather is dry with an easterly breeze.</p> <p>Caller would like feedback as they have questions about the site - 10 working day charter explained.</p> <p>P MARRIS (EMDO) - wind direction SSW 1-2mph. Numerous calls today and site officer in contact with site. Notify officer.</p>	NW, W, SW	W	Y	
85	1727500	08/08/2019 00:38	Melton Hill		<p>+442030258149 - Yor - Odour</p> <p>Caller reporting the smell from Trans Waste. Caller describes the smell as an overpowering refuse manure smell. Caller is less than half a mile from the site and the smell is in the caller's property.</p> <p>Rated 6.</p> <p>The weather is mild and still.</p> <p>CO Check of the weather using www.xcweather.co.uk took place. The wind direction at 10:00hrs is due to be from the west and it was from the west earlier in the morning. This means the permitted site could potentially be the source of the odour.</p>	S	S	Y	
86	1727516	08/08/2019 07:59	Long Plantation	Ferriby.	<p>+442030258149 - Yor- Odour- North Ferriby.</p> <p>caller is reporting odour coming from Trans waste. the odour is described as a strong smell of rubbish, caller says it's like seating next to dust bin.</p> <p>the odour was first noticed about 10 minutes. the site is about a mile or a mile and quarter away. the smell is getting inside the house. caller had to close the window.</p> <p>the weather very dry, clear, sunny and very light breeze. caller rates the odour as 4/6.</p> <p>CO Check of the weather using www.xcweather.co.uk took place. The wind direction at 10:00hrs is due to be from the west and it was from the west earlier in the morning. This means the permitted site could potentially be the source of</p>	NW, W, SW	S	Y	

					the odour. Email notification sent to the site requesting feedback.				
87	1727645	08/08/2019 12:06	Melton Hill		<p>YOR. Odour.</p> <p>Caller reports household waste smell coming from Trans Waste about a mile away. 3.5/6 on smell scale. Blustery wind and clear weather conditions. The smell is not getting inside the house, but the windows are closed.</p> <p>CO Wind direction is currently from the west making the permitted site of Transwaste the most probable source of the odour pollution described. Site to be notified by email and along with regulatory officer who is aware of several reports.</p>	S	S	Y	
88	1727843	08/08/2019 18:30	Melton Hill	Gibson Lane Melton Hu14 3HH	<p>YOR - Odour from Trans waste Site Gibson Lane Melton Hu14 3HH</p> <p>The caller rang to report an odour from Trans waste Site Gibson Lane Melton Hu14 3HH</p> <p>The caller describes the odour as a fowl off milk odour</p> <p>The caller states they noticed the odour at 18:00</p> <p>The callers property is 1 mile away from the site</p> <p>The caller states the odour is getting into their property - windows and doors closed</p> <p>The caller states the weather is Fairly still, Fairly sunny</p> <p>The caller states the odour is a 5</p> <p>P MARRIS (EMDO) - pass to EM</p>	S	changeable	Y	
89	1728137	09/08/2019 14:16	Melton		<p>YOR - Odour - Melton</p> <p>The caller is reporting Transwaste for odour</p> <p>The odour is describes as rotting waste</p> <p>The caller first smelt this at 14:15</p> <p>The caller reports this has been happening for 3-4 years</p> <p>The caller is half a mile from the site</p> <p>The weather is overcast and slightly windy</p> <p>The caller can't smell the odour while inside due to windows closed</p> <p>The odour is a 5/6</p>	S	S	Y	
90	1728219	09/08/2019 16:43	Melton		<p>0800 028 1886</p> <p>Industrial Action: YOR - Odour - Melton</p> <p>caller reporting a "sour" odour from the Transwaste waste transfer station in North Ferriby.</p> <p>Caller has just come back off holiday and he says that as soon as he opened his car door the smell "hit" him.</p> <p>Odour is not in the house as the doors and windows are closed, but it smells very strong outside.</p> <p>The weather conditions are windy with some rain.</p> <p>Caller would rate the smell a 4.</p>	S	S	Y	

					Transwaste's address: Gibson Ln, North Ferriby, Melton HU14 3HH				
					P MARRIS (EMDO) - pass to EM				
91	1728306	10/08/2019 07:27	Melton		0800 028 1886 INDUSTRIAL ACTION YORKS ODOUR TRANSWASTE RECYCLING. Calling to report the odour coming from Transwaste....Recycling centre- Gibson Lane. First noticed a few minutes ago. Describes the odour as waste dump.... rotting rubbish...not as sour as yesterday The wind is bringing it in waves.... the wind is very strong... Rates it as 1-2. Caller is approx. less than 1/2 mile from the site. P MARRIS (EMDO) - pass to EM	S	S (gust wind)	Y	
92	1728515	11/08/2019 08:14	Melton	Melton -	+448000281886 - YOR - Odour - Melton - Odour from Transwaste in Melton. Caller advised this was noticed along Brickyard Lane and Monks Way being worst in the underpath under the interchange. Caller advised the air is stagnant and concentrated in this location. Distance is about 0.7 miles away. Caller advised there is a blustery wind blowing in that direction from the site. First noticed at 07:40 on the 11/08/2019. Described as old landfill smell with a burnt smell from the recent fire. Odour rated as 3 out of 6. EMDO - wind direction checked and SW 17mph with gusts >30mph	S	S	Y	
93	1728546	11/08/2019 11:09	Long Plantation	YOR Odour Long Plantation	02030258149 msg left 11:35 & 11:58 YOR Odour Long Plantation MELTON Caller reported Odour coming from Transwaste in Melton today at 11.00 am Caller stated that the odour has been present for the past few days Caller lives approx 2 miles away Caller described the Odour as rubbish tip odour Caller stated that they have had to keep all windows and doors closed Caller stated that the weather today has slightly breezy and overcast Caller stated that they would rate the odour as 4 /6 on the scale EMDO: checked wind direction at time of report - WSW 17mph.	NW, W, SW	S, SW	Y	

Air Quality Assessment

Gibson Lane, Hull, HU14 3HH

94	1728629	11/08/2019 20:02	Long Plantation	Odour from Transwaste Gibson Lane	<p>LM@20:14- 08000 281 886 - YOR - Odour from Transwaste Gibson Lane</p> <p>The caller rang to report an odour from Transwaste Gibson Lane</p> <p>The caller describes the odour as a rubbish tip smell</p> <p>The caller noticed the odour at 19:55</p> <p>The caller states their property is 1 - 1 1/2 miles away from the site</p> <p>The caller states the odour isn't getting into their property - windows and doors closed</p> <p>The caller states the weather is breezy, clear and cloudy</p> <p>The caller states the odour is a 4</p> <p>EMDO checked wind direction at time of report - W 14mph</p>	NW, W, SW	W	Y	
95	1729140	13/08/2019 12:31	Long Plantation		<p>YOR - Odour - Trans waste</p> <p>Odour described as horrible.</p> <p>This was noticed at 1130 today</p> <p>The odour is not getting indoors as the windows and doors are having to be kept closed.</p> <p>Clothes cannot be out on the line as they end up smelling of it.</p> <p>This is getting worse recently.</p> <p>Based around half a mile away as the crow flies.</p> <p>Weather is cloudy, cool and a bit of a breeze.</p> <p>Rated as a 5 out of 6.</p> <p>IM (CO) SW wind at 17mph at 11:30. Consistent with odour from alleged site.</p>	NW, W, SW	W	Y	
96	1729261	13/08/2019 17:38	East Clough		<p>YOR-Odour-East Clough</p> <p>Caller has said that there is a smell or garbage that has been around for the past few weeks.</p> <p>This smell is around a level 5 at the moment.</p> <p>There is a westerly breeze and it is sunny.</p> <p>Caller has stated there is a recycling plant near them and this is normally the reason for the smells.</p> <p>EMDO wind direction checked - W -11mph caller is downwind of site.</p>	SE	W		NEAR RIVER, end of brickyard lane
97	1729331	14/08/2019 06:35	Melton		<p>02030258149 YOR - Odour - Melton</p> <p>Call received to report odour coming from Trans Waste, Gibson Lane</p> <p>The odour is described as being sour, rotting stuff, really, really sour</p> <p>The odour has just been detected this morning</p> <p>The reporters property is approx 1.7 miles away from the site in question</p> <p>The odour doesn't enter the callers property</p> <p>Weather conditions are described as being a slight drizzle with a slight wind</p> <p>Smell intensity is scored as 2 to 3 out of 6</p>	S	S	Y	
98	1729336	14/08/2019 07:48	Low Field Farm		<p>02030258149 YOR. Odour.</p>	SSE	S	Y	

					<p>Caller reports a very unpleasant odour from Trans Waste, about 600 yards away. It is a food processing sickly waste smell. 5/6 on smell scale. The smell is getting inside the building. It gets inside despite windows being kept closed. Weather is damp and still.</p> <p>CO (AH) - Wind direction between 6-7am was ENE and N, then ESE at 8am. The reporters are north of the site.</p>				
99	1729679	15/08/2019 10:39	Long Plantation		<p>YNE: ODOUR:</p> <p>Caller reports the smell again from Transwaste. This was noticed at 10.15am. The odour is described as "rotting waste" and rates as 4/6 at the moment. The smell is obvious outside the property which is within half a mile of the site. Caller is having to keep doors and windows closed where possible. Weather conditions are fine and dry with a stiff westerly breeze.</p> <p>Location: Riverview Avenue, North Ferriby.</p> <p>CO: Checked wind direction at time of report W - 18mph</p>	NW, W, SW	W	Y	
100	1729774	15/08/2019 14:40	Long Plantation		<p>YOR. Odour.</p> <p>Caller reports a rotting sweet waste smell coming from Trans Waste, between 500 and 1000 meters away. 3/6 on smell scale. Very windy weather generally from the west but it is blustery. It has been drying all day.</p> <p>The smell is not getting inside the house. Caller had windows closed.</p> <p>CO - wind direction W 15mph</p>	NW, W, SW	W (gust wind)	Y	
101	1729813	15/08/2019 16:06	North Ferriby	Industrial Action - YOR - Odour	<p>+442030258149 Industrial Action - YOR - Odour Complaint - North Ferriby - CAT3 -</p> <p>Caller reporting a toxic smell from Transwaste Recycling & Aggregates Ltd - EAWML/65528</p> <p>This was noticed today from 13:00pm 15/08, and the severity has increased since that time. The smell is artificial, possibly masked with deodorant. The site is 1.23 miles from the caller's address. The smell is rated between 4 and 5 out of 6 on our scale. The smell has not entered the caller's property as windows are closed.</p> <p>The weather is bright, sunny, with a breeze from the direction of the site.</p>	W	W	Y	
102	1730208	17/08/2019 13:01	Long Plantation		<p>0800 028 1886</p> <p>YOR - Odour - Transwaste - North Ferriby, Hull</p> <p>Described as a strong pungent smell</p>	NW, W, SW	W	Y	

					<p>First noticed at 12:30 Approx. 1.25 miles from the site Rated at 5/6 Not noticeable inside property - windows closed Dry day, Westerly wind, warm day approx. 18 degrees</p> <p>Cannot sit outside in garden Reporter advised that they are dismayed at the apparent lack of action taken by the EA</p> <p>EMDO: 14mph SWW, placing reporter downwind of site.</p>				
103	1730304	18/08/2019 11:40	Melton Hill		<p>YOR - Odour - Melton Hill</p> <p>Caller reports odour coming from Transwaste Caller states the odour is a sweet, rotting, sickly smell Caller explained they noticed the odour from 10am today Caller advises the site is about a mile away from their home Caller states the odour is getting into their house Caller reports their windows are open Caller explained the weather is sunny and cloudy Caller rates the odour as about a 4</p> <p>EMDO: 14mph SWW, placing reporter downwind of site.</p>	S	SW	Y	
104	1730309	18/08/2019 12:11	Long Plantation		<p>0800 028 1886</p> <p>YOR - Odour - Transwaste - North Ferriby</p> <p>Described as strong and like following a dust cart - quite pungent First noticed at 10.30 Approx., 1 mile from the site Rated at 4/6 Not noticeable inside property - doors and windows closed Weather is dry - Westerly gusty wind</p> <p>Cannot sit out in the garden</p> <p>EMDO: 14mph SWW, placing reporter downwind of site.</p>	NW, W, SW	SW	Y	
105	1730311	18/08/2019 12:23	Melton Hill		<p>YOR - Odour Complaint - Melton Hill -</p> <p>Caller reporting a sour milk smell from Transwaste Recycling and Aggregates Ltd - EPR/HP3932WF</p> <p>This was first noticed today from 12:00pm 18/08. The site is 1.13 miles from the caller's address. The smell is rated at 5 out of 6 on our scale. The smell has not entered the caller's property as they have kept all their windows and doors closed. The weather is sunny with a westerly breeze.</p> <p>EMDO: 14mph SWW, placing reporter downwind of site.</p>	S	SW	Y	
106	1730327	18/08/2019 14:24	Melton Hill		<p>YOR/ODOUR</p> <p>Caller reporting an odour from Transwaste</p> <p>Noticed before 10.00hrs</p> <p>Odour smells like a pig slurry, or a rotten animal material</p>	S	SW	Y	

					<p>smell</p> <p>Rates 4</p> <p>Odour cannot be smelt inside the property with the doors and windows closed</p> <p>Weather is windy blowing from the south west, dry.</p> <p>Caller lives approximately 2 to 2.5 miles from the site.</p> <p>Call taken @ 14.24 on 18.08.2019</p> <p>EMDO: 14mph SWW, placing reporter downwind of site.</p>				
108	1730328	18/08/2019 14:25	Melton Hill		<p>YOR - Odour - Melton Hill</p> <p>The caller is reporting an odour from a Transwaste plant The caller lives a mile away The odour smells like a waste smell First noticed at 11:00 The odour isn't getting inside due to the caller having to close windows The caller has smelt this in the past but not this bad The weather is sunny and cloudy and a bit breezy The odour is a 3/6</p> <p>EMDO: 12mps SW; placing reporter downwind of site.</p>	S	SW	Y	
109	1730329	18/08/2019 14:37	Long Plantation	Plantation -	<p>YOR - Odour Complaint - Long Plantation -</p> <p>Caller reporting a rotting vegetation / cheese smell from Transwaste Recycling and Aggregates Ltd - EAWML/HP3932WF</p> <p>This was first noticed today from around 12:00pm 18/08. The site is within 1500 yards of the caller's address. The smell is rated at 4 out of 6 on our scale. The smell has entered the caller's property through an open bedroom window, now closed. The weather is sunny with a breeze.</p> <p>EMDO: 14mph SWW, placing reporter downwind of site.</p>	NW, W, SW	SW	Y	
110	1730353	18/08/2019 17:04	Long Plantation		<p>0800 028 1886</p> <p>YOR - Odour - Transwaste - North Ferriby</p> <p>Described as a sour smell First noticed at 14:00 until 16:00 Approx. 1 mile Rated at 5/6 Not noticeable inside property - doors and windows closed Dry, South Westerly breeze</p> <p>EMDO: 14mph SWW, placing reporter downwind of site.</p>	NW, W, SW	SW	Y	
111	1730368	18/08/2019 19:49	Melton Hill		<p>YOR - Odour - Transwaste</p> <p>FEEDBACK REQUESTED</p> <p>Smell is a mix of sour rubbish and a poultry farm. It is obnoxious. Scale 6</p>	S	SW	Y	

					<p>First noticed about 1900hrs when going outside but odour may have been there before then It has got into the house. Windows are open Caller lives 600yds from the site No wind or breeze Caller has not been at home all weekend so cannot say if it was bad yesterday or not Caller wonders if this is a permit breach as it is a Sunday evening, and if they conform to their permit regulations</p> <p>EMDO: 12mph SW, placing reporter downwind of site.</p>				
112	1730371	18/08/2019 20:25	Melton Hill		<p>0800 028 1886</p> <p>YOR - Odour - Transwaste - North Ferriby, Hull</p> <p>Described as rotting waste - Vomit and cheese First noticed at 20.25 Approx. 1 mile from site Rated at 3/6</p> <p>Not noticeable inside property - Doors and windows closed Weather dry, South Westerly breeze</p> <p>EMDO: SSW 14mph, placing reporter downwind of site.</p>	S	SW	Y	
113	1730442	19/08/2019 10:46	Long Plantation		<p>+442030258149 YOR - odour</p> <p>Location - North Ferriby</p> <p>Caller reports odour from Transwaste. Described as rotten waste. Noticed at 10:30. Site is 1 mile away. Noticed outside. Weather is sunny, breezy. Rated as 5.</p> <p>IM (CO) 14mph Westerly wind supports report. Emailed site.</p>	NW, W, SW	S, SW	Y	
114	1730490	19/08/2019 12:25	Long Plantation	Ferriby	<p>YOR - Odour - Transwaste, North Ferriby</p> <p>Caller is reporting a sour milk smell coming from Transwaste, which is about 2 miles away. The smell isn't in the house with windows closed, with a strength of 3/6. The weather is windy, Cloudy and cool.</p> <p>IM (CO) Westerly wind 15mph. Supports report. Emailed site requesting investigation.</p>	NW, W, SW	W	Y	
115	1730514	19/08/2019 13:24	Long Plantation	Site	<p>YOR- ODOUR- Transwaste Waste Site</p> <p>Caller states the odour is coming from Transwaste Waste Site Caller states there is a pungent smell, like they are sitting next to a rubbish bin Caller states the odour is continuous and persistent. Caller states the odour was first noticed early morning but the odour has been happening over the last few days Caller states he reported the odour on Saturday and Sunday Caller states the site is about a mile away Caller states they can't open windows because they don't want it getting in the house Caller states there is a westerly wind that is slightly gusty,</p>	NW, W, SW	W	Y	

					<p>19-20 degrees Caller states the odour 3 out of 6 IM (CO) 15mph Westerly wind. Emailed site.</p>				
116	1730546	19/08/2019 14:54	Long Plantation		<p>YNE Odour</p> <p>The caller is reporting the odour from Trans waste on Brickyard Lane noticed at 14:30 it happens every day. The smells the horrible rotting food smell. The caller can smell this in the house and garden, the caller has to shut all the windows to keep the smell out. The caller is about 0.25 miles from the Trans waste site, The weather is overcast, with a slight breeze. The smell is a good 6/6 the caller has been sick, but it makes the caller feel ill.</p>	NW, W, SW	SW (gust wind 30 mph)	Y	
117	1730589	19/08/2019 16:23	Melton Hill		<p>Yor - Odour - 1 of 2</p> <p>Trans Waste at present is emitting a very bad odour that is described as ammonia, leaving an acid taste in the throat.</p> <p>The odour was first detected today 30 minutes ago the odour has invaded the property and the reporter is closing the windows on the call.</p> <p>The site is about 0.5 miles away from the house.</p> <p>The weather outside is still but it has just rained with no wind present.</p> <p>The score of the odour is 6/6</p> <p>The reporter is unable to use the back garden at all</p> <p>The odour is constant at present.</p> <p>IM (CO) 14mph Westerly wind. Emailed site.</p>	S	W		
118	1730591	19/08/2019 16:29	Melton Hill		<p>Yor Odour - 2 of 2</p> <p>Yesterday the reporter was badly affected by a bad odour from Trans Waste.</p> <p>The odour was first detected about 0915 when exiting the house and this lasted all day long</p> <p>The site is 0.5 miles away from the house.</p> <p>The odour was of ammonia</p> <p>The doors and windows needed to be closed all day</p> <p>The weather was windy and sunny</p> <p>The odour was constant at the time.</p> <p>This is an ongoing issue for the reporter.</p>	S	W		

					The score of the odour was 6/6 and this was the score all day.				
119	1730604	19/08/2019 17:31	Low Field Farm		<p>YOR-Odour-Melton West Park</p> <p>Caller is ringing for a strong odour coming from Melton West Park</p> <p>The odour smells like the bottom of a dustbin The odour is there all the time and today around lunchtime it was rated around a 4</p> <p>The caller is around 1 mile away from the site The odour is not getting in the house, its picked up on the outside of the property Caller has said they keep the windows and doors closed due to the smell getting inside The conditions are sunny with a slight breeze</p> <p>EMDO: 8mph SW, placing reporter downwind of site.</p>	SSE	W		
120	1730621	19/08/2019 10:38	Melton		<p>YOR. Odour. Email.</p> <p>"I am just wondering who I need to complain to about the waste smells please? I live very near to a Transwaste site HU14 and this morning I opened my windows to be met with a disgusting smell, enough to need to close the window. This is not the first time this has happened recently, and the problem seems to be getting worse."</p> <p>EMDO: Unable to assess due to delay between report</p>	S	S	Y	
121	1730704	20/08/2019 10:36	Melton Hill		<p>YOR - Odour</p> <p>North Ferriby.</p> <p>The caller is reporting odour coming from Transwaste recycling. Rotten acrid smell leaves a taste at the back of the throat. The reporter says they have got the odour around their home and where they are walking their dog. Noticed at 08.00 and still present now. Rated as a 5. They are having to keep windows closed to try to suppress the odour. They are half a mile from the site. The weather is still, dry and clear skies.</p> <p>P MARRIS (EMDO) - email sent to operator and Steve Taylor. Wind direction variable through the morning but at times of concern in report were in the direction of the reporter.</p>	S	SW	Y	
122	1730757	20/08/2019 12:15	Melton Hill		<p>YOR - Odour - Melton Hill</p> <p>The caller is reporting an odour from Transwaste The odour started 11:40 The odour isn't getting inside the caller property The caller says it's a 4/6 The caller said they could smell it worse in the nearby town The caller says this has been happening for a few years The caller says that the EA is currently taking action The caller lives over a mile from the site</p>	S	W		

					P MARRIS (EMDO) - cat 3 on hold and pass to Steve Taylor				
123	1730851	20/08/2019 16:29	Long Plantation	Ferriby	<p>YOR- Odour Trans waste North Ferriby</p> <p>The caller advised it's a terrible stench. The caller advised can be tasted in the air.</p> <p>The caller advised its acrid, vomit smell.</p> <p>The caller has just been outside to hang washing out and the odour hit them. Unable to hang their washing out.</p> <p>The caller lives approx. 1 mile away.</p> <p>The caller has had windows and doors closed so not inside their home currently.</p> <p>The caller 6/6 for intensity.</p> <p>P MARRIS (EMDO) - spoke to out of hours Simon Caine, passed to him for info tonight. CAT 3 oh</p>	NW, W, SW	W	Y	
124	1730852	20/08/2019 16:32	Long Plantation	North Ferriby -	<p>YOR - Odour - North Ferriby -</p> <p>The caller is reporting on an odour from Trans Waste. The smell is described as sour and acrid like rotting meat. This was first noticed at 07:30 and has been ongoing all day.</p> <p>The caller is half a mile from the site.</p> <p>The odour is rated as 4/6.</p> <p>The smell is getting inside the property with the windows and doors open.</p> <p>The weather conditions today are dry and still.</p> <p>P MARRIS (EMDO) - passed to Simon Caine out of hours for info and further action if required</p>	NW, W, SW	W	Y	
125	1730871	20/08/2019 17:12	65, North Ferriby		<p>YOR- Odour Transwaste North Ferriby</p> <p>The caller advised the odour is a sweet rotten smell like putrid waste.</p> <p>The caller noticed it about 30 minutes ago.</p> <p>The caller lives approx. half a mile from the site.</p> <p>The caller advised its outside but have to keep windows and doors closed.</p> <p>The caller advised the weather is breezy with a northerly wind.</p> <p>The caller rates 4/5-6 for the intensity.</p> <p>EMDO: 11mph SW placing reporter downwind of site.</p>	W	W	Y	
126	1730878	20/08/2019 17:26	Long Plantation		<p>YOR- Odour Transwaste North Ferriby</p> <p>The caller advised the odour is like a rotten food tip smell. The caller first noticed this morning and has got worse as the day has gone on.</p> <p>The caller advised their children are affected by it.</p> <p>First noticed about 11am.</p> <p>The caller advised the odour is inside their home and lingering inside.</p> <p>The caller lives less than 1 mile from the site.</p> <p>The caller advised the weather has been warm and slightly overcast. No breeze.</p> <p>The caller rates the intensity 6/6 for intensity.</p>	NW, W, SW	W	Y	

					EMDO: Unable to assess due to delay between incident and report.				
127	1730939	20/08/2019 23:05	Long Plantation	Plantation	<p>+442030258149 - YOR - Odour - Long Plantation</p> <p>Call received to report odour coming from Trans Waste The odour is described as being like household waste The odour is on & off most days The callers property is approx 1.7 miles away from the site in question The odour enters the callers if windows & doors are open Weather conditions are described as being calm, no strong wind Smell intensity is scored as 6/6</p> <p>EMDO: 5mph SSW, fair placing reporter downwind of site.</p>	NW, W, SW	SW	Y	
128	1731230	21/08/2019 19:50	Melton Hill		<p>YOR/ODOUR</p> <p>Caller reporting an odour from Transwaste</p> <p>Noticed at 19.50hrs</p> <p>Odour smells like a dustbin that has been left a while, like following a bin lorry round.</p> <p>Rates 2</p> <p>Odour cannot be smelt inside the property with the doors and windows closed</p> <p>Weather is mild and dry and no breeze</p> <p>Caller lives approximately 1 and half mile from the site.</p> <p>Call taken @ 19.50 on 21.08.2019</p> <p>Sglenville emdo, 21/08/19 @ 19:58. Very busy with reports from elsewhere. First odour report for this site tonight, wind direction SSW. NO attendance at this time.</p>	S	SW	Y	
129	1731255	21/08/2019 21:21	Melton	It smells like waste when it gets really	<p>YOR - Odour from Transwaste, It smells like waste when it gets really hot The caller first noticed the odour at 21.20 The site is less than a mile away On a scale out of 6 the customer rates it as a 6 The caller can smell the odour inside the property. The windows are closed, and the door was opened for the dog to go out. They will have to keep the windows closed because of the odour The weather conditions are fine but it was raining earlier with a slight wind There never used to be as bad but the site have 2 major fires at the site which has made it worse.</p> <p>Sglenville, EMDO. 21/08/19. Wind direction SSW. Second</p>	S	S	Y	

					report of evening. No attendance, EMSC already deployed to other incidents.				
130	1731449	22/08/2019 13:58	Melton	chase CO to call ICS msg 14.09	<p>Spoke to ABC @14:50 said he would chase CO to call ICS msg 14.09 14.23 14:39 02030258149 YOR- Odour Transwaste Melton</p> <p>The caller describes as a waste smell. The caller advised its awful and its making their caller feel sick The caller advised can't be outside and the caller feels it's unfair. The caller is wanting to enjoy the bank holiday. The caller lives approx. 5 minutes car journey. The caller advised the weather is dull, warm and breezy. The caller has closed the windows so not inside their home but feels penned in. The caller rates 6/6 for the intensity. The caller first noticed at 1pm. The caller hasn't noticed a pattern of days or times.</p> <p>duty officer, wind blowing from SW, site notified and asked to investigate</p>	S	SSW	Y	
131	1731564	22/08/2019 17:33	Melton	Odour	<p>08000281886 Industrial Action - Yor Odour</p> <p>The caller is reporting an odour from Transwaste which the caller noticed midafternoon Friday last week. The smell was like methane/sewage, it was indoors with the windows and doors shut. The caller can't remember what the weather was like last Friday, it may have rained at some point. The caller had to close their windows. The caller is not sure how far from the Transwaste site they are. The caller scored the smell as 6/6 for intensity, the caller has never smelled anything worse. The caller has had a note through the door today advising them to report any smells the area to 0800807060 as Transwaste.</p>	S	SW	Y	
132	1731730	23/08/2019 10:42	Low Field Farm		<p>YOR - ODOUR - MELTON</p> <p>Caller reporting odour that they have noticed quite often over the summer. After looking into this further, caller suspects it could be coming from the Transwaste site around the Gibson Lane area of Melton.</p> <p>Caller says there has been a lot of issues at this site, with local residents.</p> <p>Noticed this morning at about 9.30am. Can't describe the odour exactly, almost like a rubbish smell, mixed with a chemical smell. But couldn't say for certain, as not trained in that field. Can't smell inside the house, but that is because keep windows and doors closed. Caller says that the site is on the other side of the motorway from their property. As crow flies probably about 2-minute drive from the site.</p> <p>Weather is warm, with a fairly gentle breeze. 22 degrees</p>	SSE	S	Y	

					<p>Celsius and 7mph south westerly winds, according to phone. It says air quality 1, however caller says because of this smell, they wouldn't agree with that. Caller says seems to be worse when it is warmer.</p> <p>Rated 5/6. It is just unpleasant.</p> <p>Caller says that they have only lived in the village for about 18 months and it didn't smell like this. However, it is so bad, they are already thinking of moving.</p> <p>EMDO: Wind coming from the south, 8mph and fair - reporter downwind of the site. Emailed site asking for them to investigate and provide feedback.</p>				
133	1731802	23/08/2019 13:19	Melton		<p>YOR - Odour Complaint - Melton -</p> <p>Caller reporting an acrid, sour dustbin smell from Transwaste Recycling and Aggregates Ltd - EPR/HP3932WF</p> <p>This was noticed from 13:19pm 23/08. This was smelled as the caller was walking home along Monks Way, around 600 yards from the site in question. The smell is rated between 3 and 4 out of 6 on our scale. The weather is warm, clear, with south-westerly breeze.</p> <p>EMDO: SSW, 5-10mph, reporter down wind of the site. Emailed the site and requested feedback given to site inspector.</p>	S	S	Y	
134	1731856	23/08/2019 15:17	Melton	Odour - Reports a very strong smell in	<p>08000281886 Industrial Action - Yor - Odour - Reports a very strong smell in his area of Melton, near North Ferriby, from nearby Transwaste. The smell is described as a sour acrid smell and is rated 6/6 in strength. This is the second report from the caller today, and he says the smell is getting stronger.</p>	S	S	Y	
135	1731892	23/08/2019 16:51	Long Plantation	Odour	<p>0800 0281886 Industrial Action Yor Odour</p> <p>The caller is reporting the odour from Transwaste on Brick Yard Lane.</p> <p>The caller noticed the smell while they were gardening from about 15:30 this afternoon.</p> <p>The smell is like rotting meat or a butchers.</p> <p>The weather is really hot, hardly any breeze.</p> <p>The smell is outside.</p> <p>The caller says the smell is coming in waves and is a 3 at its worst</p>	NW, W, SW	S	Y	
136	1731942	23/08/2019 19:36	Melton		<p>0800 0281886 Industrial Action</p> <p>YOR - Odour - Believed to be Transwaste - North Ferriby</p> <p>Described as like a rubbish smell</p> <p>First noticed at 19:30</p> <p>Approx. 2 miles from site</p> <p>Rated at 4/6</p> <p>Noticeable inside the property - windows open</p> <p>Weather is dry, warm still day</p>	S	S	Y	

Air Quality Assessment

Gibson Lane, Hull, HU14 3HH

137	1731947	23/08/2019 20:00	Melton	- Odour from Transwaste	<p>0800 0281886 Industrial Action - YOR - Odour from Transwaste</p> <p>The caller rang to report an odour from Transwaste The caller describes the odour as rotting food/ bin smell The caller noticed the odour at 19:50 The caller states their property is 2/3 miles away from the site The caller states the odour is getting in to their property - windows and doors open The caller states the weather is Beautiful - nice sunny The caller states the odour is a 5</p>	S	S	Y
138	01732290 (M)	25/08/2019 08:59	TRANSWASTE	0281886 Yorks - Odour	<p>M/L 0923hrs & 0937hrs 0800 0281886 Yorks - Odour Location: North Ferriby</p> <p>Caller is reporting odour from Transwaste. Caller describes the odour as sour. First noticed at 08.45. Caller is 1 and half miles from the site. Odour isn't inside the property, doors and windows closed. Weather conditions are sunny, still, clear. Caller rates the odour as a 4 on the scale.</p> <p>Sglenville, emdo, 10:35 hours on 26/08/19. Operator notified of reports since 23/08/19 by email. No further reports that day, cat 3 on hold, no attendance.</p>		E, N	
139	1732466	26/08/2019 08:11	Melton		<p>08000281886 YOR. Odour.</p> <p>Caller reports a bad waste smell coming from Trans Waste, who are about 0.7 miles away. 6/6 on smell scale. Caller says it got into the house as he opened the back door. The weather is sunny and warm. There is a light breeze.</p> <p>Sglenville, emdo, 09:45 hours on 26/08/19, single report so far, no attendance at this time. Wind direction S to SSW, 21oc, 3.0 m/s at 09:30 hours.</p>	S	S	Y
140	1732747	27/08/2019 08:21	Long Plantation		<p>YORKS - Odour - North Ferriby</p> <p>Caller reporting odour probably coming from Transwaste again. It doesn't smell like manure; it smells like bad eggs. It is rank, not pleasant. Rated 4-5/6. Weather is hot and a very slight breeze.</p> <p>First noticed outside at about 7.30am this morning. Haven't opened windows today, as yet. However, if they do then the smell will most likely enter the property.</p>	NW, W, SW	changeable	Y
141	1732753	27/08/2019 08:39	Long Plantation		<p>YORKS - ODOUR - NORTH FERRIBY</p> <p>Caller reporting odour coming from Transwaste on Gibson Lane. Noticed at 8am this morning.</p>	NW, W, SW	changeable	Y

					<p>Rated 4/6. Described as a composting type smell. Quite sweet and sickly. Weather is very still, dry and quite hot. About 25 degrees at the moment. No wind so the smell is hanging in the air.</p> <p>The windows were open last night and couldn't smell it, however as soon as opened the door to leave this morning, the smell was there.</p> <p>Caller's property is about half to 1 km from the site.</p>				
142	1733406	28/08/2019 13:38	Long Plantation		<p>YOR - Odour from Transwaste</p> <p>The caller rang to report an odour from Transwaste The caller describes the odour as a pungent smell - food waste</p> <p>The caller noticed the odour at 10:00 The caller states their property is a mile away from the site The caller states the odour isn't getting into to their property windows and doors closed The caller states the weather is overcast not much wind 20-22 degrees The caller states the odour is a 3 The caller states they are concerned about the air quality in area</p> <p>EMDO, wind from the SW 13mph</p>	NW, W, SW	E		
143	1733529	28/08/2019 17:06	Long Plantation	message 17:36	<p>0800 028 1886 message 17:36</p> <p>YOR odour Transwaste North Ferriby</p> <p>Caller reporting that the smell from Transwaste is there when caller arrived home caller 10 mins drive from the site, caller rated it at 4/6 rotting cheese smell. Weather has been wet but dry at the moment.</p> <p>EMDO: Wind coming from the W, 9mph, light rain. Emailed the site.</p>	NW, W, SW	E		
144	1733627	29/08/2019 08:40	Melton		<p>Yor Odour</p> <p>The caller is reporting the odour from the Transwaste Site on Melton Industrial Estate noticed 5 minutes ago when the caller woke up. The smell is like rotten Garbage. The site is 1.5-2 miles for the caller. The weather is sunny still cool and dry. The smell is getting indoors with windows and doors shut the caller thinks it was getting in through the letter box.</p> <p>Sglenville, CO, 29/08/19 - 1 odour report today, SW wind direction light. 14oc at time of call. DConnor / SAdkin attending for odour assessment. Reported at 11:42 that odour substantiated at sandpiper pub area of Melton, 2/6 intensity, continuous.</p>	S	S	Y	

145	01734676 (M)	02/09/2019 11:11	Transwaste	MONTH	<p>SEPTEMBER FIRST OF THE MONTH</p> <p>YOR - Odour</p> <p>Transwaste, Hull</p> <p>Described the smell as a horrible pungent smell. first noticed at 10:45am. The site is a couple of miles away. Rated 4-5 out of 6. windows were closed. Weather is fine, bright, light breeze.</p>	S	S	Y	
146	1734872	02/09/2019 19:43	Long Plantation		<p>YOR-Odour-Transwaste</p> <p>Caller ringing about the odour coming from Transwaste Stating this odour smells very pungent like a rubbish bin The odour was first noticed at 19.00 The caller is around 1 mile away from the site The odour is not inside the property All windows and doors are closed Weather is overcast and has a NE breeze Caller has said the level is around a 3</p> <p>EMDO: Wind direction from SW, 17mph, partly cloudy. At 20:40hrs emailed the site and asked them to investigate.</p>	NW, W, SW	SW	Y	
147	1734938	03/09/2019 09:28	Melton Hill		<p>YOR - Odour</p> <p>North Ferriby</p> <p>The caller is reporting odour coming from Trans waste. The caller says the odour was affecting them yesterday at 12.00 and was present until 18.00. The odour is reported as being a rotting rubbish smell. The caller says you could even taste the odour. Rated as a 4. The odour was not getting inside as they had windows and doors closed. They are about 2-3 KM from the site. The weather was dry with a slight breeze and overcast.</p> <p>Caller is wondering if we would be able to install monitors in the area?</p> <p>Justin Jones (CO) checked wind data for this time period, 15 to 20mph SW / SSW. Duplicated to first report of the month.</p>	S	SW	Y	
148	1735148	03/09/2019 16:27	Melton Hill		<p>YOR - Odour - Melton Hill -</p> <p>Odour from Transwaste. Described as like a sickly-sweet smell. Putrid. Horrible. Distance to site is about 1 mile. First noticed at 14:30 on the 03/09/2019 when returning home. Odour has not entered the property with all windows closed. Odour rated 4 out of 6. Weather is a light south westerly wind and quite bright. Caller advised this has been really bad last week for the couple of warm days.</p>	S	SW	Y	

					CO: A check of www.xcweather.co.uk confirmed that the wind direction is either SW or WSW dependent on the weather station location, making the permitted site the probable source of the odour. Site contacted by email requesting an investigation and provision of feed back to the Environment Agency.				
149	1735152	03/09/2019 16:42	Melton Hill		<p>YOR Odour</p> <p>Caller is reporting the odour from Transwaste described as household waste and rated as 3/6. It is not inside the home with the windows closed. The caller is 1 mile from the site and the weather is cloudy, a SW breeze and clear. The caller noticed at 16:15. it is a regular occurrence they report.</p> <p>CO: A check of www.xcweather.co.uk confirmed that the wind direction is either SW or WSW dependent on the weather station location, making the permitted site the probable source of the odour. Site contacted by email requesting an investigation and provision of feed back to the Environment Agency.</p>	S	SW	Y	
150	1735385	04/09/2019 14:04	Long Plantation		<p>YOR - Odour - Transwaste</p> <p>FEEDBACK REQUIRED Smells of being on a landfill site. Scale 6 Caller has just got home. It is bad now. Caller cannot say when it began Odour is in the house. Windows were closed Caller lives half mile from the site It is very breezy There were no odours earlier this week</p>	NW, W, SW	W	Y	
151	1735420	04/09/2019 15:43	Long Plantation		<p>020302 58149: YNE: ODOUR:</p> <p>Caller reports the smell again from Transwaste on Gibson Lane, HU14 3HH This was noticed at about 2pm and is still evident at the moment The odour is described as "pungent odour worse than the rubbish bin" and rates as 4/6. The smell is obvious inside the property which is about a mile from the site. Having to keep doors and windows closed where possible. Weather conditions are cloudy with a gusting NE breeze.</p> <p>Location: Corby Park, North Ferriby.</p>	NW, W, SW	W	Y	
152	1736928	10/09/2019 19:24	Long Plantation	Transwaste	<p>0800 028 1886 Yor odour from Transwaste</p> <p>Thinks it's at Melton. The site is about 2 miles away. Just noticed it, might have also been about this afternoon. Outside only windows closed. Rated as a 5. Described as a sour smell, like milk. The weather is calm and pleasant.</p> <p>RG (EMDO) Wind direction for North Ferriby is WSW so site is upwind of reporter</p>	NW, W, SW	W	Y	

Air Quality Assessment

Gibson Lane, Hull, HU14 3HH

153	1737559	12/09/2019 16:18	Melton	reporting the odour from Transwaste	<p>ml 16:36 - YOR: Odour. Caller is reporting the odour from Transwaste close to Brickyard lane. Noticed while walking.</p> <p>what three words app location is: snippets. ordering. watched</p> <p>Noticed it just now, westerly wind blowing in the caller's direction from the site while walking down Brickyard lane.</p> <p>Rates severity as a 3/6. Describes the smell as sour taste. Caller is about 1/2 a mile from the site.</p> <p>P MARRIS (EMDO) - cat 3 on hold and sent to Steve Taylor</p>	S	SW	Y	
154	1737892	13/09/2019 18:39	Melton Hill	Odour	<p>0800 028 1886 Industrial Action YOR - Odour</p> <p>A caller is reporting an odour from Transwaste. It is a 'noxious waste' smell. The odour was noticed about an hour ago. The site is roughly 2 miles from the reporter. The odour was rated 4.5-5/6. The odour was entering the building when a door was open. The weather is warm, sunny with no wind.</p> <p>EMDO: www.timeanddate.com - wind NNW, 8.7mph, fair. Odour likely to be substantiated.</p>	S	changeable	Y	
155	1737900	13/09/2019 19:33	Long Plantation	ODOUR	<p>0800 028 1886 Industrial Action YOR - ODOUR</p> <p>Calling to report the odour coming from Transwaste - reprocessing waste plant. First noticed around 18:00pm. Caller could smell it around the village...High Road, Church road. Describes the odour as a very strong pungent smell - chemical...type odour. It is different to the usual rotting type odour. Rates 4/6. Caller could smell it outside... Caller was about 1 mile from the site. Weather conditions were light wind, overcast. Caller thinks they are exceeding their storage limits.</p> <p>EMDO: Wind direction from E, 9mph, fair conditions. Odour possibly from site.</p>	NW, W, SW	changeable	Y	
156	1737913	13/09/2019 20:54	Long Plantation	YOR - Odour -	<p>0800 028 1886 Industrial Actions YOR - Odour -</p> <p>Caller reporting odour coming from Trans waste composting. Described as a dirty smell of rubbish. First noticed an hour ago. Smell starting to permeate into house. Noticed smell when caller went outside and it was strong. Weather described as normal September evening. Caller is about 1 1/2 - 2 miles. Rated at 4/6.</p> <p>EMDO: Various wind directions, 1 mph, fair conditions.</p>	NW, W, SW	changeable	Y	

157	1738136	15/09/2019 10:25	Long Plantation	Ferriby	<p>YOR odour from Transwaste - North Ferriby</p> <p>Thinks the site is about a mile away. First noticed at 08.00. Rated as a 3. Described as a strong sickly smell. Also, an acrid smell. Slightly winds gusting. The smell is outside only, the house is closed up. More noticeable at the front of the house, persisted from 08.00,</p>	NW, W, SW	W	Y	
158	1738576	16/09/2019 21:12	Long Plantation	Plantation -	<p>YOR - Odour Complaint - Long Plantation -</p> <p>Caller reporting a rotting smell from Transwaste Recycling and Aggregates Ltd - EPR/BP3792LD</p> <p>This was first noticed today from 18:00pm 16/09. The site is 1 mile from the caller's address. The smell is rated at 6 out of 6 on our scale and takes the caller's breath away. The smell has entered the caller's property through open windows, now closed. The weather is dry, calm, with a westerly wind.</p>	NW, W, SW	changeable	Y	
159	1738950	18/09/2019 09:41	North Ferriby	Odour	<p>M/L 09.50 10:06 02030258149 Yorks - Odour Location: North Ferriby</p> <p>Caller is reporting odour from Transwaste. Caller describes the odour as household waste, sweet, bins. First noticed at 09.00. Caller is a mile from the site. Odour isn't inside the property, doors and windows closed. Weather conditions are still, sunny, dry, warm. Caller rates the odour as a 6 on the scale. Ongoing issue.</p> <p>CO: 5mph WWS, placing reporter down wind of site.</p>	w	W	Y	
160	1738968	18/09/2019 10:09	Melton Hill		<p>YOR - Odour From Transwaste</p> <p>The caller rang to report an odour from Transwaste The caller describes the odour as Rancid smell - worse than the smell of food going off The caller noticed the odour at 08:00 The caller states their property is a 1 mile from the site The caller states the odour is getting into their property - windows and doors open The caller states the weather is still The caller states the odour is a 5</p>	S	SW	Y	
161	1739310	19/09/2019 08:45	Long Plantation		<p>YOR - Odour - Long Plantation -</p> <p>Odour from Transwaste in North Ferriby. Described as like a sickly smell. Not like manure. First noticed at 08:40 on the 19/09/2019 when going out to the bin. Distance to the site is about a 20 minute walk. Caller advised the back door was open when first noticed but now all windows and doors closed. Odour rated 6 out of 6. Weather conditions is sunshine, blue sky and a mild wind.</p>	NW, W, SW	SW	Y	

					IM (CO) wind direction Westerly at 4mph. Supports odour from alleged site affecting the reporters location. Emailed site.				
162	1741543	26/09/2019 19:19	Melton		<p>YOR - Odour</p> <p>Possibly Transwaste Site, Hull</p> <p>smells like a burning smell.</p> <p>First noticed at 6.30pm.</p> <p>The site is around 1/4 of a mile away</p> <p>Rated 5 out of 6.</p> <p>The smell is inside the house, windows are closed.</p> <p>Weather is wet, still.</p>	S	S	Y	
164	1741580	27/09/2019 07:13	Melton	Burning of Waste:	<p>020302 58149: YORKS East: Odour / Burning of Waste:</p> <p>Caller reports the smell again from Transwaste at Melton. This was noticed at 7am.</p> <p>The odour is described as "the smell of burning" and believes that there must have been a fire again.</p> <p>Caller feels that fires are occurring more often at the site recently.</p> <p>The smoke is blowing across from the direction of the site - looks like fog in the air.</p> <p>The smell is obvious at Monks Way which is closer to the site than the callers house.</p> <p>Weather conditions are fine and dry with a slight breeze.</p> <p>Location: Monks Way Melton, North Ferriby.</p>	S	S	Y	
165	1741630	27/09/2019 09:47	Low Field Farm		<p>L/M @ 10:13 - +442030258149</p> <p>YOR - Odour</p> <p>Location: North Ferriby</p> <p>A caller is reporting an odour from Transwaste. There is an intermittent methane/chicken farm smells which come from the site.</p> <p>Today there is a smell of smoke coming from the site. Unsure if there is a fire at the site.</p> <p>The odour was noticed at roughly 08:00.</p> <p>The site is roughly 1/4 of a mile from the reporter.</p> <p>The odour was rated 6/6.</p> <p>The odour is entering the building with windows shut, it is only faint inside the building though.</p>	SSE	S	Y	
166	1741635	27/09/2019 10:04	Low Field Farm		<p>YOR. Odour.</p> <p>Caller reports what smells like a fire of some description emanating acrid smoke. It seems to be coming from the rear of a waste transfer site called Trans Waste about half a mile away. Caller says it is 3/6 on smell scale. The smell was getting inside the house this morning. Caller had windows open during the night but has had to close them.</p> <p>This is the second time in the last couple of months caller</p>	SSE	S	Y	

					has noticed this. Caller says it is not a regular occurrence before that. Caller does not know what is being burned and cannot see the fire itself. Caller has also reported this to the Local Council.				
167	1741961	28/09/2019 17:03	Long Plantation		<p>YOR - Odour</p> <p>Transwaste, Hull</p> <p>Smells like acrid burning plastic/rubber.</p> <p>First noticed at 11am, been constant since.</p> <p>The site is around half a mile away.</p> <p>Rated 5 out of 6.</p> <p>The smell is inside the house, windows are open.</p> <p>Weather is quite humid, light breeze.</p>	NW, W, SW	SW	Y	
168	01744904 (M)	09/10/2019 13:01	Transwaste		<p>YOR - Odour</p> <p>Transwaste, Hull.</p> <p>Described the smell as like stinking rubbish.</p> <p>First noticed at 12:55pm.</p> <p>The site is around 1.5 miles away.</p> <p>Rated 3/4 out of 6.</p> <p>The smell isn't inside the house, windows are closed.</p> <p>Weather is cloudy, breezy.</p> <p>CO www.xcweather.co.uk checked. Wind direction at Leaonfield; 10:50hrs WSW 16-28mph, 11:50hrs WSW 17mph, 12:50hrs WSW 16mph. The location of the odour report is potentially downwind of the permitted site. A check of other incidents confirmed that there have been no other odour reports within the last 7 days. Likely localised impact, report suggests odours detected outside rather than inside a property. Site notified via email and asked to investigate.</p>		SW	Y	
169	1746456	16/10/2019 15:13	Long Plantation	Ferriby	<p>Yorkshire - Odour report - North Ferriby</p> <p>Caller is reporting odour from Trans Waste</p> <p>Rubbish tip like smell that was first smelt at 13.30</p> <p>Caller is currently doing the school run and is less than half a mile away from the site and they can no longer detect the odour however it is very strong at home.</p> <p>Weather is cool and clear with a slight breeze.</p> <p>Windows and doors are closed but the smell has entered the house already</p> <p>Odour rated as 5.5</p>	NW, W, SW	W	Y	
170	1746470	16/10/2019 15:44	Transwaste		<p>YOR - Odour</p> <p>Taking Place Near Melton Hill</p> <p>Caller reporting an odour.</p>		W		

					<p>The site is possibly Trans waste Recycling. The odour is like rotting decomposing food, sulphur, egg smell. Caller noticed the odour at 13.00 and could still smell it at 15.15. The site is a about 1/2 mile. The odour is not getting inside the property it can only noticed outside. Weather is sunny and cloud, but there westerly wind. Caller would rate the odour at a 4</p>				
171	1747100	18/10/2019 12:45	Transwaste	Complaint - Via Email -	<p>+448000281886 - YOR - Odour Complaint - Via Email -</p> <p>Once again, there was a foul smell this morning coming from the industrial estate near our house in Melton. It smells like the smell you used to get from the landfill that you pass on the a63 just past north cave, is that a methane smell? It really feels like you are breathing in poor air quality. Anyway, it keeps happening and is really disgusting and nausea inducing. You could smell it a little in North Ferriby village as I did the school run and then it was worse on the a63 past my housing estate/the industrial estate and then stopped before the brough turn off. Please could this be looked into, as it is not nice living next this.</p> <p>We are on the edge of Melton Industrial Estate, where there are two waste recycling businesses, one of which is Transwaste. The foul smell continued all day and really was terrible. All of our house windows have to be closed when this happens.</p>		SW		
172	1748038	23/10/2019 15:03	Long Plantation		<p>YOR - Odour - Transwaste</p> <p>Noise was of heavy machinery within the building. It was continuous and loud. It was a roaring noise It has been on and off for some time. Sometimes the caller tolerates it They often have wagons going to the site at 0400hrs. Caller says they shouldn't operate before 0600hrs It was bad for the past two nights It can be heard in the house with windows closed It stopped the caller going to sleep It doesn't cause vibrations It can also be heard throughout the day, as caller is often at home Caller lives between quarter and half a mile from the site Caller thinks that the times they do operate is a breach of permit</p> <p>CO: Reporter 1600m from site, unable to assess weather conditions due to delay between observation and report.</p>	NW, W, SW	S	Y	
173	1749333	28/10/2019 08:18	Long Plantation		<p>02030258149 Yorks - Odour -</p> <p>Caller reporting odour from Trans waste first noticed at 0815 It's very sickly and cloying. It's almost chemically Caller is about a mile from site Smell in house when windows are opened</p>	NW, W, SW	W, SW	Y	

					Weather described as dry and frosty. It's still Odour rated at 6/6				
174	1749340	28/10/2019 08:37	Long Plantation	Plantation	02030258149 YOR Odour Long Plantation The caller is reporting an odour coming from Melton. Caller was unsure of the name of the site but knows it's a site that is a regulated. It smells like a really obnoxious gas. Gets to the back of your throat. The caller is about 1 mile or less away from the site. The odour is getting inside the house Windows and doors are currently closed. The weather conditions are chilly, bright, and still morning. The caller rated the odour as 6/6	NW, W, SW	W, SW	Y	
175	1749350	28/10/2019 08:51	Long Plantation	Plantation	02030258149 YOR Odour Long Plantation The caller is reporting an odour coming from trans waste site. It's a rotting waste and composting obnoxious odour. The caller had the windows and doors open and now the smell is in the house. The windows and doors are closed now The weather conditions are slightly breezy. The caller rated the smell as 6/6 the site is just over a mile away	NW, W, SW	W, SW	Y	
176	1749456	28/10/2019 11:18	Long Plantation		YORKS - Odour, Hull Caller reports their property being affected by a strong odour emitting from Transwaste in North Ferriby, located approximately 1 mile away. Caller says that the odour was already present inside their property when they got up this morning at 7am, as their windows had been open overnight. Caller describes the odour as a "waste" smell, similar to a dirt dustbin and rated at around 5/6 in intensity. The smell has been present "on and off" recently but is said today to be "excessive". The weather is very cold, bright and still today.	NW, W, SW	N	Y	
177	1750362	31/10/2019 16:46	Brough, HU15 1GP		YOR - ODOUR - BROUGH Could not change time observed as NIRS would not allow Caller wanted to report smell coming from Transwaste in Melton, East Yorkshire, Customer was calling from postcode HU15 1GP Caller would not give their residence details Caller said it smelt like rubbish landfill smell Caller said they first noticed smell at 1700hrs and just noticed when they returned from work Caller said the site is about a mile from their location Caller said the smell was not getting inside the house Caller however, said during the call they were now smelling inside the house - like a sulphur smell	SE	SE	Y	Millias CL, Brough

					<p>Caller said the windows and doors are being kept closed Caller said the weather was still with east south easterly light breeze Caller described the smell as 2 to 3 out of 6. Said it was very distinct and can be smelt from car when driving.</p> <p>CO: Unable to assess due to discrepancy between observed time and time recorded in free text, unable to contact reporter to clarify as no details provided.</p>				
178	01753371 (M)	11/11/2019 10:46	Long Plantation	Odour- North Ferriby	<p>Msg @ 11:00 +442030258149 YOR- Odour- North Ferriby *** Feedback requested***</p> <p>caller is reporting odour coming from Trans Waste located on Gibson Lane, Melton Industrial Estate. the odour is described as chemical, foul and sickly smell. the odour was noticed just now in the bathroom by the windows and vent. the site is located about 1/2 to 1/4 mile away across the field.</p> <p>all the windows are closed apart from the bathroom one that has a vent on it. the weather is dry, fairly still and light breeze. caller rates the odour as 5/6.</p> <p>CO - weather light cloud, moderate breeze, 15mph westerly. Site would be upwind or reporter's location.</p>	NW, W, SW	W	Y	
179	1753483	11/11/2019 13:50	Long Plantation		<p>YOR- Odour- North Ferriby.</p> <p>caller is reporting odour coming from Transwaste Recycling And Aggregates Ltd, Gibson Lane Site - EPR/BP3792LD. the odour is described as sewage, rotting waste food smell. the odour was first noticed about 12:00 when come back home, and the odour is still currently present. the site is located under a mile away. the smell is getting inside the house with the windows and doors closed. the weather is slight breeze and dry. caller rates the odour as 6/6.</p> <p>CO - 16mph, westerly. dry, light cloud.</p>	NW, W, SW	W	Y	
180	1754036	13/11/2019 11:34	Transwaste	Hill	<p>+442030258149 - YOR Odour Melton Hill</p> <p>Caller reported odour coming from Transwaste site at around 10.30 today Caller stated that they are 1mile away Caller described the odour as rotting dustbin , methane gassy odour Caller stated that the odour is an ongoing problem Caller stated that the weather today is sunshine, bright low wind but cold and still Caller has had to keep all doors and windows closed to keep the odour out Caller would rate the odour as 3/6 on the scale</p>		SW		
181	1758603	01/12/2019 12:31	Long Plantation		<p>Yor - Odour</p> <p>Willerby Recycling: Brickyard Lane Industrial Estate, Brickyard Lane, Melton HU14 3LH</p>	NW, W, SW	NW	Y	

					<p>Call received to report odour coming from Willerby Recycling in Melton. Reporter says it smells like rotten waste/landfill. It was first noticed at 10:00 today. The site is about half a mile away. There is no odour inside the house. Windows and doors are closed. The weather is westerly breathe. Reporter rated the smell as 4.</p> <p>P MARRIS (EMDO) - Dominant weather is westerly approx 1mph at time of notification</p>				
182	1758851	02/12/2019 14:38	Long Plantation		<p>YOR - Odour from Trans Waste</p> <p>The caller rang to report an odour from Trans Waste The caller describes the odour as the smell from a bottom of a dust bin The caller states they noticed the odour at 06:30 - but present of the since last Thursday The caller states their property is 2 mins drive away from the site The caller states the odour is getting into their property - windows and doors open The caller states the weather is cold and dry The caller states the odour is a 6</p> <p>Sglenville CO, @ 14:54 on 02/12/19 - wind direction WNW, 2.6 m/s. Dry, clear, still. Single report - wind direction conducive. cat 3 on hold at this stage. Operator notified by email at 15:00 hrs.</p>	NW, W, SW	SW	Y	
183	1759058	03/12/2019 11:15	Melton Hill	North Ferriby -	<p>YOR - Odour - North Ferriby -</p> <p>The caller is reporting on an odour from Transwaste. The smell is described as sour, sweet unnatural smell. This was first noticed at 11:00. The caller is 1.5 miles from the site. The odour is rated as 4/6. The smell is not getting inside the property with the windows and doors closed. The weather conditions today are dry and still.</p>	S	S	Y	
184	1759100	03/12/2019 13:05	Long Plantation		<p>Yor Odour</p> <p>The caller is reporting a smell which may be from Transwaste, which has gradually been getting worse since last Thursday. The smell is like excrement which has been warmed up 10 times until it goes really creamy. The smell seeps in if you are going in and out of the house. The weather is 3 degrees still and dry. The caller scored the smell as 11/6 for intensity terrible.</p>	NW, W, SW	SW	Y	
185	1759146	03/12/2019 15:02	Long Plantation		<p>YOR - Odour - North Ferriby. caller is reporting odour coming from Trans Waste.</p>	NW, W, SW	SW	Y	

Air Quality Assessment

Gibson Lane, Hull, HU14 3HH

					<p>the odour is described as strong smell of rubbish. caller says is like seating next to a rubbish bin. the odour as has seen going on for about an hour. the site is located about a mile away. the odour isn't getting inside the house. the windows and doors are closed. the weather is very still, damp and clear day. the odour is rated as 5/6.</p>				
186	1759182	03/12/2019 16:03	Long Plantation		<p>YOR - Odour from Transwaste</p> <p>The caller to report an odour from Transwaste The caller describes the odour as methane The caller states they noticed odour at 08:00 The caller states their property is 3/4 mins drive away from the site The caller states the odour isn't getting into their property The caller states the weather is fresh and crisp, no breeze The caller states the odour is a 6</p>	NW, W, SW	SW	Y	
187	1759421	04/12/2019 12:28	Melton Hill		<p>YOR - Odour - Melton Hill -</p> <p>Caller reporting an odour from Transwaste. Described as a putrid smell of food/waste. Odour rated 6 out of 6 Distance to the site is about 1/4 to 1/2 a mile Odour kept out of the property with all windows and doors closed. Caller advised the odour has been there for a few days. First noticed on the 04/12/2019 at 08:30. Weather conditions is clear blue sky, sun out, cold and dry. SR - CO. SW wind blowing which indicates correct direction from site.</p>	S	S	Y	
188	1759790	05/12/2019 16:12	Transwaste		<p>YOR- Odour Transwaste North Ferriby</p> <p>The caller advised a rotten smell was coming from Transwaste yesterday and noticed that about 3.45pm The odour was detected outside. It wasn't inside the caller's property. The caller advised no wind and a cold and crisp day. The caller rates 4/6 for the intensity.</p>		S		
189	01767575 (M)	08/01/2020 09:08	Aggregates		<p>FIRST OF THE MONTH</p> <p>YOR - Odour - North Ferriby</p> <p>caller is reporting odour coming from Trans Waste. the odour is described as refuse, sickly and dust bin smell. the odour was first noticed about 5 minutes ago. the site is located about a mile away. the odour isn't getting inside the house. the windows and doors are kept closed. the weather is dry, gentle breeze from south west. the odour is rated as 3/6.</p>		SW		
190	1768303	10/01/2020 10:42	Long Plantation		<p>YOR - Odour - North Ferriby</p>	NW, W, SW	W	Y	

					<p>Caller reports an odour from a Transwaste site that smells like rotting waste.</p> <p>Caller reports that Transwaste are approx half a mile away and open fields between them.</p> <p>Caller reports that the odour is not entering the property because the doors and windows are closed.</p> <p>Caller was in the garden but he can't be anymore because it makes him feel so sick.</p> <p>Caller rates the odour as a 4.</p> <p>Caller says there's a slight westerly breeze and is bright and clear.</p> <p>Transwaste - Gibson Ln, North Ferriby, Melton HU14 3HH.</p> <p>RG(EMDO) Wind direction according to Windy.com is Westerly, which puts reporter downwind of Transwaste. Substantiated and site informed</p>				
191	1768396	10/01/2020 13:41	Melton Hill		<p>Odour - Yorks</p> <p>The caller says that there is an odour coming from Transwaste waste processing site, the odour is described as rotting household rubbish</p> <p>The smell was noticed around 13.30 today but this is an ongoing problem and the site is not keeping within its permitting requirements.</p> <p>The site is roughly a mile away from the callers property and the smell isn't as strong as it has been but it is still there, it isn't getting into the house but the doors and windows are kept closed.</p> <p>There is a slight breeze from the south west but the site is N/E from the callers property and the smell is rated at a 3</p> <p>RG (EMDO) Wind direction at 14:00 is W according Windy.com. Site agreed with previous report. Site to be e-mailed</p>	S	SW	Y	
192	1768435	10/01/2020 14:56	Long Plantation	Caller reporting odour coming from	<p>020302 58149: YOR - Odour</p> <p>Caller reporting odour coming from Transwaste in North Ferriby, this is 2-3 miles from callers address.</p> <p>First noticed midday and has gotten worse</p> <p>Described the odour as burning stuff smell and gone waste smell.</p> <p>Odour outside with window and doors closed.</p> <p>Smell intensity: 3.5/6</p> <p>Weather Conditions: 7degrees and hardly any breeze</p>	NW, W, SW	SW	Y	
193	1771061	19/01/2020 10:16	Long Plantation		<p>YOR - Odour from Transwaste</p> <p>The caller rang to report an odour from Transwaste</p> <p>The caller describes the odour as rotting waste, sweet horrible smell</p> <p>The caller states they noticed the odour at 09:45</p> <p>The caller states their property is 3/4 mile away from the site</p> <p>The caller states the odour isn't getting into their property -</p>	NW, W, SW	changeable	Y	

					windows and doors closed The caller states the weather is north westly breeze, clear and cold The caller states the odour is a 5				
194	1771077	19/01/2020 11:59	Long Plantation		YNE: ODOUR: Caller reports the smell again from Transwaste at Brick Yard Lane. This was noticed at 11.45am. The odour is described as "rotting stinking rubbish" and rates as 5/6. The smell is obvious outside the property which is about 2 miles from the site. Weather conditions are fine and dry - cool with a slight westerly breeze. Location: Southfield Drive, North Ferriby.	NW, W, SW	W	Y	
195	1771244	19/01/2020 19:56	Long Plantation	North Ferriby	ml 20:10 - 0800 028 1886 - Y - Odour - North Ferriby The caller is reporting an odour coming from Trans Waste It smells like Hydrogen Sulphide but was different today The site is 2 miles away The odour was first noticed this evening The odour rates as a 3/6 The odour does getting into the house with windows open The weather is still and cold They are not supposed to be working today	NW, W, SW	S	Y	
196	1771367	20/01/2020 07:50	Melton Hill	North Ferriby -	0203 0258149 YOR - Odour - North Ferriby - The caller is reporting on an odour from Transwaste in Melton. The smell is described as sickly rotting waste. The smell is not getting inside the property with the windows and doors closed. This was first noticed at 07:20. The odour is rated as 5/6. The caller is 1 mile from the site. The weather conditions today are dry with a gentle SW breeze.	S	S	Y	
197	1771680	20/01/2020 15:18	Long Plantation		YOR- ODOUR- LONG PLANTATION Caller is ringing to report an odour coming from Transwaste Recycling & Aggregates Ltd, HU14 3HH. The odour is described as a chemically, manure, horrible smell which sticks in the back of your throat. The odour was first noticed around 3:15pm today. The caller is around 1 mile from the site The odour is getting inside the property with the doors and windows closed.	NW, W, SW	SW	Y	

					<p>The weather conditions are bright, sunny and fine, with a westerly breeze.</p> <p>The odour is a 5 on the scale.</p> <p>EMDO - wind direction WSW - 10mph so reporter is downwind of the site.</p>				
198	1771845	20/01/2020 17:52	Melton Hill		<p>YOR - Odour</p> <p>Trans Waste, Hull.</p> <p>Described as household waste.</p> <p>First noticed at 5.30pm.</p> <p>The site is over a mile away.</p> <p>Rated 4 out of 6.</p> <p>The smell isn't inside the house, windows are closed.</p> <p>Weather is clear, cloudy, mild breeze.</p>	S	SW	Y	
199	1771859	20/01/2020 18:00	Melton Hill		<p>YOR - Odour from Transwaste</p> <p>The caller rang to report an odour from Transwaste The caller describes the odour noxious, horrible smell The caller states they noticed the odour at 10:30 The caller states they were walking not far from the site The caller states the weather is crisp and cold , sunny no rain The caller states the odour is a 6</p>	S	SW	Y	
200	1772677	22/01/2020 11:29	Long Plantation		<p>YOR - Odour - North Ferriby</p> <p>Caller is reporting the odour from Transwaste. This is happening almost daily recently and caller is logging with us often. Today they noticed it about 11:15 upon leaving the house. It smells of sour mash, like silage that's going off. It's not pleasant. The smell is now getting indoors. The site is about 3/4 of a mile away to the west. There is little wind to speak of, very light, warmer today, about 8 degrees. Rated 4/6 today.</p> <p>EMDO(KP): Wind from west, so report likely to be substantiated as downwind of the site. Emailed the site at 12:47hrs requiring them to carry out checks and provide feedback.</p>	NW, W, SW	SW	Y	
201	01777750 (M)	05/02/2020 23:18	Long Plantation		<p>Transwaste Odour - 1st of the month</p> <p>02030258149- Yor Odour</p> <p>The caller is reporting an odour from Trans waste, 15 minutes ago, the caller popped out with the dog. The smell is like a gassy smell like town gas and rotting</p>	NW, W, SW	W	Y	

					<p>fresh. The caller is about 3/4 of a mile away, the weather is calm cold and dry. The caller scored the smell as 4/6 the caller could still breathe and didn't feel the need to cover their mouth. The smell is not getting indoors with the windows and doors shut.</p>				
202	1780057	10/02/2020 16:31	Long Plantation		<p>Yor- Odour- Long Plantation Caller is reporting odour from Transwaste It smells like rotting food waste The smell was first noticed at 3pm today The site is about 0.5 miles away The odour is getting into the house Caller is keeping all windows and doors closed Current weather is cold and there is a mild breeze Caller would rate the odour at a 6 RG(CO) Wind direction is currently Westerly at 20 knots, putting the reporter downwind of Transwaste</p>	NW, W, SW	W, SW (gust all day)	Y	
203	1785597	25/02/2020 17:23	Long Plantation	Ferriby	<p>YOR - Odour - Transwaste - North Ferriby Caller reporting the odour coming from Transwaste Caller out walking the dog and can smell this This is a highly offensive odour The site is around a mile away 4/6 Caller rated the smell The smell is not in the house Weather is clear and slight breeze</p>	NW, W, SW	S, SW (gust wind 40mph)	Y	
204	1788365	05/03/2020 18:00	Melton Hill		<p>Left msg 18:16 YOR - Odour A caller is reporting an odour from Transwaste. It is a sickly, pungent smell. It is making the caller feel sick. This was noticed just now. The site is roughly 3/4-1 mile from the reporter. The odour was rated 6/6. The odour is not entering the building with windows shut. The weather is cold and still. EMDO: 9mph NNE, placing reporter upwind of named site.</p>	S	N		
205	1795675	06/04/2020 18:00	Long Plantation		<p>YOR/ODOUR Caller reporting an odour from Transwaste Odour smells like excrement and landfill methane smell. They have a bio-waste function on the site, Noticed at 11.00hrs and its been continuous up until 17.30 hrs It has just started today as the wind has changed direction and its now a westerly wind and this is when they incur the smell from this site. Has it been present for a few days Odour can be smelt inside the property with the doors and windows closed Weather is dry sunny and a westerly breeze. Rates 5 Very strong (odour that makes you want to leave the area) Caller lives approximately 3 quarters of a mile from the site.</p>	NW, W, SW	SW	Y	

					Call taken @18.00 on 06.4.2020 Justin Jones (EMDO) wind direction predominantly W at approx. 10 to 15 mph				
206	1796453	08/04/2020 17:07	Long Plantation	Odour	0800 028 1886 MSG: 17.38 Yorks - Odour Location: North Ferriby Caller reporting an odour coming from Transwaste on Gibson Lane Noticed just now (5pm) Described a very strong, sweet, sickly smell The caller is around a mile away from the site Can't be smelt inside the house unless any windows are left open Rated at 5/6 Current weather conditions are fairly warm, sunny and still EMDO: 6mph SW, placing reporter downwind of named site.	NW, W, SW	changeable	Y	
207	1808617	21/05/2020 10:29	Melton Hill	2 of 3	X4 08000321631 @ 10.53 Yor Smell 2 of 3 Yesterday there was a smell present from 14:00-15:30 from the Transwaste Site in Melton here was a south west wind and the caller could smell something like incineration in the rear garden. The weather yesterday was hot dry and a light wind. When the wind changed direction the smell went. The caller scored the smell as 4/6 for intensity	S	S	Y	
208	1808618	21/05/2020 10:32	Melton Hill	3 of 3	X4 08000321631 @ 10.53 Yor Smell 3 of 3 The caller is reporting the smell from the Transwaste Site on Gibson Lane in Melton noticed the smell as 10:00. it's the Incinerator smell again, which the caller could smell in their back garden again. The weather is quite cloudy with a very light Westerly wind. The caller scored them all as 4/6 for intensity.	S	S	Y	
209	1809183	22/05/2020 13:35	Melton Hill		YOR - Odour from Transwaste The caller rang to report an odour from Transwaste The caller describes the odour as a burning smell The caller states they first noticed the odour @ 13:30 The caller states their property is a mile away from the site The caller states they can't smell the odour in their property - windows and doors closed The caller states the weather extremely breeze, blue skies, sunshine, mild The caller states the odour is a 4.5 RG (CO) Wind direction according to Windy.com is SW putting complainant downwind of Transwaste. E-mail sent to Transwaste	S	SW (gust wind 40 mph)	Y	
210	1809434	23/05/2020 09:36	Melton Hill		YOR - Odour - Melton Hill Caller reporting a burning odour coming from Transwaste on Gibson Lane in Melton. Reporting a potential burning smell at the same time every morning. Caller has noticed a pattern. noticed at 08:30 this morning.	S	S (gust wind 40 mph)	Y	

					<p>This has been this time in the morning for the last 7 days. Caller reports the odour disappears soon after, the odour is no longer present at 09:40.</p> <p>Caller is located roughly 1 mile from the site. Caller reports the odour was getting inside the house. Some windows were slightly open this morning. Weather is windy, south westerly wind. Rated a 4 outside.</p> <p>EMDO (KP): Wind direction according to time and date.com is SW putting complainant downwind of Transwaste. E-mail sent to Transwaste</p>				
211	1809868	25/05/2020 08:55	Melton Hill	Odour - Melton Hill	<p>left msg 09.05 - 08000281886 - YOR - Odour - Melton Hill</p> <p>Site is named Trans Waste on Gibson lane in Melton. Described as wood smoke smell. EA is aware, the site have wood burners that are causing the odour. Was first noticed today at 09:00. This has been prominent for the last few days, 1 instance was noted at 05:00 on the 23rd. Located 1 mile from the site. Weather is described as warm and clear, south west wind blowing from the site. Odour is not in the house. Windows and doors. Rated as a 2, was rated as a 6 on the 23rd.</p> <p>EMDO (KP): Wind coming from SSW direction; 7mph and 11-20oC according to timeanddate.com. Prior to that the wind has been coming from the SW for the past few days. Emailed the site.</p>	S	S	Y	
212	1814875	06/06/2020 07:45	Melton Hill	YOR - Odour - Melton Hill	<p>mI 08:02 & 08:22 - +448000281886 - YOR - Odour - Melton Hill</p> <p>*Cat 3 - 1st report within 24hrs & 2km*</p> <p>Call received to report odour coming from Trans Waste Gibson Lane Site - EPR/BP3792LD The odour is described as being wood smoke The reporters property is approx 1 mile away from the site in question The odour has entered the reporters property, windows were open & have had to be closed Weather conditions are described as being blustery & damp, wind is from the West Smell intensity is scored as 2/6</p> <p>RG (EMDO) Wind direction is Westerly, moderate breeze according to Windy.com</p>	S	SW (gust wind)	Y	
213	01825068 (M)	07/07/2020 15:37	Aggregates Ltd	with 2 km of the site.	<p>Yor - Odour - CAT 3 1st Report in 24hr with 2 km of the site.</p> <p>Transwaste on Gibson Lane site is emitting a bad odour, this started about 11 am today.</p> <p>The site is about 0.7 miles across fields from the house</p> <p>The doors and windows need to be closed.</p>	S	changeable	Y	

					<p>There is a gentle westerly breeze with intermittent showers in this period</p> <p>The score of the odour is between 3 /4 - 6</p> <p>The odour is like sweet sickly rotting smell.</p> <p>The odour is constant at present and increase and decreases in intensity.</p> <p>The odour is present today but has not been continual in the last 7 days with the winds blowing from the east/ south.</p>				
214	1826824	13/07/2020 17:21	Melton Hill		<p>YOR - Odour</p> <p>CAT 3 - First report of odour.</p> <p>North Ferriby</p> <p>Odour coming from Transwaste Ltd. Noticed now at 17:15. The odour is not getting inside their property, noticed as they stepped outside. Described as a household waste smell. Rated as a 4. The caller is about a mile from the site. The weather is south westerly and a fair breeze, overcast.</p>	S	SW	Y	
215	1826880	13/07/2020 22:14	Long Plantation		<p>YOR odour CAT 3 1 duplicate</p> <p>This is from Transwaste. The site is about 1 mile away. Gibson's lane. Rated as a 4, described as a sweet sickly composting smell. The weather is still and dry. The smell is only getting in the house a small amount. Windows closed.</p> <p>There is also a noise, but can't be sure if from the site, it is a humming noise and a rumble. They will speak to Env health about this due to the uncertainty.</p> <p>EMDO - checked wind direction WSW 7mph</p>	NW, W, SW	W	Y	
216	1827254	14/07/2020 21:09	Long Plantation	minimal impact, 3rdt report.	<p>YOR- Odour- Long Plantation Cat 3 minimal impact, 3rdt report.</p> <p>Caller reported a foul odour from Transwaste, MELTON WEST PARK GIBSON LANE MELTON EAST YORKSHIRE HU14 3HH The odour is described as rotting waste. This is a recycling company. This has just been noticed. The site is a mile from the callers property. The smell does not get in the house with the windows and doors closed. The weather is fine and still. The odour is rated as 5/6.</p> <p>EMDO - checked wind direction W 8mph</p>	NW, W, SW	W	Y	
217	1827549	15/07/2020 17:23	Long Plantation	1st report in 24 hours & 2 km	<p>YOR - odour - Long Plantation Cat 3 1st report in 24 hours & 2 km</p>	NW, W, SW	W	Y	

					<p>The caller is reporting a nuisance odour from Transwaste on Brickyard Lane, Melton. It's a waste disposal centre (Gibson Ln, North Ferriby, Melton HU14 3HH)</p> <p>The odour is like a very acrid stench that makes you feel sick</p> <p>The caller says the odour has been fairly consistent over the last 2 weeks and is gradually becoming worse</p> <p>The caller is about a mile away from the site</p> <p>The odour is getting inside the caller's house if their windows are open</p> <p>The weather is overcast and drizzly, there is no wind</p> <p>The caller rates the odour as a 6</p> <p>Sglenville, emdo, 15/07/20 - single report, wind direction westerly, 3.6 m/s. Cat 3 no attendance on this basis. Operator notified at 07:15 on 16/07/20.</p>			
218	1827892	16/07/2020 16:35	Long Plantation	cat 3 2nd report in 24 hours & 2 km	<p>Yorkshire - Odour - Long Plantation cat 3 2nd report in 24 hours & 2 km</p> <p>Caller states the odour is coming from the Transwaste site</p> <p>The address for this is Gibson Lane, Melton HU14 3HH</p> <p>The site is a transfer station</p> <p>Caller states the odour is coming in with the breeze</p> <p>Caller states the odour is like off cheese</p> <p>Caller states the odour has been bad all week</p> <p>Caller states they have only just noticed it at 16.35</p> <p>Caller states less than a mile as the crow flies</p> <p>Caller states the odour is not getting into the house, the patio door is open</p> <p>Caller states the weather is quite warm, with a breeze</p> <p>Caller states the odour is a 2 out of 6</p> <p>Sglenville, EMDO, 16/07/20 - 17:13 hrs - 2nd rept in 24 hrs, cat 3, wind direction WNW, 2.9 m/s. No further reports overnight, no attendance necessary. Operator notified of report at 07:31 hours on 17/07/20 by email.</p>	NW, W, SW	W	Y
220	1828045	17/07/2020 09:41	Melton Hill		<p>YOR - Odour - Melton Hill</p> <p>CAT 3: 2nd odour report in 24 hours.</p> <p>Odour coming from Trans Waste Melton.</p>	S	W	

					<p>Gibson Lane Site - EPR/BP3792LD SE9682825546</p> <p>Odour is described as a house waste recycling, smells like that. First noticed at 08:40. Odour has been present all week, 2nd time caller has rang. This is odour is on and off depending on wind direction. Caller is located 1 mile from the site. Odour is getting inside the house. Windows are open. Weather is described as partially cloudy, warm and south west wind. Rated a 3. SR. Westerly wind indicating site is probable source.</p>				
221	1829723	22/07/2020 17:58	Melton Hill	report	<p>YOR - Odour - Transwaste - cat 3 - 1st report</p> <p>Caller rang in to report odour from Transwaste , Gibson Lane, Melton, HU14 3HH It is a recycling centre , a house hold green bin waste The odour is described as "sticking your nose in a non recycling bin", it is offensive stuff that cannot be recycled Caller noticed at 17.45 on the 22nd of July 2020 Caller lives a mile away from the site There is no odour indoors Doors and windows are closed Caller says they are working in total breach of their permit and it is time the EA and the council did something about it. They work with the doors open last Friday and the place is riddled with holes with waste piled high outside Weather is currently cool, cloudy and slight breeze from the southwest Odour is rated as a 4</p> <p>EMDO - checked wind direction, SW at approx 5mph consistent with direction from site to customer's property. Email sent to site as per instructions in local issues.</p>	S	W		
222	1830644	25/07/2020 15:06	Long Plantation	hours - Long Plantation -	<p>YOR - Odour CAT3 1st report in 24 hours - Long Plantation -</p> <p>Caller reports an odour from Transwaste, HU14 3HH, about three quarters of a mile to a mile away It smells like a tip</p> <p>EMDO - Wind W at approx 5 mph. Email sent to site from EMDO account, NIRS passed to local site officer. It is an ongoing problem It has been lingering for a few days, on and off The odour is not getting into the property as the doors and windows are closed The weather cloudy with a bit of sun and a moderate breeze from the southwest. It is about 23 degrees Celsius The caller rates it as a 2</p>	NW, W, SW	W	Y	
223	1830727	25/07/2020 23:38	Melton Hill	Transwaste CAT 3 1 duplicate	<p>YOR odour Thought to be from Transwaste CAT 3 1 duplicate</p> <p>Can't be sure it is from that site, but says the smell is</p>	S	S	Y	

					<p>widespread around the area, definitely not a local bonfire. Says it is an acrid burning waste or bonfire smell. Rated as a 6, says it comes in the house windows open. The caller thinks they are about a quarter of a mile from the site. The caller is due east of the site. Usually a prevailing wind from the west. The weather is pleasant with a bit of breeze and warm.</p>				
224	1830784	26/07/2020 11:27	Melton Hill	Cat 3 - 1st Report today	<p>YOR - Odour - Transwaste Cat 3 - 1st Report today</p> <p>Smell is of household waste. Scale 4 First noticed today at 1000hrs. Odour is still present Odour is in the house. Windows are open Caller lives a mile from the site It is breezy today This is the fifth day in a row it has been bad. It is a regular issue</p> <p>Overnight there was a wood burning smell. This is suspected to have been happening at the site Caller says that this could be smelled in the house with the windows closed</p> <p>EMDO - wind W at 5 to 10 mph. Email sent to site from EMDO account, NIRS passed to local site officer.</p>	S	SW	Y	
225	1831445	28/07/2020 14:46	Long Plantation	Cat 3 minor impact	<p>Yorkshire - Odour - Long Plantation Cat 3 minor impact</p> <p>Name of site - Melton West and Recycling - caller is unsure what the site processes Distance - approx. 1 - 2 miles Odour - like a farm - bad manure smell First time reported this but has noticed before and Council advised to call EA Doors and windows closed as s=Jodour is getting in the house Weather - gusty wind which is making the smell worse - don't smell everyday Scale - 4</p>	NW, W, SW	W (gust wind all day)	Y	
226	1831481	28/07/2020 15:42	Long Plantation	Gibson way cat 3 minor impact	<p>YOR- Odour - Trans waste site on Gibson way cat 3 minor impact</p> <p>Caller is reporting a bad odour from this site last night at around 23:00pm</p> <p>Caller rates the odour a 4/6</p> <p>The caller describes the odour as a burning plastic</p> <p>The odour was experienced outside the house at the time when reporter was walking dogs</p> <p>The site is around 0.7 away from reporters house</p> <p>Reporter describes the weather as a slight breeze from the west the speed is unknown</p> <p>Caller states that the sky was pretty clear with some clouds</p>	NW, W, SW	W (gust wind all day)	Y	

					The smell was constant when caller got inside their house				
227	1831491	28/07/2020 15:56	Long Plantation	Lane Cat 3 3rd report in 24 hours & 2	<p>YOR-Odour- Transwaste site, Gibson Lane Cat 3 3rd report in 24 hours & 2 km</p> <p>The site is emitting an Odour</p> <p>The odour is intermittent in appearance but regularly effecting the reporter today</p> <p>Site is around 0.7 miles from caller</p> <p>Caller describes the weather as having a strong Westley windy breeze, reporter is west of the site</p> <p>Caller has had to shut all windows and doors</p> <p>Caller scores the odour a 4/5 out of 6</p> <p>The smell is making the caller feel sick</p> <p>Caller states the odour is dependent on the wind, it is worse when it is wet and warm</p> <p>Caller states that the wind speed is around 30mph</p> <p>Caller states the weather is clear with a few showers</p> <p>Caller states it is worse when it isn't windy</p> <p>Caller has been affected every day for the last 7 days</p> <p>Caller states the odour has a rotting sweet smell</p>	NW, W, SW	W (gust wind all day)	Y	
228	1831553	28/07/2020 21:00	Long Plantation	4th report in 24hours and 2km	<p>YOR Odour Long Plantation CAT3 4th report in 24hours and 2km</p> <p>Caller is reporting odour is coming from Transwaste , Gibson Ln, North Ferriby, Melton HU14 3HH</p> <p>Caller stated that they noticed the excessive odour at 5.30PM</p> <p>Caller stated that they are less than 1 mile away from the site</p> <p>Caller stated that the odour is a decaying rubbish, landfill tip</p> <p>Caller stated that they had to close all doors and windows closed to keep the odour out</p> <p>Caller stated that the weather was slightly breezy , not raining</p> <p>Caller rated the odour as 4/6 on the scale</p> <p>EMDO - Checked wind direction, W at 10 to 15 mph.</p>	NW, W, SW	W (gust wind all day)	Y	
229	1832699	01/08/2020 07:41	Melton Hill		<p>YOR. Odour. (Cat 3 min impact - 1st)</p> <p>Caller reports a bad acrid wood smoke smell coming from Transwaste about a mile away.</p> <p>Caller says he had windows open and it has got inside the</p>	S	S	Y	

					<p>house. Caller says he has a dry throat and his eyes are sore. 6/6 on smell scale. Warm and still weather.</p> <p>EMDO (KP): Checked weather conditions; wind from SW, 13mph, 63oF, fair. Likely to be substantiated.</p>				
230	1833598	04/08/2020 10:54	Elloughton Hill	CAT 3 1st report in 24 hrs 2 km	<p>YOR/ODOUR CAT 3 1st report in 24 hrs 2 km Caller reporting an odour from Transwaste, Gibson Lane, Melton Odour smells like burning plastic Noticed at 09.30hrs It was present last week just for one day and it normally when the wind is coming from the south. Odour can be smelt inside the property with the doors and windows closed Weather is quite dull and cloudy and breeze from the south with a 12 mile an hour breeze. Rates 4 Strong (odour that may make your hair or clothes smell) Caller lives approximately 1 mile and half as the crow flies from the site. Call taken @ 10.54 on 04.08.2020</p>	SE	S, SW	Y	Elloughton Hill is located 2.5k NW of the site
231	1835268	08/08/2020 10:31	Long Plantation	Long Plantation - cat 3 - 1st report in	<p>YOR - Noise and Odour complaint - Long Plantation - cat 3 - 1st report in 24 hours</p> <p>Noise complaint details: Trans waste, Gibson lane, Melton HU14 3HH. All through night noise - low freq high intensity. like a bass drum but not as loud. went down this morning and doors were open - ducted fans is where the sound emanates from, amplified by building. Operating outside of permitted hours Started this morning about 1.20 and continual Had windows open as hot last night Roughly a mile from the site Machine outside, shed 4 door 2, amber looking machine about 1m in size - separation machine with skip at end. was active this morning and forklifts going in and out with beeping noise - all doors open. roughly 7am.</p> <p>Odour complaint: Prevailing wind from west, very slight breeze. very warm and warm throughout night 19/20 degrees. Odour is slightly diff to usual - rotting vegetation. putrid smell Prevalent when you do down Gibson lane but diminished at Ferriby Around a 4 or 5 on the odour scale but around a 2 at Ferriby Number of bales piled up and strewn across this site. Maintenance is very poor - site may not be meeting permit regulations as they stand.</p>	NW, W, SW	NE		
232	1838219	15/08/2020 16:26	Long Plantation		<p>YOR - Odour - Long Plantation CAT 3: 1st report in 24 hours.</p>	NW, W, SW	NE		

					<p>Odour coming from suspected Trans waste Recycling And Aggregates Ltd Gibson Lane Site - EPR/BP3792LD HU14 3HH</p> <p>Described as a poo/ manure smell. not suspected to be land spreading. Noticed at 15:45.</p> <p>Odour has been on and off for the last few days, yesterday was worse.</p> <p>This is an ongoing issue in the area. Odour is getting inside the house. Windows are closed.</p> <p>Weather is described as overcast and light breeze. Rated 5/6.</p> <p>Caller is having to stay inside due to the overwhelming power of the odour.</p> <p>P MARRIS (EMDO) - wind direction generally from NE or ENE from IBROUG5 and 5-10mph on wunderground, Reporter upwind of site. Email sent to operator.</p>				
233	1838236	15/08/2020 18:14	Long Plantation		<p>YOR - Odour - Long Plantation</p> <p>CAT 3: 2nd report in 24 hours.</p> <p>Odour coming from Transwaste on Gibson lane. Described as strong manure smell. Normally the site creates a sweet smell. First noticed at 11:00.</p> <p>Odour has not been present for the last few days. Caller is located less than a mile. Odour is getting inside the house. Caller has had to close the windows.</p> <p>Weather is described as overcast and a light breeze. Rated 4/5.</p> <p>Washing on the line smells terrible, limiting how the caller can use their garden.</p> <p>P MARRIS (EMDO) - wind direction generally from NE or ENE from IBROUG5 and 5-10mph on wunderground, Reporter upwind of site. Email sent to operator.</p>	NW, W, SW	NE		
234	1838378	16/08/2020 13:36	Long Plantation		<p>YOR-Odour-Long Plantation</p> <p>CAT 3: 3rd report in 24 hours.</p> <p>Caller is reporting an odour coming from the Transwaste site on Gibson Ln, North Ferriby, Melton HU14 3HH Site is a waste site and a recycling site. Odour desired as sickly manure and sweet.</p> <p>Odour first noticed yesterday and has started again two hours ago today.</p> <p>Odour not getting inside the house as windows and doors are closed.</p> <p>Weather described as slight Northerly wind and damp. The caller rates the odour as a 4/5.</p>	NW, W, SW	NE		

Air Quality Assessment

Gibson Lane, Hull, HU14 3HH

235	1841362	24/08/2020 19:06	Long Plantation		<p>YOR Odour Long Plantation</p> <p>cat 3 1st report in 24 hours</p> <p>Caller is reporting an odour coming from the Transwaste site on Gibson Ln, North Ferriby, Melton HU14 3HH Caller reported that they are 100 yards away from the site Caller stated that the smell is rotten rubbish , also sweet sickly Caller stated that the odour can get in their property if any doors or windows are open Caller stated that the weather at the moment is still and dry Caller rated the odour as 3/6 on the EA scale Caller stated that they cannot enjoy sitting in their garden due to the odour.</p>	NW, W, SW	changeable	Y	
236	1841584	25/08/2020 14:18	Long Plantation	report in 24hrs in 2km radius	<p>YOR Odour Long Plantation cat 3 2nd report in 24hrs in 2km radius</p> <p>Caller is reporting an odour coming from the Transwaste site on Gibson Ln, North Ferriby, Melton HU14 3HH today at 12pm Caller stated that the odour smell likes burning manure smell, making you feel sick Caller stated that they are around 1/4 miles away from the site Caller stated that the weather is warm, drizzling Caller stated that they would rate it at 5/6 on the scale Caller stated that they cannot have any window or doors open due to the odour Caller stated that the odour is having an effect on their day to day lifestyle , meaning that they cannot sit out in their garden or hang any washing out</p>	NW, W, SW	SW (Gust wind all day, 40mph)	Y	
237	1844424	04/09/2020 07:00	Transwaste		<p>Yorks - Odour - Cat 3</p> <p>Reporting odour from Transwaste which was first noticed at 0630 this morning Described as a sweet sickly smell. like vomit The smell is not in house. Noticed whilst outside Caller is about a mile - 2 from site Weather described as mild, sunny. no strong wind Rated at 4/6</p> <p>0900 wind direction from SSW at 13mph</p>		SW		
238	1844867	05/09/2020 16:44	Long Plantation	hours & 2 km	<p>YOR Odour Cat 3 1st report in 24 hours & 2 km</p> <p>Transwaste, Gibson Lane, Hull</p> <p>Caller is reporting the odour from Transwaste described as like a farmyard odour and rated as 5/6. It was noticed just now, and it wasn't there this morning. It is not inside the home with the windows and doors closed. The caller is 10 minutes' walk from the site and the weather is sunshine & showers, a gentle breeze. The caller says it has been worse recently</p>	NW, W, SW	W (gust wind a 2 pm)	Y	

239	1844906	05/09/2020 20:32	Melton Hill	transfer Station - Waste drying plant -	<p>YOR - Odour - Transwaste - Waste transfer Station - Waste drying plant - Melton</p> <p>CAT 3 - 2nd report in last 24 hours</p> <p>Transwaste Gibson Lane Melton North Ferriby</p> <p>Smell of an acrid burning This was an issue this morning - started at midnight Started again this evening at 20:30 Approx. 1 mile from the site Rated at 4/6 - outside Not noticeable inside yet - doors and windows closed Weather is Clear - gentle breeze which is West South Westerly</p> <p>This is a perpetual nuisance - often a worse issue during the night and in the morning - suspected to be from dampening down of wood burners</p>	S	SW	Y
240	01846877 (M)	11/09/2020 15:17	Low Field Farm	Low Field Farm - CAT 3 - 1st report in	<p>YOR - Odour Complaint Transwaste - Low Field Farm - CAT 3 - 1st report in 24 hours / 2km</p> <p>Transwaste, Gibson Lane, Melton HU14 3HH Odour is sickly mixture of melting plastic and food waste Odour is on a daily basis - but prompted to call by local parish magazine. All around the clock, being going on for years. The odour is getting inside the house when windows are open The weather is dry and breezy The odour is rated at a 6 Compiling footage of trucks coming in and out which are strewing waste across the road. The caller is a keen birdwatcher but now the main type of bird is seagull. It's very distressing. The machinery noise is bad in Ferriby and Melton - it's around the clock.</p>	SSE	SW	
241	1846901	11/09/2020 16:25	Melton Hill	CAT 3 - 2ND REPORT IN 24 HOURS	<p>YOR - ODOUR CAT 3 - 2ND REPORT IN 24 HOURS Caller reporting the odour from Transwaste Caller has been away for the last few days and has just come back and it stinks. Smell of green waste. Caller is about a mile from the site.</p> <p>No further information as got cut off, did try to call him back but had to leave a message.</p>	S	SW	Y
242	1846904	11/09/2020 16:28	Melton Hill	Report in 24 Hours, 2km	<p>YOR - Odour CAT 3 Min impact - 3rd Report in 24 Hours, 2km</p> <p>Taking Place Near Melton Hill</p>	S	SW	Y

					<p>Caller reporting an odour. The site is called Trans waste, Gibson Lane, Melton. The odour is like a household green bin waste. Caller noticed the odour at 16.15. The site is about a mile from the property. The odour getting inside having to close windows and doors. Weather is cloudy and South westerly wind. Caller would rate the odour at a 4. Caller the effect the odour had was when unloading car was really bad.</p>				
243	1848218	15/09/2020 16:38	Low Field Farm	Cat 3 1st report in 24 hours & 2 km	<p>YOR - Odour - Low Field Farm Cat 3 1st report in 24 hours & 2 km</p> <p>Caller reports odour at Trans-Waste site, Melton HU14 Caller reports the site is about 700-800 metres from the site Caller reports this has been going on for years Caller reports this is on and off depending on wind direction Caller reports little wind, dry and sunny Caller reports smell is like a putrid garbage Caller reports this can be smelled inside and out with windows and doors closed Caller reports smell is a 6</p> <p>DB- Wind SE at time toward reporter, very low wind speed but report location very close to site so substantiated on that basis.</p>	SSE	S, E	Y	
244	1848250	15/09/2020 17:32	Long Plantation	Report #2 of last 24 hrs.	<p>YOR - Odour - Transwaste: CAT3: Report #2 of last 24 hrs.</p> <p>Caller reports an odour from Transwaste.</p> <p>Caller reports that they have had this odour a number of times in the last week.</p> <p>Caller describes the odour as "foul".</p> <p>Caller rates the odour as a 4.</p> <p>Caller describes weather conditions as 26 degrees with a very slight breeze.</p> <p>Caller lives approx 2 mile away from the site.</p> <p>Caller reports that the affect has been that the odour forces them inside.</p> <p>Caller reports that the odour is not entering the property.</p> <p>Caller reports that all of the doors and windows are closed.</p> <p>40 Foster St, Hull HU8 8BT</p>	NW, W, SW	E		
245	1851076	24/09/2020 10:30	Long Plantation	Cat 3 - 1st report in 24 hours	<p>YOR - Odour - Long Plantation Cat 3 - 1st report in 24 hours</p> <p>The caller is reporting an odour from trans waste The odour today is a very strong smell of rotting vegetation</p>	NW, W, SW	SW	Y	

					<p>This makes the caller retch This was first noticed at 09:31 The odour depends on the wind The weather is damp with slight rain and a slight wind The caller lives a mile from the site This can be smelt inside the property and the caller has had to close windows The odour is a 5/6</p>				
246	1851884	28/09/2020 09:38	Melton Hill	Cat 3 - historic report	<p>YOR - Odour - Melton Hill Cat 3 - historic report</p> <p>The caller is reporting odour from trans waste The smell happened on the 24th of September in the morning This caused the callers stomach to turn The callers windows were open The caller lives a 30 minute walk from the site The weather was nice and windy The wind is what caused the smell to be so strong as it was blowing from the site towards the caller The odour was a 6/6</p>	S	NW, W		
247	1854291	05/10/2020 18:02	Transwaste	report in 24hrs/2km	<p>YOR - Odour - Melton Hill - CAT3 - 1st report in 24hrs/2km Caller reports odour from Transwaste in Gibson Lane. Describes the smell as rotting household waste. This was noticed at around 16:30 and it is still there. The site is about a mile away from the caller's home. The smell does not get inside the house. Weather is dry with a SW gentle breeze. Caller rates the odour as a 4. The caller would not go out because of the smell</p>		W		
248	01860304 (M)	01/11/2020 12:03	Long Plantation	Cat 3 - Minimal Impact - Retrospective	<p>YOR - Odour - North Ferriby Cat 3 - Minimal Impact - Retrospective report.</p> <p>Caller is reporting the odour from Transwaste, Melton Ind Est. This started at 15:00 yesterday. Caller was at Corby Park Road, an exit from Ferriby, this is about 0.9 of a mile from the site. It smelled of rotting food, a typical tip smell. It didn't smell at home, the wind direction was wrong. The weather was clear, decent breeze, don't know which direction. Cloudy, no rain. They rated it 3/6.</p>	NW, W, SW	SW (gust)	Y	
249	1860305	01/11/2020 12:06	Long Plantation	Cat 3 - Minimal Impact - Retrospective	<p>YOR - Odour - North Ferriby Cat 3 - Minimal Impact - Retrospective report.</p> <p>Caller is reporting the odour from Transwaste, Melton Ind Est. Was at 17:00 hours on 20/10/2020. This was smelled on the Wolds Way near Welton Mill. It smelled of rotting food, a typical tip smell. Gentle southerly breeze, 11mph, no rain. Sunny. Caller was 1.1 miles from the site. They rated it 6/6.</p>	NW, W, SW	SW (gust)	Y	
250	1861309	05/11/2020 16:45	Long Plantation	CAT 3 1st report in 24 hrs	<p>YOR - Odour from Trans Waste CAT 3 1st report in 24 hrs</p>	NW, W, SW	SW	Y	

					<p>The caller rang to report an odour from Trans waste The caller states they are recycling plant The caller describes the odour at rotting food, tip, horrible, disgusting The caller states they noticed the odour at 15:30 The caller states their property is half a mile away from the site The caller states the odour is getting into their property - doors open The caller states the weather is clear, no wind The caller states the odour is a 5/5.5 The caller states the odour is affecting them, by them not wanting to live in the area or go outside</p> <p>Waste team update, site notified and asked to investigate the issue</p>				
251	1862754	12/11/2020 08:51	Melton Hill		<p>YOR - Odour CAT 3 - 1st report</p> <p>Odour coming from Transwaste. The site is a mile from the caller. Noticed today as they got out of the car at 08.45. Described as rotting green bin waste. Rated as a 4. The odour is not getting inside their property just yet. The weather is clear, gentle breeze and dry.</p>	S	S	Y	
252	01865093 (M)	21/11/2020 10:20	Melton Hill	Cat 3 1st report in 24 hours, 2km	<p>NE: Odour from the Trans waste sites - Cat 3 1st report in 24 hours, 2km radius -</p> <p>It's a rotten food smell. Rates it 5/6. Smelt as soon as they opened the front door. Wind is South Westerly, gentle breeze. They are about 1 km away from site. The council is putting more industrial units in the area.</p>	S	SW	Y	
253	1865108	21/11/2020 11:46	Melton Hill	hours, 2km radius - Melton Hill -	<p>YOR - Odour - Cat 3 2nd report in 24 hours, 2km radius - Melton Hill -</p> <p>Odour from Transwaste, between Melton and Ferriby. Described as a bit chemically and worse than a stinky bin, like one left for months in the summer. First noticed around 11:45 Distance to the site is about 1.2 miles. Odour is outside the property with all windows and doors closed. Weather is windy, dry and partially cloudy. Wind is coming from the south west, they believe. Odour rated 3 out of 6.</p>	S	SW	Y	
254	1865117	21/11/2020 12:03	Melton Hill	hours, 2km radius - Melton Hill -	<p>YOR - Odour - Cat 3 3rd report in 24 hours, 2km radius - Melton Hill -</p> <p>Odour from Transwaste in Melton. Described as household waste, rotting food. Noticed around 11:00 on the 21/11/2020. Distance is about 1 mile. Odour has entered the property through open windows. All now closed.</p>	S	SW	Y	

					Weather is south west strong wind and partially cloudy. Odour rated 4 out of 6.				
255	1880272	17/01/2021 16:43	Long Plantation	CAT 3 minimal reports 2 report 2 km	<p>YOR/ODOUR</p> <p>CAT 3 minimal reports 2 report 2 km 24hrs</p> <p>Caller reporting an odour from Transwaste Gibson Lane South , Melton Fields,HU14 3HH</p> <p>Energy from waste site.</p> <p>Caller says they have been in operation for a year now they have not got a licence.</p> <p>Odour smells like smoke</p> <p>This has been going on all afternoon</p> <p>Noticed at 14.30hrs Caller says now it is particularly bad at 16.46.</p> <p>There is lots of smoke from the site and there is a slight blue haze in the smoke</p> <p>Odour cannot be smelt inside the property with the doors and windows closed</p> <p>Weather is hardly any wind and it's been dry but there is a damp atmosphere.</p> <p>Rates 4 Strong (odour that may make your hair or clothes smell)</p> <p>Caller lives approximately 1 mile from the site.</p> <p>Call taken @ 16.43 on 17.01.2021</p>	NW, W, SW	W	Y	

Table B2 Odour Complaints with “Smoke Smell”

	Ref No	Reported	Location	Notification Details	Description of Smell	Location: e.g., the site (HU14 3HH) is located SSE of the odour reporter.	Wind directions at the time of reported	Likely Source from the site (HU14 3HH)? Y/N	Remarks
1	59	1726308	05/08/2019 07:43	Low Field Farm	<p>0203 0258 149</p> <p>YOR - Odour - Transwaste - North Ferriby, Hull</p> <p>Described as an odour of smoke</p> <p>First noticed at 06:20</p> <p>Approx. 500m from the site</p> <p>Rated at 5/6</p> <p>Noticeable inside the premises - doors and windows closed</p> <p>Weather is heavy cloud cover, slight breeze</p> <p>CO: Transwaste site on fire.</p>	SSE	S	Y	Boilers were not on

2	61	1726523	05/08/2019 13:54	Long Plantation	<p>Odour - YORKS -</p> <p>Caller is reporting an odour Believed to be from the Trans waste Plant</p> <p>The odour is an acrid Smokey smell that gets the back of your throat, it was first noticed around 9am today but this is an ongoing problem</p> <p>The site is roughly 3 miles from the callers property and the odour is getting inside of the callers home, the windows are open due to hot weather</p> <p>The weather is described as warm and sunny at the moment and there is no breeze, this morning there was rain when the odour was first noticed.</p> <p>The odour is rated at a 5 or 6</p>	NW, W, SW	SW	Y	Boilers were not on
3	65	1726635	05/08/2019 16:57	Melton	<p>YOR - Odour - Melton</p> <p>Customer believes the odour is coming from Gibson Lane, Melton, North Ferriby, North Humberside, HU14.</p> <p>Odour described as acidic, burning waste.</p> <p>Customer saw a large fire at the site 8am 05-08-2019 but couldn't smell anything as the wind was facing the other direction.</p> <p>Customer is roughly less than a mile from the site.</p> <p>Odour is currently just outside as the caller has the windows closed.</p> <p>Weather is breezy and sunny. Wind blowing from the west.</p> <p>Odour rated 5/6.</p> <p>Wind direction according to BBC website is WSW putting reporter downwind of site</p>	S	SW	Y	Boilers were not on
4	68	1726649	05/08/2019 17:18	Long Plantation	<p>NE - Odour, Hull</p> <p>Caller reports being affected by a bad smell emitting from Transwaste in Melton, Hull, close to caller's location.</p> <p>Caller describes the odour as "a bad smell but not at the worst it's ever been." They describe the odour as "a nasty, sickly, tip smell" - which is not thought to be associated with the recent fire onsite. Caller says that every now and then they can smell the effects of burning when the wind changes direction to coming from the site. But the sick type odour has been constant all day today and is not wind dependent.</p> <p>The underlying sick smell is rated at around 5/6 in intensity. Caller has been unable to keep the smell out of the house, as the weather is hot and humid, so all their windows have had to be open, as it's too muggy to cope with them closed.</p>	NW, W, SW	SW	Y	Boilers were not on
5	79	1727339	07/08/2019 13:59	Long Plantation	<p>YOR - Odour - Long Plantation</p> <p>Call received to report odour coming from Trans Waste</p>	NW, W, SW	W	Y	Boilers were not on

					<p>The odour is described as being scorched household waste due to a fire that was at the site at the weekend The reporter picked up on the smell whilst out walking, the odour doesn't affect the reporter at their home Weather conditions are described as being bright, cloudy, warm Smell intensity is scored 4/6 Feedback is required, 10 day charter given</p>				
6	162	1741543	26/09/2019 19:19	Melton	<p>YOR - Odour Possibly Transwaste Site, Hull smells like a burning smell. First noticed at 6.30pm. The site is around 1/4 of a mile away Rated 5 out of 6. The smell is inside the house, windows are closed. Weather is wet, still.</p>	S	S	Y	Boilers were not on
7	164	1741580	27/09/2019 07:13	Melton	<p>020302 58149: YORKS East: Odour / Burning of Waste: Caller reports the smell again from Transwaste at Melton. This was noticed at 7am. The odour is described as "the smell of burning" and believes that there must have been a fire again. Caller feels that fires are occurring more often at the site recently. The smoke is blowing across from the direction of the site - looks like fog in the air. The smell is obvious at Monks Way which is closer to the site than the callers house. Weather conditions are fine and dry with a slight breeze. Location: Monks Way Melton, North Ferriby.</p>	S	S	Y	Boilers were not on
8	165	1741630	27/09/2019 09:47	Low Field Farm	<p>L/M @ 10:13 - +442030258149 YOR - Odour Location: North Ferriby A caller is reporting an odour from Transwaste. There is an intermittent methane/chicken farm smells which come from the site. Today there is a smell of smoke coming from the site. Unsure if there is a fire at the site. The odour was noticed at roughly 08:00. The site is roughly 1/4 of a mile from the reporter. The odour was rated 6/6. The odour is entering the building with windows shut, it is only faint inside the building though.</p>	SSE	S	Y	Boilers were not on
9	166	1741635	27/09/2019 10:04	Low Field Farm	<p>YOR. Odour. Caller reports what smells like a fire of some description emanating acrid smoke. It seems to be coming from the rear</p>	SSE	S	Y	Boilers were not on

					<p>of a waste transfer site called Trans Waste about half a mile away. Caller says it is 3/6 on smell scale. The smell was getting inside the house this morning. Caller had windows open during the night but has had to close them. This is the second time in the last couple of months caller has noticed this. Caller says it is not a regular occurrence before that. Caller does not know what is being burned and cannot see the fire itself. Caller has also reported this to the Local Council.</p>				
10	167	1741961	28/09/2019 17:03	Long Plantation	<p>YOR - Odour Transwaste, Hull Smells like acrid burning plastic/rubber. First noticed at 11am, been constant since. The site is around half a mile away. Rated 5 out 6. The smell is inside the house, windows are open. Weather is quite humid, light breeze.</p>	NW, W, SW	SW	Y	Boilers were not on
11	192	1768435	10/01/2020 14:56	Long Plantation	<p>020302 58149: YOR - Odour Caller reporting odour coming from Transwaste in North Ferriby, this is 2-3 miles from callers address. First noticed midday and has gotten worse Described the odour as burning stuff smell and gone waste smell. Odour outside with window and doors closed. Smell intensity: 3.5/6 Weather Conditions: 7degrees and hardly any breeze</p>	NW, W, SW	SW	Y	Boilers were not on
12	207	1808617	21/05/2020 10:29	Melton Hill	<p>X4 08000321631 @ 10.53 Yor Smell 2 of 3 Yesterday there was a smell present from 14:00-15:30 from the Transwaste Site in Melton here was a south west wind and the caller could smell something like incineration in the rear garden. The weather yesterday was hot dry and a light wind. When the wind changed direction the smell went. The caller scored the smell as 4/6 for intensity</p>	S	S	Y	Boilers were not on
13	209	1809183	2+C208:J2082/0 5/2020 13:35:00	Melton Hill	<p>YOR - Odour from Transwaste The caller rang to report an odour from Transwaste The caller describes the odour as a burning smell The caller states they first noticed the odour @ 13:30 The caller states their property is a mile away from the site The caller states they can't smell the odour in their property - windows and doors closed The caller states the weather extremely breeze, blue skies, sunshine, mild The caller states the odour is a 4.5 RG (CO) Wind direction according to Windy.com is SW putting complainant downwind of Transwaste. E-mail sent to Transwaste</p>	S	SW (gust wind 40 mph)	Y	Boilers were not on

14	210	1809434	23/05/2020 09:36	Melton Hill	<p>YOR - Odour - Melton Hill</p> <p>Caller reporting a burning odour coming from Transwaste on Gibson Lane in Melton. Reporting a potential burning smell at the same time every morning. Caller has noticed a pattern. noticed at 08:30 this morning. This has been this time in the morning for the last 7 days. Caller reports the odour disappears soon after, the odour is no longer present at 09:40. Caller is located roughly 1 mile from the site. Caller reports the odour was getting inside the house. Some windows were slightly open this morning. Weather is windy, south westerly wind. Rated a 4 outside.</p> <p>EMDO (KP): Wind direction according to time and date.com is SW putting complainant downwind of Transwaste. E-mail sent to Transwaste</p>	S	S (gust wind 40 mph)	Y	Boilers were not on
15	211	1809868	25/05/2020 08:55	Melton Hill	<p>left msg 09.05 - 08000281886 - YOR - Odour - Melton Hill</p> <p>Site is named Trans Waste on Gibson lane in Melton. Described as wood smoke smell. EA is aware, the site have wood burners that are causing the odour. Was first noticed today at 09:00. This has been prominent for the last few days, 1 instance was noted at 05:00 on the 23rd. Located 1 mile from the site. Weather is described as warm and clear, south west wind blowing from the site. Odour is not in the house. Windows and doors. Rated as a 2, was rated as a 6 on the 23rd.</p> <p>EMDO (KP): Wind coming from SSW direction; 7mph and 11-20oC according to timeanddate.com. Prior to that the wind has been coming from the SW for the past few days. Emailed the site.</p>	S	S	Y	Boilers were not on
16	212	1814875	06/06/2020 07:45	Melton Hill	<p>ml 08:02 & 08:22 - +448000281886 - YOR - Odour - Melton Hill *Cat 3 - 1st report within 24hrs & 2km*</p> <p>Call received to report odour coming from Trans Waste Gibson Lane Site - EPR/BP3792LD The odour is described as being wood smoke The reporters property is approx 1 mile away from the site in question The odour has entered the reporters property, windows were open & have had to be closed Weather conditions are described as being blustery & damp, wind is from the West Smell intensity is scored as 2/6</p> <p>RG (EMDO) Wind direction is Westerly, moderate breeze according to Windy.com</p>	S	SW (gust wind)	Y	Boilers were not on

17	223	1830727	25/07/2020 23:38	Melton Hill	<p>YOR odour Thought to be from Transwaste CAT 3 1 duplicate</p> <p>Can't be sure it is from that site, but says the smell is widespread around the area, definitely not a local bonfire. Says it is an acrid burning waste or bonfire smell. Rated as a 6, says it comes in the house windows open. The caller thinks they are about a quarter of a mile from the site. The caller is due east of the site. Usually a prevailing wind from the west. The weather is pleasant with a bit of breeze and warm.</p>	S	S	Y	Boilers were not on
18	226	1831481	28/07/2020 15:42	Long Plantation	<p>YOR- Odour - Trans waste site on Gibson way cat 3 minor impact</p> <p>Caller is reporting a bad odour from this site last night at around 23:00pm</p> <p>Caller rates the odour a 4/6</p> <p>The caller describes the odour as a burning plastic</p> <p>The odour was experienced outside the house at the time when reporter was walking dogs</p> <p>The site is around 0.7 away from reporters house</p> <p>Reporter describes the weather as a slight breeze from the west the speed is unknown</p> <p>Caller states that the sky was pretty clear with some clouds</p> <p>The smell was constant when caller got inside their house</p>	NW, W, SW	W (gust wind all day)	Y	Boilers were not on
19	229	1832699	01/08/2020 07:41	Melton Hill	<p>YOR. Odour. (Cat 3 min impact - 1st)</p> <p>Caller reports a bad acrid wood smoke smell coming from Transwaste about a mile away.</p> <p>Caller says he had windows open and it has got inside the house. Caller says he has a dry throat and his eyes are sore.</p> <p>6/6 on smell scale. Warm and still weather.</p> <p>EMDO (KP): Checked weather conditions; wind from SW, 13mph, 63oF, fair. Likely to be substantiated.</p>	S	S	Y	Boilers were not on
20	230	1833598	04/08/2020 10:54	Elloughton Hill	<p>YOR/ODOUR</p> <p>CAT 3 1st report in 24 hrs 2 km</p> <p>Caller reporting an odour from Transwaste, Gibson Lane, Melton</p> <p>Odour smells like burning plastic</p> <p>Noticed at 09.30hrs</p> <p>It was present last week just for one day and it normally when the wind is coming from the south.</p> <p>Odour can be smelt inside the property with the doors and windows closed</p> <p>Weather is quite dull and cloudy and breeze from the south with a 12 mile an hour breeze.</p>	SE	S, SW	Y	Boilers were not on

Air Quality Assessment

Gibson Lane, Hull, HU14 3HH

					<p>Rates 4 Strong (odour that may make your hair or clothes smell) Caller lives approximately 1 mile and half as the crow flies from the site. Call taken @ 10.54 on 04.08.2020</p>				
21	236	1841584	25/08/2020 14:18	Long Plantation	<p>YOR Odour Long Plantation - cat 3 2nd report in 24hrs in 2km radius</p> <p>Caller is reporting an odour coming from the Transwaste site on Gibson Ln, North Ferriby, Melton HU14 3HH today at 12pm</p> <p>Caller stated that the odour smell likes burning manure smell, making you feel sick</p> <p>Caller stated that they are around 1/4 miles away from the site</p> <p>Caller stated that the weather is warm, drizzling</p> <p>Caller stated that they would rate it at 5/6 on the scale</p> <p>Caller stated that they cannot have any window or doors open due to the odour</p> <p>Caller stated that the odour is having an effect on their day to day lifestyle, meaning that they cannot sit out in their garden or hang any washing out</p>	NW, W, SW	SW (Gust wind all day, 40mph)	Y	Boilers were not on
22	239	1844906	05/09/2020 20:32	Melton Hill	<p>YOR - Odour - Transwaste - Waste transfer Station - Waste drying plant - Melton</p> <p>CAT 3 - 2nd report in last 24 hours</p> <p>Transwaste Gibson Lane Melton North Ferriby</p> <p>Smell of an acrid burning</p> <p>This was an issue this morning - started at midnight</p> <p>Started again this evening at 20:30</p> <p>Approx. 1 mile from the site</p> <p>Rated at 4/6 - outside</p> <p>Not noticeable inside yet - doors and windows closed</p> <p>Weather is Clear - gentle breeze which is West South Westerly</p> <p>This is a perpetual nuisance - often a worse issue during the night and in the morning - suspected to be from dampening down of wood burners</p>	S	SW	Y	Boilers were not on
23	240	01846877 (M)	11/09/2020 15:17	Low Field Farm	<p>YOR - Odour Complaint Transwaste - Low Field Farm - CAT 3 - 1st report in 24 hours / 2km</p> <p>Transwaste, Gibson Lane, Melton HU14 3HH</p> <p>Odour is sickly mixture of melting plastic and food waste</p> <p>Odour is on a daily basis - but prompted to call by local parish magazine. All around the clock, being going on for years.</p> <p>The odour is getting inside the house when windows are open</p> <p>The weather is dry and breezy</p> <p>The odour is rated at a 6</p> <p>Compiling footage of trucks coming in and out which are</p>	SSE	SW		Boilers were not on

					<p>strewing waste across the road. The caller is a keen birdwatcher but now the main type of bird is seagull. It's very distressing. The machinery noise is bad in Ferriby and Melton - it's around the clock.</p>				
24	255	1880272	17/01/2021 16:43	Long Plantation	<p>YOR/ODOUR CAT 3 minimal reports 2 report 2 km 24hrs Caller reporting an odour from Transwaste Gibson Lane South , Melton Fields,HU14 3HH Energy from waste site. Caller says they have been in operation for a year now they have not got a licence. Odour smells like smoke This has been going on all afternoon Noticed at 14.30hrs Caller says now it is particularly bad at 16.46. There is lots of smoke from the site and there is a slight blue haze in the smoke Odour cannot be smelt inside the property with the doors and windows closed Weather is hardly any wind and it's been dry but there is a damp atmosphere. Rates 4 Strong (odour that may make your hair or clothes smell) Caller lives approximately 1 mile from the site. Call taken @ 16.43 on 17.01.2021</p>	NW, W, SW	W	Y	Boilers were not on

APPENDIX G REPORT TERMS & CONDITIONS

This Report has been prepared using reasonable skill and care for the sole benefit of Eco-Power environmental Limited (“the Client”) for the proposed uses stated in the report by Tetra Tech Limited (“Tetra Tech”). Tetra Tech exclude all liability for any other uses and to any other party. The report must not be relied on or reproduced in whole or in part by any other party without the copyright holder’s permission.

No liability is accepted, or warranty given for; unconfirmed data, third party documents and information supplied to Tetra Tech or for the performance, reliability, standing etc. of any products, services, organisations or companies referred to in this report. Tetra Tech does not purport to provide specialist legal, tax or accounting advice.

The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections. Environmental conditions can vary, and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The “shelf life” of the Report will be determined by a number of factors including; its original purpose, the Client’s instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. Tetra Tech accept no liability for issues with performance arising from such factors.