

North Dorset District Council - England

Updating and Screening Assessment



2012 Air Quality Updating and
Screening Assessment for
North Dorset District Council

In fulfillment of Part IV of the Environment Act 1995
Local Air Quality Management

April, 2012

North Dorset District Council - England

DOCUMENT CONTROL SHEET

CLIENT CONTACT	Mr Kerry Pitt-Kerby North Dorset District Council Environmental Protection Nordon Salisbury Road Blandford Forum Dorset, DT11 7LL 01258 484311 Email: KPitt-Kerby@north-dorset.gov.uk		
UWE CONTACT	Dr Dotun Olowoporoku Air Quality Management Resource Centre, Faculty of Environment and Technology, University of the West of England, Frenchay Campus Coldharbour Lane, Frenchay, Bristol, BS16 1QY Tel: 0117 32 81598 Email: dotun.olowoporoku@uwe.ac.uk		
DOCUMENT	STATUS	DATE	DESCRIPTION
STATUS	Draft report	12 March 2012	Submitted to Mr Kerry Pitt-Kerby
	Final report	27 April 2012	Reviewed by Jo Barnes and submitted to Mr Kerry Pitt-Kerby

Executive Summary

North Dorset District Council has undertaken the 2012 Local Air Quality Management Updating and Screening Assessment in fulfilment of Part IV of the Environment Act 1995 which requires local authorities to review and assess air quality within their administrative area. This Updating and Screening Assessment updates all monitoring data since the last Updating and Screening Assessment (undertaken in 2009) and screens for various potential sources of pollution within the District's administrative area in accordance with the Local Air Quality Management Technical Guidance 2009 (LAQM.TG(09)).

This Updating and Screening Assessment has concluded the following:

- Monitoring Data: North Dorset DC has no monitoring sites within its boundaries apart from the PM₁₀ monitoring undertaken during the Detailed Assessment of East Down Farm which shows that there are no grounds for proceeding further with assessment of air quality in this location
- Assessment of Sources: Following the screening criteria in LAQM.TG(09), a Detailed Assessment will be required for PM₁₀ at the HGV wash facility near Gillingham Station where there are recent complaints about dust. There are no other sources (transport, other transport, industrial, commercial/domestic and fugitive) of concern within North Dorset.

North Dorset District Council accepts the need to proceed to a Detailed Assessment for fugitive emissions from the HGV wash facility close to Gillingham Station. However, the operators are currently negotiating a relocation or enclosure of this facility which would remove the exposure to particulates. North Dorset DC will confirm this relocation to Defra within the next 12 months or else prepare a Detailed Assessment for submission by April 2013.

Table of contents

- Executive Summary 1**
- 1 Introduction 4**
 - 1.1 Description of Local Authority Area..... 4
 - 1.2 Purpose of Report..... 4
 - 1.3 Air Quality Objectives 5
 - 1.4 Summary of Previous Review and Assessments..... 5
- 2 New Monitoring Data 9**
 - 2.1 Summary of Monitoring Undertaken 9
- 3 Road Traffic Sources 10**
 - 3.1 Narrow Congested Streets with Residential Properties Close to the Kerb..
..... 10
 - 3.2 Busy Streets Where People May Spend 1-hour or More Close to Traffic 10
 - 3.3 Roads with a High Flow of Buses and/or HGVs..... 12
 - 3.4 Junctions 12
 - 3.5 New Roads Constructed or Proposed Since the Last Round of Review
and Assessment..... 12
 - 3.6 Roads with Significantly Changed Traffic Flows 13
 - 3.7 Bus and Coach Stations 13
- 4 Other Transport Sources..... 14**
 - 4.1 Airports 14
 - 4.2 Railways (Diesel and Steam Trains)..... 14
 - 4.2.1 Stationary Trains..... 14
 - 4.2.2 Moving Trains 15
 - 4.3 Ports (Shipping) 15
- 5 Industrial Sources..... 16**
 - 5.1 Industrial Installations 16
 - 5.1.1 New or proposed installations for which an Air Quality Assessment has
been carried out..... 16
 - 5.1.2 Existing installations where emissions have increased substantially or
new relevant exposure has been introduced 16
 - 5.1.3 New or significantly changed installations with no previous Air Quality
Assessment..... 17

5.2	Major Fuel (Petrol) Storage Depots	18
5.3	Petrol Stations	18
5.4	Poultry Farms	19
6	Commercial and Domestic Sources	20
6.1	Biomass Combustion – Individual Installations	20
6.2	Biomass Combustion – Combined Impacts	22
6.3	Domestic Solid-Fuel Burning	22
7	Fugitive or Uncontrolled Sources.....	23
8	Conclusions and Proposed Actions.....	25
8.1	Conclusions from New Monitoring Data.....	25
8.2	Conclusions from Assessment of Sources	25
8.3	Proposed Actions.....	26
9	References.....	27
10	Appendices.....	28
	Appendix A: District Map.....	29
	Appendix B: Part A1 Permitted Installations.....	30
	Appendix C: Biomass Boiler Site Plan	31
	Appendix D: HGV Wash Facility Site Plan	32
	Appendix E: Defra LAQM Support Helpdesk Responses.....	33

List of Tables

Table 1: Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in England.....	5
Table 2: Details of biomass boiler in HMP Guy Marsh	20
Table 3: Comparison of background adjusted emission rates and threshold emission rates.....	21

List of Figures

Figure 1: Blandford Forum.....	11
--------------------------------	----

1 Introduction

1.1 Description of Local Authority Area

North Dorset is located in the south-west of England, bordering Somerset and Wiltshire. It is predominantly a rural area comprising of five major market towns: Blandford Forum, Gillingham, Shaftesbury, Stalbridge and Sturminster Newton. The rural area of North Dorset covers 235 square miles. In the south and east of the District are the Dorset Downs and Cranborne Chase, both officially recognised as Areas of Outstanding Natural Beauty. The Blackmore Vale and Limestone Ridges occupies the northern and western part of the District.

In June 2010, the population of North Dorset was estimated to be 64,200, dispersed over a large geographical area including the market towns and many villages. Appendix A shows the boundary of the District.

1.2 Purpose of Report

This report fulfils the requirements of the Local Air Quality Management (LAQM) process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where exceedences are considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

The objective of this Updating and Screening Assessment (USA) is to identify any matters that have changed which may lead to risk of an air quality objective being exceeded. A checklist approach and screening tools are used to identify significant new sources or changes and whether there is a need for a Detailed Assessment. The USA report should provide an update of any outstanding information requested previously in Review and Assessment reports.

1.3 Air Quality Objectives

The air quality objectives applicable to LAQM in England are set out in the Air Quality (England) Regulations 2000 (SI 928), The Air Quality (England) (Amendment) Regulations 2002 (SI 3043), and are shown in Table 1. This table shows the objectives in units of microgrammes per cubic metre $\mu\text{g}/\text{m}^3$ (milligrammes per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

Table 1: Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in England.

Pollutant	Air Quality Objective Concentration	Measured as	Date to be achieved by
Benzene	16.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
	5.00 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
	0.25 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2008
Nitrogen dioxide	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2005
Particles (PM ₁₀) (gravimetric)	50 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
Sulphur dioxide	350 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.4 Summary of Previous Review and Assessments

As part of the requirement of the LAQM process, North Dorset District Council (North Dorset DC) has produced previous Review and Assessment reports. Set out below is a summary of these documents:

Round 1 of LAQM, 1999

This review concluded that none of the regulated pollutants required further assessment at that time. It showed that no exceedences of the air quality objectives were likely in North Dorset due to low level of industry and low traffic flows.

Updating and Screening Assessment Report, 2003

This USA Report provided an update to the Stage 1 review of air quality in 1999. The 2003 Progress Report indicates that the UK air quality objectives for all seven regulated pollutants were likely to be met in the district.

Updating and Screening Assessment Report, May 2006

The results of this USA indicated that a Detailed Assessment would not be required for any of the seven pollutants assessed. None of the UK air quality objectives were likely to be breached within North Dorset DC.

The May 2006 USA report is published on the North Dorset DC website at:

<http://www.dorsetforyou.com/media.jsp?mediaid=148470&filetype=pdf>

Progress Report, April 2007

This Progress Report provided an update to the 2006 report. The April 2007 Progress Report indicated that the UK air quality objectives for all seven regulated pollutants were likely to be met in the district.

The April 2007 Progress Report is published on the North Dorset DC website at:

<http://www.dorsetforyou.com/media.jsp?mediaid=148469&filetype=pdf>

Progress Report, April 2008

This Progress Report provided an update to the April 2007 report. The April 2008 Progress Report indicates that the UK air quality objectives for all seven regulated pollutants were likely to be met. It concluded that it has not been necessary to proceed to secondary stages of the air quality management regime.

The April 2008 Progress Report is published on the North Dorset DC website at:

<http://www.dorsetforyou.com/media.jsp?mediaid=148468&filetype=pdf>

Updating and Screening Assessment Report, April 2009

The USA, undertaken on behalf of North Dorset DC by Faber Maunsell indicated that none of the UK air quality objectives for all seven pollutants excluding particulate matter (PM₁₀) are likely to be exceeded within the District. Therefore, a Detailed Assessment will not be required for six of the key pollutants. However, the USA identified potential exceedences of PM₁₀ in the vicinity of a poultry farm housing in excess of 400,000 birds and equipped with mechanical ventilation. A Detailed Assessment was recommended for PM₁₀ at this site.

The April 2009 USA report is published on the North Dorset DC website at:

<http://www.dorsetforyou.com/media.jsp?mediaid=148467&filetype=pdf>

Detailed Assessment Report, January 2010

The Detailed Assessment of the East Down Farm commenced on 8 September 2009 and was completed in 10 December 2009. The report concluded that the possibility of the Air Quality Objectives for PM₁₀ being exceeded at the farm was very low and that there are no grounds for declaring an AQMA or proceeding further with assessment of air quality in this location.

The 2010 Detailed Assessment report is published on the North Dorset DC website at: <http://www.dorsetforyou.com/media.jsp?mediaid=148460&filetype=pdf>

Progress Report, April 2011

The 2011 Progress Report provided an update to the April 2009 USA report. The April 2011 Progress Report indicated that the UK air quality objectives for all seven regulated pollutants were likely to be met in the District. However a limited number of industrial sources, some with fugitive/uncontrolled emissions, were identified for further investigation as part of the 2012 Updating, Screening and Assessment process These are:

- Lowbrook Farm, Belchalwell - Biodigester
- Blackmore Vale Dairy, Shaftesbury - Biodigester
- Oil & Water Ltd, Wincombe Business Park, Shaftesbury
- Waste Transfer Station, Butts Pond, Sturminster Newton
- East Down Poultry Farm (site of previous Detailed Assessment) was likely to increase stocking to 490,000 by the time of the USA in 2012

These sources are therefore considered in this report.

The April 2011 Progress Report is published on the North Dorset DC website at:

<http://www.dorsetforyou.com/media.jsp?mediaid=163931&filetype=pdf>

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

Following the findings of previous Rounds of Review and Assessment indicating no exceedences of the air quality objectives, North Dorset DC has no monitoring sites within its boundaries and has undertaken no monitoring since the previous Updating and Screening Assessment in 2009, apart from the PM₁₀ monitoring undertaken during the Detailed Assessment of the East Down Farm between 8 September 2009 and 10 December 2009. This data is presented in the 2010 Detailed Assessment on the North Dorset DC website at:

<http://www.dorsetforyou.com/media.jsp?mediaid=148460&filetype=pdf>

3 Road Traffic Sources

3.1 Narrow Congested Streets with Residential Properties Close to the Kerb

Consideration has been given to locations where traffic is slow moving, with stop/start driving, and where buildings on either side reduce dispersion. This element of the Updating and Screening Assessment only considers nitrogen dioxide (NO₂).

Melbury Abbas on the C13 is considered to have relevant exposure within 2 m of the kerb. This route is used by both cars and HGVs as an alternative to the more twisting A350 between Blandford & Shaftesbury. There are no traffic data available for this site, however it is estimated that annual average daily traffic (AADT) is likely to be >5,000 vehicles per day (vpd). The road has 20 mph speed limit which is frequently exceeded, therefore average vehicle speed is not considered to be <15 mph (25 kph), Defra's definition of congested.

North Dorset District Council confirms that there are no new/newly identified congested streets with a traffic flow above 5,000 vehicles per day and residential properties close to the kerb, that have not been adequately considered in previous rounds of Review and Assessment.

3.2 Busy Streets Where People May Spend 1-hour or More Close to Traffic

Consideration has been given to streets with many shops, outdoor cafes and bars where people may be expected to regularly spend one hour or more. This element of the Updating and Screening Assessment only considers NO₂. East Street/West Street, Blandford Forum, was considered as a potential busy road with shops and residential flats where people may spend 1-hour or more close to traffic. Also, there are traffic calming measures which often lead to frequent queues of slow-moving

traffic during the day. No monitoring or traffic flow data are available for this site, however a brief manual traffic count has indicated that it is unlikely that the traffic flow is greater than 10,000 vpd. North Dorset DC have reviewed busy streets in their area and determined that although there may be relevant public exposure within 5 m of the kerb at East Street/West Street, Blandford Forum, there are unlikely to be exceedences of the NO₂ objectives.



Figure 1: Blandford Forum

North Dorset District Council has assessed new/newly identified busy streets where people may spend 1 hour or more close to traffic, that were not assessed in previous rounds of Review and Assessment, and concluded that it will not be necessary to proceed to a Detailed Assessment.

3.3 Roads with a High Flow of Buses and/or HGVs.

There are currently no roads with an unusually high proportion of buses and/or HGVs: greater than 20% or greater than 2500 vehicles per day within North Dorset DC that have been identified since the previous round of Review and Assessment.

North Dorset District Council confirms that there are no new/newly identified roads with high flows of buses/HGVs.

3.4 Junctions

There have been no changes since the previous round of Review and Assessment. Although there are a number of junctions within the district that may be categorised as “busy” (greater than 10,000 vpd), there are no road junctions with relevant exposure within 10 m that have not been previously assessed and there is no new relevant exposure.

North Dorset District Council confirms that there are no new/newly identified busy junctions/busy roads.

3.5 New Roads Constructed or Proposed Since the Last Round of Review and Assessment

Consideration has been given to new roads constructed or proposed since the last round of Review and Assessment. This element of the Updating and Screening Assessment considers both NO₂ and PM₁₀. A new through-road (north of Brinsley Close) linking the B3092 Bath Road to the B3091 Station Road/Rixon Hill has been included in previous Review and Assessment reports and does have relevant receptors within 10 m. However, North Dorset DC have reviewed new roads in this area and determined that there are no sites of concern that meet the criteria detailed in Box 5.3 A.5 LAQM.TG(09).

North Dorset District Council confirms that there are no new/proposed roads.

3.6 Roads with Significantly Changed Traffic Flows

This section of the Updating and Screening Assessment only considers those roads that have not been assessed in Sections 3.2 to 3.5 above. A significant increase can be considered as a 25% increase in traffic flow on any road with more than 10,000 vehicles per day. This element of the Updating and Screening Assessment considers both NO₂ and PM₁₀. North Dorset DC have reviewed roads in their area and determined that there are no sites of concern that meet the criteria detailed in Box 5.3 A.6 LAQM.TG(09).

North Dorset District Council confirms that there are no new/newly identified roads with significantly changed traffic flows.

3.7 Bus and Coach Stations

This section considers bus stations or sections of bus stations that are not enclosed, and where relevant exposure exists. This element of the Updating and Screening Assessment considers both NO₂ objectives (annual mean and 1-hour). North Dorset DC have therefore reviewed bus and coach stations in their area and determined that there are no sites of concern that have not been previously assessed that meet the criteria detailed in Box 5.3 A.7 LAQM.TG(09).

North Dorset District Council confirms that there are no relevant bus stations in the Local Authority area.

4 Other Transport Sources

4.1 Airports

Consideration has been given to airports with more than 10 million passengers per annum (100,000 tonnes freight = 1mppa) and with relevant exposure within 1000 m of the airport boundary. This element of the Updating and Screening Assessment considers just NO₂ (consideration of PM₁₀ has been removed from the latest Technical Guidance). North Dorset DC has reviewed airports in their area. The small airfield within the district only caters for light aircraft and does not have the throughput of freight or passengers to fulfil the criteria in this screening assessment. There are therefore no sites of concern that have not been previously assessed that meet the criteria detailed in Box 5.4 B.1 LAQM.TG(09).

North Dorset District Council confirms that there are no airports in the Local Authority area that meet the specified criteria.

4.2 Railways (Diesel and Steam Trains)

Stationary locomotives, diesel and coal-fired, can give rise to high levels of SO₂ close to the point of emissions. Additionally, recent evidence suggests that lines with heavy traffic of moving locomotives may give rise to high levels of NO₂ close to the track.

4.2.1 Stationary Trains

The railway station located in Gillingham (within the District) is a commuter station for single-track rail line through approximately 13 km of the District, running from Exeter to London Waterloo. North Dorset DC has identified no locations along the train line, where diesel locomotives are regularly stationary for 15 minutes with relevant exposure within 15 metres. Therefore, it is not necessary to proceed to a Detailed Assessment for this emission source.

North Dorset District Council confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.

4.2.2 Moving Trains

Consideration has been given to sections of tracks with large numbers of moving diesel locomotives, with background NO₂ concentrations greater than 25 µg/m³ and relevant exposure with 30 m of the edge of the tracks. This element of the Updating and Screening Assessment considers just NO₂. North Dorset DC has identified no sections of the track along the Exeter to London Waterloo line within the district that meets the criteria in Box 5.4 B.2 LAQM.TG (09). Therefore, it is not necessary to proceed to a Detailed Assessment for this emission source.

North Dorset District Council confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.

4.3 Ports (Shipping)

Consideration is given to ports where large ships generally burn oils with high sulphur content in their main engines (bunker oils). This element of the Updating and Screening Assessment only considers SO₂. There are no ports within North Dorset DC area. Consequently, there are no sites of concern that meet the criteria detailed in Box 5.4 B.3 LAQM.TG (09).

North Dorset District Council confirms that there are no ports or shipping that meet the specified criteria within the Local Authority area.

5 Industrial Sources

5.1 Industrial Installations

Industrial sources are controlled by the Environment Agency (EA) and by local authorities under the Pollution Prevention and Control regulations and through the Clean Air Act. A list of Part A1 Permitted Processes in North Dorset is provided in Appendix B. Many of these sources have been previously assessed in detail in previous Rounds of Review and Assessment, therefore focus in this Updating and Screening Assessment is primarily on new installations and those with significantly changed emissions. This section considers all of the regulated pollutants although those most at risk included SO₂, NO₂, PM₁₀ and benzene.

5.1.1 New or proposed installations for which an Air Quality Assessment has been carried out

Consideration has been given to any new or proposed industrial installations for which an Air Quality Assessment has been carried out. North Dorset DC has identified no new or proposed industrial installations in their area and determined that there are no sites of concern that meet the criteria detailed in Box 5.5 C.1 LAQM.TG(09).

North Dorset District Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

5.1.2 Existing installations where emissions have increased substantially or new relevant exposure has been introduced

Consideration has been given to any new or proposed industrial installations for which an Air Quality Assessment has been carried out. North Dorset DC have identified no installations within the district or neighbouring areas where emissions

have increased substantially (greater than 30%) or where new relevant exposure has been introduced and determined that there are no sites of concern that meet the criteria detailed in Box 5.5 C.1 LAQM.TG(09).

North Dorset District Council confirms that there are no industrial installations with substantially increased emissions or new relevant exposure in their vicinity within its area or nearby in a neighbouring authority.

5.1.3 New or significantly changed installations with no previous Air Quality Assessment

Consideration has been given to any existing industrial installations where emissions have increased substantially or new exposure has been introduced. Emissions from Heat, Power and Vented sources within Yellowstone Environmental Services (formerly Oil and Water Limited) site has been the subject of numerous 'odour nuisance' complaints from residents of Tollgate Park (85 m away) and was raised as a potential new source in the 2011 Progress Report. This is a Part A process and is therefore outside the remit of the LAQM Review and Assessment process. There are a further two new installations in the district that were identified in the 2011 Progress report which operate within the Pollution Prevention and Control regime regulated by the Environment Agency: a Biodigester at Lowbrook Farm and a Biodigester at Blackmore Vale Creamery. Both of these installations have been determined to have no existing or potential concerns that meet the criteria detailed in Box 5.5 C.1 LAQM.TG (09).

North Dorset District Council has assessed new/proposed industrial installations, and concluded that it will not be necessary to proceed to a Detailed Assessment.

5.2 Major Fuel (Petrol) Storage Depots

There is the potential for major fuel (petrol) depots to emit benzene and risk exceeding the 2010 objective. This element of the Updating and Screening Assessment considers benzene only. There are no major fuel (petrol) depots within North Dorset of concern that meet the criteria detailed in Box 5.5 C.2 LAQM.TG(09).

There are no major fuel (petrol) storage depots within the North Dorset District Council area.

5.3 Petrol Stations

Petrol stations combined with nearby busy roads may potentially emit sufficient benzene to risk exceeding the 2010 objective. Consideration must be given to all petrol stations with an annual throughput of more than 2000 m³ of petrol, with busy roads close by and relevant exposure within 10 m of the pumps. There are four petrol stations within North Dorset with an annual throughput of more than 2000 m³ of petrol without Stage 2 Recovery.

1. Total UK Ltd., Chantry Fields Service Station, Gillingham, Dorset SP8 4UK
2. Damory Service Station, Salisbury Road, Blandford Forum, Dorset DT11 7LP
3. ROC UK Ltd, Ivy Cross Service Station, Shaftesbury, Dorset SP7 8DS
4. Redpost Service Station, Winterborne Zelston, Blandford Forum, Dorset DT11 9EU

However, these sites are not within busy roads with >30,000 vehicles per day. North Dorset DC can confirm that there are no sites of concern that have not been previously assessed that meet the criteria detailed in Box 5.5 C.3 LAQM.TG(09).

North Dorset District Council confirms that there are no petrol stations meeting the specified criteria.

5.4 Poultry Farms

Previous rounds of Review and Assessment have identified the potential for exceedences of the PM₁₀ objectives associated with emissions from poultry farms (defined as chickens (laying hens and broilers), turkeys, ducks and guinea fowl). Consideration has been given to any farms housing in excess of 400,000 birds (mechanically ventilated), 200,000 birds (naturally ventilated) or 100,000 turkeys (any ventilation) where relevant exposure exists with 100 m. This element of the Updating and Screening Assessment considers PM₁₀ only.

North Dorset DC identified potential exceedences of PM₁₀ in the vicinity of East Down Farm housing in excess of 400,000 birds and equipped with mechanical ventilation. Relevant exposure is located approximately 56 m from the nearest source. A Detailed Assessment was recommended for PM₁₀ at this site, which was completed in December 2009. The report concluded that the possibility of the Air Quality Objectives for PM₁₀ being exceeded at the farm was very low and that there are no grounds for declaring an AQMA or for proceeding further with assessment of air quality at this location.

The 2011 Progress Report identified that East Down Farm was likely to increase its stocking to 490,000 birds by April 2012. North Dorset DC has reported that the Environment Agency permit for the farm was increased from 418,000 birds to 498,000 laying hens and 20,000 pullets. The operational capacity however has fallen from 450,000 birds at the time of the Detailed Assessment to 440,000 birds currently. Following advice from the Defra LAQM Support Helpdesk there is currently no requirement to proceed to another Detailed Assessment for this site as there is a Defra report pending on poultry farms that will provide further guidance (Appendix E). Furthermore the fall in operational stocking would indicate that the risk of exceeding the Air Quality Objectives for PM₁₀ is unlikely. North Dorset DC has reviewed poultry farms in their area and determined that there are no sites of concern that meet the criteria detailed in Box 5.5 C.4 LAQM.TG(09).

North Dorset District Council confirms that there are no poultry farms meeting the specified criteria.

6 Commercial and Domestic Sources

Commercial (including the service sector) and domestic sources need to be considered in relation to biomass combustion and the use of domestic solid-fuel usage. The process of combustion of biomass material may result in an increase in PM₁₀ and NO_x emissions.

6.1 Biomass Combustion – Individual Installations

Consideration has been given to large individual installations (50 kW to 20 MW in size) burning biomass. This element of the USA considers PM₁₀ and NO₂. North Dorset DC has reviewed the biomass boiler at HM Prison Guy's Marsh, which was commissioned in September 2010. Details of the boiler are provided in Table 2 and plans are available in Appendix C.

Table 2: Details of biomass boiler in HMP Guy's Marsh

Date of Operation	September 2010
Installed Capacity (MW)	1.2
Fuel Type	Wood chip
Description of Appliance	Binder Woodchip Boiler
Flue Diameter (m)	0.45
Stack Height (m)	9
Height (m) of highest building within 5x stack height	N/A
Maximum Emission Rates gs ⁻¹ (NO ₂)	0.133 (provided by NCDC)
Maximum Emission Rates gs ⁻¹ (PM ₁₀)	0.055 (provided by NCDC)

Background concentrations of PM₁₀ and NO₂ were taken from the 2010 background maps, which were supplied by the Defra LAQM Support Helpdesk. At the time of the report new 2011 projected background concentrations were not available, however, given the changes since the 2008 baseline maps, the LAQM Support Helpdesk advised that the 2010 background concentrations would be a more reliable estimate for 2011 than those projected from 2008 (Appendix E).

For each stack, background adjusted emissions rates were calculated for PM₁₀, NO₂ annual mean and NO₂ hourly mean using the formulae provided on pp. 5-46 to 5-47 in LAQM.TG(09). These were then compared with the threshold emission rates from the nomograms in TG(09) figures 5.19, 5.20 and 5.21 respectively. Table 3 shows these comparisons for each stack; if the background adjusted emission rate is greater than or equal to the threshold emission rate, a Detailed Assessment will be required. None of the background adjusted emission rates calculated is greater than or equal to the threshold emission rates. This calculation is based on background concentrations that are subject to change, however the change is deemed unlikely to affect the conclusions of the report. Therefore a Detailed Assessment will not be required for the biomass boilers.

Table 3: Comparison of background adjusted emission rates and threshold emission rates

	PM ₁₀	NO ₂ annual	NO ₂ hourly
Location	384666, 120686		
Effective Stack height ¹ (m)	9		
2010 Background concentrations(µg/m ³)	13.8975	6.84734	6.84734
Background Adjusted Emissions Rate (g/s)	0.002762	0.004012	0.028555
Threshold Emission Rate (g/s) (From Nomograms)	0.0055	0.018	0.08
Is Background Adjusted Emission Rate >= Threshold Emission Rate	No	No	No

North Dorset DC have reviewed individual biomass combustion installations in their area and determined that the site meet the criteria detailed in Box 5.8 D.1a LAQM.TG(09), but will not require a Detailed Assessment.

North Dorset District Council has assessed the biomass combustion plant, and concluded that it will not be necessary to proceed to a Detailed Assessment.

¹ The stack height should be assumed to be equal to the actual (physical) stack height.

6.2 Biomass Combustion – Combined Impacts

Numerous small biomass combustion units, while acceptable individually, may have a cumulative impact on PM₁₀ concentrations. This element of the Updating and Screening Assessment considers PM₁₀ only. North Dorset DC have reviewed the combined impacts of biomass combustion installations in their area and determined that there are no sites of concern that meet the criteria detailed in Box 5.8 D.1b LAQM.TG(09).

North Dorset District Council confirms that there are no areas of significant use of small biomass combustion units in the Local Authority area

6.3 Domestic Solid-Fuel Burning

Consideration has been given to locations where domestic solid-fuel burning (coal) may give rise to exceedences of the SO₂ objectives. This element of the Updating and Screening Assessment considers SO₂ only. North Dorset DC have reviewed domestic solid-fuel burning in their area and determined that there are no sites of concern that have not been previously assessed that meet the criteria detailed in Box 5.8 D.2 LAQM.TG(09).

North Dorset District Council confirms that there are no areas of significant domestic fuel use in the Local Authority area.

7 Fugitive or Uncontrolled Sources

Fugitive or uncontrolled sources may give rise to emissions of PM₁₀. This section considers numerous sources such as quarries, landfill sites, stockyards, construction work and waste management sites. Consideration has been given to elements such as:

- the passage of vehicles over unpaved roads;
- handling of dust materials;
- process dust, e.g. concrete cutting; and
- windblown dust from stockpiles and dusty surfaces.

In the 2011 Progress Report, North Dorset DC identified three local developments which may have an impact on air quality in the area:

- Yellowstone Environmental Services (formerly Oil & Water Ltd), Wincombe Business Park;
- Waste Transfer Station, Butts Pond, Sturminster Newton; and
- East Down Poultry Farm.

North Dorset DC has reviewed these sites and can determine they do not meet the criteria detailed in Box 5.10 E.1 LAQM.TG (09), since:

- Yellowstone Environmental Services site (considered under 5.1.3 above) is a Part A process and is therefore outside the remit of the LAQM Review and Assessment process;
- The Waste Transfer Station has ceased operating; and
- The East Down Poultry Farm (considered under 5.4 above) does not currently require a Detailed Assessment, despite a significant increase in the number of permitted birds, as there is a Defra report pending which will provide further guidance.

North Dorset DC has identified relevant exposure near to a HGV wash facility close to Gillingham Station. A site plan of the wash facility identifying area of concern is available in Appendix D. Recent resident complaints indicate dusts from HGVs are leaving residues on vehicles and properties. North Dorset DC determined that this is

an area of concern that has not been previously assessed, and therefore meets the criteria detailed in Box 5.10 E.1 LAQM.TG (09) necessary for Detailed Assessment.

North Dorset District Council accepts the need to proceed to a Detailed Assessment for fugitive emissions from the HGV wash facility close to Gillingham Station. However, the operators are currently negotiating a relocation or enclosure of this facility which would remove the exposure to particulates. North Dorset DC will confirm this relocation to Defra within the next 12 months or else prepare a Detailed Assessment for submission by April 2013.

North Dorset District Council has identified potential sources of fugitive particulate matter that meet specified criteria, and **will need to proceed to a Detailed Assessment for PM₁₀ at the HGV wash facility close to Gillingham Station.**

8 Conclusions and Proposed Actions

8.1 Conclusions from New Monitoring Data

North Dorset DC has no monitoring sites within its boundaries apart from the PM₁₀ monitoring undertaken during Detailed Assessment of the East Down Farm. The monitoring indicated that the possibility of the Air Quality Objectives for PM₁₀ being exceeded at the farm was very low and that there are no grounds for proceeding further with assessment of air quality in this location.

8.2 Conclusions from Assessment of Sources

This Updating and Screening Assessment has concluded the following:

- This assessment has indicated that there are no Road Transport Sources of concern in North Dorset, and therefore a Detailed Assessment is not required for this source.
- This assessment has indicated that a Detailed Assessment is required for NO₂ for moving locomotives. There are no additional Other Transport Sources of concern in North Dorset.
- This assessment has indicated that there are no Industrial Sources of concern in North Dorset, and therefore a Detailed Assessment is not required for this source.
- This assessment has indicated that there are no other Commercial and Domestic Sources of concern in North Dorset, and therefore a Detailed Assessment is not required for this source.
- This assessment has indicated that there are Fugitive or Uncontrolled Sources of concern in North Dorset, and therefore a Detailed Assessment may be required for this source.

North Dorset DC have reviewed all of the potential sources as detailed in the Updating and Screening Assessment checklists in LAQM.TG(09) and have identified a requirement to proceed to a Detailed Assessment for PM₁₀ at the HGV wash facility near Gillingham Station where there are recent complaints about dust.

8.3 Proposed Actions

North Dorset Council will proceed to undertake a Detailed Assessment for PM₁₀ at the HGV wash facility near Gillingham Station, provided that the facility is not relocated in the interim. This Detailed Assessment will be submitted to Defra by April 2013.

9 References

Defra, (2009). Local Air Quality Management Technical Guidance LAQM.TG(09). February 2009.

Defra (2007) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland. Volume 2. London: The Stationery Office.

HM Government (1995) *Environment Act 1995*. The Stationary Office.

10 Appendices

Appendix A: District Map

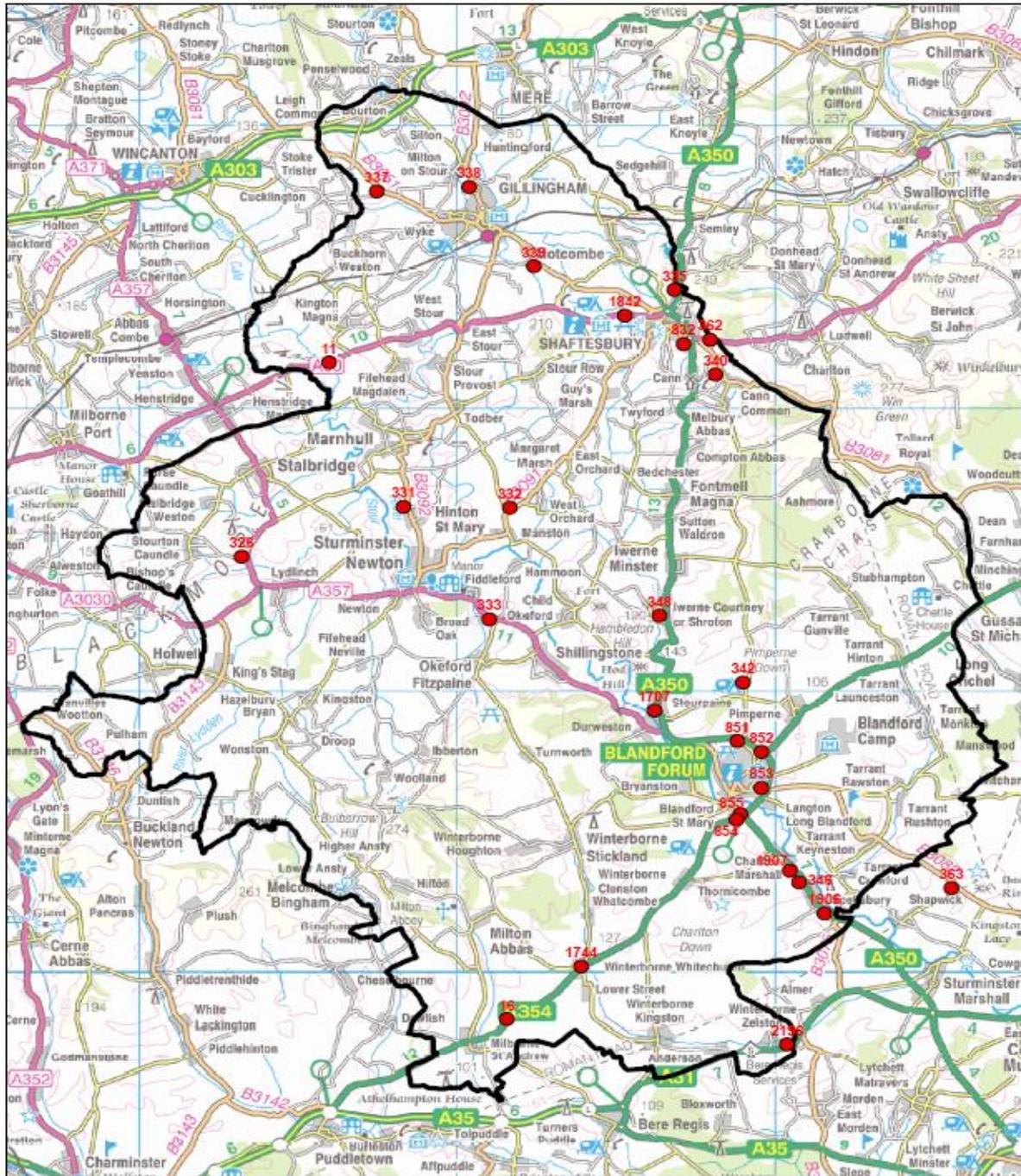
Appendix B: Part A1 Permitted Installations

Appendix C: Biomass Boiler Site Plan

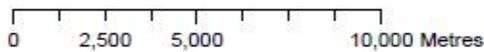
Appendix D: HGV Wash Facility Site Plan

Appendix E: Defra LAQM Support Helpdesk Responses

Appendix A: District Map



ATC Sites



1:162,917

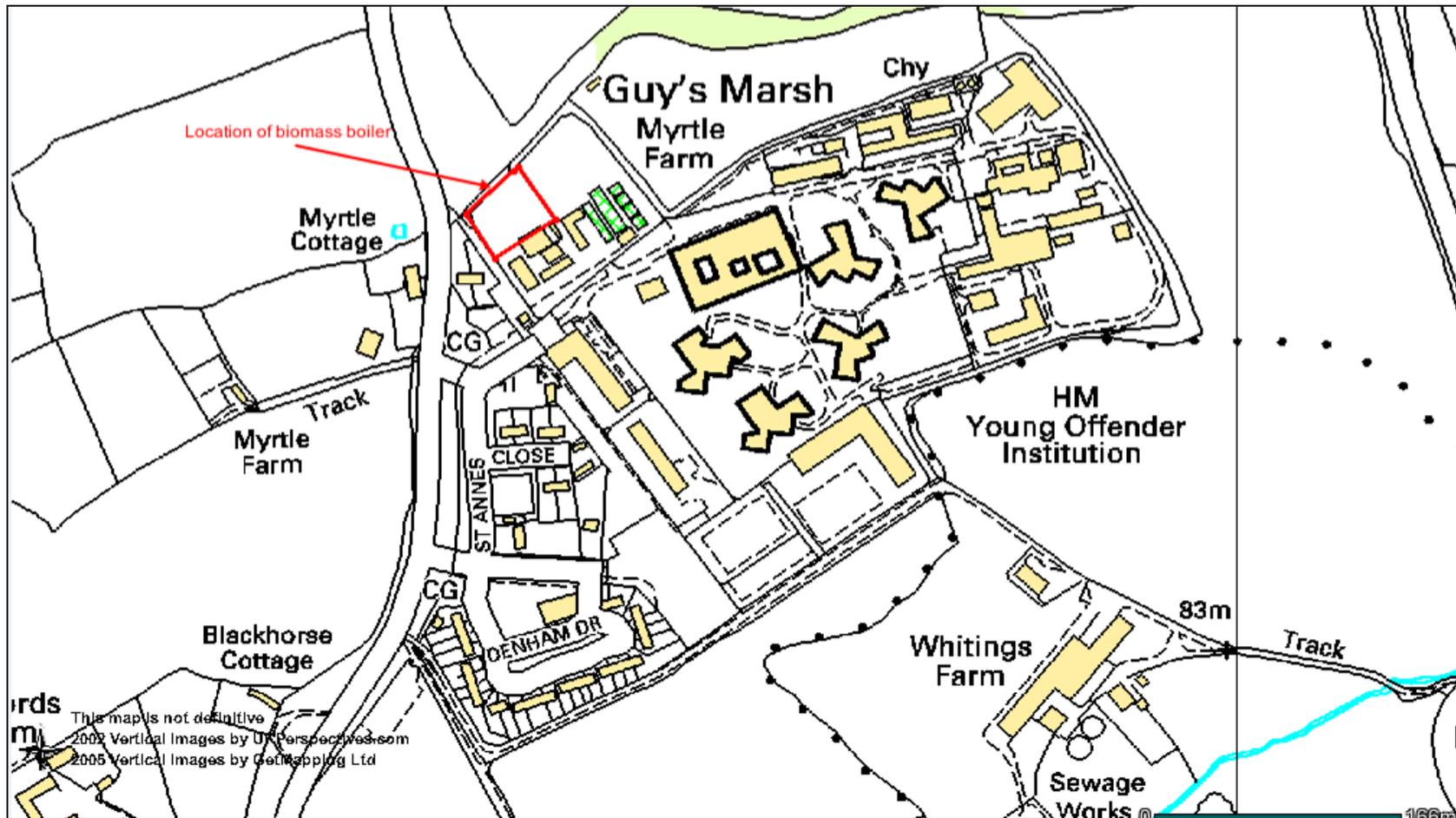


Map of North Dorset showing locations of the Automatic Traffic Counters

Appendix B: Part A1 Permitted Installations

Name and Address	Process type
Faccenda Group, Shillingstone Farm, Okeford Fitzpaine, Blandford Forum DT11 0RQ	Poultry production
J & G Environmental Ltd, Holland Way Ind Est, Blandford Forum, DT11 7TA	Waste transfer
Walston Poultry Farm Ltd, Thorpe Farm, Winterborne Kingston, Blandford Forum, DT11 7BH	Poultry production
Old Stour Farm Ltd, Woodville, Stour Provost, Gillingham, Dorset, SP8 5SN	Poultry production
Thrive Unique Ltd, Middle Farm, Stalbridge Weston, Sturminster Newton, DT10 2LA	Poultry production
Yellowstone Environmental Services (formerly Oil and Water Limited), 20, Wincombe Business park, Shaftesbury, SP7 9QJ	Waste transfer/treatment
Savage Cat Farm, Boweridge Hill, Gillingham, SP8 5QR	Poultry production
Farmergy Ltd, Lowbrook Farm, Belchalwell, Blandford Forum, DT11 0EQ	Biodigester and combustion
Ferns Poultry Farm Back Lane, Kingston, Hazelbury Bryan, Sturminster Newton DT10 2AN	Poultry production
BOCM Pauls, Blandford Heights, Blandford Forum, Dorset, DT11 7TL	Animal feed compounder
Sigma Aldrich, The Old Brickyard, Gillingham, Dorset, SP8 4XT	Chemical production
Dorset County Council, Conygar Landfill Site, Castle Lane, Okeford Fitzpaine, Blandford Forum, DT11 0RJ	Waste management
Mark Farwell Ltd, Downend Farm, Bushes Road, Stourpaine, Blandford Forum, DT11 8SY	Waste management
J Cowley and S Kimber, Deer Park Riding Stables, White Cliff Mill Street, Blandford Forum, DT11 7BN	Waste management
Dorset County Council, Gibbs Marsh Trading Estate, Stalbridge, DT10 2RY	Waste management
Mr V Smith, Okeford Common, Okeford Fitzpaine, Blandford Forum, DT11 0RY	Waste management
PCS South West Ltd, 8 Ambassador Business park, West Stour, Gillingham SP8 5SE	Waste management
North Dorset Stone Ltd, Manor Farm, Silton, Gillingham SP8 5PR	Waste management

Appendix C: Biomass Boiler Site Plan



Appendix E: Defra LAQM Support Helpdesk Responses

Poultry farms

From: yvonne.brown@uk.bureauveritas.com on behalf of
LAQMHelpdesk@uk.bureauveritas.com
Sent: 26 April 2012 17:30
To: Jo Barnes
Cc: lakhu.luhana@uk.bureauveritas.com
Subject: Poultry Farms North Dorset

Thank you for contacting the LAQM Helpdesk. Your query has been allocated the unique reference code: 0999 and you should use this as a reference for any further follow up regarding the following response.

Defra is currently reviewing recently collated information on poultry farms in order to determine if any changes are required to the screening criteria set out in LAQM.TG(09). In the meantime it is recommended that you raise the potential for a new source with your USA but do not proceed to a Detailed Assessment until a response on this is provided by Defra.

Please ensure your USA includes information on the size of the poultry farm, whether it is regulated by EA (for example BAT is required), confirm operational number of units (versus capacity allowed if these are significantly different), and confirm details of nearest relevant receptors and background pollutant concentrations in the area.

This will enable the appraisal team and Defra to confirm if any further work is required.

Many thanks

Yvonne Brown
LAQM Helpdesk Team

Email: LAQMHelpdesk@uk.bureauveritas.com
Telephone: 0800 032 7953

2010 Background maps

From: james.bellinger@uk.bureauveritas.com on behalf of
LAQMHelpdesk@uk.bureauveritas.com
Sent: 25 April 2012 09:49
To: Jo Barnes
Subject: RE: 2010 background maps

Hi Jo,

As there are so many differences between the maps the best is to use the 2010 maps as a conservative estimate.

Regards,

James Bellinger

To: LAQMHelpdeskmail@VERITAS
cc:
Attn:
Subject: RE: 2010 background maps

Ok, thanks, Erwan. Is it preferable to use the new 2010 maps for 2011 or the old maps for 2011?

Thanks

Jo

From: erwan.corfa@uk.bureauveritas.com
[mailto:erwan.corfa@uk.bureauveritas.com] On Behalf Of
LAQMHelpdesk@uk.bureauveritas.com
Sent: 24 April 2012 10:44
To: Jo Barnes
Subject: RE: 2010 background maps

Hi Jo

My colleague James is not in the office to day but, just to let you know, currently only revised 2010 background maps are available. We currently do not have revised projection factors. Therefore, in the absence of these, you may wish to consider assuming that 2010 is suitable for 2011. Alternatively, you may wish to consider any available local background monitoring that provide information on background trends.

North Dorset District Council

As soon as we have further information, we will update the LAQM Support website.

Kind Regards

Erwan

Erwan Corfa
LAQM Helpdesk Team
Email: LAQMHelpdesk@uk.bureauveritas.com
Telephone: 0800 0327953

Jo Barnes <Jo.Barnes@uwe.ac.uk>
24/04/2012 10:32

To: LAQMHelpdeskmail@VERITAS
cc: Dotun Olowoporoku <Dotun.Olowoporoku@uwe.ac.uk>
Attn:
Subject: RE: 2010 background maps

Hi James

On closer inspection I note that you have sent me the 2010 maps though I requested the 2011 maps - please could you send the correct maps asap?

Thanks

Jo

From: james.bellinger@uk.bureauveritas.com
[mailto:james.bellinger@uk.bureauveritas.com] On Behalf
Of LAQMHelpdesk@uk.bureauveritas.com
Sent: 23 April 2012 11:56
To: Jo Barnes
Subject: 2010 background maps

Dear Jo,

Please see attached background maps as requested for North Dorset, Rushcliffe and Rossendale.

Regards,