



ORKNEY
ISLANDS COUNCIL

2012 Air Quality Updating and
Screening Assessment for
Orkney Islands Council

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

April 2012

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Executive Summary

The Update and Screening Assessment has concluded that there is no need to proceed to a detailed assessment for any pollutant.

Recently acquired monitoring data clearly shows that Orkney is currently meeting the 2010 air quality objectives. Pollutant levels have remained at a consistently low level and there is no significant risk of Orkney exceeding the air quality objectives.

Due to the predominantly rural nature of Orkney, and the continued lack of large scale industrial processes, as things stand do not pose a risk to the air quality objectives.

The current monitoring regime within Orkney for NO₂ will continue to ensure that the high standard of air quality in the county continues. Having considered results in recent years with 95% of results below the limit of detection the monitoring of Benzene is to be updated and adjusted accordingly. An updated SO₂ report is to be conducted, confirming that levels continue to be significantly below the air quality objectives.

The next course of action for Orkney Island Council will be to submit the 2013 Progress Report.

Table of contents

1	Introduction	5
1.1	Description of Local Authority Area	5
1.2	Purpose of Report.....	5
1.3	Air Quality Objectives	6
1.4	Summary of Previous Review and Assessments	8
2	New Monitoring Data	9
2.1	Summary of Monitoring Undertaken	9
2.1.1	Automatic Monitoring Sites	9
2.1.2	Non-Automatic Monitoring Sites	9
2.2	Comparison of Monitoring Results with AQ Objectives	11
2.2.1	Nitrogen Dioxide	11
2.2.2	PM ₁₀	14
2.2.3	Sulphur Dioxide.....	14
2.2.4	Benzene.....	14
2.2.6	Summary of Compliance with AQS Objectives	14
3	Road Traffic Sources	16
3.1	Narrow Congested Streets with Residential Properties Close to the Kerb	16
3.2	Busy Streets Where People May Spend 1-hour or More Close to Traffic.....	16
3.3	Roads with a High Flow of Buses and/or HGVs.	16
3.4	Junctions.....	16
3.5	New Roads Constructed or Proposed Since the Last Round of Review and Assessment 17	
3.6	Roads with Significantly Changed Traffic Flows.....	17
3.7	Bus and Coach Stations	17
4	Other Transport Sources.....	18
4.1	Airports.....	18
4.2	Railways (Diesel and Steam Trains)	18
4.3	Ports (Shipping)	18
5	Industrial Sources.....	21
5.1	Industrial Installations	21
5.1.1	New or Proposed Installations for which an Air Quality Assessment has been Carried Out	21
5.1.2	Existing Installations where Emissions have Increased Substantially or New Relevant Exposure has been Introduced	21
5.1.3	New or Significantly Changed Installations with No Previous Air Quality Assessment...	21
5.2	Major Fuel (Petrol) Storage Depots	21
5.3	Petrol Stations.....	21
5.4	Poultry Farms.....	22

6	Commercial and Domestic Sources	23
6.1	Biomass Combustion – Individual Installations	23
6.2	Biomass Combustion – Combined Impacts.....	23
6.3	Domestic Solid-Fuel Burning	23
7	Fugitive or Uncontrolled Sources.....	24
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

List of Tables

Table 1.1	Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in Scotland
Table 2.2	Details of Non-Automatic Monitoring Sites
Table 2.4	Results of Nitrogen Dioxide Diffusion Tubes

List of Figures

Figure 2.2	Map of Non-Automatic Monitoring Sites
Figure 2.4	Trends in Annual Mean Nitrogen Dioxide Concentration Measured at Diffusion Tube Monitoring Sites

Appendices

Appendix 1	QA/QC Data and 2011 Monitoring Results
Appendix 2	Emissions Inventory

1 Introduction

1.1 Description of Local Authority Area

The Orkney Islands are situated between 5 and 50 miles north of mainland Scotland (59°N, 3°W). There are approximately 70 islands and 20 skerries in the island group. 17 of the islands are inhabited with a population of around 20,000. The largest town is Kirkwall with a population of around 7500.

The main traffic routes in Orkney are a series of 'A' roads that link the west mainland to the east, through Kirkwall and southwards across the barriers to South Ronaldsay. The highest volume of traffic can be found within Kirkwall, with very light levels of traffic found across the mainland and the Outer Isles. The main airport is situated at Grimsetter, 2 miles outside Kirkwall. There are smaller airports across the Outer Isles providing links to Orkney mainland. Large ferry services link Orkney to the Scottish mainland and Shetland with other numerous smaller inter-island links throughout Orkney. Other shipping activity is present within Orkney water's and tends to be concentrated around Scapa Flow.

The county is overwhelmingly rural in character and there are few significant industrial processes in Orkney. The main industrial process comes from the oil activities at Flotta. There are other smaller industrial processes i.e. fish processing and quarrying.

The last update and screening assessment in 2009 concluded that there were no locations in Orkney where the air quality objectives were likely to be exceeded.

1.2 Purpose of Report

This report fulfils the requirements of the Local Air Quality Management 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 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 **Scotland** are set out in the Air Quality (Scotland) Regulations 2000 (Scottish SI 2000 No 97), the Air Quality (Scotland) (Amendment) Regulations 2002 (Scottish SI 2002 No 297), and are shown in Table 1.1. 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 1.1 Air Quality Objectives included in Regulations for the purpose of LAQM in Scotland

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
	3.25 $\mu\text{g}/\text{m}^3$	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 7 times a year	24-hour mean	31.12.2010
	18 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2010

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

The First stage review and assessment for Orkney Islands Council was published in December 1998 and revised in May 1999. This concluded that because Orkney is predominantly a rural island community with few significant industrial processes in the islands, and road traffic volumes are low. The risk of the air quality objectives for benzene, 1,3 butadiene, carbon monoxide, lead, nitrogen dioxide, sulphur dioxide and particulates being exceeded are considered negligible. It also concluded that there was not a requirement for a second stage review.

Further Updating and Screening Assessment of local air quality were published in October 2003 and April 2009 respectively. These reports concluded that air quality was currently meeting the national objectives and that it was not necessary to undertake a Detailed Assessment or to declare an Air Quality Management Area (AQMA).

The Council has also published Progress Reports on Air Quality, in July 2004, September 2005, November 2006, April 2008, April 2010 and April 2011. These reports have confirmed that a Detailed Assessment for air quality within Orkney is not required for any pollutants, and further concluded that levels of pollutants in Orkney are way below the NAQS objectives and Orkney is not at risk of exceeding these objectives.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

There are no automatic monitoring sites with in Orkney.

2.1.2 Non-Automatic Monitoring Sites

New data for 2011 has been gathered by Orkney Islands Council via a network of five diffusion tubes for Nitrogen Dioxide (NO₂) concentrations and three diffusion tubes for Benzene concentrations. The tubes are exposed on a monthly basis throughout the year and sent for analysis at Edinburgh Scientific Services. The locations of the tubes are presented in Figure 2.2.

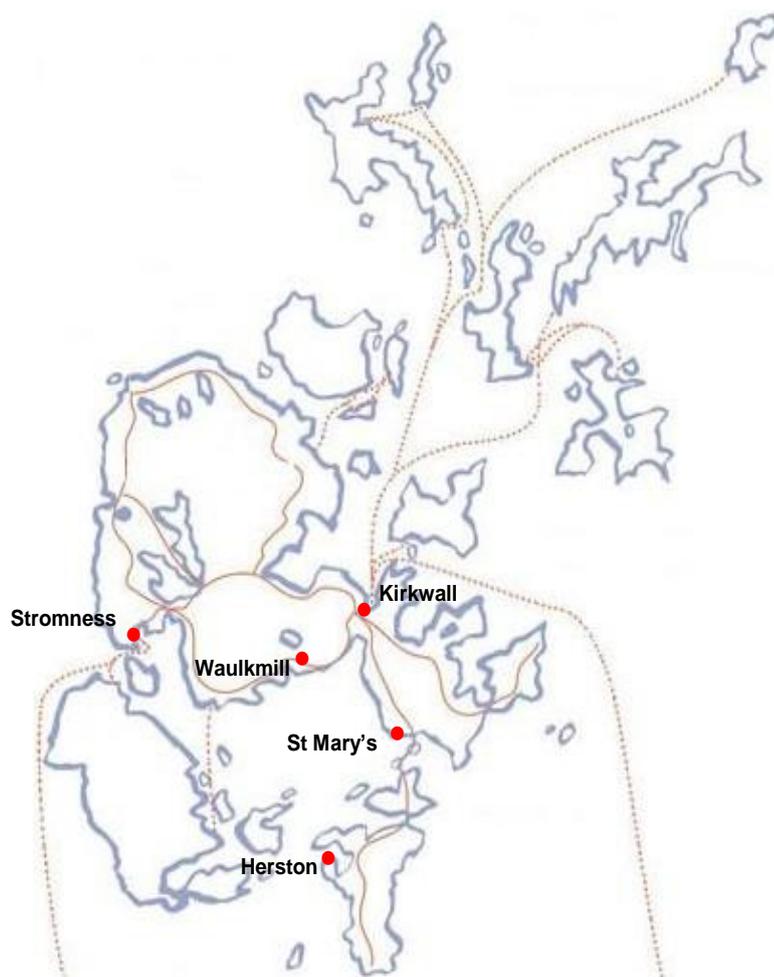


Figure 2.2 Map of Non-Automatic Monitoring Sites

Table 2.2 Details of Non-Automatic Monitoring Sites

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Does this location represent worst-case exposure?
Kirkwall	Roadside	344812	1011017	NO ₂	N	N	Y (1m)	1m	Y
Stromness	Roadside	325590	1009553	NO ₂	N	N	Y (1m)	1m	Y
St Mary's	Roadside	347140	1001235	NO ₂ , Benzene	N	N	Y (2m)	1m	Y
Waulkmill	Rural	339525	1006985	NO ₂ , Benzene	N	N	N	1.5m	Y
Herston	Rural	341995	991999	NO ₂ , Benzene	N	N	Y (10m)	2m	Y

2.2 Comparison of Monitoring Results with AQ Objectives

2.2.1 Nitrogen Dioxide

As stated previously, there is no automatic monitoring data with regards to Nitrogen dioxide, as it has been deemed unnecessary due to the islands rural landscape and low population. Therefore all monitoring data is obtained through the placement of diffusion tubes. As diffusion tubes cannot detect short term fluctuations in pollutant concentrations, it is not possible to compare the monitoring results against all NAQS objectives for NO₂. As can be seen from the data below, this is justified due to the County's very low NO₂ levels.

Diffusion Tube Monitoring Data

The annual mean concentrations for NO₂ are shown in Table 2.5. The full data set of results for 2011 can be seen in Appendix A

As can be seen from the results in Table 2.6 below, in 2011 there has been no significant change in levels of NO₂. Kirkwall experiences the highest levels of NO₂ which is understandable considering it is Orkney's largest town and has the highest traffic flows.

Table 2.6 below shows Kirkwall to have an upward trend in its annual mean concentrations of NO₂. It was noted in the 2011 Progress Report that this reflected the, re-location of the monitoring point within Kirkwall, to a busy crossroads, part way through 2009. This new location was deemed more indicative of the worst case in Kirkwall, due to the monitoring point's location outside residential properties and on a main route within the town. The local bus station is also located adjacent to the crossroads, with all out going traffic movements from the bus station having to leave through this junction. This report envisaged that the results in 2011 would show the this upward trend of mean concentrations to stabilise and level out which can be seen clearly in the results shown in the table. The levels in Kirkwall are currently at 46% of the objective. Elsewhere in Orkney annual mean concentrations of NO₂ remain significantly unchanged.

Figure 2.4 below displays the trends of NO₂ concentrations within Orkney over the last 5 years. It is unlikely that levels will ever exceed the NAQS objective of 40 mg/m³.

Table 2.5 Results of Nitrogen Dioxide Diffusion Tubes in 2011

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2011 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 1.02)
								2011 ($\mu\text{g}/\text{m}^3$)
KW	Kirkwall	Roadside	N	N	12 months	N	N	18.4
SN	Stromness	Roadside	N	N	12 months	N	N	12.6
SM	St Mary's	Roadside	N	N	12 months	N	N	4.6
WM	Waulkmill	Rural	N	N	11 months	N	N	3.8
HE	Herston	Rural	N	N	12 months	N	N	3.1

Table 2.6 Results of Nitrogen Dioxide Diffusion Tubes (2008 to 2011)

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) $\mu\text{g}/\text{m}^3$			
			2008* (Bias Adjustment Factor = 1.05)	2009* (Bias Adjustment Factor = 0.93)	2010* (Bias Adjustment Factor = 0.95)	2011 (Bias Adjustment Factor = 1.02)
KW	Roadside	N	12.6	14.0	18.9	18.4
SN	Roadside	N	9.6	10.3	10.6	12.6
SM	Roadside	N	4.4	6.8	5.0	4.6
WM	Rural	N	3.3	4.8	4.0	3.8
HE	Rural	N	2.8	2.6	2.8	3.1

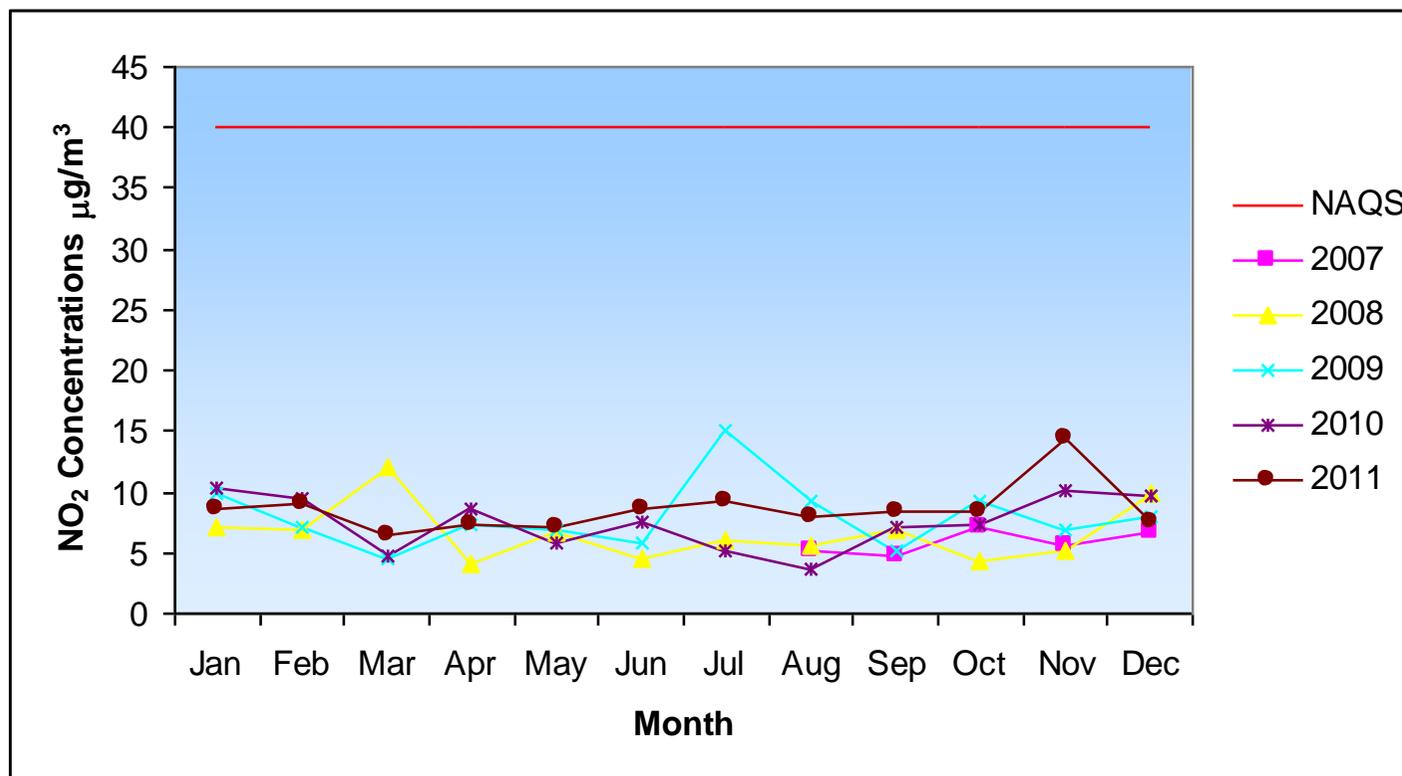


Figure 2.4 Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites

2.2.2 PM₁₀

Orkney Islands Council does not undertake monitoring for PM₁₀. In previous reports background concentration maps were used and predicted that PM₁₀ pollution levels in Orkney will not exceed 15µg/m³. Current background maps show Orkney to have PM₁₀ levels of approximately 7-8 µg/m³. Taking these facts into consideration it is concluded that there is no expected exceedance of the 2010 objective (18µg/m³) in Orkney.

2.2.3 Sulphur Dioxide

There is no new monitoring data for SO₂ in Orkney.

The last time data was collected was in 2005 when real time data for SO₂ was collected to measure ambient levels of SO₂ in Kirkwall, with the assistance of SEPA.

The resulting report from SEPA concluded that the 'ambient air levels of SO₂ in Kirkwall never exceeded the limits set out by the air quality objectives'.

Since these findings were published by SEPA and reported on in the Orkney Islands Council 2005 Progress Report and commented on in subsequent reports, there have been no significant changes within Kirkwall that would influence ambient SO₂ concentrations in the town.

If anything with the onset of solid fuel and oil heating systems being replaced by eco friendly and energy efficient air source heating systems within the towns it is envisaged that ambient SO₂ levels have most probably decreased.

It can therefore be concluded that SO₂ levels within Orkney are not likely to exceed the air quality objectives set out by NAQS.

2.2.4 Benzene

Monitoring of Benzene during 2011 has shown there have been no significant changes in the levels of benzene recorded at the three monitoring locations Herston, Waulmill and St Mary's. Over 90% of the recorded values for this period were below the Limit of Detection (LOD) of 0.2ppb (0.65 µg/m³). Benzene levels in Orkney are well within the NAQS objectives. Full monitoring data for Benzene can be seen in Appendix A.

It can therefore be concluded that benzene levels within Orkney are not likely to exceed the NAQS air quality objectives.

2.2.5 Summary of Compliance with AQS Objectives

Orkney Islands Council has examined the results from monitoring in the County. Concentrations are all below the objectives, therefore there is no need to proceed to a Detailed Assessment.

3 Road Traffic Sources

3.1 Narrow Congested Streets with Residential Properties Close to the Kerb

Orkney Islands Council confirms that there are no new/newly identified congested streets with a 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

Orkney Islands Council confirms that there are no new/newly identified busy streets where people may spend 1 hour or more close to traffic.

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

Even though Orkney's bus station is located in the centre of Kirkwall, due to the rural nature of the service and the number of buses on the roads along with low levels of HGV's it is considered that there are no roads that meet the criteria

Orkney Islands Council confirms that there are no new/newly identified roads with high flows of buses/HDVs.

3.4 Junctions

Orkney does not have any Junctions or roads that meet the criteria in the technical guidance

Orkney Islands 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

Orkney Island Council confirms that there are no new/proposed roads.

3.6 Roads with Significantly Changed Traffic Flows

Orkney Islands Council confirms that there are no new/newly identified roads with significantly changed traffic flows.

3.7 Bus and Coach Stations

The main bus station in Orkney is in the main town of Kirkwall. Even though the bus station is situated in the centre of the town within 10 metres of relevant exposure, it is not considered a risk to the air quality in Orkney as there are only approximately 1,174 bus movements in the bus station per week which does not meet the relevant criteria set out in Section A.7 of Box 5.3 of TG(09).

Orkney Islands Council confirms that there are no relevant bus stations in the Local Authority area.

4 Other Transport Sources

4.1 Airports

There is one airport within the local authority area. This is located approximately 2 miles from Kirkwall in the East Mainland. The surrounding country side is sparsely populated within 1000 metres of the airport, with Kirkwall being the closest densely populated area.

The airport is operated by Highlands and Islands Airports Ltd (HIAL). HIAL produce an annual report providing details of passenger numbers using Kirkwall Airport and the number of aircraft movements.

From the most recent published report 2010 -2011, total aircraft movements within the county amounted to 14,388 a drop of 8% since the last USA in 2009. Total passenger numbers for Kirkwall were 144,369 a 4% drop since the last USA in 2009. Total amount of freight for Kirkwall was 132 tonnes, equivalent to 1320 passengers (Box 5.4, Technical Guidance LAQM TG(09)) a drop of 82% since the last USA in 2009. Therefore, for the purposes of this report, the total equivalent passenger numbers for the airport is 145,689 or 0.15 mppa.

As can be seen from the above, Orkney Islands Council is satisfied that the above data falls well below the levels specified within the Technical Guidance LAQM TG(09) and that it is not necessary to proceed to a detailed assessment for nitrogen dioxide.

4.2 Railways (Diesel and Steam Trains)

Orkney Islands Council confirms that there are no railways in the Local Authority area.

4.3 Ports (Shipping)

Orkney is an Island community which is reliant on shipping for transport, employment and tourism to name a few.

Because Orkney is made up of a number of islands there is a network of Ro-Ro ferry links between the islands, providing lifeline services to Orkney's population across these isles.

The largest of these ferries are those that link Orkney to mainland Scotland via either Aberdeen or Scrabster. For the purpose of this report, the Hamnavoe which sails between Stromness and Scrabster, is one of the three largest ferries that provides a service to mainland Scotland. The net weight of this boat is 2634 tonnes.

As a comparison a cross channel ferry (Ro-Ro) between Dover and Calais has a net weight of approximately 11,000 tonnes.

Orkney's three largest Ro-Ro ferries have combined movements of approximately 1420 per year, spread between the two harbours of Kirkwall (Hatston) and Stromness.

The other lifeline Ro-Ro ferries linking the different islands are smaller with the busiest harbour being that of Kirkwall. Here ship movements equate to approximately 6000 per year.

The Orkney Islands Council is becoming an ever increasing destination for cruise ships sailing the North Atlantic. The majority of the cruise ships come into the Kirkwall Bay though not all dock due to their size and shuttle boats are used to bring tourists to and from the ship to shore. The total number of movements for cruise ships scheduled for 2012 is 152.

There is one relevant receptor within 250 metres of Kirkwall harbour however considering the figures given above it is not considered that the movements do not cause a significant risk to air quality.

There are larger amount of relevant receptors within Stromness, however the movements there are negligible, over the course of the year.

Orkney's waters and in particular Scapa Flow, provide a sheltered environment for shipping. These waters are a source of commercial business for Orkney Islands Council harbours department, which attract large tankers using the flow in which to lay anchor in its sheltered waters. Scapa Flow also provides a sheltered environment for the activity of ship to ship transfers of oil. This commercial shipping generates important income for the Islands.

This activity within Scapa Flow will not increase the number of annual movements significantly as the tankers are at anchor for long periods. It is therefore envisaged that there will be no significant risk increase of SO₂ to Orkney's air quality. Due to the nature of ship to ship transfers and the venting of gases during this process, it was a possibility that there could be a potential increase in the levels of benzene. As can be seen from the 2011 results there has been no significant changes in levels of benzene and it is envisaged that there will be no significant risk of an increase in benzene to Orkney's air quality.

The waters around Orkney fall within the Sulphur Emission Control Area comprising of the North Sea and English Channel region. From the 1st July 2010 shipping operating in these areas has to use fuel with a sulphur content of less than 1%. In accordance with Section B.3 of Box 5.4 of TG(09), if the shipping is using fuel with a sulphur content of less than 1% then it is not necessary to take this assessment further.

Orkney Islands 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

5.1.1 New or Proposed Installations for which an Air Quality Assessment has been Carried Out

Orkney Islands 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

Orkney Islands 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

Orkney Islands 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.

5.2 Major Fuel (Petrol) Storage Depots

There are no major fuel (petrol) storage depots within the Local Authority area.

5.3 Petrol Stations

Orkney Islands Council confirms that there are no petrol stations meeting the specified criteria.

5.4 Poultry Farms

Orkney Islands Council confirms that there are no poultry farms meeting the specified criteria.

6 Commercial and Domestic Sources

6.1 Biomass Combustion – Individual Installations

Orkney Islands Council confirms that there are no biomass combustion plant in the Local Authority area.

6.2 Biomass Combustion – Combined Impacts

Due to Orkney's rural nature there are a number of properties in and out with the towns that use domestic solid fuels. However the number of domestic biomass combustion installations are not known. There are plans to promote wood burning systems in Orkney. These will largely be linked to new developments and depending on scale will be likely be assessed at the planning stage.

It is envisaged that as these will likely be low density or individual developments, this would not cause significant risk to PM₁₀ levels in Orkney.

Other domestic solid fuel sources are present on a greater scale but considering the size of the towns in Orkney they are not considered a significant risk to the air quality of the county.

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

6.3 Domestic Solid-Fuel Burning

As has been stated previously in this report, the use of solid fuels is quite widespread through Orkney. However this is usually supplementary to rather than the primary source of heating. Therefore it is considered that there is no significant risk of SO₂ ever exceeding the NAQS objectives.

Orkney Islands Council confirms that there are no areas of significant domestic fuel use in the Local Authority area.

7 Fugitive or Uncontrolled Sources

Orkney Islands Council confirms that there are no potential sources of fugitive particulate matter emissions in the Local Authority area.

8 Conclusions and Proposed Actions

8.1 Conclusions from New Monitoring Data

The recently acquired monitoring data that has been included in this report clearly shows that Orkney is currently meeting the 2010 air quality objectives. Comparing historic data against the current data clearly shows that pollutant levels have remained at a consistently low level and that there is no significant risk of Orkney exceeding the air quality objectives.

8.2 Conclusions from Assessment of Sources

Orkney is a rural Island community with a population that has remained fairly static in recent years. Because of this it is envisaged that emissions from road transport is unlikely to have a significant impact on the air quality in the county. Due to this conclusion it is felt that DMRB calculation for traffic in Orkney is not necessary due to the very low volumes, and it is unlikely that there will be a significant increase in the level of traffic on Orkney Roads. Considerable investment has been made by to improve and increase both foot paths and cycle routes within the county Orkney Islands Council, with further campaigns to promote the use of public transport to lower levels of traffic further.

Ports and shipping is clearly an important sector within the local authority and is reflected in the County's maritime history. Despite this it is envisage that this sector does not pose a risk to the air quality objectives.

The predominantly rural nature of Orkney has been previously mentioned, along with the lack of large scale industrial processes, and as they currently stand do not pose a risk to the air quality objectives.

As future developments of both residential and commercial schemes are completed, it is unlikely that the domestic and commercial sources of solid fuel burning will pose a significant risk to air quality given the planning controls of the Orkney local plan dictating that the scale of development in the County will remain of a low density.

From the report it can be said that Orkney is not at risk of exceeding any of the air quality objectives.

8.3 Proposed Actions

The Update and Screening Assessment has concluded that there is no need to proceed to a detailed assessment for any pollutant.

The current monitoring regime for NO₂ within Orkney will continue to ensure that the high standard of air quality in the county continues. It is the intension of Orkney Islands Council to cease monitoring Benzene through it's network of diffusion tubes. This decision has been taken because results that have been provided over the previous years have been for the majority been within the limits of detection. It is envisage that some short term monitoring will take place during the year so that some form of monitoring is maintained.

As stated in the report the monitoring of SO₂ has not been carried out in the County since 2005. Although there has been no significant changes that would indicate an increase in the risk of SO₂ it is e envisage that some short term monitoring will take place during the year to confirm that SO₂ levels within the county are meeting the NAQS objectives.

However, the possibility of increased shipping activities within Orkney's water will be monitored and the need for increased monitoring will be considered, to ensure the air quality of the county is not a detriment to this activity.

The next course of action for Orkney Island Council will be to submit the 2013 Progress Report.

9 References

Please provide a list of all documents referred to in the report.

DELETE THIS INSTRUCTION BOX BEFORE SUBMITTING THE REPORT.

Orkney Islands Council Air Quality Review Stage 1, 1999

Orkney Islands Council Update and Screening Assessment 2003

Orkney Islands Council Progress Report 2008

Orkney Islands Council Update and Screening Assessment 2009

Orkney Islands Council Progress Report 2010

Orkney Islands Council Progress Report 2011

Orkney Ambient Air Study, SEPA Report 2005

Orkney Islands Council Transportation section – Bus movements

Highland and Islands Airport Annual Report 2010-2011

Orkney Harbours Department Annual Performance Report 2011

Orkney Ferries Timetables

Northlink Ferry Timetables

Health and Safety Executive website – Listing of Major Fuel Storage Depots.

Orkney Islands Council Environmental Health Department – Regarding Poultry.

Appendices

Appendix A: QA/QC Data

Appendix B: Emissions Inventory

Appendix A: QA:QC Data

Diffusion Tube Bias Adjustment Factors

All diffusion tubes are analysed by Edinburgh Scientific Services.

A Bias Adjustment of 1.02 was used. This was taken from the National Diffusion Tube Bias Adjustment Spreadsheet (version September 2011)

Factor from Local Co-location Studies (if available)

There has been no co-location studies conducted in Orkney.

Discussion of Choice of Factor to Use

The national bias adjustment factor was used as there has been no local bias adjustment factors calculated through a co-location study.

PM Monitoring Adjustment

There has been no recent PM monitoring within Orkney

Short-term to Long-term Data adjustment

No adjustment is required for short term monitoring as all monitoring data is conducted on a monthly basis over the entire year.

QA/QC of automatic monitoring

There are no automatic monitoring sights in Orkney

QA/QC of diffusion tube monitoring

Bias and Precision taken from data supplied on R & A website.

Appendix B: Emissions Inventory

Part A Processes			
<i>Operator</i>	<i>Process Address</i>	<i>Process Type</i>	<i>Description</i>
Talisman	Flotta, Orkney	Petroleum	Oil terminal
Talisman	Flotta, Orkney	Combustion	Gas and Oil turbines
Kingsdale Landfill	Firth, Orkney	Landfill	Landfill
Bossack Quarry	Bossack, Tankerness.	Landfill	Landfill

Part B Processes			
<i>Operator</i>	<i>Process Address</i>	<i>Process Type</i>	<i>Description</i>
Orkney Islands Council	Cursiter Quarry, Finstown, Orkney	Stone Crushing	Quarrying
Orkney Islands Council	Cursiter Quarry, Finstown, Orkney	Tar & Bitumen processes	Roadstone Coating
Orkney Aggregates Ltd	Heddle Quarry, Finstown.	Stone Crushing	Quarrying
Gairsty Quarry Ltd	Quoyloo, Sandwick	Stone Crushing	Quarrying
Seatter	Hoy	Stone Crushing	Mobile Crusher
Launderama	Kirkwall, Orkney	Dry cleaning	Laundrette
Northern Isles Salmon	Hatston, Kirkwall	Fish Ensiling	Fish Ensiling

Note: This information was provided by SEPA, Norlantic House, Hatston, Kirkwall, Orkney.