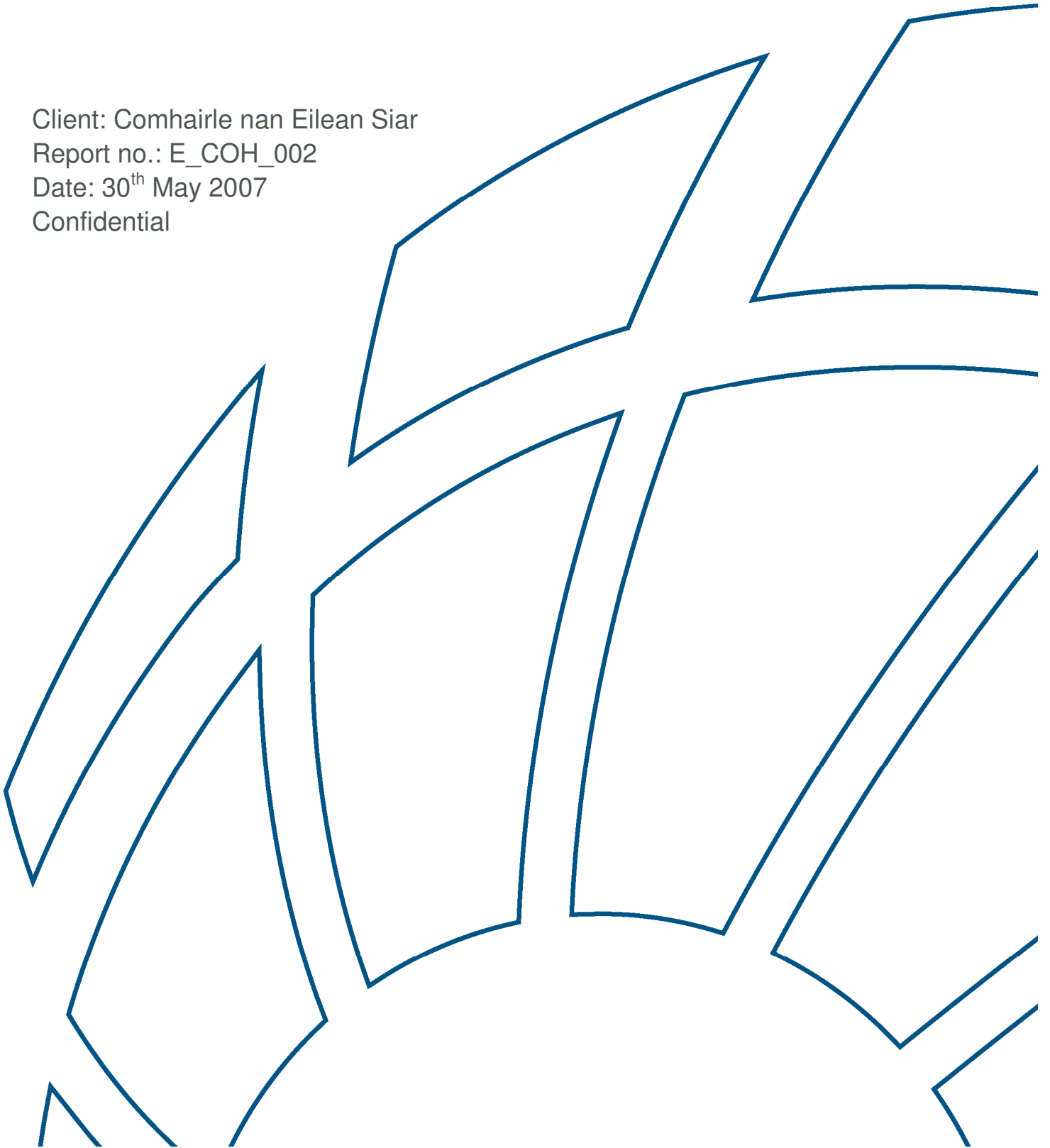





LAQM Progress Report 2007

Client: Comhairle nan Eilean Siar
Report no.: E_COH_002
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1 INTRODUCTION

BMT Cordah Limited has been commissioned by Comhairle Nan Eilean Siar to undertake the Local Air Quality Management (LAQM) Progress Report for 2007. The aim of the report is to provide an update on local air quality including information on recent air quality monitoring, changes in local policy towards air quality and changes in local sources of atmospheric emissions.

The assessment uses current monitoring data and information on industrial, transport, commercial and domestic atmospheric emissions to identify if there is potential for exceedence of the air quality objectives for pollutants contained within the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2000 (NAQS)¹.

The report follows guidance set out in LAQM.TG(03) technical guidance², LAQM.PRG(03) progress report guidance³, LAQM.PG(03) policy guidance⁴ and subsequent guidance amendments⁵.

1.1 Review and Assessment process

The Environment Act 1995 and subsequent regulations require local authorities to assess compliance of air quality in their area with the standards and objectives set out in the NAQS. For local authorities within Scotland further regulations are set out in the Air Quality (Scotland) Regulations 2000 and Air Quality (Scotland) Amendment Regulations 2002.

The LAQM framework requires that local authorities carry out regular reviews of air quality. This 'Review and Assessment' process comprises two phases. The first phase of the Review and Assessment is an Update and Screening Assessment (U&SA) which is undertaken every three years. The U&SA considers any changes that have occurred in pollutant emissions and sources since the last round of Review and Assessment that may affect air quality.

The second phase is either a Detailed Assessment or a Progress Report depending upon the outcome of the U&SA.

If the U&SA identifies a risk of exceeding an air quality objective at a location of relevant public exposure a Detailed Assessment is required. The Detailed Assessment considers the risk of

¹ The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, Working together for clean air, Defra, January 2000.

² Part IV of the Environment Act 1995, Local air quality management technical guidance, LAQM.TG(03), Defra et al, January 2003.

³ Part IV of the Environment Act 1995, Local air quality management progress report guidance, LAQM.PRG(03), Defra et al, January 2003

⁴ Part IV of the Environment Act 1995, Local air quality management policy guidance, LAQM.PG(03), Defra et al, January 2003.

⁵ Part IV of the Environment Act 1995, Local air quality management technical guidance update, LAQM.TG(03) – update: January 2006, Defra et al and Local air quality management policy guidance: Addendum, LAQM.PGA(05), Defra et al, January 2005

exceeding an objective to greater depth in order to determine whether it is necessary to declare an Air Quality Management Area (AQMA).

If the U&SA does not identify any risk of exceeding air quality objectives, an Progress Report is prepared annually in the intervening years between U&SAs. As mentioned above, the aim of the Progress Report is to provide an update on pollutant monitoring data, policy towards air quality and new developments which will have an impact on local air quality.

An AQMA is declared following a Detailed Assessment where it has been shown that an air quality objective has been or is predicted to be exceeded by the objective deadline.

2 NATIONAL AIR QUALITY STANDARDS AND OBJECTIVES

Assessment criteria, or objectives, in the form of atmospheric concentration levels for eight pollutants are detailed in the National Air Quality Strategy (NAQS). Of these eight pollutants, seven are assessed by local authorities. The eighth pollutant, ozone, is assessed at a national level due to its transboundary nature. The seven pollutants that are assessed and the objectives that apply in Scotland are presented in Table 1.

3 LOCAL PERSPECTIVE

Comhairle nan Eilean Siar covers the group of islands off the west coast of Scotland including Lewis, Harris, North Uist, South Uist, Benbecula, Barra and Vatersay, which is shown in Figure 1. The population of the islands is approximately 26,370 with the majority resident on Lewis. The largest town is Stornaway on Lewis with a population of around 5,600. Many of the islands are connected by causeways including the A859 between Lewis and Harris and the A865 between North Uist, Benbecula and South Uist. The islands are connected to mainland Scotland through airports at Stornaway, Barra and Benbecula, and ports at Stornaway, Castlebay and Tarbert.

The most recent review and assessment report conducted by Comhairle nan Eilean Siar was an Updating and Screening Assessment⁶ in 2006. The report concluded that there were no locations where air quality objectives for any pollutant were likely to be exceeded.

⁶ Local Air Quality Management Updating and Screening Assessment 2006. Comhairle nan Eilean Siar, October 2006.

Table 1: NAQS air pollutant objectives

Pollutant	Air quality objective			
	Concentration	Measured as	Equivalent percentile	Date to be achieved by
Benzene	16.25 µg/m ³	running annual mean	-	31 / 12 / 2003
	3.25 µg/m ³	running annual mean	-	31 / 12 / 2010
1,3-butadiene	2.25 µg/m ³	running annual mean	-	31 / 12 / 2003
Carbon monoxide (CO)	10 mg/m ³	running 8-hour mean	-	31 / 12 / 2003
Lead	0.5 µg/m ³	annual mean	-	31 / 12 / 2004
	0.25 µg/m ³	annual mean	-	31 / 12 / 2008
Nitrogen dioxide (NO ₂)	200 µg/m ³ not to be exceeded more than 18 times per year	1-hour mean	99.79 th percentile of 1-hour means	31 / 12 / 2005
	40 µg/m ³	annual mean	-	31 / 12 / 2005
Particulate (PM ₁₀)	50 µg/m ³ not to be exceeded more than 35 times a year	24-hour mean	90.4 th percentile of 24-hour-means	31 / 12 / 2004
	40 µg/m ³	annual mean	-	31 / 12 / 2004
	50 µg/m ³ not to be exceeded more than 7 times a year	24-hour mean	98 th percentile of 24-hour-means	31 / 12 / 2010
	18 µg/m ³	annual mean	-	31 / 12 / 2010
Sulphur dioxide (SO ₂)	125 µg/m ³ not to be exceeded more than 3 times a year	24-hour mean	99 th percentile of 24-hour means	31 / 12 / 2004
	350 µg/m ³ not to be exceeded more than 24 times a year	1-hour mean	99.7 th percentile of 1-hour means	31 / 12 / 2004
	266 µg/m ³ not to be exceeded more than 35 times a year	15-minute mean	99.9 th percentile of 15-minute means	31 / 12 / 2005

4 MONITORING DATA

Comhairle nan Eilean Siar monitor NO₂ using passive diffusion tubes at four locations in Stornaway, shown in Figure 2. No monitoring is undertaken for any other pollutant. The results of the monitoring in 2006 are presented in Table 2. The results have had a bias adjustment factor of 0.96 applied to them to take account of laboratory bias when the tubes are analysed. Bias adjustment factors are calculated by comparing measured NO₂ concentrations from co-located diffusion tubes and an automatic NO₂ monitoring station. The diffusion tubes for Comhairle nan Eilean Siar are analysed by Glasgow Scientific Services, and the bias adjustment factor is obtained through result of co-location studies carried out by other Councils who also use this laboratory for diffusion tube analysis.

Table 2: NO₂ diffusion tube monitoring results 2006

Location	Type of location	NO ₂ annual mean concentration (µg/m ³)	Data capture (%)
MacMillan Brae, Stornaway	Background	19.1	100
Barony Square, Stornaway	Background	15.9	100
Cromwell Street, Stornaway	Kerbside	3.6	100
Bank Street, Stornaway	Kerbside	7.7	90

Measured NO₂ concentrations are below the NO₂ annual mean objective of 40µg/m³. Two of the diffusion tubes are positioned in locations where highest NO₂ levels are expected (i.e. highest traffic volume) and these both have measured annual mean concentrations of less than half the objective concentration. Measured concentrations in 2006 are consistent with previous year's results.

5 NEW LOCAL DEVELOPMENTS

Comhairle nan Eilean Siar and the Scottish Environment Protection Agency (SEPA) were consulted to determine whether there have been any new developments (industrial, commercial or domestic) since 2006 U&SA which may have an impact on local air quality concentrations.

The only new process that has commenced operation in the last year is the waste transfer/treatment plants at Creed, Lewis and Market Stance, Uist. The Lewis plant will incorporate an Anaerobic Digestion system that will produce a biogas which will be combusted for electricity generation. Combustion generated gases (NO_x, SO_x, CO, PM) will be produced in this process, although there will also be a reduction in the generation of landfill gases due to changed waste procedures by the Council. Following the Progress Report guidance, this change will be logged and considered more thoroughly during the next full round of Review and Assessment.

A list of all SEPA regulated processes in the Comhairle nan Eilean Siar area is presented in Table 3.

Table 3: SEPA registered industrial processes in Comhairle nan Eilean Siar

Company, Location	Activity	Permit Number
PPC PART A PROCESSES		
Bennadrove Landfill, Lewis	Landfill	PPC/A/1004275
PPC PART B PROCESSES		
Arnish Point Yard, Stornaway	Blast cleaning and painting	PPC/N/0060015
No name given	Mobile plant	PPC/N/0060023
Aggregate Industries	Mobile plant	PPC/N/0060045
Scotland Gas Networks, Stornaway	Gas odourising	PPC/N/0060054
Marybank Quarry, Stornaway	Crushing, grinding and screening – Mobile crushing	PPC/N/0060057
Parkend Industrial Estate, Stornaway	Crushing, grinding and screening – Mobile crushing	PPC/N/0060057
Macaulay Askernish, South Uist	Crushing and screening	PPC/N/0060062
Marybank Industrial Estate, Stornaway	Fish ensiling	PPC/N/0060063
Crogarry Beag Quarry, North Uist	Crushing, screening, roadstone coating and bulk cement processes	PPC/N/0060078
I A & C Maciver, Stornaway	Mineral processes	PPC/N/0060091
Aggregate Industries, Marybank Quarry, Stornaway	Mineral processes	PPC/B/1003191
64-67 Bayhead St, Stornaway	Unloading of petrol at a service station	PPC/B/1004369
John Mackay & Sons	Mobile plant	PPC/B/1015622
Euroclean, Stornaway	Dry cleaning	PPC/B/1015246
Uist Laundry, Benbecula	Dry cleaning	PPC/B/1015228
IPC PROCESSES		
Stornaway Power Station	Combustion	IPC/N/50010v02

6 ACTION PLANS/AIR QUALITY STRATEGIES

Comhairle nan Eilean Siar do not have any air quality action plans or air quality strategies. The Local Transport Plan is due for revision, although it is not thought that there will be any measures included in this plan that will specifically address air quality.

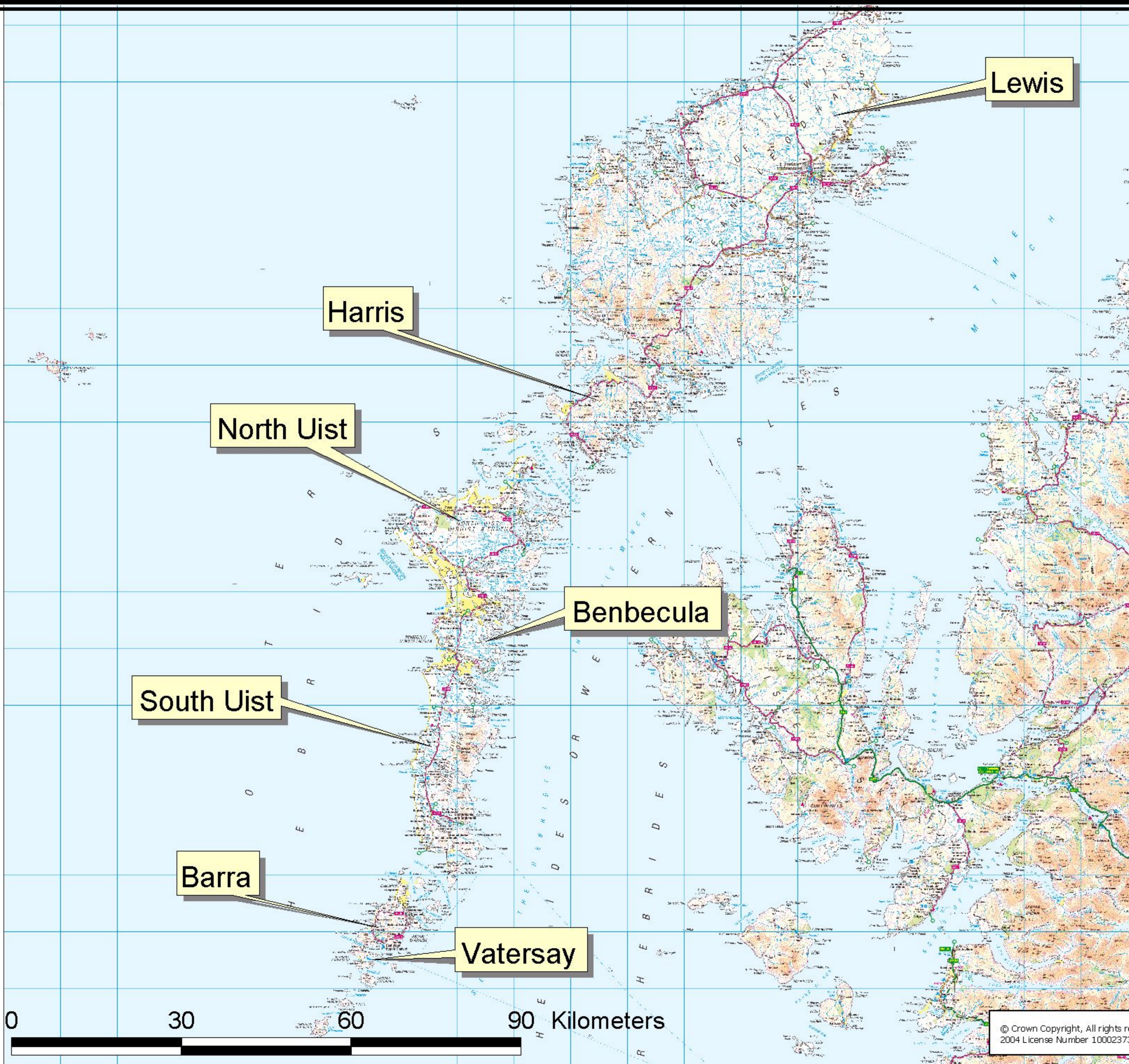
7 PLANNING AND AIR QUALITY

Comhairle nan Eilean Siar have developed an internal procedure where all commercial planning applications that are received are referred to the environmental health department for consultation. The environmental health department can then ensure that a robust air quality assessment is carried out in the planning application where appropriate.

8 CONCLUSIONS

BMT Cordah Limited has conducted a Progress Report on local air quality on behalf of Comhairle nan Eilean Siar. The assessment included recent pollutant monitoring data, new local developments with an impact on air quality, how air quality issues are addressed within the planning system and what air quality strategies are being implemented by the Council.

The Progress Report has concluded that the NAQS objectives are unlikely to be exceeded at any location. One new industrial process has been identified for potential investigation at the next full round of Review and Assessment, a waste treatment and transfer plant at Creed, Lewis.



Legend

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Scale	1:1,200 000

Project Title
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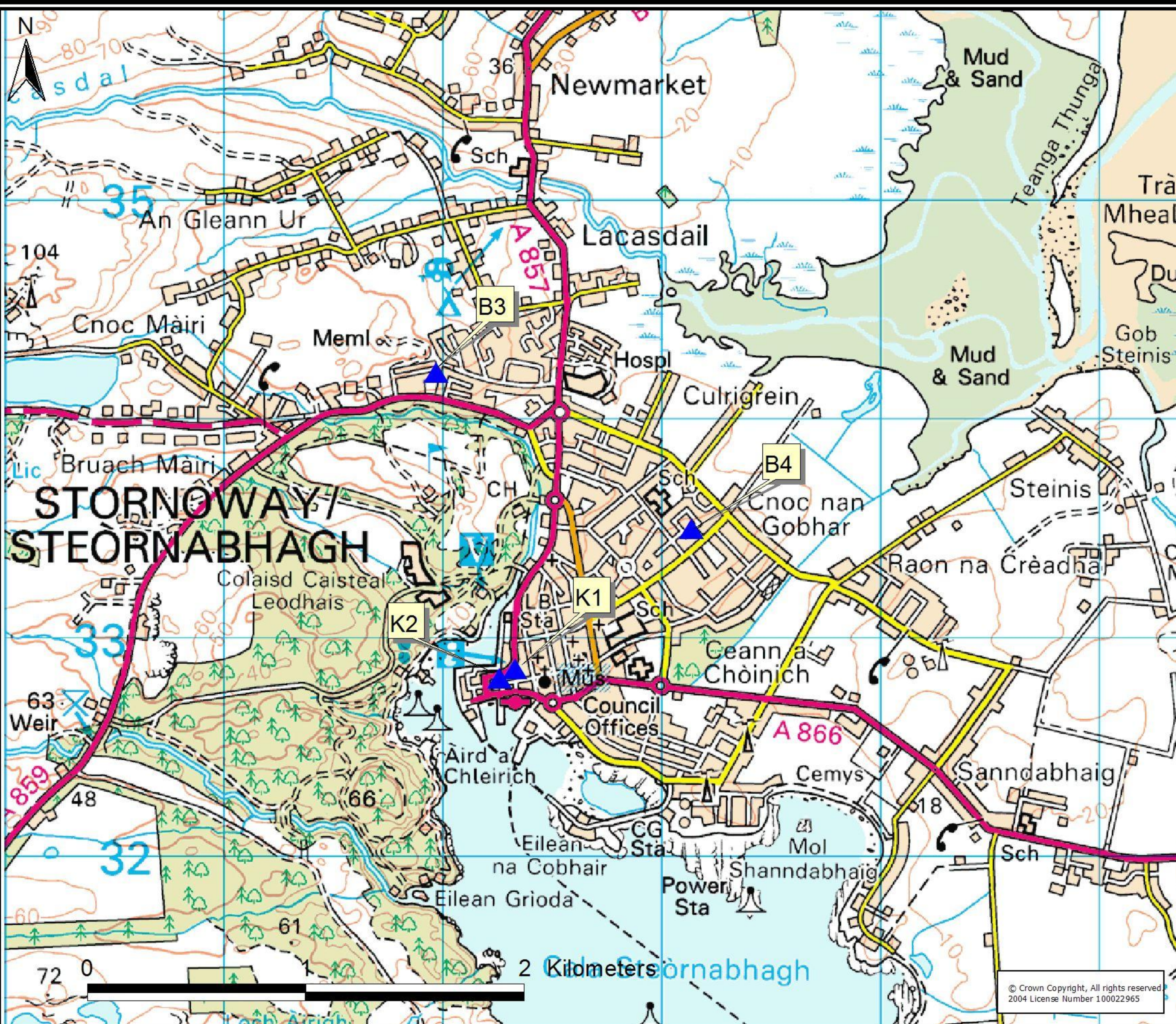
Figure no. 1

Figure title
Comhairle Nan Eilean Siar

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- Legend**
- ▲ Diffusion_tubes.shp
 - K1 - Cromwell Street
 - K2 - Bank Street
 - B3 - MacMillan Brae
 - B4 - Barony Square

Date	May 2007
Scale	1:25000
Project Title	LAQM Progress Report
Figure no.	2

Figure title
NO₂ diffusion tube locations

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