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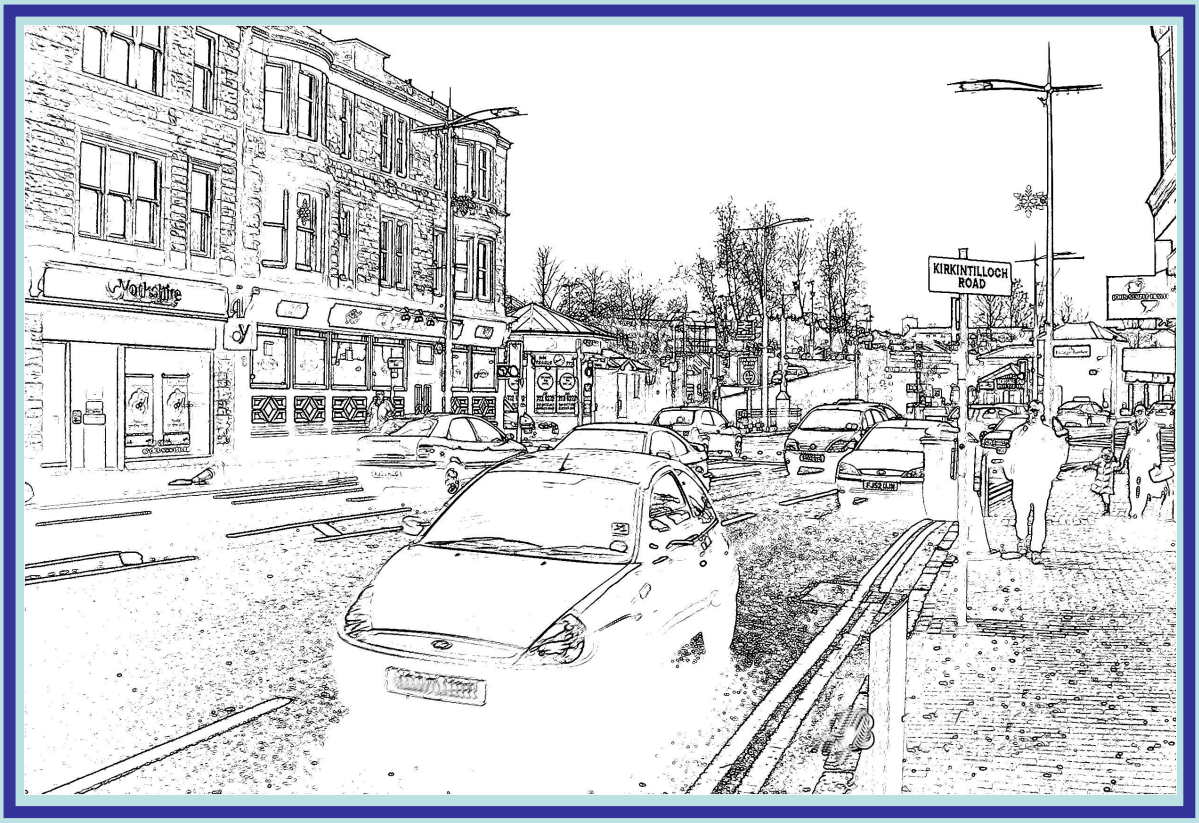
East Dunbartonshire Council
Local Air Quality Management
Progress Report 2005



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BMT Cordah Limited
ENVIRONMENTAL CONSULTANCY
AND INFORMATION SYSTEMS

LAQM Progress Report 2005

A Report for East Dunbartonshire Council

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Glossary

AQMA	Air Quality Management Area
CO	Carbon Monoxide
DMRB	Design Manual for Roads and Bridges Screening Model (v1.0g)
HDV	Heavy Duty Vehicles (Includes Rigid & Articulated HGVs, Buses and Coaches)
IPPC	Integrated Pollution Prevention and Control
LAQM	Local Air Quality Management
LDV	Light duty vehicle
NAEI	National Atmospheric Emissions Inventory
NAQS	National Air Quality Strategy
NETCEN	National Environment Technology Centre (AEA Environmental Technology)
NO_2	Nitrogen Dioxide
PM_{10}	Particulate matter with an (equivalent aerodynamic) diameter of ten microns (10µm) or less
SEPA	Scottish Environment Protection Agency
SO_2	Sulphur Dioxide
U&SA	Updating and Screening Assessment

Units

$\mu g/m^3$	Microgramme per metre cubed ($1x10^{-6}$ grammes per cubic metre)
mg/m^3	Milligramme per metre cubed ($1x10^{-3}$ grammes per cubic metre)
percentile	The xth percentile is the value at which x percent of the time the measured or modelled pollutant concentration is less than the value

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1 INTRODUCTION

BMT Cordah Ltd has been commissioned by East Dunbartonshire Council to carry out the 2005 Local Air Quality Management (LAQM) Progress Report.

LAQM Framework and Report Scope

The Environment Act 1995 and subsequent regulations require local authorities to conduct a Review and Assessment of air quality in their area to assess compliance with the standards and objectives set out in the *Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2000* (Reference 1). For local authorities within Scotland further regulations are set out in the *Air Quality (Scotland) Regulations 2000* (Reference 2) and *Air Quality (Scotland) Amendment Regulations 2002* (Reference 3).

The pollutants contained within the National Air Quality Strategy (NAQS) and their relevant objectives for Scotland are shown in Table 1.

The framework of LAQM requires a Review and Assessment of air quality by local authorities on a regular basis.

The second round of the Review and Assessment commenced in 2003 and has two phases. The first stage of the second round of Review and Assessment was an Updating and Screening Assessment (U&SA). The U&SA considered any changes that had occurred since the first round of Review and Assessment that may have affected air quality.

Where a risk of exceedence of an air quality objective at a location with relevant public exposure was identified by the U&SA then a Detailed Assessment is required. A Detailed Assessment will consider any risk of exceedence of an objective to greater depth in order to determine whether it is necessary to declare an Air Quality Management Area (AQMA).

During years when an U&SA is not being conducted local authorities are required to submit a Progress Report detailing ongoing air quality monitoring results and providing updated information on air quality issues within the local authority area. A Progress Report includes information on new developments, policies or monitoring data relating to air quality. Air quality information and data is used to identify changes in air quality that result in a potential exceedence of the NAQS objectives.

Purpose

The aim of the report is to provide a review and update on air quality issues within the East Dunbartonshire Council area since the previous review and assessment report. Updated information is used to identify areas where there is the potential for exceedence of NAQS objectives.

This report is the 2005 Progress Report of air quality within East Dunbartonshire Council and follows the guidance set out in the LAQM.TG(03) technical guidance (Reference 4) and LAQM.PRG(03) progress report guidance (Reference 5).

Table 1: Pollutant Objectives outlined in the NAQS

Pollutant	Air Quality Objective			Date to be achieved by
	Concentration	Measured as	Equivalent percentile	
Benzene	16.25 µg/m^3	running annual mean	-	31st December 2003
	3.25 µg/m^3	running annual mean	-	31st December 2010
1,3-butadiene	2.25 µg/m^3	running annual mean	-	31st December 2003
Carbon monoxide (CO)	10 mg/m^3	running 8 hour mean	-	31st December 2003
Lead	0.5 µg/m^3	annual mean	-	31st December 2004
	0.25 µg/m^3	annual mean	-	31st December 2008
Nitrogen dioxide (NO_2)	200 µg/m^3 not to be exceeded more than 18 times per year	1-hour mean	99.79th percentile of 1-hour means	31st December 2005
	40 µg/m^3	annual mean	-	31st December 2005
Particulate (PM_{10})	50 µg/m^3 not to be exceeded more than 35 times a year	24-hour mean	90.4th percentile of 24-hour-means	31st December 2004
	40 µg/m^3	annual mean	-	31st December 2004
	50 µg/m^3 not to be exceeded more than 7 times a year	24-hour mean	98th percentile of 24-hour-means	31st December 2010
	18 µg/m^3	annual mean	-	31st December 2010
Sulphur dioxide (SO_2)	125 µg/m^3 not to be exceeded more than 3 times a year	24-hour mean	99th percentile of 24-hour means	31st December 2004
	350 µg/m^3 not to be exceeded more than 24 times a year	1-hour mean	99.7th percentile of 1-hour means	31st December 2004
	266 µg/m^3 not to be exceeded more than 35 times a year	15-minute mean	99.9th percentile of 15-minute means	31st December 2005

1.1 Summary of Air Quality Assessment in East Dunbartonshire

East Dunbartonshire Council completed an U&SA in April 2003 (Reference 6). The U&SA concluded that it was unlikely that NAQS objectives for NO_2, SO_2, lead, CO, benzene or 1, 3-butadiene would be exceeded within the East Dunbartonshire Council area. However, the U&SA concluded that there was potential for the NAQS objectives for PM_{10} to be exceeded due to road traffic at busy junctions and that a Detailed Assessment was required.

A Detailed Assessment (Reference 7) was undertaken in 2004 and included a dispersion modelling study of road traffic emissions and updated monitoring results for both NO_2 and PM_{10}. It was concluded that the 2004 objectives for PM_{10} would be met, but that there was a possibility that both the annual mean objective and the 24-hour mean objective for 2010 would be exceeded. Automatic monitoring data was only available for 6 months and NO_2 diffusion tube concentrations did not indicate an exceedence at sensitive receptors. It was therefore concluded that the decision to declare an AQMA for PM_{10} would be taken upon completion of a years automatic monitoring and that the NO_2 diffusion tube results would be reconsidered upon completion of a full years co-location study at Bishopbriggs Cross.

An addendum (Reference 8) to the Detailed Assessment was produced upon completion of a years automatic monitoring. The report concluded that it was likely that NAQS objectives for NO_2 and PM_{10} would be exceeded and that there was the requirement for an AQMA for PM_{10} at Bishopbriggs Cross and AQMAs for NO_2 at Bishopbriggs Cross and the junction of Kirkintilloch Road (A803) and Colston Road (B182). In addition it was recommended that automatic monitoring be considered for PM_{10} at Bearsden Cross and the Industry St / Lenzie Road / Townhead junction in Kirkintilloch and for NO_2 at Bearsden Cross.

2 AIR QUALITY MONITORING

East Dunbartonshire Council maintain a network of monitoring sites located throughout the Council area, and in particular within the areas of Bishopbriggs, Bearsden, Milngavie and Kirkintilloch. The network includes monitoring for NO_2 and PM_{10}. East Dunbartonshire Council has previously monitored SO_2. The current monitoring sites are located as follows:

- eleven NO_2 diffusion tube sites in Bearsden;
- five NO_2 diffusion tube sites in Bishopbriggs;
- a NO_2 diffusion tube site in Kirkintilloch;
- a triplicate diffusion tube co-location site at Bishopbriggs Cross;
- three SO_2 bubbler analysers in Kirkintilloch;
- a SO_2 bubbler analyser in Bearsden;
- a SO_2 bubbler analyser in Bishopbriggs;
- a SO_2 bubbler analyser in Milngavie;
- a SO_2 bubbler analyser in Milton of Campsie;
- an automatic beta attenuation PM_{10} monitoring site at Bishopbriggs Cross; and
- an automatic NO_2 monitoring site in Bishopbriggs Cross.

The monitoring results and associated information for each of these sites are presented in Sections 2.1 to 2.3. The locations of each monitoring site are shown on Figures 2 to 4 in Appendix 1.

Proposed Monitoring Sites

In 2005 East Dunbartonshire Council plan to install an automatic analyser for PM_{10} and NO_2 at Bearsden Cross. The modelling study carried out as part of the Detailed Assessment identified the potential for exceedences of the NAQS objectives at Bearsden Cross. It is intended that monitoring results from the automatic analysers will be used to verify model predictions and determine the requirement for an AQMA at the junction.

2.1 NO_2 Monitoring

The locations of NO_2 monitoring sites are presented in Figure 2 in Appendix 1.

2.1.1 QA/QC Procedures

The laboratory analysis of the passive diffusion tubes is undertaken by Glasgow Scientific Services (GSS). GSS prepare the diffusion tubes using the 20% triethanolamine in water technique. The laboratory undertake the analysis of diffusion tubes for several local authorities including Glasgow City Council and North Lanarkshire Council. Both councils undertake annual co-location studies of diffusion tubes with automatic monitoring stations. The Detailed Assessment utilised cross-comparison data obtained from Glasgow City Council to obtain a bias correction factor for the diffusion tubes. In 2004 East Dunbartonshire Council conducted a co-location study at Bishopbriggs Cross. The results from the triplicate co-location study indicate that the diffusion tubes are under-predicting the NO_2 concentration compared with the automatic analyser. Results from other neighbouring local authority co-location studies carried out using the GSS laboratory reported different bias correction factors. All available co-location factors for 2004 from neighbouring local authorities using GSS are provided in Table 2.

Table 2: Laboratory bias correction factors for Glasgow Scientific Services 2004

Site Name	Annual Mean Diffusion Tube Concentration (µg/m^3) (Dm)	Annual Mean Chemiluminescence Concentration (µg/m^3) Cm	Bias Adjustment Factor (Cm/Dm)	Diffusion Tube Bias 100* (Dm – Cm)/Cm (%)
East Dunbartonshire Council	33.3	35.5	1.07	-6.1
North Lanarkshire Council	29	23	0.81	23.3
Glasgow City Council City Centre	43.4	32.0	0.74	35.6
Glasgow City Council City Chambers	38.4	49.9	1.30	-22.9
Glasgow City Council Kerbside	90.8	68.0	0.75	33.5
GSS Mean for 2004			**0.93**	**12.7**

Due to the large variation in bias adjustment factors from neighbouring local authorities, and that historically diffusion tubes from GSS have over-predicted rather than under-predicted the automatic analyser results, the five available factors have been averaged to derive a mean bias adjustment factor for 2004. This method is used in the laboratory inter-comparison study to determine the overall bias factor for each laboratory for a given year. The mean bias adjustment factor has been applied to the NO_2 diffusion tube results for East Dunbartonshire Council.

2.1.2 NO_2 Monitoring Sites and Results

The NO_2 monitoring site parameters are presented in Table 3.

Table 3: Current NO_2 Diffusion Tube Monitoring Sites in East Dunbartonshire

Site	Site No.	Location	Grid Reference	Site Category	2004 Data Capture Rate (%)
Bishopbriggs 5	BB5	Huntershill House, Crowhill Rd	NS 60948 69610	Urban Background	83
Bishopbriggs 6	BB6	145 Kirkintilloch Rd	NS 61016 70198	Roadside	100
Bishopbriggs 8	BB8	77 Brackenbrae Avenue	NS 60842 70278	Urban Background	100
Bishopbriggs 12	BB12	South of Arnold Clark garage, Kirkintilloch Rd	NS 60581 69527	Roadside	100
Bishopbriggs 13	BB13	1495 Springburn Rd	NS 60549 69312	Roadside	100
Bishopbriggs 14A	BB14	128 Crowhill Rd, Bishopbriggs Cross	NS 60990 70126	Roadside	100
Bishopbriggs 14B	BB14	128 Crowhill Rd, Bishopbriggs Cross	NS 60990 70126	Roadside	100
Bishopbriggs 14C	BB14	128 Crowhill Rd, Bishopbriggs Cross	NS 60990 70126	Roadside	100
Bearsden 1	BD1	118 Drymen Rd	NS 54218 72193	Roadside	100
Bearsden 3	BD3	5 Ravelston Rd	NS 54655 70158	Urban Background	92
Bearsden 4	BD4	8 Lowther Av	NS 53075 73382	Urban Background	83
Bearsden 7	BD7	Traffic lights at Bearsden Cross	NS 54269 72069	Kerbside	100
Bearsden 8	BD8	Hanging basket at Bearsden Cross	NS 54275 72047	Kerbside	100
Bearsden 9	BD9	Switchback at Braemar Crescent	NS 54751 70621	Roadside	83
Bearsden 10	BD10	Junction of Maryhill Rd and Rannoch Dr	NS 55394 70683	Roadside	100
Bearsden 13	BD13	Canniesburn Toll	NS 54809 71057	Kerbside	100
Bearsden 14	BD14	1 Milngavie Rd, Canniesburn Toll	NS 54877 71000	Kerbside	92
Bearsden 15	BD15	1 Milngavie Rd, Canniesburn Toll	NS 54898 71023	Kerbside	92
Kirkintilloch 15	K15	Townhead lights	NS 65640 73501	Roadside	83

All sites recorded a data capture rate greater than 83% during 2004 with twelve sites having a data capture rate of 100%. The technical guidance states that a data capture rate of greater than 90% is necessary for the purposes of Detailed Assessments and Further Assessments.

The annual mean NO_2 concentrations recorded during 2004 are presented in Table 4. Conversion factors provided in the LAQM.TG (03) technical guidance have been applied to the corrected 2004 annual mean concentrations to predict the annual mean NO_2 concentration at each site for 2005 and enable comparison with the 2005 NAQS objective. Sites where there is a predicted exceedence have been shaded.

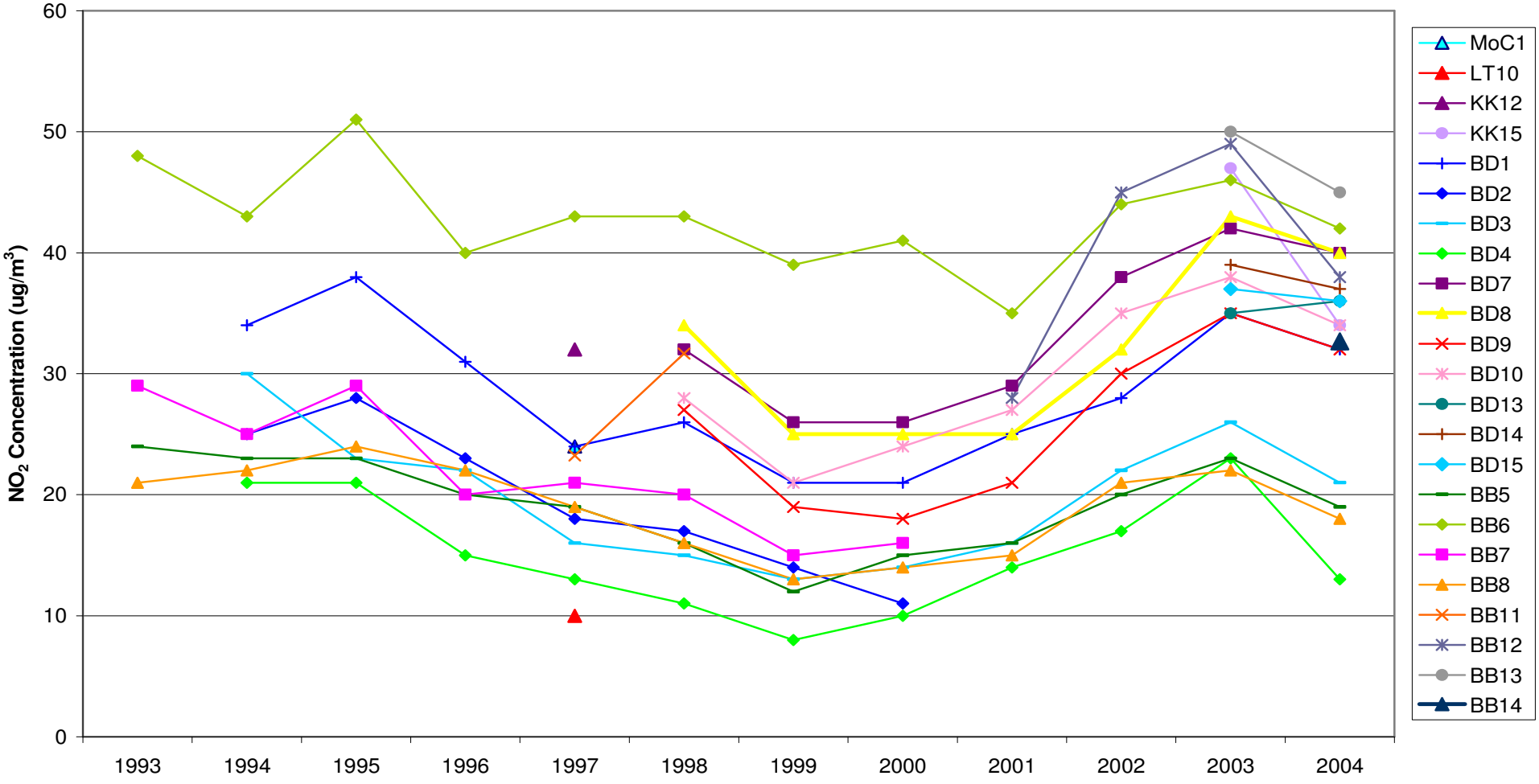
Table 4: Annual mean NO_2 concentrations for East Dunbartonshire

Site	Measured 2004 annual mean concentration (µg/m^3)	2004 annual mean concentration corrected for bias (µg/m^3)	2005 predicted annual mean concentration (µg/m^3)
Bishopbriggs 5	19	18	17
Bishopbriggs 6	42	39	38
Bishopbriggs 8	18	17	16
Bishopbriggs 12	38	35	34
Bishopbriggs 13	45	42	41
Bishopbriggs 14A	34	32	31
Bishopbriggs 14B	32	30	29
Bishopbriggs 14C	32	30	29
Bearsden 1	32	30	29
Bearsden 3	21	20	19
Bearsden 4	13	12	12
Bearsden 7	40	37	36
Bearsden 8	40	37	36
Bearsden 9	32	30	29
Bearsden 10	34	32	31
Bearsden 13	36	34	33
Bearsden 14	37	34	34
Bearsden 15	36	34	33
Kirkintilloch 15	34	32	31

Four exceedences of the 2005 annual mean NAQS objective for NO_2 were recorded during 2004. However correcting for diffusion tube bias leaves one exceedence at Bishopbriggs 13. The results in Table 4 indicate that it is likely that the NO_2 annual mean NAQS objective for 2005 will be exceeded at one location in 2005, namely Bishopbriggs 13, which is located at the junction between Kirkintilloch Rd (A803) and Colston Rd (B812). Monitoring results for Bishopbriggs 6, Bearsden 7 and Bearsden 8 monitoring sites indicate that annual mean NO_2 concentrations for 2005 will be close to the NAQS objective for 2005.

NO_2 concentrations for East Dunbartonshire Council from 1993 to 2004 are plotted in Chart 1.The measured NO_2 concentrations within East Dunbartonshire do not follow the predicted national trends set out in the *National Air Quality Strategy*, which predicts a decrease in NO_2 concentrations. Between 1993 and 1999 NO_2 concentrations decreased by approximately 35%, with some sites, notably Bearsden 4, decreasing by over 60%. Statistical analysis shows that between 1993 and 1999 there was a significant negative correlation (< -0.7) between year and annual mean NO_2 concentration at each site ranging from -0.63 to -0.98. However, since 2000 the trend across the council area shows an increase in NO_2 concentrations with a peak annual mean NO_2 concentration occurring in 2003. Since 2000, there has been a moderate (0.5–0.7) or significant (>0.7) positive correlation between year and annual mean NO_2 concentration at each site ranging from 0.48 to 0.91. Most sites experienced a decrease in NO_2 in 2004 compared to 2003, which was an exceptionally poor year for air quality across the UK..

Chart 1: Annual Mean NO_2 Concentration 1994 - 2004



2.2 SO_2 Monitoring

East Dunbartonshire Council has monitored SO_2 since 1976 using a network of 8-port bubblers. The SO_2 concentrations are determined by the net titration method. Currently there are seven locations within East Dunbartonshire where SO_2 is monitored, although historically the Council has monitored SO_2 at a total of fourteen sites. The current SO_2 monitoring locations and site parameters are shown in Table 5 and in Figure 3 in Appendix 1.

Table 5: Current SO_2 Bubbler Monitoring Sites in East Dunbartonshire

Site	Site No.	Location	Grid Reference	2004 Data Capture Rate (%)
Bearsden 5	BD5	Westerton Hall, Maxwell Av, Bearsden	NS 53980 70605	87
Bishopbriggs 5	BB5	Huntershill House, Crowhill Rd	NS 60948 69610	86
Kirkintilloch 8	K8	Merkland Recreation Centre, Merkland Place	NS 67000 74100	100
Kirkintilloch 9*	K9	Unit 4, Whitegates, Lenzie Rd	NS 65555 73350	100*
Kirkintilloch 10	K10	John St Hostel, John St	NS 65935 74115	98
Lennoxtown 9	L1	Craighead Primary School, Craighead Rd	NS 65220 76830	98
Milngavie 1	M1	1 Grange Av	NS 55550 74590	92

* site operational for 3 months 01/01/04 – 31/03/04

The LAQM.TG(03) technical guidance provides corrections factors for calculating the 99.9th percentile of 1-hour means and the 99.7th percentile of 15-minute means based upon the maximum daily mean recorded during a given year. The SO_2 concentrations are determined by net titration, therefore the technical guidance states that the maximum daily mean should be factored by 1.25 to account for the under-read of bubblers at high concentrations. Equations 1 and 2 provide the estimates for the 15-minute and 1-hour mean percentiles corresponding to the NAQS objectives for SO_2.

Equation 1

99.9th percentile of 15-minute means = 1.8962 * maximum daily mean

Equation 2

99.7th percentile of 1-hour means = 1.3691 * maximum daily mean

The annual mean SO_2 concentrations recorded in East Dunbartonshire during 2004 are presented in Table 6.

The monitoring results in Table 6 indicate that the monitoring site at Kirkintilloch 10 experienced the highest SO_2 concentrations during 2004. However, the projected short-term SO_2 concentrations for 2004 are significantly below the 24-hour, 1-hour and 15-minute NAQS objectives for SO_2.

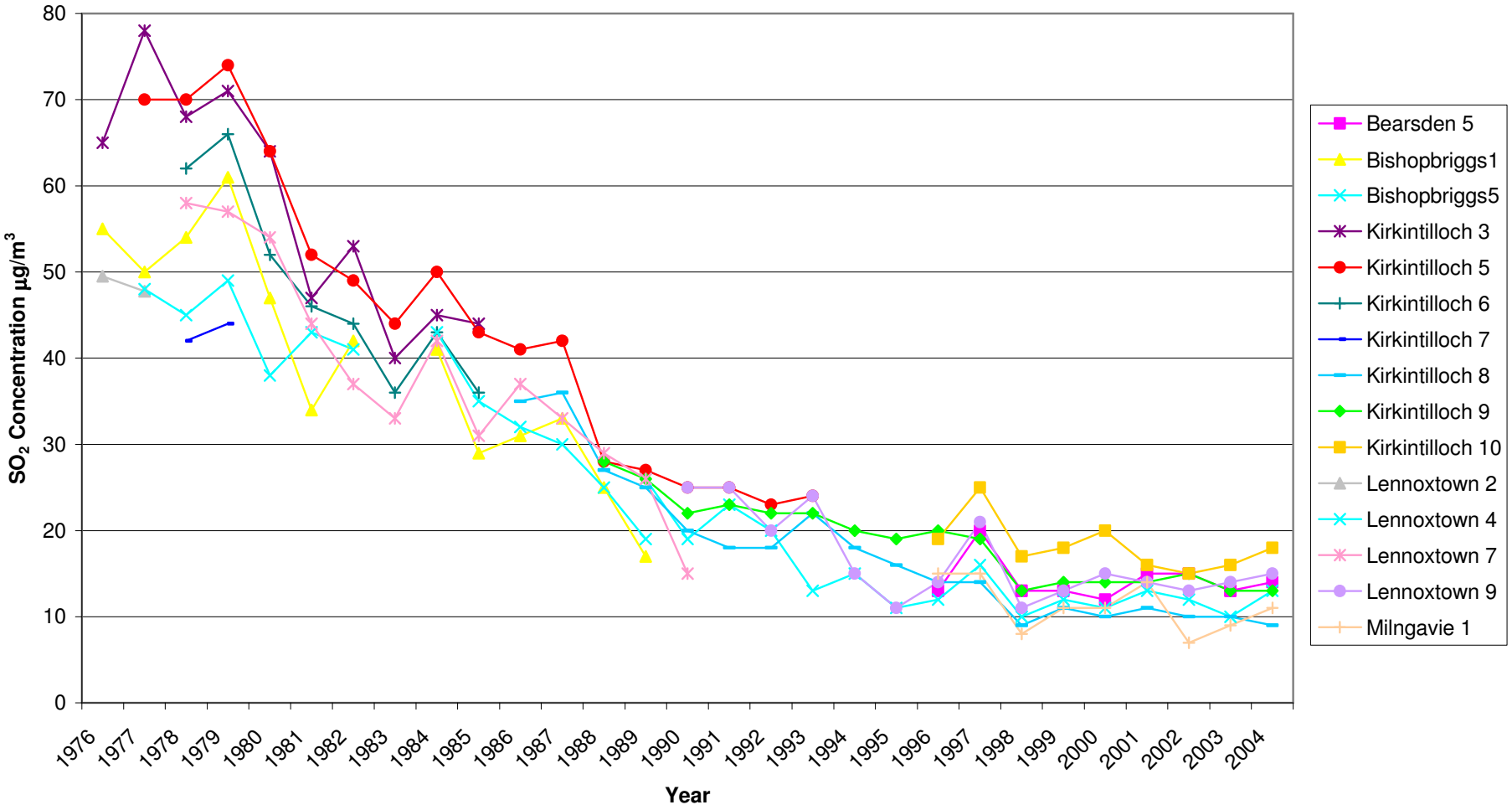
Table 6: SO_2 Concentrations for East Dunbartonshire during 2004.

Site	Annual mean concentration ($\mu g/m^3$)	99th percentile of 24-hour mean concentration ($\mu g/m^3$)	maximum 24-hour mean concentration ($\mu g/m^3$)	99.7th percentile of 1-hour mean concentration ($\mu g/m^3$)	99.9th percentile of 15-minute mean concentration ($\mu g/m^3$)
Bearsden 5	14	28	39	53	73
Bishopbriggs 5	13	27	48	65	90
Kirkintilloch 8	9	24	30	41	57
Kirkintilloch 9*	13	19	24	33	45
Kirkintilloch 10	18	56	70	96	133
Lennoxtown 9	15	33	49	67	92
Milngavie 1	11	19	30	41	57

* site operational for 3 months 01/01/04 – 31/03/04

The general trend in SO_2 concentrations across East Dunbartonshire since 1976 is shown in Chart 2. The graph shows a marked decline in SO_2 concentrations between 1976 and 1998 with a significant negative correlation (< -0.7) between year and annual mean SO_2 concentration at each site ranging from -0.76 to -0.96. The annual mean concentrations have remained fairly constant since 1998 with an insignificant negative correlation (> -0.7) between year and annual mean SO_2 concentration at each site ranging from -0.21 to -0.56.

Chart 2: Annual Mean SO_2 Concentrations 1976 to 2004



2.3 PM_{10} Monitoring

East Dunbartonshire Council undertake the monitoring of PM_{10} at a roadside site at Bishopbriggs Cross. The monitor is located approximately 20m (metres) to the south east of the centre of the junction of Kirkintilloch Road, Springfield Road, Kenmure Avenue and Crowhill Road. PM_{10} is monitored using a beta attenuation analyser. A detailed site plan showing the monitoring location is provided in Figure 4 in Appendix 1. The analyser has been continuously operational since December 2003. An automatic analyser is being considered for PM_{10} monitoring at Bearsden Cross, where the modelling study carried out as part of the Detailed Assessment predicted the likelihood of exceedence of the 2010 annual mean PM_{10} objective.

A summary of the monitoring data obtained is presented in Table 7. The monitoring data has been factored by 1.3 in line with LAQM.TG(03) technical guidance to compare with gravimetric techniques on which the objectives are based. In addition, when validating the monitoring data before calculating the mean concentrations any recorded negative values were removed.

Table 7: 2004 PM_{10} Monitoring Results for Bishopbriggs Cross, 2004

Annual mean concentration (µg/m^3)	Maximum 24-hour mean concentration (µg/m^3)	98th Percentile of 24-hour mean concentration (µg/m^3)	No. of exceedences of 50 µg/m^3	Data capture rate (%)
23.4	74.4	54.9	9	99.2

The annual average concentration has been calculated based on the actual monitored concentrations. The overall data capture rate for the year is greater than 90% therefore the results meet criteria for use in Detailed Assessments and declarations of AQMAs.

The measured annual mean concentration in 2004 exceeds the 2010 annual mean objective level of 18µg/m^3. Future PM_{10} concentrations are expected to decline as a result of increased efficiency and emission reduction techniques on motor vehicles. The annual mean concentration has therefore been projected forward to 2010 using the techniques contained within LAQM.TG(03) technical guidance. The method used for the projection is summarised in Equation 3.

Equation 3

Monitored concentration 2004 (gravimetric)	= 23.4 µg/m^3	
Secondary Concentration 2001 (from maps)	= 3.77 µg/m^3	
Coarse PM_{10} fraction (from LAQM.TG(03))	= 10.5 µg/m^3	
Secondary Concentration 2004	= 3.77 µg/m^3 x 0.932	= 3.51 µg/m^3
Secondary Concentration 2010	= 3.77 µg/m^3 x 0.795	= 3.00 µg/m^3
Primary Concentration 2004	= 23.4 – 3.51 – 10.5	= 9.39 µg/m^3
Primary Concentration 2010	= 9.39 x (0.815/0.930)	= 8.23 µg/m^3
Total PM_{10} Concentration 2010	= 8.23 + 3.00 + 10.5	= **21.7 µg/m^3**

The total projected PM_{10} concentration in 2010 therefore exceeds the 2010 annual mean NAQS objective of 18µg/m^3.

Nine exceedences of the 24-hour mean objective of 50µg/m^3 were recorded in 2004. Seven exceedences of the 24-hour mean objective are permitted by NAQS objectives in 2010. The number of exceedences of the 24-hour mean objective cannot be directly projected forward to future years. LAQM.TG(03) technical guidance provides an estimation of the number of 24-hour mean exceedences based on the annual mean. The estimation is provided below in Equation 4.

Equation 4

Predicted Total PM_{10} Concentration 2010	= 21.7
No of exceedences of the 24-Hour objective in 2010	= -18.5 + 0.00145 * $(21.7)^3$ + (206 / 21.7)
	= **5.8**

From the predicted annual mean PM_{10} concentration for 2010 it is estimated that there will be 6 exceedences of the 24-hour mean objective of 50µg/m^3 in 2010. This is below the permitted seven exceedences. However, the number of predicted exceedences is close to the permitted number of exceedences and short term pollutant concentrations are highly dependent upon meteorological conditions.

It is therefore concluded that there is the potential for an exceedence of the 24-hour mean PM_{10} objective for 2010 at Bishopbriggs Cross.

3 NEW DEVELOPMENTS

The LAQM.PRG(03) progress report guidance lists three categories of new developments that may affect air quality and thus should be assessed in the progress report. The three categories are:

- new industrial developments (Part A or Part B processes);
- new commercial, residential, transport or amenity developments likely to have an impact on air quality which have been granted planning permission; and
- new landfill or quarry locations with relevant public exposure.

The National Society for Clean Air (NSCA) provides further guidance (Reference 9) on the type of new commercial, residential, transport or amenity developments that are likely to cause significant impacts on local air quality. NSCA guidance suggests that developments that should be considered for air quality impacts are those resulting in:

- increased road traffic congestion;
- a change in traffic flow greater than 5%;
- a change in vehicle speed greater than 10kph;
- any road with greater than 10,000 vehicles per day;
- altering traffic composition (e.g. bus stations , HGV parks or increased delivery traffic from a retail distribution centre);
- new car parking facilities (more than 300 spaces), lorry or coach parks; and
- developments located close to sensitive ecological sites or within areas known to be of poor air quality (examples include construction of new residential properties close to a major road or within an AQMA, or developments within or near to designated environmental sites e.g. SSSIs).

The criteria provided by NSCA have been used to assess developments with air quality impacts that have been granted planning permission by East Dunbartonshire Council since the U&SA.

3.1 Industrial Developments

SEPA were consulted regarding any significant changes to the regulated industrial processes within East Dunbartonshire Council. Currently within East Dunbartonshire Council area there is one part A regulated process, P W Hall Ltd, and twenty nine part B regulated processes including thirteen petrol stations, a brass foundry, a printing process, a furniture manufacturer, a waste oil burner, seven quarry product processes, three road vehicle re-finishing processes and two plastic / metal coating processes. A list of currently regulated processes is provided in Appendix 2.

P W Hall Ltd are manufacturers of compounds and colour concentrates for the plastics and allied industries. The plant is located in Woodilee Industrial Estate in Kirkintilloch and emits particulates, lead and ketone into the atmosphere via nine air vents. P W Hall Ltd submitted a PPC permit application to SEPA in December 2004, which is currently being considered. The current IPC authorisation (IPC/W/00051) will remain in existence until July 2005, when it is expected that the PPC permit (PPC/A/100058) will supersede the IPC permit. The PPC application includes an assessment of emissions to air and concludes that emissions comply with relevant air quality limits and that P W Hall Ltd does not have a significant impact on air quality. There are no significant changes predicted in air quality emissions from the site. It is therefore unlikely that emissions will lead to an exceedence of NAQS objectives.

One variation notice was issued by SEPA during 2004 to John McGavigan Ltd, a printing process in Bishopbriggs; however the change to emissions was not considered significant. It is therefore unlikely that emissions will lead to an exceedence of NAQS objectives.

Bishopbriggs Service Station on Kirkintilloch Road in Bishopbriggs has closed and Lennox Service Station on Main Street Lennoxtown has changed from a Part B authorisation to a deemed PPC authorisation. This will result in a positive or negligible impact on air quality in the vicinity of the two service stations.

The cement batching process operated by Robslee Concrete Co. Ltd and the vehicle re-spraying process operated by Arnold Clark Automobiles Ltd have changed from Part B authorised processes to a deemed PPC authorised processes. The authorisation changes will not result in changes to atmospheric emissions.

There have been three PPC authorisations issued to new processes since the last round of review and assessment:

- Fexible ducting Ltd, a metal and plastic coating process in the north of Milngavie. Emissions to the atmosphere are likely to include SO_2, NO_2, PM_{10}, CO and VOCs;
- William Begg & Son operate a waste oil burner at premises on Milngavie Road, Bearsden. Emissions to the atmosphere are likely to include SO_2, NO_2, PM_{10}, CO and VOCs; and
- H. Morris & Co. Ltd, a furniture manufacturer at Glenmill Works in Campsie Glen. Atmospheric emissions are likely to be VOCs associated with the solvents used and stored on site.

The PPC authorisations for the three new processes were deemed duly made and it is therefore considered that they are unlikely to result in exceedences of the NAQS objectives. No other industrial processes were determined to have been installed or to have significantly altered their atmospheric emissions therefore it is unlikely that changes in industrial emissions will result in the potential to exceed NAQS objectives.

3.2 Transport, Residential and Commercial Developments

There are five major developments within East Dunbartonshire which have been considered for air quality impacts and granted planning consent since the last round of review and assessment.

Katrine Water Project: Alteration to position and detail of raw water pumping station and access track associated with the Katrine Water Project. Construction has commenced at Barrachan, Milngavie Reservoirs. The impact to air quality associated with construction traffic is expected to be short-term and negligible. The air quality impacts associated with the operation of the site are not expected to be significant in terms of the NAQS objectives.

Canniesburn Hospital Site: Construction of 238 new properties at the Canniesburn Hospital site has commenced. The development is likely to increase road traffic along the A809 Switchback Road, A81 Maryhill Road and around Canniesburn Toll. However, the air quality impact is likely to be negligible.

ASDA at Bearsden: Consent was granted to demolish the existing ASDA at Bearsden and build a new shop on the existing site. The rebuilding of the ASDA is not expected to have a significant impact on air quality.

Cancer research facility: A new cancer research facility is currently under construction at Garscube Estate adjacent to the A809 Switchback Road. The increase in road traffic along switchback Road is not expected to result in a significant impact on air quality.

Housing and business development in Lennoxtown: Construction of 116 properties for housing and businesses on Station Road in Lennoxtown is likely to commence in 2005. The development will lead to an increase in road traffic along A891 through Lennoxtown and the B822 Campsie Road. The increase in road traffic will have a negative impact on air quality within Lenoxtown, however it is unlikely to be significant with respect to NAQS objectives due to the low levels of background pollutants and lack of sources in the area.

3.3 Quarries and Landfills

No new quarries or landfills have been granted planning permission within East Dunbartonshire since the last round of review and assessment.

3.4 East Dunbartonshire Local Plan and Future Developments

The planning applications are listed on the East Dunbartonshire Council website and updated weekly. All planning applications are made available to the Environmental Health Officers prior to planning permission being granted and any air quality issues are raised in consultation with Development Control and the developer.

The *East Dunbartonshire Local Plan was* adopted in February 2005 meaning that there is now a greater commitment to the delivery of a number of major projects. Currently there are ten major planning proposals, contained in the *East Dunbartonshire Local Plan*, where air quality impact is a consideration. The projects are set out in Table 8.

The projects have yet to be granted planning permission and the air quality impact in relation to road traffic emissions should be assessed. Particular attention should be taken for developments along Kirkintilloch Road in Bishopbriggs, where there is a proposed AQMA.

4 LOCAL AIR QUALITY PLAN

East Dunbartonshire Council has not formulated a local air quality strategy. However, the Council has continued to comply with the requirements of the LAQM review and assessment programme. Air quality reports, including the 2003 Updating and Screening Assessment and 2004 Detailed Assessment, are available for the public to view on the East Dunbartonshire Council website.

Table 8: Proposed Developments within East Dunbartonshire

Project	Description	Status	Likely Air quality impacts
Kirkintilloch Link Road	New road by-passing Kirkintilloch town centre	outline planning permission granted in September 2004, implementation 2006 - 2008	An increase in road traffic along several roads in the north and east of Kirkintilloch is likely to have a negative impact on air quality at properties along the new road. A reduction in road traffic in the centre of Kirkintilloch is likely to see an improvement in air quality in Kirkintilloch
Bishopbriggs Relief Road	New road by-passing Bishopbriggs town centre to be constructed in 6 phases: construction of the Bishopbriggs Relief Road (phase 4) from a new roundabout west of Westerhill Farm on Westercleddens Road to a new roundabout north of the railway bridge on Westerhill Road	Planning application lodged for phase 4, phases 1-3 completed	A reduction in congestion and road traffic volumes along the A803 in Bishopbriggs resulting in a positive impact on air quality within Bishopbriggs town centre. An increase in traffic volumes on adjoining routes is likely to have a negative impact on air quality in the vicinity of these roads. Overall impact is likely to be positive drawing road traffic away from the area of the proposed AQMA
Bishopbriggs East Housing	Up to 400 new properties	No progress	As yet undetermined
Woodilee Housing Proposal	920 new properties and business units on the former Woodilee Hospital site in Kirkintilloch	Likely to get outline consent soon, possible start date 2006.	An increase in road traffic along roads within Kirkintilloch is likely to have a negative impact on air quality at properties along principal roads within Kirkintilloch.
Lennox Castle Hospital	Up to 320 new properties, landscaping and access road in Lennoxtown	Likely to get outline consent soon, possible start date 2006.	A possible increase in traffic along the A891 through Lennoxtown and the B822 Campsie Road to Krikintilloch will have a negative impact on air quality within Lenoxtown – Not likely to be significant due to the low levels of background pollutants and sources in the area.
Kilmardinny / Westpark	New housing, business and retail developments, a rail halt and sports pitches	Project still under discussion	An increase in traffic along the A81 between Canniesburn Toll and Milngavie is likely to have a negative effect on air quality along the A81 Milngavie Road.
St Andrews Campus / Bearsden High School	New secondary school, playing fields, conversion of listed buildings for residential use, development of new residential units, improved vehicular access, associated car parking and landscaping	Project still under discussion, possible start date 2008	A possible increase in road traffic along the A809 Stockiemuir Road / Drymen Road with associated negative impact to air quality at properties along the road. Unlikely to have a significant impact.
Low Moss Prison	Erection of a new prison and associated road works, landscaping and demolition of existing buildings	Outline consent likely to be granted soon.	New prison simply replacing old building therefore the development is likely to have a negligible impact on air quality in the vicinity of the Bishopbriggs Relief Road.
Westerhill Road Industrial development	Land decontamination; provision of access road and road layout and the formation of serviced business and general industrial plots	Consent granted to East Dunbartonshire Council, timescale uncertain	A possible increase in road traffic along Kirkintilloch Road, in particular industrial vehicles (HGVs) is likely to have a negative impact on air quality at properties along Kirkintilloch Road.
Southbank Road, Kirkintilloch	Redevelopment of canal basin including canalside housing, arts and cultural centre, industrial / business developments and a new access route.	Several outline consents granted, implementation uncertain	An increase in road traffic within the Townhead area of Kirkintilloch is likely to lead to a negative impact on air quality within the centre of Kirkintilloch.

5 LOCAL TRANSPORT STRATEGY

The East Dunbartonshire Council Roads Department identified six proposed developments to the road network in East Dunbartonshire which are listed in the *Local Transport Strategy* that are likely to affect air quality in the next 5 to 10 years.

- Significant development of the green field area between the Glasgow to Milngavie railway line and the A81 Milngavie Road at Kilmardinny is likely to result in an increase in traffic along the A81 between Canniesburn Toll and Milngavie. This is likely to have a negative effect on air quality along the A81 Milngavie Road.

- Rationalisation of the A808 Roman Road and A81 Milngavie Road junction will lead to improved traffic control and reduced congestion. This is likely to have a positive impact upon NO_2 and PM_{10} concentrations in the vicinity of the junction.

- Signalisation of the A81 Canniesburn Toll will improve the flow of traffic and thus is likely to have a positive effect upon air quality, notably for PM_{10} and NO_2, in the vicinity of the roundabout.

- The construction of the Bishopbriggs Relief Road is likely to lead to an increase in traffic volumes along Auchinairn Road, Wester Cleddens Road and Westerhill Road and therefore is likely to have a negative impact on air quality in the vicinity of these roads. However, the Bishopbriggs Relief Road will reduce congestion and road traffic volumes along the A803 in Bishopbriggs resulting in a positive impact on air quality, notably PM_{10} and NO_2, within Bishopbriggs town centre.

- Introduction of bus priority lanes along the A803 Kirkintilloch Road in Bishopbriggs is likely to lead to a reduction in congestion and lead to a positive impact to air quality within Bishopbriggs town centre.

- The completion of the Kirkintilloch Link Road is expected to lead to increases in road traffic along several roads in the north and east of Kirkintilloch. This will have a negative impact on air quality within Kirkintilloch, notably along Woodilee Road, New Lairdsland Road, Waterside Road, Woodhead Avenue, Larkfield Road, Woodside Avenue, Foxes Road, Nursery Park Estate, Earlsburn Road. However, the Kirkintilloch Link Road is expected to reduce traffic along the B757 Lenzie Road and adjoining roads (Industry Street, Crosshill Road and Kirkintilloch Road). The reduction in traffic along these routes is expected to have a positive impact on air quality in Kirkintilloch town centre.

The six proposed road network developments may vary due to planning and development constraints. The predicted impact of these proposed road network developments may also differ depending upon any alterations to the proposed schemes.

6 CONCLUSIONS AND RECOMMENDATIONS

East Dunbartonshire Council's U&SA concluded that it was unlikely that NAQS objectives for benzene, 1, 3-butadiene, carbon monoxide, lead, NO_2, SO_2 or PM_{10} in 2004 would be exceeded. The report did however identify the potential for exceedence of the PM_{10} NAQS objectives in 2010 at several road junctions. The 2004 Detailed Assessment and 2005 Addendum to the Detailed Assessment concluded that monitoring data corroborated with the modelling predictions that there was a potential for exceedence of the NAQS objectives for PM_{10} and NO_2 at Bishopbriggs Cross and for NO_2 at the junction of Kirkintilloch Road (A803)and Colston Road (B812) in Bishopbriggs.

Monitoring data obtained within East Dunbartonshire in 2004 for PM_{10} and NO_2 indicate that the conclusions of the Detailed Assessment Addendum with respect to PM_{10} and NO_2 remain valid. 2004 SO_2 monitoring data indicates that conclusions of the U&SA with respect to SO_2 remain valid. No monitoring data are available for the East Dunbartonshire Council area for the remaining pollutants; however, no new emission sources have been identified since the 2003 U&SA. The conclusion of the U&SA that it is unlikely that there will be any exceedences of NAQS objectives for benzene, 1, 3-butadiene, carbon monoxide, lead and SO_2, remains valid.

Since the U&SA, completed in 2003, there have been no new residential, commercial or industrial developments within the East Dunbartonshire Council area which are likely to result in an exceedence of NAQS objectives. Assessment of air quality impacts from road traffic emissions associated with several proposed commercial and residential developments will be required before planning permission is granted.

It is concluded that it is likely there will be an exceedence of the 2010 NAQS objectives for PM_{10} and of the 2005 annual mean NAQS objective for NO_2 in Bishopbriggs. The Detailed Assessment Addendum Report identified that there was a requirement for an AQMA for PM_{10} and NO_2 at Bishopbriggs Cross and an AQMA for NO_2 at the junction of Kirkintilloch Road (A803) and Colston Road (B812) in Bishopbriggs.

East Dunbartonshire Council intend to declare an AQMA for NO_2 and PM_{10} in Bishopbriggs along Kirkintilloch Road from Colston Road to the north of Bishopbriggs Cross at Cadder Roundabout.

The Council will be required to carry out a Further Assessment of NO_2 and PM_{10}.and must develop an Air Quality Action Plan to be submitted to the Scottish Executive 1 year from the date of declaration of the AQMA.

It is anticipated that East Dunbartonshire will commence monitoring of PM_{10} and NO_2 at Bearsden Cross using automatic analysers to verify modelled predictions of exceedence as part of the further assessment.

7 REFERENCES

Reference 1 UK National Air Quality Strategy for England, Wales, Scotland and Northern Ireland, Department of Environment, Food and Rural Affairs, January 2000

Reference 2 Air Quality (Scotland) Amendment Regulations 2000

Reference 3 Air Quality (Scotland) Amendment Regulations 2002

Reference 4 Part IV of the Environment Act 1995 Local Air Quality Management Technical Guidance, LAQM.TG(03), DEFRA, January 2003

Reference 5 Part IV of the Environment Act 1995 Local Air Quality Management Progress Report Guidance, LAQM.PRG(03), DEFRA, December 2003

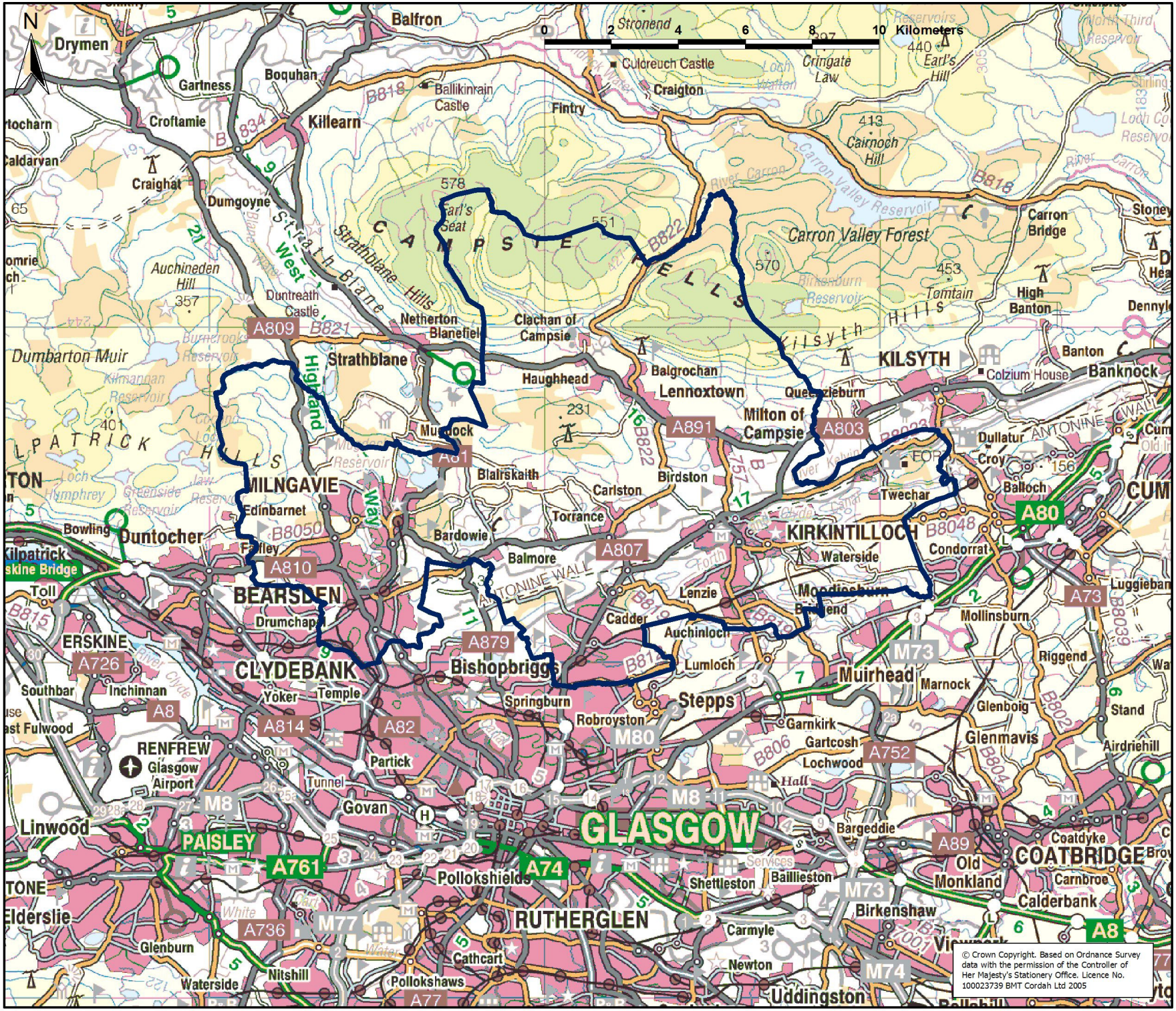
Reference 6 LAQM Updating and Screening Assessment for East Dunbartonshire Council, July 2003

Reference 7 LAQM Detailed Assessment 2004 for East Dunbartonshire Council, BMT Cordah report Ref. EDC.001, August 2004

Reference 8 Addendum LAQM Detailed Assessment 2004 for East Dunbartonshire Council, BMT Cordah report Ref. EDC.003(1), March 2005

Reference 9 Development Control: Planning for Air Quality, NSCA, November 2004

Appendix 1: Figures



East Dunbartonshire Council

Legend

East Dunbartonshire Council

Date	28th April 2005
Scale	refer to scale bar

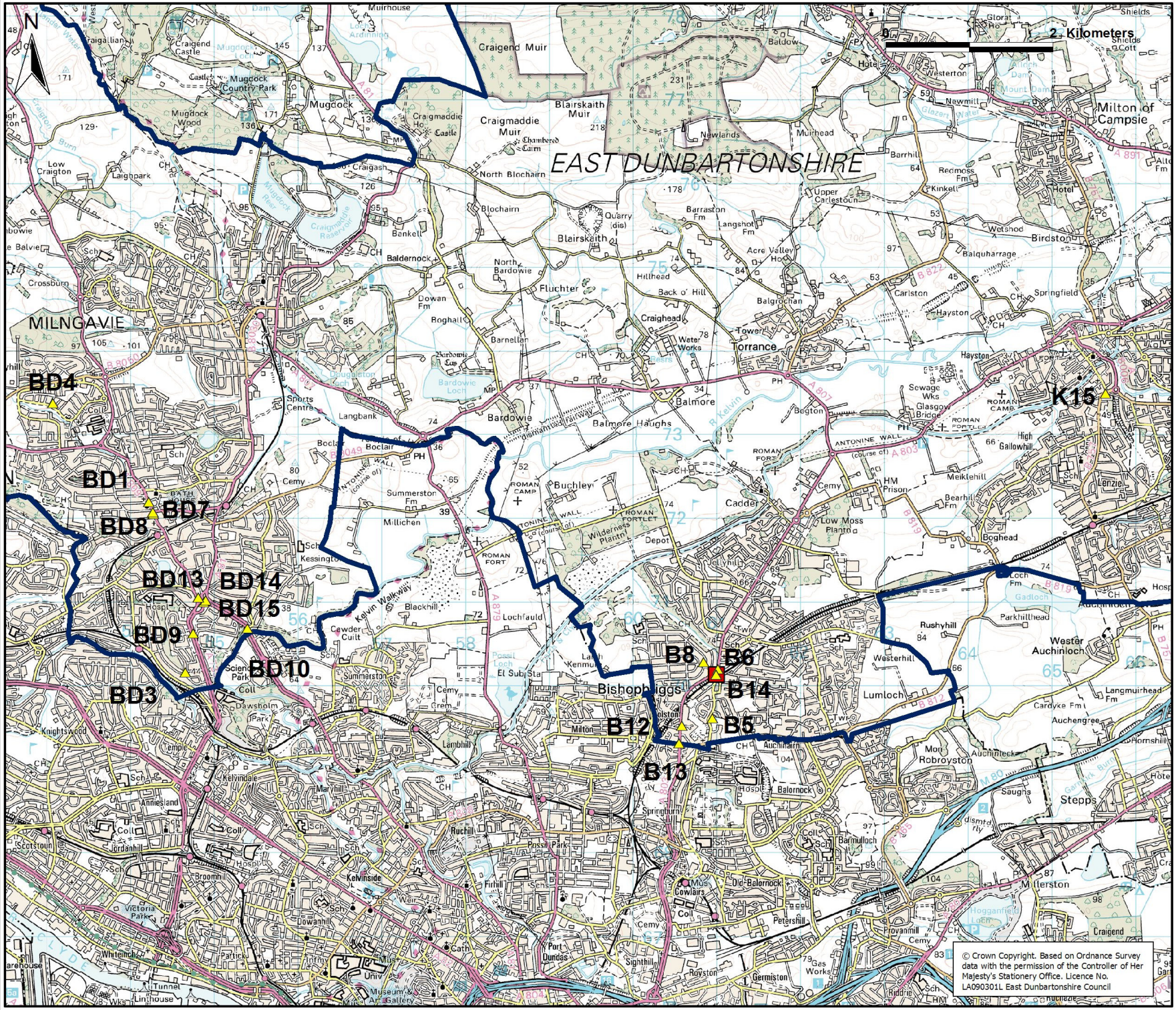
Project title
LAQM Progress Report 2005

Figure no. 1

Figure title
East Dunbartonshire Council Area

BMT Cordah Limited
Doherty Building
Pentlands Science Park
Penicuik, Edinburgh, EH26 0PZ
Website: http://www.bmtcordah.com
BMT Cordah Limited is a member of the BMT group of companies

BMT CORDAH Ltd



East Dunbartonshire Council

Legend

- NO2 diffusion tube sites
- Automatic Monitor
- East Dunbartonshire Council Boundary

Date	28th April 2005
Scale	refer to scale bar

Project title
LAQM Progress Report 2005

Figure no. 2

Figure title
Locations of NO2 Monitoring Sites in East Dunbartonshire Council

BMT Cordah Limited
Doherty Building
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Penicuik, Edinburgh, EH26 0PZ
Website: http://www.bmtcordah.com
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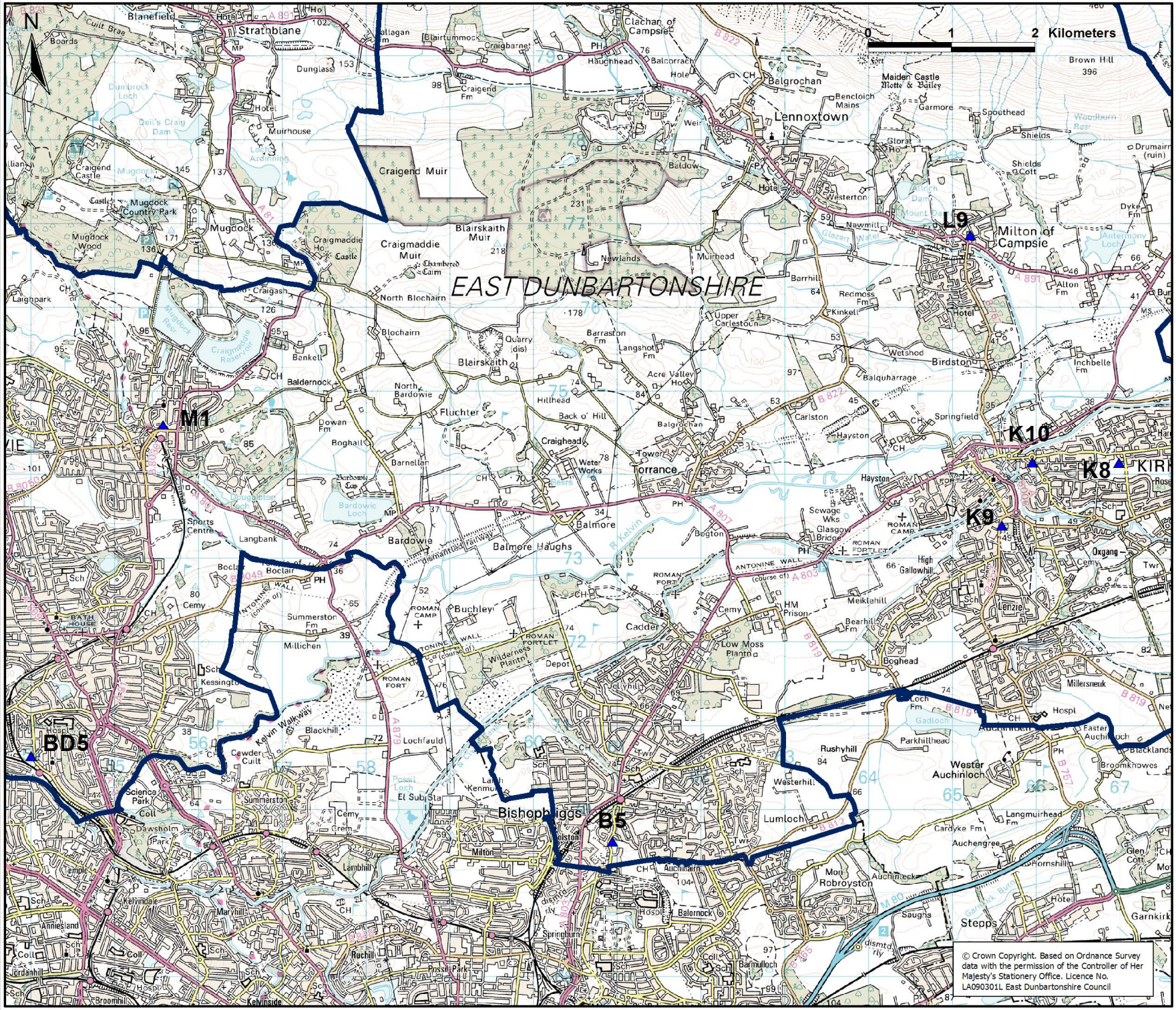
BMT CORDAH Ltd



East Dunbartonshire Council

Legend

- SO2 monitoring sites
- East Dunbartonshire Council Boundary

B5: Huntershill House, Crowhill Rd, Bishopbriggs

BD5: Westerton Hall, Maxwell Av, Bearsden

K8: Merkland Recreation Centre, Merkland Pl, Kirkintilloch

K9: Unit 4, Whitegates, Lenzie Rd, Kirkintilloch

K10: John St Hostel, John St, Kirkintilloch

L9: Craighead Primary School, Craighead Rd, Milton of Campsie

M1: 1 Grange Av , Milngavie

Date	28th April 2005
Scale	refer to scale bar

Project title
LAQM Progress Report 2005

Figure no. 3

Figure title
Locations of SO2 Monitoring Sites in East Dunbartonshire Council

BMT Cordah Limited
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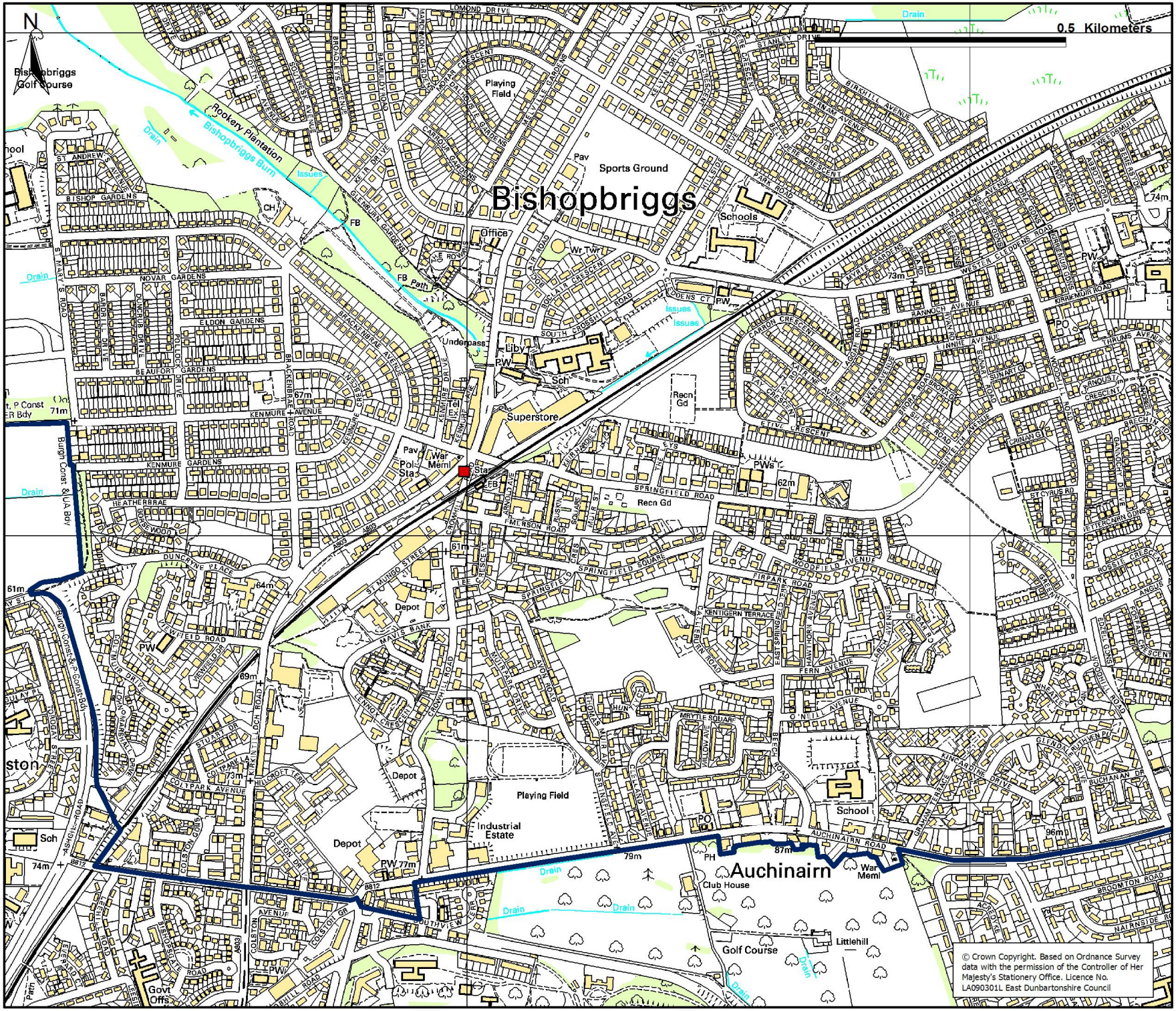

East Dunbartonshire Council

Legend

- Automatic Monitor
- East Dunbartonshire Council Boundary

Date	28th April 2005
Scale	refer to scale bar

Project title
LAQM Progress Report 2005

Figure no. 4

Figure title
Locations of PM10 Monitoring Sites in East Dunbartonshire Council

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Appendix 2: SEPA Regulated Processes

PART A Regulated Processes

Reference No	Date Received	Appln for Variation Received	Applicant/Permit Holder	Site Address	NGR	Type of Facility/Process	Schedule Refs	Relevant Licences	Permit Issue Date
PPC/A/100058	15-Dec-04		P W Hall Ltd Woodilee Industrial Estate Kirkintilloch Glasgow G66 3UR	Woodilee Industrial Estate Kirkintilloch Glasgow G66 3UR	NS 662 729	Inorganic Chemicals (plastics compounding)	4.2	IPC/076/1995	

Application Number	Date Authorised	Date Varied	Name of Applicant	Site Address	Number	Process Description	Process Number	Authorisation Number	Date
IPJ/1/SC/1	24/07/1995	16/08/99 03/12/03	P W Hall Ltd	Woodilee Industrial Estate Kirkintilloch	1.0	Inorganic chemicals	4.5	IPC/076/1995	09/08/1994

Part B Regulated Processes

SEPA Ref No	Application Date	Company	Premises	Street	Town	Process	Section	Issued	Status	Last Var Date
APC/W/00008	11/11/1992	Marley Building Materials	Cadder	Kirkintilloch Road	Bishopbriggs	Cement Batching and manufacture of concrete roof tiles	3.1	20/01/1994	Authorised	09/08/2002
APC/W/00228	17/09/1992	Montgomery [Daniel Montgomery & Son]		Old Mill Park Industrial Estate	Kirkintilloch	Coating of plastic moulded bottle closures by spray applicaiton, including metallising lacquers	6.5	26/05/1994	Authorised	17/09/2002
APC/W/00234	23/11/1992	Young, Archibald		Milton Road	Kirkintilloch	Brassfounders	2.2	14/04/1994	Authorised	12/06/2002
APC/W/20042	11/10/1996	Gillespies of Lenzie	3	Woodilee Industrial Estate	Lenzie	Road Vehicle Re-finishing (body repair workshop)	6.5	18/08/1997	Authorised	30/11/2001
APC/W/20131	09/04/1998	BP Oil UK Ltd	Canniesburn Service Station	Maryhill Road	Glasgow	Unloading petrol at service station	1.4	14/01/1999	Authorised	22/05/2002
APC/W/20144	09/04/1998	Calanike Retailing Ltd	Kirkie Filling Station, 80	Waterside Road	Kirkintilloch	Unloading of petrol at a service station	1.4	09/06/1999	Authorised	26/10/2001
APC/W/20170	12/08/1998	Malthurst Ltd	Malthusrt Bearsden	Stockiemuir Road	Bearsden	Unloading of petrol at a service station	1.4	05/11/1998	Authorised	17/06/2002
APC/W/20229	20/10/1998	Gillespie [J Gillespie (ME) Ltd]	Millersneuk Garage, 63-69	Auchinloch Road	Lenzie	Unloading of petrol at a service station	1.4	26/03/1999	Authorised	17/06/2002
APC/W/20230	20/10/1998	Gillespie [J Gillespie (ME) Ltd]	Lenzie Service Station	Kirkintilloch Road	Kirkintilloch	Unloading of petrol at a service station	1.4	16/06/1999	Authorised	22/05/2002
APC/W/20233	20/10/1998	Gillespie [J Gillespie (ME) Ltd]	Milngavie Filling Station, 42	Glasgow Road	Milngavie	Unloading of petrol at a service station	1.4	24/12/1998	Authorised	04/07/2002
APC/W/20234	20/10/1998	Gillespie (J Gillespie (ME) Ltd	Whitehill Filling Station, 54-56	Kilsyth Road	Kirkintilloch	Unloading of petrol at a service station	1.4	12/03/1999	Authorised	23/05/2002
APC/W/20290	12/11/1998	Esso Petroleum Company Ltd	Kessington Service Station, 45	Milngavie Road	Bearsden	Unloading of petrol at a service station	1.4	14/01/1999	Authorised	20/05/2002
APC/W/20300	16/11/1998	Shell UK Ltd	Westermains Service Station, 31	Glasgow Road	Kirkintilloch	Unloading of petrol at a service station	1.4	31/03/1999	Authorised	17/06/2002
APC/W/20302	16/11/1998	Shell UK Ltd	Shell Low Moss (773)	Kirkintilloch Road	Bishopbriggs	Unloading of petrol at a service station	1.4	30/03/1999	Authorised	17/06/2002
APC/W/20348	07/12/1998	Potter [William Potter]	Hillfoot Auto Supplies, 145/147	Milngavie Road	Bearsden	Unloading of petrol at a service station	1.4	14/01/1999	Authorised	31/08/2001
APC/W/20402	29/01/1999	FuelForce Ltd	Bearsden Filling Station, 23/25	Duntocher Road	Bearsden	Unloading of petrol at a service station	1.4	10/03/1999	Authorised	31/08/2001
APC/W/20483	03/05/2000	McGavigan [John McGavigan Ltd]		Westerhill Road	Bishopbriggs	Printing	6.5	02/10/2000	Authorised	15/12/2004
APC/W/00003	04/12/1992	RMC Russell	Gartshore Works	Twechar	Kilsyth	Cement Batching	3.1	15/09/1994	Authorised	16/08/2002
APC/W/00004	21/12/1992	RMC Russell	Gartshore Coating Plant	Twechar	Kilsyth	Roadstone Coating	3.4	08/12/1994	Authorised	31/12/2000
APC/W/00005	11/09/1992	RMC (Scotland) Ltd	Gartshore Concrete	Twechar	Kilsyth	Cement Batching	3.1	04/03/1993	Authorised	26/03/2002
APC/W/00007	23/12/1992	RMC [Scotland] Ltd	Gartshore Mortar Plant	Twechar	Kilsyth	Mortar Batching	3.1	05/08/1993	Authorised	26/03/2002
APC/W/00226	02/10/1992	Bardon Aggregates Ltd		Balmore Road	Torrance	Concrete batching	3.1	15/04/1993	Authorised	26/09/2002
APC/W/20062	12/04/1997	Ferrymill Motors		Campsie Road	Torrance	Road vehicle respraying	6.5	30/09/1997	Authorised	09/07/2003

Reference No	Date Application Received	Applicant/Permit Holder	Site Address	NGR	Type of Facility/Process	Schedule Refs	Relevant Licenses	Date Relevant Licence Revoked	Permit Issue Date
PPC/W/30038	18-Aug-03	Flexible Ducting Ltd, Cloberfield, Milngavie, Glasgow, G62 7LW	Cloberfield, Milngavie, Glasgow, G62 7LW	NS 550 753	Coating of Metal and Plastic	6.4			07-Apr-04
PPC/W/30043	04-Sep-03	William Begg & Son, 79 Milngavie Road, Bearsden, Glasgow, G61 2DL	79 Milngavie Road, Bearsden, Glasgow, G61 2DL	NS 550 717	Waste oil burner	1.2	n/a		19-Nov-03
PPC/W/30099	Deemed 29/3/04	Mr J McGregor & Mr S McGregor T/A Lennox Service Station, Main Street, Lennoxtown, Glasgow, G65 7HA	Lennox Service Station, Main Street, Lennoxtown, G65 7HA		Petrol vapour recovery	1,2	APC/W/20143		21-Apr-04
PPC/W/30138	Deemed 17/09/2003	Robeslee Concrete Co Ltd, Southbank Road, Kirkintilloch, Glasgow, G66 1UA	Southbank Road, Kirkintilloch, Glasgow, G66 1UA	NS 6480 7320	Cement Batching	3.1	APC/W/00230		14-Jul-04
PPC/W/30152	Deemed 29/3/04	Arnold Clark Automobiles Ltd, 134 Nithsdale Drive, Glasgow, G41 2PP	64 Kirkintilloch Road, Bishopbriggs, G64 2AH	NS 607 696	Vehicle Respraying	6.5	APC/W/20487		01-Sep-04
PPC/W/30169	26-Aug-04	H. Morris & Co Ltd Glenmill Works Campsie Glen Glasgow G66 7AA	H. Morris & Co Ltd Glenmill Works Campsie Glen Glasgow G66 7AA	NS 605 793	Solvent Emissions	7			02-Mar-05
PPC/B/1003211	Deemed 22/06/2004	RMC Russell plc Tannochside Park Uddingston G71 5PH	Gartshore Coating Plant Gartshore Twechar		Roadstone coating processes	3.5	APC/W/00004		