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**SALISBURY DISTRICT COUNCIL
REVIEW AND ASSESSMENT OF AIR QUALITY
STAGE 1
Environment Act 1995
Part IV section 82**

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EXECUTIVE SUMMARY

This document has been produced as part of Salisbury District Council's obligations under Part IV of the Environment Act 1995. It is the first stage in a review and assessment of air quality to be completed by the end of December 1999.

The purpose of the review is to ascertain the quality of air within the District with respect to seven specific pollutants known to be the cause of certain health effects. The pollutants are those described in the schedule to the Air Quality Regulations 1997, and for which objective levels have been set in order to protect health. The required assessment is made in order to determine whether any of these objective levels are likely to be exceeded within the District by the end of 2005.

The introduction to the document describes the development of the legislation, its requirements and the geographical area of Salisbury District Council. The potential pollutant sources within the District, namely point sources, transport sources and area sources, are then examined and each pollutant is reviewed with regard to the contributing sources, or potential contributing sources in the area. Further to this review, an assessment is made for each pollutant regarding potential exceedances of the regulated objectives.

The document has been supported by a full public consultation exercise in the area in accordance with the requirements.



From the review of sources in the area and the available monitoring data, it has been concluded that a second stage review and assessment will be required with respect to the pollutants nitrogen dioxide and PM10. The authority is confident that there is negligible risk of the objectives for the other pollutants being exceeded by the end of 2005, and therefore it will be unnecessary to proceed to a Stage 2 review and assessment for these pollutants.

1. INTRODUCTION

The impact of air pollution, particularly on human health, is an issue of significant public and governmental concern. Contemporary air pollution problems, for example those arising from increasing vehicle emissions, have entered the political arena both in Europe and the UK. The UK has addressed these issues through legislation such as the Environment Act 1995 and the Road Traffic Reduction Act 1997. Part IV of the Environment Act 1995 required the Secretary of State to provide a National Air Quality Strategy, which was duly published in 1997.

Air quality is also an issue of sustainability. Agenda 21, the central text to come out of the Rio Earth Summit in 1992, dedicates one of its chapters to 'protecting and promoting human health'. Air quality is identified as a key element in the reduction of health risks from environmental pollution. This has also been reflected in the UK's Sustainable Development Strategy. In acknowledging that good air quality was essential for human health and the well-being of the environment as a whole, it identified one of the key issues for sustainability as 'to manage local air quality, especially in urban areas, and in particular to ensure that all relevant sectors - industry, transport, local authorities and the general public - contribute.'

1.1 Legislative Background

Historically the control of air pollution in the UK has developed in a reactive fashion, with regulations to address specific problems as they became recognised. There has not previously been a strategy or framework to deal with air quality in a holistic sense. The Environment Act 1995, Part IV, Air Quality broke

new ground in that it required the Secretary of State to prepare and publish a statement containing policies with respect to the assessment and management of air quality. This was duly published as the National Air Quality Strategy (1997) and outlined a comprehensive approach to control emissions from the main sources and to improve ambient air quality through a nation-wide system of local air quality management as well as by national policy instruments.

An Expert Panel on Air Quality Standards was commissioned by the government to devise health based standards for a range of pollutants. These were written into statute, by the Air Quality Regulations 1997, as objective levels for seven pollutants to be achieved by 31 December 2005. The standards were defined by the strategy as 'concentrations of pollutants in the atmosphere which can broadly be taken to achieve a certain level of environmental quality. The standards relating to the quality of air are based on the assessment of the effects of each pollutant on public health'. The strategy aims to tackle air pollution at a local level, particularly by giving local authorities new powers and obligations to reach specified air quality objectives. It is as part of these obligations that this document has been produced.

Under section 82 of the Environment Act 1995 it is a requirement that every local authority shall, from time to time, cause a review to be conducted of the air quality in their area. It shall also conduct an assessment of whether air quality standards and objectives are being achieved or are likely to be achieved by the end of 2005. A review and assessment of air quality is the first, and key, step in the local air quality management regime. It will provide a benchmark for action by local authorities and the mechanism by which the success of such action can be measured. The government has recommended a 3-stage approach, whereby each stage increases in detail and complexity. The complexity and detail of the review and assessment should be consistent with the risk of failing to achieve the air quality objectives by the end of 2005. Every local authority must complete the first stage, the results of which will indicate whether it is necessary to go on to a second stage. In areas, identified by the first stage as having the potential to experience elevated levels of pollutants, a second stage should be undertaken. Similarly the results of the second stage will indicate whether it will be necessary to go on to the third stage. On completion of a third stage, in areas where it appears that the objectives are not likely to be reached by 2005, an Air Quality Management Area (AQMA) must be designated. Where AQMAs have been designated, local authorities are required to prepare a written action plan setting out how they will attempt to achieve air quality standards and objectives in the designated area.

The above legislation has been supported by a series of eight technical guidance notes (see references). This document will act as the information submitted to the DETR by Salisbury District Council for the purposes of the first stage review and assessment exercise as required under Part IV of the Environment Act 1995.

1.2 The Salisbury Area

The District Council's area covers 388 square miles of South Wiltshire and has a population of approximately 105, 000. The focus of the District is the city of Salisbury itself (population approximately 39, 500) which provides many of the services for the surrounding area and is therefore an important commercial centre. The smaller settlements of Amesbury, Wilton, Downton, Mere and Tisbury provide local services and employment. The majority of the district is rural, varying in character from the New Forest in the South East to the extensive, sparsely populated areas of Salisbury Plain in the North and the remote countryside of Cranborne Chase to the South West, all linked by the valleys of the River Avon and its tributaries.

The conflicting problems of both accommodating private vehicles and improving the historic environment of the city have been appreciated for many years. Proposals for extending pedestrianisation and improving the traffic management arrangements in the city centre have been backed by extensive public consultation, which has shown that these types of measures will be welcomed. Traffic management measures have recently been made permanent in Queen Street. High Street, between New Street and New Canal, has also been pedestrianised and only service vehicles are allowed entry before 10 am and after 4 pm. At the same time as the High Street closure, New Street was made two-way between High Street and Catherine Street and traffic calming measures were introduced in Cranebridge Road and Mill Road.

Amesbury with a population of about 7 500, lies 13 kms north of Salisbury at the junction of the A303 and the A345 passing north-south through the town. The area around Amesbury is particularly rich in archaeological features, with the prehistoric monument of Stonehenge situated 2 kms to the west. Amesbury's potential air quality problems are caused by through traffic on the A345 conflicting with local traffic and pedestrians, and congestion is experienced at peak times especially near the central shopping and business area.

1.3 Pollutant Objectives

The eight pollutants that were identified as being potentially harmful to health and which the commissioned expert panel were asked to address were: benzene, 1,3-butadiene, carbon monoxide, lead, nitrogen dioxide, ozone, particulates and sulphur dioxide.

For each pollutant the panel published a report describing the main sources of the pollutant (both natural and man made), methods by which it could be measured, a review of literature relating to its health effects, and results of monitoring carried out. The panel decided on a level below which it was unlikely that health effects would arise and a relevant exposure time that might trigger health effects.

From this they deduced an objective for the pollutant which was described as an average concentration, as measured over a particular time period which should not be exceeded.

Because of ozone's transboundary nature, the Government deemed it not to be cost-effective to tackle high ozone levels by local air quality management. While local authorities are able to make a significant impact on the reduction of ozone precursors at the local level, their action is unlikely to reduce ozone levels in the same locality. The responsibility for achieving the ozone objective must, therefore, lie at the national and international levels.

The 1997 Air Quality Regulations therefore prescribe air quality objectives as set out in the National Air Quality Strategy, with the exception of ozone, as follows:

POLLUTANT	OBJECTIVE
Benzene	5 ppb or less, when expressed as a running annual mean
1,3-Butadiene	1 ppb or less, when expressed as a running annual mean
Carbon monoxide	10 ppm or less, when expressed as a running 8 hour mean
Lead	0.5 µg/m ³ or less when expressed as an annual mean
Nitrogen dioxide	150 ppb or less, when expressed as an hourly mean, and 21 ppb or less when expressed as an annual mean
Particulates	(PM ₁₀) 50 µg/m ³ or less when expressed as the 99th percentile of daily maximum running 24 hour means
Sulphur dioxide	100 ppb or less, when expressed as the 99.9th percentile of 15 minute means

The averaging periods reflect the nature of possible health effects, the pollutants with shorter averaging periods having an acute health effect and those with longer averaging periods representing a chronic health effect.

A running annual mean is a mean that is calculated on an hourly basis, yielding one running annual mean per hour. A running 8 hour mean is a mean which is calculated on an hourly basis, yielding one running 8 hour mean per hour. An annual mean is a mean which is calculated on a yearly basis, yielding one annual mean per calendar year. In the case of lead, this represents the mean of the daily levels for that year, in the case of nitrogen dioxide, the mean of the hourly means for that year. A daily maximum running 24 hour mean is a mean which is calculated on a daily basis yielding one daily 24 hour mean per day. A 15 minute mean is calculated every 15 minutes, from concentrations recorded at a frequency of not less than once every 10 seconds. An hourly mean is one calculated every hour from concentrations recorded at a frequency of not less than once every 10 seconds.

In some cases, it is appropriate that for a standard with a short averaging time, the objective for that pollutant should be expressed in percentile compliance. For example, if the objective is to be complied with at the 99.9th percentile, then 99.9% of measurements at each measuring point in the relevant period (usually one year) must be at or below the level specified. This approach is taken where 100% compliance would be disproportionately expensive, or exceedences may arise for social and cultural

reasons (e.g. bonfire night) or due to uncontrollable natural sources or adverse weather conditions.

Air quality monitoring involves measuring the ambient concentrations of pollutants in air at a given place and point in time. The measurements produced are always average values over a defined period of time, which may range from a month to a few seconds. These must be consistent with the averaging times set out in the Regulations, in order to be relevant. For guidance of specific methods of monitoring for each pollutant, see Guidance note LAQM. TG1(98) (Monitoring for air quality reviews and assessments).

1.4 The National Perspective

Reviews and assessments of air quality will provide detailed analysis at the local level to build on the national picture set out in the National Air Quality Strategy. The results of the national analysis set out in the strategy suggest that for carbon monoxide, benzene, 1,3-butadiene and lead, existing national policy

measures are expected to deliver the national air quality objectives by the end of 2005. There are exceptions to this, for example:

- for carbon monoxide in the vicinity of heavily trafficked roads or in the vicinity of certain stationary sources
- for benzene and 1,3-butadiene, in the vicinity of major industrial sources which handle, store or emit benzene or 1,3-butadiene
- for lead, only in areas with significant industrial sources which have the potential to result in elevated levels of lead in 'relevant' locations.

The National Air Quality Strategy points to a number of pollutants where further measures at the local scale may be necessary. These are sulphur dioxide, nitrogen dioxide and particulate matter (PM10). Sulphur dioxide is likely to be a problem in areas with high levels of domestic coal burning. Local authorities with major roads, or highly congested roads, have the potential to result in elevated levels of nitrogen dioxide. For PM10, it is expected that a reduction of 5 - 10% over and above those achieved by national measures will be required to ensure that the air quality objective is achieved everywhere by 2005. Local authorities with significant sources of PM10, such as highly congested roads or industrial sources may have the potential to result in elevated levels of PM10 in 'relevant' locations.

1.5 The Local Perspective

Given that the purpose of the air quality objectives is to protect human health, the crucial issue is that of exposure. For the purpose of the review and assessment, pollution is not an issue if it exists in a location where no person is likely to be exposed to it.

At a personal level exposure to air pollution depends upon many factors including the degree of activity that an individual undertakes, the time spent outdoors, the presence of pre-existing disease and indoor sources of pollution.

When the standards to protect health were set by the commissioned Expert Panel on Air Quality Standards, the available epidemiological studies demonstrated health effects using pollutant information taken from outdoor fixed-site monitors, as these facilities were the only ones available to indicate general pollution levels at that time. Although personal exposure information would provide more accurate information regarding health effects, such information was not available. In setting the standards the Panel had to make use of the data taken from the available studies which used the outdoor fixed-site information.

Accordingly, the Air Quality Regulations 1997 state that compliance with the air quality objectives is to be determined by reference to the quality of air at outdoor locations where members of the public are regularly present.

In order for a location to be classified as 'relevant', the averaging time of the pollutant objective must also be considered, as follows:

- for objectives with short averaging times (e.g. sulphur dioxide) reviews and assessments should be focussed on any non-occupational, near ground-level outdoor location, as exposures over such short averaging times (e.g. 15 minutes) are potentially likely;
- for objectives with longer averaging times (e.g. lead) reviews and assessments should be focussed on the following non-occupational, near ground-level outdoor locations: background locations, roadside locations and other areas of elevated pollutant concentrations where a person might reasonably be expected to be exposed over the relevant averaging time of the objective (e.g. over the course of one year).

The averaging time of each objective was determined on the basis of the timescale within which the pollutant is capable of affecting health. Those pollutants that have an acute effect were given short averaging periods and those that have a chronic effect were assigned longer averaging periods.

This first stage review should identify all existing or proposed activities which:

- have the potential, singly or together, to emit significant quantities of the pollutant(s) of concern;
- and are expected to be in existence and/or operation by the end of 2005; and for which
- there is potential for exposure of individuals in relevant locations, as described above.

If any of these conditions do not apply for a pollutant within the authority's area, then the risk of failing to achieve the air quality objective for that pollutant by the end of 2005 is likely to be negligible and a second stage review and assessment is not required.

1.6 Public consultation

The Government attaches great importance to the opportunities for partnership that the management of air quality brings. The Environment Act 1995 provides the statutory basis for consultation and liaison. For the air quality management process to proceed it is imperative that local authorities develop and utilise a

close relationship with other agencies, authorities, businesses and the local community in order to deliver local air quality improvements. At the first stage review and assessment, local authorities will need to exchange information with neighbouring authorities and the Environment Agency regarding point sources, and also with the local community in order to address their specific concerns.

Schedule 11 of the Environment Act requires local authorities to consult:

- the Secretary of State
- the Environment Agency
- the relevant Highways Authority
- all neighbouring local authorities
- the relevant County Council
- any relevant National Park Authority
- other relevant public authorities as the local authority considers appropriate bodies representative of local business interests and other bodies as the authority considers appropriate

The Government also recommends that local authorities consider consulting with local councils and with relevant community and environmental groups and also copy relevant material to the Government Office in the regions. The exchange of information has a role throughout the air quality management process and, as the process progresses, the consultation process should evolve with it. At this first stage, the consultees (listed in appendix 5.2) have been contacted by letter and their views sought. A copy of the

letter sent is also included in appendix 5.1.

A county-wide consultation has also been conducted by the Wiltshire Local Air Quality sub group. A list of these consultees has been included in appendix 5.3.



2. SOURCES IN THE SALISBURY AREA

Pollution sources may be described as point sources, area sources and transport sources.

A point source is one where pollution is emitted from within a limited geographical area that can be identified by way of a specific map reference, such as an industrial site. The pollutants may be emitted from a building or chimney, or from several emission positions within the referenced point source area.

An area source contains numerous point sources each emitting relatively small quantities of pollution.

Taken on its own, each individual source within the area would be considered to be insignificant and not worthy of individual identification; however, when the pollution from many such sources is considered, the accumulation of all the numerous emissions contributes sufficiently to the background air quality to make a difference. A commercial centre containing many businesses or shops, or a large residential area, may contain sufficient sources to warrant being described as an area source due to the emissions from central heating boilers or refrigeration plant, for example. Within such an area different pollutants may be emitted by the various sources. Each pollutant can be addressed separately under the descriptor "area source".

Transport sources include emissions from the various modes of road, rail and air transport. The current state of knowledge regarding emissions from rail and air transport is such that, unless a problem is known or suspected to exist with respect to the seven indicator pollutants, they are to be discounted for the purposes of review and assessment.

2.1 Point Sources

Section 2 of the Environmental Protection Act 1990 enabled the Secretary of State to make regulations prescribing processes for which an authorisation would be required in order to operate. These prescribed processes were those identified as having the potential to release into the air significant quantities of prescribed pollutants. The processes and the pollutants were described respectively in Schedules 1 and 4 of The Environmental Protection (Prescribed Processes and Substances) Regulations 1991. The prescribed processes were designated by the Regulations as Part A or Part B processes, depending upon their polluting potential. Those with the greater potential to pollute are Part A processes; authorisation and legislative control of such processes is the duty of the Environment Agency. Part B processes generally have less polluting potential; authorisation and legislative control of these processes is the duty of the Local Authority.

All of the pollutants that are addressed in the Air Quality Regulations 1997 for the purposes of review and assessment are also prescribed substances under the above legislation. As all the prescribed processes in the district of any Council are listed on public register this provides the starting point for the identification of point sources of interest, for the purposes of review and assessment. Annexes 1 and 2 of the DETR Pollutant Specific Guidance Note, LAQM.TG4(98), contain lists of the prescribed processes which may be significant in the review process because of their likelihood to emit significant quantities of

the indicator pollutants. For completeness these annexes are included in Appendix 1 to this report. Only emissions from those processes included on these lists are to be considered for the purposes of the review, unless problems from other processes are known, or suspected, to exist.

It is a requirement of the Environmental Protection Act 1990 that prescribed processes are operated in accordance with a set of conditions described in their authorisation document. The purpose of the authorisation and the operating conditions is to ensure that the best available techniques not entailing excessive cost will be used – (i) for preventing the release of prescribed substances into any environmental medium (air, land or water) or, where that is not practicable by such means, for reducing the release of such substances to a minimum and for rendering harmless any such substances which are so released; and (ii) for rendering harmless any other substances which might cause harm if released into any environmental medium. By the year 2001 all prescribed processes should be fully upgraded to the standards contained in relevant process guidance notes issued by the Secretary of State.

2.1.1 Prescribed processes within Salisbury District Council

A full list of the prescribed processes within the Salisbury District Council area is included in appendix 1. Of these processes, only two are included in the DETR guidance as being of possible significance for the purposes of this review:-

1. *The Tintometer Limited, Waterloo Road, Salisbury (OS reference SU 153 295)*

DETR guidance indicates that lead glass manufacturing processes may be relevant with respect to emissions of lead into air; if the process furnaces use coal or heavy fuel oil then sulphur dioxide emissions may also be of relevance. The Tintometer Limited process, as authorised by Salisbury District Council, uses natural gas to fire the furnaces; this is a low sulphur fuel, therefore sulphur dioxide emissions are not an issue.

The Tintometer Limited has a lead glass manufacturing process in which coloured glass is produced in up to three closed pot furnaces. Emissions are passed through an electrostatic precipitator prior to discharge from a common flue. Bag filter arrestment plant is used to collect dust from the batch mixing of raw materials including red lead oxide.

The operator monitors emissions from the furnace stack every three months for particulate matter and once a year for lead. Emissions of particulate matter from the arrestment plant in the mixing room are monitored by visual inspection on a daily basis when in use and quantitatively on an annual basis for lead and particulate matter.

Results from monitoring carried out in July and October 1998 show that lead emissions from the pot furnace stack were 0.03 mg/m^3 , while those from the batch room stack were 0.75 mg/m^3 , well within the prescribed emission limits of 5 mg/m^3 and 2 mg/m^3 respectively, laid down in Secretary of State's Guidance Note PG 3/4 (95). Particulate emissions are also well within the prescribed limits.

2. *ECC Calcium Carbonates, Quidhampton, Salisbury (OS reference SU 113 312)*

Quarry processes are identified by DETR guidance as potentially being of concern in the review process with respect to the pollutant known as PM10.

ECC Calcium Carbonates, Quidhampton, Salisbury is a quarry process with on site milling and drying plant. The process involves quarrying of chalk followed by milling, drying and storage of three calcium carbonate products.

Secretary of State's Guidance Note PG 3/15 (96) refers to the drying of minerals, and states that the concentration of particulate matter in emissions to air from mineral driers should not exceed 100 mg/m^3 . Monitoring of the emissions should be carried out either twice a year or by sampling yearly and by continuously indicatively monitoring the emission.

The two drying mills at ECC Calcium Carbonates are fitted with cyclones followed by reverse air bag filter arrestment plant. Monitoring for particulate matter is carried out twice a year. The four storage silos are vented through air tight dust filters. They do not require monitoring as they have audible and visual alarms to warn of over filling.

Monitoring of the particulate emissions from the drying milling plant carried out in February 1998 showed that the emissions of 8 mg/m^3 and 9 mg/m^3 were well within the prescribed limit of 100 mg/m^3 .

It is not necessary to address the other prescribed processes in the Salisbury District Council as part of this review as it is not considered that the emissions are likely to have a significant impact with respect to the pollutants of concern. It should be noted that all the processes that require authorisation within the District are duly authorised. They operate in accordance with the conditions of their authorisation and are inspected at appropriate intervals by the authorised enforcement agency. Those processes that require their emissions to air to be monitored comply with the prescribed emission limits, and the results of such monitoring are kept on the public register file at the Council House, Bourne Hill, Salisbury for inspection purposes.

A map of all the industrial point sources is included in appendix 1.

2.1.2 Prescribed processes within neighbouring authorities

The neighbouring local authorities have been consulted with regard to this review and assessment, as required by the Environment Act 1995. In response each has provided a list of prescribed processes in their area. Any processes that lie within 10 km of the boundary with Salisbury DC are worthy of examination with regard to potential impact upon the air quality in Salisbury DC. This is obviously only of interest during periods when the wind direction is such that Salisbury DC is downwind of the process. The authorities contacted were West Wiltshire, Kennet, Test Valley, New Forest, East Dorset, North Dorset, South Somerset and Mendip.

The prevailing wind direction in England is from the South-West. The authorities that lie to the South West of Salisbury are North Dorset and South Somerset.

Of the prescribed processes in **North Dorset DC** there is only one which could potentially have an impact upon air quality in the Salisbury DC area, according to the DETR guidelines, which is Sigma-Aldrich, Gillingham, a Part A process. The operations on the site involve the manufacture and use of organic chemicals. The site is about 5 km from the boundary of Salisbury DC.

The main pollutants that may be emitted from this site are benzene, sulphur dioxide and nitrogen dioxide. The Environment Agency, the enforcement agency for the authorisation on this site, has been contacted for information on the emissions. It is their opinion that the emissions are trivial and may be disregarded for the purpose of this review and assessment.

Of the prescribed processes in **South Somerset DC** there is only one which may give rise to pollutants of concern GKN Westland, Yeovil, a Part A chemical process.

This process is at a distance of at least 30 km from the boundary of Salisbury DC and as such will be disregarded for the purpose of this review and assessment.

Of the prescribed processes in **Mendip DC**, which lies to the North West of Salisbury DC, there are several quarries that, together, are worthy of mention. Over 15 million tonnes of stone is quarried each year from these quarries, each of which may be described as area sources in their own right as they are so large. Geographically they are close to each other in the vicinity of Frome and about 10 km from the western boundary of Salisbury DC. They operate on a 24 hour basis and have been identified by Mendip DC as needing a stage three review and assessment for the pollutant PM10.

These quarries are of more concern to West Wiltshire DC than to Salisbury DC due to the prevailing wind direction.

There is also an animal carcass incinerator in Frome that may give rise to nitrogen dioxide, sulphur dioxide, carbon monoxide or PM10. It is an oil-fired incinerator burning in the range of 1 tonne of slaughtered cattle remains per hour, with monitoring carried out once a year. The Environment Agency, the authorisation agency for authorisation on this site, has been contacted for information regarding emissions. It is their opinion that the emissions are trivial and may be disregarded for the purpose of this review and assessment. No complaints regarding air quality have ever been received.

West Wiltshire DC and **Kennet DC** lie on the northern boundary of Salisbury DC. When the prevailing wind is northerly, pollution from these areas may be transported into Salisbury District area.

Of the prescribed processes in West Wiltshire there are three Part A processes in Westbury that may give rise to pollution. However, as Westbury is just over 10 kms from the Salisbury DC boundary, these are deemed not to have a significant impact on the residents in the Salisbury DC area.

The response from Kennet DC indicated that there are no processes likely to impinge on air quality in Salisbury DC. They have no Part A processes in their area and no part B processes within 10 km of the boundary.

Test Valley DC lies to the east of Salisbury DC. There are two Part A processes within Test Valley, but as they are both more than 10 kms from Salisbury DC boundary they are unlikely to have a significant impact on Salisbury DC residents. There are no Part B processes which are likely to have a significant impact on the Salisbury DC area.

New Forest DC lies to the south east of Salisbury DC. Part A processes likely to give rise to significant emissions are situated in the south of the New Forest area, and particularly as this is the opposite direction to the prevailing wind, are not likely to have a significant impact on residents within the Salisbury DC area.

East Dorset DC lies to the south of Salisbury DC. Again, all of the prescribed processes are situated in the south of the district (Wimborne/ Ferndown) and as such are not expected to have any significant impact on the Salisbury DC area.

2.2 Area Sources

Area sources, such as domestic combustion, agricultural activity, road transport, shipping etc., are those sources too numerous and disperse to identify individually. Area sources are mapped using data relating as closely as possible to each emitting activity. A proportion of the national totals for each area source is allocated to a grid square according to the proportional distribution of key source related categories. For example, the UK total aircraft emissions are mapped according to the proportion of takeoffs and landings for each grid-square. Obviously in the case of aircraft most of the grid-squares will have a proportion of zero and only those covering the major UK airports will contain a value.

The only area sources of concern during the first stage of a review and assessment are diffuse transport sources, domestic coal and oil burning activities and industrial coal and oil burning not covered by prescribed processes.

Salisbury DC has no area sources of significance for any of the pollutants to be reviewed.

Mendip DC have identified area sources of PM10 in their area within 10 km of the Salisbury DC boundary. Although Salisbury is not generally downwind of Mendip, if the wind was coming from the north west, then it might transport pollution from Mendip DC.

2.3 Transport Sources

Within the whole of the Wiltshire county, the largest annual average traffic growth rate (comparing 1996 with 1986) was in the Salisbury District area at about 3.6% per year.

Within the Salisbury area, Amesbury has the highest annual average traffic growth rate at about 4.4% (comparing 1996 with 1986). This is largely as a result of the influence of the A303 Trunk Road that bypasses the town. However, the local traffic forecasts provided by the DETR indicate that whereas in Wiltshire as a whole, the figures will exceed the nationally predicted growth rates, in the Salisbury District is anticipated to have lower than national increases in traffic.

Salisbury also has the lowest car use as a means to travel to work, in Wiltshire (Wiltshire Travel Report, 1996).

Area (by residence)	Car	Rail	Buses	Motor-cycle	Pedal cycle	On foot
Wiltshire	70.9	1.6	3.6	2.2	5.1	16.6
Salisbury District	66.6	1.5	6.2	2.2	4.9	18.6
Salisbury	59.4	1.6	9.7	2.1	6.7	20.6
Amesbury	65.2	1.0	4.9	3.6	5.2	20.0

Traffic counts in Salisbury are carried out annually in June, both manually and automatically.

The following roads in the area have been monitored:

Average Daily Flows (7-day average) Automatic monitoring:

Location	Average Daily Flow (7 day average) - June 1996
Fisherton Street	17 651
Exeter Street	21 183
Central Car Park	4 995
Castle Street*	16 730
Milford Street	7 926
Chruchill Way West (A36)**	33 444

12-hour manual traffic counts:

Location	12 hour traffic count
Cranebridge Road*	5 984
St Marks Road	4 340
Churchill Way / Boune Hill	1 940
West walk / De Vaux Place	886

* NO2 diffusion tube monitoring data available

** NO2 diffusion tube data available in nearby street (residential)

On consultation with Wiltshire County Council, there are 14 roads with a projected annual average daily flow in excess of 20, 000 in the year 2005 (based on high growth). They are:

- Castle Road (Beehive Junction to Churchill Way)
- Castle Street (Churchill Way to Wyndham Road)
- Churchfields Road (Mill Road to Ashfield Road)
- Churchill Way (All) (Trunk Road)
- Downton Road
- Exeter Street
- Fisherton Street (Churchill Way to South Western Road)
- Harnham Road
- London Road (Churchill Way to St Thomas's Bridge)
- New Bridge Road
- Southampton Road (Trunk Road)
- Wilton Road (Wilton to Churchill Way) (Trunk Road)
- A36 Alderbury Bypass - County boundary (Trunk Road)

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- A303 (total length) (Trunk Road)

At this stage it is unknown how many of these roads are over 25 000 projected annual average daily flow.

2.4 Proposed developments

No developments within the Salisbury area requiring an Environmental Impact Assessment (e.g. new roads, industrial/ commercial sites or residential estates) have been identified and no such development is currently in progress.



3. THE POLLUTANTS

3.1 Benzene

Benzene is a known human carcinogen. Occupational exposure to benzene at 1 - 10 ppm is strongly linked with the risk of developing leukaemia (also less strongly with liver, lung and stomach cancer). In the UK the main atmospheric source of benzene is the combustion and distribution of petrol, of which it is a minor constituent (2% by volume). Motor vehicles are the most important single source on a national basis, accounting in 1996 for 64% of the total UK annual emission of 41 ktonnes, with most of this arising from petrol vehicles. Six tonnes, 15% of the total, were emitted from industrial processes.

The focus of the review and assessment of benzene should be non-occupational near ground level outdoor locations with elevated levels of benzene concentrations in areas where a person might reasonably be expected to be exposed over a year (in the vicinity of housing, schools etc).

It is expected that benzene won't be a problem unless there is a major industrial process that either handles, stores or emits benzene. Roadside levels of benzene, next to even the most congested roads are expected to be well below the objective by the year 2005.

The pollutant specific guidance (TG4(98)) specifies that for the purposes of a first stage review and assessment for benzene, the only sources that need to be investigated are:

- One or more of the Part A or B processes of the type indicated to be a potential significant source of benzene by the tables in Annexes 1 and 2;
- Planned developments of the above mentioned types in the locality

Benzene Monitoring

Throughout the month of August 1995 the air in Salisbury City Centre was monitored for benzene (among other pollutants) using the OPSIS system. This is an established method of determining background levels of pollutants whereby a beam of light is projected at roof-top level to a receiver/ analyser several hundred metres away. As it passes through air, light from the beam is absorbed by the polluting gases. This allows the analyser's computer to determine the average levels of pollutants across the path of the beam for comparison with air quality guidelines. Throughout the month the 24-hourly averages for benzene were well below the 'low' level as stipulated in the DOE guidelines.

From Appendix 1 outlining point sources in the Salisbury area and information from neighbouring authorities, there are no processes likely to release significant quantities of benzene, and no developments of this sort are planned. The background benzene concentrations in the area are below 0.5 ppb (see appendix 4).

The authority is therefore confident that there is negligible risk of the objective for benzene being exceeded by 2005 and it will therefore be unnecessary to proceed to a Stage 2 review and assessment

for benzene. This has been confirmed by the benzene monitoring work outlined above. However, it should be noted that the Government is currently investigating the concentrations of benzene in the vicinity of petrol stations.

3.2 1,3-Butadiene

1,3-Butadiene is an accepted genotoxic carcinogen and therefore no absolutely safe level can be defined. Laboratory studies have shown that 1,3-butadiene causes a variety of cancers in rodents and damages the genetic structures of the cell. The Government has therefore recommended a standard of 1 ppb as a running annual mean. However, due to uncertainties in data on effects on humans and the limited amount of monitoring data available, the Expert Panel on Air Quality Standards have recommended a review of this position in 5 years.

1,3-Butadiene in the atmosphere is mainly derived from the combustion of petrol and other materials. Although neither petrol nor diesel fuel contains 1,3-butadiene it is formed in the combustion process from olefins in the fuel. 1,3-Butadiene is also an important industrial chemical and is handled in bulk at a small number of locations. Other than these locations, the dominant source of 1,3-butadiene in the UK atmosphere is the motor vehicle.

As for benzene, the focus of the review and assessment for 1,3-butadiene should be non-occupational, near ground level outdoor locations with elevated 1,3-butadiene concentrations in areas where a person may reasonably expect to be exposed over a year (in the vicinity of housing, schools etc). Again, only those authorities with major industrial processes which either handle, store or emit 1,3-butadiene and which have the potential, in conjunction with other sources, to result in elevated levels in relevant locations, are expected to need to undertake a second or third stage review and assessment.

The pollutant specific guidance (TG4(98)) specifies that for the purposes of a first stage review and assessment for 1,3-butadiene, the only sources that need to be investigated are:

- One or more of the Part A or B processes of the type indicated to be a potential significant source of 1,3-butadiene by the tables in Annexes 1 and 2;
- Planned developments of the above mentioned types in the locality

From Appendix 1 outlining point sources in the Salisbury area and information from neighbouring authorities, there are no processes likely to release significant quantities of 1,3-butadiene, and no developments of this sort are planned.

The authority is therefore confident that there is negligible risk of the objective for 1,3-butadiene being exceeded by 2005 and it will therefore be unnecessary to proceed to a Stage 2 review and assessment for benzene.

There has been no 1,3-butadiene monitoring carried out in the Salisbury area.

3.3 Carbon monoxide

Carbon monoxide diminishes the oxygen carrying capacity of the blood by binding to haemoglobin. In low concentrations it causes headaches, impaired concentration and reflexes. Low levels (2-3%) can also increase the risk of heart problems in individuals with cardiovascular disease. Mental Activity could also be affected by reductions in oxygen supply resulting from exposure to carbon monoxide. For example, such changes could affect hand-eye co-ordination. Other concerns include the risk to pregnant women from exposure to high levels of carbon monoxide, which can cause foetal growth retardation. High levels of carbon monoxide are associated with cold, stable meteorological conditions.

The main source of carbon monoxide in the UK is road transport, which accounted for 71% of the total emission of 4.6 Mtonnes in 1996. Road transport sources will constitute a larger proportion of the total in most cities and maximum 8-hour concentrations are therefore expected near busy, especially congested roads.

The focus of an authority's review and assessment for carbon monoxide should be the following non-occupational, near ground level outdoor locations: background locations, roadside locations, and other areas of elevated carbon monoxide concentrations where a person might reasonably be expected to be over an 8 hour period.

The pollutant specific guidance (TG4(98)) specifies that for the purposes of a first stage review and assessment for carbon monoxide, the only sources that need to be investigated are:

- Road links with current or projected annual average daily traffic flow greater than 50 000;
- 'Part A' authorised processes with the potential to emit significant quantities of CO (listed in Annex 1);
- Planned developments of the above mentioned type in the locality, including those which will increase traffic flow.

There has been no carbon monoxide monitoring carried out in the Salisbury area.

Using traffic monitoring data and traffic projections for Salisbury for the year 2005 (appendix 2.2), there will be no roads within the Salisbury area in relevant areas with a projected annual average daily traffic flow greater than 50 000.

From Appendix 1 outlining point sources in the Salisbury area and information from neighbouring authorities, there are no processes likely to release significant quantities of carbon monoxide, and no developments of this sort are planned. The background carbon monoxide concentrations in the area are below 0.2 ppm with one location in the range of 0.21-0.3 ppm. (see appendix 4.2).

The authority is therefore confident that there is negligible risk of the objective for carbon monoxide being exceeded by 2005 and it will therefore be unnecessary to proceed to a Stage 2 review and assessment for carbon monoxide.

3.4 Lead

Lead exhibits toxic biochemical effects in humans, which lead to a decrease in the synthesis of haemoglobin, acute or chronic damage to the nervous system, effects on the kidneys, gastrointestinal tract, joints and reproductive system. Anaemia only occurs in cases of severe lead poisoning, but effects on red cell survival and haemoglobin production are found at lower levels.

Lead is the most widely used non-ferrous metal and has a large number of industrial applications, both in its elemental form and in alloys and compounds. The single largest use globally is in the manufacture of batteries, but other uses are in paints and glazes, in alloys, in radiation shielding, tank lining and piping. As the compound tetraethyl lead, it has been used as a petrol additive to enhance the octane rating. With the recognition of the adverse effects of lead on human health and the growing use of catalytic converters, which are poisoned by lead, this use is declining rapidly. Most of the current emissions of lead in the UK arise from petrol fuelled motor vehicles.

Lead concentrations in air have decreased significantly in the last decade. This is due to the reduction in the maximum permissible lead content of petrol and the continued increasing market share of unleaded petrol to the point where, since 1993, all new petrol fuelled cars are catalyst equipped and therefore must run on unleaded petrol.

Only local authorities with significant industrial sources, which have the potential to result in elevated levels of lead in relevant locations, are expected to need to undertake a second or third stage review and assessment.

The pollutant specific guidance (TG4(98)) specifies that for the purposes of a first stage review and assessment for lead, the only sources that need to be investigated are:

- Part A authorised processes with the potential to emit significant quantities of lead (listed in Annex 1);
- Part B processes, or a number of such processes in close proximity, which collectively have the potential to emit significant quantities of lead (listed in Annex 2);
- Industrial or other sites with non-prescribed processes with the potential to emit significant quantities of lead;
- Planned developments of the above mentioned types in the locality.

There has been no lead monitoring carried out in the Salisbury area.

From Appendix 1 outlining point sources in the Salisbury area and information from neighbouring authorities, there are no processes likely to release significant quantities of lead, and no developments of this sort are planned. One process (lead glass manufacturer) has been examined in greater detail in section 2.1.1. The background lead concentration in all areas in the region is below 0.02 µg/m³ (see

appendix 4).

The authority is therefore confident that there is negligible risk of the objective for lead being exceeded by 2005 and it will therefore be unnecessary to proceed to a Stage 2 review and assessment for lead.

3.5 Nitrogen dioxide

Nitrogen Dioxide can affect lung function. Repetitive exposure in animals can produce changes in lung structure, lung metabolism, and lung defences against bacterial infection. Animal toxicological studies suggest that peak concentrations contribute more to the toxicity than does the duration of the exposure, although the latter is still important. This is the reason for the two objectives, both hourly means and an annual mean. There is also some evidence that exposure to nitrogen dioxide may put children at an increased risk of respiratory infection and may lead to impaired lung function later in life.

Nitrogen dioxide (NO₂) and nitric oxide (NO) are both oxides of nitrogen and together are referred to as NO_x. All combustion processes produce some NO_x, but the main sources of NO_x in the UK are road transport (47% in 1996), power generation (22% in 1996) and domestic sources (4% in 1996). In urban areas, the proportion of local emissions due to road transport is greater.

NO₂ is produced by the oxidation of nitric oxide in the atmosphere and there is a complex relationship between emissions of NO_x and the resulting concentrations of NO₂, dependent on the proportion of NO₂ in the primary emission and the availability of atmospheric oxidant, especially ozone, to oxidise NO to NO₂. Exceedences of the 1-hour objective for NO₂, if they occur are most likely to be associated with either winter episodes of poor dispersion or summer oxidant episodes.

Local authorities with major roads or highly congested roads, which have the potential to result in elevated levels of NO₂ in relevant locations, are expected to require a second or third stage review and assessment. Relevant locations are defined as non-occupational, near ground level outdoor locations with elevated NO₂ concentrations where a person might reasonably be expected to be exposed over a year (for the annual objective) or for an hour (for the hourly objective).

The pollutant specific guidance (TG4(98)) specifies that for the purposes of a first stage review and assessment for nitrogen dioxide, the only sources or conditions that need to be investigated are:

- An annual mean urban background NO₂ concentration in 1996 of greater than 30 ppb;
- One or more existing or planned roads with a projected annual average daily traffic flow of greater than 20, 000 in 2005;
- One or more Part A or Part B processes of the type indicated to be a potential significant source of NO_x by the table in Annex 1 and 2;
- An indication of existing sources acting in combination to exceed a current annual mean NO₂ concentration of 30 ppb (for example as measured by diffusion tubes or automatic measurement methods).

NO₂ monitoring

Since 1993 the district council has been participating in a nation-wide survey of nitrogen dioxide levels organised on behalf of the former Department of the Environment. This has involved the use of diffusion tube samplers, which are exposed for a month before being analysed in an accredited laboratory. Initially there were four monitoring sites in Salisbury - one in the High Street, one adjacent to the Ring Road and two in residential areas to the north and west of the city. In May 1994 additional samplers were placed at Brown Street and Minster Street (Salisbury), West Street (Wilton) and Salisbury Street (Amesbury). A further six diffusion tube monitors located to indicate changes in nitrogen dioxide concentrations resulting from the proposed pedestrianisation scheme, have been operating since July 1995.

From the diffusion tube survey carried out between 1993 and 1998, the highest concentrations were found in Minster Street, Winchester Street, Castle Street, Brown Street and Blue Boar Row. In all these locations, the annual average objective concentration (21 ppb) has been exceeded. Elsewhere, mean levels have fluctuated over the years. These diffusion tube results tell us nothing about hourly means. NO₂ was also measured during August 1995 using the OPSIS system (see section 3.1). Applying the DOE guidelines, the air quality was 'very good' (under 50 ppb hourly means) for most of the month with only the occasional peak taking it down into the 'good' category (up to 65 ppb).

Some further monitoring was carried out in May 1998 in Brown Street using a continuous monitoring device. Over this period the hourly averages did not exceed 80 ppb.

From Appendix 1 outlining point sources in the Salisbury area and information from neighbouring authorities, there are no processes likely to release significant quantities of nitrogen dioxide, and no developments of this sort are planned. The background nitrogen dioxide concentrations in the area are in the range of 5.1 - 10 ppb with small areas of 10.1 - 15 ppb. (see appendix 4).

However, within the Salisbury District Council area, there are likely to be 14 roads with a projected annual average daily traffic flow of greater than 20 000 in 2005 (see section 2.2). Because of this, and some exceedences for the NO₂ diffusion tube data (annual averages) it is recommended that a second stage review and assessment of NO₂ be carried out in order to determine concentrations of NO₂ more precisely.

3.6 Particulates (PM₁₀)

Particulate matter with a diameter of less than 10 µm is known as PM₁₀. It is this size range of particulate matter suspended in air that has been found to have health effects. It is implicated in increasing obstruction of those passages used in breathing and worsening underlying lung disease. There is also a possibility that some particulates penetrate deep into the lung tissue and may be carcinogenic (for example, hydrocarbons). Although many of the obvious effects of air pollution disappeared with the earlier smogs, research over the last few years has suggested that, even at the much lower levels now found in the UK, particulate air pollution seems to be associated with a range of measures of ill health, including effects on cardiovascular and lung function and asthma (NAQS, 1997).

Unlike the gaseous pollutants discussed in this document, which are single, well-defined substances,

particulate matter in the atmosphere is composed of a wide range of materials arising from a variety of sources. During 1996, 24% of UK emissions of primary PM₁₀ was derived from road transport sources, 38% from industrial sources, 16% from power stations and 17% from domestic and other low-power combustion. In general, emission estimates for PM₁₀ are less accurate than for the other pollutants described, particularly for sources other than road transport.

PM₁₀ is likely to be the most difficult objective to achieve. This is compounded by the secondary formation of particulate sulphates and nitrates, resulting from the oxidation of sulphur and nitrogen oxides. There are also natural or semi-natural sources such as wind blown dust and sea salt particles. The impact of local urban sources is superimposed on this regional background. Due in part to great number of unknowns, the government has established the Airborne Particulates Expert Group (APEG) to advise on sources of PM₁₀ in the UK and current and future ambient concentrations. Their conclusions are expected shortly.

The focus of an authority's review and assessment should be non-occupational, near ground level outdoor locations with elevated PM₁₀ concentrations in areas where a person might reasonably be expected to be exposed over a 24 hour period.

The pollutant specific guidance (TG4(98)) specifies that for the purposes of a first stage review and assessment for PM₁₀, the only sources or conditions that need to be investigated are:

- Urban areas for which the annual average regional background due to secondary particles is currently greater than 8 µg/m³
- Emissions from low-level dispersed sources (including road traffic) greater than 10 tonnes in any single 1 km x 1 km grid square or on average 5 tonnes in several adjacent squares
- One or more existing or planned roads with a projected annual average daily traffic flow of greater than 25 000;
- One or more Part A or Part B processes of the type indicated to be a potential significant source of PM₁₀ by the Table in Annex 1 or 2;
- Any industrial process that emits significant quantities of dust in the form of PM₁₀ from uncontrolled or fugitive sources within the plant.

PM₁₀ monitoring

PM₁₀ concentrations were measured between 4th October and 6th November 1995. They fluctuated considerably, but were generally well below the air quality standard.

Further monitoring was carried out in May 1998 in Brown Street using a continuous monitoring device. Here maximum running 24 hour means exceeded 50 µg/m³ for 11 of the 29 days investigated.

The background concentration of PM₁₀ in the area is between 17.6 and 22.5 µg/m³, with the secondary component being 10 µg/m³ (see appendix 4).

In view of the annual average regional background concentration from secondary particles being greater than 8 µg/m³, and the monitoring data from Brown Street (May 1998), it is recommended that a second stage review and assessment of PM₁₀ be carried out in order to determine concentrations of PM₁₀ more precisely.

At the time of writing, accurate traffic predictions for roads over 25 000 projected annual average daily flow (AADF) were unavailable. However, in 1996 there was one monitored road in Salisbury with an AADF of greater than 25 000 and at current growth predictions (appendix 2.2) there are likely to be several more. At the second stage review and assessment, traffic predictions will be analysed more accurately.

It is also proposed that possible PM₁₀ emissions from quarries in the Mendip area (see section 2.1.2) will be investigated more thoroughly in the stage 2 review and assessment for PM₁₀.

The National Emissions Inventory shows that no 1 km X 1 km grid square within the district emits more than 10 tonnes of PM₁₀ from low level sources. Average emissions from adjacent squares are below 5 tonnes.

The National Air Quality Strategy is currently under review and it would seem that PM₁₀ is one of the pollutant objectives most likely to be modified, as information and knowledge relating to this pollutant is growing rapidly. This is partly because of the increase in the number of monitoring stations for PM₁₀ around the country that have been installed following the publication of the National Air Quality Strategy. The National Air Quality Strategy review is expected to be released for consultation purposes early in 1999.

3.7 Sulphur dioxide

Sulphur dioxide is a potent bronchorestricting agent. The degree of effect depends on the concentration inhaled, degree of underlying airway reactivity, the rate of exercise of the individual, the amount of moisture in the inhaled air and the distribution of inhaled air between the nose (effective filter) and the mouth (poor filter).

Sulphur dioxide is emitted in the combustion of coal and oil. The main sources in 1996 were power generation (65%), other industry (24%), commercial and domestic heating (6%) and road transport (2%). Exceedences of the air quality standard currently occur in the vicinity of industrial processes for which stack heights were designed to meet previous air quality standards and in areas where significant quantities of coal are used for space heating. The focus of an authority's review and assessment should be on any non-occupational, near ground level outdoor location given that exposures over 15 minutes are potentially likely in these locations.

The pollutant specific guidance (TG4(98)) specifies that for the purposes of a first stage review and assessment for sulphur dioxide, the only sources or conditions that need to be investigated are:

- Part A industrial processes of the type listed in Annex 1;
- Part B industrial process of the type listed in Annex 2;
- A solid fuel or fuel oil combustion system with thermal power greater than 5 MW;
- A 1 km x 1 km grid square in the authority's area for which maximum low-level (i.e. domestic combustion and other short stack) emissions are greater than 25 kg per hour or 40 tonnes per year. Where domestic emissions are the main source of concern, this can be assumed to approximate to 300 houses burning coal in a 1 km x 1 km grid square.

SO₂ monitoring

The first SO₂ monitoring to be done within the Salisbury area was that carried out in August 1995 using the OPSIS system (see section 3.1). Applying the DOE guidelines, SO₂ was in the 'very good' category for the whole month (most of the time under 10 ppb hourly averages).

Some further monitoring was carried out in May 1998 in Brown Street using a continuous monitoring device. Again, although measured as hourly averages, for the majority of the month the total concentration was less than 20 ppb.

It should be noted that no monitoring has been undertaken during winter months.

The background sulphur dioxide concentrations are mainly below 2 ppb, with some areas being 2.1 - 4.0 ppb (see appendix 4). The National Emissions Inventory shows that no 1 km X 1 km grid square in the Salisbury DC area emits more than 40 tonnes of SO₂ per year from low level sources.

From Appendix 1 outlining point sources in the Salisbury area and information from neighbouring authorities, there are no processes likely to release significant quantities of sulphur dioxide, and no

developments of this sort are planned.

The authority is therefore confident that there is negligible risk of the objective for sulphur dioxide being exceeded by 2005 and it will therefore be unnecessary to proceed to a Stage 2 review and assessment for sulphur dioxide.



4. CONCLUSION AND RECOMMENDATIONS

From the review of sources within the Salisbury District area and the available monitoring data, it is concluded that a second stage review and assessment is required with respect to nitrogen dioxide and PM₁₀. For the other pollutants examined, the authority is confident that there is negligible risk of the objectives for those pollutants being exceeded by 2005 and therefore it will be unnecessary to proceed to a Stage 2 review and assessment for these pollutants.

The main concerns expressed by respondents to the consultation exercise, were those regarding the traffic pollution on the A36 (and the A30 to a lesser extent) cited by two people, one of whom highlighted a perceived high asthma rate in Wilton.

The second major concern was low flying helicopters in the Durrington area and aircraft exhaust emissions in the vicinity of Boscombe Down. Both letters outlining this problem stated that the smell of kerosene / paraffin could be smelt quite strongly in local villages when the weather was 'right'. At present, there is no legislation addressing aircraft exhaust emissions. Pollution and odour of this sort are not part of the local air quality management process and as such cannot be addressed by this document.

However, this is an area that is now coming under increasing investigation, with the UK government due to publish a green paper on aviation and the environment next year.

Concerns over the A36 and A30 will be addressed as the review and assessment process continues. The health effects of air pollution are the primary aim of the local air quality management process and as such will be evaluated as more detailed air pollution monitoring takes place.

As Salisbury District Council embark upon stage two of the review and assessment process, more monitoring of NO₂ and PM₁₀ will need to be carried out, the detail of which will be the subject of further discussions. In addition, some simple screening and dispersion models, such as Aeolus or DMRB (Design Manual for Roads and Bridges) may need to be utilised. The methodology of a Stage 2 review and assessment for NO₂ is described in the pollutant specific guidelines (LAQM.TG4(98)). There is

currently no guidance for second stage PM10 review and assessment, but this is expected early in 1999.



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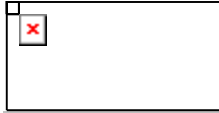


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