2009 Air Quality Updating and Screening Assessment for *Slough Borough Council*

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

Final Report
November 2009

Slough Borough Council

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Executive Summary

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

Slough Borough Council has recently undertaken the following rounds of Review and Assessment:

- Detailed Assessment (2004) and Further Assessment (2004)
- Progress Report (2005)
- Further Assessment (2005) and Updating and Screening Assessment (2006)
- Progress Report (2007)
- Detailed Assessment (2008)

The first ***Further Assessment (2004)*** concluded that the major causes of air quality exceedences were found to relate mainly to road traffic. In most cases the majority of road contributions came from motorways, however, there were instances when major roads were found to be the main source. Exceedences of the annual mean objective for nitrogen dioxide were predicted at several locations in Slough. As a result, Slough Borough Council declared two Air Quality Management Areas (AQMAs) in June 2005, which relate primarily to stretches of the M4 and the A4. The Slough Local Transport Plan 2006-2011 (March 2006) contains the air quality action plan for the M4, A4 and also general actions for the Town Centre to improve air quality. The designation of the two AQMAs was supported by the conclusions reached in the first ***Progress Report (2005).***

The ***Further Assessment (2005)*** identified a number of sites showing exceedences of the NO_2 annual mean objective that were not currently in the designated Air quality Management Areas: Tuns Lane, Lansdowne Avenue and Princess Street. These sites are close to the A4 in the Town Centre. However, the 2005 Further Assessment concluded that there was no requirement to declare an AQMA in the Town Centre along the A4 main road as the Tuns Road monitoring site was affected by construction works close by and the other two sites were borderline when adjusted to the nearest public exposure. Based on the findings of the 2005 Further Assessment the ***Updating and Screening Assessment (2006),*** recommended that the new, 2007, NO_2 monitoring sites in the Town Centre (placed where there is relevant public exposure) and the existing sites be closely and regularly reviewed to highlight quickly any need to declare an AQMA in the Town Centre.

The ***Progress Report (2007)*** highlighted the fact that NO_2 concentrations at Town Centre sites found to be in exceedence of the NO_2 annual mean objective within the Further Assessment (2005), remained the same in 2006. It was suggested that four new diffusion tube sites (namely, Wexham Road, Wellington Street – Stratfield, Blair Road – Victoria Court and Wellesley Road), would help to verify these town centre concentrations during 2007.

The recent ***Detailed Assessment (2008)*** considered NO_x and NO_2 concentrations in the Town Centre of Slough; assessing the 2007 monitoring data from existing and new diffusion tube sites as well as undertaking modelling of NO_x and NO_2 in order to assess the likelihood of the annual mean NO_2 Air Quality Strategy Objective (40 $\mu g\ m^{-3}$) being exceeded in the area. It recommended that Slough Borough Council should consider the declaration of an AQMA along Tuns Lane from the junction with the M4 up to the junction with Bath Road. Slough Borough Council were also advised to consider declaring an AQMA in the Town Centre along the A4 stretching from William Street roundabout to the Uxbridge roundabout. In addition, it was recommended that the impact on annual mean NO_2 concentrations as a result of the Great Western Railway line running through the Town Centre should be assessed further and monitored carefully in the future.

Conclusions from this report

In terms of automatic monitoring of nitrogen dioxide, there were no exceedences of the annual mean nitrogen dioxide objective (40μg/m^3) at the Salt Hill, Slough Colnbrook or Slough Lakeside 2 monitoring sites in 2006, 2007 or 2008. However, the annual mean concentration measured at Salt Hill during 2008 (39 μg/m^3) was close to the objective. The annual mean nitrogen dioxide objective was exceeded at the Chalvey automatic monitoring site, which is situated in the M4 Air Quality Management Area (AQMA), in 2006, 2007 and 2008.

The hourly mean objective for nitrogen dioxide (200 μg/m^3 not to be exceeded more than 18 times per year) was not exceeded at any of the automatic monitoring sites in 2008. Although there was poor data capture at the Chalvey, M4 site during 2007, the 99.8th percentile of hourly means indicates that it was likely there was an exceedence of the hourly mean nitrogen dioxide objective during 2007 at this site.

In assessing the 2008 annual mean nitrogen dioxide concentrations, measured using diffusion tubes, (bias adjusted using national factor) against the AQS Objective of 40 μg/m^3, exceedences are evident at seven of the diffusion tube monitoring sites. Five of these sites, namely Winvale, Brands Hill, Grampian Way, London Road and William Street Roundabout have been highlighted in previous Review and Assessment Reports as likely to exceed the AQS Objective for annual mean nitrogen dioxide. Two of these diffusion tube sites were new for 2008, namely Rogans (Colnbrook by pass) and Yew Tree Road.

Five of the diffusion tube sites identified as likely to exceed the annual mean nitrogen dioxide objective, during 2008, are located in existing AQMAs. These are Winvale (located in the M4 AQMA), Brands Hill, Grampian Way, London Road and Rogans (located in the Brands Hill AQMA). The exceedences measured at these diffusion tube monitoring sites during 2008 justify the presence of the two AQMAs. Two of the diffusion tube sites identified as likely to exceed the annual mean nitrogen dioxide objective, during 2008, are not currently located in existing AQMAs. These sites are William Street Roundabout and Yew Tree Road and are situated in the town centre. William Street Roundabout is not currently located where there is relevant public exposure but is located at the centre of a new major Town Centre development called the Heart of Slough project, which has recently been granted planning permission, and will have potential receptors in the future. The declaration of two new AQMAs in the Town Centre is currently in progress and includes those areas that have been identified as likely to exceed the annual mean nitrogen dioxide objective.

No exceedences are evident at any of the automatic monitoring sites when assessing the 2006, 2007 and 2008 annual mean PM_{10} concentrations against the AQS Objective of 40 μg/m^3. Furthermore, when assessing the 2006, 2007 and 2008 24-hour mean PM_{10} concentrations against the AQS Objective of 50 μg/m^3, not to be exceeded more than 35 times per year, no exceedences are evident at any of the automatic monitoring sites.

When assessing the 2006, 2007 and 2008 annual mean Benzene concentrations against the AQS Objective of 16.25 μg/m^3, no exceedences are evident at any of the diffusion tube sites.

Recommendations

On the basis of the information supplied by Slough Borough Council for this Updating and Screening Assessment it is recommended that:

- Slough Borough Council should continue with the declaration of the new AQMAS in the Town Centre.

- Slough Borough Council should consider proceeding to a Detailed Assessment for nitrogen dioxide for the residential areas located along the railway line (Great Western Line) within 30m of the edge of the tracks. The background annual mean nitrogen dioxide concentration in the borough is above 25 μg/m^3. Therefore, where there ar more than 300 diesel locomotive movements per day, nitrogen dioxide concentrations should be assessed in detail to determine whether the annual mean nitrogen dioxide objective is likely to be exceeded.

Slough Borough Council

- Slough Borough Council should maintain monitoring at all existing sites within their borough. It is also recommended that they continue to implement the measures outlined in their Air Quality Action Plan aimed at mitigating air quality problems at Brands Hill AQMA, the M4 AQMA as well as borough wide.

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1 Introduction

1.1 Description of Local Authority Area

Slough is situated in Berkshire, in the south–east of England, close to the West of London. The borough is an urban area located in the Thames Valley and is surrounded by countryside, which forms part of the Metropolitan Green Belt. Slough has excellent communication links and is in close proximity to Heathrow airport and the Greater London conurbation. Slough is integrated into the heart of the UK transport and communications network. It is located between the M4, M40 and the M25. There is also a rail link into the centre of London, with onward links from there that go to the rest of the country. The town in an important commercial centre and includes both industrial and residential areas.

1.2 Purpose of Report

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

1.3 Air Quality Objectives

The air quality objectives applicable to LAQM **in England** are set out in the Air Quality (England) Regulations 2000 (SI 928), The Air Quality (England) (Amendment) Regulations 2002 (SI 3043), and are shown in Table 1.1. This table shows the objectives in units of micrograms per cubic metre $\mu g/m^3$ (milligrams per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

Table 1.1 Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in England.

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

1.4 Summary of Previous Review and Assessments

1.4.1 First Round of Review and Assessment

Slough Borough Council completed their first round of Review and Assessments and concluded that emissions of carbon monoxide, benzene, 1,3-butadiene, lead and sulphur dioxide and there was therefore no requirement to proceed to a Detailed Assessment for these substances. Emissions of PM_{10} were assessed in more detail but no areas were anticipated to exceed the AQS Objective for annual mean PM_{10} for 2004. When considering nitrogen dioxide, an area alongside the M25 in Poyle was identified as likely to exceed the AQS Objective of annual mean NO_2 (40 $\mu g/m^3$). However, when considering the exceedence area, there were no areas of relevant public exposure and hence it was recommended that Slough Borough Council did not declare any Air Quality Management Areas (AQMAs). Although the council proposed not to declare an AQMA, as part of their commitment to sustainable development and improving air quality, an air quality strategy was produced.

1.4.2 Second Round of Review and Assessment

Updating and Screening Assessment (USA), 2003

Slough Borough Council carried out an Updating and Screening Assessment (USA) in 2003. It concluded that the AQS Objectives for CO, benzene and 1,3 butadiene would be achieved in all areas of Slough. The AQS Objectives for annual mean concentrations of lead and SO_2, along with the AQS Objective for hourly mean concentrations of NO_2 and the AQS Objective for 24-hour mean concentrations of PM_{10}, were predicted to be achieved in most areas. However, it was recommended that a future study of areas surrounding the new S. Grundon waste facility (when operational in 2008) was undertaken with respect to these pollutants. In terms of the annual mean objectives for NO_2 and PM_{10}, the 2003 USA predicted that these would be exceeded close to motorways, major roads and junctions and hence, it recommended that a Detailed Assessment be conducted for annual mean nitrogen dioxide and annual mean and 24 hour mean PM_{10} for five areas in Slough, located primarily around busy roads and junctions where is relevant public exposure.

Further Assessment, 2004

The first Further Assessment (2004*)* provided a focused consideration of road traffic in the Borough and provided source contribution estimates for major roads and motorways, and estimated percentage improvements required to meet air quality objectives. The major causes of air quality exceedences were found to relate mainly to road traffic. In most cases the majority of road contributions came from motorways, however, there were instances when major roads were found to be the main source.

Progress Report, 2005

Exceedences of the annual mean objective for nitrogen dioxide were predicted at several locations in Slough. As a result, Slough Borough Council declared two Air Quality Management Areas (AQMAs) in June 2005, which relate primarily to stretches of the M4 (M4 AQMA) and the A4 (Brands Hill AQMA). The Slough Local Transport Plan 2006-2011 (March 2006) contains the air quality action plan for the M4, A4 and also general actions for the Town Centre to improve air quality. The designation of the two AQMAs was supported by the conclusions reached in the first Progress Report (2005).

Further Assessment, 2005

The Further Assessment (2005) identified a number of sites showing exceedences of the NO_2 annual mean objective that were not currently in the designated Air quality Management Areas: Tuns Lane, Lansdowne Avenue and Princess Street. These sites are close to the A4 in the Town Centre. However, the 2005 Further Assessment concluded that there was no requirement to declare an AQMA in the Town Centre along the A4 main road as the Tuns Road monitoring site was affected by construction works close by and the other two sites were borderline when adjusted to the nearest public exposure.

1.4.3 Third Round of Review and Assessment

Updating and Screening Assessment (USA), 2006

Based on the findings of the 2005 Further Assessment the Updating and Screening Assessment (2006), recommended that the new, 2007, NO_2 monitoring sites in the Town Centre (placed where there was relevant public exposure) and the existing sites be closely and regularly reviewed to highlight quickly any need to declare an AQMA in the Town Centre.

Progress Report, 2007

The Progress Report (2007) highlighted the fact that NO_2 concentrations at Town Centre sites found to be in exceedence of the NO_2 annual mean objective within the Further Assessment (2005), remained the same in 2006. It was suggested that four new diffusion tube sites: namely, Wexham Road, Wellington Street – Stratfield, Blair Road – Victoria Court and Wellesley Road, would help to verify these town centre concentrations during 2007. The 2007 Progress Report recommended that the situation in the Town Centre should be reconsidered in detail in the next round of Review and Assessment.

Detailed Assessment, 2008

The recent Detailed Assessment (2008) considered NO_x and NO_2 concentrations in the Town Centre of Slough; assessing the 2007 monitoring data from existing and new diffusion tube sites as well as undertaking modelling of NO_x and NO_2 in order to assess the likelihood of the annual mean NO_2 Air Quality Strategy Objective (40 $\mu g\ m^{-3}$) being exceeded in the area. It recommended that Slough Borough Council should consider the declaration of an AQMA along Tuns Lane from the junction with the M4 up to the junction with Bath Road. Slough Borough Council were also advised to consider declaring an AQMA in the Town Centre along the A4 stretching from William Street roundabout to the Uxbridge roundabout. It also recommended that any future developments in the vicinity of those areas that are likely to impact levels of road traffic should be carefully considered, particularly in the context of the 'Heart of Slough' project that would bring about changes to the Town Centre infrastructure. In addition, it was recommended that the impact on annual mean NO_2 concentrations as a result of the Great Western Railway line running through the Town Centre should be assessed further and monitored carefully in the future.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

Slough Borough Council currently undertake ambient monitoring of the following pollutants covered by the AQS:

- Nitrogen dioxide (NO_2)
- Particulate matter (PM_{10})
- Benzene

Slough Borough Council also monitors $PM_{2.5}$ and PM_1. While these particulate size fractions are not currently included in the Air Quality Regulations for England and Wales, they may become part of future Regulations.

Slough Borough Council continues to monitor radiation as well as continuing with its Carbon Management Plan.

2.1.1 Automatic Monitoring

Five automatic monitoring sites are now operational in the borough. These sites comprise four NOx/NO2 analysers, two TEOM PM10 analysers, three Osiris PM monitors and one BAM PM monitor.

Slough Lakeside 2 automatic monitoring site commenced monitoring in June 2007 and is located at Lakeside Road Colnbrook and operated by Lakeside Energy from Waste Ltd.This is north of the new clinical waste incinerator and the EfW. A NOx/NO2 analyser, a BAM PM monitor and an Osiris PM monitor are located at this site.

These sites are not affiliated to Defra's Automatic Urban and Rural Monitoring Network (AURN), but are part of the National Automatic Monitoring Calibration Club, whereby monitoring data are managed to the same procedures and standards as AURN sites.

Table 2.1 below provides further details about the current automatic monitoring sites within the borough.

Table 2.1 Details of automatic monitoring sites

Site name	Site type	OS Grid Ref	Pollutants Monitored	In AQMA?	Relevant Exposure? (Y/N)	Distance to kerb of nearest road (m)	Worst Case Location?
Salt Hill (Slough town centre, A4)	Intermediate (Residential)	496599, 180156	NO_x, NO_2 and PM_{10} (TEOM)	No	Y	10m	Y
Slough Colnbrook (Pippins)	Urban Background (Residential)	503542, 176827	NO_x, NO_2 PM_{10}, $PM_{2.5}$ & $PM_{1.0}$ (TEOM and Osiris)	No	Y	>50m	N
Slough Chalvey, M4	Intermediate - Motorway (Residential)	496562, 179109	NO_x and NO_2	Yes (M4 AQMA)	Y	45m from M4	Y
Slough Colnbrook (Lakeside, Tan Hse Farm)	Urban Background	503551, 177258	PM_{10}, PM2.5 & PM1.0 (Osiris)	No	Y	>50m	N
Slough Lakeside 2 (run by Lakeside Energy from Waste Ltd)	Urban Background	503569, 177385	NOx, NO_2 and PM_{10} (BAM) (Co-located Osiris PM_{10}, $PM_{2.5}$ and PM_1)	No	N	10m	N

2.1.2 Non-Automatic Monitoring

Diffusion tube monitoring of NO_2 and benzene is carried out at a number of locations in the Slough Borough Council Area. Nitrogen dioxide monitoring is currently undertaken at thirty-four sites across the borough. For 2008, two newly established diffusion tubes have been installed at Rogans, close to the Colnbrook bypass and Yew Tree Road, in the Town Centre. Benzene monitoring is currently undertaken at six sites across the borough.

Details of the diffusion tube monitoring locations are provided in Table 2.1. The locations include kerbside, intermediate and urban background sites.

Table 2.2 Details of non- automatic monitoring sites

Site Name	Site Type	OS Grid Ref	Pollutants Monitored	In AQMA?	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Worst-case Location?
Hencroft Street 6N	UB	497925, 179450	NO_2	N	Y	N/A	Y
Kent Avenue 5N	UB	496450, 181875	NO_2	N	Y	N/A	Y
Essex Avenue	I	496200, 181900	NO_2	N	Y	1-5m	Y
Windsor Road 1N	K	497557, 179825	NO_2	N	Y	1-5m	Y
Mitchell Close	I(M)	495450, 179480	NO_2	Y	Y	90m	Y
Tweed Road	I	501518, 177882	NO_2	Y	Y	15m	Y
Colnbrook By-pass	K	503196, 177349	NO_2	N	N	5m	N
Horton Road (Caravan Park)	I	503136, 175654	NO_2	N	Y	17m	Y
Princess Street	I	498541, 179815	NO_2	N	Y	17m	Y
Paxton Avenue	I(M)	496050, 179258	NO_2	Y	Y	66m	Y
Winvale	K(M)	497488, 179090	NO_2	Y	Y	15m	Y
Lansdowne Avenue	I	497188, 180050	NO_2	N	Y	14m	Y
Brands Hill	K	501798, 177659	NO_2	Y	Y	3m	Y
Tuns Lane	I	496416, 180126	NO_2	N	Y	20m	Y
Elbow Meadows	UB(M)	503856, 176538	NO_2	N	Y	119m	Y
London Road	K	501733, 177725	NO_2	Y	Y	3m	Y
Grampian Way	UB	501382, 178101	NO_2	Y	Y	51m	Y
Ditton Road	I(M)	500851, 177890	NO_2	Y	Y	60m	Y
Pippins *	UB	503542, 176827	NO_2	N	Y	N/A	Y
Salt Hill *	I	496599, 180156	NO_2	N	Y	10m	Y
William Street roundabout	K	497646, 180064	NO_2	N	N	9m	N
Torridge Road	I (M)	501637, 177999	NO_2	Y	Y	95m	Y
Sussex Place	K	498784, 179560	NO_2	N	Y	6m	Y

Site Name	Site Type	OS Grid Ref	Pollutants Monitored	In AQMA?	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Worst-case Location?
Spackmans Way	I(M)	496272, 179187	NO_2	Y	Y	40m	Y
Farnham Road (2)	I	496397, 180341	NO_2	N	Y	20m	Y
Lakeside Road *	UB	503877, 177459	NO_2	N	N	N/A	N
Chalvey (CAS) *	I(M)	496562, 179109	NO_2	Y	Y	45m	Y
Wexham Road	K	498394, 179849	NO_2	N	Y	4m	Y
Wellington Street - Stratfield	I	498168, 179907	NO_2	N	Y	13m	Y
Shelley Close	I	500981, 178319	NO_2	N	Y	20m	Y
Blair Road- Victoria Court	I	497105, 180081	NO_2	N	Y	13m	Y
Wellesley Road	I	498071, 179949	NO_2	N	Y	12m	Y
Rogans (Colnbrook by pass) §	K	501941, 177633	NO_2	Y	Y	5m	Y
Yew Tree Road §	K	498483, 179707	NO_2	N	Y	3m	Y

* Diffusion tube co-located with automatic monitor
§ New for 2008
Bold Triplicate diffusion tubes

Key to monitoring site types:

K	Kerbside	1.5m from the kerb of a busy road - residential
I	Intermediate	Between 20-30m from a busy road - residential
UB	Urban Background	More than 50m from a busy road - residential
K(M)	Kerbside Motorway	Between 20-50m from Motorway Centre - residential
I(M)	Intermediate Motorway	Between 50-100m from Motorway centre - residential
UB(M)	Urban Background Motorway	Between 100-200m from Motorway centre - residential

2.2 Comparison of Monitoring Results with AQ Objectives

2.2.1 Nitrogen Dioxide

Automatic Monitoring Data

Table 2.3a displays the annual mean nitrogen dioxide monitoring results from the automatic monitoring sites in the borough for 2006, 2007 and 2008. All statistics have been ratified according to QA/QC procedures outlined in Appendix A.

Table 2.3a Results of automatic monitoring for nitrogen dioxide: Comparison with annual mean objective

Site name	Within AQMA?	Data capture for 2008 (%)	Annual mean concentration (μg/m^3)		
			2006	2007	2008
Salt Hill (Slough town centre, A4)	N	77.8	37	37	39*
Slough Colnbrook (Pippins)	N	99.6	33	33	31
Chalvey, M4	Y	93.5	**44**	**51***	**44**
Slough Lakeside 2	N	97.1	-	-	36**

* Adjusted due to poor data capture

** Data may be subject to further quality control

Red Measured concentration exceeds the AQS objective

There were no exceedences of the annual mean nitrogen dioxide objective (40μg/m^3) at the Salt Hill, Slough Colnbrook or Slough Lakeside 2 monitoring sites in 2006, 2007 or 2008. However, the annual mean concentration measured at Salt Hill during 2008 (39 μg/m^3) was close to the objective. This was an increase in comparison to the annual mean concentrations measured in 2006 and 2007, although it should be noted that there was poor date capture at this site in 2008. The annual mean nitrogen dioxide objective was exceeded at the Chalvey automatic monitoring site, which is situated in the M4 Air Quality Management Area (AQMA), in 2006, 2007 and 2008.

Table 2.3b shows the number of exceedences of the hourly mean nitrogen dioxide AQS objective, measured at each of the automatic monitoring sites in the borough, for 2006, 2007 and 2008.

Table 2.3b Results of automatic monitoring for nitrogen dioxide: Comparison with 1-hour mean objective

Site name	Within AQMA ?	Data capture 2008 (%)	Number of exceedences of hourly mean objective (200 μg/m^3) *If the data capture was <90%, the 99.8th percentile of hourly means in shown in brackets*		
			2006	2007	2008
Salt Hill (Slough town centre, A4)	N	77.8	(105)	0	(111)
Slough Colnbrook (Pippins)	N	99.6	(111)	0	0
Chalvey, M4	Y	93.5	(149)	(243)	13
Slough Lakeside 2	N	97.1	-	-	0**

** Data are provisional and may be subject to further quality control

Red Measured concentration exceeds the AQS objective

The hourly mean objective for nitrogen dioxide (200 μg/m^3 not to be exceeded more than 18 times per year) was not exceeded at any of the automatic monitoring sites in 2008. Although there was poor data capture at the Chalvey, M4 site during 2007, the 99.8th percentile of hourly means indicates that there was an exceedence of the hourly mean nitrogen dioxide objective during 2007 at this site.

Diffusion Tube Monitoring Data

Table 2.4a displays the diffusion tube monitoring results for 2008, corrected and uncorrected for bias using a national bias adjustment factor of 0.93. Table 2.4b displays the bias adjusted (using appropriate national bias adjustment factors for each of the years) diffusion tube monitoring results for across the time series 2006-2008.

Table 2.4a Results of Nitrogen Dioxide Diffusion Tubes

Site name	Within AQMA?	Data Capture 2008 %	Annual mean concentrations	
			Unadjusted 2008 (µg/m^3)	Adjusted for bias 2008* (µg/m^3)[1]
Hencroft Street 6N	N	92	31	29
Kent Avenue 5N	N	100	27	25
Essex Avenue	N	100	32	30
Windsor Road 1N	N	100	**46**	**43**
Mitchell Close	Y	100	35	33
Tweed Road	Y	100	**40**	37
Colnbrook By-pass	N	100	**42**	39
Horton Road (Caravan Park)	N	100	34	31
Princess Street	N	100	**41**	38
Paxton Avenue	Y	100	**41**	38
Winvale	Y	92	**48**	**44**
Lansdowne Avenue	N	92	**41**	38
Brands Hill	Y	100	**62**	**58**
Tuns Lane	N	100	37	34
Elbow Meadows	N	100	37	34
London Road	Y	100	**50**	**47**
Grampian Way	Y	92	**44**	**41**
Ditton Road	Y	100	**42**	39
Pippins *	N	100	30	28
Pippins *	N	100	30	28
Pippins *	N	100	30	28
Salt Hill *	N	83	35	33
Salt Hill *	N	92	36	33
Salt Hill *	N	83	34	31
William Street roundabout	N	92	**52**	**48**
Torridge Road	Y	100	**41**	38
Sussex Place	N	100	38	36
Spackmans Way	Y	100	**40**	37
Farnham Road (2)	N	100	**39**	36
Lakeside Road	N	100	**42**	39
Chalvey (CAS) *	Y	100	**42**	39
Chalvey (CAS) *	Y	100	**40**	37
Chalvey (CAS) *	Y	100	**40**	37
Wexham Road	N	92	**45**	**42**
Wellington Street - Stratfield	N	92	**41**	38
Shelley Close	N	100	36	33
Blair Road- Victoria Court	N	100	**43**	40
Wellesley Road	N	83	39	37
Rogans (Colnbrook by pass) §	Y	75	**48**	**45**
Yew Tree Road §	N	92	**53**	**49**

Bold Measured concentration exceeds the AQS objective
Bold Triplicate diffusion tubes
* Diffusion tube co-located with automatic monitor
§ New for 2008

[1] Annual mean concentrations for 2008 were adjusted for bias using a national factor of 0.85

Table 2.4b Results of Nitrogen Dioxide Diffusion Tubes

Location	Within AQMA?	Annual mean concentrations (μg/m^3) Adjusted for bias		
		2006[2]	2007[3]	2008
Hencroft Street 6N	N	27	31	29
Kent Avenue 5N	N	27	26	25
Essex Avenue	N	33	34	30
Windsor Road 1N	N	40	**43**	**43**
Mitchell Close	Y	35	36	33
Tweed Road	Y	35	39	37
Colnbrook By-pass	N	40	**43**	39
Horton Road (Caravan Park)	N	31	33	31
Princess Street	N	39	39	38
Paxton Avenue	Y	40	**42**	38
Winvale	Y	**45**	**44**	**44**
Lansdowne Avenue	N	38	38	38
Brands Hill	Y	**59**	**60**	**58**
Tuns Lane	N	**44**	37	34
Elbow Meadows	N	34	36	34
London Road	Y	**49**	**50**	**47**
Grampian Way	Y	38	**41**	**41**
Ditton Road	Y	37	39	39
Pippins *	N	29	30	28
Pippins *	N	30	30	28
Pippins *	N	30	29	28
Salt Hill *	N	34	33	33
Salt Hill *	N	35	34	33
Salt Hill *	N	34	33	31
William Street roundabout	N	**49**	**50**	**48**
Torridge Road	Y	35	**41**	38
Sussex Place	N	35	38	36
Spackmans Way	Y	40	40	37
Farnham Road (2)	N	36	37	36
Lakeside Road *	N	39	39	39
Chalvey (CAS) *	Y	**41**	39	39
Chalvey (CAS) *	Y	39	39	37
Chalvey (CAS) *	Y	40	39	37
Wexham Road	N	-	**46**	**42**
Wellington Street - Stratfield	N	-	38	38
Shelley Close	N	-	36	33
Blair Road- Victoria Court	N	-	**42**	40
Wellesley Road	N	-	40	37
Rogans (Colnbrook by pass) §	Y	-	-	**45**
Yew Tree Road §	N	-	-	**49**

Bold Measured concentration exceeds the AQS objective
Bold Triplicate diffusion tubes
* Diffusion tube co-located with automatic monitor
§ New for 2008

When assessing the 2008 annual mean nitrogen dioxide concentrations (bias adjusted using national factor) against the AQS Objective of 40 μg/m^3, exceedences are evident at seven of the diffusion tube monitoring sites.

Five of these sites, namely Winvale, Brands Hill, Grampian Way, London Road and William Street Roundabout have been highlighted in previous Review and Assessment Reports as likely to exceed the AQS Objective for annual mean nitrogen dioxide. Two of these diffusion tube sites were new for 2008, namely Rogans (Colnbrook by pass) and Yew Tree Road.

[2] Annual mean concentrations for 2006 were adjusted for bias using a national factor of 1.01
[3] Annual mean concentrations for 2007 were adjusted for bias using a national factor of 0.98

Five of the diffusion tube sites identified as likely to exceed the annual mean nitrogen dioxide objective, during 2008, are located in existing AQMAs. These are Winvale (located in the M4 AQMA), Brands Hill, Grampian Way, London Road and Rogans (located in the Brands Hill AQMA). The exceedences measured at these diffusion tube monitoring sites during 2008 justifies the presence of the two AQMAs. Two of the diffusion tube sites identified as likely to exceed the annual mean nitrogen dioxide objective, during 2008, are not currently located in existing AQMAs, namely William Street Roundabout and Yew Tree Road, which are situated in the town centre. William Street Roundabout tube is not currently located where there is relevant public exposure but is located at the centre of a new major Town Centre development called the Heart of Slough project which has recently been granted planning permission and will have potential receptors in the future.

2.2.2 Particulate matter

Table 2.5a displays the annual mean PM_{10} monitoring results from the automatic monitoring sites in the borough across the time series 2006 - 2008. All statistics have been ratified according to QA/QC procedures outlined in appendix A.

Table 2.5a Results of automatic monitoring for PM_{10}: Comparison with annual mean objective

Site name	Within AQMA ?	Data capture for 2008 (%)	Annual mean concentration (μg/m^3)		
			2006	2007	2008
Salt Hill (Slough town centre, A4) – TEOM	N	61.2	27[§]	24[§]	24[#]
Slough Colnbrook (Pippins) – TEOM	N	99.2	24[§]	23[§]	20[#]
Slough Colnbrook (Pippins) – Osiris	N	88.2	18	20	19
Slough Lakeside – Osiris	N	81.5	14	16	23
Slough Lakeside 2 – Osiris	N	97.4	-	-	25
Slough Lakeside 2 - BAM	N	97.4	-	-	25[†]

§ PM_{10} measured by TEOM has been converted to indicative gravimetric equivalent, using correction factor of 1.3
# PM_{10} measured by TEOM has been converted to indicative gravimetric equivalent, using the Volatile Correction Model
† PM_{10} measured by BAM has been corrected for slope by dividing concentrations by a correction factor of 1.21

When assessing the 2006, 2007 and 2008 annual mean PM_{10} concentrations against the AQS Objective of 40 μg/m^3; no exceedences are evident at any of the automatic monitoring sites.

Table 2.5b shows the number of exceedences of the 24-hour mean PM_{10} AQS objective, measured at each of the automatic monitoring sites in the borough across the time series 2006 – 2008.

Table 2.5b Results of automatic monitoring for PM_{10}: Comparison with 24-hour mean objective

Site name	Within AQMA ?	Data capture 2008 (%)	Number of exceedences of 24-hr mean objective (50 μg/m^3) *If the data capture was <90%, the 90th percentile of hourly means in shown in brackets*		
			2006	2007	2008
Salt Hill (Slough town centre, A4) – TEOM	N	61.2	(38)	9	(42)
Slough Colnbrook (Pippins) – TEOM	N	99.2	(37)	13	21[#]
Slough Colnbrook (Pippins) – Osiris	N	88.2	9	(36)	(31)
Slough Lakeside – Osiris	N	81.5	(24)	(32)	(39)
Slough Lakeside 2 – Osiris	N	97.4	-	-	19
Slough Lakeside 2 - BAM	N	97.4	-	-	21[†]

§ PM_{10} measured by TEOM has been converted to indicative gravimetric equivalent, using correction factor of 1.3
# PM_{10} measured by TEOM has been converted to indicative gravimetric equivalent, using the Volatile Correction Model
† PM_{10} measured by BAM has been corrected for slope by dividing concentrations by a correction factor of 1.21

Slough Borough Council

When assessing the 2006, 2007 and 2008 24-hour mean PM_{10} concentrations against the AQS Objective of 50 μg/m^3, not to be exceeded more than 35 times per year, no exceedences are evident at any of the automatic monitoring sites.

2.2.3 Benzene

Benzene is monitored by diffusion tubes at six sites within the borough. Table 2.6a displays the diffusion tube monitoring results for Benzene across the time series 2006 - 2008.

Table 2.6a: Results of Benzene diffusion tubes

Location	Within AQMA?	Annual mean concentrations (μg/m^3)		
		2006	2007	2008
Elbow Meadows	N	0.9	1.0	1.0
Princess	N	1.4	1.3	1.4
Pippins School	N	0.8	0.9	1.0
Salt Hill Park	N	1.0	0.9	1.2
London Road	Y	1.5	1.6	1.4
Winvale	Y	0.8	1.0	0.8

When assessing the 2006, 2007 and 2008 annual mean Benzene concentrations against the AQS Objective of 16.25 μg/m^3; no exceedences are evident at any of the diffusion tube sites.

2.2.4 Other pollutants monitored

No monitoring is currently undertaken in the Slough Borough Council area for 1,3-butadiene, carbon monoxide, lead and sulphur dioxide. Based upon the findings of the previous assessments, the concentrations of these other pollutants are unlikely to be in excess of the air quality objectives at any location.

3 Road Traffic Sources

3.1 Narrow Congested Streets with Residential Properties Close to the Kerb

Slough Borough Council confirms that there are no newly identified congested streets with a flow above 5,000 vehicles per day and residential properties close to the kerb (within 2m), that have not adequately been considered in previous rounds of Review and Assessment.

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

Slough Borough Council confirms that there are no newly identified busy streets where people spend 1 hour or more close to traffic.

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

Slough Borough Council confirms that there are no new or newly identified roads with high flows of buses or Heavy Duty Vehicles (HDVs).

3.4 Junctions

Slough Borough Council confirms that there are no new/newly identified busy junctions or busy roads since the 2008 Detailed Assessment.

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

Slough Borough Council confirms that there are no new or proposed roads since the 2008 Detailed Assessment.

3.6 Roads with Significantly Changed Traffic Flows

Slough Borough Council confirms that there are no new or newly identified roads with significantly changed traffic flows.

3.7 Bus and Coach Stations

The existing main bus station is due to be demolished during September 2009 and rebuilt in a similar position (behind the existing site) during 2010. The new bus station is expected to be operational by autumn 2010. During construction and development, there will be some changes to the bus routes and standing arrangements but it will not affect relevant public exposure in the vicinity. Once the new bus station is completed, there will also be taxi areas, station parking and office car parking for the offices above the bus station.

Slough Borough Council confirms that within the new main bus station, the number of movements (a bus coming into the bus station then going out again should be counted as two movements) will exceed 2,500 per day. However, there is currently no relevant public exposure within 10m and there will be no relevant public within 10m once the new bus station has been completed.

4 Other Transport Sources

4.1 Airports

Slough Borough Council confirms that there are no airports within the borough that have a passenger throughput greater than 10 million passengers per annum.

4.2 Railways (Diesel and Steam Trains)

4.2.1 Stationary Trains

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

4.2.2 Moving Trains

New evidence has come to light that nitrogen dioxide concentrations can be elevated alongside railway lines with a large number of diesel locomotive movements. LAQM TG (09) outlines a new requirement that applies to a number of local authorities to assess railway lines with a high usage of diesel locomotives to establish whether there is relevant public exposure nearby. These lines need to be considered where the background annual mean nitrogen dioxide concentration is above 25 $\mu g/m^3$. LAQM TG (09) identifies Slough Borough Council as one of the local authorities at risk.

There are three railway lines operational in the Slough LA region. The Great Western Line, linking Reading with London, the Slough to Windsor line and the Poyle line. The Great Western Line was assessed in the 2008 Detailed Assessment in the context of annual mean nitrogen dioxide concentrations. The report recommended that the impact on annual mean NO_2 concentrations as a result of the Great Western Railway line running through the town centre should be assessed further and monitored carefully in the future.

Slough Borough Council confirms that there are sections of the Great Western Line that have greater than 300 diesel locomotive movements per day (one passing diesel train is one movement) and that the background annual mean nitrogen dioxide concentration is above 25 $\mu g/m^3$. There are residential areas along the rail line, hence there is potential for long-term exposure within 30m of the edge of the tracks. Slough Borough Council **will need to proceed to a Detailed Assessment for nitrogen dioxide.**

4.3 Ports (Shipping)

Slough Borough Council confirms that there are no ports or shipping that meet the specified criteria within the Local Authority area.

5 Industrial Sources

5.1 Industrial Installations

A list of Part A and Part B industrial sources within the borough is provided in Appendices 2 and 3.

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

The Energy from Waste (EfW) incinerator, Lakeside Energy, is scheduled to be fully operational in August 2009. An air quality impact assessment is currently being prepared to assess what impact the EfW incinerator may have on the local air quality.

Slough Borough Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within a neighbouring authority.

5.1.2 Existing Installations where Emissions have Increased Substantially or New Relevant Exposure has been Introduced

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

5.1.3 New or Significantly Changed Installations with No Previous Air Quality Assessment

Slough Borough Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority, with no previous air quality assessment.

5.2 Major Fuel (Petrol) Storage Depots

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

5.3 Petrol Stations

A list of petrol stations in the Slough Borough is displayed in Appendix 3.

Slough Borough Council confirms that there are no new petrol stations with an annual throughput of more than 2000 m^3 of petrol that have busy roads nearby, with relevant exposure within 10 m of the pumps. There are also no new stations where throughput has increased, to exceed the threshold, since the 2008 Detailed Assessment.

5.4 Poultry Farms

Slough Borough Council confirms that there are no poultry farms housing in excess of 400,000 birds if mechanically ventilated / 200,000 birds if naturally ventilated / 100,000 birds in a turkey unit with relevant public exposure within 100m of the poultry units.

6 Commercial and Domestic sources

6.1 Biomass Combustion – Individual Installations

There is a biomass, woodchip combustion boiler located within the Slough Borough at Wexham Nursery on Wexham Road, which supplies thermal energy to produce provide hot water and central heating for the nursery glasshouse and office. The consumption rate is approximately 1,000 tonnes/year, with an annual energy output of 2,830MWh/year.

As outlined in LAQM. TG (09), for the purposes of this USA report, the PM_{10} and NO_2 emissions from the biomass boiler do not have to be assessed as the biomass boiler burns less than 50kW units per annum.

There are no biomass combustion plants in the Local Authority area, which require assessment.

6.2 Biomass Combustion – Combined Impacts

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

6.3 Domestic Solid-Fuel Burning

The whole Borough is covered by Smoke Control Orders.

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

6.4 Small Boilers

Slough Borough Council confirms that there are no new or newly identified boiler plants rated at >5$MW_{(thermal)}$ that burn coal or fuel oil since the previous Review and Assessment report.

7 Fugitive or Uncontrolled Sources

A soil treatment facility, Biffa (Biogenie), located on Sutton Lane, Colnbrook, became operational during 2008. There is a Dust management Plan in place for this facility. The air quality impact of the facility was assessed in detail during the planning process.

An operation to extract 2 million tonnes of sand and gravel and to restore agricultural land using imported inert waste commenced in 2009. The operation is located on land east of Horton Road and west of the Colne Valley Way at the edge borough. There is also a gravel processing plant on the site, site office facilities and the formation of settlement ponds. Although the land is located at the borough boundary, access traffic travels through the AQMA at Brands Hill, Colnbrook. The operation is taking place at approximately 100m from residential public exposure and residents are affected by the source. There is a Dust Management Plan and as a mitigation measure, bunds are in place. The restoration process is expected to take approximately 12 years to complete. An air quality assessment was undertaken for the development during the planning process. The assessment is sufficient for Review and Assessment processes, therefore a Detailed Assessment is not required of this source.

Slough Borough Council has identified potential sources of fugitive particulate matter that meet specified criteria but confirms an assessment has already been undertaken that is sufficient for Review and Assessment purposes. Therefore, it will not be necessary to proceed to a Detailed Assessment.

8 New Developments

8.1 Residential, Commercial and Public Developments

The following developments with potentially significant air quality impacts have been granted approval in 2008, since the last round of Review and Assessment. Some have introduced new receptors into an existing area of poor air quality, or into an area with previously no receptors.

Residential and Public

(P/06348/007) Lion House depot & no. 10 Petersfield Avenue, Slough

Demolition of existing buildings and the erection of a 3/5-story building containing 90 apartments and a health centre. There will also be a conversion of 10 Petersfield Avenue from flats to a house (3 bedroom) with parking and landscaping.

(P/04851/007) 611 – 623, Bath Road, Slough

Demolition of 8 residential properties and erection of 26 houses and 49 two bed flats, access to the road, car parking and associated works.

(P/03953/002) Former Western House, Broom Path, Lower Cippenham Lane, Cipp Green

A new build residential development for 50 dwellings.

(**P/08770/060, P/08770/061 and p/08770/065) Land between M4 Motorway and Richards Way, Cippenham Meadows**

Erection of 200 new build dwellings in total. The first phase will be located near the roundabout, the second phase in the middle of the site and the third phase at the rear of Palace Court, Banty Road.

(P/13110/000) Middlegreen Trading Estate , Middle Green Road, Langley St Marys, Slough

Outline application for the erection of 200 residential dwellings.

(P/11425/003) Land covering 2 – 78 Castleview Road and part of Upton Court Road and 36 Blenheim Road, Slough

New build residential development for 300 dwellings with primary school; public open space and play area. Access would be from Upton Court Road.

(P/11425/004) Land to the rear of 2 – 78 Castleview Road

Master plan for new build residential development and school.

(S/623/1) William Hartley Yard and part of Wexham Nursery, Wexham Lea

New build residential development for 66 new build units and 1 conversion.

(**P/09013/001) Land South of Wexham Lodge, Wexham Road, Wexham**

70 extra care flats for the elderly (55 one bedroom flats and 15 two bedroom flats) associated communal facilities and a day care centre, public open space.

(P12673/001) Centre Pool & Speedwell, 330 Northampton Avenue, Slough (496334, 181003)

Extra care scheme to provide 56 units consisting of 48 one-bedroom flats and 8 two bedroom flats and communal spaces.

(P/11508/003) Railway Terrace and Mill Street, including 54 and 56 Grays Place, Slough (497892, 180259)

Demolition of buildings and replacement with a mixed use development (up to 14 storeys high) comprising 229 apartments, 1180 sqm of retail and community space (classes A1, A2, A3, A4 and D1, excluding the doctors surgery which is D2). There will also be parking spacing & associated highways works.

(P/10406/006) Intercity House, Railway Terrace, Slough (497839, 180283)

Redevelopment of site to provide 134 dwellings (in a building rising from 4 storeys to 10 storeys) with associated parking, amenity space and public space. Access will be from Grays Place.

(P/01949/014) Units 2 & 3, The Pavilions, Stoke Gardens, Slough

Residential development to provide two buildings consisting of Block A (4 one bedroom flats and 14 two bedroom flats) and Block B (12 one bedroom flats and 26 two bedroom flats) and 52 car parking spaces.

(P/11033/002) 1-7 High Street, Chalvey, Slough (497311, 180032)

Construction of a part seven/part eight storey building consisting of 78 flats (36 one bedroom flats and 42 two bedroom flats) with office A2 and storage at ground level.

Commercial

(P/00699/008) 1B & 3-9 Albert Street, Upton, Slough

Scheme to develop business office space (use class B1) covering an area of 0.3 ha. There have also been amendments to the scheme for internal alterations to the reception.

55-56 Herschel Street and 14 – 32 Church Street, Upton, Slough

Demolition of the existing buildings and redevelopment of the site. The redevelopment will include the erection of storey office buildings (one part four/part six and one six storey building) together with access parking and landscaping.

53 – 63 Windsor Road, Slough

Redevelopment of existing office to increase space provided from 9,950 sqm to 13,152 sqm.

Land at Calder Way, Poyle Industrial Estate, Colnbrook & Poyle

Demolition of existing warehouse and erection of a 297 bedroom, six-storey hotel. There will also be a decked car park for 154 cars together with landscaping and associated works.

Land off Wexham Road, South of Wexham Nursery, Wexham, Slough

Care UK Community Partnership – 120 place nursing home in a three-storey building and associate car parking and landscaping.

The Octagon, Brunel Way, Slough

Demolition of existing building and erection of 2 linked office buildings (ten floors plus eight floors) comprising 29,417 sqm of external office floor space (class B1A) together with access, parking and servicing.

Slough Borough Council

The Quality Hotel, Heathrow, London Road, Langley, Slough, SL3 8QB

Extension to existing hotel to create an additional 172 hotel bedrooms, a new reception, two restaurants and four meeting rooms. As the hotel is located in a current AQMA, an air quality assessment was submitted before approval was granted.

8.1.1 Developments Outlined in the Previous Review and Assessment Report

Redevelopment of Slough Town Centre 'Heart of Slough' Project

A key proposal site has been designated in the Town Centre that would incorporate Brunel Bus Station and car park, library, day centre and the roundabout in William Street, providing a mix of uses including arts/cultural/heritage, leisure, offices, hotel/conference, residential and public parking and a replacement bus station. An application for Part Full and Part Outline Planning Permission was submitted in July. Construction of road works is likely to commence in 2009, with other site development expected to start in 2009/2010. An application for Part Full and Part Outline Planning Permission was submitted in July and approved in August:

- **Phase 1:** September 2009 – March 2012: Demolition of bus station and Compare House and construction of new road layout, new bus station and first office block.
- **Phase 2:** April 2010 – February 2015: Construction of second office block, new library and first residential blocks on the TVU site. Demolition of day centre and existing TVU structures.
- **Phase 3:** October 2010 – September 2015: Demolition of existing library and construction of third office block.
- **Phase 4:** January 2015 – 2027: Construction of three residential blocks.

The scheme includes the development of approximately 1,500 residential units on Thames Valley University, 350,000 sq ft of offices and a new bus station on the existing Brunel Bus Station site, along with a mixed hotel/residential scheme on the current library and a new life long learning centre/museum/ library adjoining St Ethelbert's Church.

New superstore

At the main roundabout junction with the A4 and Uxbridge Road, there was previously a Co-op supermarket. This has been closed since 2006 and was used temporarily by Tesco while the main Tesco Extra superstore on Wellington St was being refurbished. Planning on this site has been delayed and the site has not since been occupied. However, following a decision made by the Competition Commission, the part built building has been demolished and will be replaced by a new superstore for which there are currently two competing supermarket applications. It is anticipated that the new superstore will impact significantly on traffic in the area when it opens and as such should be considered in future rounds of Review and Assessment.

9 Air Quality Plans and Policies

9.1 Air Quality Action Plans

In June 2005 two Air Quality Management Areas (AQMAs) were declared, one for the M4 corridor across Slough's southern boundary, and the second for the A4 at Brands Hill. The Brands Hill AQMA Action Plan was integrated into the LTP2 but the overall air quality strategy also covers the M4 AQMA as well as the wider Borough. Slough Borough Council is in discussions with DEFRA concerning the possibility of declaring an AQMA for the town centre.

Two new AQMAs in the Town Centre are in the process of being declared. One will extend from junction 6 of the M4, north along the A355 Tuns Lane to the main junction with the A4 Bath Road, and a second one will extend along the A4 Bath Road from Ledgers Road junction to the roundabout at Uxbridge Road.

The action plans for the Brands Hill AQMA and the M4 AQMA include the following measures:

- Improved signalling and road markings at M4, J5;
- The installation of a new traffic monitoring site;
- Upgrading the bus fleet and enhancing Heathrow services using A4 London Road;
- Making air quality information more widely available;
- Encouraging cycling/walking;
- Ensuring developments generating significant additional traffic at M4 J5 are subject to environmental/transport assessments;
- Completing a freight strategy;
- Development of an area wide travel plan for Slough Trading Estate
- Working with the Highways Agency on further measures to reduce traffic congestion at M4, J5; and
- Promotion of Slough in the major transport hub scheme.

Further details of these Air Quality Action Plans can be found in Slough Local Transport Plan – 2008 Progress Review.

9.2 Local Transport Plan

In their second Local Transport Plan (Slough Local Transport Plan 2006 – 2011) published in March 2006 Slough Borough Council put forward their strategy for improving transport in the borough and a five-year action programme. They also set a range of targets, which they aim to meet by March 2011. A review of the progress made so far in delivering their action programme and working towards meeting those targets is set out in Slough Local Transport Plan – 2008 Progress Review. The third LTP is in progress and is due to be completed in April 2011. The new AQMAs in the Town Centre will be included in LTP3 along with the Action Plans.

The strategy is to tackle traffic congestion problems and the associated air quality problems in several ways. It includes the following measures:

- better traffic management and control to keep the traffic moving, particularly using new technology;
- improving alternatives to car use (public transport, cycling and walking), particularly for shorter local trips;
- working with schools and employers to help them develop travel plans to tackle congestion;
- parking management and control, particularly to manage long term parking demand in town centre areas; and
- working with the Highways Agency, to improve the management of the M4 and the Slough motorway junctions.

10 Conclusions and Proposed Actions

10.1 Conclusions from New Monitoring Data

Slough Borough Council currently undertake ambient monitoring of the following pollutants covered by the AQS: nitrogen dioxide (NO_2), particulate matter (PM_{10}) and benzene.

Five automatic monitoring sites are now operational in the borough. These sites comprise four NOx/NO_2 analysers, two TEOM PM_{10} analysers, three Osiris PM monitors and one BAM PM monitor.

Diffusion tube monitoring of NO_2 and benzene is carried out at a number of locations in the Slough Borough Council Area. Nitrogen dioxide monitoring is currently undertaken at thirty-four sites across the Borough. For 2008, two newly established diffusion tubes have been installed at Rogans, close to the Colnbrook by pass and Yew Tree Road, in the Town Centre. Benzene monitoring is currently undertaken at six sites across the borough.

10.1.1 Nitrogen dioxide

In terms of automatic monitoring of nitrogen dioxide, there were no exceedences of the annual mean nitrogen dioxide objective (40$\mu g/m^3$) at the Salt Hill, Slough Colnbrook or Slough Lakeside 2 monitoring sites in 2006, 2007 or 2008. However, the annual mean concentration measured at Salt Hill during 2008 (39 $\mu g/m^3$) was close to the objective. This was an increase in comparison to the annual mean concentrations measured in 2006 and 2007. The annual mean nitrogen dioxide objective was exceeded at the Chalvey automatic monitoring site, which is situated in the M4 Air Quality Management Area (AQMA), in 2006, 2007 and 2008.

The hourly mean objective for nitrogen dioxide (200 $\mu g/m^3$ not to be exceeded more than 18 times per year) was not exceeded at any of the automatic monitoring sites in 2008. Although there was poor data capture at the Chalvey, M4 site during 2007, the 99.8th percentile of hourly means indicates that it was likely there was an exceedence of the hourly mean nitrogen dioxide objective during 2007 at this site.

When assessing the 2008 annual mean nitrogen dioxide concentrations, measured using diffusion tubes, (bias adjusted using national factor) against the AQS Objective of 40 $\mu g/m^3$, exceedences are evident at seven of the diffusion tube monitoring sites. Five of these sites, namely Winvale, Brands Hill, Grampian Way, London Road and William Street Roundabout have been highlighted in previous Review and Assessment Reports as likely to exceed the AQS Objective for annual mean nitrogen dioxide. Two of these diffusion tube sites were new for 2008, namely Rogans (Colnbrook by pass) and Yew Tree Road.

Five of the diffusion tube sites identified as likely to exceed the annual mean nitrogen dioxide objective, during 2008, are located in existing AQMAs. These are Winvale (located in the M4 AQMA), Brands Hill, Grampian Way, London Road and Rogans (located in the Brands Hill AQMA). The exceedences measured at these diffusion tube-monitoring sites during 2008 justify the presence of the two AQMAs. Two of the diffusion tube sites identified as likely to exceed the annual mean nitrogen dioxide objective, during 2008, are not currently located in existing AQMAs, namely William Street Roundabout and Yew Tree Road, which are situated in the town centre.

10.1.2 Particulate matter

When assessing the 2006, 2007 and 2008 annual mean PM_{10} concentrations against the AQS Objective of 40 $\mu g/m^3$; no exceedences are evident at any of the automatic monitoring sites. Furthermore, when assessing the 2006, 2007 and 2008 24-hour mean PM_{10} concentrations against the AQS Objective of 50 $\mu g/m^3$, not to be exceeded more than 35 times per year, no exceedences are evident at any of the automatic monitoring sites.

10.1.3 Benzene

When assessing the 2006, 2007 and 2008 annual mean Benzene concentrations against the AQS Objective of 16.25 μg/m^3; no exceedences are evident at any of the diffusion tube sites.

10.2 Conclusions from Assessment of Sources

10.2.1 Railways

Slough Borough Council confirms that there are sections of the Great Western Line that have greater than 300 diesel locomotive movements per day (one passing diesel train is one movement) and that the background annual mean nitrogen dioxide concentration is above 25 μg/m^3. There are residential areas along the rail line, hence there is potential for long-term exposure within 30m of the edge of the tracks. Slough Borough Council **will need to proceed to a Detailed Assessment for nitrogen dioxide.**

10.2.2 Industrial sources

The Energy from Waste (EfW) incinerator, Lakeside Energy, is scheduled to be fully operational in August 2009. An air quality impact assessment is currently being prepared to assess what impact the EfW incinerator may have on the local air quality.

10.2.3 Fugitive or uncontrolled sources

A soil treatment facility, Biffa (Biogenie), located on Sutton Lane, Colnbrook, became operational during 2008. There is a Dust management Plan in place for this facility. The air quality impact of the facility was assessed in detail during the planning process.

An operation to extract 2 million tonnes of sand and gravel and to restore agricultural land using imported inert waste commenced in 2009. The operation is located on land east of Horton Road and west of the Colne Valley Way at the edge borough. There is also a gravel processing plant on the site, site office facilities and the formation of settlement ponds. Although the land is located at the borough boundary, access traffic travels through the AQMA at Brands Hill, Colnbrook. The operation is taking place at approximately 100m from residential public exposure and residents are affected by the source. There is a Dust Management Plan and as a mitigation measure, bunds are in place. The restoration process is expected to take approximately 12 years to complete. An air quality assessment was undertaken for the development during the planning process. The assessment is sufficient for Review and Assessment processes, therefore a Detailed Assessment is not required of this source.

10.3 Proposed Actions

On the basis of the information supplied by Slough Borough Council for this Updating and Screening Assessment it is recommended that:

- Slough Borough Council should continue with the declaration of the two new AQMAs in the Town Centre and a Further Assessment Report.

- Slough Borough Council should consider proceeding to a Detailed Assessment for nitrogen dioxide for the residential areas located along the railway line (Great Western Line) within 30m of the edge of the tracks. The background annual mean nitrogen dioxide concentration in the borough is above 25 μg/m^3. Therefore, where there are more than 300 diesel locomotive movements per day, nitrogen dioxide concentrations should be assessed in detail to determine whether the annual mean nitrogen dioxide objective is likely to be exceeded.

- Slough Borough Council should maintain monitoring at all existing sites within their Borough. It is also recommended that they continue to implement the measures outlined in their Air Quality Action Plan aimed at mitigating air quality problems at Brands Hill AQMA, the M4 AQMA as well as borough wide.

11 Acknowledgments

This report was prepared in conjunction with Monica Wilsch, Head of Environmental Quality at Slough Borough Council

12 References

Department for Environment, Food and Rural Affairs, (2009) Local Air Quality Management Technical Guidance LAQM.TG (09).

Department for Environment, Food and Rural Affairs, Air Quality Strategy for England, Scotland Wales and Northern Ireland, 2007.

Slough Borough Council, Air Quality Review and Assessment Detailed Assessment, 2008

Slough Borough Council, Air Quality Review and Assessment Progress Report, 2007

Slough Borough Council, Air Quality Update and Screening Assessment, 2006

Slough Borough Council, Air Quality Review and Assessment – Further Assessment, 2005

Slough Borough Council, Air Quality Review and Assessment – Further Assessment 2004

Slough Local Transport Plan 2006 – 2011, March 2006

Slough Local Transport Plan 2008 Progress Review

Spreadsheet of Bias Adjustment Factors accessed at www.uwe.ac.uk/aqm/review.

UK National Air Quality Information Archive, accessed at www.airquality.co.uk,

Appendices

Appendix A: QA/QC Data

Appendix B: Part A Processes

Appendix C: Part A2 and Part B Processes

Appendix A: QA:QC Data

Diffusion Tube Bias Adjustment Factors

Diffusion tubes may systematically under or over-read NO_2 concentrations when compared to the reference chemiluminescence analyser. This is described as bias and can be corrected for to improve the accuracy of the diffusion tube results, using a suitable bias adjustment factor.

Slough Borough Council's diffusion tubes are prepared and analysed by Gradko Laboratories, using 50% v/v TEA in acetone. This laboratory takes part in the QA/QC Field Intercomparison (operated on behalf of Defra as part of their Support to Local Authorities for LAQM contract). The bias adjustment factor used within this Updating and Screening Assessment was derived from the national database of co-location studies, http://www.uwe.ac.uk/aqm/review/R&Asupport/diffusiontube050509.xls, (as shown in Figure A1). The results from this spreadsheet provided a national bias adjustment factor of 0.93.

Volatile Correction Model for Tapered Element Oscillating Microbalance analysers (TEOM) PM analysers

Monitoring concentration of PM in ambient air is not straightforward. This is due to the complex nature and composition of PM. The method selected for the collection and determination of the particle mass thus has an influence upon the mass concentration that is subsequently reported. Two TEOM analysers are used by Slough Borough Council to support Local Air Quality Management (LAQM) work. However, the outcome of recent equivalence tests for various PM_{10} samplers, when compared with the European reference sampler, (Harrison D (2006) UK Equivalence Programme for Monitoring for Particulate Matter, available at www.airquality.co.uk/archive/reports/list.php) means that TEOM analysers cannot strictly be used to measure PM_{10} concentrations for comparison with the air quality objectives.

The UK Government and Devolved Administrators recognise that many local authorities have invested considerable resources in TEOM analysers, and it may not be practical to replace these instruments on the short term. It is therefore considered appropriate that TEOM analysers should remain suitable for use for purpose of LAQM, but wherever possible the data collected should be adjusted using the Volatile Correction Model (VCM) rather than the use of a simple 1.3 multiplication factor.

For the purposes of this Updating and Screening Report, the VCM web portal, www.volatile-correction-model.info/Default.aspx, has been used to download geographically specific correction factors to be applied to the 2008 TEOM PM_{10} data from Salt Hill (Slough town centre, A4) and Slough Colnbrook (Pippins) TEOM PM_{10} analysers.

Correction of Beta Attenuation Monitor (BAM) PM_{10} data

Automatic monitoring of PM_{10} using a BAM, Slough Lakeside 2 automatic monitoring site, commenced in June 2007. The monitor is situated at Lakeside Road, Colnbrook, north of the new clinical waste incinerator and Energy from Waste Ltd (a part of the Grundon group). The standard BAM analyser meets the equivalence criteria for PM_{10} monitoring providing the results are corrected for slope. For the purposes of this report, the 2008 measured concentrations were divided by a correction factor of 1.21.

Figure A1: Diffusion Tube Bias Adjustment Calculations

Spreadsheet Version Number: 05/09

Follow the steps below **in the correct order** to show the results of **relevant** co-location studies

This spreadsheet will be updated in late September 2009 on the R&A website

Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods

Whenever presenting adjusted data, you should state the adjustment factor used

This spreadhseet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.

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Step 1: Select the Laboratory that Analyses Your Tubes from the Drop-Down List. If a laboratory is not shown, we have no data for this laboratory.

Step 2: Select a Preparation Method from the Drop-Down List. If a preparation method is not shown, we have no data for this method at this laboratory.

Step 3: Select a Year from the Drop-Down List. If a year is not shown, we have no data[2].

Step 4: Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor[3] shown in blue at the foot of the final column.

If you have your own co-location study then see footnote[4]. If uncertain what to do then contact the Review and Assessment Helpdesk 0117 328 3668 aqm-review@uwe.ac.uk.

Analysed By[1]	Method (To undo your selection, choose (All) from the pop-up list)	Year[5] (To undo your selection, choose (All))	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m3)	Automatic Monitor Mean Conc. (Cm) (µg/m3)	Bias (B)	Tube Precision[6]	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	50% TEA in Acetone	2008	R	Boston BC	12	45	36	27.3%	G	**0.79**
Gradko	50% TEA in Acetone	2008	R	LB Hammersmith and Fulham	10	90	68	32.4%	S	**0.76**
Gradko	50% TEA in Acetone	2008	UB	Reading BC	12	26	23	13.4%	G	**0.88**
Gradko	50% TEA in Acetone	2008	UC	Uttlesford DC	11	26	28	-7.0%	G	**1.08**
Gradko	50% TEA in Acetone	2008	R	Stevenage BC	12	37	29	26.5%	G	**0.79**
Gradko	50% TEA in Acetone	2008	R	LB Hounslow	12	58	59	-0.2%	G	**1.00**
Gradko	50% TEA in Acetone	2008	R	LB Hounslow	12	69	72	-4.6%	G	**1.05**
Gradko	50% TEA in Acetone	2008	UB	LB Hounslow	10	38	30	24.9%	G	**0.80**
Gradko	50% TEA in Acetone	2008	R	LB Redbridge	12	46	46	-0.2%	G	**1.00**
Gradko	50% TEA in Acetone	2008	R	LB Redbridge	11	50	55	-10.1%	G	**1.11**
Gradko	50% TEA in Acetone	2008	UB	LB Redbridge	12	37	32	13.9%	G	**0.88**
Gradko	50% TEA in Acetone	2008	K	LB Redbridge	10	52	53	-2.4%	G	**1.03**
Gradko	50% TEA in Acetone	2008	K	AEA Tech Intercomparison	12	103	116	-10.7%	G	**1.12**
Gradko	50% TEA in Acetone	2008	R	Horsham DC	11	34	30	12.7%	G	**0.89**
Gradko	50% TEA in Acetone	2008	R	LB Lewisham	10	69	63	8.1%	G	**0.93**
Gradko	50% TEA in Acetone	2008	UC	Sheffield CC	12	33	30	10.8%	G	**0.90**
Gradko	50% TEA in Acetone	2008		**Overall Factor[3] (16 studies)**				**Use**		**0.93**

[1] For Casella Stanger/Bureau Veritas (NOT Bureau Veritas Labs) use Gradko 50% TEA in Acetone; for Bureau Veritas Labs and Eurofins use Casella Seal/GMSS/Casella CRE/Bureau Veritas Labs/Eurofins; for Staffordshire County Analyst use Staffordshire CC SS; for Bodycote Health Sciences use Clyde Analytical Laboratories. From 2008 Dundee CC are Tayside SS.

[2] In this situation it would be reasonable to use data from the nearest year.

[3] Overall factors have been calculated using orthogonal regression to allow for uncertainty in both the automatic monitor and diffusion tube. The uncertainty of the diffusion tube has been assumed to be double that of the automatic monitor.

[4] If you have your own co-location study, please send your data to us, so that it can be included here. If this is not possible, but you wish to combine these factors with your own, select and copy the relevant data from this spreadsheet and paste them into a new one (otherwise your calculations will include hidden data). Then add your own data and calculate the bias. To obtain a new correction factor that includes your data, average the bias (B) values, expressed as a factor, i.e. -16% is -0.16. Next add 1 to this value, e.g. -0.16 + 1.00 = 0.84 in this example, then take the inverse to give the bias adjustment factor 1/0.84 = 1.19. (This will not be exactly the same as the correction factor calculated using orthogonal regression as used in this spreadsheet, but will be reasonably close).

[5] Where an annual data set falls into two years it has been ascribed to the year in which most of the data fall.

[6] Tube precision is determined as follows: G = Good precision - coefficient of variation (CV) of diffusion tube replicates is considered good when the CV of eight or more periods is less than 20%, and the average CV of all monitoring periods is less than 10%; P = Poor precision - CV of four or more periods >20% and/or average CV >10%; S = Single tube, therefore not applicable; na = not available.

QA/QC of diffusion tube monitoring

The Workplace Analysis Scheme for Proficiency (WASP) is an independent analytical performance-testing scheme, operated by the Health and Safety Laboratory (HSL). WASP formed a key part of the former UK NO_2 Network's QA/QC, and remains an important QA/QC exercise for laboratories supplying diffusion tubes to Local Authorities for use in the context of Local Air Quality Management (LAQM). The laboratory participants analyse four spiked tubes, and report the results to HSL. HSL assign a performance score to each laboratory's result, based on their deviation from the known mass of nitrite in the analyte.

The outcomes of these QA/QC schemes are evaluated on a regular basis against a set of pre-defined performance criteria. The Performance criteria are based upon the Rolling Performance Index (RPI) statistic.

Gradko Laboratories takes part in the independent Workplace Analysis Scheme for Proficiency and demonstrated good performance in the WASP scheme for analysis of NO_2 diffusion tubes, January 2008 – January 2009.

Appendix B: Part A Processes

Table B1. Part A Processes in the Slough Borough regulated by the Environment Agency

Table A6: Part A Industrial Processes		
Type of Process	**Location**	**Grid reference**
Combustion	Slough Power Station	495370, 181540
Various Paint Processes	ICI Plc	498460, 180120
Surface Treatment	Metal Colours	492756, 183066
Landfill	Colnbrook Landfill	503716, 176204
Biological Process for Pharmaceuticals	Lonza Biologics Plc	495600, 188060
Manufacture and Packaging of Chocolate based Confectionary	Mars UK Ltd	495100, 181550
Incineration Plant, Energy from Waste	S Grundon Waste Ltd	503870, 177300

Appendix C: Part A2 and Part B Processes

APPLICANT	TYPE OF PROCESS. Reference	GRID REFERENCE	PROCESS GUIDANCE NUMBER	APPLICATION DATE	DATE AUTHORISED	PERMIT ISSUED DATE	PERMIT REFERENCE
1.	**Combustion and Incineration**						
Slough Crematorium Stoke Road Slough Berks SL2 5AX	Cremation of Human Remains.	497710 E 181450 N	PG 5/2	31st July 1991	20th July 1992	12TH May 2008	PPC/08/19
BPV Servicing and SAAB Spares The Workshop Ely Avenue Slough Berks SL2 5DS	Waste Oil Burners.	496280 E 181450 N	PG 1/1	16th January 1992	27th May 1993	March 2005	Q04PELYA/1/2005
2.	**Mineral Sector**						
London Concrete (Heathrow Plant) Colnbrook by Pass Slough Berkshire SL3 OEB	Mixing Concrete	504289 E 177884 N	PG 3/1	22nd February 2002	6th June 2003	3rd May 2007	PPC/07/16
Lafarge Cement UK Plant Colnbrook by Pass Colnbrook Slough Berkshire SL3 OET	**CLOSED AND REVOKED 2007**						
Wiggins Transport Ltd R/O Poyle Manor Farm Poyle Road Stanwell Middx	Crushing and Grinding.	502900 E 176300 N	PG 3/8	29th April 1992	23rd December 1992	28th February 2007	PPC/07/3
McArdle Contractors Ltd McArdle House McArdle Way Colnbrook Slough	Mobile Crushing Plant CEASED 2008	N/A	PG3/16	18th September 2006	N/A	29th December 2006	PPC/06/1

APPLICANT	TYPE OF PROCESS. Reference	GRID REFERENCE	PROCESS GUIDANCE NUMBER	APPLICATION DATE	DATE AUTHORISED	PERMIT ISSUED DATE	PERMIT REFERENCE
McArdle Contractors Ltd McArdle House McArdle Way Colnbrook Slough	Mobile Screening Plant	N/A	PG3/16	18th September 2006	N/A	29th December 2006	PPC/06/2
3.	**Metal Sector**						
Wagstaff Foundries Ltd 7 David Road Poyle Trading Estate Colnbrook Slough Berks SL3 ODB	Iron Sandcasting Production process.	503480 E 176180 N	PG 2/4 PG 2/3	Sept 2003	18th December 2003	28th February 2007	PPC/07/17
4.	**Solvents Sector**						
Emanuel Brothers Ltd Wexham Road Slough Berks SL1 1RW	Respraying of Road Vehicles.	498440 E 180220 N	PG 6/34	14th September 1992	5th August 1993	28th February 2007	PPC/07/6
Rainbow Bodyshop 460 Bath Road Slough Berks SL1 6BB	Respraying of Road Vehicles.	493880 E 181140 N	PG 6/34	21st October 1992	28th May 1993	28th February 2007	PPC/07/7
Tigwell & William 11 David Road Poyle Industrial Estate Colnbrook SL3 0DB	Respraying of Road Vehicles. CLOSED 2009	503480 E 176220 N	PG 6/34	29th September 1992	28th February 1994	28th February 2007	PPC/07/9
Bodytechnics Limited 381 Sykes Road Slough Trading Estate Slough Berkshire SL1 4SP	Respraying of Road Vehicles	494460 E 181370 N	PG 6/34	24th May 1999	19th December 2000	28th February 2008	PPC/07/19
Autodex Holding Ltd 466 Bath Road Slough Berks SL1 6BB	Respraying of Road Vehicles	493840 E 181030 N	PG 6/34	5th June 1995	5th July 1996	28th February 2007	PPC/07/8

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APPLICANT	TYPE OF PROCESS. Reference	GRID REFERENCE	PROCESS GUIDANCE NUMBER	APPLICATION DATE	DATE AUTHORISED	PERMIT ISSUED DATE	PERMIT REFERENCE
Autotech Slough Ltd 649-650 Ajax Avenue Slough Trading Estate Slough Berks SL1 4BG	Respraying of Road Vehicles	495796 E 180807 N	PG 6/34	22nd October 2003		28th February 2007	PPC/07/4
Autotech ARC Stoke Gardens Industrial Estate Slough Berks SL1 3QB	Respraying of Road Vehicles		PG 6/34	18th March 2003		28th February 2007	PPC/07/5
R & C Motors Co Ltd White Hart Road Chalvey Slough Berks SL1 2SF	Respraying of Road Vehicles.	*496620 E 179240 N	PG 6/34	30th September 1992	5th August 1993	28th February 2007	PPC/07/11
DUCO International Eastbourne Rd Slough Bucks SL1 4SF	Textile and Fabric Coating and Finishing Process	494960 E 181270 N		1st April 2004 (as a Part B process)	30th September 2003 (as a Part B process)	8th March 2007	IPPC/A2/08/1b
Wartsil Propulsion 810 Oxford Avenue Slough Industrial Estate Slough Berkshire SL1 4LN	Textile Coating		PG 4/02(05) PG6/08 (04)	5th July 2007	N/A	18th December 2007	PPC/07/18
ICI PAINTS Wexham Road Slough Berks SL2 5DS	Paint Manufacturing.	498500 E 180190 N	PG 6/10(92)	25th August 1992	30th September 1993	28th June 2007	PPC/07/14
5.	**Bitumen Coatings**						
W R GRACE LTD 636/9 and 647/8 Ajax Avenue Slough Berks SL1 4BH	Bituminous Process Plant 2	495840 E 180730 N	PG 6/42	3rd August 1995	8th November 1996	8th March 2007	

APPLICANT	TYPE OF PROCESS. Reference	GRID REFERENCE	PROCESS GUIDANCE NUMBER	APPLICATION DATE	DATE AUTHORISED	PERMIT ISSUED DATE
W R GRACE LTD 636/9 and 647/8 Ajax Avenue Slough Berks SL1 4BH	As above Plant 7	495750 E 180820 N	PG6/43	3rd August 1995	8th November 1996	8th March 2007
6.	**Dry Cleaners**					
Classic Cleaners 278 Farnham Road Slough Berkshire SL1 4XL			PG6/46	24th October 2006	N/A	29th December 2006
Launderama 14 Harrow Market Langley Slough Berkshire SL3 8HJ			PG6/46	30th October 2006	N/A	29th December 2006
White Rose Dry Cleaners 9 Grasmere Avenue Slough Berkshire SL2 5JD			PG6/46	30th October 2006	N/A	29th December 2006
Wardrobe Game 59 Coleridge Crescent Colnbrook Slough Berkshire SL3 0QD			PG6/46	28th October 2006	N/A	11th January 2007
APPLICANT	TYPE OF PROCESS. Reference	PROCESS GUIDANCE NUMBER	APPLICATION DATE	DATE AUTHORISED	PERMIT ISSUED DATE	PERMIT REFERENCE
7.	**Petrol Filling Stations**					

Slough Borough Council

APPLICANT	TYPE OF PROCESS. Reference	PROCESS GUIDANCE NUMBER	APPLICATION DATE	DATE AUTHORISED	PERMIT ISSUED DATE	PERMIT REFERENCE
Tesco Service Station Brunel Way Slough Berkshire SL1 1XW	Vapour recovery	PG 6/46	26th May 1998	31st December 1998	4th May 2007	PPC/PFS/07/1
Farnham Road Service Station 416 Farnham Road Slough Berkshire SL2 1JA	Vapour recovery	PG 6/46	2nd November 1998	31st December 1998	4th May 2007	PPC/PFS/07/2
BP Chequers Service Stn Colnbrook By Pass Colnbrook Slough Berkshire SL3 0EH	Vapour recovery	PG 6/46	3rd August 1998	31st December 1998	24th May 2007	PPC/PFS/07/3
Slough East Service Stn 85 London Road Slough Berkshire SL3 7RS	Vapour recovery	PG 6/46	19th November 1998	31st December 1998	4th May 2007	PPC/PFS/07/4
Shell Burnham Lane 56 Burnham Lane Slough Berkshire SL1 6JY	Vapour recovery	PG 6/46	11th January 1999	31st March 1999	24th May 2007	PPC/PFS/07/5
Good Companions Service Station 93 Stoke Poges Lane Slough Berkshire SL1 3NJ	Vapour recovery	PG 6/46	16TH February 1998	31st December 1998	28th June 2007	PPC/PFS/07/6
BP Brandshill Service Stn 575 London Road Slough Berkshire SL3 1DA	Vapour recovery	PG6/46	3rd August 1998	31st December 1998	24th May 2007	PPC/PFS/07/7

APPLICANT	TYPE OF PROCESS. Reference	PROCESS GUIDANCE NUMBER	APPLICATION DATE	DATE AUTHORISED	PERMIT ISSUED DATE	PERMIT REFERENCE
Murco Service Station 135 High Street Chalvey Slough Berkshire SL1 2TW	Vapour recovery	PG6/46	30th November 1998	31st December 1998	28th June 2007	PPC/PFS/07/8
BP Wexham Road Service Station 273 Wexham Road Slough BerkshireSL2 5QY	Vapour recovery	PG6/46	3rd August 1998	31st December 1998	24th May 2007	PPC/PFS/07/9
Langley Connect Service Station Parlaunt Road Slough Berkshire SL3 8QR	Vapour recovery	PG6/46	3rd August 1998	31st December 1998	24th May 2007	PPC/PFS/07/10
Tesco Express 80-82 London Road Slough Berkshire SL3 7HR	Vapour recovery	PG6/46	6th October 1998	31st December 1998	28th June 2007	PPC/PFS/07/11
Bath Rd Filling Station 232 Bath Road Slough Berkshire SL1 3XE	Vapour recovery	PG6/46	13th October 1998	31st December 1998	4th May 2007	PPC/PFS/07/12
BP Furnival Service Station 253-257 Farnham Road Slough Berkshire SL2 1DA	Vapour recovery	PG6/46	7th May 1998	31st December 1998	28th June 2007	PPC/PFS/07/13
South West Service Stn 395 Bath Road Slough Berkshire SL1 3SA	Vapour recovery	PG6/46	24th September 1998	31st December 1998	28th June 2007	PPC/PFS/07/14

Slough Borough Council

APPLICANT	TYPE OF PROCESS. Reference	PROCESS GUIDANCE NUMBER	APPLICATION DATE	DATE AUTHORISED	PERMIT ISSUED DATE	PERMIT REFERENCE
Golden Cross Service Stn Old Bath Road Colnbrook Slough Berkshire SL3 0JZ	Vapour recovery	PG6/46	26th November 1998	31st December 1998	28th June 1998	PPC/PFS/07/15