



## REVOCATION OF FAWLEY AIR QUALITY MANAGEMENT AREA

### 1.0 Introduction

- 1.1 The Local Air Quality Management process is set out in Part IV of the Environment Act, 1995, the Air Quality Strategy for England, Scotland, Wales and Northern Ireland, 2007 and associated policy and technical guidance documents. This process places a duty on all Local Authorities to regularly review and assess air quality in their area against objectives (listed in Appendix 1) set by Government for 7 pollutants are aimed at the protection of public health.
- 1.2 Where exceedance of an air quality objective is determined or considered likely the Local Authority must 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 to reduce pollutant concentrations in pursuit of the objective.

### 2.0 Background to Fawley Air Quality Management Area

- 2.1 Through the Local Air Quality Management process Fawley was initially identified as a location that might be affected by increased concentrations of sulphur dioxide from localised industry. Therefore, in 2004 this Council commenced monitoring of sulphur dioxide at Jubilee Hall in the centre of Fawley village using a real time analyser with assessment against the three AQ objectives for this pollutant, namely the 15 minute, hourly and 24 hour mean. In 2005 it became apparent that there was likely to be an exceedance of the 15 minute mean objective for sulphur dioxide and an AQMA (a map showing the extent of the AQMA is shown in Appendix 2) was subsequently declared by Cabinet at their meeting on the 3<sup>rd</sup> August 2005.
- 2.2 Following declaration of the AQMA the Council determined that the majority of the localised sulphur dioxide emissions in Fawley were from the Exxonmobil oil refinery. Council officers therefore worked closely with Exxon and the Environment Agency (the body responsible for regulating and permitting processes at the refinery) to produce an Air Quality Action Plan (AQAP). This plan, which outlined options to reduce sulphur dioxide emissions in pursuit of the 15 mean AQ objective, was formally adopted by the Council at its Cabinet meeting on the 3<sup>rd</sup> September 2008.

### 3.0 Implementation of AQ Action Plan

- 3.1 Since its adoption officers have been working jointly with the refinery and the Environment Agency to develop and secure the implementation of the options contained in the AQAP. In summary the works completed to date include:

- Continual reduction in permitted annual sulphur dioxide emissions as indicated below:

Year	Permitted SO <sub>2</sub> tonnes per year	Actual releases of SO <sub>2</sub> tonnes per year
2008	20,800	18,092
2009	18,000	13,910
2010	18,000	11,237
2011	18,000	11,771
2012	18,000	
2013 - 2015	11,200	
2016 onwards	8,600	

#### Permitted and actual sulphur dioxide emissions from Esso oil refinery

- Introduction of a sulphur dioxide hourly limit
- Use of sulphur dioxide reduction additive on the catalytic converter plant (CAT)
- Introduction of an operating procedure to predict periods of likely potential increases in sulphur dioxide concentrations and ability to adjust fuel burnt i.e. change from oil to gas during certain weather conditions as at such times it was determined that the emissions from 4 stacks at the refinery could combine with the potential that these emissions could ground in the vicinity of Fawley village
- The above procedure is in the process of being superseded by the conversion of the main boiler to the use of a lower sulphur fuel (nearing completion).
- Alarm system operational between refinery and real time monitor in Jubilee Hall, Fawley which acts as an early warning to alert the refinery to increases in sulphur dioxide concentrations.

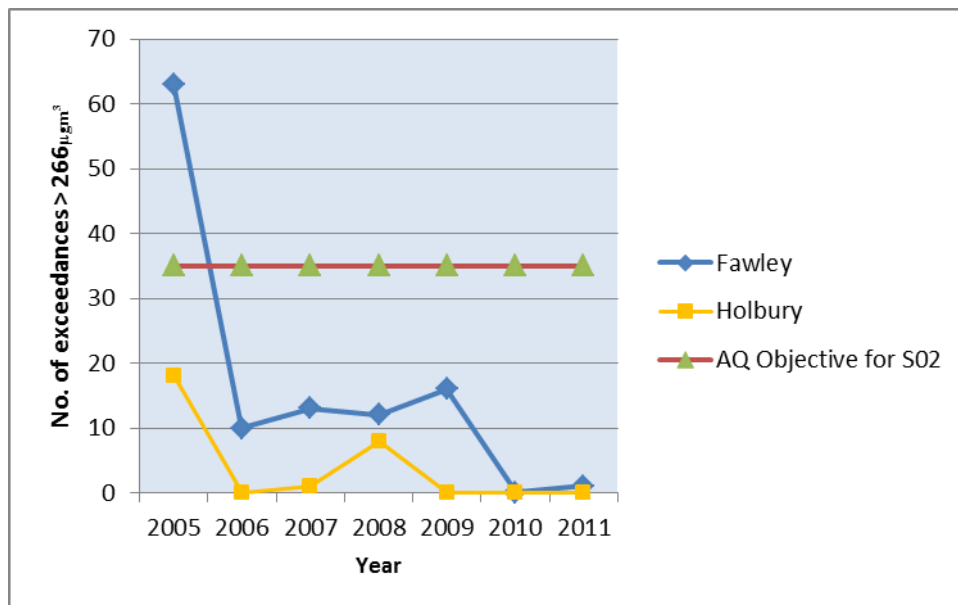
3.2 There are also further works which are due for completion at the refinery which include:

- Installation of equipment to reduce sulphur dioxide emissions by recovering 97-99% of sulphur (2015)
- Further review of site sulphur dioxide emissions by Environment Agency (2014/2015)

3.3 Some of the options are still evolving due to technological issues but the overall aim to reduce sulphur dioxide emissions remains. In addition to the implementation of the Air Quality Action Plan the Environment Agency, in their capacity as regulator for the refinery, have ensured that the reduction in sulphur dioxide emissions has formed part of the operators permit through the inclusion of improvement conditions or as set emission limits within the permit.

## 4.0 Monitoring Results

- 4.1 Whilst it is difficult to specify the precise reduction in emissions for all the agreed implemented options, the monitoring results from 2006 – 2012 have shown a dramatic reduction in the number of monitored exceedances of the 15 minute mean objective for sulphur dioxide.
- 4.2 This is clearly indicated in the graph below which shows the exceedance of the AQ objective in 2005 which led to the declaration of the AQMA and the reduction in the number of exceedances since 2006 following a combination of operational improvements at the refinery and works to reduce the overall emissions. It should be noted that the monitoring result for 2012 has now been ratified as zero exceedances for the 15 minute mean objective for sulphur dioxide.



**Sulphur dioxide 15 minute mean objective results 2005 - 2011**

## 5.0 Revocation of the Fawley AQMA

- 5.1 The monitoring has shown that the air quality objectives for sulphur dioxide (15 minute, hourly and annual mean) have been met for the past 7 years. As such there is no legal requirement to retain the AQMA and, in accordance with Government guidelines, this Council is now seeking its revocation.
- 5.2 Defra has been advised of the improvement in the sulphur dioxide emissions in Fawley and has endorsed the intention to proceed with revocation of the AQMA. Accordingly, and as part of the revocation process stipulated by Defra, the Council has consulted with members of the public, local councillors, local businesses (advert placed in local paper and information publicised on NFDC website) and key

stakeholders (Environment Agency, Fawley Parish Council, Natural England, Exxonmobil and neighbouring local authorities) on its proposal to revoke the AQMA.

- 5.3 The consultation period extended for 8 weeks and ended on 18<sup>th</sup> January 2013 and met with a positive response from Exxonmobil, the Environment Agency, and waterside industries (as represented at the New Forest Environmental Protection Liaison Committee). Support for the revocation was also received from a member of the public and whilst no formal response was received from Fawley Parish Council officers gave a presentation to the Parish Council as part of the consultation process and addressed any queries raised.
- 5.4 A copy of the response from the Environment Agency and Exxon are contained in Appendix 3.

## **6.0 Environmental Implications**

- 6.1 The introduction of the AQMA and the subsequent production of the AQAP have, through partnership working between Council officers, Exxon and the Environment Agency, brought about a significant improvement in sulphur dioxide emissions in Fawley.
- 6.2 The Environment Agency has confirmed that their continued action through the refinery's operational permit will lead to additional reduction in sulphur dioxide emissions over the next few years. In addition Exxon have given their assurance that they will continue to operate the refinery site with the aim of consistently meeting the 15 minute mean for sulphur dioxide and all of the relevant AQ objectives for the local area.
- 6.3 These commitments will ensure that the air quality in Fawley continues to improve with considerable benefits for the wider environment. Fawley Parish Council has also requested that it would be in the public interest for Council officers to continue monitoring the local air quality to act as an early warning in the unlikely event that any deterioration in the sulphur dioxide emissions occurs. The continuance of the monitoring has also been endorsed by the refinery.

## **7.0 Financial Implications**

- 7.1 There is no cost associated with the actual revocation of the AQMA and the ongoing cost associated with the monitoring (officer time, maintenance of the air quality station and management of the AQ data) can be financed out of the existing budget. Furthermore, Fawley Parish Council, local industry and the Environment Agency have all supported the need for continued local air quality monitoring in order to maintain public reassurance that there is no deterioration in sulphur dioxide emissions once the AQMA has been revoked.

## **8.0 Crime and Disorder**

8.1 None

## **9.0 Conclusion**

9.1 Following the declaration of the Fawley AQMA in August 2005 operational changes have been made and works implemented at the Fawley refinery to secure a reduction in sulphur dioxide emissions. Monitoring in the intervening years has shown a significant improvement in the local air quality to the extent that there has not been an exceedance of the 15 minute mean objective for sulphur dioxide in Fawley or Holbury since the declaration of the AQMA.

9.2 As sulphur dioxide levels in Fawley are now well within the AQ objective for the 15 minute mean for this pollutant there is no longer a legal requirement for the AQMA to remain. In such circumstances Defra guidance requires that the AQMA should be revoked and following extensive consultation with all relevant stakeholders, local councillors and members of the public, revocation of the Fawley AQMA is now sought.

## **10.0 Comments by Environment Portfolio Holder**

10.1 The Portfolio Holder warmly welcomes this recommendation and congratulates all the Council's partners, the Environment Agency, Fawley Parish Council, Natural England, Exxonmobil and the New Forest Environmental Protection Liaison Committee who have worked towards this excellent result.

## **11.0 Comments by the Environment Overview and Scrutiny Panel**

11.1 The Environment Overview and Scrutiny Panel support the recommendations to Cabinet.

## **12.0 Recommendation**

12.1 It is therefore recommended that:

- The Fawley Air Quality Management Area declared by Cabinet on the 3<sup>rd</sup> August 2005 in respect of the exceedance of the 15 minute mean air quality objective for sulphur dioxide is revoked.
- The air quality monitoring stations located in Fawley village and Holbury Manor Infants School are maintained and monitoring continued for the foreseeable future in

order to reassure the public that sulphur dioxide emissions do not deteriorate once the AQMA is removed.

**Further information can be obtained from:**

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**Background Papers:**

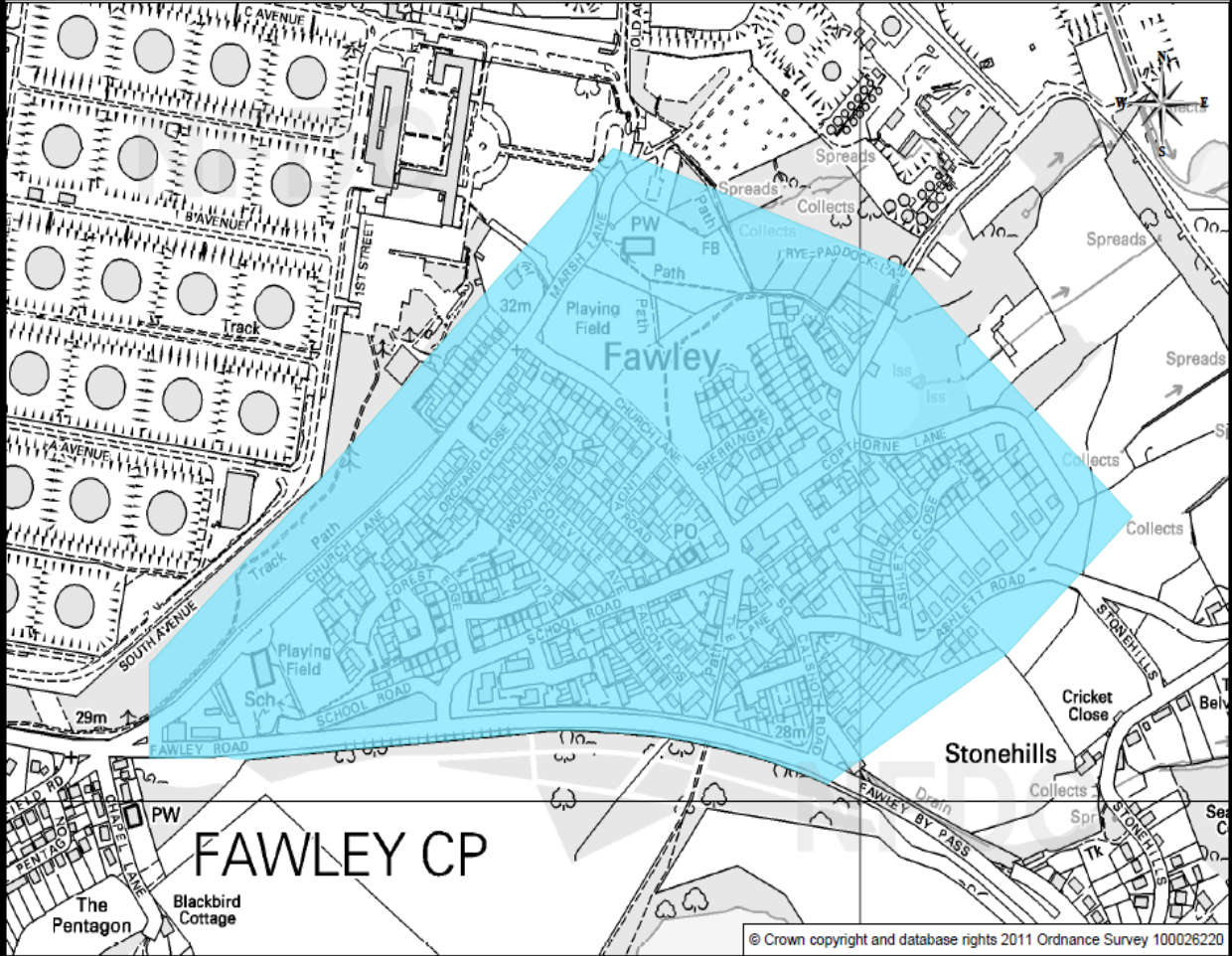
Environment Act 1995  
Defra Policy Guidance on  
Local Air Quality  
Management LAQM.PG (03)

New Forest District Council  
Updating and Screening  
Assessment 2012

## APPENDIX 1

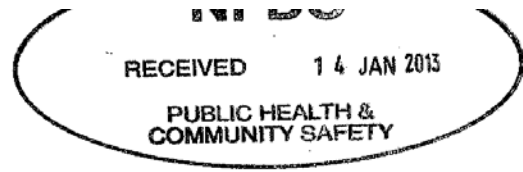
Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
	5.00 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
Carbon monoxide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

Fawley Air Quality Management Area





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**ExxonMobil**

Rachel Higgins  
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11th<sup>th</sup> January 2013

Dear Ms. Higgins,

CONSULTATION REGARDING REVOCATION OF FAWLEY AQMA

Thank you for the invitation to comment on the revocation of the Air Quality Management Area (AQMA) for Fawley Village as per your letter of 5th December.

Esso Petroleum agrees with the proposal to revoke the AQMA and would make the following points in support of this view....

- Prior to the introduction of the AQMA, we noted that there was potential that the proposed 15 minute mean Sulphur Dioxide (SO<sub>2</sub>) objective might not be met. We rapidly put procedures in place to mitigate the impact of emissions from the site stacks by ensuring that we burnt lower Sulphur fuels on our main boilers when weather conditions meant that higher SO<sub>2</sub> concentrations could occur. This has been successful from 2006 (when the objective came into force) onwards - so the objective has always been met.
- We have carried out steps to reduce our SO<sub>2</sub> emissions. To date we have introduced an SO<sub>2</sub> reduction additive to reduce emissions from our Cat Plant stack, and have just commissioned a low Sulphur liquid fuel stream to our main boilers to reduce emissions from this unit.
- We intend to carry our further SO<sub>2</sub> reduction work - in particular the construction of facilities to improve the efficiency of our Sulphur recovery plants and so reduce emissions further, with anticipated completion by the end of 2015.

We would like to assure all interested parties that we will continue to operate the site with the aim of consistently meeting the 15 minute mean SO<sub>2</sub> Air Quality Objective, (AQO) and indeed all of the relevant AQOs for the local area.

We would like to thank NFDC, EA and the NFDC Environmental Protection Liaison Committee for their cooperation and support in allowing us to develop monitoring and mitigation procedures that have clearly achieved the aim of ensuring that the objectives for air quality in the Fawley area were met.

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Environment  
Agency

**NFDC**

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RECEIVED 07 JAN 2013  
PUBLIC HEALTH &  
COMMUNITY SAFETY

Our ref:  
Your ref: RH

Date: 4 January 2013

Dear Rachel

**ENVIRONMENT ACT 1995  
CONSULTATION REGARDING THE REVOCATION OF THE FAWLEY AIR  
QUALITY MANAGEMENT AREA**

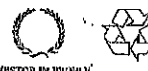
Thank you for the opportunity to comment on the New Forest District Council's proposal to revoke the Fawley Air Quality Management Area.

I note with great interest and pleasure that the threat of a breach the 15 minute mean objective for sulphur dioxide has been removed as a result of the partnership between the Environment Agency, New Forest District Council and Esso Petroleum Co Ltd. Furthermore, continued action by the Environment Agency will lead to additional reduction in damaging sulphur dioxide emissions over the next few years. This will have considerable benefits for the wider environment.

Yours sincerely

**SIMON MOODY  
Environment Manager (West)  
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