



Appendix A
OEH Tender Document

**INTERNATIONAL BEST PRACTICE MEASURES TO PREVENT AND/OR MINIMISE
PARTICLE EMISSIONS FROM COAL MINING**

TECHNICAL BRIEF

The Department of Environment, Climate Change and Water NSW (DECCW) is undertaking a major review of the management of particle emissions from coal mining in the Hunter Valley. As part of this review, DECCW is commissioning a study to identify international best practice measures to prevent and/or minimise particle emissions from coal mining in the Hunter Valley.

1. OBJECTIVE

The objectives of the study are to:

- Review international best practice measures to prevent and/or minimise particle emissions from all activities associated with NSW coal mines, including land rehabilitation.
- Compare international best practice measures to prevent and/or minimise particle emissions with those currently used at NSW coal mines.
- Make recommendations regarding the adoption of international best practice measures that could be practicably implemented in NSW at existing and proposed coal mines.
- Estimate the likely reduction in particle emissions associated with adopting each international best practice measure at NSW coal mines.
- Estimate the costs associated with adopting each international best practice measure at NSW coal mines.

2. BACKGROUND INFORMATION

There is growing community concern regarding both the health and amenity impacts associated with particle emissions from coal mining in the Hunter Valley. Many recent scientific studies have confirmed that exposure to particles are associated with health risks.

The coal mining industry is the:

- Largest industrial emitter of PM₁₀ in the NSW Greater Metropolitan Region (GMR), emitting 25,256 kg of PM₁₀ per year, or 33.6% of anthropogenic emissions¹; and
- Third largest emitter of PM_{2.5} in the GMR, emitting 4,154 kg of PM_{2.5} per year, or 13.6% of anthropogenic emissions¹.

The *Protection of the Environment Operations Act 1997* (POEO Act) is the key piece of environment protection legislation administered by the Environment Protection Authority (EPA), which is part of DECCW.

The POEO Act establishes a system of environment protection licensing for 'scheduled' activities with the potential to have a significant impact on the environment. Schedule 1 of the POEO Act lists those scheduled activities, which are licensed by the EPA. A coal mine is declared to be a scheduled activity if:

- (a) it has a capacity to produce more than 500 tonnes of coal per day; or
- (b) it has disturbed, is disturbing or will disturb a total surface area of more than 4 hectares of land.

¹ Air Emissions Inventory for the Greater Metropolitan Region in NSW
<http://www.environment.nsw.gov.au/air/airinventory.htm>

Part 5.4 (sections 124–135) of the POEO Act deals specifically with air pollution from EPA-licensed premises. This includes the general obligation that the occupier of a premises must:

- not cause air pollution by failing to operate or maintain plant, carry out work or deal with materials in a proper and efficient manner (sections 124–126); and
- operate any plant by such practicable means as may be necessary to prevent or minimise air pollution (section 128).

3. SCOPE OF WORK

DECCW is seeking advice on:

- Best practice measures used internationally to prevent and/or minimise particle emissions from all activities associated with NSW coal mines.
- How international best practice measures to prevent and/or minimise particle emissions compare with those currently used at NSW coal mines.
- The international best practice measures that could be practicably implemented in NSW for existing and proposed coal mines.
- The likely reduction in particle emissions associated with adopting each international best practice measure at NSW coal mines.
- The costs associated with adopting each international best practice measure at NSW coal mines.

4. TASKS FOR THE CONSULTANT

- Identify the major sources of particles from coal mines (i.e. TSP, PM₁₀ and PM_{2.5}) and rank them in descending order of significance for offsite impacts.
- Identify current operational practices and/or emission controls for minimising particle emissions from coal mining in the Hunter Valley. In identifying current operational practices and/or emission controls, the consultant will visit a representative sample of operational open-cut coal mines in the Hunter Valley.
- Research and identify international best practice to prevent and/or minimise particle emissions from all activities associated with coal mining including land rehabilitation. This may involve site visits to relevant interstate and overseas mines.
- Evaluate the practicality of implementing best practice identified in 2. at coal mines in the Hunter Valley. The NSW Minerals Council and a representative sample of operational open-cut coal mines in the Hunter Valley are to be consulted as part of the evaluation. The reasoning behind all findings of the evaluation is to be clearly stated.

The consultant should liaise with DECCW at the start of the project to discuss the tasks to be completed.

5. DELIVERABLES

- A draft report covering all of the points defined in the Scope of Work.
- A final report covering all of the points defined in the Scope of Work.
- A presentation of the final report to DECCW.

The final report must include:

- An executive summary written in plain English;
- A detailed report addressing the objectives of the study as outlined above; and
- Recommendations.

Electronic reports need to be submitted in Microsoft Word 2003 and Acrobat compatible formats, while electronic data needs to be submitted in Microsoft Excel 2003 and Microsoft Access 2003 compatible format.

6. PROJECT MANAGEMENT

6.1. Timeframes and Milestones

Milestones and progress payments are detailed below:

- Milestone 1: Agreement on scope of work and commencement of study (40% progress payment on Friday 4 June 2010).
- Milestone 2: Delivery of draft report addressing objectives and scope of work to the satisfaction of DECCW (30% progress payment on Friday 23 July 2010).
- Milestone 3: Delivery of final report addressing objectives and scope of work to the satisfaction of DECCW (final 30% payment on Friday 6 August 2010).

With each request for payment, the consultant should submit a consolidated progress report covering the items in Section 6.2. Progress Reports.

6.2. Progress Reports

Brief progress reports are required to be submitted to the DECCW project officer by C.O.B. on Friday every week. The progress reports must be emailed to the project officer and include the following details:

- Tasks undertaken in the last week and personnel responsible for the task.
- Tasks planned for the next week and personnel responsible for the task.
- Any outstanding information/new issues.
- Meetings held / planned (inc. dates) (External / Internal).
- Budgetary issues / changes to scope / schedule issues.

6.3. Contract

The successful consultant will be required to sign a standard DECCW consultancy contract ("the Agreement"). All major changes in direction of the project need to be confirmed in writing by the consultant keeping a running log of all changes requested and confirmed.

7. PROJECT BUDGET

The indicative budget for this work is \$100,000 (exclusive of GST)

8. REQUIREMENTS FOR SUBMITTING A TENDER

In providing a proposal for this work, please provide a submission including:

- A brief summary of your relevant experience in this area;
- A detailed summary of your relevant experience in this area;
- A detailed discussion of the approach to the study and methods that will be used;
- CVs for the consultant(s) who would conduct the work;
- Detailed work plans including timetables for delivering outputs;
- Demonstrated understanding of the requirements of the consultancy (including any proposed variations or innovations);
- Proposed timetable (including the availability of key personnel);
- Proposed budget;
- Documentation of previous relevant experience;
- Names of relevant referees; and
- Declaration of any conflict of interest or risk of conflict of interest.

9. TENDER EVALUATION CRITERIA

The selection criteria used to award this tender will be:

- Quality of the proposed method and approach to the project;
- Experience in similar tasks and/or demonstrated capacity to undertake the project;
- The relevant expertise of the proposed consultants;
- Ability to perform the work within the timeframe;
- Value for money; and
- High level of report writing and communication skills.

10. LODGEMENT OF TENDER

Proposals must be lodged in hard copy format in triplicate to:
The Tender Box
Department of Environment, Climate Change and Water
Level 14, 59-61 Goulburn Street
SYDNEY NSW 2000

Proposals must also be lodged via email to:
Nick.Agapides@environment.nsw.gov.au.

All proposals should be marked to the attention of:
Nick Agapides
Manager Major Air Projects
Air Policy Section
Climate Change, Policy and Programs Group
Department of Environment, Climate Change and Water NSW

Tenders must be received by 10:00 am, Friday 21 May 2010.

Further Information:

Nick Agapides
Manager Major Air Projects
Air Policy Section
Climate Change, Policy and Programs Group
Department of Environment, Climate Change and Water NSW
Telephone: 02 9995 6047
Facsimile: 02 9995 5938
Email: Nick.Agapides@environment.nsw.gov.au



Appendix B
OEH Section 191 Notice to
GMR Coal Mines

Your reference: -
Our reference: DOC09/35294 & FIL09/9889
Contact: Nick Agapides, 02 9995 6047

<<Contact_Title>> <<Contact_Given_Name>> <<Contact_Surname>>
<<Contact_Position>>
<<AP_Name>>
<<AP_Street>>
<<AP_Suburb>> <<AP_State>> <<AP_Postcode>>

Dear <<Contact_Title>> <<Contact_Surname>>

29 September 2009

**AIR EMISSIONS INVENTORY FOR THE GREATER METROPOLITAN REGION IN NSW
2008 SURVEY OF EPA-LICENSED PREMISES**

**COMPANY NAME: <<AP_Name>>
ENVIRONMENT PROTECTION LICENCE NUMBER: <<Lic_No>>
S191 NOTICE NUMBER: AP - <<Lic_No>>**

The Department of Environment, Climate Change and Water (DECCW) would like to advise you that the air emissions inventory for the Greater Metropolitan Region (GMR) in NSW is being updated for the 2008 calendar year. The NSW Environment Protection Authority (EPA), which is part of DECCW, will need to obtain information from 1,109 EPA-licensed premises to complete this task.

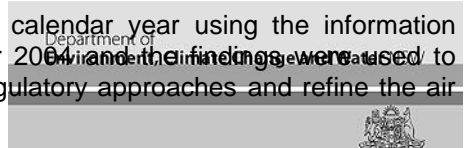
In 1998 the NSW Government released *Action for Air*, its 25-year air quality management plan for the GMR, which covers the Sydney, Lower Hunter and Illawarra regions. *Action for Air* focuses on regional air pollution and includes strategies that represent a comprehensive attack on the two pollutants of primary concern: photochemical smog (ground-level ozone); and fine particle pollution.

The State Plan - A New Direction for NSW sets targets to improve outcomes and services for the people of NSW. *The State Plan* commits the NSW Government to meeting the goals of the National Environment Protection (Ambient Air Quality) Measure (Ambient Air Quality NEPM). These national health-based goals apply to six air pollutants: carbon monoxide; lead; sulfur dioxide; nitrogen dioxide; ozone and fine particles.

To ensure proposed policies in *Action for Air* are based on the most credible and up-to-date information and progress in meeting *The State Plan* targets is supported by sound evidence-based data, DECCW maintains an air emissions inventory.

You may have participated in a survey of 1,161 EPA-licensed premises during November to December 2004. You may also have participated in stakeholder workshops during June 2007, to discuss the inventory results prior to their release and also reviewed emission estimates for your premises before they were finalised. Your timely and comprehensive input was critical to ensure the industry sectors' contribution to air pollution was accurately represented.

In November 2007, DECCW published an inventory for the 2003 calendar year using the information provided by EPA-licensed premises during November to December 2004 and the findings were used to assess the effectiveness of DECCW's air policies, programs and regulatory approaches and refine the air quality management strategies contained in *Action for Air*.



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For additional information about the air emissions inventory for the 2003 calendar year, please refer to Attachment 1 to this letter or the DECCW web site <http://www.environment.nsw.gov.au/air/airinventory.htm>.

The existing inventory represents activities for the 2003 calendar year. This update is needed to accurately characterise current air quality in the GMR, given the improvements in air quality achieved through various domestic, industrial and on-road mobile source related programs that have been implemented since that time. It is necessary to update the inventory for the 2008 calendar year. This will allow each sectors' contribution to air pollutant emissions to be re-evaluated, as the most economic and environmentally effective air quality management and regulatory responses are developed and canvassed with stakeholders.

We have designed this approach to minimise duplication with the National Pollutant Inventory (NPI). Only 320 of the 1,109 EPA-licensed premises being surveyed are NPI reporters, so the survey is necessary to ensure emissions from the industry sector are accurately estimated. You may also be aware that emissions reported to the NPI are aggregated totals for each premises, while the survey seeks emissions disaggregated by each source so a robust analysis can be conducted to support effective regulation of air pollution.

The EPA is conducting the 2008 survey through a Notice to Provide Information and/or Records ("the Notice") issued under s191 of the *Protection of the Environment Operations Act 1997* ("the Act"). The information sought in the Notice relates to the EPA's functions and responsibilities under the Act. The use of the EPA's powers in this way is for the purpose of administering the Act and protecting the environment.

Attachment 2 to this letter includes the Notice, while Annexure A to the Notice includes a Questionnaire(s), which you must complete. One (1) copy of the completed Questionnaire(s) must be provided in writing by no later than 10 November 2009 and addressed to:

Mr. Nick Agapides
Manager Major Air Projects
Climate Change, Policy and Programs Group
Department of Environment, Climate Change and Water
PO Box A290
SYDNEY SOUTH NSW 1232

If you need to discuss any matters in relation to the Notice, please contact Mr. Nick Agapides on (02) 9995 6047 or Nick.Agapides@environment.nsw.gov.au. If you need assistance in completing the Questionnaire(s), please contact the Air Emissions Inventory Helpdesk at: air.majorprojects@environment.nsw.gov.au, or as follows:

Air Emissions Inventory Helpdesk Staff Member	Phone Number
Mr. Nick Agapides	(02) 9995 6047
Mr. Kelsey Bawden	(02) 9995 6094

I trust you share DECCW's desire that future decisions on managing air pollution issues are based on accurate industry information and hope we can continue to work cooperatively in managing air quality in NSW.

Yours sincerely



JOE WOODWARD
Deputy Director General
Environment Protection and Regulation

Attachment 1. Air Emissions Inventory Brochure
 2. s191 Notice to Provide Information and/or Records
 3. Questionnaire(s)

Air Emissions Inventory for the Greater Metropolitan Region in NSW



Why do we need an air emissions inventory?

Air pollution comes from many sources, so we need to know the contribution each one makes in order to develop the best approaches for improving air quality. The last air emissions inventory for NSW was completed in 1996 and although that data has served us well until now, emissions have changed, making it necessary for a new inventory.

The major task of developing the new inventory commenced in 2004 and took nearly three years to complete. The results are now available and being used to shape the way we improve air quality in NSW.

What is the air emissions inventory?

The air emissions inventory is a detailed listing of pollutants discharged into the atmosphere by each source type during a given time period and at a specific location. The study area covers 57,330 km², which includes the greater Sydney, Newcastle and Wollongong regions, known collectively as the Greater Metropolitan Region (GMR). Figure 1 shows the GMR, Sydney, Newcastle and Wollongong regions. Approximately 76% of the NSW population resides in the GMR.

The inventory includes emissions from biogenic (i.e. natural) and anthropogenic (i.e. human) derived sources as outlined below:

- Biogenic (e.g. bushfires, trees and windborne dust)
- Commercial businesses (e.g. quarries, service stations and smash repairers)
- Domestic activities (e.g. house painting, lawn mowing and wood heaters)
- Industrial premises (e.g. oil refineries, power stations and steelworks)
- Off-road mobile (e.g. aircraft, railways and recreational boats)
- On-road mobile (e.g. buses, cars and trucks).

The inventory includes over 90 air pollutants. They are:

- criteria pollutants (i.e. carbon monoxide (CO), lead, oxides of nitrogen (NO_x), PM₁₀, PM_{2.5}, sulfur dioxide (SO₂) and volatile organic compounds (VOCs))
- metal air toxics (e.g. antimony, arsenic, beryllium, chromium and nickel)
- organic air toxics (e.g. benzene, formaldehyde, polycyclic aromatic hydrocarbons (PAHs), toluene and xylenes).

Air emissions data can be presented either for the GMR, Sydney, Newcastle or Wollongong regions, or each of the 66 local government areas (LGAs) within the GMR. Emissions vary by month, weekday/weekend day and hour of the day, and can be presented on an annual, monthly, daily or hourly basis.



Figure 1 Definition of GMR, Sydney, Newcastle and Wollongong Regions

How was the air emissions inventory completed?

The air emissions inventory project was largely funded by the NSW Environmental Trust, with additional funding provided by the Department of Environment and Climate Change NSW (DECC) and the Commonwealth Department of the Environment and Water Resources in line with State and Commonwealth agreements under the National Pollutant Inventory (NPI) National Environment Protection Measure (NEPM).

After six months preparatory work and project planning, the inventory project formally commenced in July 2004. The inventory project has been a significant air quality study that has taken nearly three years to complete.

DECC has been responsible for overall project management and three contractors have provided DECC with expertise in emission estimation methodology design, database design, activity data collection, emissions estimation and quality assurance/quality control. Over ten engineers and scientists have been responsible for completing the project.

How have air emissions been estimated?

Activity data has been obtained from industry groups, government departments and other service providers. A number of surveys have also been conducted to obtain activity data.

Air emissions have been estimated by combining activity data with emission factors. Where available, source emission test data has been used in preference to emission factors for industrial and commercial sources.

The emissions have been assigned to map coordinates for industrial and commercial point sources, or each 1-km by 1-km grid cell for biogenic, domestic-commercial, off-road mobile and on-road mobile area sources. Emissions are then calculated for months, weekdays/weekend days and hours using factors derived from the activity data. Figure 2 shows the grid coordinate system.

Emission estimation techniques for all source types have been based on either published Australian (i.e. NPI) or overseas methodologies (e.g. California Air Resources Board (CARB) or United States Environmental Protection Agency (USEPA)).

The base year of the inventory represents activities that took place in the 2003 calendar year and emission projection factors have been developed for every year from 2004 to 2031 using the methodologies published by USEPA, which is shown below in Equation 1 and the following data:

- Final energy usage growth data published by Australian Bureau of Agriculture and Resource Economics (ABARE)
- Free standing dwelling growth data published by Australian Bureau of Statistics (ABS) and Transport and Population Data Centre (TPDC)
- Population growth data published by ABS and TPDC
- Primary energy usage growth data published by ABARE
- Total dwelling growth data published by ABS and TPDC
- Vehicle kilometres travelled growth data published by TPDC.

$$\text{Equation 1 } E_{i,j,n} = E_{i,j,2003} \times PF_{j,n}$$

where:

$E_{i,j,n}$	=	Emission of substance i from source type j for year n	tonnes/year
$E_{i,j,2003}$	=	Emission of substance i from source type j for the base year 2003	tonnes/year
$PF_{j,n}$	=	Emission projection factor for source type j for year n	

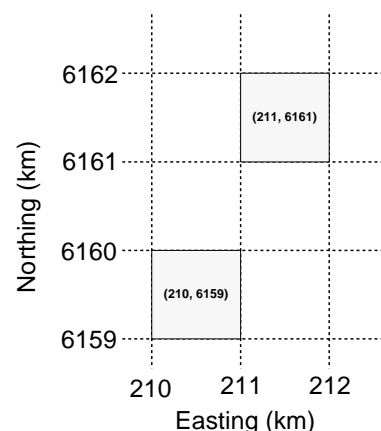


Figure 2 Grid Coordinate System

Where is the air emissions data stored?

The air emissions inventory data is stored in a database, which includes several features such as:

- air pollution modelling using models developed by California Institute of Technology (CIT), CSIRO and USEPA
- emissions charting by air pollutant, source, LGA and region
- emissions data visualisation using geographical information systems (GIS)
- emissions forecasting up to the year 2031
- emissions modelling to test out policy scenarios
- environmental reporting by air pollutant, source, LGA and region
- source and pollutant prioritisation using CARB facility prioritisation guidelines
- VOC prioritisation based on photochemical smog forming potential using the CARB maximum incremental reactivity (MIR) methodology.

Figure 3 presents the role of the air emissions inventory within the air quality management cycle.

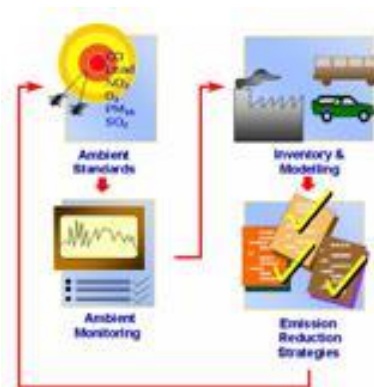


Figure 3 Air Emissions Inventory within the Air Quality Management Cycle

What are the priority air pollutants?

Air quality in the GMR has been steadily improving since the 1980s. In 1998, ambient air quality standards and goals for six criteria pollutants (i.e. CO, lead, NO₂, O₃, PM₁₀ and SO₂) were set in the Ambient Air Quality NEPM. Ambient concentrations of CO, lead, NO₂ and SO₂ are all consistently below their respective national standards. However, some exceedences of national standards occur for O₃ and periodically for PM₁₀. Emissions of NO_x, PM₁₀, PM_{2.5} and VOCs are the air pollutants of primary concern in the GMR and Sydney region. Figure 4 illustrates air pollution sources, their transport and transformation and parts of the environment that are impacted by air pollution.

NO_x and VOCs (or photochemical smog precursors), in the presence of sunlight, undergo a series of complex reactions, which are responsible for photochemical smog formation. Ground-level ozone is an indicator of photochemical smog, which is characterised by a white atmospheric haze during the warmer months of the year.

PM₁₀ and PM_{2.5} (or particles with an aerodynamic equivalent diameter less than 10 microns and 2.5 microns respectively) are responsible for fine particulate matter pollution. Fine particulate matter pollution is characterised by a brown atmospheric haze during the cooler months of the year.

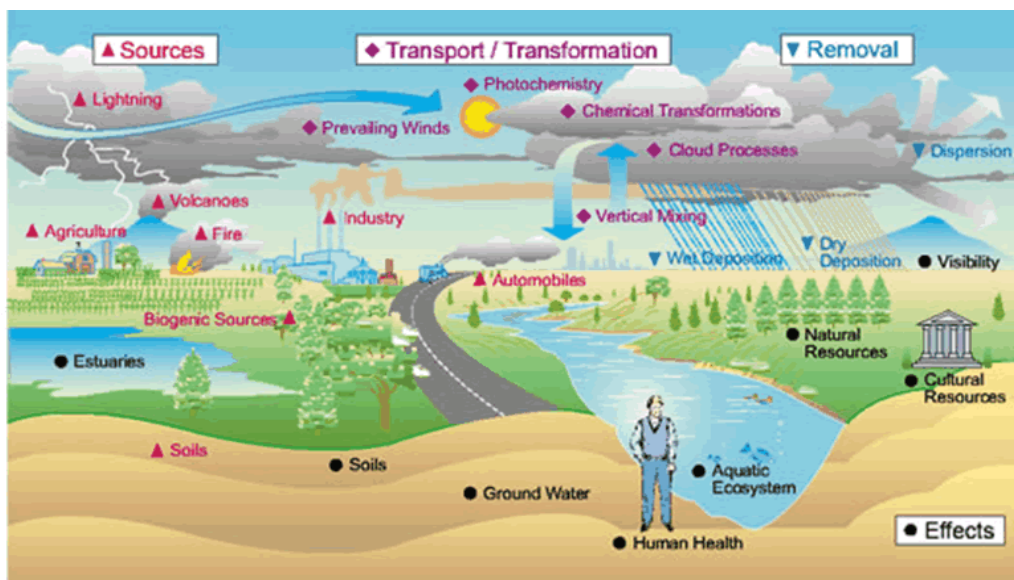


Figure 4 Sources of Air Pollution and their Impact on the Environment

What are the major anthropogenic sources in the GMR?

Table 1 presents annual anthropogenic emissions of criteria pollutants in the GMR.

Table 1 Annual Anthropogenic Emissions of Criteria Pollutants in the GMR

Substance	Anthropogenic Source Type					Anthropogenic Total
	Commercial	Domestic-Commercial	Industrial	Off-Road Mobile	On-Road Mobile	
tonnes/year						
CO	1,801	90,516	603,133	32,144	559,047	1,286,641
Lead	0.194	0.153	11.964	54.917	13.701	80.929
NO _x	2,648	1,791	175,537	23,470	88,609	292,054
PM ₁₀	4,032	6,651	46,530	14,566	3,349	75,128
PM _{2.5}	1,270	6,428	13,127	6,486	3,188	30,499
SO ₂	71.005	143	295,819	4,170	1,660	301,863
VOCs	13,844	67,303	17,786	7,640	64,493	171,067

- CO – Industrial, on-road mobile and domestic-commercial sources make-up ~97.4%
- Lead – Off-road mobile, on-road mobile and industrial sources make-up ~99.6%
- NO_x – Industrial, on-road mobile and off-road mobile sources make-up ~98.4%
- PM₁₀ – Industrial, off-road mobile and domestic-commercial sources make-up ~90.2%
- PM_{2.5} – Industrial, off-road mobile, domestic-commercial and on-road mobile sources make-up ~95.8%
- SO₂ – Industrial sources make-up ~98%
- VOCs – Domestic-commercial, on-road mobile, industrial and commercial sources make-up ~95.5%.

Figures 5 to 8 show major source contributions to annual anthropogenic emissions of NO_x, PM₁₀, PM_{2.5} and VOCs in the GMR.

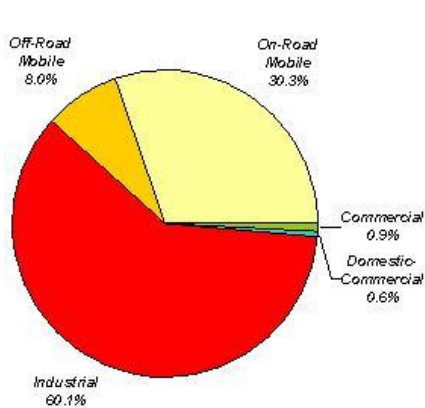


Figure 5 Annual Emissions of NO_x in the GMR

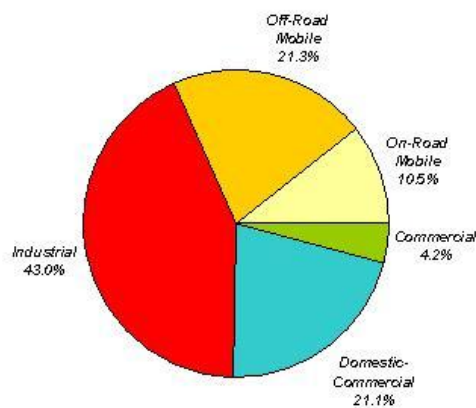


Figure 7 Annual Emissions of PM_{2.5} in the GMR

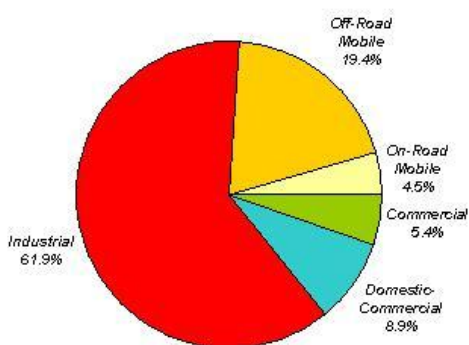


Figure 6 Annual Emissions of PM₁₀ in the GMR

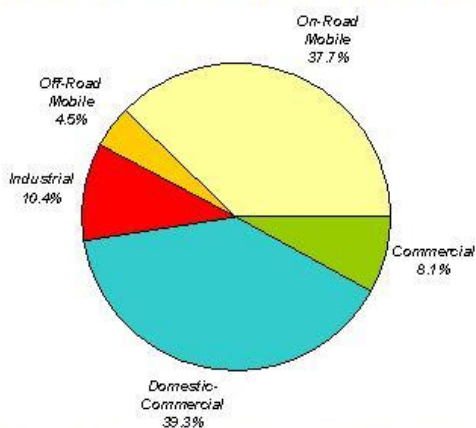


Figure 8 Annual Emissions of VOCs in the GMR

What are the major anthropogenic sources in the Sydney region?

Table 2 presents annual anthropogenic emissions of criteria pollutants in the Sydney region.

Table 2 Annual Anthropogenic Emissions of Criteria Pollutants in the Sydney Region

Substance	Anthropogenic Source Type					Anthropogenic Total
	Commercial	Domestic-Commercial	Industrial	Off-Road Mobile	On-Road Mobile	
	tonnes/year					
CO	1,265	67,221	8,004	20,251	431,270	528,011
Lead	0.189	0.114	4.703	13.325	10.713	29.044
NO _x	1,870	1,356	14,032	9,514	65,996	92,768
PM ₁₀	2,143	4,993	7,911	3,707	2,552	21,305
PM _{2.5}	723	4,826	3,390	1,761	2,426	13,126
SO ₂	48.074	108	10,980	1,374	1,254	13,764
VOCs	9,973	51,929	13,989	4,772	50,171	130,834

- CO – On-road mobile and domestic-commercial sources make-up ~94.4%
- Lead – Off-road mobile, on-road mobile and industrial sources make-up ~99%
- NO_x – On-road mobile, industrial and off-road mobile sources make-up ~96.5%
- PM₁₀ – Industrial, domestic-commercial, off-road mobile and on-road mobile sources make-up ~89.9%
- PM_{2.5} – Domestic-commercial, industrial, on-road mobile and off-road mobile sources make-up ~94.5%
- SO₂ – Industrial sources make-up ~79.8%
- VOCs – On-road mobile, domestic-commercial, industrial and commercial sources make-up ~96.3%

Figures 9 to 12 show major source contributions to annual anthropogenic emissions of NO_x, PM₁₀, PM_{2.5} and VOCs in the Sydney region.

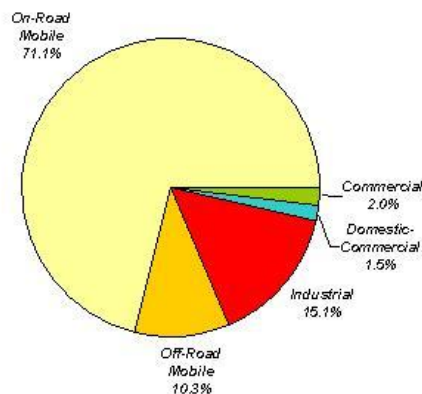


Figure 9 Annual Emissions of NO_x in the Sydney Region

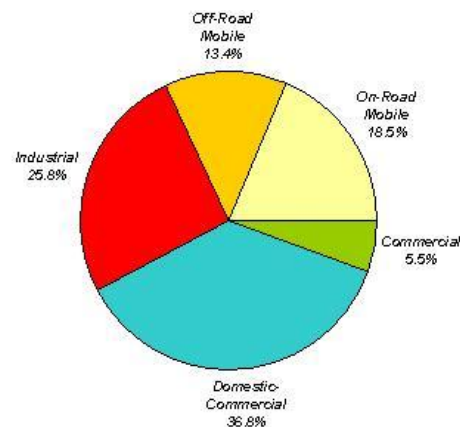


Figure 11 Annual Emissions of PM_{2.5} in the Sydney Region

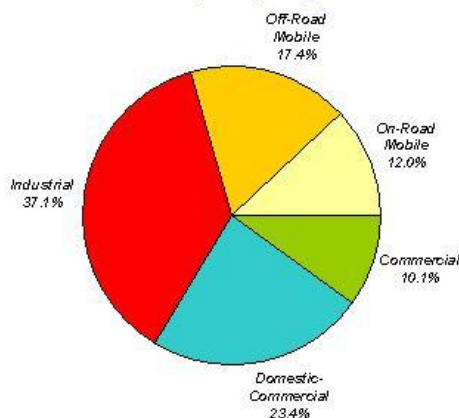


Figure 10 Annual Emissions of PM₁₀ in the Sydney Region

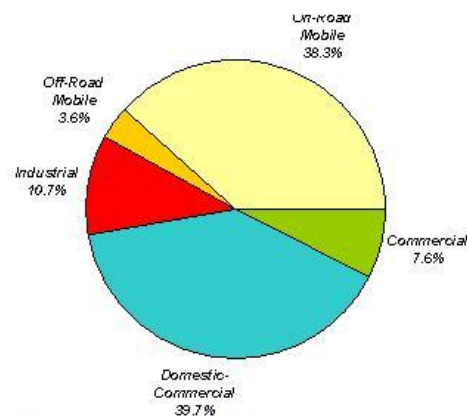


Figure 12 Annual Emissions of VOCs in the Sydney Region

How will the information be used?

In 1998 the NSW Government released 'Action for Air', its 25-year air quality management plan for the GMR. 'Action for Air' focuses on regional air pollution. The strategies in the plan aim to reduce the two pollutants of primary concern:

- photochemical smog (i.e. ground-level ozone)
- fine particle pollution (i.e. PM₁₀ and PM_{2.5}).

The inventory will be used to refine existing emission reduction strategies and develop new-targeted strategies for all major sectors to further reduce their emissions. These will be included in the next review of 'Action for Air' in 2007.

Where can I obtain additional information?

If you require more detailed information about activity data, emission estimation methodologies, sources and emissions of other air pollutants included in the air emissions inventory you can visit the DECC web site at <http://www.environment.nsw.gov.au/air/airinventory.htm> and download the following documents:

- Criteria Pollutant Emissions for all Sectors
- Anthropogenic Ozone Precursors and Particle Emissions in the Greater Metropolitan and Sydney Regions
- Biogenic Emissions Module
- Commercial Emissions Module
- Domestic-Commercial Emissions Module
- Industrial Emissions Module
- Off-Road Mobile Emissions Module
- On-Road Mobile Emissions Module.

Published by:

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Website: www.environment.nsw.gov.au

In July 2009 the Department of Environment and Climate Change became known as the Department of Environment, Climate Change and Water NSW.

<<Contact_Title>> <<Contact_Given_Name>> <<Contact_Surname>>
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ACN or ARBN: <<ACN_or_ARBN>>

Notice number AP - <<Lic_No>>

File number FIL09/9889

Date 29 September 2009

NOTICE TO PROVIDE INFORMATION AND/OR RECORDS

BACKGROUND

- A. The NSW Environment Protection Authority (“**the EPA**”) is part of the Department of Environment, Climate Change and Water (“**DECCW**”).
- B. The EPA is responsible for the administration and enforcement of the *Protection of the Environment Operations Act 1997* (“**the Act**”).
- C. The EPA is conducting a survey of EPA-licensed premises (“**the survey**”) to contribute to a 2008 calendar year air emissions inventory (“**the inventory**”) being prepared for the Greater Metropolitan Region in NSW (“**the GMR**”). The inventory will include over 850 substances from biogenic, commercial, domestic, industrial, off-road mobile and on-road mobile sources.
- D. In November 2007, DECCW published an inventory for the 2003 calendar year using the information provided by EPA-licensed premises during November to December 2004. The findings were used to refine the air quality management strategies contained in the NSW Government’s *Action for Air* policy document as well as policies and programs developed and administered by the EPA. The inventory has also enabled the EPA to more effectively regulate air pollution under the Act.
- E. Since the inventory represents activities for the 2003 calendar year, it is considered the information does not accurately characterise current air quality in the GMR, given the improvements in air quality achieved through various domestic, industrial and on-road mobile source related programs that have been implemented since that time. The EPA believes that a re-evaluation of each sectors’ contribution to air pollutant emissions is required, so the most economic and environmentally effective air quality management and regulatory responses are continually reviewed, developed and canvassed with stakeholders, hence the need to update the inventory for the 2008 calendar year.
- F. The 2008 calendar year inventory will be used to contribute to the development of new air policy and programs in New South Wales. It is also anticipated the new inventory will be used to:
 - Prioritise sources and pollutants of concern;
 - Assess the effectiveness of air policies, programs and regulatory approaches;
 - Enable the EPA to more effectively regulate air pollution under the Act;
 - Forecast future emission scenarios;
 - Contribute to air pollution modelling; and
 - Contribute to environmental reporting relating to air quality.
- G. A questionnaire(s) (“**the Questionnaire**”) is attached to this Notice at **Annexure A**.
- H. This Notice requires you to submit **one (1) copy** of the completed **Questionnaire(s)** to the EPA.
- I. Information collected by the EPA under this Notice relates to the functions and responsibilities of the EPA under the Act and is for the purposes of administering the Act and protecting the environment.

REQUIREMENT TO PROVIDE INFORMATION AND/OR RECORDS

1. I Nick Agapides, delegate of the EPA, require you to complete the attached Questionnaire(s) as it applies to your premises and provide a copy.
2. You must furnish any record specified above if that record is in your possession or you can lawfully obtain possession of it.
3. The information and/or records must be provided to the EPA by no later than **10 November 2009**.
4. The information and/or records must be provided in writing and addressed to:

**Mr. Nick Agapides
Manager Major Air Projects
Climate Change, Policy and Programs Group
Department of Environment, Climate Change and Water
PO Box A290
Sydney SOUTH NSW 1232**



.....
Mr. Nick Agapides
Manager Major Air Projects
Climate Change, Policy and Programs
(By Delegation)

WARNING AND INFORMATION ABOUT THIS NOTICE

1. It is an offence against the Act not to comply with this Notice unless you have a lawful excuse for not doing so. It is also an offence to furnish information under this Notice knowing that the information is materially false or misleading.
2. The maximum penalty that a court may impose on a corporation for not complying is \$1,000,000, with a further \$120,000 for each day the offence continues. The maximum penalty that a court may impose on an individual is \$250,000 and a further \$60,000 for each day the offence continues.
3. Under section 319A of the Act, your obligation to provide the information and/or records specified in this Notice continues until the Notice is complied with in full, even if the due date has passed.
4. The fact that the information and/or records that this Notice requires you to provide might incriminate you or make you liable to a penalty does not excuse you from having to comply with the Notice.
5. The fact that a record provided by you in compliance with this Notice might incriminate you does not make that record inadmissible in evidence against you in criminal proceedings.
6. This Notice is issued under section 191 of the Act
7. However, if you are a natural person (that is, an individual rather than, for example, a company or other incorporated body) you may object to providing information which this Notice requires you to provide on the ground that the information might incriminate you. You must still provide the information but it is not admissible in evidence against you in criminal proceedings if you make this objection except for the offence of knowingly answering a question falsely or in a way that is misleading in a material respect.
8. This warning is given for the purposes of section 212 of the Act.
9. Note: The Act defines "records" as including plans, specifications, maps, reports, books, and other documents (whether in writing, in electronic form or otherwise).

ANNEXURE A **QUESTIONNAIRE**

Please find enclosed Questionnaire(s) for activities listed in Table A.1.

Table A.1. Activity Specific Questionnaires

Activity Type
<<Activity_1>>
<<Activity_2>>
<<Activity_3>>
<<Activity_4>>
<<Activity_5>>
<<Activity_6>>
<<Activity_7>>
<<Activity_8>>
<<Activity_9>>
<<Activity_10>>
<<Activity_11>>
<<Activity_12>>

If you undertake any of the additional activities shown in Table A.2 at your premises, you need to obtain, complete and submit additional Questionnaire(s) in order for you to fully comply with the requirements of the Notice. If you need assistance in completing the Questionnaire(s), please contact the Air Emissions Inventory Helpdesk at air.majorprojects@environment.nsw.gov.au or as follows:

Air Emissions Inventory Helpdesk Staff Member	Phone Number
Mr. Nick Agapides	(02) 9995 6047
Mr. Kelsey Bawden	(02) 9995 6094

Table A.2. Activity Specific Questionnaires

Activity Type
Agricultural fertiliser (phosphate) production
Aluminium production (alumina)
Aluminium production (scrap metal)
Ammonium nitrate production
Animal accommodation
Battery production
Bird accommodation
Bitumen mixing
Boat construction maintenance (dry float)
Boat construction maintenance (general)
Boat mooring and storage
Brewing and distilling
Cement or lime handling
Cement or lime production
Ceramics production
Chemical production
Chemical storage

Activity Type
Coal washery reject or slag landfilling
Coal works
Coke production
Composting
Concrete works
Container reconditioning
Contaminated soil treatment
Crushing, grinding or separating
Dairy animal accommodation
Dairy processing
Explosives production
General agricultural processing
General animal products production
General chemicals storage
Generation of electrical power from coal
Generation of electrical power from gas
Generation of electricity not coal or gas
Glass production (container)
Glass production (float)
Hazardous, industrial or group A waste D
Hazardous, industrial or group A waste G
Helicopter-related activity
Iron or steel production (iron ore)
Iron or steel production (scrap metal)
Land-based extractive activity
Landfilling
Metal plating or coating
Metal processing
Mining for coal
Mining for minerals
Non-ferrous metal production (ore)
Non-ferrous metal production (scrap)
Non-thermal treatment of waste
Other land-based extraction
Paints polishes adhesives production
Paper or pulp production
Paper production using recycle materials
Pesticides and related products production
Petrochemical production
Petroleum products and fuel production
Petroleum products storage
Pharmaceutical and veterinary products production
Pig accommodation
Plastics resins production
Printing, packaging and visual media production
Railway systems activities
Recovery of waste

Activity Type
Recovery of waste oil
Recovery of waste tyres
Rendering or fat extraction
Road construction
Rubber products tyre production.
Scrap metal processing
Sewage treatment
Shipping in bulk
Slaughtering or processing of animals
Soap and detergent production
Sterilisation activities
Thermal treatment of waste
Waste storage
Water-based extractive activity
Wood or timber milling or processing
Wood preservation

Major Materials and Products

Q13. Please estimate the annual quantity of the main raw materials consumed (e.g. tonnes/year, litres/year). Also indicate the physical state of the raw material (i.e. solid/liquid or gas)^a. Attach a separate sheet if there is insufficient space in the table below.

Raw Material	Please circle:	Annual Quantity Used ^a
1.	solid / liquid / gas	
2.	solid / liquid / gas	
3.	solid / liquid / gas	
4.	solid / liquid / gas	
5.	solid / liquid / gas	
6.	solid / liquid / gas	
7.	solid / liquid / gas	

a Department of Environment, Climate Change & Water (DECCW) acknowledges that this information may be commercially sensitive. All information presented in this survey will be kept strictly confidential.

Q14. What product(s) are mined:

1. _____
2. _____
3. _____
4. _____
5. _____

Q15. Please specify the following information for each product(s) mined that is sent off-site. Attach a separate sheet if there is insufficient space in the table below.

Product Material	Annual Quantity Produced (tonnes) ^a	Off-site transfer method (e.g. truck, rail)

a Department of Environment, Climate Change & Water (DECCW) notes that this information may be commercially sensitive. All information presented in this survey will be kept strictly confidential.

Q16. Please estimate the total area of land that is exposed (e.g. has no vegetative cover) in ha: _____

- Q17.** Please estimate the average total area of land being worked at any particular time of the year (ha): _____
- Q18.** Please estimate the average total area of land that is cleared annually through burn off (ha): _____
- Q19.** Please indicate the 'burn off' regime (e.g. one day every three weeks) and please indicate whether there are specific periods when burning does not occur (e.g. December): _____
- Q20.** Please sketch a flow diagram representing the main stages involved in the process (e.g. land clearing → top soil removal → storage of top soil → blasting → removal of mineral → crushing → stockpile). If a "ready-made" sketch or more detailed flow diagram is available, please attach it to this questionnaire.

Air Emission Sources

Q22. Please identify all air emission sources at the facility, indicating whether any emission control technologies (e.g. baghouse or low NO_x burners for point sources) and/or management practices (e.g. watering and chemical wetting agents on stockpiles for fugitive sources) are utilised and the date they were first commissioned and/or either significantly modified, upgraded or replaced. Note that point, fugitive, controlled and uncontrolled sources should be included. Note also that, where there is more than one, all emission control technologies and/or management practices should be included for each source. Attach a separate sheet if there is insufficient space in the table below.

Emission Source Name	Stack/Vent Number ^a	Control Technology	Reduction Efficiency (%)	Date First Commissioned ^{b,d}	Date Significantly Modified, Upgraded or Replaced ^{c,d}

a Insert "NA" (not applicable) for fugitive sources

b Include the earliest date (i.e. day, month and year) that either:

- An application for pollution control approval (PCA) was lodged under the *Pollution Control Act 1970*
- A development application (DA) was lodged under the *Environmental Planning and Assessment Act 1979*; or
- A licence application was lodged under the *Protection of the Environment Operations Act 1997*,

Otherwise, include that date the emission source was "First Commissioned", if this information is not available.

c Include the earliest date (i.e. day, month and year) that either:

- An application for pollution control approval (PCA) was lodged under the *Pollution Control Act 1970*
- A development application (DA) or modification to an existing development consent was lodged under the *Environmental Planning and Assessment Act 1979*; or
- A licence application or variation to an existing licence was lodged under the *Protection of the Environment Operations Act 1997*,

Otherwise, include that date the emission source was "Significantly Modified, Upgraded or Replaced", if this information is not available.

d Include codes PCA, EP&A and POEO beside date to denote Pollution Control Act 1970, Environmental Planning and Assessment Act 1979 and Protection of the Environment Operations Act 1997 respectively, where relevant

Fuel Combustion

Q23. If combustion devices (e.g. see below) are utilised by the facility, please specify their characteristics in the table below). Please read the footnotes. Attach a separate sheet if there is insufficient space in the table below.

Type of Combustion Device	Stack/Vent Number	Rated Capacity (kW)	Fuel Type ^a	Estimated Annual Fuel Consumption (either tonnes, litres, cubic metres or MJ)	Emission Control(s) ^b	Control Efficiency (%)

^a If the fuel type is an oil, please indicate the type of oil (e.g. residual, distillate, No.6 Residual Oil).

^b Emission controls include flue gas controls such as baghouses and scrubbers as well as the use of combustion related controls such as low NO_x burners. If more than one control device is used, please number the controls and place a corresponding control efficiency for each numbered control in the adjacent column (e.g. with "(1) baghouse, (2) scrubber" entered into the "Emission Control(s)" column, the adjacent column would read "(1) 99%, (2) 80%". for the corresponding control efficiencies).

Combustion Types

External Combustion		Internal Combustion
Boiler - dry bottom - wall fired	Spreader stoker	Gas turbine
Boiler - dry bottom - tangentially fired	Overfeed stoker	4-stroke lean burn
Boiler - dry bottom - cell burner fired	Handfed unit	4-stroke rich burn
Boiler - wet bottom - wall fired	Fluidised bed combustor - circulating	2 stroke lean burn
Boiler - wet bottom - tangentially fired	Fluidised bed combustor - bubbling	
Boiler - wet bottom - cell burner fired	Space heater	
Boiler (other)	Fuel cell/Dutch oven	
Cyclone furnace		

Q24. Please provide source specific emission estimates for any point sources at the facility in the table below. Please indicate any available information on stack properties (e.g. location, height, diameter, exit velocity) even if no emissions data are available. Attach a separate sheet if there is insufficient space in the table below.

	Stack/ Vent Number	Stack/ Vent Number	Stack/ Vent Number	Stack/ Vent Number	Stack/ Vent Number	Stack/ Vent Number
STACK DETAILS:						
Stack Identification						
Emission Source ID (please use ID number used in Q22 and Q23) ^a						
Stack Location Easting (MGA) (km)						
Stack Location Northing (MGA) (km)						
Stack height (m)						
Stack internal diameter @ exit (m)						
Gas discharge velocity (m/s) @ discharge temperature						
Gas discharge volume (m ³ /s) @ discharge temperature						

**EMISSION COMPONENTS
(kg/year):**

Total Solid Particulates						
PM ₁₀						
CO						
NO						
NO ₂						
SO ₂						
SO ₃						
VOCs ^b						
Lead						
Formaldehyde						
Benzene						
Toluene						
Benzo(α)pyrene or PAHs						
Isomers of xylene						
Other (please specify)						

a Please use the same naming convention as used for Q22 and Q23 (where applicable).
 b If the species-specific composition of total VOCs is known, please attach this information separately.

Q25. If the emissions of any of the sources specified in Q22-Q24 vary from the operating regime of the facility, described in Q8-Q12, please describe this variation below.

Q26. Please indicate the following information for any fuel or organic liquid storage tanks at the facility. All volumes should be expressed in kilolitres (kL). Attach a separate sheet if there is insufficient space in the table below.

Tank Type (please tick)		Capacity (kL)	Material Stored (e.g. petrol, diesel, LPG, acetone)	Estimated Loss (if known) (kL)	Filling Method (i.e. splash loading, submerged loading or bottom loading) ^b	During filling tanks, are the vapours displaced from the tank vented directly to the atmosphere or are they returned to the filling tanker?	Annual Throughput (kL/y)	Please specify any emission control measures utilised on the tanks ^c
Above Ground ^a	Below Ground							

- a If any above ground tanks are present, please indicate whether the tank design is fixed roof, floating roof (internal or external), or a pressure tank.
- b *Submerged Filling*: The liquid enters the tank from the top of the tank, freefalling and splashing to the bottom of the tank;
Submerged Filling: The liquid enter the tank via a pipe which reaches down to the bottom of the tank, allowing the end of the pipe to become submerged shortly after filling commences; and *Bottom Loading*: The liquid is filled via a pipe that enters through the bottom of the tank. For gas filled tanks please indicate "NA".
- c Emission controls may include devices such as secondary seals (for above ground tanks), vapour recovery units (VRUs) and/or activated carbon filters used on the storage tank vents to minimise breathing and filling releases. Indicate the control efficiency where possible.

Q27. Please provide (attach to the questionnaire) fuel speciation profiles for fuels used at the facility.

Q29. Do you have an on-site wastewater treatment system? If so, please provide the following data:

VOC emissions to air estimate from wastewater treatment: _____
kg/year

Please specify method of calculation:

Please estimate the annual volume of wastewater treated (i.e. megalitres/year)

_____ ML/yr

Please estimate the minimum, maximum and average Biological Oxygen Demand (BOD) of wastewater as received by the treatment plant (i.e. influent BOD).

_____ kg/m³ (min)

_____ kg/m³ (max)

_____ kg/m³ (annual average)

On-Site Vehicles

Q30. Please specify the following information pertaining to vehicles used for ON-SITE operations as best as possible (please read the footnotes beneath the table). Attach a separate sheet if there is insufficient space in the table below.

Type of vehicle ^a	Vehicle model year	Number of vehicles of this type operating	Fuel type (Petrol, diesel, LPG)	Engine Size (or power rating – kW or HP)	ON-SITE operating regime (e.g. 6am – 6pm, Monday to Friday) ^b	Typical operating hours per day	Number of operating days per year	Annual ON-SITE VKT per vehicle (km) ^{c, d}	% of VKT on PAVED roads (%) ^{c, d}	% of VKT on UNPAVED roads (%) ^{c, d}

- a Covers Off-Road vehicles only. Off-Road vehicles typically are not registered with the Road and Traffic Authority (RTA) because they do not access the road network. Some may have Conditional Registrations with the RTA, when it requires limited access to the road network. Example: front end loader, grader, bulldozer, fork lifts.
- b Please characterise the ON-SITE operating regime if it differs to that described in Q8 – Q12.
- c It is important to ensure that only ON-SITE operations are considered when providing these data.
- d VKT = Vehicle Kilometres Travelled (km). Provide these data on a 'per vehicle' basis (i.e. so the TOTAL VKT's for a particular vehicle type will be the 'number of vehicles' by the 'VKT's' for each vehicle). This data only needs to be approximate.

Q31. Please specify the total fuel consumed by on-site vehicles:

Petrol: _____ kL/year
 Diesel: _____ kL/year
 LPG: _____ m³/year

Q33. Please specify any other activities leading to airborne emissions that have not been considered already in this questionnaire. If any estimates of emissions have been performed by the facility (e.g. fugitive emissions such as solvent loss, particulates from blasting) please present them in the following table. Attach a separate sheet if there is insufficient space in the table below.

Activity	Pollutant Emitted	Emission Estimate ^a

^a Please specify the units of measurement, as well as the method used to estimate the emission (e.g. source testing, mass balance).

Q34. Please estimate the annual electricity consumption at the facility (MWh):

Q35. Please provide any site-specific emission estimates (by source) not already covered by this questionnaire and air emission test data (please attach to the completed questionnaire):

Q36. Any additional comments relating to this questionnaire.
