Government of **Western Australia**
Department of **Environment Regulation**

LICENCE FOR PRESCRIBED PREMISES
Environmental Protection Act 1986

LICENCE NUMBER L4533/1967/15 **FILE NUMBER** DER2015/000597

LICENSEE AND OCCUPIER OF PREMISES
Cockburn Cement Limited
Level 1, 157 Grenfell Street
Adelaide SA 5000p
ACN: 008 673 470

NAME AND LOCATION OF PREMISES
Cockburn Cement Limited
As depicted in Attachment 1 and located at:

Street Address	Lot Number	Plan / Diagram	Volume	Folio
Rockingham Road, Munster	450	P 249735	2045	99
Russell Road, Munster	50	D 6065	1417	148
Munster	88	P 22127	2115	676
Russell Road, Munster	246	P 226012	1417	148
Russell Road, Munster	311	P 300770	1304	658
Russell Road, Munster	5	D 18525	1258	508
Russell Road, Munster	4	D 18525	1174	541

PRESCRIBED PREMISES CATEGORY
Schedule 1 of the *Environmental Protection Regulations 1987*

Category 12 – Screening, etc. of material
Category 43 – Cement or lime manufacturing
Category 61A – Solid waste facility
Category 62 – Solid waste depot
Category 63 – Class I inert landfill site

CONDITIONS OF LICENCE
Subject to the conditions of this licence set out in the attached 40 pages.

[redacted]

Officer delegated under Section 20
of the *Environmental Protection Act 1986*

ISSUE DATE: Friday, 30 March 2012
COMMENCEMENT DATE: Saturday, 31 March 2012
EXPIRY DATE: Thursday, 30 June 2016
AMENDMENT DATE: 17 March 2016

DEFINITIONS

In this licence:

"air temperature" means the temperature of ambient air that is measured to ensure neither solar nor terrestrial radiation affect the reading (usually achieved by a Stevenson Screen or similar enclosure around the temperature sensor) and reported in degrees Celsius (°C);

"analyte" means a chemical element (such as carbon) or chemical compound (such as sulfur dioxide) or a physical entity such as Total Suspended Particulate matter (TSP) that is required to be monitored;

"APHA-AWWA-WEF" means American Public Health Association (APHA), the American Water Works Association (AWWA) and the Water Environment Federation (WEF);

"AS/NZS" means the most recent version (unless otherwise specified) of the specified Australian and New Zealand Standard as jointly published by Standards Australia International Ltd, Sydney and Standards New Zealand, Wellington;

"AS/NZS 5667" means the most recent version and the relevant parts of the Australian and New Zealand series of guidance standards on Water Quality Sampling;

"AS or Australian Standard" means the most recent version (unless otherwise stated) of the specified Australian Standard published by Standards Australia International Ltd. Sydney;

"authorised person or inspector" means an authorised person or inspector as defined in sections 87 and 88 respectively of the Act;

"average coal sulfur content" means the sulfur content of coal measured per train load of coal received at the premises for combustion in the kilns averaged each calendar month and reported as percent sulfur by weight of dry coal;

"Bi-annual Monitoring" means monitoring twice per calendar year where monitoring is spaced at least 3 months apart;

"CEMS" means continuous emission monitoring system;

"CEM" means Continuous Emissions Monitor, and refers to an instrument installed to continuously monitor the concentration of a pollutant within a stack, and also refers to an instrument installed to continuously monitor associated parameters within the stack such as temperature, moisture and velocity;

"CEMS Code" means the WA Department of Environment and Conservation document titled Continuous Emission Monitoring System (CEMS) Code for Stationary Source Air Emissions, October 2006;

"CEO" means Chief Executive Officer of the Department of Environment Regulation;

"CEO" for the purpose of correspondence means;
Chief Executive Officer
Department Administering the Environmental Protection Act 1986
Locked Bag 33

CLOISTERS SQUARE WA 6850
Email: info@der.wa.gov.au;

"DER" means the Department of Environment Regulation;

"equivalent aerodynamic diameter" is that diameter (normally expressed in millionths of a metre or micrometres or µm) of a spherical particle of unit density (i.e. 1g/cm3) that would have the same settling velocity in air as the particulate matter (or dust) under consideration;

"EPP" means Environmental Protection (Kwinana) (Atmospheric Wastes) Policy 1999;

"ESP" means Electrostatic Precipitator;

"ESP field" means a section of an ESP that can be electrically isolated or "tripped-out" without shutting down the entire ESP;

"fugitive dust" means dust from sources other than those point sources listed in Table 1 and Attachment 7 of this licence;

"g/m^3" in relation to a gaseous discharge, means grams per cubic metre, corrected to dry gas (eliminating any volume contribution from water vapour or droplets) and corrected to STP unless otherwise specified;

"g/s" means grams per second corrected to dry gas (eliminating any volume contribution from water vapour or droplets) and corrected to STP unless otherwise specified;

"ignition phase" means the time and all operations involved in taking a kiln from its non-burning state to a state of stable combustion of the kiln's operational fuel without any feed being added;

"Inert Waste Type 1" means as defined in the current version of the "Landfill Waste Classification and Waste Definitions 1996 (as amended), December 2009";

"kg/m^3" means kilogram per cubic metre;

"licensee' means Cockburn Cement Limited;

"m^3/s" means volumetric flow of stack gas in cubic metres per second corrected to dry gas (eliminating any volume contribution from water vapour or droplets) and corrected to STP unless otherwise specified;

"mg/m^3" means the concentration of the specified Analyte in milligrams per cubic metre corrected to dry gas (eliminating any volume contribution from water vapour or droplets) and corrected to STP unless otherwise specified;

"NATA" means the Australian National Association of Testing Authorities;

"NATA accredited" means the company undertaking the monitoring or the laboratory undertaking the specified analysis are currently accredited by NATA for the monitoring and analysis specified;

"NOx" means the sum of nitrogen oxide and nitrogen dioxide represented as nitrogen dioxide;

"odour emission rate" means the rate of emission of odours expressed as odour units times cubic metre (corrected to STP) per second ($ou.m^3/s$);

"Odour Unit(s)" means odour units as defined in the Australian Standard "AS/NZS 4323.3:2001 Stationary source emissions – Part 3: Determination of odour concentrations by dynamic olfactometry;

"pg/m^3" means the concentration of the specified analyte in picograms per cubic metre corrected to dry gas (eliminating any volume contribution from water vapour or droplets) and corrected to STP unless otherwise specified;

"PM" means particulate matter of any shape, structure or density, dispersed in the gas stream.

"PM2.5" means particulate matter or dust with an Equivalent Aerodynamic Diameter of 2.5 micrometres (2.5 µm) or less;

"PM10" means particulate matter or dust with an Equivalent Aerodynamic Diameter of 10 micrometres (10 µm) or less;

"Protocol" means the document entitled "Protocol" and which is at Attachment 6 to this Licence.

"Quarterly" means a period of three consecutive calendar months as follows:
1st Quarter: January, February and March;
2nd Quarter: April, May and June;
3rd Quarter: July, August and September;
4th Quarter: October, November and December;

"Quarterly Monitoring" means monitoring Quarterly (within each Quarter of the year) where successive monitoring is spaced at least 45 days apart;

"Relevant Determination" means a determination under clause 7(3) of the Environmental Protection (Kwinana) (Atmospheric Wastes) Policy 1999, determining the sulfur dioxide limits for the licensee;

"Reliable Data" in relation to stack emissions monitoring, ambient air monitoring and meteorological monitoring systems means to provide accurate, precise and representative data for at least 90% of the time over any interval of a calendar month and for at least 95% of the time over any interval of 365 days;

"root cause analysis" means a technique from the reliability engineering discipline which is a method of 'drilling down' to investigate adverse events or outcomes in order to assist in the identification of the underlying system flaws that may not be immediately apparent from initial review;

"STP" means Standard Temperature and Pressure which in Western Australia is taken at a temperature of 0 degrees Celsius (0°C) and an absolute pressure of 101.325 kilopascals (one standard atmosphere);

"SW-846" refers to the USEPA SW-846 series of publications, generally titled Test Methods for Evaluating Solid Waste, Physical/Chemical Methods;

"TEQ" means the toxic equivalent which is a single number expressing the toxicity of a mixture of dioxins and dioxin-like compounds in terms of equivalent 2,3,7,8-tetrachloro-dibenzodioxin (2,3,7,8-TCDD – the most toxic dioxin) and is defined in the 1998 publication, Executive Summary of the Assessment of the health risk of dioxins issued by the International Programme on Chemical Safety (IPCS) which is an organ of the World Health Organisation (WHO);

"TSP" means Total Suspended Particulate matter or dust of all class sizes as defined in AS/NZS3580; and

"µg/s" means micrograms per second corrected to dry gas (eliminating any volume contribution from water vapour or droplets) and corrected to STP unless otherwise specified;

"USEPA" means United States Environmental Protection Agency.

"VDI 3940" means Vereins Deutscher Ingenieure (VDI) 3940-2:2006 Measurement Of Odour Impact By By Field Inspection - Measurement Of The Impact Frequency Of Recognizable Odours - Plume Measurement

GENERAL CONDITIONS

1. The licensee is only permitted to emit wastes to the air environment from the premises through the active major discharge points listed in Table 1 and the minor discharge points listed in Attachment 7, subject to the conditions in this licence.

Table 1: Major Discharge Points

Major Discharge Points	Status
Kiln 2 Stack Discharge Point	Care and maintenance
Kiln 3 Stack Discharge Point	Care and maintenance
Kiln 4 Stack Discharge Point	Care and maintenance
Kiln 5 Stack Discharge Point	Active
Kiln 6 Stack Discharge Point	Active

1A. The licensee shall notify the CEO 14 days ahead of restarting any Kiln with a status of "Care and maintenance" listed in Table 1.

1B. The licensee shall provide the CEO with a commissioning report within 60 days of restarting any Kiln listed in Table 1 with a status of "Care and maintenance" which is restarted.

1C. The licensee shall ensure the commissioning report referred to in Condition 1B includes;

(a) a summary of the monitoring required under Condition 37 for the Kiln, which should be conducted within 14 days of restarting;
(b) a summary of performance testing required under Phase III of the CEMS Code, which should be conducted as soon as practical after restarting;
(c) a review of performance against licence conditions 9, 15, 16, 17, 41, 42 and 43; and
(d) where they have not been met, measures proposed to meet the licence conditions, together with timescales for implementing the proposed measures.

2. The licensee shall only operate kilns with the permitted fuels listed in column 2 of Table 2 provided that the average coal sulfur content does not exceed that specified in column 3 of Table 2.

Table 2: Permitted Fuels

Column 1	Column 2	Column 3
Kiln Number	**Permitted Fuel**	**Average Coal Sulfur Content**
Kiln 2	Natural Gas Only	N/A
Kiln 3	Natural Gas and/or Coal Only	0.7%
Kiln 4	Natural Gas and/or Coal Only	0.7%
Kiln 5	Natural Gas and/or Coal Only	0.7%
Kiln 6	Natural Gas and/or Coal Only	0.7%

3. The licensee shall not store any liquids in Storage Fuel Oil Tanks 5150, 5155 and 5160 located within the premises.

Complaints Register

4. The licensee shall keep a written record of all complaints received concerning the impact of emissions from the premises for a minimum of 3 years, which shall include but not be limited to:
   (a) date and time both of the complaint and of any environmental impact reported by the complainant;
   (b) a unique registration number;
   (c) location of the complaint;
   (d) general description of the nature of any environmental impact reported by the complainant to which the complaint relates;
   (e) whether the complainant reported any adverse health effects;
   (f) wind direction, wind speed and air temperature at the time of the complaint;
   (g) the likely source(s) of the cause of the complaint;
   (h) action taken in response to the complaint including results of any investigation(s) and action(s) taken to prevent a recurrence of the events giving rise to the complaint; and
   (i) time taken to respond to the complaint.

5. Following receipt of a complaint concerning the impact of emissions from the premises:
   (a) within 72 hours of receipt of the complaint the licensee shall respond to the complainant; and
   (b) within 10 days of receipt of the complaint the licensee shall provide feedback, including but not limited to, investigation outcomes and action(s) taken (if any are appropriate) in relation to the complaint, unless such feedback is not requested by the complainant as a result of the response under (a).

6. The licensee shall provide to the CEO and publish on a Cockburn Cement Limited website, by 5 p.m. of the first Wednesday of each month, a weekly summary of the information contained in the complaints register required by condition 4 for the preceding month ending on the first Tuesday of each month excluding the names and addresses of complainants.

7. The licensee shall make available the records contained within the register required by condition 4 and any other record referred to in this licence to an authorised person or inspector upon request.

8. The licensee shall publish quarterly on a Cockburn Cement Limited website a report prepared by an accredited independent auditor as to its compliance with conditions 4, 5 and 6.

EMISSION TO AIR

9. Subject to Condition 11, the licensee shall not allow PM emissions from the Discharge Points, specified in column 1 of Table 3 to exceed the corresponding PM emission limit specified in column 3 of Table 3.

TABLE 3: Targets and Limits

Column 1	Column 2	Column 3
Discharge Points	Target PM emissions in mg/m^3 (8 minute rolling average, updated at least every clock minute, measured in accordance with Condition 42)	Limit PM emissions in mg/m^3 (measured in accordance with Condition 37)
Kiln 2 Stack Discharge Point	100	150
Kiln 3 Stack Discharge Point	100	150
Kiln 4 Stack Discharge Point	100	150
Kiln 5 Stack Discharge Point	25	50
Kiln 6 Stack Discharge Point	25	50

Note: emission limits do not apply for maintenance or repair work for the kiln (and associated wash down and cleanout of pre heating stages).

10. Subject to Condition 11 the Licensee shall manage all PM emissions from the discharge points listed in Table 1 by taking the required management action specified in column 3 of Table 4 in response to the corresponding event detailed in column 2 of Table 4.

Table 4: Required Management Actions

Column 1	Column 2	Column 3
Event Number	**Event Details**	**Required Management Actions To Be Taken**
1.	Ignition phase	(a) the licensee shall minimise the number of purges for any kiln; (b) the licensee shall limit the purging of kilns fired on natural gas to not more than 5 kiln volumes during the ignition phase if required to do so by the gas regulating authority; (c) the licensee shall report to the CEO by the 21st day of every month or the next business day the details of the previous month's ignition phase events confirming compliance with (b) above; and (c) the licensee shall not introduce any feed of raw material to a kiln during its ignition phase.
2.	For all periods where the rolling 8 minute average updated at least every clock minute as indicated by any CEMS on an active major discharge point indicates the PM emissions exceeds the target for that discharge point as defined in column	1. immediately investigate the cause of the event; 2. undertake remedial action to reduce PM emissions within 30 minutes to be below the target for that discharge point and keep it below the target for a minimum of 2 consecutive clock hours or if this is not possible reduce the feed of raw materials to the kiln to a maximum of 80% of the normal production rate and keep this feed rate for a minimum of 2 hours until emissions are below the target for 2 consecutive clock hours; 3. record and report to the CEO within two business days

	2 of Table 3 for 60 consecutive minutes, but does not trigger the management actions required in column 3 for Event 3.	the following information: (a) stack emission data; (b) reason for the target exceedance; and (c) verification that remedial action has been taken to rectify the cause and to prevent recurrence.
3.	Whenever any CEMS indicates the PM emissions exceed 150 mg/m^3.	1. the licensee shall cease feed of raw material to the relevant kiln within 5 minutes of the start of any such event unless the PM emissions have dropped below 150 mg/m^3; 2. for all events resulting in cessation of feed of raw material to any kiln due to the management action 1 for event 3 the licensee shall: (a) immediately investigate the cause of the specified event; (b) undertake an investigation of the likely impacted areas beyond the premises boundary; (c) record and report to the CEO within 7 days all remedial actions taken; and 3. subject to condition 12, the licensee shall not recommence any feed of raw material to any kiln unless the licensee provides written evidence to the satisfaction of the CEO, in accordance with the Protocol, that the problem that triggered the event has been investigated by a suitably qualified technician and rectified.

11. The licensee is exempt from compliance with condition 9 and 10:
    (a) if the licensee is undertaking CEMS calibration curve correlation through manual stack sampling; and
    (b) the licensee has notified the CEO in writing at least 7 days prior, but no more than 21 days prior to commencement of the CEMS calibration curve correlation.

11A. At least 7 days prior, but no more than 21 days prior to undertaking CEMS calibration curve correlation, the licensee shall publish on a Cockburn Cement Limited website notice of its intent to undertake CEMS calibration curve correlation.

12. Whenever the licensee has to cease feed of raw material to any kiln(s) as required by any management action specified in Table 4:
    (a) if the licensee can identify the cause of the event 3 event as specified in Table 4, the licensee shall not recommence feed to the relevant kiln(s) unless the problem that triggered the specified event has been rectified; and
    (b) if the licensee cannot identify the cause of two consecutive event 3 events as specified in Table 4 within 7 consecutive days, the licensee shall not recommence feed to the relevant kiln(s) until the problem that triggered the specified event has been rectified.

Emission Limit for minor discharge points

13. The Licensee shall not allow PM emissions to air greater than 50mg/m^3 from all minor discharge points as referred to in condition 1 and listed in Attachment 7.

14. If any of the minor discharge points as referred to in condition 1 and listed in Attachment 7 emit visible dust, the licensee shall as soon as practicable repair the device that serves as pollution control for that minor discharge point.

Dust Control Measures

15. The licensee shall ensure that all hoppers, crushers, screens and conveyor systems used to treat, store or convey material including but not limited to shale, limestone, bauxite and coal are operated and maintained in such a manner that dust emissions are minimised through the implementation of appropriate dust management control measures.

16. The licensee shall take all reasonable and practicable measures to minimise dust generation during the handling, transport and storage of materials within the premises.

17. The licensee shall maintain all access roads and hardstand areas within the premises as often as necessary to manage dust generation and build-up so as to prevent visible fugitive dust being discharged beyond the boundary of the premises.

Housekeeping Program Register

18. The licensee shall maintain a housekeeping register (including a schedule of dates and actions) for dust across the premises.

Maintenance Schedule and Maintenance Register

19. The licensee shall implement and maintain a schedule (based on best practice) and a register of maintenance and servicing of the pollution control equipment in accordance with the schedule.

Off Site Odour and Dust

20. The licensee shall ensure that odour emitted from the premises does not unreasonably interfere with the health, welfare, convenience, comfort or amenity of any person who is not on the premises.

21. The licensee shall ensure that dust emitted from the premises does not unreasonably interfere with the health, welfare, convenience, comfort or amenity of any person who is not on the premises.

22. The licensee shall ensure that no visible fugitive dust is discharged beyond the boundary of the premises.

23. The licensee shall publish quarterly on a Cockburn Cement Limited website a report prepared by an accredited independent auditor as to its compliance with conditions 9 to 22 and condition 24.

Sulfur Dioxide Emission Limits – Plant (Environmental Protection (Kwinana) (Atmospheric Waste) Policy 1999)

24. The Licensee shall not allow Sulfur Dioxide emissions to air greater than 180 g/s (as a 60 minute average, measured in accordance with Condition 42) from the premises as a combined total of the discharge from all the discharge points listed in Table 1.

DISCHARGE TO LAND

25. The licensee shall only bury wastes in the waste disposal area (landfill), as depicted in Attachment 2, that meet the "Inert Waste Type 1" definition as defined in the current version of the publication "Landfill Waste Classification and Waste Definitions 1996 (as amended), December 2009".

26. The wastes buried within the premises shall consist only of wastes generated within the premises and wastes generated at the Cockburn Cement Limited, Kwinana Operation located at Lot 45 on Diagram 91600 Leath Road, Kwinana.

27. The licensee shall ensure the following when waste disposal land filling activities are conducted at the premises:
    (a) disposal of all waste on the premises is at least 35 metres inside the premises boundary;
    (b) all waste is placed within a defined trench or within an area enclosed by earthen or other inert bunds;
    (c) restrict the tipping area to a maximum linear length of 30 metres;
    (d) ensure that any exposed face of the landfill does not exceed 2 metres in height;
    (e) manage the landfill operations to prevent visible dust from crossing the premises boundary;
    (f) cover waste with a minimum inert final soil cover of at least 1 metre; and
    (g) dispose all lime kiln dust, cement kiln dust, high alkaline dust or any other material collected from hoppers in a suitably wet state that prevents dust from crossing the premises boundary.

28. The licensee shall maintain detailed records of the wastes deposited at the premises which shall include but not be limited to:
    (a) nature of waste;
    (b) volumes of waste; and
    (c) sources of waste.

29. The licensee shall provide to the CEO by 1 April of each year an annual report containing the records referred to in condition 28 for the previous calendar year.

MONITORING CONDITIONS

Monitoring Requirements (Environmental Protection (Kwinana) (Atmospheric Waste) Policy 1999)

30. The emissions monitoring system required by condition 41 shall measure or otherwise estimate using approved procedures the following quantities for each specified source:
    (a) mass emission rate of sulfur dioxide in g/s;
    (b) total volume emission rate of waste gases in m^3/s; and
    (c) density of the waste gases in kg/m^3.

Ambient Sulfur Dioxide Monitoring Requirements (Environmental Protection (Kwinana) (Atmospheric Waste) Policy 1999)

31. The licensee shall cause to be undertaken a program to monitor the ambient concentration of sulfur dioxide at the following sites as outlined in section 7.2 of EPA Bulletin 644 "Development of an Environmental Protection Policy for Air Quality at Kwinana" or otherwise as determined by the Chief Executive Officer.

Table 5: Ambient Monitoring Stations

Site	Location
4	Western Power gas pumping station, Abercrombie Road, Kwinana
5	Proposed BP pumping station, Miguel Road, Cockburn
8	Tindal Avenue, Beeliar.

Please see note after condition 54

32. Prior to the commissioning of ambient sulfur dioxide monitoring and data acquisition equipment the licensee shall obtain approval from the CEO for its use and the relevant procedures to be followed.

33. The licensee shall ensure that the approved monitoring equipment is operated and calibrated in accordance with approved procedures and is maintained so as to provide Reliable Data.

Meteorological Monitoring Requirements (Environmental Protection (Kwinana) (Atmospheric Waste) Policy 1999)

34. The licensee shall obtain meteorological data from a meteorological monitoring system comprised of approved instruments and data acquisition equipment at each location at which sulfur dioxide concentrations are being monitored. The following parameters shall be monitored at each location:
    (a) wind speed;
    (b) wind direction; and
    (c) air temperature.

35. The following additional parameters shall be monitored at an approved site:
    (a) wind direction standard deviation (sigma theta);
    (b) differential air temperature from measurements at 2m and 10m heights;
    (c) relative Humidity;
    (d) barometric pressure;
    (e) nett radiation; and
    (f) rainfall.

36. All meteorological monitoring systems shall be maintained by the licensee so as to provide Reliable Data.

Stack Emission Testing Conditions

37. The licensee shall monitor (or sample for monitoring) the effluent stack gases emitted from each of the active discharge points as detailed in Table 1 for each of the parameters or substances specified in column 1 of Table 6 by the corresponding method specified in column 2 of Table 6 and at the corresponding frequencies specified in column 3 of Table 6 and shall record and report the monitoring results in the units specified in column 4 of Table 6.

Table 6: Air Emissions Monitoring Program

Column 1	**Column 2**	**Column 3**	**Column 4**
Parameter/substance to be monitored	**Monitoring method[1]**	**Monitoring frequency**	**Units[2]**
Volumetric Flow Rate	USEPA Method 2	Quarterly	m^3/s
PM	USEPA Method 5 or USEPA Method 17	Quarterly	mg/m^3 and g/s*
PM10	USEPA Method 201A	Quarterly	mg/m^3 and g/s*
Sulfur Dioxide	USEPA Method 6 or USEPA Method 6C	Quarterly	mg/m^3 and g/s*
Nitrogen Oxides	USEPA Method 7E or 7D	Quarterly	mg/m^3 and g/s*
Odour concentration and Odour Emission Rate	AS/NZS 4323.3:2001	Quarterly	OU and OU. m^3/s*
Hydrogen Chloride, Hydrogen Fluoride	USEPA Method 26A	Bi-annual	mg/m^3 and g/s*
Mercury, Thallium, Cadmium, Antimony, Arsenic, Lead, Total Chromium, Cobalt, Copper, Manganese & Nickel	USEPA Method 29	Bi-annual	$\mu g/m^3$ and g/s*
Carbon Monoxide	USEPA Method 10	Bi-annual	mg/m^3 and g/s*
Polycyclic-Aromatic Hydrocarbons (PAH)	SW-846 Method 0010	Bi-annual	$\mu g/m^3$ and mg/s*
Volatile Organic Compounds	USEPA Method 18	Bi-annual	mg/m^3 and g/s*
Dioxins & Furans	USEPA Method 23	Bi-annual	pg/m^3 in TEQ and µg/s*

Note: *Emission rates (i.e. g/s) are to be calculated using the values derived from the concentration values of the parameter, and the volumetric flow rate.
[1]: Where the USEPA methods and the SW method refer to USEPA 1 for the sampling plan, this should be read as a referral to the AS/NZS 4323.1:2001
[2]. All concentrations to be corrected to STP at 10% oxygen except for odour concentration and odour emission rate.

38. Pursuant to condition 37 the licensee shall measure and record the following parameters during all stack emission testing:
    a) kiln fuel type and feed rate over the duration of the test;
    b) raw materials feed rate over the duration of the test;
    c) carbon dioxide concentration by USEPA method 3A and reported as mass percentage of carbon dioxide per mass of dry stack gas;
    d) oxygen concentration by USEPA method 3A and reported as mass percentage of oxygen per mass of dry stack gas;
    e) moisture content by USEPA method 4 and reported in volume percentage of stack gas;
    f) volumetric flow rate by USEPA method 2 and reported in m^3/s;
    g) temperature of the exit gas in degrees Celsius;
    h) stack height in metres; and
    i) stack diameter in metres.

39. The licensee shall ensure that the fuel mix and raw material feed rate remain constant and reflect normal operating conditions whenever stack testing is undertaken pursuant to conditions 37 and 38.

40. The licensee shall ensure that all sampling and analysis for stack emission testing as specified in condition 37 and in condition 38 are conducted by companies and laboratories with current NATA accreditation for the methods and analyses specified in column 1 and column 2 of Table 6.

CEMS Monitoring Conditions

41. The licensee shall ensure that a CEMS for each of the parameters to be monitored specified in column 1 of Table 7 are operational and in compliance with the CEMS Code on each of the active discharge points as listed in Table 1.

42. The licensee shall operate the CEMS to monitor the parameters listed in column 1 of Table 7 and record and report the monitored parameters in the units specified in Column 2 of Table 7.

43. The licensee shall maintain the CEMS to ensure CEMS and data availability are as specified in column 3 of Table 7.

Table 7: CEMS Requirement

Column 1	Column 2	Column 3
Parameter	**Unit**	**Availability of the CEMS**
PM	Optical density converted to mg/m^3	≥ 90% of the time per Calendar Month and ≥ 95% of the time per Calender Year
Volumetric Flow Rate	m^3/s	≥ 90% of the time per Calendar Month and ≥ 95% of the time per Calendar Year
NOx	mg/m^3	≥ 90% of the time per Calendar Month and ≥ 95% of the time per Calendar Year
Sulfur dioxide	mg/s	≥ 90% of the time per Calendar Month and ≥ 95% of the time per Calendar Year

Groundwater Monitoring Program

44. The licensee shall sample and analyse, in accordance with AS/NZS 5667.11:1998, groundwater for the parameters specified in column 3 of Table 8 at the sampling frequencies specified in column 2 of Table 8 at the monitoring sites specified in column 1 of Table 8 and as depicted in Attachment 3.

Table 8: Groundwater Monitoring

Column 1	Column 2	Column 3
Monitoring Sites	**Sampling Frequency**	**Parameters**
A; B; C; D; E; F; G; H; M2; MB1; MB2; T; X; Y; Z.	Monthly	(i) pH (at 1 metre intervals from the water's surface to the bottom of each bore); (ii) Electrical Conductivity (at 1 metre intervals from the water's surface to the bottom of each bore); (iii) Temperature (at 1 metre intervals from the water's surface to the bottom of each bore); and (iv) Standing Water Level (SWL) in metres AHD.

Ambient Air Quality Monitoring

45. The licensee shall undertake the continuous monitoring of ambient air quality for the parameters as specified in Column 2 of Table 9 at the locations as specified in Column 1 of Table 9 and depicted in Attachment 8, with a minimum availability as specified in Column 3 of Table 9.

Table 9: Ambient Air Quality Monitoring

Column 1	Column 2	Column 3
Monitoring Location	**Parameters**	**Availability requirement**
A. (Lot 450) Opposite TAFE	TSP, PM10 and PM2.5	≥ 90% of the time per Calendar Month and ≥ 95% of the time per Calender Year
B. Britannia Avenue		
C. South Coogee Primary School		
D. Water Corporation		

Ambient Air Quality Targets

46. Where an exceedance of the target in column 2 of Table 10 over the time period in column 3 of Table 10 is attributable to emissions from the premises:
    (a) the licensee must undertake management actions to improve ambient air quality to below the target; and
    (b) report the exceedance and the management actions taken to the CEO within 48 hours of the licensee becoming aware of the occurrence of the exceedance.

Table 10: Ambient Air Quality Monitoring Targets

Column 1	Column 2	Column 3
Parameter	Target	Time period
TSP	90ug/m^3	24 hour average (Calendar Day)
PM10	50ug/m^3	24 hour average (Calendar Day)

REPORTING CONDITIONS

47. Subject to condition 48 the licensee shall publish on a Cockburn Cement Limited website on the internet real time CEMS data for PM from all active Major Discharge Points as listed in Table 1, collected in accordance with condition 42 and displayed in a graph form as mg/m^3 and g/s.

48. The licensee shall ensure that the real time CEMS data published in accordance with condition 47:
    (a) has a maximum delay of 60 minutes;
    (b) is viewable in a time period of at least 60 minutes; and
    (c) is available for at least 90% of the time per Calendar Year.

Monthly Reporting Requirements

49. The licensee shall provide a written report to the CEO within 7 days on request for the relevant kiln or kilns which includes all CEMS data that has been recorded in accordance with Condition 42-which shall include but not be limited to the following information for all active discharge points as stated in Table 1;

    (i) time stamped 1 minute average PM emissions recorded as g/s and mg/m^3 as measured by the CEMS;
    (ii) 1 hour rolling average PM emissions as a 1 minute value in mg/m^3;
    (iii) time stamped 1 minute average kiln raw material feed-rate;
    (iv) time stamped 1 minute average volumetric flow rate;
    (v) time stamped 1 minute average fuel-rate for each fuel type used;
    (vi) status of the pollution control equipment

49A. The licensee shall provide a written report to the CEO by the 21st day of every month or the next business day containing information for the previous month which shall include but not be limited to the following information for the relevant kiln or kilns:
    (a) time stamped wind direction and wind speed, an explanation of the reasons for any exceedances of a target or limit, including event number 3 occurrences in column 2 of Table 4,
    (b) remedial action taken, including those measures taken to prevent future recurrence of the exceedance event; and
    (c) data enabling assessment of compliance with Condition 43;
    (d) number of events 2 and 3 specified in Table 3;
    (e) the date, time and duration of each event identified in (d) above;
    (f) the reason or reasons for the event identified in (d) above;
    (g) a root cause analysis of events identified in (d) above where management action 2 of event 2 and management action 1 of event 3 were required as specified in table 4,

describing remedial measures taken to prevent future recurrence of the event and to reduce emissions below the limit or target level as soon as practicable as well as measures taken to clean up affected property; and recorded ambient monitoring data presented as a time series graph and an assessment of the ambient monitoring required by Condition 45.

Data Storage Requirements

50. The licensee shall keep the original data recordings for all emissions monitoring, stack testing, groundwater monitoring and measurements made in relation to this licence on the premises for a minimum period of 24 calendar months.

Reporting Of Meteorological And Ambient Sulfur Dioxide Monitoring Data (Environmental Protection (Kwinana) (Atmospheric Waste) Policy 1999)

51. The licensee shall provide to the CEO data from each of the meteorological and sulfur dioxide monitoring stations at which monitoring is occurring in accordance with conditions 31 and 34 to 36:
    (a) the meteorological data shall be provided as a time series listing on a computer-readable medium or via telemetry and in a format approved by the CEO;
    (b) the sulfur dioxide data shall be summarised in the form of one calendar month tables, one for each monitoring station, and shall contain for each day in the one month period with the following:
        (i) daily average;
        (ii) maximum one-hour average, which may span midnight; and
        (iii) percentage data recovery for the day;
    (c) the sulfur dioxide data from each monitoring station shall be provided as time-series records of the recorded sulfur dioxide data on an approved computer-readable medium or via telemetry and in a format approved by the CEO; and
    (d) the meteorological and sulfur dioxide monitoring data shall be provided to the CEO no later than 14 days after the last day of the period to which the data relates or within such longer period of time as is approved by the CEO.

52. If the ambient sulfur dioxide concentration measured at any of the monitoring sites at which monitoring is occurring in accordance with conditions 31 to 33 exceeds the standard or limit for that site, for any of the averaging periods as established by the EPP, then the licensee shall advise the CEO that this has occurred within two working days of that occurrence. Further, the licensee shall provide in writing within five working days in the format approved in accordance with condition 30 a listing of sulfur dioxide emissions from each source listed in the Relevant Determination and located within the boundary of the licensed premises, for the period which includes and extends one hour either side of the period in which the exceedance occurred.

53. As and when requested by the CEO the licensee shall provide in written form within five working days of that request, data from the meteorological and sulfur dioxide monitoring systems. The requested data shall be provided as a time-series listing of the data in an approved format and shall cover the period requested by the CEO.

Note on Conditions 30 to 36
*Without limiting the licensee's responsibility and obligation to fulfil all of the requirements for monitoring and reporting specified in conditions **30 – 36** and **51 to 53**, the CEO will, if so requested by the licensee, approve the monitoring and reporting functions being performed on behalf of the licensee by a*

nominated agent, as part of a cooperative arrangement between industries. Notwithstanding this, advice on exceedances of the standard or limit together with sulfur dioxide emissions during those exceedances as required by conditions 51 to 53 must be provided directly by the licensee.

Condition 31 requires that a total of three ambient sulfur dioxide monitoring stations are maintained in the relevant portion of the environment, pursuant to Clause 11(1)(b) of the EPP. Two of the monitoring stations are permanently located at sites 4 and 5. The third monitoring station shall be relocated in accordance with condition 31. A period of one month is allowed for relocation of the monitoring station.

CEMS Reporting Requirements

54. The licensee shall provide the CEMS monitoring data required by conditions 41 and 42 in electronic format to the CEO by the 21st day of each month or next business day for the previous month's monitoring data and shall include but not be limited to the following:
    (a) the data shall be presented in an uncompressed CSV (ASCII) file, as described in Attachment 4;
    (b) the data shall be readable in Microsoft Office Excel;
    (c) the data shall be presented in the required units as specified in column 2 of Table 11 and averaging time as specified in column 3 of Table 11 for the parameters as specified in column 1 of Table 11;
    (d) the data shall be accompanied with separate spreadsheets detailing compliance with the availability requirement as specified in column 3 of Table 7; and
    (e) the data shall include a separate spreadsheet detailing compliance with conditions 11(a), 11(b) and 11A.

Table 11: Reporting information

Column 1	Column 2	Column 3
1. Parameter	**2. Required Unit**	**3. Averaging Time**
PM	Optical density converted to mg/m^3 and g/s.	1 minute, starting the 1st minute of each hour
Volumetric Flow Rate	m^3/s	30 minute, starting the 1st and 31st minute of each hour
Sulfur Dioxide	mg/s	60 minute average, starting the 1st minute of each hour
NOx	mg/m^3	30 minute, starting the 1st and 31st minute of each hour

Stack Test Reporting Requirements

55. The licensee shall before the 21st day of March, June, September and December or next business day provide a report to the CEO of the results of the tests required by condition 37 of the previous quarterly stack test. The report shall also include the averaged CEMS concentration for each parameter (PM, Volumetric Flow Rate, Sulfur Dioxide and NOx) during the sampling period.

56. The report referred to in condition 55 shall be accompanied by certification endorsed by the licensee that both sampling and analysis were performed in accordance with conditions 37 to 40.

Air Modelling Report Requirements

57. The licensee shall provide to the CEO an Air Modelling Review Report at the same time as the report required by condition 55, which shall include but not be limited to the modelling and mapped contours of the ground level concentrations of the tested parameters as stated

in condition 37 and a comparison of these concentrations to the relevant air quality guidelines for the modelled parameters.

Groundwater Reporting Requirements

58. The licensee shall provide to the CEO by 1 April of each year a Groundwater Monitoring Program Report which shall include but not be limited to the results and analyses of the groundwater monitoring program required by condition 44 for the previous calendar year.

Annual Audit Compliance Report Requirements

59. The licensee shall by 1 April in each year, provide to the CEO an Annual Audit Compliance Report in the form in Attachment 5 to this licence, signed and certified in the manner required by Section C of the form, indicating the extent to which the licensee has complied with the conditions of this licence, and any previous licence issued under Part V of the Act for the premises, during the period beginning 1 January the previous year and ending on 31 December in that year.

Annual Complaint Review Report

60. The licensee shall provide to the CEO by 1 April of each year, an Annual Complaint Review Report which shall include but not be limited to:
    (a) a review of all complaints received in the previous calendar year;
    (b) an analysis of the investigations undertaken as a result of each complaint;
    (c) an analysis of the environmental impact leading to the complaints;
    (d) the probable source and cause of the environmental impact;
    (e) a rolling three year analysis of the causes and sources of similar complaints; and
    (f) proposals to reduce and minimise the number of complaints likely to have been caused by the licensee and the proposed rectification of the source causing the complaints.

Management Action Annual Review Report Of Events

61. The licensee shall provide to the CEO by 1 April of each year, a Management Action Annual Review Report containing a review of the management actions performed based on the information submitted under condition 50 for the previous calendar year which shall include but not be limited to:
    (a) a summary and analysis of all event 2 and 3 events in Table 4 requiring the management action under 1 in Column 3 including the causal factors; and
    (b) proposals to reduce the number of all events in Table 4 requiring the management action under 1 in Column 3 of Table 4.

Management of the coal stockpile

62. The licensee shall manage the coal stockpile such that the risk of excessive heating or spontaneous combustion events is minimised and this management shall include but not be limited to:
    (a) ensuring that coal which has been stockpiled for the longest time is used first;
    (b) routine compaction and shaping of the coal stockpile to reduce rate of oxidation of coal reaching a point where excessive heating or combustion is likely to occur; and
    (c) routine inspection of the coal stockpile area at least every 6 hours for coal combustion events including monitoring for temperature increases.

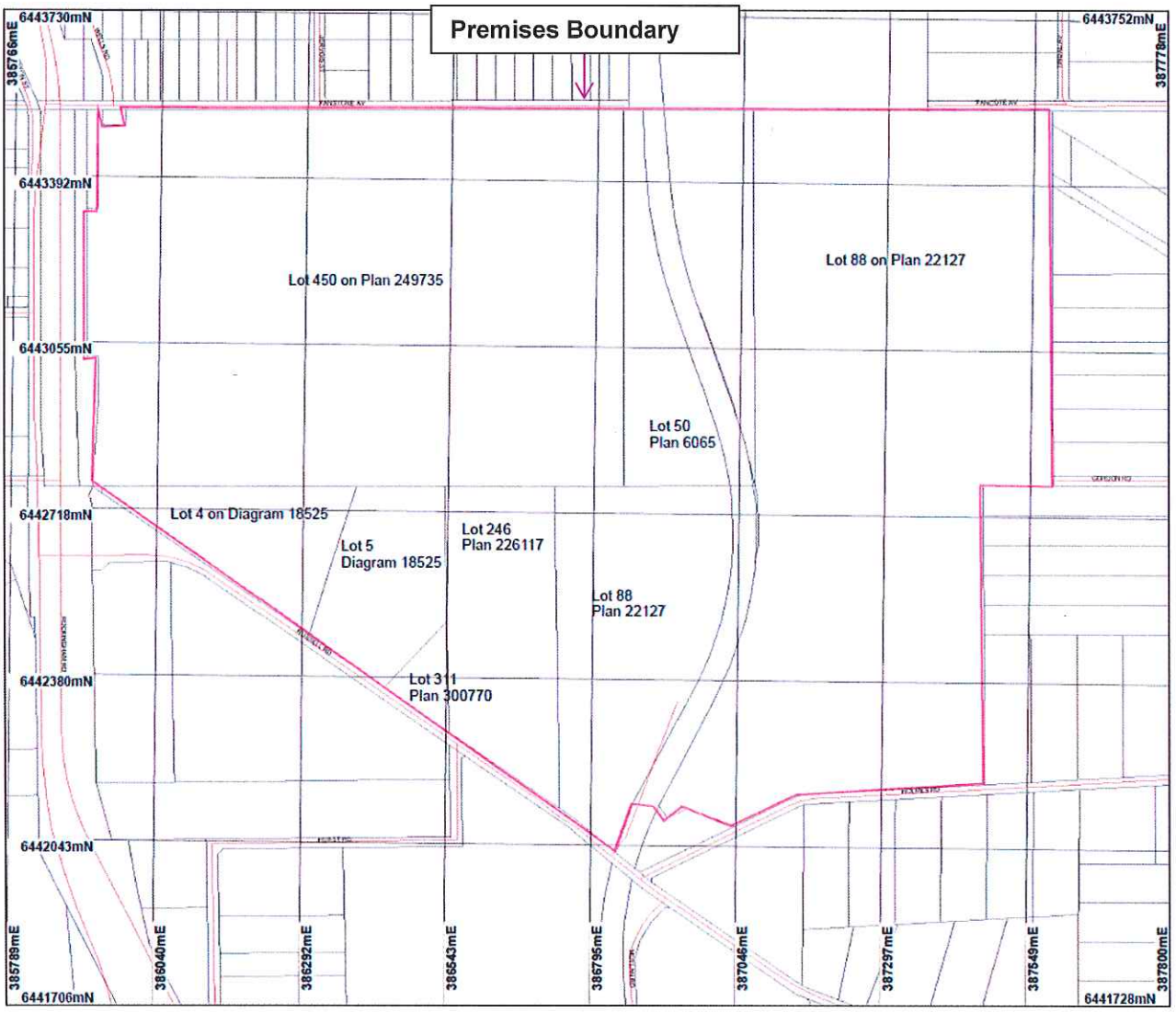
Odour Verification Plan

63. The Licensee shall create and submit to the CEO by 30 April 2015 an Odour verification plan that is designed to verify the chemical composition of point source emissions. The odour verification plan must address the requirements listed in Attachment 9.

64. The licensee shall conduct the Odour verification plan and provide a final report to the CEO detailing the results of the Odour verification plan by the 28 August 2015.

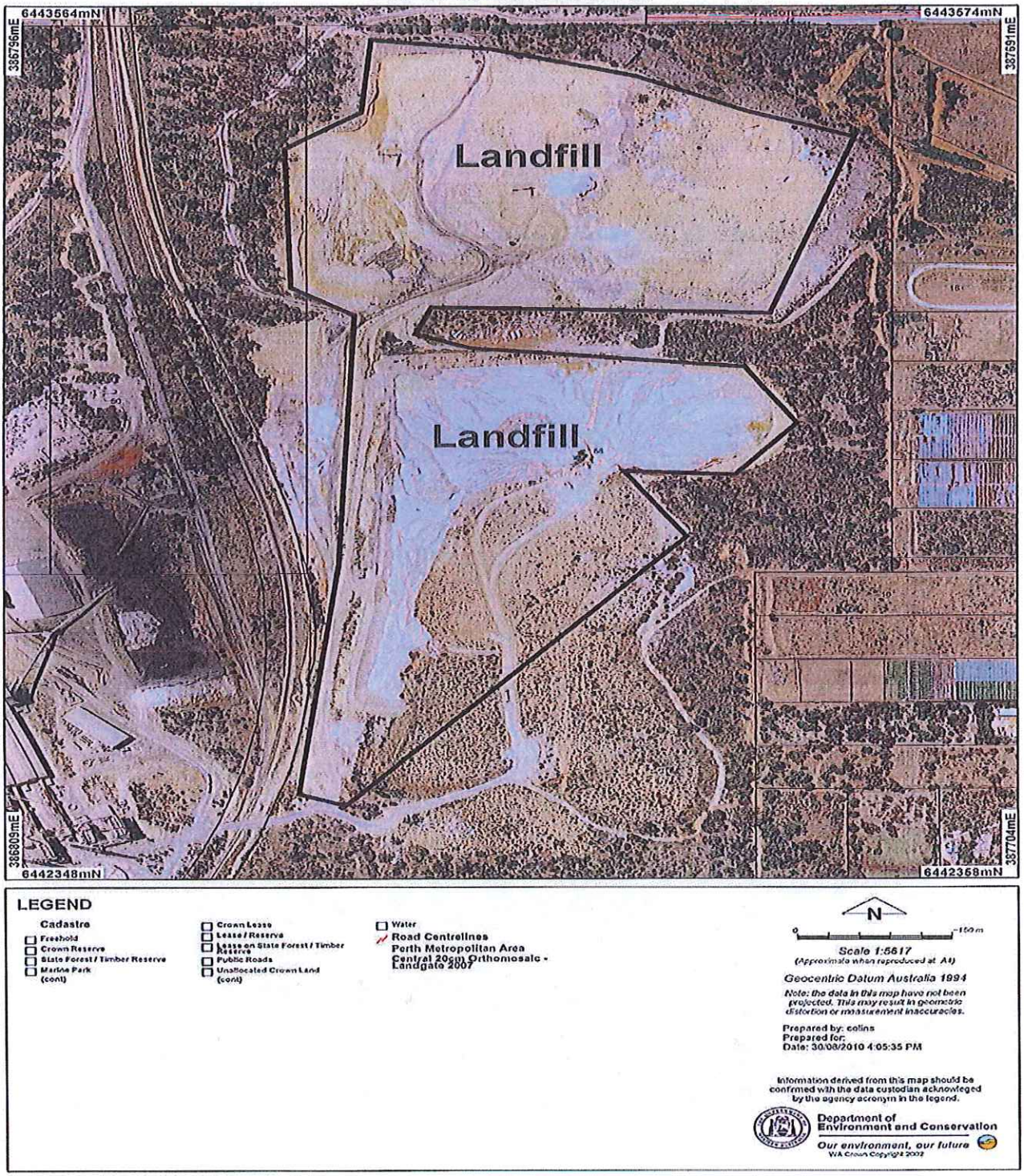
ATTACHMENT 1 – PLAN OF PREMISES

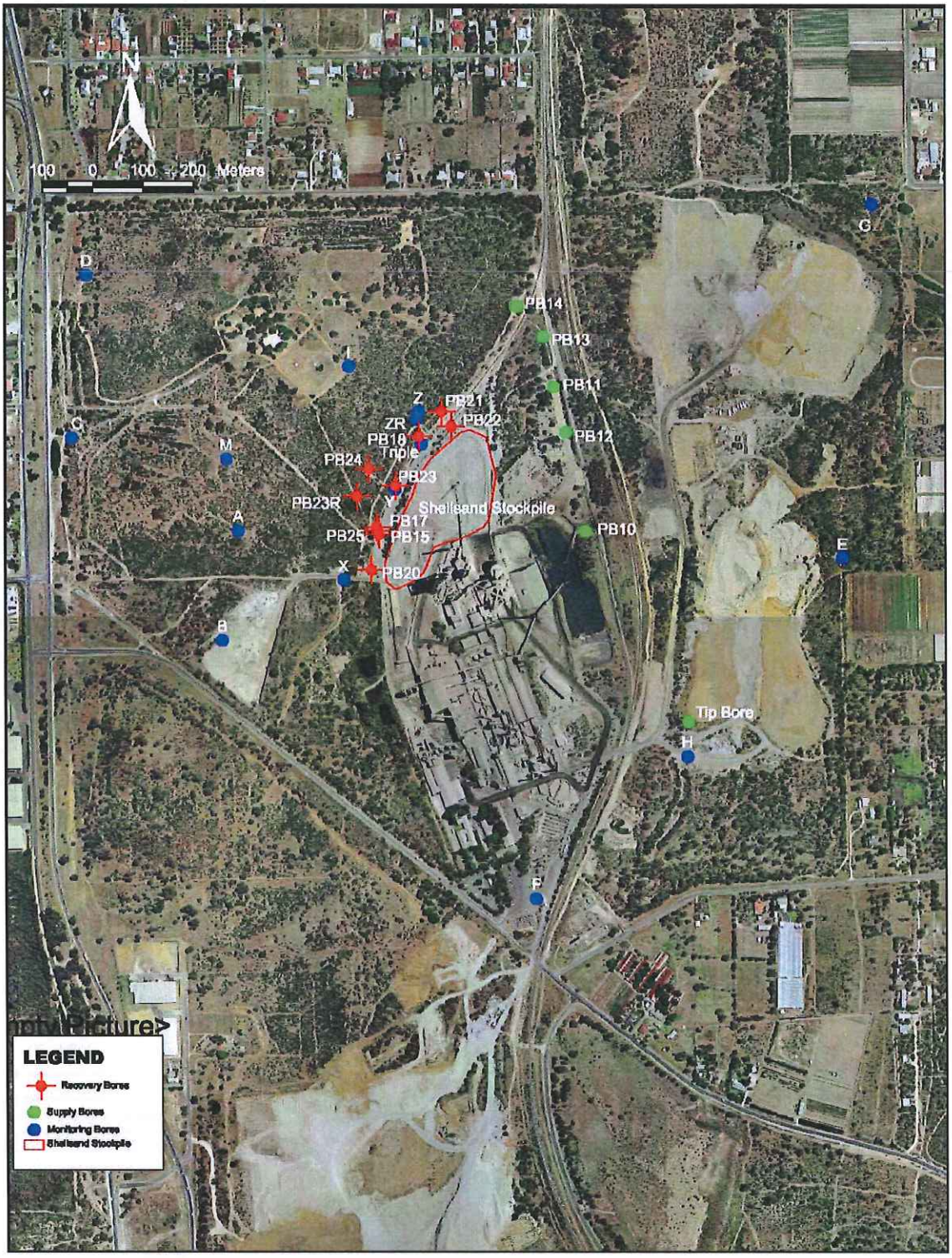
LICENCE NUMBER L4533/1967/15 **FILE NUMBER** DER2015/000597



NB: Russel Road and Railway are not part of the Premises.

ATTACHMENT 2




N
100 0 100 200 Meters
D
I
C
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A
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X
Z
ZR
PB18
Triple
PB24
PB23
PB23R
Y
PB17
PB25
PB15
PB20
PB21
PB22
PB14
PB13
PB11
PB12
PB10
Shellsand Stockpile
G
E
Tip Bore
H
F
LEGEND
Recovery Bores
Supply Bores
Monitoring Bores
Shellsand Stockpile

File Format

- Data shall be submitted as Comer Separated Values (CSV) format files, i.e. plain text with individual fields separated by commas.
- Each data file must have a 2 line header
  - Header line 1 contains the following fields: industry name, species contained in this file, start and end dates and times of the data in the file.
  - Header line 2 contains comma separated column titles. Each column title shall be of the form Stack Name-parameter e.g. Stack1-mass, Stack1-Volume, stack1-Density
- Each subsequent line consists of a record of the time series emissions. The sequence of fields for each record line is as follows:
  - Date (ddmmyyyy) must include leading zeros (i.e. 01012010)
  - Time (hhmm) must include leading zeros (i.e. 0210)

SO_2 and NOx 30 minute data	**Particulate 1 minute data**
Stack 1 Mass flow rate expressed as g/sec	Stack 1 particulate g/ m^3
Stack 1 Volume flow rate expressed as m^3/sec	Stack 1 particulate g/sec
Stack 1 Stack gas exit density expressed as kg/m^3	Stack 2 particulate g/ m^3
Stack 2 Mass flow rate	Etc…
Etc…	
E.g.: ddmmyyyy, hhmm, g/sec (stk1),m^3/sec(stk1),kg/m^3(stk1), (stk2),…;	E.g. ddmmyyyy, hhmm, g/ m^3 (stk1), g/sec (stk2), g/ m^3 (stk2)…..

- If there are multiple sources then these are reported on the same line, repeating the pattern of mass, volume, density for each source
- The time stamp (second field) marks the end of each half hour averaging period, i.e. the record for 00:30 is the thirty minute average from 00:01 – 00:30
- Daily half hour records begin at 00:30 and the final record for each day is 24:00

Submitting Data by email

- The CSV data files shall be submitted as mime encoded email attachments to an email address specified by the DER.
- There is a maximum of one attached data file for each email
- Each of the monitored species (e.g.: SO2, NOx, particulates) are to be submitted in separate data files (i.e., one species per file).
- Each email containing submitted data must contain the correct industry and species identification tag surrounded by square brackets in the subject header of the email. For example Industry-Y SO_2, NOx and particulate emissions these will be:

  [industryy_so2]
  [industryy_nox]
  [industryy_part]

- submission email address is: kwindata@environment.wa.gov.au

SECTION A

LICENCE DETAILS

Licence Number:	Licence File Number:
Company Name: Trading as:	ABN:
Reporting period: _____ to _____	

STATEMENT OF COMPLIANCE WITH LICENCE CONDITIONS

1. Were all conditions of licence complied with within the reporting period? (please tick the appropriate box)
   Yes □ Please proceed to Section C
   No □ Please proceed to Section B

SECTION B

DETAILS OF NON-COMPLIANCE WITH LICENCE CONDITION.

Please use a separate page for each licence condition that was not complied with.

a) Licence condition not complied with?

b) Date(s) when the non compliance occurred, if applicable?

c) Was this non compliance reported to DER?

☐ Yes ☐ No

☐ Reported to DER verbally Date _____

☐ Reported to DER in writing Date _____

d) Has DER taken, or finalized any action in relation to the non compliance?

e) Summary of particulars of non compliance, and what was the environmental impact?

f) If relevant, the precise location where the non compliance occurred (attach map or diagram)

g) Cause of non compliance

h) Action taken or that will be taken to mitigate any adverse effects of the non compliance

i) Action taken or that will be taken to prevent recurrence of the non compliance

SECTION C
SIGNATURE AND CERTIFICATION
This Annual Audit Compliance Report may only be signed by a person(s) with legal authority to sign it. The ways in which the Annual Audit Compliance Report must be signed and certified, and the people who may sign the statement, are set out below.

Please tick the box next to the category that describes how this Annual Audit Compliance Report is being signed. If you are uncertain about who is entitled to sign or which category to tick, please contact the licensing officer for your premises.

If the licence holder is		**The Annual Audit Compliance Report must be signed and certified:**
an individual	□ □	by the individual licence holder, or by a person approved in writing by the Chief Executive Officer of the Department of Environment and Conservation to sign on the 's behalf.
A firm or other unincorporated company	□ □	by the principal executive officer of the Licensee; or by a person with authority to sign on the Licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment and Conservation.
A corporation	□ □ □ □ □ □	by affixing the common seal of the Licensee in accordance with the Corporations Act 2001; or by two directors of the Licensee; or by a director and a company secretary of the Licensee, or if the Licensee is a proprietary company that has a sole director who is also the sole company secretary – by that director, or by the principal executive officer of the Licensee; or by a person with authority to sign on the Licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment and Conservation.
A public authority (other than a local government)	□ □	by the principal executive officer of the Licensee; or by a person with authority to sign on the Licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment and Conservation.
a local government	□ □	by the chief executive officer of the Licensee; or by affixing the seal of the local government.

It is an offence under section 112 of the Environmental Protection Act 1986 *for a person to give information on this form that to their knowledge is false or misleading in a material particular. There is a maximum penalty of $50,000 for an individual or body corporate.*
I/We declare that the information in this annual audit compliance report is correct and not false or misleading in a material particular.

SIGNATURE: _____
NAME:
(printed) _____

POSITION: _____

DATE: _____/_____/_____

SIGNATURE: _____
NAME:
(printed) _____

POSITION: _____

DATE: _____/_____/_____

SEAL (if signing under seal)

PROTOCOL

BETWEEN

The **DEPARTMENT OF ENVIRONMENT REGULATION (Department)** acting through its CEO, of 'The Atrium' 168 St Georges Terrace, PERTH WA 6000

AND

COCKBURN CEMENT LTD (Licensee) of Level 1, 157 Grenfell Street, ADELAIDE SA 5000

RECITALS

The Licensee is the holder of Licence Number L4533/1967/15 (**Licence**).

This PROTOCOL is for the purpose of administering the Management Action in column 3 of Table 4 of condition 10 for a Type 3 Event.

1. Definitions

In this Protocol, unless the context otherwise requires:

Authorised Departmental Officer means the officer, in order of availability of the Department who will complete Part 2 of Form 2 in accordance with clause 2.4, and in any event will include:

(a) the Manager Licensing (Process Industries) or the person acting in this position;

(b) the Director, Licensing and Approvals or the person acting in this position; and

(c) the Executive Director, Licensing and Approvals – Environment or the person acting in this position.

Authorised Technician means the production supervisor or a suitably qualified person authorised by the Licensee to act in that position:

Emergency Response Officer is the Departmental officer staffing the Emergency Pollution Response telephone number 1300 784 782.

Exempted Type 3 Event means any Type 3 Event arising from a power failure.

Form 1 means the form described as the Form 1 - Type 3 Event attached to this Protocol

Form 2 means the form described as the Form 2 - Type 3 Event attached to this Protocol.

Management Actions means the required management actions specified in column 3 of Table 4 of condition 10 of the Licence for a Type 3 Event.

Non-standard Type 3 Event means any Type 3 Event occurring:

(a) after at least three previous Type 3 Events;

(b) commencing within a 48 hour period commencing at the commencement of first of the previous three Type 3 Events;

(c) took place in respect of the same kiln as the previous three Type 3 Events; and

(d) is not an Exempted Type 3 Event.

Standard Type 3 Event means any Type 3 Event other than a Non-standard Type 3 Event (including an Exempted Type 3 Event).

Type 3 Event means the event described in as Specified Event Number 3 in column 2 of Table 4 of condition 10 of the Licence.

2. Administration of a Non-standard Type 3 Event

2.1 Where a Non-standard Type 3 Event occurs, the Licensee, by an Authorised Technician, must:

(a) complete Part 1 of Form 2;

(b) send the Form (along with any of the Form 1's relating to the previous three Type 3 Events) to the Department at the email addresses of the Authorised Departmental Officers listed in column 2 of the table in Schedule 1 to this Protocol; and

(c) telephone the Emergency Pollution Response telephone number 1300 784 782.

2.2 If it is impossible for the Authorised Technician to perform the actions specified in paragraphs (a), (b) and (c) of clause 2.1, he or she may communicate the details of the completed Part 1 of Form 2 to the Department by telephone or some other means of communication.

2.3 On receipt of the telephone call referred to in clause 2.1(c), the Emergency Response Officer must telephone the Authorised Departmental Officers in the order set out in the definitions to this Protocol, until an Authorised Departmental Officer answers in person.

2.4 As soon as possible after receiving either the completed form referred to in clause 2.1(b), or a telephone call referred to in clause 2.3, whichever is the earlier, the Authorised Departmental Officer must:

(a) complete Part 2 of Form 2;

(b) send the Form to the Licensee at the following email addresses:

(i) enviro.event@cockburncement.com.au or any replacement email address(es) supplied to the Department by the Licensee.

(c) telephone the Authorised Technician on 0429 271 407 or such other replacement telephone number supplied to the Department by the Licensee.

2.5 If it is impossible for the Authorised Departmental Officer to perform the actions specified in paragraphs (a), (b) and (c) of clause 2.4, he or she may communicate the Department's required response to the Licensee by telephone or some other means of communication.

2.6 As soon as possible after complying with clause 2.5, the Authorised Departmental Officer must complete the actions specified in paragraphs (a), (b) and (c) of clause 2.4 of this Protocol.

2.7 Where the Licensee does not receive a response from an Authorised Departmental Officer within 90 minutes of an Authorised Technician sending to the Department a complete Part 1 of Form 2 in accordance with clause 2.1(b), Part 2 of the Form 2 shall be deemed to have been completed with a "Yes" to both questions, and to authorise the recommencement of feed.

3. Administration of a Standard Type 3 Event

3.1. Subject to clause 3.2, where a Standard Type 3 Event occurs the Licensee, by an Authorised Technician, must by the close of business on the next working day :

(a) complete Form 1; and

(b) send the Form to the Department at the email addresses of the Authorised Departmental Officers listed in column 2 of the table in Schedule 1 to this Protocol.

3.2. If the cause of the Standard Type 3 Event is not rectified by the close of business on the next working day after the Standard Type 3 event occurs, the Licensee, by an authorised technician, must:

(a) by the close of business on the next working day after the Standard Type 3 Event occurs:

(i) complete Form 1 to the extent possible using available information; and

(ii) send the Form to the Department at the email addresses of the Authorised Departmental Officers listed in column 2 of the table in Schedule 1 to this Protocol;

and

(b) by the close of business on the next working day after the Standard Type 3 Event is rectified:

(i) complete the remainder of Form 1; and

(ii) send the Form to the Department at the email addresses of the Authorised Departmental Officers listed in column 2 of the table in Schedule 1 to this Protocol.

4. Effect of Protocol

4.1 For the purposes of condition 10 of the Licence, the Licensee will be in compliance with the requirements of the Management Actions for a Type 3 Event where feed of raw material to any kiln is recommenced following cessation of feed of raw materials in the following circumstances:

(a) a Non-Standard Type 3 Event has occurred and an Authorised Departmental Officer has completed Part 2 of Form 2 with a 'Yes' to both questions (or such response has been deemed pursuant to this Protocol);

(b) a Standard Type 3 Event has occurred and an Authorised Technician has completed Form 1 and carried out the remaining steps contained within clause 2.1 of this Protocol; and/or

(c) an Exempted Type 3 Event has occurred.

FORM 1 – TYPE 3 EVENT

Cockburn Cement Ltd: condition 10 of Licence number L4533/1967/15.

This Form is to read with the Protocol.

(*Authorised Technician to fill out*)

1. Specify the cause of the Type 3 Event:

2. Specify the time (or approximate time) the Type 3 Event occurred:

3. Describe the steps taken to investigate and rectify the cause of the Type 3 Event:

4. Specify the time (or approximate time) of rectification of the Type 3 Event.

The undersigned approves the recommencement of feed

Signed .....
Authorised Technician

Date:

Time:

FORM 2 - TYPE 3 EVENT FORM

Cockburn Cement Ltd: condition 10 of Licence number L4533/1967/15.

This form is to be read with the Protocol.

PART 1 (*Authorised Technician to fill out)*

1. Specify the cause of the Type 3 Event:
2. Specify the time (or approximate time) the Type 3 Event occurred:
3. Describe the steps taken to investigate and rectify the cause of the Type 3 Event:
4. Specify the time (or approximate time) of rectification of the Type 3 Event:

Signed _____
Authorised Technician

Date:

Time:

Contact telephone number:

PART 2 (*Authorised Departmental Officer to fill out*)

1. Are you satisfied that the cause of the Type 3 Event has been investigated?

   Yes No (*please circle*)

2. Are you satisfied that the cause of the Type 3 Event has been rectified?

   Yes No (*please circle*)

3. Further comments:

The undersigned approves the recommencement of feed

Signed _____
Authorised Departmental Officer

Date:

Time:

Contact telephone number:

ATTACHMENT 7 – Minor Discharge Points

LICENCE NUMBER L4533/1967/15 **FILE NUMBER** DER2015/000597

Minor Discharge Points			
MA Doc. No.	Plant No.	Unit Description	Customer Reference
CCL-035	4:004	64S-6-20	PLANT 4:004 K3 & 4
CCL-008	4:006	DLMV 20	PLANT 4:006
CCL-036	4:026	DCE DLM	PLANT 4:026 K3 & 4
CCL-039	4:035	A216F	PLANT 4:035, K3 & 4
	4:043	?	Kiln 2 cream hopper
CCL-098	4:050	100S-10-TR20	PLANT 4:050
CCL-009	4:180	16S-TR6-20	PLANT 4:180 SILO K2
CCL-020	4:367	A216F	PLANT 4:367 KILN 3 & 4
CCL-019	4:378	A216FL	PLANT 4:378 SILO K3 & 4
CCL-097	4:385	UNKNOWN	PLANT 4:385
CCL-104	4:466	A340FLH POP TOP	KILN 4
CCL-106	4:490	A216FH	K4 HA HOPPER
CCL-007	4:478	36S-TR8-20	PLANT 4:478 SILO K3 & 4
CCL-022	6:354	LUHR MWF 2.5/4.5/S.5	PLANT 6:354 NORTH LUHR DUST COLLECTOR
CCL-023	6:356	LUHR MWF 2.5/4.5/2.5	PLANT 6:356 SOUTH LUHR DUST COLLECTOR
CCL-044	6:429	DCE DLM	PLANT 6:429 CEMENT MILL
CCL-024	6:454	LUHR MWF 2.5/6.5/2.5	PLANT 6:454 WEST LUHR DUST COLLECTOR
CCL-025	6:456	LUHR MWF 2.5/6.5/2.5	PLANT 6:456 EAST LUHR DUST COLLECTOR
CCL-045	6:470	49S-TR10-20	PLANT 6:470 CEMENT MILL
CCL-102	6:490	225S-TR12 POP TOP	PLANT 6:490
CCL-103	6:491	31-6-200	PLANT 6:491
CCL-026	8:101	DLM V2	PLANT 8:101 SILO 1
CCL-027	8:102	DLM V2	PLANT 8:102 SILO 1
CCL-002	8:105	DLMV 20	PLANT 8:105 SILO 2
CCL-001	8:106	DLMV 20	PLANT 8:106 SILO 2
CCL-032	8:109	DCE DLM	PLANT 8:109 SILO 3
CCL-033	8:110	DCE DLM	PLANT 8:110 SILO 3
CCL-050	8:113	DCE DLM	PLANT 8:113 SILO 4
CCL-051	8:114	DCE DLM	PLANT 8:114 SILO 4
CCL-028	8:117	DLMV2	PLANT 8:117 SILO 5
CCL-029	8:118	DLMV2	PLANT 8:118 SILO 5
CCL-030	8:119	DLMV2	PLANT 8:119 SILO 5

CCL-031	8:120	DLMV2	PLANT 8:120 SILO 5
CCL-012	8:121	DLM	PLANT 8:121 SILO 6
CCL-015	8:122	DLMV 20	PLANT 8:122 SILO 6
CCL-052	8:126	DCE DLM	PLANT 8:126 SILO 7
CCL-005	8:125	DLMV 20	PLANT 8:127/125 SILO
CCL-053	8:133	DCE DLM	PLANT 8:133 SILO 9
CCL-054	8:134	DCE DLM	PLANT 8:134 SILO 9
CCL-055	8:137	DCE DLM	PLANT 8:137 SILO 10
CCL-056	8:138	DCE DLM	PLANT 8:138 SILO 10
CCL-004	8:141	DLMV 20F	PLANT 8:141 SILO 11
CCL-057	8:142	DCE DLM	PLANT 8:142 SILO 11
CCL-013	8:143	DLM	PLANT 8:143 SILO 11
CCL-058	8:144	DCE DLM	PLANT 8:144 SILO 11
CCL-059	8:145	DCE DLM	PLANT 8:145 SILO 12
CCL-060	8:149	DCE DLM	PLANT 8:149 SILO 13
CCL-016	8:150	DLM	PLANT 8:150 SILO 13
CCL-061	8:151	DCE DLM	PLANT 8:151 SILO 13
CCL-062	8:152	DCE DLM	PLANT 8:152 SILO 13
CCL-063	8:153	A216FL	PLANT 8:153 SILO 15
CCL-064	8:154	A216FL	PLANT 8:154 SILO
CCL-065	8:155	A216FL	PLANT 8:155 SILO
CCL-066	8:156	A216FL	PLANT 8:156 SILO
CCL-067	8:161	DCE DLM	PLANT 8:161 SILO 18
CCL-068	8:163	A165FL	PLANT 8:163 SILO 19
CCL-069	8:200	25S-TR10-20	PLANT 8:200 SILO 1-4
CCL-070	8:420	A141FL	PLANT 8:420
CCL-071	8:431	A141FL	PLANT 8:431
CCL-073	8:605	100S-TR10-20	PLANT 8:605 OLD PACKING PLANT
CCL-074	8:706	DCE DLM	PLANT 8:706 RAIL LOADOUT
CCL-075	9:046	DCE SHAKER 29 POCKET	PLANT 9:046 NEXT TO K5 EAST
CCL-076	9:071	100S-TR10-20	PLANT 9:071 LIME SILO
CCL-077	9:072	100S-TR10-20	PLANT 9:072 SILO LOAD OUT LIME
CCL-078	9:087	A216FL	PLANT 9:087 LIME SILO NO. A
CCL-094	9:088	42R-8-20	PLANT 9:088 SILOS
CCL-079	9:089	DCE DLM	PLANT 9:089 CONVEYOR TO SILOS A,B,C,D

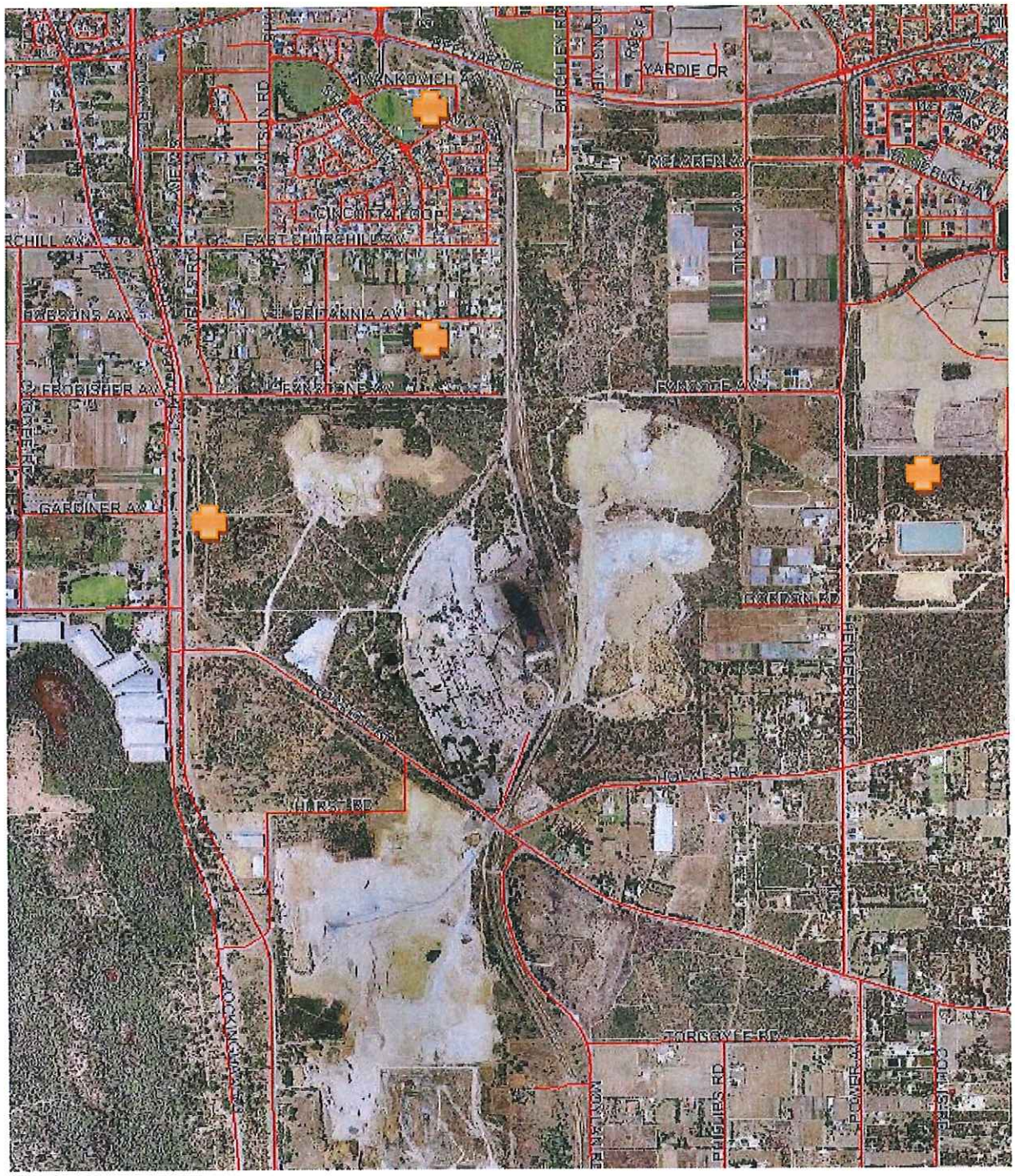
ATTACHMENT 7 – Minor Discharge Points

LICENCE NUMBER L4533/1967/15 **FILE NUMBER** DER2015/000597

CCL-080	9:094	81S-TR10-20	PLANT 9:094 KILN 3 & 4 TRANSPORT SYSTEM
CCL-014	9:204	100S-TR8-20	PLANT 9:204
CCL-095	9:210	DLMV 20	PLANT 9:206/9:210
CCL-082	9:211	81S-TR10-20	PLANT 9:211 LIME TRANSPORT NEXT TO K5
CCL-083	9:214	168S-TR10-20	PLANT 9:214 NEXT TO K5
CCL-084	9:216	DCE DLMV 20/10F6	PLANT 9:216 SILO 9:217
CCL-101	9:301	DCE DLM	LIME VAC. SYSTEM
CCL-085	9:334	640S-TR12-20-HR C/LESS	PLANT 9:334 NEXT TO CONTROL K5
CCL-086	9:689	A165FL	PLANT 9:689 LKD HOPPER K5 & 6
CCL-096	9:699	?	PLANT 9:699
CCL-011	9:760	DF 6.0/5.0/2.3	PLANT 9:760 KILN 6
CCL-010	9:804	100S-TR10-20	PLANT 9:804 KILN 6
CCL-088	9:831	LUHR DVF	PLANT 9:831 SILO
CCL-003	9:832	LUHR DVF	PLANT 9:832 REJECT SILO K6
CCL-089	9:841	LUHR DVF	PLANT 9:841 K5 & 6 SILO
CCL-090	9:842	LUHR DVF	PLANT 9:842 K5 & 6 SILO
CCL-091	9:843	LUHR DVF	PLANT 9:843 K5 & 6 SILO
CCL-092	9:930	LUHR DVF	PLANT 9:930 50 TON SILO RAIL
CCL-093	9:931	LUHR DVF	PLANT 9:931 50 TON SILO RAIL

ATTACHMENT 8 – Ambient Monitoring Locations

LICENCE NUMBER L4533/1967/15 **FILE NUMBER** DER2015/000597



: location of an ambient TSP/PM10/PM2.5 monitor

1. The licensee shall undertake the monitoring in Table 1.

Table 1: Monitoring of point source emissions to air – targeted program

Emission point reference	Parameter[4]	Units[2]	Averaging period	Frequency [1,3]	Method
Kiln 5 and Kiln 6 Stack Discharge Point	Total Reduced Sulfur compounds (TRS)	mg/m^3, g/s	Minimum 30 minute average	Four samples, completed in duplicate unless continuously monitored	USEPA Method 16B
	Volatile Organic Compounds (Reduced Sulfur Compounds)	mg/m^3, g/s			USEPA Method 18
	Total Volatile Organic Compounds (as n-propane)	mg/m^3, g/s			USEPA Method 25
	Volatile Organic Compounds	mg/m^3, g/s			SW846-0030
	Aldehydes and Ketones	mg/m^3, g/s			SW846-0011 or NATA approved equivalent
	Carbon Monoxide	mg/m^3, g/s	One minute averages for duration of all tests in this table		USEPA Method 10
	Odour concentration and odour emission rate	ou and ou.m^3/s	As specified in method		AS/NZS 4323.3:2001

Note 1: Monitoring shall be undertaken to reflect normal operating conditions and any limits or conditions on inputs or production.
Note 2: All concentrations are referenced to STP dry and 10% Oxygen concentration except Odour.
Note 3: Sampling for each parameter must be carried out simultaneously on each emission point;
Note 4: Analyte lists and test specific parameters to be achieved are included in Table 2

2. The licensee shall undertake four testing events mentioned in Table 1, Attachment 9 (event) under an odour verification plan required as part of condition 63. The odour verification plan shall:

    (a) outline that the first event is scheduled within 3 weeks of the submission of the odour verification plan;
    (b) outline that each subsequent event is scheduled at least 2, but no more than 4 weeks after the previous monitoring event;
    (c) outline that sampling for each separate event be conducted simultaneously on both emission points, unless kilns are unstable or brought offline during testing. Where kilns become unstable or are brought offline, the verification plan shall outline scheduling commitments in order for the remaining tests to be completed as soon as practicable;
    (d) require that process monitoring information be collected during all events, including but not limited to:
        a. Kiln Monitoring
            i. CEMS (NOx, SO2, Flow, Particulates)
            ii. Coal Feed rate
            iii. Sand Feed rate
            iv. Air rate
            v. Combustion efficiency (Kiln and Pre-calciner for Kiln 6, Kiln for Kiln 5) – Carbon monoxide (ppm) and Oxygen (%)
        b. Feed Monitoring (1-2 grab samples per test)
            i. Coal sulphur content, as required by licence condition 8
            ii. Sand Feed composition
                1. VOC content
                2. TOC content
                3. Sulphur content (total, sulphate, sulphite and reduced sulphur)
        c. Gas composition
    (e) provide notification to the CEO, at least 3 days in advance of any event occurring.
    (f) consider specific conditions when scheduling each event:
        a. wind direction is predicted to be within -90°/+90° azimuth range (W to E) from the kiln 6 stack;
        b. for events 1 and 2, require testing in Table 1, Attachment 9 to be conducted after 3pm;
        c. for events 3 and 4, require testing in Table 1, Attachment 9 to be conducted after 3pm, unless written approval from DER has been provided to begin earlier;
    (g) require testing in Table 1, Attachment 9 to be conducted by companies and laboratories with current NATA accreditation for the methods and analyses specified in Table 1, Attachment 9; and

3. The Licensee shall provide an interim report to DER within 5 weeks of the completion of each event, which includes but is not limited to:
   (a) results of the simultaneous monitoring required under clause 1;
   (b) details of process conditions listed under clause 2 at the time emission measurements were completed; and
   (c) ambient air temperature, wind speed and wind direction

Table 2: Analyte lists

Compounds	**Method Detection Limit**	**Compounds**	**Method Detection Limit**
Aldehydes and Ketones	<0.2 mg/m^3	**Volatile Organic Compounds (Reduced Sulphur Compounds)**	<0.05 mg/m^3
Acetaldehyde		Methyl mercaptan	
Acetone		Ethyl mercaptan	
Acrolin		Propyl mercaptan(s)	
Benzaldehyde		Butyl mercaptan(s)	
Butanal		Carbonyl sulphide	
2-butanone		Dimethyl sulphide	
Butenal		Hydrogen Sulphide	
Formaldehyde		Thiophene	
Hexanal		Tetrahydrothiophene	
Isobutyraldehyde		Dimethyldisulphide	
Methacrolein		Dimethyltrisulphide	
Methyl ethyl ketone		Benzothiophene	
Pentanal		Dibenzothiophene	
2-pentanone		Semi-quantative screen (Top 10 concentrations of other reduced sulphur compounds present in sample)	
Propanal			
Tolualdehyde			
Semi-quantative screen (Top 10 concentrations of other aldehydes and ketones present in sample)			
Total Volatile Organic Compounds (as n-propane)	<0.5 mg/m^3	**Total Reduced Sulphur Compounds (TRS)**	<1.0 mg/m^3
Volatile Organic Compounds	<0.05 mg/m^3	Total Reduced Sulphur Compounds (reported as Sulphur Dioxide)	
USEPA Method 8240B analyte list (as listed in Section 1 of USEPA Method 8240B)		**Carbon Monoxide**	<2.0 mg/m^3
Semi-quantative screen (Top 50 concentrations of other VOC's present in sample)		Carbon Monoxide	

Government of **Western Australia**
Department of **Environment Regulation**

Decision Document

Environmental Protection Act 1986, Part V

Proponent: **Cockburn Cement Limited**

Licence: **L4533/1967/15**

Registered office: Level 1
157 Grenfell Street
Adelaide SA 5000p

ACN: 008 673 470

Premises address: Russel Road
MUNSTER WA 6166
As per below:

Street Address	Lot Number	Plan / Diagram	Volume	Folio
Rockingham Road, Munster	450	P 249735	2045	99
Russell Road, Munster	50	D 6065	1417	148
Munster	88	P 22127	2115	676
Russell Road, Munster	246	P 226012	1417	148
Russell Road, Munster	311	P 300770	1304	658
Russell Road, Munster	5	D 18525	1258	508
Russell Road, Munster	4	D 18525	1174	541

Issue date: Friday, 30 March 2012

Commencement date: Saturday, 31 March 2012

Expiry date: Thursday, 30 June 2016

Decision
Based on the assessment detailed in this document the Department of Environment Regulation (DER), has decided to issue a licence. DER considers that in reaching this decision, it has taken into account all relevant considerations and legal requirements and that the Licence and its conditions will ensure that an appropriate level of environmental protection is provided.

Decision Document prepared by: Richard Wilson
Licensing Officer

Decision Document authorised by: Ed Schuller
Delegated Officer

Contents

1 Purpose of this Document

This decision document explains how DER has assessed and determined the application and provides a record of DER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DER's assessment and decision making under Part V of the *Environmental Protection Act 1986.* Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.

2 Administrative summary

Administrative details		
Application type	Works Approval ☐ New Licence ☐ Licence amendment ☒ Works Approval amendment ☐	
Activities that cause the premises to become prescribed premises	**Category number(s)**	**Assessed design capacity**
	12	NA
	43	
	61A	
	62	
	63	
Application verified Application fee paid	Date: NA Date: NA	
Works Approval has been complied with Compliance Certificate received	Yes☐ No☐ N/A☒ Yes☐ No☐ N/A☒	
Commercial-in-confidence claim	Yes☐ No☒	
Commercial-in-confidence claim outcome	N/A	
Is the proposal a Major Resource Project?	Yes☐ No☒	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the *Environmental Protection Act 1986*?	Yes☐ No☒	Referral decision No: Managed under Part V☐ Assessed under Part IV☐
Is the proposal subject to Ministerial Conditions?	Yes☐ No☒	Ministerial statement No: EPA Report No:
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the *Environmental Protection Act 1986*)?	Yes☐ No☒ Department of Water consulted Yes ☐ No ☒	
Is the Premises within an Environmental Protection Policy (EPP) Area Yes☐ No☒ If Yes include details of which EPP(s) here.		
Is the Premises subject to any EPP requirements? Yes☐ No☒ If Yes, include details here, eg Site is subject to SO_2 requirements of Kwinana EPP.		

3 Executive summary of proposal and assessment

Cockburn Cement Limited's (CCL) Munster facility (CCL Munster) commenced operations in 1953 and is the major producer of lime and clinker in Western Australia. In 1972, CCL established a sea sand pumping station at Woodman Point, seven kilometres from the plant. CCL is permitted, under an agreement with the State Government (Cement Works (Cockburn Cement Limited) Agreement Act, 1971), to dredge areas of Cockburn Sound and Owen Anchorage for the extraction of shell sand for the production of lime.

In addition to cement and lime manufacturing, other prescribed activities onsite include screening, crushing and milling of quarried materials and shale, acceptance of off specification product and other inert waste type 1 from CCL's Kwinana facility for landfilling onsite and stockpiling of inert waste type 1 prior to landfilling.

CCL currently operates two clinker kilns (kilns 3 and 4) and two lime kilns (kilns 5 and 6). Pollutants emitted from the kiln stacks include particulates, combustion gases (NOx, SO2, CO) and Volatile Organic Compounds (VOCs). Particulates, NOx and SO2 emissions are continuously monitored by Continuous Emissions Monitoring Systems (CEMS) installed on each kiln stack. In addition to CEMS each kiln has pollution control equipment designed to minimise particulate emissions produced in the clinker and lime manufacturing process. Kilns 3 and 4 have Electrostatic Precipitators (ESP's) and baghouse filters were installed on kilns 5 and 6 in 2013 and 2012 respectively.

In addition to the kiln emission points other emissions from the premises include fugitive dust and odour which are generated from bulk materials, fuel and product storage and stockpiling (shellsand, limestone, shale, bauxite, iron, coal, clinker and gypsum) and wastewater from shellsand dewatering activities. Waste products produced in the lime and clinker manufacturing process, such as waste materials collected by the ESP's and baghouses, include lime kiln dust and clinker kiln dust. These waste materials are stored on the premises for future re-use or disposal.

Whilst recent upgrades have been targeted at reducing particulate emissions from the kiln stacks, odour emissions from CCL Munster continue to be a concern in the surrounding community.

This licence amendment is for the removal of the quarry that previously formed part of the premises from the licence.

4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986* (the Act), the *Environmental Protection Regulations 1987*and DER's Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision document.

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
NA	L45 Attachment 1	The licence has been amended to remove parcels of land that constituted the quarry area. The licence has also been amended to extend the expiry from 30 March 2016 to 30 June 2016. As a result of the above changes DER has made the following amendments to the licence: • The removal of the land no longer relevant to the premises; • Amendment of Condition 45 to remove quarry 9 as a monitoring point for TSP, PM10 and PM2.5; and • Amending Licence Attachment 1 to remove the quarry area. The licence has been extended for a short duration and re-assessment of licence conditions will occur prior to the licence being re-issued.	NA

5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
4/3/2016	Draft amendment sent to Licensee	No comments received. Waiver form received 16/3/2016	N/A

6 Risk Assessment

Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management

Table 1: Emissions Risk Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High