

This Report has been cleared
for submission to the Board by
Jonathan Derham

Signed: N. Keavey Date: 28/5/08



OFFICE OF
LICENSING & RESOURCE USE

REPORT OF THE TECHNICAL COMMITTEE ON OBJECTIONS TO LICENCE CONDITIONS	
TO:	Directors
FROM:	Technical Committee Environmental Licensing Programme.
DATE:	27 th May 2008.
RE:	Objection to a Proposed Decision for Irish Cement Limited, Platin, Drogheda, County Louth, Licence Register No. P030-03.

Application Details	
Class of activity:	10.1 Production of cement; and 11.1 The recovery or disposal of waste in a facility, within the meaning of the Act of 1996, which facility is connected or associated with another activity specified in this Schedule in respect of which a licence or revised licence under Part IV is in force or in respect of which a licence under the said Part is or will be required.
Location of activity:	Platin, Drogheda, County Louth.
Licence application received:	21/09/2007.
PD issued:	20/02/2008.
First Party Objection received:	18/03/2008.

Company

This report relates to an application by Irish Cement Limited (ICL) for an Integrated Pollution Prevention Control (IPPC) Licence for an existing cement production installation at Platin, Drogheda, Co. Louth.

ICL is part of the CRH plc. group of companies and has operated a cement production installation at Platin, Co. Louth since 1972. The installation includes a limestone quarry and cement production activity. There are currently two kilns on-site. The Proposed Determination (PD) provides for the decommissioning of one kiln (referred to as kiln 1) and the commissioning of a new higher throughput kiln (referred to as kiln 3) and associated plant.

The main emissions associated with the existing and proposed activity are:

- combustion gases to atmosphere from the kilns,
- particulate matter to atmosphere from plant and machinery associated with moving, milling, storage, packaging of raw materials, intermediates and finished products,
- discharges from quarry dewatering, process and surface water to the River Nanny, and
- noise from plant, machinery and blasting associated with the quarry.

The activity is licensed under Classes 10.1 and 11.1 of the Environmental Protection Agency Acts 1992 and 2007.

There was one valid submission, received from the Health Services Executive, made in relation to this application prior to it being considered by the Board at Proposed Determination (PD) stage. The Board approved the recommendation of the inspector to grant a licence and a PD was issued by the Agency on the 20th February 2008.

Consideration of the Objection by Technical Committee

This report considers one valid first party Objection, as set out below. The main issues raised in the Objection are summarised below and where appropriate under various different headings. However, the original Objection should be referred to at all times for greater detail and expansion of particular points.

The Technical Committee (TC), comprising of Mr. Breen Higgins (Chair) and Dr. Karen Creed has considered all of the issues raised in the Objection and this report details the Committee's comments and recommendations following the examination of the Objection together with discussions with the Inspector, Mr. Patrick Byrne, who also provided comments on the points raised.

First Party Objection

No.	Objector Name and Address	Date Received
1	Mr. Colm A. Bannon. Irish Cement Limited, Platin, Drogheda, Co. Louth.	18 th March 2008.

1. Mr. Colm A. Bannon, Irish Cement Limited.

The first party submitted a twenty four-page Objection addressed to the Agency in the form of a short letter of introduction, a number of points of objection and a number of supporting Annexes in relation to specific Conditions and/or Schedules contained within the PD.

Objection 1; Condition 3.14 – Waste Water Treatment Plant

The Objection states that the Waste Water Treatment Plant (WWTP), utilised for the treatment of sanitary effluent generated on site is currently being upgraded, a final design was due to be agreed with the Agency in April 2008 and construction was to follow (to date no formal submission has been received by OEE on this matter). The applicant suggests that a six-month period will be necessary for the construction/installation to take place and requests that the timeframe be extended from the 3 months stipulated in Condition 3.14 to the 31st of December 2008.

Technical Committee's Evaluation:

The TC notes the concerns of the objector and the content of the Inspector's Report prepared during the PD process. Under the section entitled "*Emissions to Water*", the licensing inspector states that '*sanitary effluent generated on-site is directed to an on-site effluent treatment system ... however following exceedences of emission limit values in March and September 2006 it has been identified that the treatment system is hydraulically overloaded*'. It is further stated that a preliminary proposal was presented to the Agency in October 2007 aimed at remediating the overloading issue. The proposed solution involved installation of additional proprietary treatment and the installation of a wetland system.

Given that an overloading issue was identified as far back as March 2006 and that a proposed solution had been developed in 2007, it is the view of the TC that the timeframe contained in the PD for remedial works to be undertaken is satisfactory. Therefore, it is recommended to retain the timeframe of three months specified within Condition 3.14 of the PD.

Recommendation:

No change.

Objection 2; Condition 4.1.1 - Interpretation

The Objection, under point 2, expresses the view that the use of a 97-percentile value for the interpretation of compliance against emission limit values for discharges to air '*....does not represent BAT for the industry and does not represent current licensing practice in other Member States.*' It is further stated that during '*unsteady state*' conditions, such as those encountered during start up/shut down situations and, in the case of particulates, safety trip outs, were excluded from the compliance evaluation whereas they had been incorporated under the previous licence Reg. No P0030-02.

Irish Cement Limited state that it is their view "*...that the lack of recognition of the unsteady state conditions combined with the insertion of the '97% rule' criterion are inoperable and do not reflect current licence practice in the E.U.*"

Technical Committee's Evaluation:

The TC notes the concerns of the objector and considers that, as per the existing licence Reg. No. P0030-02 it is appropriate to include a provision allowing for those 'unsteady state' conditions experienced within the kiln. With this in mind it is considered appropriate to alter Condition 4.1.1 to exclude periods of start-up, shutdown and, in the case of dust, safety trip-outs. This exclusion will provide the licensee with an appropriate level of flexibility in operating the on-site kilns whilst also maintaining a high level of environmental protection.

However, the contention put forward in the Objection that a 97-percentile rule for the assessment of compliance is not BAT for the industry is considered inaccurate by the TC. This interpretation of compliance monitoring is standard within the industry in an Irish context and as such is considered BAT for the sector. This level of compliance has been seen to be achievable within the sector and should therefore be retained in the licence.

Recommendation:

Replace existing Condition 4.1.1, below:

4.1.1 Continuous Monitoring:

- (i) No 24 hour mean value shall exceed the emission limit value.
- (ii) 97% of all 30 minute mean values taken continuously over an annual period shall not exceed 1.2 times the emission limit value.
- (iii) No 30 minute mean value shall exceed twice the emission limit value.

with amended Condition 4.1.1, as follows:

4.1.1 Continuous Monitoring:

- (i) No 24 hour mean value shall exceed the emission limit value.
- (ii) 97% of all 30 minute mean values taken continuously over an annual period (**excluding start-up and shut-down, and in the case of dust, safety trip-outs**) shall not exceed 1.2 times the emission limit value.
- (iii) No 30 minute mean value shall exceed twice the emission limit value.

Objection 3; Condition 4.5 – Noise Compliance Band

The objector states that under Section I.7.1 of the licence application a strong case has been presented for the inclusion of a +/- 4dB(A) tolerance when assessing compliance for sound pressure levels generated as a result of the on-site activities. It is suggested that the documentation was not sufficiently considered as part of the PD process.

Technical Committee's Evaluation:

The TC notes the point raised by the objector and also the content of the Inspector's report, specifically the section entitled 'Noise and Vibration'. The IR deals

comprehensively with this issue and stipulates that 45/55dB(A) daytime/ night-time noise level limits shall apply to the activities. In conjunction with this a 2dB(A) tolerance is provided for under Condition 4.5, representing BAT for the sector.

As previously stated the first party requests that the tolerance levels be widened to allow for +/-4dB(A); it is the considered view of the TC that such a level of tolerance does not represent BAT for this sector. It should be further noted that the TC considers that the licensee should, rather than seeking a relaxation of the noise limit values, be endeavouring to reduce noise levels to a position whereby the 2dB(A) tolerance level is not activated.

Recommendation:

No change.

Objection 4; Condition 4.7 – Dust and Particulate Matter Deposition Limits

The Objection requests that the requirement to ensure that dust and particulate matter emissions arising from the site do not give rise to deposition levels in excess of 350mg/m²/day, be deleted. This request is supported by the assertion that dust deposition gauges may pick up dust from all local sources and ICL would, in such a scenario, not be responsible for all dust present in the gauges. It is stated, therefore, that it would be *'inequitable to apply a limit to the site'*. An alternative is suggested by ICL whereby the company maintain dust deposition gauges and record the results; this would then be used as back up to on site monitoring.

Technical Committee's Evaluation:

The issue of dust deposition is considered in the IR under the heading *'Fugitive Emissions'* and are said to result on-site from vehicle movements and out-door storage of raw/intermediate materials, clinker and fuel. A number of complaints (3) have been received in relation to dust emissions from the installation during the previous 12 month period.

It is considered BAT for this sector to apply a 350mg/m²/day dust deposition limit as per Technical Instructions on Air Quality Control – TA Luft. The requirement to maintain this limit is reinforced by the fact that there continue to be complaints logged in relation to dust emissions from the on site activities. In the Objection the first party states that ICL will not be responsible for all the dust deposited in the gauges due to the presence of nearby roadways, etc. In order to determine the portion of dust attributable to the on-site activities it is proposed to include a requirement for analysis of the dust deposited. This monitoring and analysis shall be used to characterise the depositions. By so doing it will be possible to determine the quantity of raw meal or clinker deposits expressed as a percentage of the total dust deposited in the gauges.

Recommendation:

Replace existing Schedule B.7, below:

B.7 Dust Deposition Limits:

Measured at the monitoring points AA1 – AA4 (Figure F.2 additional information received 28th December 2007) or as otherwise agreed by the Agency.

Level mg/m ² /day ^{Note 1}
350

Note 1: 30 Day composite sample with results expressed as mg/m²/day.

with amended Schedule B.7, as follows:

B.7 Dust Deposition Limits:

Measured at the monitoring points AA1 – AA4 (Figure F.2 additional information received 28th December 2007) or as otherwise agreed by the Agency.

Level mg/m ² /day ^{Note 1 & 2}
350

Note 1: 30 Day composite sample with results expressed as mg/m²/day.

Note 2: Within six months of the date of grant of this licence analysis shall be undertaken to characterize the dust depositions. The level of raw meal or clinker-derived dust shall be expressed as a percentage of the total dust deposited. Any sample where the emission limit value is exceeded shall be accompanied by a corresponding compositional analysis.

Objection 5; Schedule B – Emission Limits: B.1 Emissions to Air

➤ **NO_x ELV: Kiln 3 start up**

The Objection states that the 800mg/Nm³ limit contained within the PD from Day 1 of operation of Kiln 3 will be impossible to achieve. It is stated that during the commissioning phase a period of higher NO_x emissions is anticipated. This position is supported by way of the inclusion of a report in the Annex to the Objection; this report suggests that it may take a period of eight months before the ELV can be achieved on a continuous basis. ICL therefore request this eight-month timeframe to be included in the Schedule.

Technical Committee's Evaluation:

The TC notes the content of the Objection and the Inspector's Report. It is considered appropriate that a period of time be allowed whereby the commissioning of Kiln 3 can be facilitated. However, the timeframe of eight months requested in the Objection for commissioning to complete is considered to be excessive.

It is the view of the TC that a more appropriate timeframe would be one that reflects the time taken for the Kiln to begin producing a commercially viable clinker product. Following consideration of all the information at hand the TC recommends that the PD be altered accordingly.

Recommendation:

Replace existing Schedule B.1 for emission point A2-08, below:

B.1 Emissions to Air:

Emission Point Reference No: A2-08
Location: Kiln 3 Stack
Volume to be emitted: Maximum in any one day: 9,840,000 m³
 Maximum rate per hour: 410,000 m³
Minimum discharges height: 168.2 m above O.D.

Parameter	Emission Limit Value
Oxides of sulphur	400 mg/m ³
Nitrogen oxides (as NO ₂)	800 mg/m ³
Particulates	30 mg/m ³

with amended Schedule B.1 for emission point A2-08, as follows:

Emission Point Reference No: A2-08
Location: Kiln 3 Stack
Volume to be emitted: Maximum in any one day: 9,840,000 m³
 Maximum rate per hour: 410,000 m³
Minimum discharges height: 168.2 m above O.D.

Parameter	Emission Limit Value
Oxides of sulphur	400 mg/m ³
Nitrogen oxides (as NO ₂) ^{Note 1}	800 mg/m ³
Particulates	30 mg/m ³

Note 1: ELV to be achieved on the commencement of production of commercially viable clinker.

➤ **Particulate ELV: Cement Mill 1**

The PD requires an ELV for particulates of 50mg/Nm³ to be achieved for Cement Mill 1, this is considered by ICL to be an onerous requirement given that the BAT range for the industry is 25 – 75mg/Nm³. An ELV of 75mg/Nm³ for Particulates is requested in the Objection. It is stated that the air dispersion modelling for the site demonstrated that emissions of this order would not result in a breach of the Air Quality Standards Regulations, 2002 (S.I. No. 271 of 2002).

Technical Committee's Evaluation:

The application documentation (Further Information received 28/12/07 Appendix III "Air Quality Modelling of NOx and PM10") contained a 39-page dispersion model, utilising AERMOD software. This model was utilised to assess the impact of particulate emissions from the various emission points on site. The model used a figure for Particulate emissions of 75mg/Nm³ for the purpose of assessment against those limits stipulated in the Air Quality Standards Regulations, 2007. No deleterious impact was noted on the receiving environment when employing this ELV.

The TC, therefore, considers it appropriate to permit a 75mg/Nm³ particulate emission limit value at Cement Mill 1.

Recommendation:

Replace existing Schedule B.1 for emission point A2-04, below:

B.1 Emissions to Air:

Emission Point Reference No: A2-04
Location: Cement Mill 1
Volume to be emitted: Maximum in any one day: 444,000 m³
Maximum rate per hour: 18,500 m³
Minimum discharges height: 75.94 m above O.D.

Parameter	Emission Limit Value
Particulates	50 mg/m ³

with amended Schedule B.1 for emission point A2-04, as follows:

B.1 Emissions to Air:

Emission Point Reference No: A2-04
Location: Cement Mill 1
Volume to be emitted: Maximum in any one day: 444,000 m³
Maximum rate per hour: 18,500 m³
Minimum discharges height: 75.94 m above O.D.

Parameter	Emission Limit Value
Particulates	75 mg/m ³

➤ Particulate ELV: Kiln 2 Grate Cooker

As with the point above the Objection seeks to increase the limit for particulate emissions from 50mg/Nm³ to 100mg/Nm³ in line with the upper limits contained

within the BAT note for this sector. This again was the modelled scenario and the results showed no exceedences of those limits stipulated within the Air Quality Standards Regulations, 2007.

Technical Committee's Evaluation:

As per the point raised above in relation to NO_x emissions, a 100mg/Nm³ value was modelled without any impact on the ambient air quality. As such it is considered appropriate to amend the Schedule to reflect this emission limit value.

Recommendation:

Replace existing Schedule B.1 for emission point A2-07, below:

Emission Point Reference No: A2-07
Location: Kiln 2 Grate Cooler
Volume to be emitted: Maximum in any one day: 5,040,000 m³
 Maximum rate per hour: 210,000 m³
Minimum discharges height: 81.23 m above O.D.

Parameter	Emission Limit Value
Particulates	50 mg/m ³

with amended Schedule B.1 for emission point A2-07, as follows:

Emission Point Reference No: A2-07
Location: Kiln 2 Grate Cooler
Volume to be emitted: Maximum in any one day: 5,040,000 m³
 Maximum rate per hour: 210,000 m³
Minimum discharges height: 81.23 m above O.D.

Parameter	Emission Limit Value
Particulates	100 mg/m ³

Objection 6; Schedule B.2 – Emission Point Ref. No. SW-4 flow Limit

The Objection refers to the fact that a flow limit of 15,000m³/day has been retained at emission point SW-4. This limit is in conflict with the 28,000m³/day value requested by ICL in their licence application. The increased limit was sought in order to accommodate the westward development of the quarry.

This development will lead to an anticipated increase in the quantity of water requiring removal from the void space. New information was submitted in support of this request in the form of a hydrogeological report, included as an Annex to the Objection, prepared by Mr. K. Cullen, Hydrogeologist. This report outlines the measures to be undertaken by ICL to ensure that the abstraction, and subsequent discharge, of this water will not impact negatively on the surrounding groundwater, surface water or ecological environments.

The Objection requests that the 28,000m³/day limit be incorporated into Schedule B.2.

Technical Committee's Evaluation:

The TC notes the content of the Objection and in particular the report by Mr. K. Cullen contained within Annex III. As previously stated an increased volume of water is predicted to percolate into the quarry space; it will therefore be necessary to 'dewater' the void space to allow the quarrying activity to safely continue.

The licensing inspector did not accommodate this request at PD stage of the licensing process as it was considered that insufficient information was provided with regard to the impacts of the increased volumes on the hydrogeology in the immediate vicinity of the installation. The additional information submitted in the Objection clarifies a number of points in relation to impacts on groundwater levels in the area and the steps to be taken should any negative impacts be noted on wells etc. in the area.

In light of this additional information and considering the stringent physio-chemical limits applied to the extracted groundwater prior to discharge, as per *Schedule B.2: Emissions to Water* of the PD, the TC considers it appropriate to permit the 28,000m³/day volumetric limit.

However, the TC also recommends that a monitoring report focusing particularly on the impacts of the abstraction and subsequent discharge of this water on groundwater, surface water and ecological habitats be submitted to the Agency on a biennial basis. This report, required under Condition, is considered necessary in order to ensure that no negative affects are impacted on any waterbody in the vicinity of the installation.

Recommendation:

Replace existing Schedule B.2 for emission point SW-4, below:

Emission Point Reference No: SW- 4(formerly W4)
Name of Receiving Waters: River Nanny
Emission Source: Combined effluent streams from:
 Surface water treatment plant;
 Sanitary treatment plant; and
 Quarry groundwater.

Volume to be emitted: Maximum in any one day: 15,000 m³ ^{Note 1}
 Maximum rate per hour: 700 m³ ^{Note 1}

Parameter	Emission Limit Value
Suspended Solids	35 mg/l
BOD ^{Note 2}	10 mg/l
BOD ^{Note 3}	6.0 mg/l
Mineral Oil	2.0 mg/l
Lead (as Pb)	0.1 mg/l
Copper (as Cu)	0.1 mg/l
Zinc (as Zn)	0.5 mg/l

Note 1: Where the flow limit is exceeded due to extreme meteorological conditions, the licensee shall notify the Agency in line with the provisions of Condition 11 of this licence.
Note 2: Limit applies when rate of discharge is less than or equal to 200m³ per hour.
Note 3: Limit applies when rate of discharge is greater than 200m³ per hour.

with amended Schedule B.2 for emission point SW-4, as follows:

Emission Point Reference No: SW- 4(formerly W4)
Name of Receiving Waters: River Nanny
Emission Source: Combined effluent streams from:
 Surface water treatment plant;
 Sanitary treatment plant; and
 Quarry groundwater.

Volume to be emitted: Maximum in any one day: 28,000 m³ ^{Note 1}
 Maximum rate per hour: 1,166 m³ ^{Note 1}

Parameter	Emission Limit Value
Suspended Solids	35 mg/l
BOD ^{Note 2}	10 mg/l
BOD ^{Note 3}	6.0 mg/l
Mineral Oil	2.0 mg/l
Lead (as Pb)	0.1 mg/l
Copper (as Cu)	0.1 mg/l
Zinc (as Zn)	0.5 mg/l

Note 1: Where the flow limit is exceeded due to extreme meteorological conditions, the licensee shall notify the Agency in line with the provisions of Condition 11 of this licence.
Note 2: Limit applies when rate of discharge is less than or equal to 200m³ per hour.
Note 3: Limit applies when rate of discharge is greater than 200m³ per hour.

and,

Insert new Condition 6.19 as follows, below:

The licensee shall, on a biennial basis, prepare and submit to the Agency a dewatering monitoring report. This report shall pay particular attention to the impacts (physical and chemical) of the dewatering activities on the groundwater environment (water table, cone of depression, base flow to surface waters, etc.), the surface water environment and ecological habitats in the vicinity of the installation and downstream of SW-4 as appropriate.

Objection 7; Schedule C – Control and Monitoring

➤ **C.1.1 Control of Emissions to Air – CO Monitoring**

The Objection expresses the view that the requirement for monitoring of Carbon Monoxide on Emission Points A2-04, A2-07 and A2-09 is unnecessary as those gases being emitted are non-combustion gases.

Technical Committee’s Evaluation:

The TC agrees that there should not be a requirement for monitoring of Carbon Monoxide at emission points A2-04, A2-07 and A2-09, as combustion gases are absent at these locations.

Recommendation:

Replace existing Schedule C.1.1, below:

Emission Point Reference No: A2-01, A2-02, A2-04, A2-07 & A2-09
Description of Treatment: Electrostatic Precipitators

Control Parameter	Monitoring	Key Equipment ^{Note 1}
Voltage across electrodes	Continuous	Rectifiers and spares
Current	Continuous	Gear and spares
Carbon Monoxide	Continuous	On-line CO analyser, rapid response
Visibility	Daily visual assessment of plume	Not Applicable

Note 1: The licensee shall maintain appropriate access to standby and/or spares to ensure the operation of the abatement system.

with amended Schedule C.1.1, as follows:

Emission Point Reference No: A2-01, A2-02, A2-04, A2-07 & A2-09
Description of Treatment: Electrostatic Precipitators

Control Parameter	Monitoring	Key Equipment ^{Note 1}
Voltage across electrodes	Continuous	Rectifiers and spares
Current	Continuous	Gear and spares
Carbon Monoxide ^{Note 2}	Continuous	On-line CO analyser, rapid response
Visibility	Daily visual assessment of plume	Not Applicable

Note 1: The licensee shall maintain appropriate access to standby and/or spares to ensure the operation of the abatement system.

Note 2: Monitoring of Carbon Monoxide shall be undertaken at emission points A2-01 and A2-02.

➤ **C.1.1 Control of Emissions to Air – Filter Integrity**

The PD places a requirement on the applicant to continuously monitor the filter integrity at a number of emission points including A2-03, i.e., emissions from Coal Mill 2. The Objection states that there is currently no continuous monitor in place at this emission point. It is requested that a period of nine months be allowed for the installation of this technology to take place.

Technical Committee’s Evaluation:

The TC considers it appropriate to allow a timeframe to facilitate the procurement and commissioning of the continuous monitoring equipment. However, a six month timeframe for this work to be completed is sufficient.

Recommendation:

Replace existing Schedule C.1.1, below:

Emission Point Reference No: A2-03, A2-05, A2-06, A2-08 and A2-10
Description of Treatment: Bag Filters

Control Parameter	Monitoring	Key Equipment ^{Note 1}
Differential Pressure	Continuous	Filter Fan
Filter Integrity	Continuous	Filter Bags
Visibility	Daily visual assessment of plume	Not applicable

Note 1: The licensee shall maintain appropriate access to standby and/or spares to ensure the operation of the abatement system.

With amended Schedule C.1.1, as follows:

Emission Point Reference No: A2-03, A2-05, A2-06, A2-08 and A2-10
Description of Treatment: Bag Filters

Control Parameter	Monitoring	Key Equipment ^{Note 1}
Differential Pressure	Continuous	Filter Fan
Filter Integrity ^{Note 2}	Continuous	Filter Bags
Visibility	Daily visual assessment of plume	Not applicable

Note 1: The licensee shall maintain appropriate access to standby and/or spares to ensure the operation of the abatement system.

Note 2: A continuous filter integrity monitor shall be installed on emission point A2-03 within six months of the date of grant of this licence.

➤ **C.1.2 Monitoring of Emissions to Air – NO_x, particulates & CO Monitoring**

The Objection points out that NO_x, Particulates and CO levels from emission point A2-03, i.e., Coal Mill 2, are monitored at the top of Kiln 2 Preheater Tower. It is also stated that there is no continuous monitor in place on A2-03 for the monitoring of particulates and that a period of nine months should be permitted to allow for installation of this equipment.

➤ **Exhaust Volume and Humidity**

The Objection points out that exhaust volume and humidity were not previously required under P0030-02. If these parameters are to be retained discussion will be necessary with the Agency to establish exact parameters of the monitoring while a timeframe of nine months should be allowed for the installation of the equipment.

➤ **Oxygen**

The Objection states that oxygen is currently monitored at the top of Kiln 1 and Kiln 2 Preheater Towers and requests an appropriate amendment of the PD.

Technical Committee’s Evaluation:

The TC notes the views expressed in the Objection. It is considered appropriate to alter Schedule C.1.2 to accurately reflect the appropriate monitoring location for NO_x, Particulates and CO levels from Coal Mill 2 (A2-03). A timeframe of six months shall be permitted for the installation of continuous monitoring equipment at emission point A2-03.

The TC considers it appropriate to retain the requirement for monitoring of exhaust volume and humidity in order to appropriately quantify emissions from this activity. However, it is considered reasonable to allow for a six month timeframe to facilitate the procurement and commissioning of the necessary monitoring equipment.

It is considered appropriate to alter Schedule C.1.2 to accurately reflect the appropriate monitoring location for O₂.

Recommendation:

Replace existing Schedule C.1.2, below:

C.1.2. Monitoring of Emissions to Air

Emission Point Reference No: A2-01 (until kiln 1 is decommissioned and thereafter when venting combustion gases from Kiln 3), A2-02, A2-03 (when venting combustion gases from Kiln 2), & A2-08 (from date of commencement of operation of kiln 3)

Parameter	Monitoring Frequency	Analysis Method/Technique
Sulphur Dioxide (as SO_x)	Quarterly	Flue gas analyser
Nitrogen oxides (as NO_x)	Continuous	On line gas analyser
	Daily average concentration	On line gas analyser
Particulates	Continuous	Opacity Meter and readout
	Daily average concentration	Opacity Meter and readout
PM₁₀ and PM_{2.5}	Annually	Standard methods
Carbon monoxide (as CO)	Continuous	On line gas analyser
Exhaust Volume (or alternative estimation method)	Continuous	Standard Methods
Humidity	Continuous	Standard Methods
Temperature	Continuous	Standard Methods
Oxygen (O₂)	Continuous	Standard Methods

With amended Schedule C.1.2, as follows:

Emission Point Reference No: A2-01 (until kiln 1 is decommissioned and thereafter when venting combustion gases from Kiln 3),
 A2-02, A2-03 (when venting combustion gases from Kiln 2), & A2-08 (from date of commencement of operation of kiln 3)

Parameter	Monitoring Frequency	Analysis Method/Technique
Sulphur Dioxide (as SO _x)	Quarterly	Flue gas analyser
Nitrogen oxides (as NO _x) ^{Note 1}	Continuous	On line gas analyser
Particulates ^{Note 1 & 2}	Daily average concentration	On line gas analyser
	Continuous	Opacity Meter and readout
PM ₁₀ and PM _{2.5}	Daily average concentration	Opacity Meter and readout
	Annually	Standard methods
Carbon monoxide (as CO) ^{Note 1}	Continuous	On line gas analyser
Exhaust Volume (or alternative estimation method)	Continuous	Standard Methods
Humidity	Continuous	Standard Methods
Temperature	Continuous	Standard Methods
Oxygen (O ₂) ^{Note 3}	Continuous	Standard Methods

Note 1: Parameter shall be monitored at emission point A2-02.

Note 2: A continuous particulate monitor shall be installed at emission point A2-02 within six months of the date of grant of this licence.

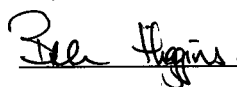
Note 3: O₂ to be monitored at emission point A2-01 and A2-02 from the date of the grant of this licence, and at A2-08 from date of commencement of operation of Kiln 3.

Overall Recommendation

It is recommended that the Board of the Agency grant a licence to the applicant

- (i) for the reasons outlined in the Proposed Decision and
- (ii) subject to the conditions and reasons for same in the Proposed Decision, and
- (iii) subject to the amendments proposed in this report.

Signed

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Breen Higgins

Inspector

Office of Climate, Licensing and Resource Use

for and on behalf of the Technical Committee