Building 58, Castle Works, East Moors Road
CARDIFF CF24 5NN
Tel: 029 2035 1800
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29 January 2016

Mrs E A Parr
PPC Compliance Assistant
Natural Resources Wales
Rivers House
St Mellons Business Park
St Mellons
CARDIFF
CF3 0EY

Our Ref: W:\Environmental\IPPC\Environment Agency Reporting\Permit Reporting\New Melt Shop\Annual\2015\TP3639BH 4.2.2. Annual Returns 2015.doc

Dear Mrs Parr,

RE: Melt Shop EPR Permit TP3639BH 4.2.2. Annual Returns 2015

In accordance with CELSA Manufacturing (UK) Ltd Environmental Permitting Regulations (EPR) Melt Shop Permit TP3639BH, permit condition 4.2.2 requires the following:

4.2.2 For the following activities in schedule 1, table S1.1, A1 to A8. A report or reports on the performance of the activities over the previous year shall be submitted to Natural Resources Wales by 31st January (or other date agreed in writing by Natural Resources Wales each year. The report(s) shall include as a minimum:

a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data, and
b) the annual production/treatment data set out in Schedule 4 Table S4.2

1.1 Introduction

Within CELSA Manufacturing Mission statement, we are a 'recycling, environmentally focused steelmaking company'. Despite an exceptionally difficult market, CELSA are committed to achieving continual improvement of our environmental performance.

The Melt Shop's environmental performance in 2015 will be reviewed, including the environmental Objectives and Targets which are set by senior management. CELSA received only two complaints, one noise and one dust, in 2015. CELSA has continued to engage with local residents in Tremorfa to understand pertinent issues in the local area.

Significant investment in engineering control measures, such as replacing ducting and panels in the Quench Tower has prevented water leaks, enabling complete combustion of the off gases from the 4th hole extraction. These repairs and replacements were made during the April annual maintenance shutdown.

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1.2 Environmental Performance Review

1.2.1 Production and Energy Consumption

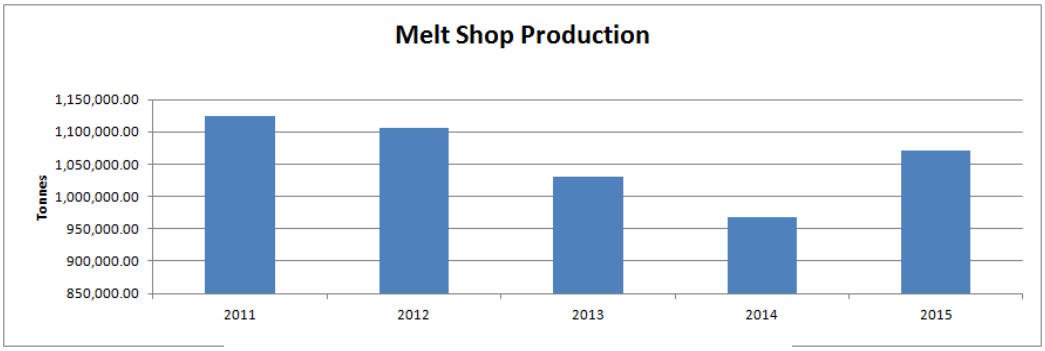

Figure 1: Melt Shop production (tonnes)

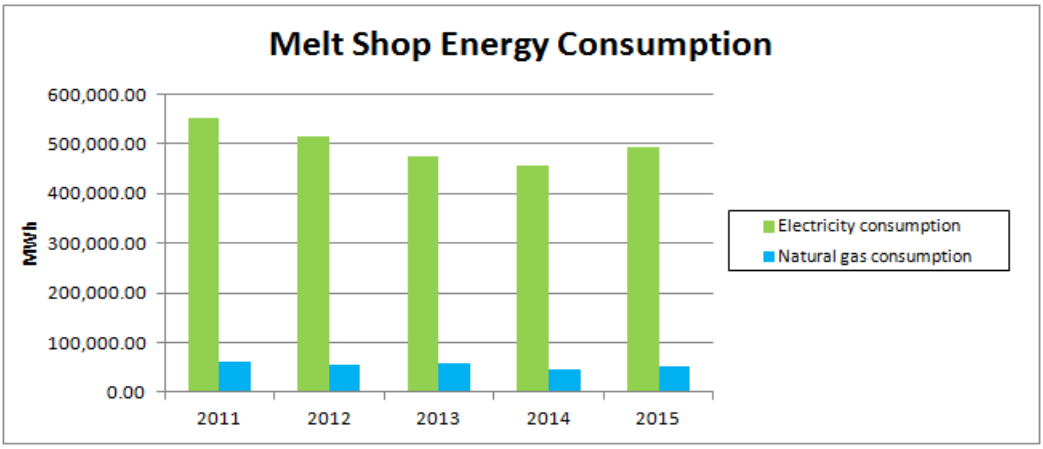

Figure 2: Melt Shop energy consumption (MWh)

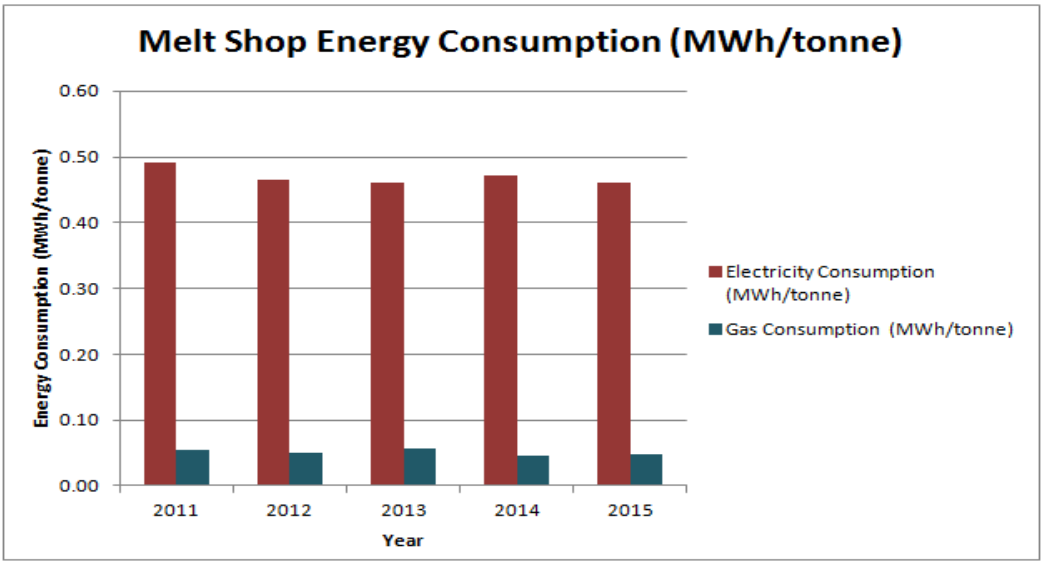

Figure 3: Melt Shop Energy Consumption per tonne (MWh/tonne)

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Total production of liquid steel at the Melt Shop increased from 967,900 tonnes in 2014 to 1,070,729 tonnes in 2015. However, it can be observed in Figures 2&3, the Melt Shop has maintained electricity consumption, whilst achieving a slight decrease in gas consumption from 0.47 MWh/tonne to 0.46 MWh/tonne in 2015. The Melt Shop are continuing to target energy reduction in 2015, investigating potential energy saving projects. This will be primarily facilitated through the new multi-departmental Energy Management Team which is to be launched in early 2016.

1.2.2 Air emissions – A1 & A2

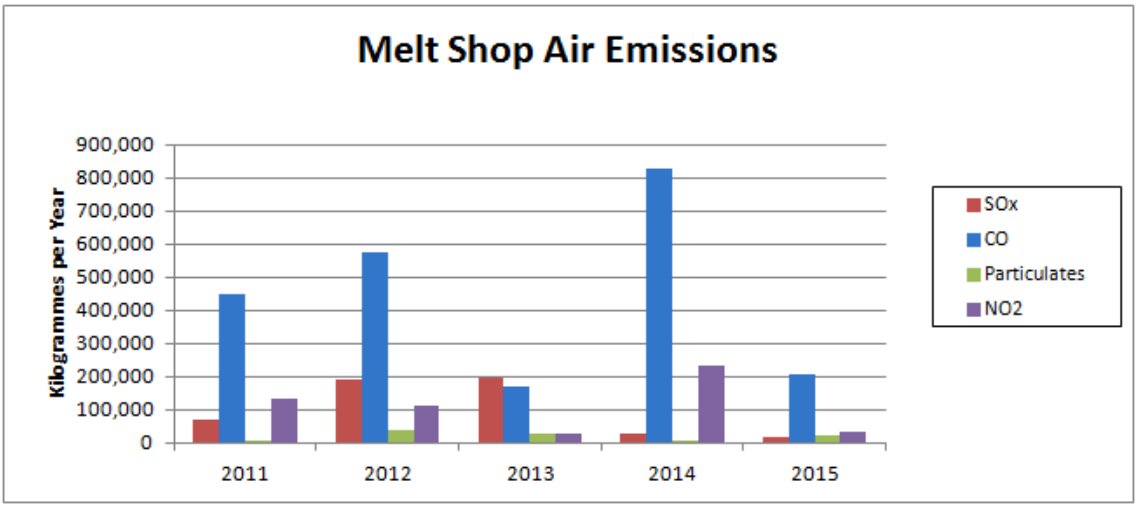

Figure 4: Melt Shop Air Emissions (kg/yr)

The air emission parameters for A1 and A2 were all below the set limits. A decrease in all parameters, excluding particulates, has been observed in 2015. The greatest decrease in emissions is CO as a result of significant investment in ducting repairs and replacement panels in the Quench Tower of the Melt Shop.

1.2.3 Waste Water Quality – S1 & S2

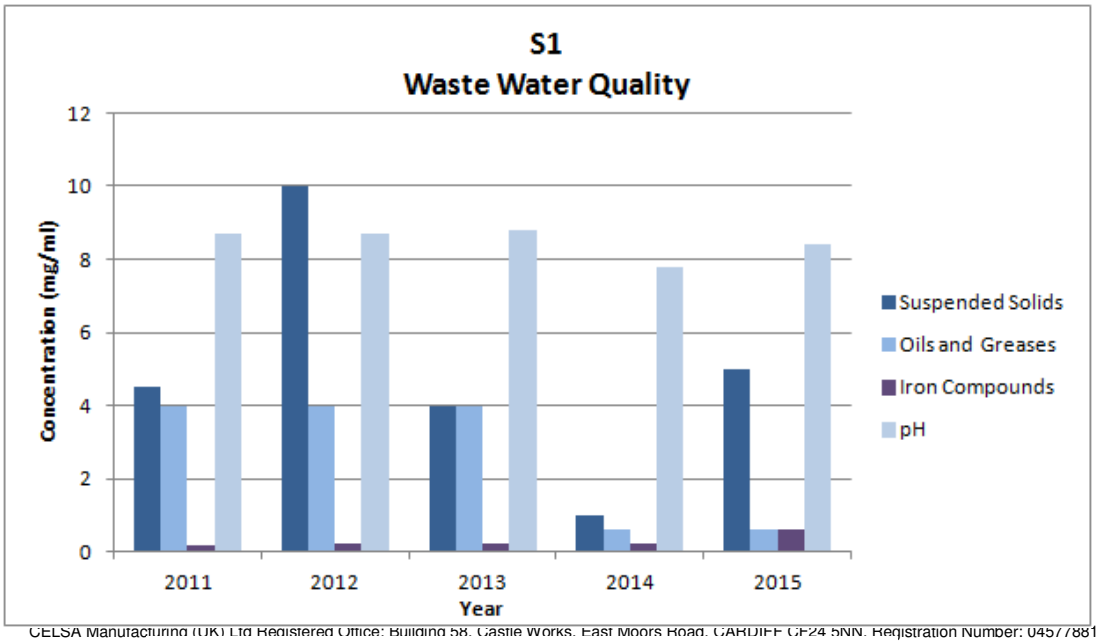

Figure 5: Melt Shop Waste Water Quality (mg/l)

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It is difficult to make a true comparison as the results are based on spot samples. However, the waste water quality parameters for S1 and S2 were all below the set limits.

1.2.4 Water Consumption

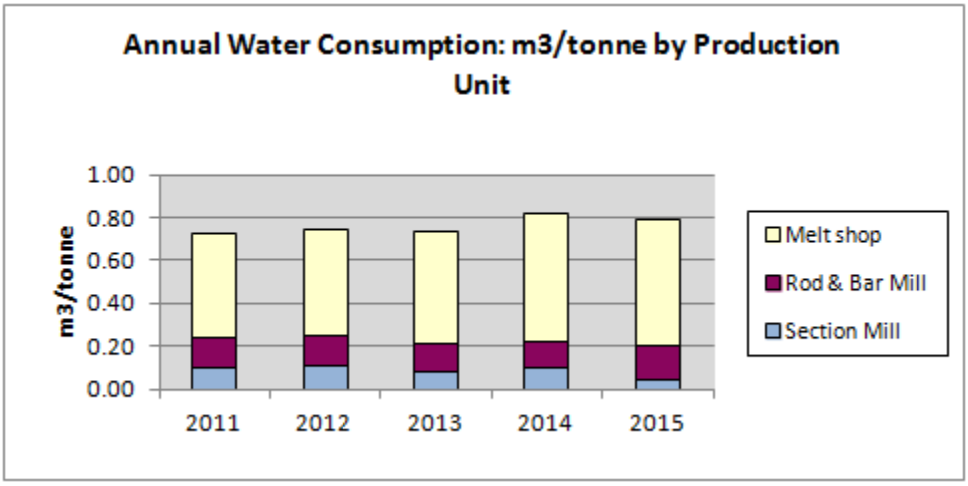

Figure 6: Melt Shop water consumption (m^3/tonne)

The Melt Shop reduced their water consumption from 0.6 m^3/tonne to 0.59 m^3/tonne in 2015 compared with 2014. Therefore, the Melt Shop did not meet their water reduction target of 3% but achieved a 1% reduction in 2015.

1.2.5 Waste Production

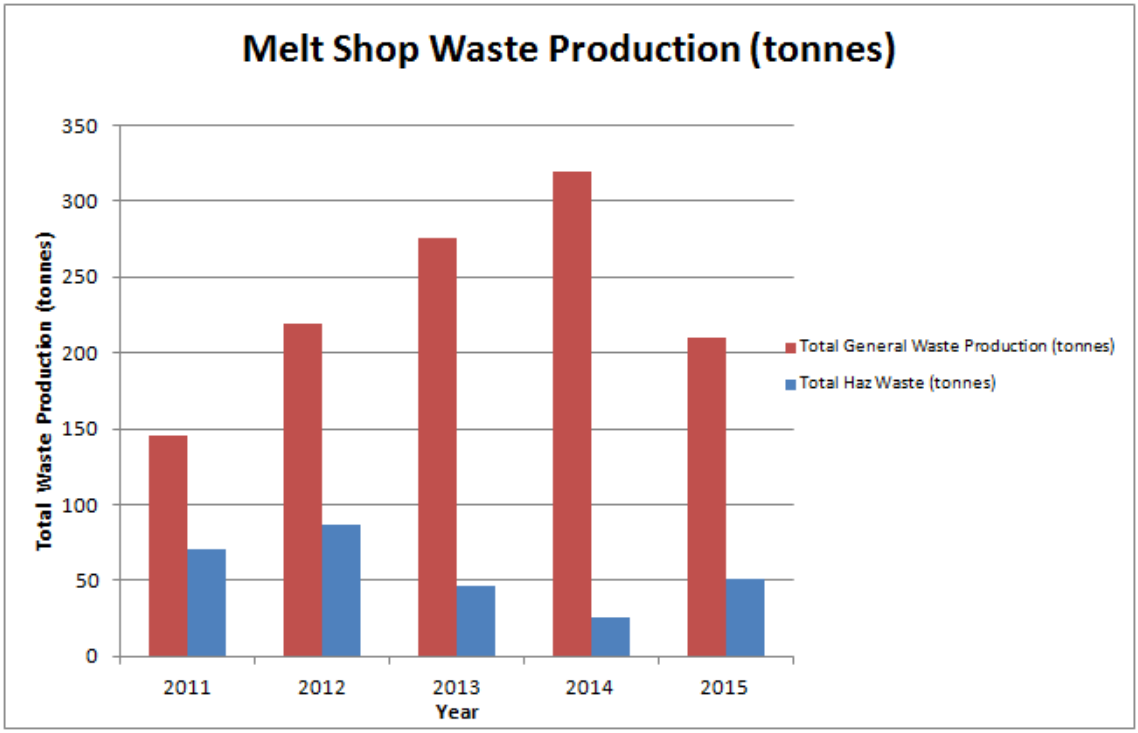

Figure 7: Melt Shop waste production (tonnes)

General waste production decreased in 2015 compared to 2014 and therefore, the Melt Shop met their 3% reduction target. This was as a result of a learning lesson document and awareness posters. Additionally, mixed waste recycling was introduced in July 2015. A further target has been set for 2016.

The Melt Shop did not meet their hazardous waste target of achieving a 3% reduction.

1.2.6 Fugitive Emissions

Particulates are formed as a consequence of EAF steelmaking and are created from the volatilisation of the steel scrap during the electric arc melting process. Large volumes of fume are generated during the melting process, which are handled up to 2 million cubic metres per hour of extraction. Fume is drawn off both the electric arc and ladle furnace using extraction fans. The main fume discharge and any fugitive releases in these areas are captured by the roof canopy total capture system and conveyed by ducting to the abatement plant (bag house).

CELSA received one dust complaint in September 2015 following a dedusting plant failure. A number of the DED compartments were in fault due to a problem with dampers not closing on dust cleaning. EAF plant shut down immediately once the dedusting plant failed and was not re-started until such time that adequate extraction was available. Preventative maintenance checks have been improved through daily physical checks and emergency damper cylinders replaced.

Slag is produced during the making of steel and is a normal by-product of the EAF process. Slag from the EAF is tipped to flow beneath the furnace onto the slag bed. As this is conducted within the main Melt Shop, any emissions arisings from this are captured by the air collection and abatement system. The slag is then moved by a specially adapted bulldozer to an outside intermediate staging area, to blade the material out and allow cooling water to be sprayed onto the slag. The slag is kept in the staging area until a cooled economic load has been assembled. It is then transported via dedicated wagons to the slag reprocessing plant on the other side of the Rover Way.

As part of the secondary steel process an artificial slag is generated on the steel ladle. Subsequent to casting, this slag will be tipped to the ground. When cooled, it is also transported to the slag handling plant across Rover Way.

Dust suppression is in operation during slag tipping to ensure any fugitive emissions are minimised. The water spray system has been improved and other abatement techniques are being considered in 2016 to continue to control any fugitive emissions.

The Frisbee Dust Gauges and the Turnkey Optical Particle Analysis system also enable CELSA to gain a greater understanding of dust levels in Tremorfa.

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1.2.7 The review of annual production/treatment data set out in Schedule 4 Table S4.2

A1 Monthly Average Concentrations

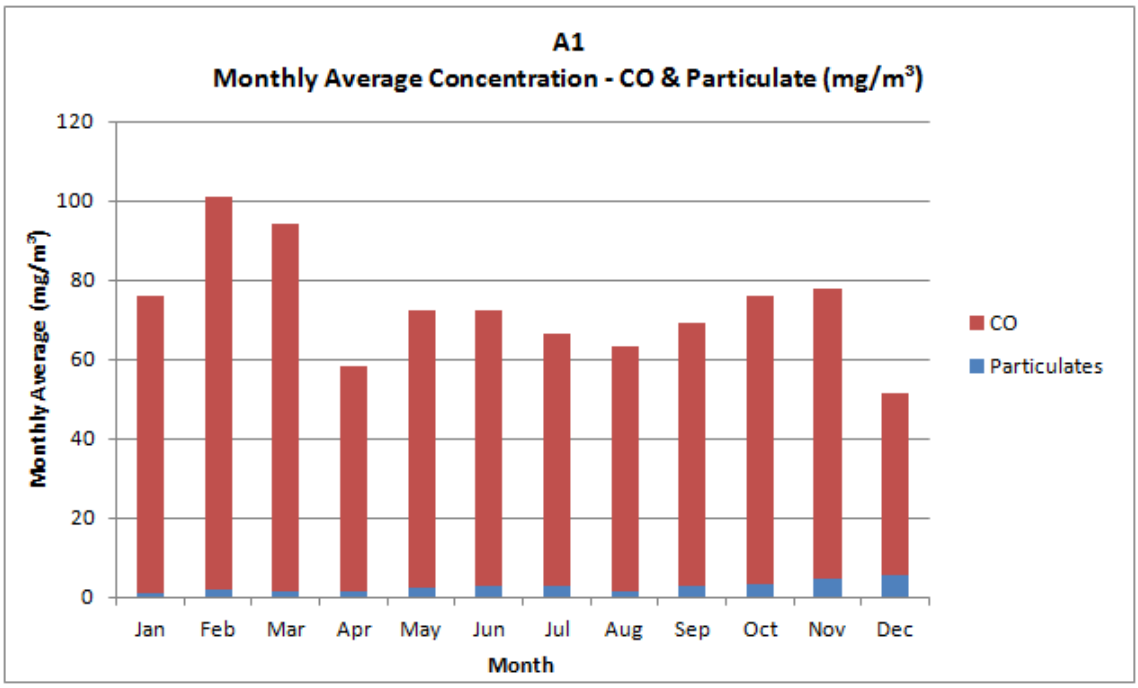

Figure 8: Melt Shop Monthly Average Concentration of continuous monitoring (mg/m³) – A1

CELSA's A1 continuous emissions are monitored and analysed throughout each Shift and discussed in the daily morning meetings with the Melt Shop senior managers, production personnel and engineers. A higher CO monthly average concentration can be observed in Quarter 1of 2015. Following the significant investment and maintenance work completed in April 2015, a marked decrease in CO can be observed. Additionally, the weekly scheduled 8 hour Planned Preventative Maintenance ensures the dedusting plant and associated emission capturing is running to efficiently.

Ambient Air

The Topas monitor required calibration at the beginning of 2015. This was completed and the monitor was replaced. However, a specialist engineer was required to subsequently remove the monitor, replace the photometer instrument and then recalibrate. This resulted in the monitor being off line for a considerable amount of time. The monitor is now fully operational and trends will be analysed in 2016.

Dust concentrations analysed from the Frisbee Dust Monitor in Willows Avenue have varied throughout 2015 as observed in Figure 8, achieving an average of 46 mg/m²/day each month. A high concentration of 113 mg/m²/day was recorded in March 2015. However, this is seen as an anomaly as there were no exceptional circumstances out of normal operations at CELSA which could have caused this result.

From previous correspondence with the Environment Agency Wales, it was stated that:

"The Environment Agency have advised that there are no UK or European Standards for dust deposition, however, typical background values for open country, town centres and industrial areas are considered to be 50, 100 and 150mg/m2/day, as annual averages. Levels in excess of 200mg/m2/day are likely to

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lead to complaints. The data reported from the Willows Road monitor appear to be typical for the type of area, however, 12 months of data needs to be available before any specific comment on the annual average and monthly variations can be made."

The 2015 annual average recorded from the Frisbee Monitor at Willows Avenue was 46 mg/m²/day. This is below the typical background levels for town centres and industrial areas as indicated in the above quote.

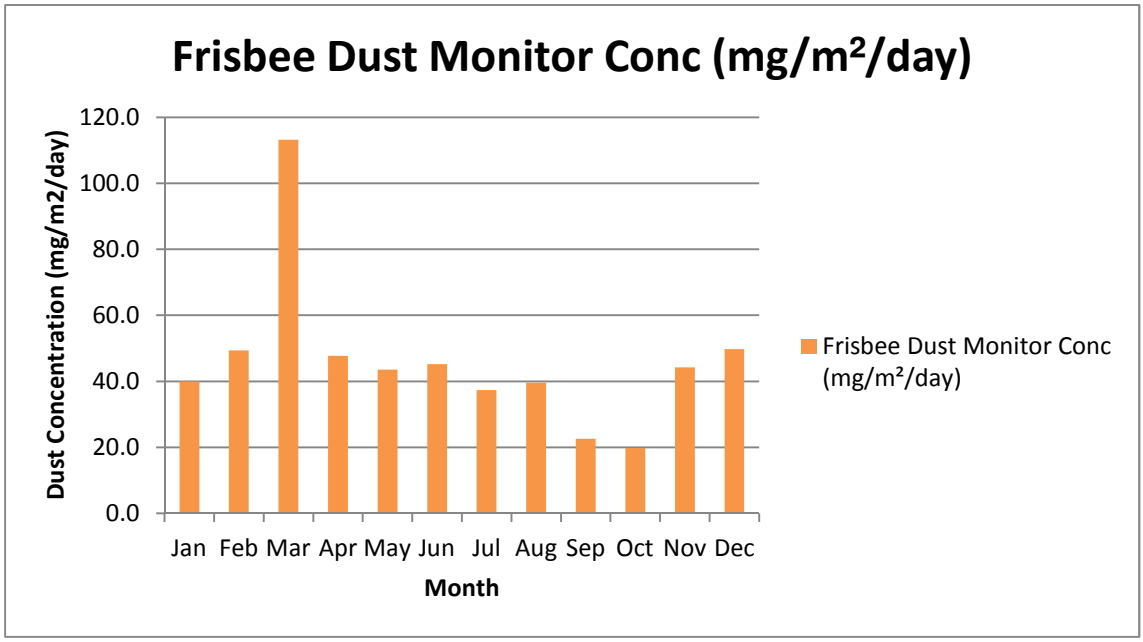

Figure 9: Melt Shop monthly dust concentrations recorded through Frisbee monitor analysis (mg/m²/day)

In summary, improvements have been made in a number of areas, such as increased steel production, slight decrease in gas consumption (mWh/tonne) and significant reduction in CO breaches. Additionally, all waste water were within permit limits. In 2016, CELSA will continue to manage and improve environmental impacts through the Environment Management System. New EHS training booklet is being rolled out to all employees which should improve knowledge base of the workforce in which to make informed decisions in respect to environmental matters. Similarly, a new multi-departmental Energy Management Team is being developed to review the findings of the ESOS assessment completed in 2015. The Team will assess feasibility of implementing the improvement opportunities identified. Regarding waste management, cardboard balers are being introduced, together with the implementation of mixed recycling skips to increase segregation at source and divert from general waste.

If you require any further information, please do not hesitate to contact the Environment Department.

Yours sincerely,

S.L.Jones.

Sara Jones
Environmental Advisor