Building 58, Castle Works, East Moors Road
CARDIFF CF24 5NN
Tel: 029 2035 1800
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31st January 2020

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\2017\TP3639BH 4.2.2. Annual Returns 2019.doc

Dear Mrs Parr,

RE: Melt Shop EPR Permit TP3639BH 4.2.2. Annual Returns 2019

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 'the UK's leading environmentally focused integrated steel manufacturer'. Despite an exceptionally difficult market, CELSA are committed to achieving continual improvement of our environmental performance.

The Melt Shop's environmental performance in 2019 has been reviewed, including the environmental Objectives and Targets which have been set for 2020 in conjunction with senior management. CELSA received 45 complaints during July and August (2019) due to the storage of scrap steel cans on site. CELSA were first made aware of complaints off-site issue on July 5th. CELSA had a number of arrangements in place to trap flies however, increased the number of pest control activities to bring the situation under control. These activities included halting all purchases of scrap steel cans, increasing the number of tonnes (of steel cans) per melt, spraying all stockpiles on a weekly basis with appropriate insecticide and increasing the number of and frequency of change of fly bags along the perimeter fence. In addition, CELSA spoke directly with complainants and a number of home visits were made. The CAR form issued on the 20th August 2019 (CAR_NRW0035612) highlighted that the 'Overall the measures Celsa had followed appeared to have been very effective' and the 'NRW had not received any recent complaints related to flies in the local area'. CELSA were issues with a formal warning letter and two category three non-

compliance. CELSA were asked to prepare a scrap management plan for handling and treatment of scrap steel cans, which was sent through to the NRW at the end of November.
Three complaints were received from local stakeholders over the issue of fugitive dust release. At the start of 2019, CELSA met with a number of local residents, in conjunction with the Local Councillor Jane Henshaw, where the findings from an airborne dust investigation were discussed. It was agreed that a meeting would be held after the May Shutdown where a number of improvement plans would be carried out that would reduce fugitive dust release. In June, a number of local residents were invited to headquarters in Cardiff to meet with the Environmental team and the head of People, Organisation and Development (POD); following on from this, three residents homes were visited. CELSA will continue to engage with local residents in Tremorfa and are currently enlisting the help of external consultants who are looking at a number of dust suppression mechanism for hot spots around site.

1.2 Environmental Performance Review

1.2.1 Production and Energy Consumption

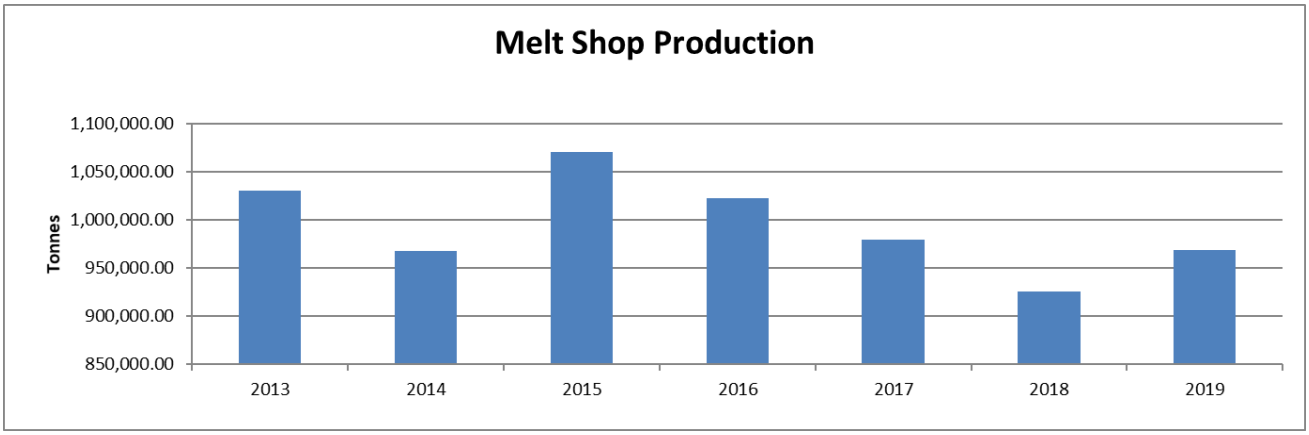

Figure 1: Melt Shop production (tonnes)
There was an increase in production of steel by 5% from 2018 to 2019.

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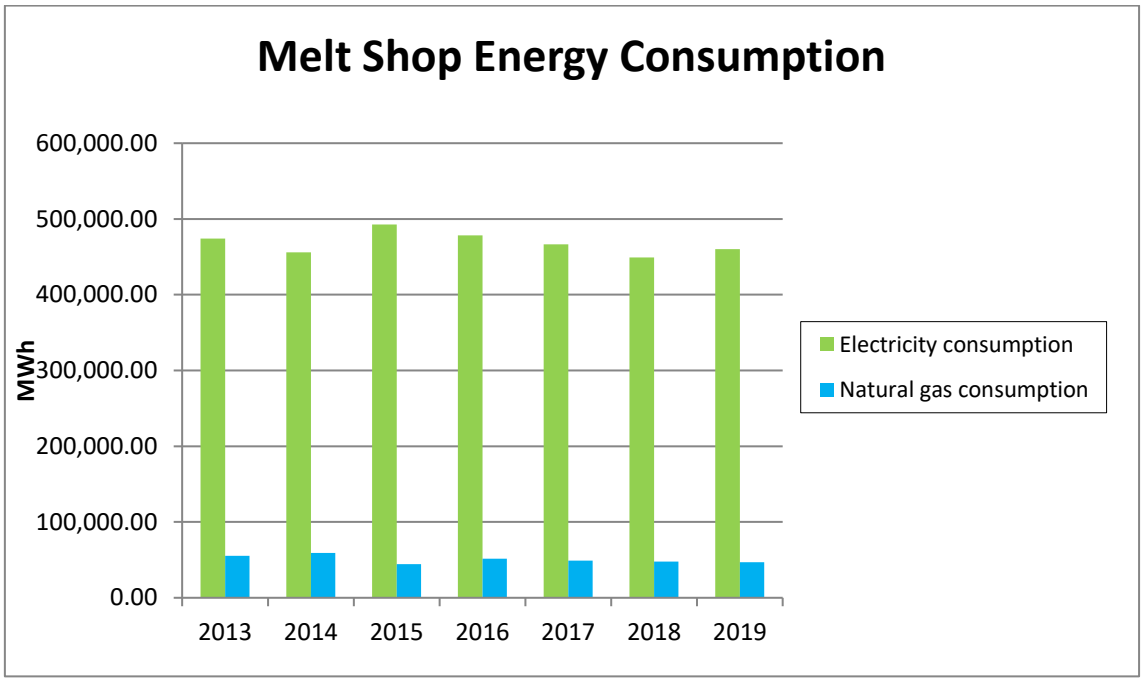

Figure 2: Melt Shop Energy Consumption (MWh)
Electricity consumption at the Melt Shop saw a 1% increase since 2018, for electricity and natural gas consumption. However, there have been greater fluctuations in electricity consumption than natural gas, which has remained relatively stable across the years. The Melt Shop will continue to focus on energy as part of their Objectives and Targets for 2020, with any remaining recommendations from the ESOS audit carried forward into 2020.

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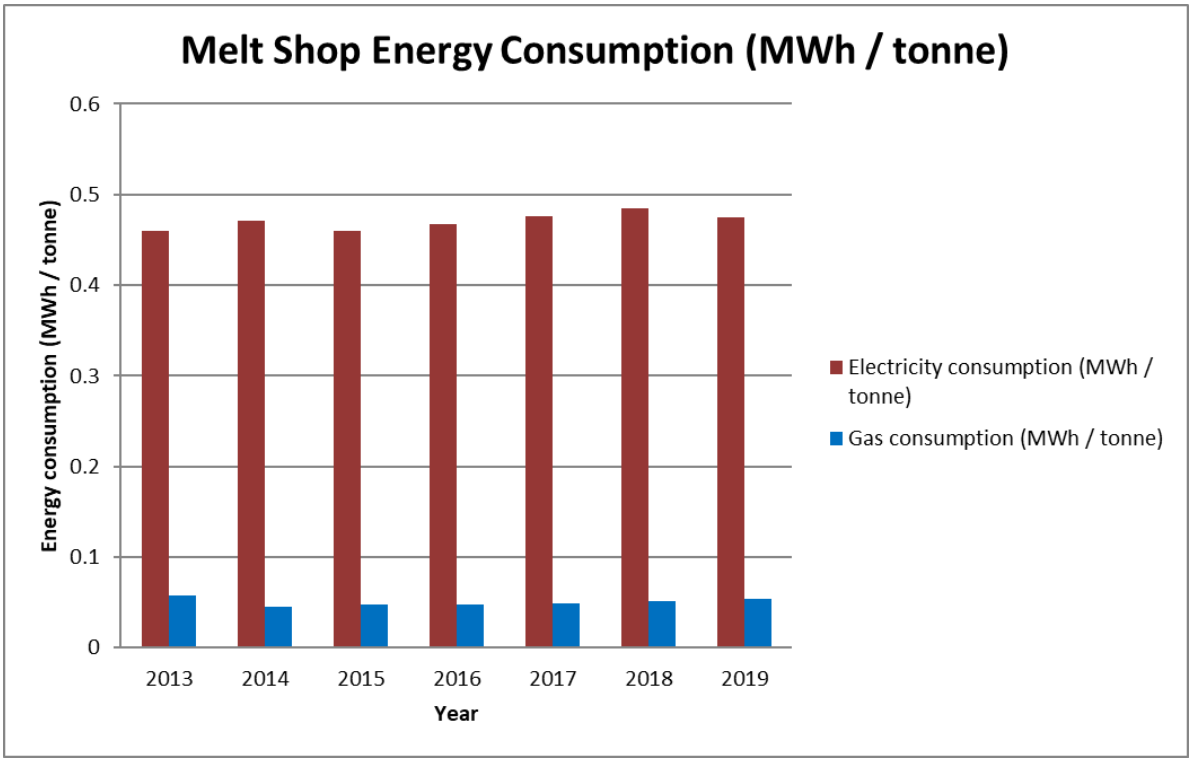

Figure 3: Melt Shop Energy Consumption per tonne (MWh/tonne)
Energy consumption per tonne shows an increase from 2018 to 2019. These issues are being addressed in the objectives and targets set out for electricity consumption for 2020.

1.2.2 Air emissions – A1 & A2

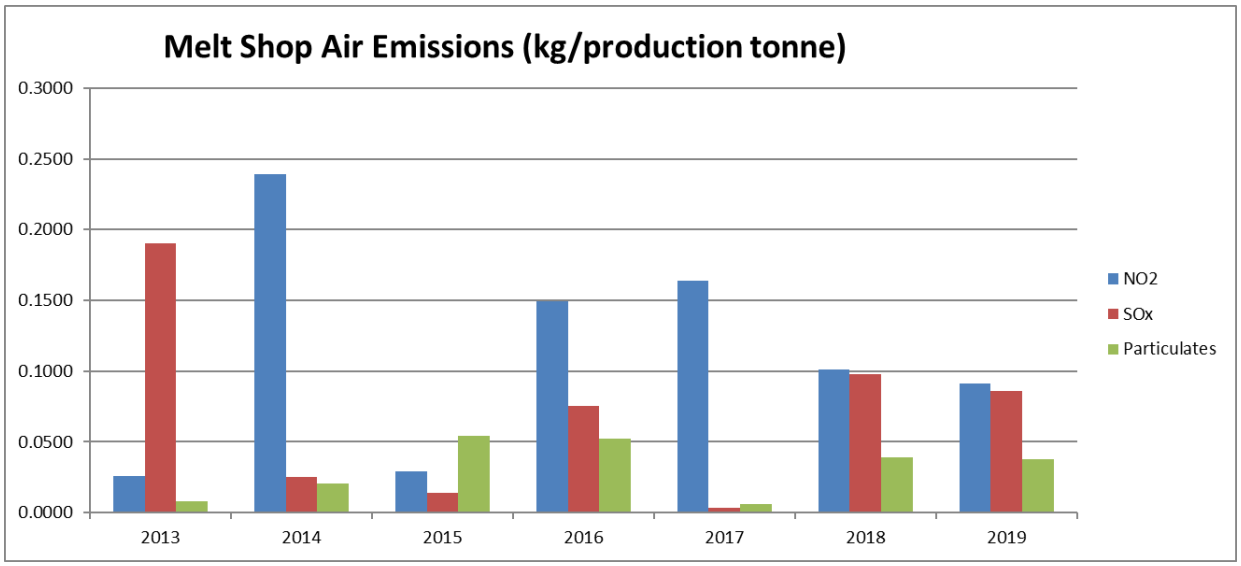

Figure 4: Melt Shop Air Emissions (kg/yr)

The air emission parameters for A1 and A2 were all below the set limits.

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Waste Water Quality – S1 & S2

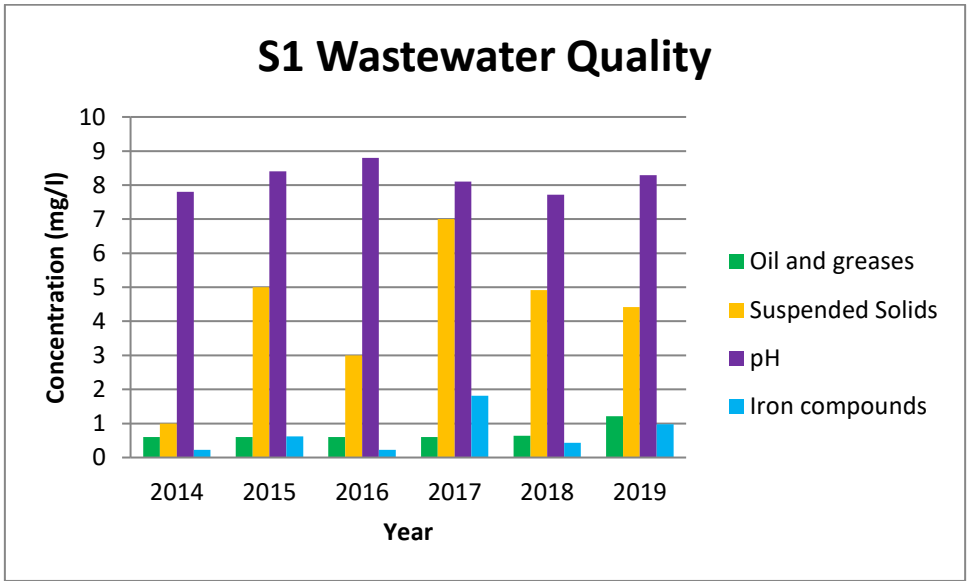

Figure 5: Melt Shop Waste Water Quality (mg/l)
Although there was an increase in oils and greases, iron compounds and pH, it is difficult to make a true comparison as the results are based on spot samples. The wastewater quality parameters for S1 and S2 were all below the set limits.

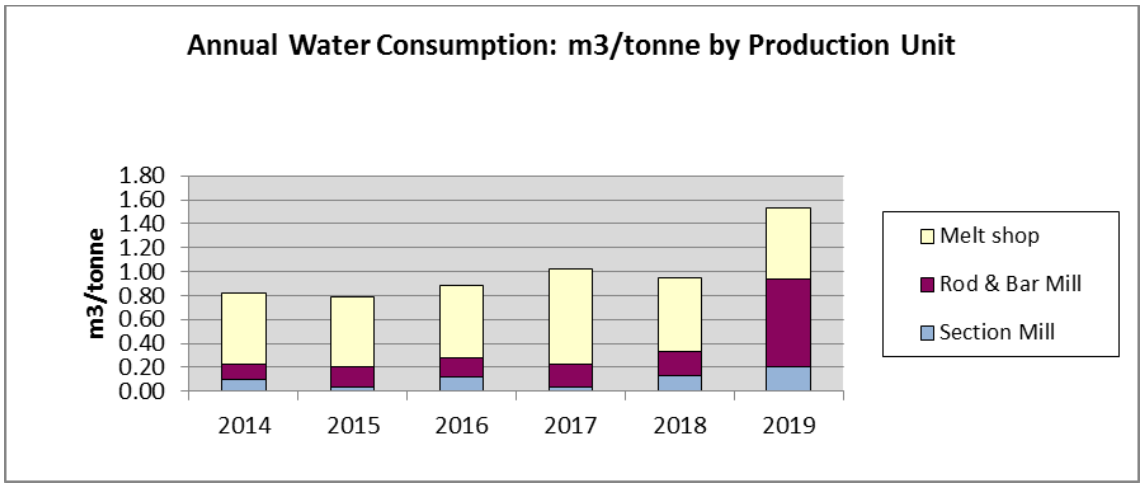

Figure 6: Melt Shop water consumption (m^3/tonne)
The Melt Shop water consumption increased to 0.704 m3/tonne in 2019, compared with 0.585 m^3/tonne in 2018. Therefore, the Melt Shop did not meet their water reduction target of 5%. CELSA's will continue to engage with the water management contractor (SUEZ) and supplier (DCWW Welsh Water) to upon the potential water saving measures that can be implemented throughout 2020.

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1.2.3 Waste Production

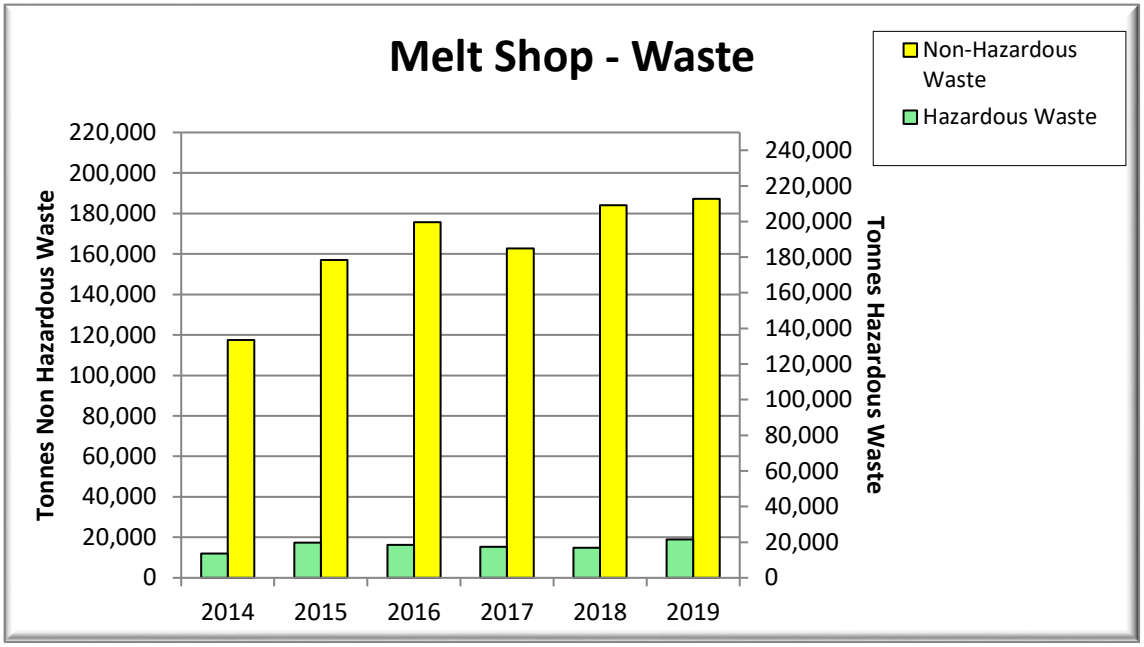

Figure 7: Melt Shop waste production (tonnes)

The general waste target was 17.3 tonnes per month in 2019 however; the Meltshop did not achieve the target, with 27.46 tonnes per month being produced. Areas for improvement that were identified in 2018, such as improved communication through better waste segregation signage, were carried forward into 2019. Additionally, communication was maintained with the operational areas through the monthly EMS meetings, where monthly walkabout actions are recorded on Prosafety which includes any actions related to waste segregation. This has most notably increased the level of wood and mixed recycling which have been removed from the general waste stream. Similarly, pre-shutdown discussions are aimed to ensure that any other waste streams are segregated appropriately and are not sent offsite as general waste. A considerable reduction of 37% has been set for 2020, with a target of 17.3 tonners per month. Overall, there was <1% increase in the amount of non-hazardous waste from 2018 to 2019, whilst hazardous waste increased by 28% from 2018 to 2019.

1.2.4 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 completed a large amount of maintenance work during the summer shut down (7th to 21st May 2019) which has had a beneficial impact at reducing fugitive emissions, some of this work includes:

- Replacement of some of Meltshop cladding Survey work and subsequent general repair as necessary
- T4/T5 repairs
- Replacement of expansion joints (four done last year, more this year)

- Bishop Hat cleaning
- Quench tower refurbishment
- Drop out box repairs
- Surveying of hot ductwork and repairs carried out as required
- Installation of atomising jets with dynamic control in quench tower to improve dioxin abatement
- Dust filter plant
    - Replacement of booster fan
    - Main fan refurbishment
    - Expansion joint replacement
    - Damper replacement
    - Installation of new CO probe for improved process monitoring capability

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 arising 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.

At the mineral site, where slag is cooled and weathered, controls are in place to minimise fugitive dust lift off. This is stated within Environmental Control Procedure 12, titled Fugitive Emissions Management Procedure. This procedure refers to all direct and ancillary activities associated with continuous operation from the CELSA Melt Shop and Mineral Site which may give rise to fugitive emissions. This procedure also refers to the road dampening at the Melt Shop.

The Turnkey Optical Particle Analysis System (TOPAS), located at Willows High School, enables CELSA to gain a greater understanding of dust levels in Tremorfa. The TOPAS particulate results are reported to NRW on a quarterly basis. In addition, in 2019, CELSA have worked with Baden Powell, the local primary school to set up an additional TOPAS monitor, again this is to further enhance our understanding of dust levels in Tremorfa.

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

A1 Monthly Average Concentrations

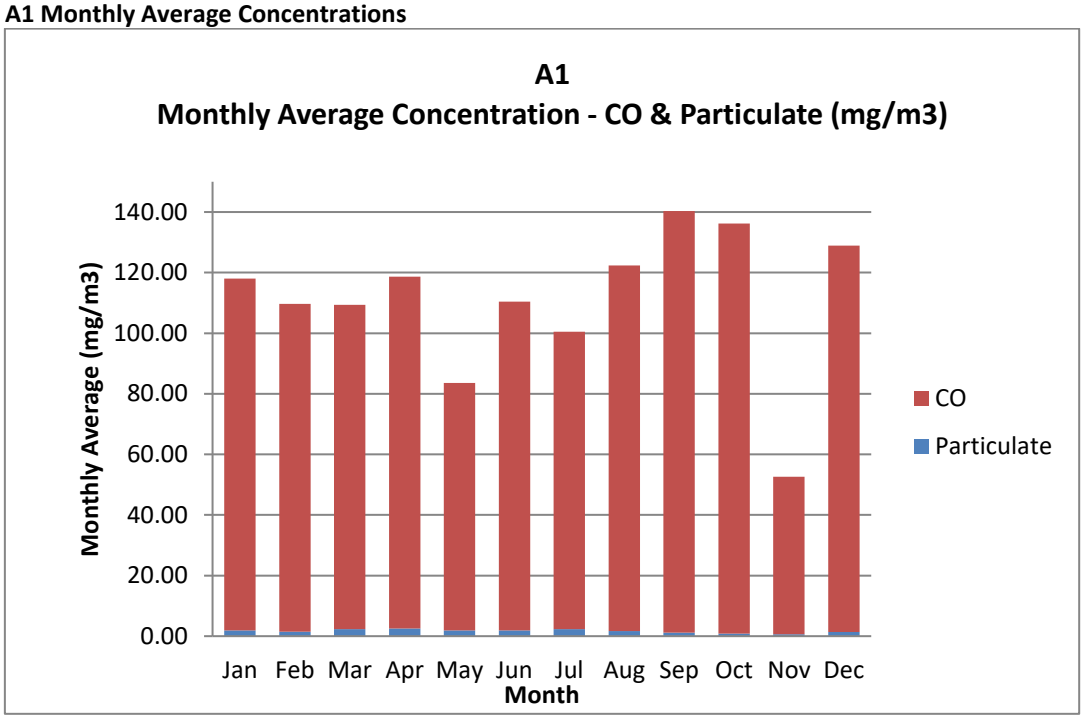

Figure 8: Melt Shop Monthly Average Concentration of continuous monitoring (mg/m³) – A1

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. Investigations are conducted in order to identify any issues that could contribute to the CO breaches. The majority of issues relating to breaches were as a result of delays from trimming, reblowing of oxygen and general engineering delays.

The lower monthly average seen in November was attributed to probe failure in the Continuous Emission Monitoring System, (CEMS) which required an external technician to come in to assess the causes of failure. CEMS was down from the 14th of November until 1st of December.

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Ambient Air

In 2019, there were two periods in which the TOPAS monitor was not operational, this was during 1st January to 20th January and again from 22nd of September to the 23rd of October. This was due to technical failures and issues with calibration, both of which were rectified. The TOPAS monitor results for all remaining periods were submitted. The cause of any failures have been noted in all the quarterly reports submitted to the NRW.

In summary, improvements have been made in a number of areas, all wastewater discharges were within permit limits. Regarding waste management, the melt shop continued to improve engagement and communication with both the workforce and the external waste management provider. Further to the Environmental Training package (ISO14001) that was rolled out in 2017, additional training in environmental awareness was rolled out to all employees in 2019. This improved their knowledge base of the workforce and allow individuals to make informed decisions in respect to environmental matters.

In 2020, CELSA will continue to manage and improve environmental impacts through the Environment Management System and strive to achieve the challenging targets set.

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

Yours sincerely,

Gabriella Nizam
Environmental Advisor