

2020 Annual Performance Report for

Tarmac Cement & Lime Ltd

Aberthaw Works

January 2021
V2 Resubmitted February 2021

Georgina Taubman
HSE Business Partner
Tarmac Cement and Lime Aberthaw Works

Introduction

Tarmac Cement & Lime Ltd (the "Operator"), company registration number 66558, whose registered office is Portland House, Bickenhill Lane, Solihull, B37 7BQ operate a cement manufacturing installation at Aberthaw Cement Plant, East Aberthaw, Barry, CF62 3ZR.

The cement manufacturing activities carried out at the above installation are authorised by Permit EPR/BL3986ID issued by Natural Resources Wales which includes permission to burn waste derived fuels (WDFs).

Condition 4.2.2 of the Permit requires the Operator to submit an annual performance report on the functioning and monitoring of the process. This report gives an account of the running of the process and the emissions into air and water compared with the emission standards in the permit.

Plant Description

The main purpose of the activities at the installation is the production and grinding of cement clinker to produce various cement products. Tarmac Cement & Lime operate one dry preheater process cement kiln at the Aberthaw site, which has the capacity to produce 565,000 tonnes of clinker per year. Tarmac Cement UK maintains registration to the ISO14001 environmental management system. Certification ISO 50001 was achieved in November 2013.

Aberthaw Cement Plant uses traditional fossil fuels (coal, pet coke and oil) and waste derived fuels (WDFs) Polymer chip, end of life whole tyres and Solid Recovered Fuel (SRF). Polymer chip was first used as a fuel in February 2013. Whole tyres were introduced in July 2012 and SRF was first used in May 2013.

Polymer chip and SRF are introduced into the kiln along with a pulverised coal via a firing pipe at the front end of the kiln. Whole tyres are burnt in the kiln at the back end via the pre-heater tower and kiln hearth.

The WDFs replace some of the fossil fuels that are traditionally used to produce cement clinker. The use of WDFs has a number of environmental benefits including:

- Practical solution to the disposal of waste products, which are currently disposed of via conventional waste disposal methods, whilst at the same time producing a valuable product;
- Reduction in the use of finite fossil fuels;
- Contribution towards carbon reduction commitments.

No additional residues are produced as a result of using WDFs at Aberthaw Works. The fuels are combusted at approximately 1450°C at which temperature all residues are incorporated into the cement clinker.

Plant Performance

Aberthaw Cement Plant has one cement kiln, which has run throughout the year in accordance with its Environmental Permit to operate.

Planned maintenance was held from 10th February – 9th March 2020, there were two additional stops, one was due to the site shutting down operations temporarily due to Covid-19 (16th April – 19th May) and then a planned maintenance stop between the 19th – 28th October.

Fuel usage and the percentage substitution rate of WDFs are regularly monitored. This data is submitted to NRW on the appropriate form quarterly as required by the Environmental Permit, and is summarized below. The table shows the tonnes used of fossil fuels and WDFs, and the relative thermal input of each WDF as a percentage.

Fuel	Quantity burned Tonnes	Relative thermal input of waste derived fuels	Average calorific value MJ/kg
Coal	36648.98		26.96
Petroleum coke	0.00		0.00
Distillate fuel oil	596.94		40.23
Tyre fluff	15.00	0.05%	34.41
Tyres	7761.36	13.95%	29.20
SRF 1	7420.67	11.19%	20.85
Polychip	1785.97	4.13%	34.25

Plant Monitoring – Emissions to Air

Two types of air emission monitoring are carried out at the main release point (stack) from the kiln. Automatic instruments (CEMs) as required by the permit to continuously monitor some emission species. A list of the CEMS used at the site is contained in Appendix I.

An independent accredited external test body monitors other emissions species every six months. The tables below summarises those species that are continuously monitored and those that are periodically monitored.

Pollutants measured	Continuously	Periodically
Particulates	x	
Oxides of Nitrogen	x	
Sulphur Dioxide	x	
Carbon Monoxide	x	
Total Organic Carbon	x	
Hydrogen Chloride	x	
Ammonia	x	
Mercury		x
Cadmium and Thallium		x
Group III Metals		x
Dioxins and Furans		x
Hydrogen Fluoride		x

Continuously monitored species are controlled to a limit based on the average of a 24-hour period (12:00-12:00). The daily averages are compared to the 24-hour limit and reported to NRW on a quarterly basis.

During the combustion of WDFs the continuous monitoring equipment at Aberthaw Works was operating normally for 100% of the kiln operating time.

Summary emissions data from the continuous monitoring system is attached as Appendix I; this is based on the same data that is supplied to NRW on a quarterly basis.

Periodically monitored species are tested using techniques and procedures that meet European and National Standards. These include all species listed above and also particulates on the cement mills. The results of this monitoring are compared directly to the limit prescribed in the permit and are reported to NRW. The 2020 routine extractive monitoring was carried out for particulate in March and September, during our September monitoring, we exceeded our Coal Mill (A4) stack and so further testing was undertaken in December following investigation and remedial work. The retest returned a compliant result.

The gaseous testing in June, September and November for the remaining routine requirements, all testing performed by independent, UKAS & MCERTS accredited third party organisations.

In 2020 gaseous testing was delayed due to Covid-19 whereby Element postponed their scheduled March visit to June.

The kiln gaseous CEMs were subject to a full BS EN 14181 QAL 2 calibration in March 2019, then successfully passed an AST assessment in June 2020, all components passed the requirements of the standard and no follow on work is required.

A full particulate QAL 2 calibration was completed in April 2019, then successfully passed an AST assessment on the 19th March 2020, again fully passing the requirements of the standard.

On the 27th October, a new ABB ACF-5000 was installed replacing one of the ABB ACF-NT analysers, the plan is to install a second ACF-5000 early in 2021 and perform a full QAL 2 in the first 6 months of the year.

Zero and span checks (QAL3) are made at site level on a weekly and monthly basis to ensure that the analysers are performing within the specified ranges and that they continue to operate effectively. Trained personnel conduct these checks and the records are kept on site.

We have installed a new particulates monitoring position on our kiln hood on the 2nd September 2020 this position will be included in testing on a 6 monthly basis.

Plant Monitoring – Emissions to Water

Monthly samples of water are taken from the site's operational discharge point (W1) and are sent to an external UKAS accredited laboratory for analysis for suspended solids, pH and oils and greases. The results of the analysis are compared to the ELVs specified in the permit.

Plant Compliance

Aberthaw cement plant submitted 10 schedule 5 notifications during the course of 2020.

Summary of 2020 Schedule 5 Notifications

- See Appendix IV

Availability of Information

Copies of this report may be requested from Tarmac by contacting Georgina Taubman, Health, Safety & Environmental Business Partner via email at georgina.taubman@tarmac.com

Further information can be requested directly from Natural Resources Wales by calling the general enquiries line, 0300 065 3000.

Public Registers are available online at The NRW Online Public Registers website: [Public register - Customer Portal \(naturalresources.wales\)](#) Information on Tarmac can be found on the company website: <http://www.tarmac.com/>

Appendix I Continuous Emissions Monitors

TARMAC CEMENT ABERTHAW WORKS – ENVIRONMENTAL PERMIT EPR/BL3986ID

SUMMARY OF CEMS

LOCATION	MAKE	MODEL	MCERTS CERTIFICATE	STATUS
A1 (KILN)	ABB Automation Products (Duty Gaseous CEM)	Advance CEMAS FTIR-NT (ACF-NT)	Sira MC 030016/09	Last compliance 7 th September and 25 th November. AST check: 24 th - 26 th June 2020 (last QAL 2 March 2019)
	ABB Automation Products (Standby Gaseous CEM)	Advance CEMAS FTIR-NT (ACF-NT)	Sira MC 030016/09	Last compliance 7 th September and 25 th November. AST check: 24 th - 26 th June 2020 (last QAL 2 March 2019)
A1 (KILN)	Durag Particulate CEM	D-R320	Sira MC140253/01	Last compliance check: September 2020 (last QAL 2 April 2019)
A2 (CEMENT MILL)	PCME Particulate CEM	DT990	Sira MC 050049/03	Last compliance/calibration check: September 2020
A3 (CEMENT MILL)	Durag Particulate CEM	DR800	Sira MC080123/02	Last compliance/calibration check: September 2020

BS EN 14181 summary 2019 QAL 2 Duty system

Parameter	Calibration Function derived from QAL2?	EN 14181 Procedure used to Derive the Calibration Function	Calibration Function Derived	Result of Variability Test	Valid Calibration Range @ REF Conditions	Range after Surrogate Extension @ REF Conditions	Calibration Function to Apply to the Data Acquisition Handling Software (See Conclusions)
Total VOCs	Yes	Procedure A	$y = 1.0257x - 0.3325$	Pass	0 to 59.6 mg/m ³	N/A	$y = 1.0257x - 0.3325$
Oxides of Nitrogen (as NO ₂)	Yes	Procedure A	$y = 1.1524x + 1.2307$	Pass	0 to 633.8 mg/m ³	N/A	$y = 1.1524x + 1.2307$
Sulphur Dioxide	Yes	Procedure A	$y = 1.0025x + 4.407$	Pass	0 to 550.6 mg/m ³	N/A	$y = 1.0025x + 4.407$
Carbon Monoxide	Yes	Procedure A	$y = 0.9283x + 63.1412$	Pass	0 to 2133.1 mg/m ³	N/A	$y = 0.9283x + 63.1412$
Hydrogen Chloride	Yes	Procedure C	$y = 1.0122x - 1.6177$	Pass	0 to 5.1 mg/m ³	N/A	$y = 1.0122x - 1.6177$
Ammonia	Yes	Procedure A	$y = 0.8916x + 1.3405$	Pass	0 to 73.6 mg/m ³	N/A	$y = 0.8916x + 1.3405$
Water Vapour (% v/v)	Yes	Procedure B	$y = 0.8521x + 0$	Pass	0 to 13.6 % v/v	N/A	$y = 0.8521x + 0$
Oxygen (Calculated Dry) (% v/v)	Yes	Procedure B	$y = 0.9849x + 0$	Pass	0 to 13.5 % v/v	N/A	$y = 0.9849x + 0$
Oxygen (Measured Wet) (% v/v)	Yes	Procedure A	$y = 0.9987x + 0.0494$	Pass	0 to 12.4 % v/v	N/A	$y = 0.9987x + 0.0494$

2019 QAL 2 Standby system

Parameter	Calibration Function derived from QAL2?	EN 14181 Procedure used to Derive the Calibration Function	Calibration Function Derived	Result of Variability Test	Valid Calibration Range @ REF Conditions	Range after Surrogate Extension @ REF Conditions	Calibration Function to Apply to the Data Acquisition Handling Software (See Conclusions)
Total VOCs	Yes	Procedure A	$y = 1.0412x - 0.1228$	Pass	0 to 60 mg/m ³	N/A	$y = 1.0412x - 0.1228$
Oxides of Nitrogen (as NO ₂)	Yes	Procedure A	$y = 1.0447x + 0.2083$	Pass	0 to 637.4 mg/m ³	N/A	$y = 1.0447x + 0.2083$
Sulphur Dioxide	Yes	Procedure A	$y = 1.014x + 10.7433$	Pass	0 to 668.9 mg/m ³	N/A	$y = 1.014x + 10.7433$
Carbon Monoxide	Yes	Procedure A	$y = 1.0143x + 17.431$	Pass	0 to 2135.2 mg/m ³	N/A	$y = 1.0143x + 17.431$
Hydrogen Chloride	Yes	Procedure C	$y = 0.9797x - 0.5963$	Pass	0 to 5.1 mg/m ³	N/A	$y = 0.9797x - 0.5963$
Ammonia	Yes	Procedure A	$y = 0.9693x - 0.4242$	Pass	0 to 75.5 mg/m ³	N/A	$y = 0.9693x - 0.4242$
Water Vapour (% v/v)	Yes	Procedure B	$y = 0.9218x + 0$	Pass	0 to 13.6 % v/v	N/A	$y = 0.9218x + 0$
Oxygen (Calculated Dry) (% v/v)	Yes	Procedure B	$y = 1.0099x + 0$	Pass	0 to 13.6 % v/v	N/A	$y = 1.0099x + 0$
Oxygen (Measured Wet) (% v/v)	Yes	Procedure A	$y = 1.0113x + 0.0754$	Pass	0 to 12.4 % v/v	N/A	$y = 1.0113x + 0.0754$

2019 Particulate matter QAL 2

<u>Results of QAL2 Testing</u>			
1.	AMS Range	=	0 – 20 mg/m ³
2.	EN 14181 Calibration Function ($y=a+bx_i$)	=	$y = -5.399 + 1.310 x_i$ mg/m ³
3.	EN 14181 Calibrated Range	=	0 – 20.97 mg/m ³ (offset by -0.16 mg/m ³)
4.	Calibration Valid Range, using Calibrated AMS Data	=	0 – 5.11 mg/Nm ³
5.	Extrapolation of Valid Calibration Range, using Surrogates	=	Not Applicable
6.	Test of Variability	=	Pass

BS EN 14181 summary 2020 AST Duty system

Parameter	Calibration Function derived from QAL2?	Calibration Function as Derived from the Previous QAL2	Calibration Range from Previous QAL2 @ REF Conditions	Calibration Function that the AST was performed against (See Conclusion)	Result of Variability Test	Result of Calibration Test	Range after AST Extension @ REF Conditions
Total VOCs	Yes	$y = 1.0257x - 0.3325$	0 to 59.6	$y = 1.0257x - 0.3325$	Pass	Pass	Existing Range Still Valid
Oxides of Nitrogen (as NO ₂)	Yes	$y = 1.1524x + 1.2307$	0 to 633.8	$y = 1.1524x + 1.2307$	Pass	Pass	Existing Range Still Valid
Sulphur Dioxide	Yes	$y = 1.0025x + 4.4070$	0 to 550.6	$y = 1.0025x + 4.4070$	Pass	Pass	Existing Range Still Valid
Carbon Monoxide	Yes	$y = 0.9283x + 63.1412$	0 to 2133.1	$y = 0.9283x + 63.1412$	Pass	Pass	Existing Range Still Valid
Hydrogen Chloride	Yes	$y = 1.0122x - 1.6177$	0 to 5.1	$y = 1.0122x - 1.6177$	Pass	Pass	Existing Range Still Valid
Ammonia	Yes	$y = 0.8916x + 1.3405$	0 to 73.6	$y = 0.8916x + 1.3405$	Pass	Pass	Existing Range Still Valid
Water Vapour (% v/v)	Yes	$y = 0.8521x + 0.0000$	0 to 13.6	$y = 0.8521x + 0.0000$	Pass	Pass	0 to 15.0 % v/v
Oxygen (Wet) (% v/v)	Yes	$y = 0.9987x + 0.0494$	0 to 12.4	$y = 0.9987x + 0.0494$	Pass	Pass	Existing Range Still Valid

2020 AST standby system

Parameter	Calibration Function derived from QAL2?	Calibration Function as Derived from the Previous QAL2	Calibration Range from Previous QAL2 @ REF Conditions	Calibration Function that the AST was performed against (See Conclusion)	Result of Variability Test	Result of Calibration Test	Range after AST Extension @ REF Conditions
Total VOCs	Yes	$y = 1.0412x - 0.1228$	0 to 60.0	$y = 1.0412x - 0.1228$	Pass	Pass	Existing Range Still Valid
Oxides of Nitrogen (as NO ₂)	Yes	$y = 1.0447x + 0.2083$	0 to 637.4	$y = 1.0447x + 0.2083$	Pass	Pass	Existing Range Still Valid
Sulphur Dioxide	Yes	$y = 1.0140x + 10.7433$	0 to 668.9	$y = 1.0140x + 10.7433$	Pass	Pass	Existing Range Still Valid
Carbon Monoxide	Yes	$y = 1.0143x + 17.4310$	0 to 2135.2	$y = 1.0143x + 17.4310$	Pass	Pass	Existing Range Still Valid
Hydrogen Chloride	Yes	$y = 0.9797x - 0.5963$	0 to 5.1	$y = 0.9797x - 0.5963$	Pass	Pass	Existing Range Still Valid
Ammonia	Yes	$y = 0.9693x - 0.4242$	0 to 75.5	$y = 0.9693x - 0.4242$	Pass	Pass	Existing Range Still Valid
Water Vapour (% v/v)	Yes	$y = 0.9218x + 0.0000$	0 to 13.6	$y = 0.9218x + 0.0000$	Pass	Pass	0 to 15.0 % v/v
Oxygen (Wet) (% v/v)	Yes	$y = 1.0113x + 0.0754$	0 to 12.4	$y = 1.0113x + 0.0754$	Pass	Pass	Existing Range Still Valid

2020 Particulate matter AST

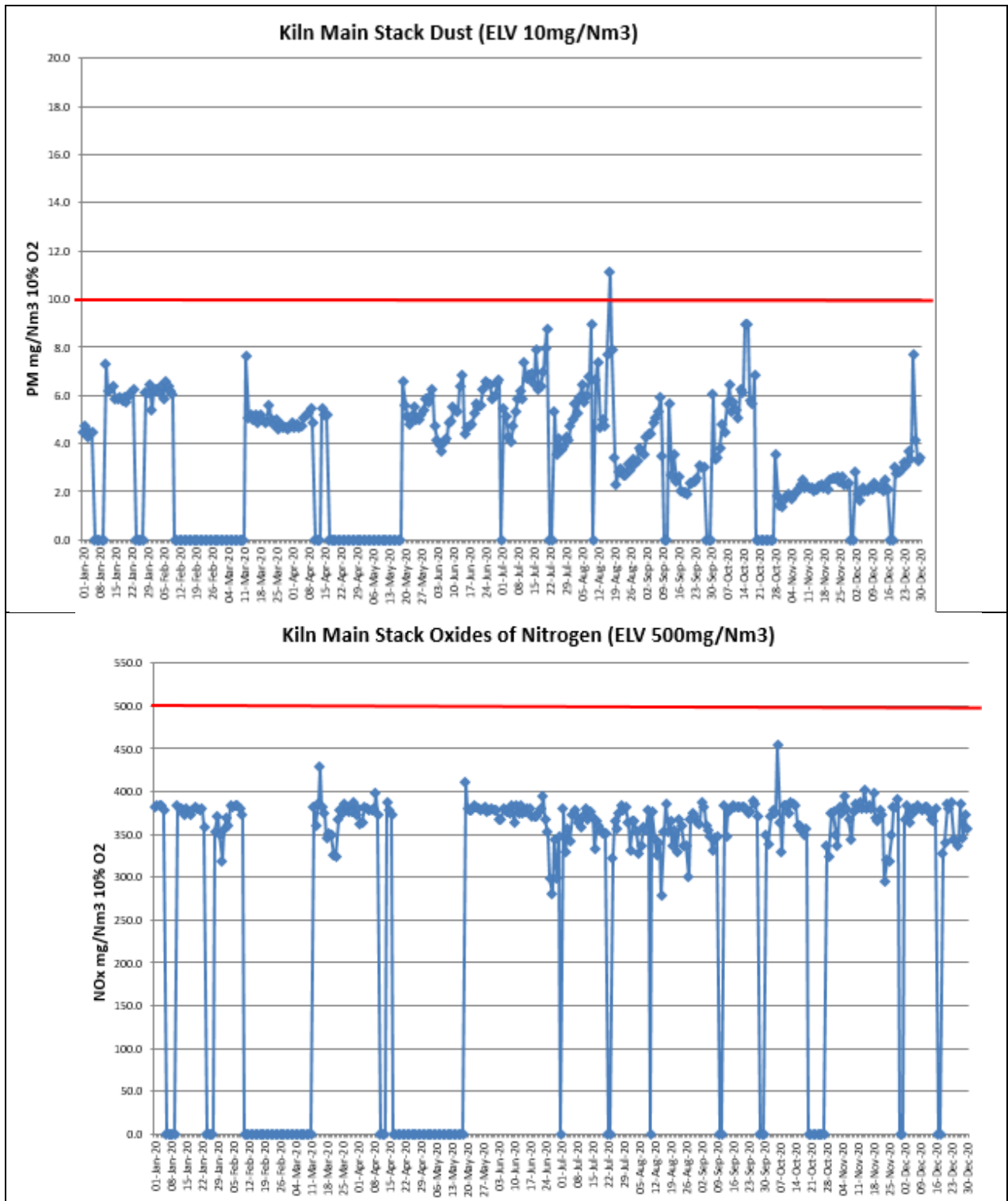
Results of QAL2 Testing			
1.	AMS Range	=	0 – 20 mg/m ³
2.	EN 14181 Calibration Function ($y=a+bx_1$)	=	$y = -5.399 + 1.310 x_1$ mg/m ³
3.	EN 14181 Calibrated Range	=	0 – 20.97 mg/m ³ (offset by -0.16 mg/m ³)
4.	Calibration Valid Range, using Calibrated AMS Data	=	0 – 5.11 mg/Nm ³
5.	Extrapolation of Valid Calibration Range, using Surrogates	=	Not Applicable
6.	Test of Variability	=	Pass
7.	Calibration Acceptance	=	Pass

QAL 3 alarm and warning limits

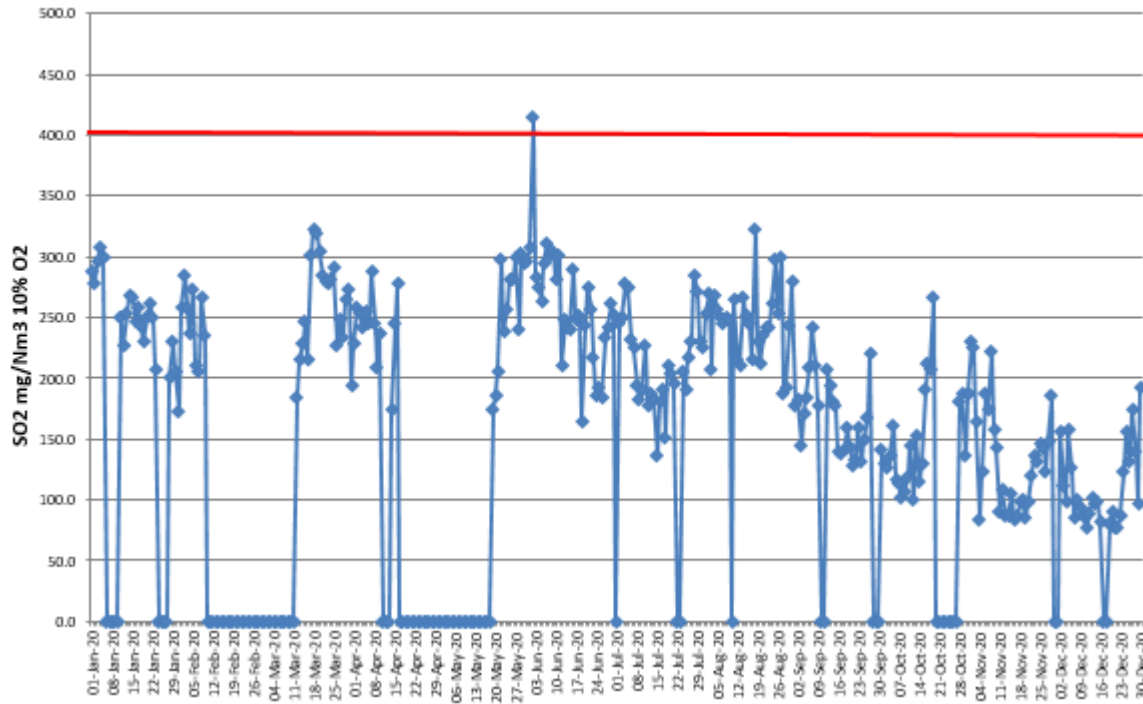
As per the guidance in the BS EN 14181 standard the S_{AMS} is generated by the use of zero and span data, the action alarm for all of the control charts is set at $2 S_{AMS}$ and the warning limit set at $1 S_{AMS}$.

Full records of the QAL 2, AST and QAL 3 data are stored on site and available for discussion.

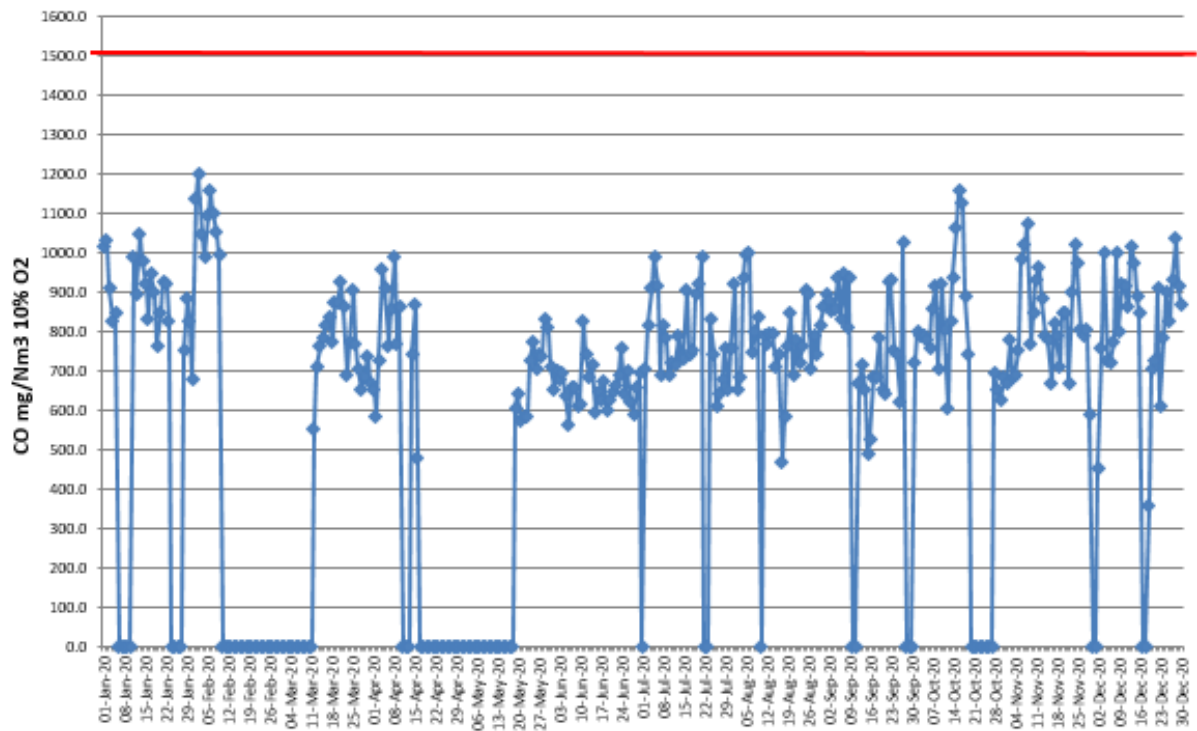
Appendix II
Continuous Emissions Monitor Results



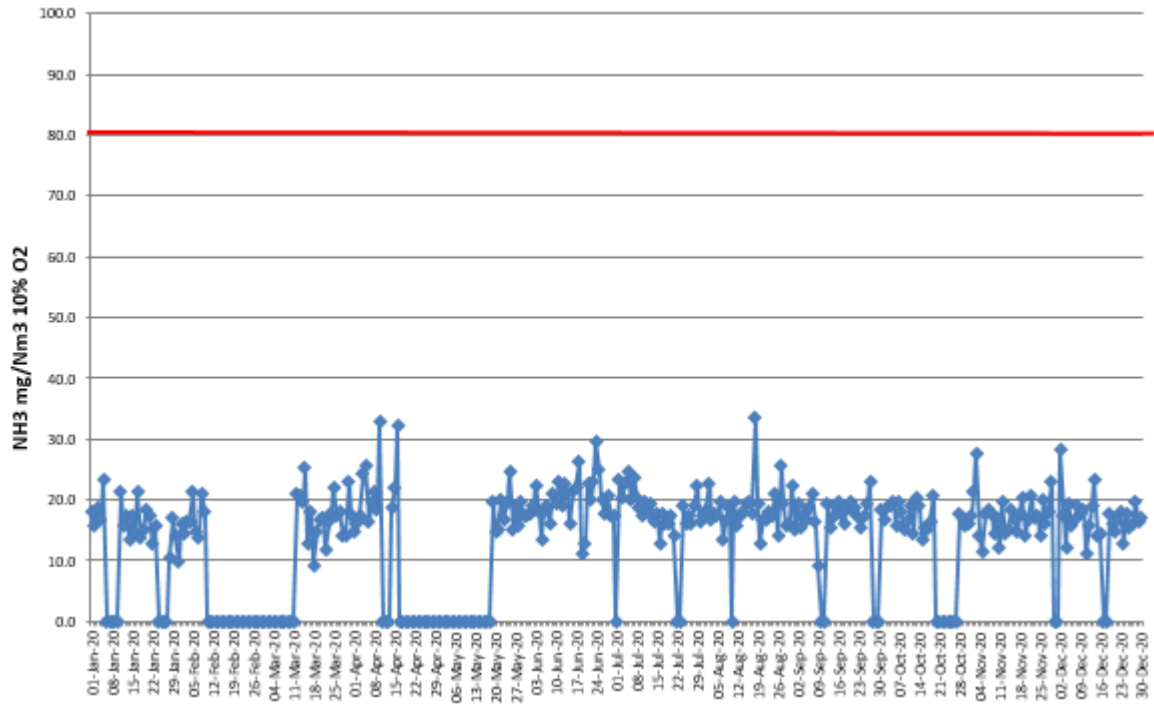
Kiln Main Stack Sulphur Dioxide (ELV 400mg/Nm3)



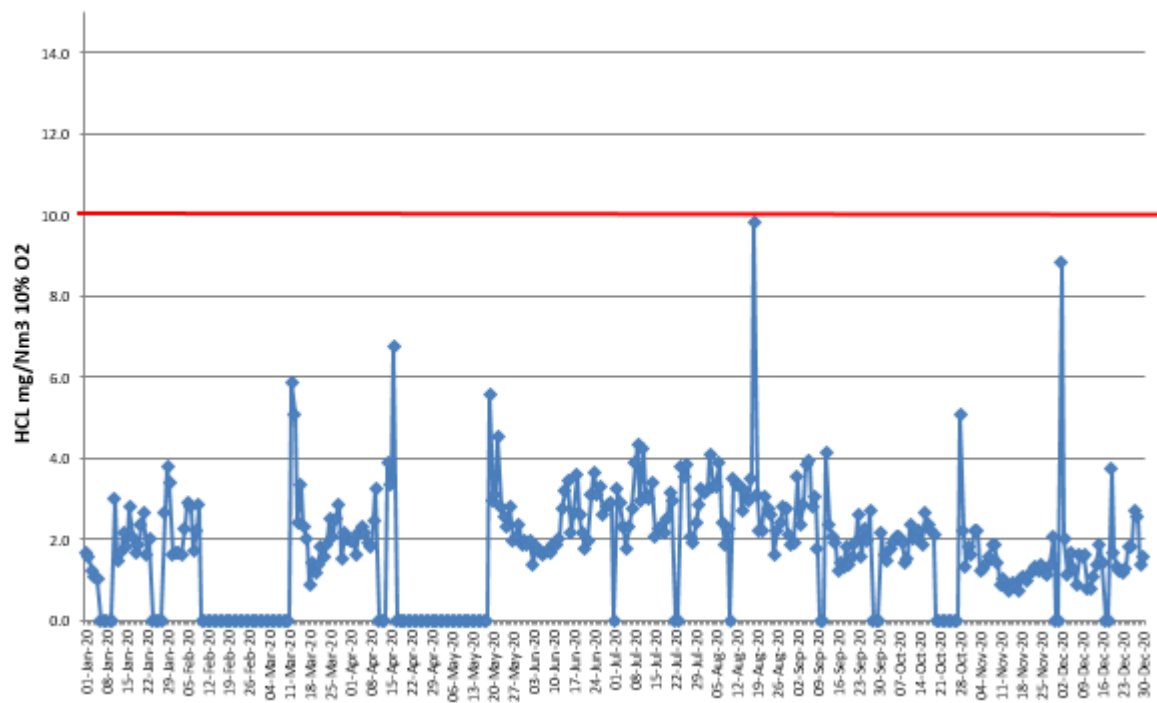
Kiln Main Stack Carbon Monoxide (ELV 1500mg/Nm3)

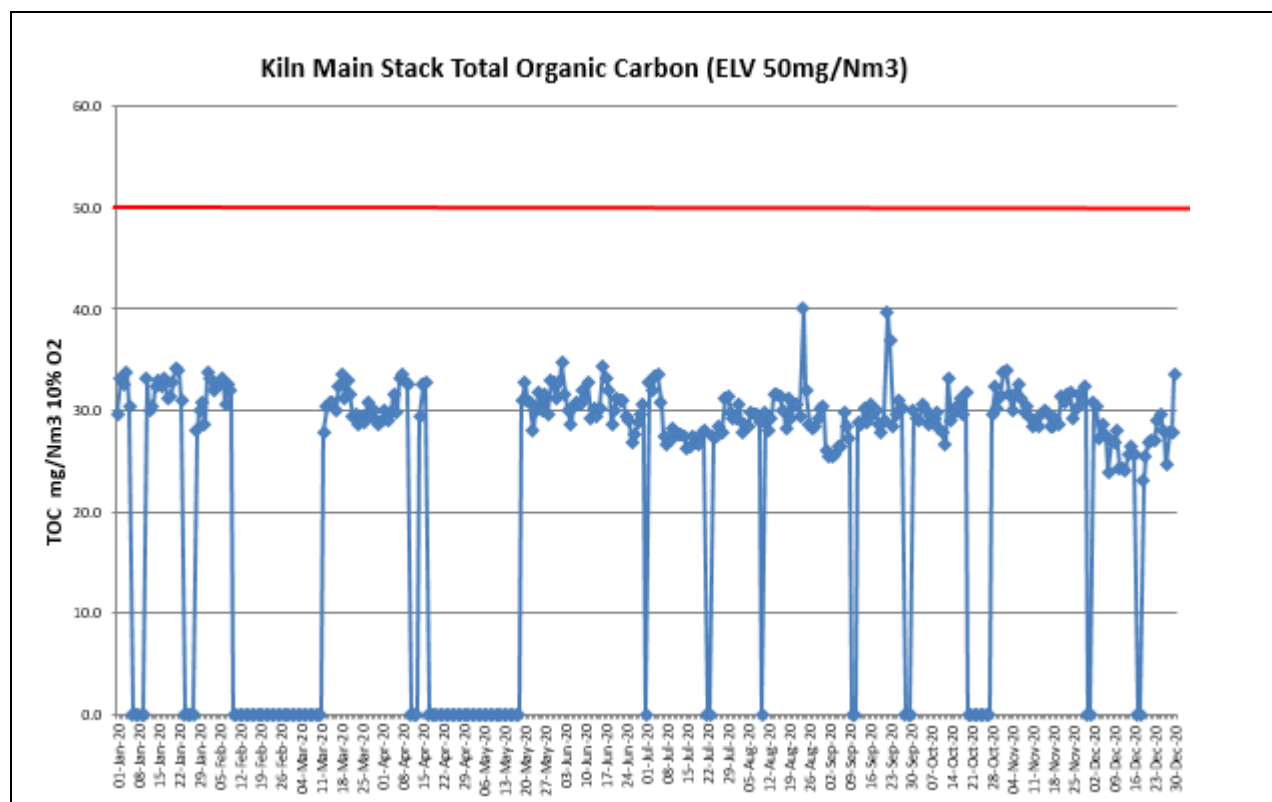


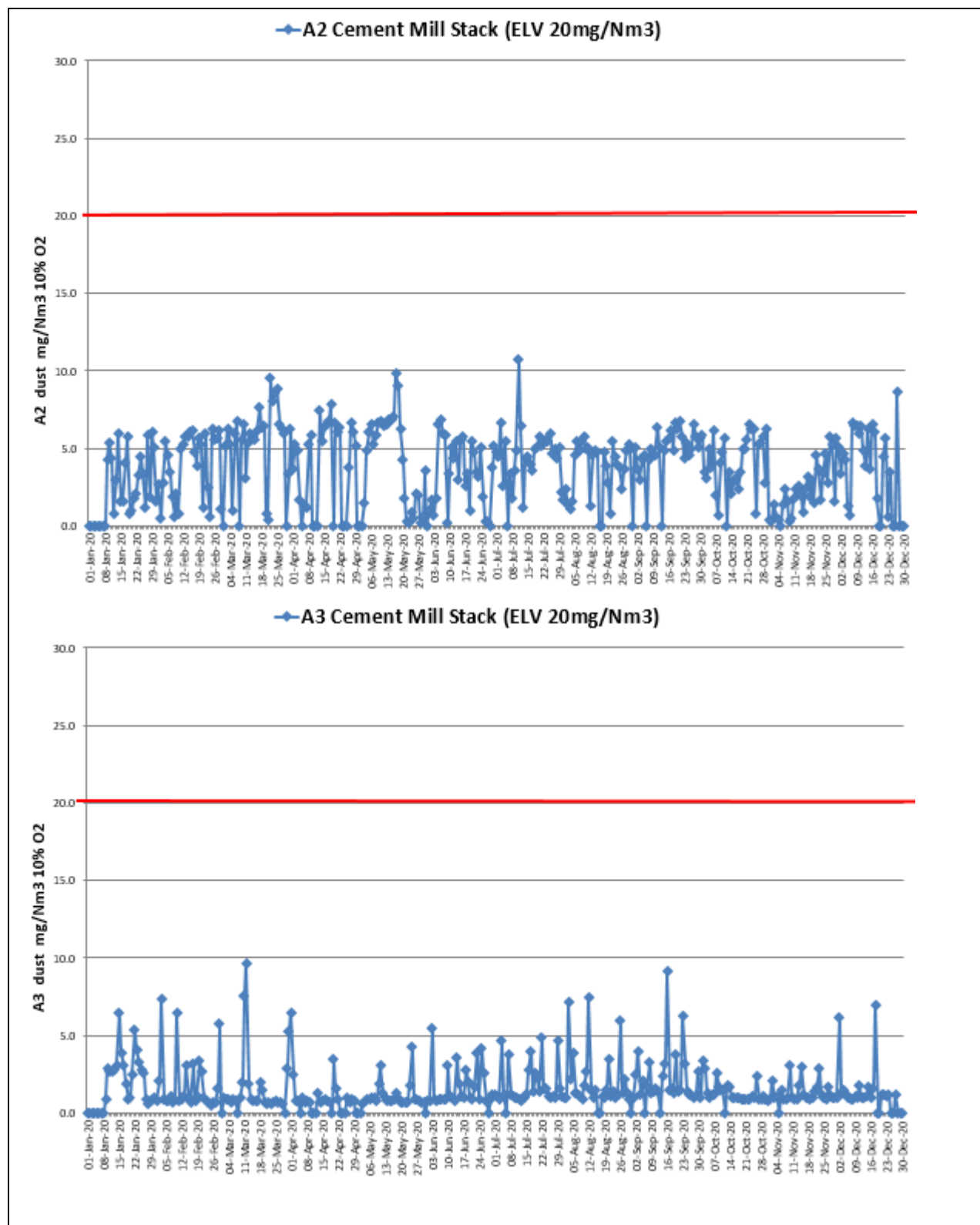
Kiln Main Stack Ammonia (ELV 80mg/Nm3)



Kiln Main Stack Hydrogen Chloride (ELV 10mg/Nm3)







Appendix III
Periodic Monitoring Results

Species	Limit mg/m3	Kiln 1 Test 1 mg/m3	Kiln 1 Test 2 mg/m3
Mercury	0.05	0.005	0.00092
Cadmium and Thallium	0.05	0.009	0.0012
Group III Metals	0.5	0.102	0.022
Hydrogen Fluoride	1	< 0.05	<0.046
Dioxins and Furans	0.1*	0.0011	0.00088

* Dioxin and Furan results in ng/m3 NATO I TEQ

Appendix IV

Summary of all Schedule 5 Reports submitted in 2020

19/1/2020 Odour Complaint

Query received via NRW in email 23.1.20, regarding a complaint received 19.1.20 from unnamed resident who lives in Font-y-Gary. Complainant reported strong odours similar to burning rubber which they think were coming from the Aberthaw Power station. Odour issue was not attributable to Aberthaw site and no further action was needed to be taken.

31/1/2020 – Noise Complaint

Complaint from resident from West Aberthaw (via NRW) to say they are unhappy about the level of noise coming from the site. Extensive noise monitoring work has been undertaken and a Noise Management Plan has been produced to outline the noise abatement activities that will be implemented moving forward and into 2021. This is an ongoing issue and the Schedule 5 remains open.

1-2/2/2020 – Dust Complaint

NRW contacted Tarmac following two dust complaints received on Sat 1st (ref 2000643) and Sun 2nd (ref (2000661) February from a resident in Burton Hill. The complaint coincided with very strong winds (Storm Ciara) blowing in the direction of the complainant property mobilised particles. On the 1st between 7am-12:00 noon, clinker loading operations were being undertaken - this process can sometimes give rise to dusty conditions in the loading area which may have in turn have left the site on the strong winds. Dustscan dust monitoring equipment located at Burton Hill was taken for analysis - results showed a LOW dust settlement risk impact. Analysis of the dust composition showed the primary source to be cementitious material/clinker. However important to note that, during this monitoring period construction work (repair of a stone wall) was being undertaken immediately next to the Dustscan pole where a cement mixer had been located and, as such, this is extremely likely to have contributed cement based dust measured by the Dustscan.

11/2/2020 – Dust complaint

Dust complaint from a resident in Burton Hill from dust on car that had fallen since previous day. During the period in question clinker loading had been taking place at the clinker shed into road lorries and so this could have been the source of the dust. Very strong winds due to Storm Ciara were still ongoing and its likely this will have facilitated the mobilisation of particulates which although likely were from clinker loading would also likely include particulates from other sources. Following investigations, a small tear in the clinker shed roller door heavy duty canvas material was found which may have enabled fugitive dust escape. This was repaired the day after the complaint was received. Dustscan Gravimetric results showed dust mass and deposition rates as Below Detectable Limits but the dust settlement risk impact came back as high. Took action to minimise the removal of clinker outside the shed (which is an unusual occurrence under normal operational conditions). During management meeting the Environmental Officer reminded managers to ensure that should any fugitive dust be seen around clinker loading operations be reported to supervisors immediately and steps taken to minimise dust release.

9/3/2020 – Dust Complaint

NRW contacted Tarmac following complaint from a resident in Burton Hill about dust which had dropped on to their car.

Investigation being undertaken by Maintenance into the cause of the electrical fault which lead to the ID fan failure, this resulted in pressurisation of kiln cooler area and a release of dust. The associated control unit model of the variable speed drive system was replaced. As the

issue has been identified and the correct part used, now confident that, moving forward, the likelihood of this fan causing pressurisation of the kiln and with it fugitive dust releases. Dustscan analysis for the period up to the 9.3.20 showed dust deposition was VERY LOW. Dustscan results for period 9.3-11.3.20 also showed VERY LOW levels of dust deposition.

11/3/2020 – Dust Complaint

Dust complaint from resident of Burton Hill. Investigations found that the installation of ducting to the new dust extractor hood had to be stopped temporarily due to the strong winds making conditions unsafe. The stoppage of this work resulted in a limited release of dust. Dustscan analysis for the period up to the 9.3.20 showed dust deposition was VERY LOW. Dustscan results for period 9.3-11.3.20 also showed VERY LOW levels of dust deposition. Complainant was offered a car wash but they declined, saying that the rain had washed most of the dust away.

17/3/2020 – Noise Complaint

Complaint from resident from FYG about the excessive level of noise coming from the quarry. Resident described the sound as a metal bucket scraping against rock as well as the noise from the quarry siren.

During a meeting with NRW on the 25.3.2020, it was agreed to hold off any loud crushing or loading activities until at least 6:45am. In addition, the quarry manager and the electrical engineer have implemented measures to reduce the volume of the startup siren. The external siren has been relocated slightly and an additional siren has also been located in enclosed areas along the system line with a view to contain the noise levels more effectively. Volume controls on both sirens have been reduced by up to 50%. The direction in which external siren points has also been adjusted so it now point in the opposite of Rhoose with a view to reducing noise levels travelling off site.

3/6/2020 - Breach of SO2 daily average emission limit

Daily average Permit ELV limit for SO₂ is 400mg/Nm³. SO₂ emission reading of 518 mg/Nm³ (-20% confidence interval 414 mg/Nm³) at end of daily average for period - 12:00 on 2.6.2020 to 12:00 3.6.2020. Failure of abatement system lime dosing pipe resulting in temporary loss of lime injection to the kiln exit gas leading to an increase in SO₂ emissions during half hourly continuous monitoring periods from 5am – 9:39am after which pipe was replaced and SO₂ levels returned to below limit. Informed NRW Officer Tony Leakey at 10:30am prior to end of 12:00-12:00 period for 3.6.2020.

Following an RCA investigation, guidance has been issued to shift teams to make them aware of the suspected cause of the blockage and advice in 'troubleshooting; to assist them to identify air flow trend issues and the use of more robust couplings and associated tools to ensure air intake is prevented in the future.

3/9/20 – coal mill dirty bag filter ELV exceeded

Breach of particulates emission limit. Permit ELV limit for particulates is 10mg/Nm² (routine monitoring) Coal Mill particulate emission reading of 14.36 mg/m³ recorded following 6 monthly periodic spot sampling by CES undertaken on the 3.9.2020. As part of the sites 6 month periodic particulates emissions monitoring schedule, CES Environmental Instruments came to site to undertake particulate monitoring. Following their monitoring of the Coal Mill Stack (A4) they notified us that the filters appeared dirty so as precaution we carried inspection and discovered deposits of coal on the clean side of the filters – the following day we changed the bags of the whole bay that were found to have coal deposits. leading to the monitoring results measured. CES came back to site on the 3rd Dec (Octobers visit had to be

postponed and limited availability meant Dec was the next available date). Following their visit, they have provided provisional results on the 10.12.20 which showed average coal mill emissions have fallen to: PM actual 2.36mg/m³ & PM dry 3.20mg/m³ indicating that the remedial work that was undertaken in September following CES's previous visit was successful.

27/9/20 – cooler tube elbow failure

On the 27.9.2020, a leak on the elbow flange of cooler tube #7 was reported by the afternoon shift. It deteriorated rapidly and by 8pm the tube had fallen away completely. This particular cooler elbow had been identified for replacement during the scheduled shutdown, but it deteriorated quicker than anticipated. As a result of this event, a plume of fugitive was released. The kiln was taken off line at 8:30pm, spare parts were ready to refit as soon as the tube had sufficiently cooled. Each of the other cooler tube elbows were assessed for condition – no issues. The cooler tube and elbow repair work was successfully replaced on the 29th of September.

29/9.2020 – Diesel Spill at Inbound Weighbridge

Diesel fuel spill from a split fuel tank on a contractor lorry which made contact with an Armco safety barrier when slowly driving on to the inbound weighbridge. Diesel fuel spill -approx. 250lts from damaged lorry fuel tank. The spill was immediately contained and remained on made (concrete) ground. No Significant Environmental Impact detected as spill was contained and managed and so did not mobilise to any environmental receptors e.g. soil, ground or surface water. Response time was instant due to the fact it occurred next to a strategically placed spill station.

9/10/20 - Release of coal particulates from the coal stack.

The coal milling plant was shut down when a faint plume was noted emitting from the stack – it was not clear at this point whether this was condensation or particulates, but as a precaution the system was put on stop to allow investigations to be undertaken. Following an initial inspection it was noted that the coal mill damper valve on bag filter bay 3 was stuck open. This faulty damper valve seized in the open position allowing fugitive to escape through via the coal stack. On discovery, the open damper valve was immediately manually shut. An overhaul of the valve mechanism was undertaken. Investigations found that a loss of pressure caused the valve to seize open – to remedy this and prevent a reoccurrence we have implemented a damper position sensor which feeds back to the control room to notify them of any valve issues alerting shift to stop the mill pending further investigation.