

RELEASES TO AIR

Operational summary for quarter ending 31-Dec-17

Operator: Tata Steel UK Ltd

Location: Port Talbot Works

Permit: BL7108 / BL7108IM (V009)

Operational parameters: Raw materials - Gas production and usage

Release point	Month	Gas flared (GJ)	Gas vented (GJ)	Gas produced (GJ)
A12A BOS convertor 1 gas flare	Month 1	14133		
	Month 2	46489		
	Month 3	59545		
A13A BOS convertor 2 gas flare	Month 1	14133		
	Month 2	46489		
	Month 3	59545		
A33 Blast furnace gas flare stack no.1	Month 1	77486		
	Month 2	115149		
	Month 3	30791		
A33C Blast furnace gas flare stack no.2	Month 1	145486		
	Month 2	123013		
	Month 3	115149		
A33A Blast furnace gas main number 4 bleeder	Month 1		391	
	Month 2		393	
	Month 3		123	
A33B Blast furnace gas main number 5 bleeder	Month 1		478	
	Month 2		253	
	Month 3		80	
A59 Coke oven gas triple flare	Month 1	48520		
	Month 2	47142		
	Month 3	82883		
Blast furnaces 4 and 5	Month 1			1578458
	Month 2			1347355
	Month 3			1437641
Coke ovens	Month 1			541876
	Month 2			504405
	Month 3			518965
BOS Plant	Month 1			205987
	Month 2			174685
	Month 3			199468

Signed on behalf of the Operator

Dated 15/01/18

Form Installation gas

WASTE PRODUCTION

Operational summary for quarter ending 31-Dec-17

Operator: Tata Steel UK Ltd

Location: Port Talbot Works

Permit: BL7108

Release point	Month	Steel slag (tonnes)	Desulph slag (tonnes)	Hazardous waste * (tonnes)	Non hazard waste * (tonnes)	BF slag (tonnes)	Oil used in coke ovens (tonnes)	Waste oil reductant (tonnes)
BOS	Oct	27093	21010					
	Nov	23777	12035					
	Dec	36076	20587					
Iron and steel installation	Oct			11.2	767			
	Nov			5.0	968			
	Dec			5.1	2502			
BF4 tapholes	Oct					31550		
	Nov					23144		
	Dec					30519		
BF5 tapholes	Oct					33876		
	Nov					33361		
	Dec					36058		
BF5	Oct							
	Nov							
	Dec							
Coke ovens	Oct						111	**
	Nov						131	**
	Dec						138	**

* Disposal to Morfa landfill site non-hazardous and hazardous cells.

** WID compliant Oil.

Signed on behalf of the Operator



Dated 10/01/18

Form Waste 1

RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-17

Operator: Tata Steel UK Ltd

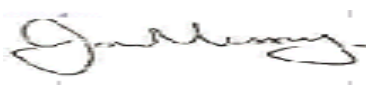
Location: Port Talbot Works

Permit: BL7108

Release Points: A50, A51, A52A, A52B, A53 & A62

Operating details	BOILERS						
	A50A Service 4	A50B Service 5	A51 A5	A52A No.6	A52B No.7	A53 Mitchell	A62 No.3
Operating time (hours)	1676	2124	2158	1159	2202	1562	2139
Mean load (%MCR)	55.1	55.4	50.0	85.5	87.5	67.5	65.7
Mean flue gas flow (Nm ³ /hr)	48707	65649	61392	138267	234693	82398	192254
Heavy Fuel Oil							
Average net CV (GJ/t)	40.9	40.9	40.9	40.9	40.9	40.9	
Max. sulphur content (g/Kg)	10	10	10	10	10	10	
Max. asphaltene content (g/Kg)	46	46	46	46	46	46	
Ave.%wt Sulphur	0.995	0.995	0.995	0.995	0.995	0.995	
NOx factor	0.1	0.1	0.1	0.1	0.1	0.1	
Coke Oven Gas							
Average net CV (GJ/km ³)	17.16	17.16	17.16	17.16	17.16	17.16	
Sulphur content (g/m ³)	5.03	5.03	5.03	5.03	5.03	5.03	
NOx factor	0.04	0.04	0.04	0.04	0.04	0.04	
Blast Furnace Gas							
Average net CV (GJ/km ³)	3.61	3.61	3.61	3.61	3.61	3.61	3.61
Sulphur content (g/Nm ³)	0.024	0.024	0.024	0.024	0.024	0.024	0.024
NOx factor	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Natural Gas							
Average net CV (GJ/km ³)	36.7	36.7	36.7	36.7	36.7	36.7	36.7
NOx factor	0.04	0.04	0.04	0.04	0.04	0.04	0.04

Signed on behalf of the Operator



Dated

12/01/18

RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-17

Operator: Tata Steel UK Ltd

Location: Port Talbot Works

Permit: BL7108

Release Points: A50A/A50B, A51, A52A, A52B, A53 & A62

OXIDES OF NITROGEN - NOx (DISCONTINUOUS MONITORING)						
Release Point	A50A&B Service 4&5	A51 A5	A52A No.6	A52B No.7	A53 Mitchell	A62 No.3
Time and date of sampling	02-Oct-16 11:10	16-Oct-17 10:20	08-Aug-17 10:19:00	08-Aug-17 10:09:00		
Flowrate (Nm3/hr)	91802	70051	190,028	214,023		
NOx measured** conc. (mg/Nm3)	180 (+/-9.7)	38 (+/-2.1)	104 (+/-3.6)	117 (+/-4.1)		
NOx limit (mg/NM3)	300 BFG/COG	300 BFG/COG	300 BFG/COG	300 BFG/COG		
Sampling method used	ISO 10849	ISO 10849	ISO 10849	ISO 10849		
Analytical method used	EC*	EC*	EC*	EC*		
Continuous hourly monitoring result over the period	0		29	86		
Fuel usages over the sampling period						
Natural gas (%)	1%	4%	10%	9%		
BF gas (%)	69%	80%	70%	79%		
Coke oven gas (%)	30%	17%	20%	12%		
Heavy fuel oil (%)	0%	0%	0%	0%		

A52A, A52B and A62 (Boiler 3) have an annual monitoring requirement. A50A/A50B has a six monthly monitoring requirement. CEMS subject to QAL2 in 2013

* EC - electrochemical cell

** Mitchell boiler unable to sample due to safety issues.

Signed on behalf of the Operator



Dated 15/01/18

Form LCPD DCM NOx

RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-17

Operator: Tata Steel UK Ltd

Location: Port Talbot Works

Permit: BL7108 / NP3938GZ

Release Points: A50A/A50B, A51, A52A, A52B, A53 & A62

SULPHUR DIOXIDE - SO ₂ (DISCONTINUOUS MONITORING)						
Release Point	A50A&B Service 4&5	A51 A5	A52A No.6	A52B No.7	A53 Mitchell	A62 No.3
Time and date of sampling	02-Oct-16 11:10	16-Oct-17 10:20	08-Aug-17 10:19:00	08-Aug-17 10:09:00		
Flowrate (Nm ³ /hr)	91802	70051	190,028	214,023		
SO ₂ measured conc. (mg/Nm ³)	547 (+/-28.6)	70 (+/- 3.2)	120 (+/-3.9)	153 (+/-5.0)		
SO ₂ limit (mg/NM ³)	800 BFG/COG	800 BFG/COG	800 BFG/COG	800 BFG/COG		
Sampling method used	BS 6069	BS 6069	BS 6069	BS 6069		
Analytical method used	EC*	EC*	EC*	EC*		
Continuous hourly monitoring result over the period	0		99	102		
Fuel usages over the sampling period						
Natural gas (%)	1%	4%	10%	9%	4%	
BF gas (%)	69%	80%	70%	79%	80%	
Coke oven gas (%)	30%	17%	20%	12%	5%	
Heavy fuel oil (%)	0%	0%	0%	0%	0%	

A52A, A52B and A62 (Boiler 3) have an annual monitoring requirement. A50A/A50B have a six monthly monitoring requirement.

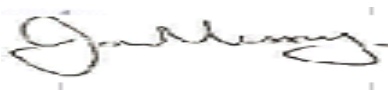
CEMS subject to QAL2 in 2013

Unable to test Mitchell boiler due to safety issues.

* EC - electrochemical cell

** Mitchell boiler unable to sample due to safety issues.

Signed on behalf of the Operator



Dated

15/01/18

Form LCPD DCM SO₂

RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-17

Operator: Tata Steel UK Ltd

Location: Port Talbot Works

Permit: BL7108

Release Points: A50A, A50B, A51, A52A, A52B, A53 & A62

Release point	Month	Fuel oil (GJ)	Coke oven gas (GJ)	Blast furnace gas (GJ)	Natural gas (GJ)	BOS gas (GJ)	All fuels (GJ)
A50A Service Boiler 4	O	0	10892	16303	1636		28830
	N	0	41388	29148	2755		73290
	D	0	62266	20736	4391		87393
A50B Service Boiler 5	O	0	28265	44427	3874		76566
	N	0	39819	37490	3303		80612
	D	0	60529	20717	3240		84486
A51 Boiler A5	O	419	5286	54443	1475	0	61623
	N	525	3292	60380	1306	55	65558
	D	0	4585	60469	1776	49	66878
A52A Boiler 6	O	234	54459	253430	17702	26574	352399
	N	0	87	0	0	979	1066
	D	20	10565	140861	26849	7013	185308
A52B Boiler 7	O	0	60146	254917	11544	26855	353463
	N	1476	51263	250918	19996	23719	347372
	D	2247	62819	239052	25637	16337	346092
A53 Mitchell	O	0	1220	11709	1756		14686
	N	643	10205	122077	7100		140026
	D	0	9244	137990	5509		152744
A62 Boiler 3	O			147107	8254	0	155360
	N			156265	17590	0	173855
	D			157067	14332	0	171399
Total	O	652	160269	782336	46241	53429	1042928
	N	2644	146053	656278	52050	24754	881778
	D	2267	210009	776891	81734	23399	1094300

Signed on behalf of the Operator

Dated 05/01/18

Form LCPD Fuels

RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-17

Operator: Tata Steel UK Ltd

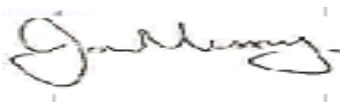
Location: Port Talbot Works

Permit: BL7108

Release Points: A50A, A50B, A51, A52A, A52B & A53

PARTICULATE MATTER (mg/Nm3) - CONTINUOUS EMISSIONS MONITORING							
Release point	Month	Monthly mean LIMIT=50	Maximum hourly mean	Date & time of maximum value	Minimum hourly mean	Standard deviation of hourly means	% data capture over month
A50A & A50B Service Boilers 4&5	Oct	2.2	19.5	17/10/17 08:00	0.1	2.6	100%
	Nov	1.1	7.8	01/11/17 16:00	0.1	1.1	100%
	Dec	1.2	5.6	18/12/17 18:00	0.2	1.0	100%
A51 Boiler A5	Oct	0.8	18.2	06/10/17 16:00	0.0	1.7	100%
	Nov	0.8	117.7	23/11/17 05:00	0.0	5.4	100%
	Dec	0.4	3.8	04/12/17 01:00	0.0	0.5	100%
A52A Boiler 6	Oct	1.6	7.6	03/10/17 13:00	0.0	0.5	100%
	Nov	0.0	0.0	01/11/17 00:00	0.0	0.0	100%
	Dec	2.2	168.4	11/12/17 14:00	0.0	8.2	100%
A52B Boiler 7	Oct	0.6	33.4	03/10/17 13:00	0.1	1.3	100%
	Nov	1.2	25.4	23/11/17 05:00	0.4	2.4	100%
	Dec	1.7	29.7	19/12/17 11:00	0.3	3.5	100%
A53 Mitchell	Oct	1.1	113.8	29/10/17 16:00	0.0	6.2	100%
	Nov	3.2	22.7	23/11/17 13:00	1.7	2.2	100%
	Dec	3.1	15.9	12/12/17 04:00	2.1	0.7	100%

Signed on behalf of the Operator



Dated

12/01/18

Form LCPD CEM Parts

RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-17

Operator: Tata Steel UK Ltd

Location: Port Talbot Works

Permit: BL7108 / BL7108IM (V009)

Release Points: A50, A52A & A52B

OXIDES OF NITROGEN (mg/Nm3) - CONTINUOUS EMISSIONS MONITORING							
Release point	Month	Month mean LIMITS: BFG/COG=300	Maximum hourly mean	Date & time of maximum value	Minimum hourly mean	Standard deviation of hourly means	% data capture over month
A52A Boiler 6	Oct	98.5	332.3	28/10/2017 18:00	0.0	77.7	91%
	Nov	0.0	0.0	01/11/2017 0:00	0.0	0.0	100%
	Dec	87.6	377.5	19/12/2017 14:00	0.0	91.5	100%
A52B Boiler 7	Oct	94.5	177.1	22/10/2017 20:00	30.1	27.4	100%
	Nov	90.5	337.7	23/11/2017 5:00	27.6	41.3	100%
	Dec	104.6	363.9	19/12/2017 10:00	25.8	47.6	100%
A50A & A50B Service Boilers	Oct	169.6	371.9	22/10/2017 13:00	8.8	61.6	100%
	Nov	226.2	506.9	25/11/2017 11:00	12.2	112.1	100%
	Dec	264.2	506.3	13/12/2017 14:00	21.2	109.5	100%
SULPHUR DIOXIDE (mg/Nm3) - CONTINUOUS EMISSIONS MONITORING							
Release point	Month	Month mean LIMITS: BFG/COG=500	Maximum hourly mean	Date & time of maximum value	Minimum hourly mean	Standard deviation of hourly means	% data capture over month
A52A Boiler 6	Oct	259.7	505.7	28/10/2017 22:00	0.0	106.4	91%
	Nov	0.0	0.0	01/11/2017 0:00	0.0	0.0	100%
	Dec	170.6	495.3	20/12/2017 2:00	0.0	161.5	100%
A52B Boiler 7	Oct	162.3	496.7	03/10/2017 13:00	60.9	54.7	100%
	Nov	148.5	730.7	23/11/2017 9:00	63.0	80.8	100%
	Dec	175.7	704.6	18/12/2017 15:00	60.3	102.3	100%
A50A & A50B Service Boilers	Oct	172.9	879.0	03/10/2017 17:00	4.0	168.3	100%
	Nov	464.3	1512.0	15/11/2017 3:00	4.1	391.6	100%
	Dec	706.6	1883.6	01/12/2017 23:00	29.2	374.9	100%

Signed on behalf of the Operator

Dated 12/01/18

Form LCPD CEMS SO2 & NOx

RELEASES INTO AIR

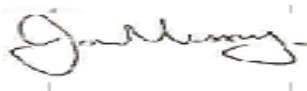
Operational summary for quarter ending

31-Dec-17

Operator: Tata Steel UK Ltd**Location:** Port Talbot Works**Permit:** BL7108 / NP3938GZ**Release Point:** A62

PARTICULATE MATTER (mg/Nm3) - CONTINUOUS EMISSIONS MONITORING									
Release point	Month	Maximum daily mean	Monthly mean	Date & time of maximum value	Minimum daily mean	Standard deviation of daily means	% valid monitor reponse	Fuel weighted monthly limit	% Abnormal condtions
A62 Boiler 3	Oct	7.1	3.1	31-Oct-17	1.5	1.4	100.00%	9.7	96.5%
	Nov	6.2	2.8	23-Nov-17	1.6	1.2	100.00%	9.4	96.0%
	Dec	8.6	2.7	10-Dec-17	1.8	1.2	100.00%	9.5	91.4%
SULPHUR DIOXIDE (mg/Nm3) - CONTINUOUS EMISSIONS MONITORING									
Release point	Month	Maximum daily mean	Monthly mean	Date & time of maximum value	Minimum daily mean	Standard deviation of daily means	% valid monitor reponse	Fuel weighted monthly limit	% Abnormal condtions
A62 Boiler 3	Oct	258.9	133.2	07-Oct-17	36.3	64.8	100.00%	190.0	96.5%
	Nov	304.9	122.6	29-Nov-17	33.2	53.3	100.0%	181.4	96.0%
	Dec	198.4	116.4	14-Dec-17	33.0	49.6	100.00%	182.4	91.4%
OXIDES OF NITROGEN (mg/Nm3) - CONTINUOUS EMISSIONS MONITORING									
Release point	Month	Maximum daily mean	Monthly mean	Date & time of maximum value	Minimum daily mean	Standard deviation of daily means	% valid monitor reponse	Fuel weighted monthly limit	% Abnormal condtions
A62 Boiler 3	Oct	169.7	70.0	13-Oct-17	11.0	39.3	100.00%	193.9	96.5%
	Nov	121.5	58.5	08-Nov-17	27.0	20.4	100.00%	188.8	96.0%
	Dec	108.5	53.0	17-Dec-17	7.7	25.3	100.00%	189.3	91.4%

Boiler 3 off from 21 January 2016.

Signed on behalf of the Operator**Dated** 12/01/18


Operational summary for quarter ending 31-Dec-17

Location: Port Talbot Works

Release Points: A50A, A50B, A51, A52A, A52B, A53 & A62

Signed on behalf of the Operator

Johnny

Form LCPD CEMS LOG

RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-17

Operator: Tata Steel UK Ltd

Location: Port Talbot Works

Permit: BL7108 / AP3330BE

Release Points: A50A, A50B, A51, A52A, A52B, A53 & A62

Month	Sulphur Dioxide (tonnes)							Oxides of Nitrogen (tonnes)							Particulates (tonnes)						
	A50A	A50B	A51	A52A	A52B	A53	A62	A50A	A50B	A51	A52A	A52B	A53	A62	A50A	A50B	A51	A52A	A52B	A53	A62
January	13.0	13.0	0.7	39.1	33.9	5.9	1.8	5.2	5.2	1.6	10.0	9.2	3.5	2.3	0.0	0.0	0.03	0.4	0.2	0.1	0.12
February	5.4	5.4	0.6	39.8	35.6	6.8	0.8	2.8	2.8	1.2	10.4	9.5	3.6	1.8	0.0	0.0	0.03	0.4	0.2	0.2	0.11
March	6.2	6.2	0.8	45.6	41.9	3.1	3.6	4.0	4.0	1.9	12.8	12.0	2.5	2.5	0.1	0.1	0.05	0.3	0.2	0.1	0.11
April	6.9	6.9	0.7	3.1	3.2	1.4	0.0	3.6	3.6	0.5	2.6	2.5	0.9	3.9	0.1	0.1	0.04	0.3	0.1	0.1	0.19
May	0.0	0.0	0.0	44.2	37.4	5.8	7.2	4.4	4.4	0.0	0.0	0.0	0.0	5.3	0.1	0.1	0.05	0.2	0.1	0.1	0.17
June	0.0	0.0	0.2	11.7	10.4	5.1	6.5	5.3	5.3	0.0	2.4	2.2	0.0	5.7	0.1	0.1	0.02	0.2	0.1	0.1	0.12
July	5.3	5.3	0.0	45.2	35.7	5.7	0.0	4.7	4.7	0.0	10.7	9.7	3.2	5.6	0.1	0.1	0.00	0.2	0.1	0.1	0.12
August	6.0	6.0	4.2	23.8	17.5	1.2	0.3	6.1	6.1	1.3	10.4	9.5	1.3	5.3	0.1	0.1	0.12	0.3	0.1	0.1	0.11
September	7.6	7.6	4.1	30.3	31.2	0.0	0.3	7.2	7.2	1.6	9.8	9.1	0.0	6.8	0.1	0.1	0.04	0.3	0.1	0.0	0.13
October	0.0	0.0	3.7	32.6	35.6	0.8	7.0	3.8	3.8	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.03	0.3	0.1	0.0	0.22
November	0.0	0.0	2.6	0.0	29.7	6.9	4.4	4.9	4.9	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.02	0.0	0.2	0.1	0.13
December	0.0	0.0	2.6	5.0	29.8	5.4	6.5	7.7	7.7	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.02	0.5	0.3	0.1	0.21
Totals	25	25	2	125	111	16	6	12	12	5	33	31	10	7	0.1	0.1	0.1	1.0	0.6	0.4	0.3
	309							109							3						
	Service		A5	Margam C		Mit	3	Service		A5	Mgm C		Mit	3	Service		A5	Mgm C		Mit	3
Boiler Plant Totals	49		2	236		16	6	24		5	64		10	7	0		0	2		0	0
NERP Annual Limit (T)	686		251	2219		575		252		96	929		212		20		4	56		10	

Signed on behalf of the Operator

Dated 10/01/18

Form LCPD Monthly 1

RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-17

Operator: Tata Steel UK Ltd

Location: Port Talbot Works

Permit: BL7108 / NP3938GZ

Release Points: A6, A7, A30, A31, A32, A34A, A34B & A39

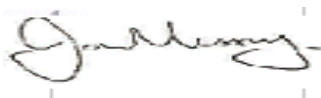
OXIDES OF NITROGEN - NOx (DISCONTINUOUS MONITORING)								
Release Point	A6	A7	A30	A31	A32	A34A	A34B	A39 #
Time and date of sampling	30-Oct-17 10:24	26-Oct-17 10:01				02-Nov-17 14:23	02-Nov-17 14:15	05-Sep-17 09:25
Flowrate (Nm3/hr)	282837	170805				211545	259627	29,051
NOx measured conc.(mg/Nm3) **	69 (+/-2.4)	41 (+/-1.6)				533 (+/- 33.0)	550 (+/-32.3)	3 (+/-0.1)
Oxygen content (%)	3.8							
NOx limits (mg/Nm3)	100	100				1800	1800	115
Sampling method used	ISO 10849	ISO 10849				ISO 10849	ISO 10849	ISO 10849
Analytical method used	EC *	EC *				EC *	EC *	EC *
Continuous hourly monitoring result over the period								
Fuel usages over the sampling period								
Natural gas (%)	3%	0%				83%	38%	100%
BF gas (%)	69%	98%						0%
Coke oven gas (%)	7%	2%				17%	62%	
BOS Gas (%)	22%							

* EC - electrochemical cell

A30, A31 & A32 are no longer a permit requirement/ non operational

A39 has a 6 monthly monitoring requirement.

Signed on behalf of the Operator



Dated 10/01/18

Form I&S DCM NOx

RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-17

Operator: Tata Steel UK Ltd

Location: Port Talbot Works

Permit: BL7108 / NP3938GZ

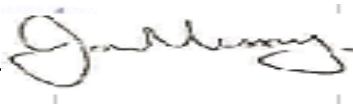
Release Points: A6, A7, A34A & A34B

SULPHUR DIOXIDE - SO ₂ (DISCONTINUOUS MONITORING)					
Release Point	A6	A7	A34A	A34B	A39 #
Time and date of sampling	30-Oct-17 10:24	26-Oct-17 10:01	02-Nov-17 14:23	02-Nov-17 14:15	05-Sep-17 09:25
Flowrate (Nm ³ /hr)	282837	170805	211545	259627	29,051
SO ₂ measured conc.(mg/Nm ³)	35.9 (+/- 1.4)	0.2 (+/- 0.8)	106 (+/-7.2)	550 (+/-33.0)	0 (+/- 0.0)
SO ₂ limits (mg/Nm ³)	200	200	1400	1400	260
Sampling method used	BS6069	BS6069	BS6069	BS6069	BS6069
Analytical method used	EC *	EC *	EC *	EC *	EC *
Continuous hourly monitoring result over the period					
Fuel usages over the sampling period					
Natural gas (%)	3%	0%	83%	38%	100%
BF gas (%)	69%	98%			0%
Coke oven gas (%)	7%	2%	17%	62%	
BOS Gas (%)	22%				

* EC - electrochemical cell

A39 has a 6 monthly monitoring requirement

Signed on behalf of the Operator



Dated

10/01/18

Form I&S DCM SO₂

RELEASES INTO AIR

Operational summary for quarter ending 31-Dec-17

Operator: Tata Steel UK Ltd

Location: Port Talbot Works

Permit: BL7108 / PP3738SQ

Release Points: A6, A7, A21, A22, A24 & A46

VARIOUS DISCONTINUOUS MONITORING					
Release Point	A21/A22	A6	A7	A39 # (6 Monthly)	A46* (annual)
Parameter	Chloride (as HCl)	Carbon monoxide			Oxides of nitrogen
Time and date of sampling	01-Nov-17 10:48	30-Oct-17 10:24	26-Oct-17 10:01	05-Sep-17 09:25	- -
Flowrate (Nm3/hr)	18,176	282837	170805	29,051	-
Measured conc.(mg/Nm3)	0.2 (+/-0.1)	7517 (+/-283.2)	7094 (+/- 246.1)	1444 (+/-30.8)	-
Emission limits (mg/Nm3)	5				
Sampling method used	Isokinetic	BS ISO 12039	BS ISO 12039	BS ISO 12039	ISO 10849
Analytical method used	BSEN1911	EC *	EC *	EC *	EC *
Fuel usages over the sampling period					
Natural gas (%)		3%	0%		
BF gas (%)		69%	98%		
Coke oven gas (%)		7%	2%		
BOS Gas (%)		22%			

* EC - electrochemical cell

* No limit for A46 in new permit.

A39 has a 6 monthly monitoring requirement - no yet taken for HY2

Signed on behalf of the Operator

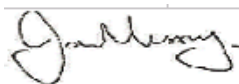
Dated 10/01/18



Form I&S DCM Misc

Liquid Iron Plating Operations (Iron Plating Pit)			
Date	Time	Tonnes	Reason
01/10/17	22:14	268	Metallurgy Reasons
05/10/17	07:20	228	Metallurgy Reasons
05/10/17	06:12	285	Metallurgy Reasons
04/10/17	22:13	268	Metallurgy Reasons
04/10/17	20:32	171	Metallurgy Reasons
02/10/17	07:50	174	Metallurgy Reasons
02/10/17	06:35	228	Metallurgy Reasons
02/10/17	04:14	171	Metallurgy Reasons
02/10/17	02:42	228	Metallurgy Reasons
02/10/17	00:30	180	Metallurgy Reasons
01/10/17	23:23	192	Metallurgy Reasons
15/10/17	10:20	285	Metallurgy Reasons
15/10/17	03:54	282	Metallurgy Reasons
15/10/17	02:47	184	Metallurgy Reasons
14/10/17	09:04	247	Metallurgy Reasons
Total		3391	

Signed on behalf of the Operator



Form I&S Operational 1

Dated 03/01/18

RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-17

Operator: Tata Steel UK Ltd

Location: Port Talbot Works

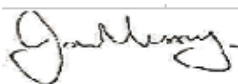
Permit: BL7108

Release Points: Iron plating continued

Liquid Iron Plating Operations (Iron Plating Pit)			
Date	Time	Tonnes	Reason
14/10/17	08:27	237	Metallurgy Reasons
12/10/17	03:35	217	Metallurgy Reasons
12/10/17	01:10	268	Metallurgy Reasons
11/10/17	23:43	228	Metallurgy Reasons
09/10/17	21:43	225	Metallurgy Reasons
09/10/17	21:22	228	Metallurgy Reasons
17/10/17	13:27	228	Metallurgy Reasons
17/10/17	09:04	171	Metallurgy Reasons
17/10/17	08:20	228	Metallurgy Reasons
17/10/17	06:13	240	Metallurgy Reasons
17/10/17	04:50	228	Metallurgy Reasons
16/10/17	23:19	228	Metallurgy Reasons
16/10/17	22:26	228	Metallurgy Reasons
16/10/17	04:01	226	Metallurgy Reasons
16/10/17	03:12	256	Metallurgy Reasons
15/10/17	10:41	200	Metallurgy Reasons
19/10/17	07:27	180	Metallurgy Reasons
19/10/17	07:13	278	Metallurgy Reasons
19/10/17	06:30	280	Metallurgy Reasons
19/10/17	05:28	112	Metallurgy Reasons
19/10/17	05:03	171	Metallurgy Reasons
19/10/17	04:01	282	Metallurgy Reasons
19/10/17	02:13	270	Metallurgy Reasons
18/10/17	23:43	240	Metallurgy Reasons
18/10/17	21:18	268	Metallurgy Reasons
17/10/17	14:08	274	Metallurgy Reasons
27/10/17	16:23	256	Metallurgy Reasons
27/10/17	15:04	205	Metallurgy Reasons
26/10/17	18:38	237	Metallurgy Reasons
26/10/17	17:51	216	Metallurgy Reasons
25/10/17	14:05	212	Metallurgy Reasons
25/10/17	13:34	206	Metallurgy Reasons
25/10/17	12:57	291	Metallurgy Reasons
22/10/17	03:44	204	Metallurgy Reasons
22/10/17	03:06	228	Metallurgy Reasons
21/10/17	15:33	184	Metallurgy Reasons
28/10/17	06:48	228	Metallurgy Reasons
28/10/17	05:45	208	Metallurgy Reasons
28/10/17	05:15	171	Metallurgy Reasons
28/10/17	04:06	218	Metallurgy Reasons
Total		9055	

Signed on behalf of the Operator

Dated 03/01/18



Form I&S Operational 1

RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-17

Operator: Tata Steel UK Ltd

Location: Port Talbot Works

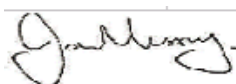
Permit: BL7108

Release Points: Iron plating continued

Liquid Iron Plating Operations (Iron Plating Pit)			
Date	Time	Tonnes	Reason
28/10/17	03:32	228	Metallurgy Reasons
28/10/17	02:49	161	Metallurgy Reasons
27/10/17	23:25	218	Metallurgy Reasons
27/10/17	23:07	171	Metallurgy Reasons
27/10/17	20:01	228	Metallurgy Reasons
27/10/17	19:20	282	Metallurgy Reasons
29/10/17	18:42	285	Metallurgy Reasons
29/10/17	17:14	200	Metallurgy Reasons
29/10/17	16:46	240	Metallurgy Reasons
29/10/17	16:05	240	Metallurgy Reasons
28/10/17	23:10	228	Metallurgy Reasons
28/10/17	22:36	228	Metallurgy Reasons
28/10/17	20:36	228	Metallurgy Reasons
28/10/17	20:09	278	Metallurgy Reasons
28/10/17	15:06	218	Metallurgy Reasons
28/10/17	14:40	180	Metallurgy Reasons
28/10/17	20:36	228	Metallurgy Reasons
28/10/17	20:09	278	Metallurgy Reasons
28/10/17	15:06	218	Metallurgy Reasons
28/10/17	14:40	180	Metallurgy Reasons
31/10/17	20:31	171	Metallurgy Reasons
31/10/17	19:57	232	Metallurgy Reasons
31/10/17	15:32	161	Metallurgy Reasons
31/10/17	13:12	278	Metallurgy Reasons
31/10/17	12:44	184	Metallurgy Reasons
30/10/17	10:18	283	Metallurgy Reasons
04/11/17	04:29	216	Metallurgy Reasons
04/11/17	04:03	174	Metallurgy Reasons
03/11/17	20:45	190	Metallurgy Reasons
03/11/17	20:17	228	Metallurgy Reasons
03/11/17	18:14	256	Metallurgy Reasons
03/11/17	17:13	188	Metallurgy Reasons
03/11/17	15:20	240	Metallurgy Reasons
03/11/17	14:46	171	Metallurgy Reasons
02/11/17	12:53	228	Metallurgy Reasons
01/11/17	12:27	0	Metallurgy Reasons
Total		7717	

Signed on behalf of the Operator

Dated 03/01/18



Form I&S Operational 1

RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-17

Operator: Port Talbot Works

Location: Port Talbot Works

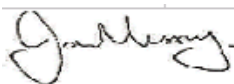
Permit: BL7108

Release Points: Iron plating continued

Liquid Iron Plating Operations (Iron Plating Pit)			
Date	Time	Tonnes	Reason
08/11/17	00:35	180	Metallurgy Reasons
07/11/17	23:31	278	Metallurgy Reasons
04/11/17	21:39	229	Metallurgy Reasons
04/11/17	20:46	240	Metallurgy Reasons
04/11/17	17:39	228	Metallurgy Reasons
04/11/17	17:32	230	Metallurgy Reasons
04/11/17	14:41	171	Metallurgy Reasons
04/11/17	14:19	180	Metallurgy Reasons
04/11/17	12:48	218	Metallurgy Reasons
04/11/17	12:17	256	Metallurgy Reasons
21/11/17	20:36	13	Metallurgy Reasons
16/11/17	19:51	297	Metallurgy Reasons
16/11/17	19:30	237	Metallurgy Reasons
16/11/17	19:02	230	Metallurgy Reasons
16/11/17	18:43	190	Metallurgy Reasons
16/11/17	14:49	228	Metallurgy Reasons
16/11/17	13:57	184	Metallurgy Reasons
14/11/17	14:22	310	Metallurgy Reasons
10/11/17	11:04	216	Metallurgy Reasons
10/11/17	10:06	285	Metallurgy Reasons
29/11/17	05:17	149	Metallurgy Reasons
26/11/17	19:43	267	Metallurgy Reasons
25/11/17	11:19	228	Metallurgy Reasons
25/11/17	10:49	171	Metallurgy Reasons
25/11/17	08:28	273	Metallurgy Reasons
25/11/17	06:37	294	Metallurgy Reasons
24/11/17	02:51	247	Metallurgy Reasons
24/11/17	02:21	171	Metallurgy Reasons
23/11/17	03:06	161	Metallurgy Reasons
22/11/17	01:27	84	Metallurgy Reasons
05/12/17	14:26	228	Metallurgy Reasons
05/12/17	07:20	256	Metallurgy Reasons
05/12/17	06:35	208	Metallurgy Reasons
05/12/17	04:39	247	Metallurgy Reasons
05/12/17	03:51	197	Metallurgy Reasons
30/11/17	14:45	294	Metallurgy Reasons
Total		7875	

Signed on behalf of the Operator

Dated 03/01/18



Form I&S Operational 1

RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-17

Operator: Port Talbot Works

Location: Port Talbot Works

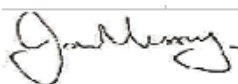
Permit: BL7108

Release Points: Iron plating continued

Liquid Iron Plating Operations (Iron Plating Pit)			
Date	Time	Tonnes	Reason
30/11/17	08:02	132	Metallurgy Reasons
29/11/17	11:46	142	Metallurgy Reasons
29/11/17	06:54	232	Metallurgy Reasons
09/12/17	16:34	254	Metallurgy Reasons
09/12/17	15:15	273	Metallurgy Reasons
09/12/17	14:16	278	Metallurgy Reasons
09/12/17	02:57	153	Metallurgy Reasons
09/12/17	02:33	184	Metallurgy Reasons
08/12/17	17:29	174	Metallurgy Reasons
08/12/17	16:54	217	Metallurgy Reasons
08/12/17	15:51	268	Metallurgy Reasons
08/12/17	15:10	190	Metallurgy Reasons
13/12/17	12:56	228	Metallurgy Reasons
13/12/17	12:14	218	Metallurgy Reasons
13/12/17	11:32	228	Metallurgy Reasons
13/12/17	10:19	285	Metallurgy Reasons
13/12/17	08:55	161	Metallurgy Reasons
13/12/17	08:35	273	Metallurgy Reasons
10/12/17	14:31	171	Metallurgy Reasons
10/12/17	13:50	217	Metallurgy Reasons
10/12/17	03:33	161	Metallurgy Reasons
09/12/17	19:47	197	Metallurgy Reasons
22/12/17	07:25	228	Metallurgy Reasons
21/12/17	23:24	201	Metallurgy Reasons
18/12/17	04:56	270	Metallurgy Reasons
18/12/17	04:00	293	Metallurgy Reasons
18/12/17	02:12	206	Metallurgy Reasons
14/12/17	11:11	273	Metallurgy Reasons
13/12/17	23:46	161	Metallurgy Reasons
13/12/17	22:35	228	Metallurgy Reasons
13/12/17	15:58	228	Metallurgy Reasons
13/12/17	15:23	288	Metallurgy Reasons
24/12/17	23:24	228	Metallurgy Reasons
24/12/17	20:08	228	Metallurgy Reasons
24/12/17	19:23	184	Metallurgy Reasons
24/12/17	15:04	180	Metallurgy Reasons
Total		7832	

Signed on behalf of the Operator

Dated 03/01/18



Form I&S Operational 1

Operational summary for quarter ending 31-Dec-17

Location: Port Talbot Works

Permit: BL7108

Release Points: Iron plating continued

Signed on behalf of the Operator

Dated 03/01/18

Johnny

Form I&S Operational 1

RELEASES INTO AIR

Operational summary for quarter ending 31-Dec-17

Operator: Tata Steel UK Ltd

Location: Port Talbot Works

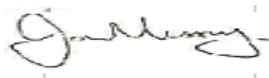
Permit: BL7108

Release Points: A2, A8A, A8B, A9, A10, A14, A15 & A16

PARTICULATE MATTER (mg/Nm3) - CONTINUOUS EMISSIONS MONITORING											
Release point	Month	Limit	Maximum daily mean	Minimum daily mean	Standard deviation of daily means	Maximum hourly mean	Minimum hourly mean	Standard deviation of hour means	Monthly mean	abatement availability %	% data capture over month
A8A	Oct	15	4	2.8	0.2	8.2	2.6	0.3	3.1	100%	100%
	Nov		3	2.6	0.1	3.4	2.4	0.2	2.8	100%	100%
	Dec		3	2.6	0.1	4.0	2.5	0.1	2.8	100%	100%
A8B	Oct	15	10	2.7	1.6	23.4	2.1	2.4	10.9	100%	100%
	Nov		13	1.9	3.1	38.2	1.7	4.4	4.9	100%	100%
	Dec		13	1.9	2.8	37.0	1.7	4.1	4.1	100%	100%
A9	Oct	15	6	0.0	1.6	16.3	1.0	1.5	0.6	100%	100%
	Nov		2	0.0	0.5	13.2	0.6	2.4	0.2	100%	100%
	Dec		7	0.0	2.1	12.9	1.0	1.8	0.8	100%	100%
A2*	Oct	30	117	0.0	32.4	222.4	0.0	46.4	38.0	100%	100%
	Nov		44	0.6	10.4	111.2	0.0	14.7	20.1	100%	100%
	Dec		39	5.6	9.6	103.4	0.0	13.7	20.8	100%	100%
A10	Oct	15	6	1.0	1.1	11.0	2.6	2.0	3.3	100%	100%
	Nov		3	0.9	0.6	5.0	1.5	1.0	2.0	100%	100%
	Dec		3	1.4	0.5	14.8	2.3	2.2	2.2	100%	100%
A14	Oct	15	1	0.1	0.4	4.7	0.3	0.8	0.5	100%	100%
	Nov		2	0.3	0.5	3.1	0.5	0.6	1.1	100%	100%
	Dec		12	1.9	2.6	56.3	3.1	9.7	4.4	100%	100%
A15	Oct	15	4	1.4	0.6	5.9	2.1	1.0	2.5	100%	100%
	Nov		4	1.3	0.8	6.4	2.1	1.1	2.6	100%	100%
	Dec		6	2.3	1.0	9.7	3.4	1.8	3.8	100%	100%
A16	Oct	15	5	0.9	1.2	19.0	1.1	3.4	2.8	100%	100%
	Nov		5	1.9	0.9	8.3	2.9	1.5	3.4	100%	100%
	Dec		6	2.8	0.9	10.2	4.3	1.7	4.3	100%	100%

*A2 ELV discussed with NRW as derogation

Signed on behalf of the Operator



Dated

03/01/18

Form I&S CEMS Parts 1 & 2

RELEASES INTO AIR

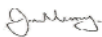
Operational summary for quarter ending 31-Dec-17

Operator: Tata Steel UK Ltd
Location: Port Talbot Works
Permit: BL7108 / RP3730BV

Iron Ore Sintering - Record of strand stoppages > 30 minutes				
Date	Time		Planned/ Unplanned	Reason
	Start	Duration (mins)		
01-Oct-17	08:35	2m	unplanned	Loss of raw mix due to mixer failing to come in.
01-Oct-17	09:10	3h 30m	unplanned	Delay to replace bolts on North exciter
01-Oct-17	12:52	13m	unplanned	loss of fines control, stoped system checked and started up ok.
01-Oct-17	13:20	9m	unplanned	delay due to hard sinter on start up.
02-Oct-17	15:30	59m	unplanned	1021 tracked over and required digging off and tension.
02-Oct-17	03:34	12m	unplanned	Change tracking roller as belt running into structure
03-Oct-17	04:15	11m	unplanned	Hood tripped, no reason why
03-Oct-17	15:52	40m	unplanned	hood water tank hit low level
04-Oct-17	01:51	1h 21m	unplanned	Delay taken to prevent breaching 4h waste gas pcme average
04-Oct-17	10:08	46m	unplanned	950 ddy blockage, stop taken to clear out ddy.
04-Oct-17	11:05	16m	unplanned	Hood tripped/slamsht valve activated
04-Oct-17	11:22	28m	unplanned	Hood tripped/slamsht valve activated
05-Oct-17	12:51	1h 4m	unplanned	Patch repair clipped to 1065 conveyor
05-Oct-17	17:37	1h 26m	unplanned	SWGf tripped on Motor NDE Horizontal, North fan then tripped on anti windmill, when lighting hood slam shi activated 6 times so switched lines and hood lit
05-Oct-17	10:02	56m	unplanned	Excess vibration in horizontal plane on SWGF motor bearings along with axial. Vibration in excess of trip limits on the South. Then the NWGF system tripped on windmill protection.
05-Oct-17	11:14	21m	unplanned	Excess vibration in axial plane on SWGF motor DE bearing. NWGF brought to idle to stop windmill protection from activating.
06-Oct-17	03:45	21h 15m	Planned Maintenance	18 hour PM
07-Oct-17	12:09	15m	unplanned	Damaged r-rollers seen marking the belt. Plant stopped to change 3 r-rollers.
07-Oct-17	12:50	22m	unplanned	Stop to change a holed pallet. 42 taken out, 58 put on.
07-Oct-17	13:12	29m	unplanned	Replacing broken straps on 1020 feeder
07-Oct-17	19:50	4m	unplanned	Bobcat utilised to remove build-up activated trip cable
07-Oct-17	20:38	12m	unplanned	SWGf trip on NDE horizontal.
08-Oct-17	09:16	18m	unplanned	Stop to gap cooler trays prior to performing repair work on the cooler rails.
09-Oct-17	10:01	2h 20m	unplanned	Repairs to cooler rails.
10-Oct-17	16:02	14m	unplanned	SWG fan tripped for Motor nde horizontal vibration (no unforeseen circumstances evident on strand). North fan speed reduced to prevent windmill.
11-Oct-17	11:13	13m	unplanned	Both WG fans tripped due to only one water cooling fan running. No 3 fan gearbox noisy and hot.
12-Oct-17	12:42	19m	unplanned	Both WG fans tripped due to only one water cooling fan running. No 3 fan gearbox noisy and hot.
12-Oct-17	13:41	2h 18m	unplanned	1027 h/e snub drum changed
13-Oct-17	22:18	6h 42m	unplanned	South leg of 1008 feeder fracture. Plant stop to perform weld repair to this.
13-Oct-17	22:30	19m	unplanned	Pallet change (hole north of centre)76 off 10 on.
14-Oct-17	09:01	8m	unplanned	Small stop to burn through
19-Oct-17	10:28	47m	unplanned	Plaaset chnagne 65 off 73 on Grate bars front row middle.Delay extended due to having to shuffle pallets around on side of strand.
21-Oct-17	06:09	5m	unplanned	Loss of temps along strand.
21-Oct-17	11:02	3m	unplanned	1004 conveyor dropped out but restarted with voltage. Conveyor checked with no issue.
21-Oct-17	12:06	1h 37m	unplanned	Re-secure 4x straps on 1020 feeder
22-Oct-17	12:00	41m	unplanned	8x failed rollers. Stop to replace
22-Oct-17	20:32	8m	unplanned	Mixer failed to start when raw-mix group started.
22-Oct-17	14:41	6m	unplanned	Raw mix material sticking, loss of strand temps after cleaning. Stop to Sinter through.
22-Oct-17	22:04	10m	unplanned	Stop to check 1026 North weigher zero.
22-Oct-17	01:29	7m	unplanned	Delay incurred to remove ceramic lining from No6 Weigh-feeder

Signed on behalf of the Operator

Dated 03/01/18



Form Sinter Operational

RELEASES INTO AIR

Form Sinter Operational Cont.

Operational summary for quarter ending

Operator: Tata Steel UK Ltd
Location: Port Talbot Works
Permit: BL7108 / RP3730BV

Iron Ore Sintering - Record of strand stoppages > 30 minutes				
Date	Time	Duration (mins)	Planned/Unplanned	Reason
22-Oct-17	09:12	4m	unplanned	Removing debris from Strand.
23-Oct-17	09:52	10m	unplanned	Stopped to sinter through due to loss of temps as compaction on strand from removing mesh from rollfeeder.
24-Oct-17	11:06	23m	unplanned	Trip activated in error by bobcat on 1022 conv
24-Oct-17	00:16	1h 8m	unplanned	North drive belts parted causing damage to the north underspeed and supporting bracket. New underspeed fitted and bracket repaired and refitted.
25-Oct-17	12:04	31m	unplanned	Stop taken to patch large hole in area on the south side of the discharge area. Hole getting visibly bigger over past 24 hours.
25-Oct-17	22:00	7h 0m	unplanned	1008 Feeder fracture repair failed. Stop taken to perform in-situ repairs as spare feeder not available.
25-Oct-17	16:41	7m	unplanned	Loss of temps along strand
26-Oct-17	00:51	4m	unplanned	Loss of raw mix in hopper due to removal of several mixer lumps from rollfeeder.
26-Oct-17	13:34	57m	unplanned	Pallet change required No43 Holed leading row mid / south on pallet slam shut activated x 4 before able to lite hood
27-Oct-17	15:12	4m	unplanned	Loss of temps along strand
27-Oct-17	01:51	4m	unplanned	South bent beam activated
28-Oct-17	07:56	7m	unplanned	Emergency stop button activated in error on 1066 pan conveyor.
28-Oct-17	09:44	8m	unplanned	Stop to sinter through on the Strand after temperature dropped due to roll feeder cleaning (Backplate scraper ineffective)
29-Oct-17	12:40	4h 26m	unplanned	Stop to perform repair to 1008-feeder, also emergency screen change to 1023 screen.
29-Oct-17	23:21	3m	unplanned	Small stop to check intermediate shaft
29-Oct-17	00:03	5m	unplanned	Loss of temps along strand.
29-Oct-17	19:06	6m	unplanned	1020 bin hi-hi.
29-Oct-17	19:24	3m	unplanned	Loss of raw mix. Mixer failed to start.
30-Oct-17	19:43	8m	unplanned	HSB stalled on hard sintered material.
30-Oct-17	19:54	1h 37m	unplanned	1066-pan conveyor stopped.
30-Oct-17	05:52	13h 6m	Planned Maintenance	8 hour PM period extended due to 1008 feeder change requirement. 1008 feeder change completed 17:00. Delays in reinstating fans, 1009 shaft detector meant restart delayed.
30-Oct-17	14:44	9m	unplanned	Hood tripped 'Quick Action Valve SOV 27-205' activated. Gas pressure increased to 102mb (normally 80mb) activating the valve
01-Nov-17	14:55	3m	unplanned	trip activated while cleaning tail end
01-Nov-17	20:45	20m	unplanned	Pallet change for hole, bars missing on front row middle, 134 off 51 on
01-Nov-17	20:38	14m	unplanned	changing 2 return rollers
02-Nov-17	11:03	3m	unplanned	Trip activated while cleaners working in area
02-Nov-17	10:15	1h 55m	unplanned	Stop to repair rails and tension 1066 pan conveyor.
03-Nov-17	12:23	2m	unplanned	1020 hopper hi hi level a. arm after plant restart.
04-Nov-17	12:36	3h 10m	unplanned	Plant stop for cooler alarm. Check shows wheel off the rail.
05-Nov-17	16:12	9m	unplanned	Stop to gap the cooler trays
06-Nov-17	16:25	2m	unplanned	Trip activated on 1021-con. Trip reset before operator could attend site.
07-Nov-17	16:50	1h 2m	unplanned	Stop to complete repairs to cooler tray wheel.
07-Nov-17	08:30	3m	unplanned	Trip activated on 1021-con. Scaffolders working in the area at the time.
08-Nov-17	08:04	20m	unplanned	Pallet change for wheel off on North side, 63c off, and 135 on.
10-Nov-17	21:00	11h 48m	Electrical	Stop to clear obstruction in the r-fines chute. On restart, unable to get fines feeder to run, also mixer water issues. Fault traced to 1003 east weigher controlling return fines?.
10-Nov-17	10:26	4m	unplanned	Trip activated east side of conveyor Dbi in area at time
11-Nov-17	23:30	4m	unplanned	trip activated by bobcat
11-Nov-17	05:41	3h 15m	unplanned	Cooler stopped found wheel off tray No44 (outer) wheeld wedged at bottom of dip rail. Tray 45 looks to have come off in dip rail.

Signed on behalf of the Operator

Dated

03/01/18

Form Sinter Operational

RELEASES INTO AIR

Form Sinter Operational Cont.

Operational summary for quarter ending

00-Jan-00

Operator: Tata Steel UK Ltd
Location: Port Talbot Works
Permit: BL7108 / RP3730BV

Iron Ore Sintering - Record of strand stoppages > 30 minutes				
Date	Time	Duration (mins)	Planned/	Reason
	Start		Unplanned	
11-Nov-17	09:44	2h 3m	unplanned	Fitting new wheel to tray No44 (outer)
11-Nov-17	14:05	25m	unplanned	Pallet change 42 on 33 off
11-Nov-17	15:28	24m	unplanned	Loss of water flow to North fan resulting in delay. Flow meters found to be clogged.
13-Nov-17	19:33	39m	unplanned	Troughing roller jammed between belt and tail drum causing damage to underspeed
13-Nov-17	02:35	25m	unplanned	Pallet change 33 on 55 off
14-Nov-17	01:11	4m	unplanned	On inspections found a shovel lodged in a return roller
15-Nov-17	09:04	2m	unplanned	trip activated by cleaners
16-Nov-17	09:14	3h 3m	unplanned	issues with incoming gas supply. This due to COG isolation meaning Natural Gas being used in area that normally use COG causing low incoming gas supply to plant tripping hood.
17-Nov-17	13:54	1h 1m	unplanned	issues with incoming gas supply. This due to COG isolation meaning Natural Gas being used in area that normally use COG causing low incoming gas supply to plant tripping hood.
17-Nov-17	15:00	1h 14m	unplanned	gas flow to low coming in to the plant. pressure switches needed bleeding, bloom panel issues also. changing to stream B.
17-Nov-17	11:43	9m	unplanned	needed to adjust 1001 baffle to track 1002 conveyor.
17-Nov-17	01:04	50m	Electrical	Delay to replace damaged U/Speed on 1002
18-Nov-17	01:59	30m	unplanned	delay to replace pallet, grate bars missing in front row centre, 43 on no number on pallet removed
19-Nov-17	11:15	22m	unplanned	Pallet failed on grate bars and insulation pieces middle tailing row middle. Pallet 62 off / 46 on
20-Nov-17	19:05	6m	unplanned	stopped to remove mixer mesh from 1004
20-Nov-17	13:51	6m	unplanned	Mixer dropped out a couple of times in quick succession, loss of raw mix, mixer required floating.
20-Nov-17	21:04	39m	unplanned	low cooling water flow, flow meters checked and all clean, slam shut activated when lighting the hood.
20-Nov-17	10:31	6m	unplanned	Blockage on 1014 chute
20-Nov-17	23:02	30m	unplanned	Both north and south fans stopped alarm cooling water low flow, slam shut activated
20-Nov-17	09:55	3h 20m	unplanned	Patching 1021 conveyor
20-Nov-17	05:00	6h 45m	unplanned	Plant stopped to allow precip to be permitted and opened up ready for Kings to inspect / repair No2 field.
21-Nov-17	11:52	4m	unplanned	Delay when 1020 out on high
21-Nov-17	12:11	4m	unplanned	Delay to sinter through due to loss of temps
21-Nov-17	18:51	17m	unplanned	Underspeed needed adjusting
21-Nov-17	22:11	1h 47m	unplanned	Repairing 2 holes on 1021
21-Nov-17	03:02	2m	unplanned	Checking repairs on 1021
21-Nov-17	07:19	4h 48m	unplanned	Delay to replace 1021 belt due to damage.
22-Nov-17	23:17	1h 25m	unplanned	T/E buried due to issues with 1021 conveyor clip joint and material on return
22-Nov-17	02:30	9m	unplanned	Tracking issues
22-Nov-17	19:22	36m	unplanned	pallet change for hole 134 on 120 off
22-Nov-17	13:35	55m	unplanned	Stopped to carry out rail repairs to south rail on lifting wheel strand level.
22-Nov-17	18:47	17m	unplanned	Delay to inspect strand due to main breaker tripping out
22-Nov-17	14:30	52m	unplanned	Wheel off conveyor
22-Nov-17	03:48	17h 45m	Planned Maintenance	Planned maintenance
22-Nov-17	22:42	1h 36m	Environmental	stopped to avoid 4 hourly WG breach
22-Nov-17	00:48	1h 0m	unplanned	Hearth layer bin run empty at 39.7% and cooler was not full.
23-Nov-17	03:12	24m	unplanned	Hearth layer bin run empty again and cooler was not full.
24-Nov-17	18:33	2m	unplanned	Lump detector activated (mixer lump)

Signed on behalf of the operator
Date: 03-Jan-18

RELEASES INTO AIR

Form Sinter Operational Cont.

Iron Ore Sintering - Record of strand stoppages > 00-Jan-00

Operator: Tata Steel UK Ltd
 Location: Port Talbot Works
 Permit: BL7108 / RP3730BV

Iron Ore Sintering - Record of strand stoppages > 30 minutes				
Date	Time	Duration (mins)	Planned/	Reason
25-Nov-17	08:28	8m	unplanned	
25-Nov-17	11:21	1h 31m	unplanned	Delay to remove several scaffolding poles in chute, and inspect 1065 joint
26-Nov-17	16:48	4m	unplanned	Delay to replace damaged patch on 1065 conveyor joint
28-Nov-17	18:09	40m	unplanned	delay to remove flap on 1065
28-Nov-17	20:00	30m	unplanned	NDE horizontal trip
29-Nov-17	21:35	11m	unplanned	1002 stopping
29-Nov-17	21:48	8m	unplanned	1002 stopping
30-Nov-17	22:08	5m	unplanned	1002 stopping
30-Nov-17	22:15	1h 16m	unplanned	1002 stopping
02-Dec-17	23:36	8m	unplanned	1002 stopping
03-Dec-17	00:57	30m	unplanned	1002 stopping
03-Dec-17	07:47	47m	unplanned	switching water cooling pumps over from North to south pump due to leak and both pumps tripped tripping the WG Fans
03-Dec-17	08:46	3m	unplanned	when permitting North cooling water pump both pumps tripped again.
04-Dec-17	15:56	12m	unplanned	trip activated by falling material from No4 weigh feeder
04-Dec-17	17:36	52m	unplanned	1022 dropped out, checks carried out posibel belt slipping?
05-Dec-17	14:50	13m	unplanned	Sinter Temps / Strand conditions
05-Dec-17	16:54	17m	unplanned	Sinter Temps / Strand Conditions
05-Dec-17	17:14	11m	unplanned	Screen dropped out.
06-Dec-17	17:21	1h 35m	unplanned	Issue with 1065 con found stringer wrapped around dwt drum and along length of belt north side approx 2" wide
06-Dec-17	20:57	11m	unplanned	Stopped to sinter through - issues with return lines chute blocked.
07-Dec-17	23:26	2m	unplanned	strand stopped, 1009 e stop??? plant came in on voltage
08-Dec-17	23:31	33m	unplanned	Å 1065 dropped out found dead weight built up with material and bottoming out close to ground floor level. material removed and dead weight dropped slightly.
08-Dec-17	03:18	24m	unplanned	Å Another 2" stringer found on 1065 dead weight, same removed. Was around 30m long
08-Dec-17	04:49	11h 2m	unplanned	Conveyor has failed, crash spare being fitted.
08-Dec-17	16:53	6m	unplanned	1020 Bin Hi-hi
08-Dec-17	17:21	9m	unplanned	Loss of sinter temps along strand.
09-Dec-17	23:01	3m	unplanned	1020 Hi-Hi
04-Dec-17	23:55	6m	unplanned	1020 Hi-hi
06-Dec-17	09:26	49m	unplanned	U/Speed fault. Same changed
10-Dec-17	14:27	7m	unplanned	Trip activated, no persons in area. Possible falling sinter
10-Dec-17	02:52	5m	unplanned	Lumps at roll feeder / mixer failed to come in on restart
11-Dec-17	14:40	1m	unplanned	cooler dropped out with no alarm
12-Dec-17	07:00	8h 8m	Planned Maintenance	planned maintenance
12-Dec-17	15:52	3m	unplanned	1020 bin empty on start up so in manual few issues after plant started and 1020 went out on hihi
12-Dec-17	15:15	4m	unplanned	1020 feeder HiHi
13-Dec-17	15:30	2m	unplanned	1020 Hi Hi
13-Dec-17	15:47	35m	unplanned	Å Material built up on tail end causing belt to track south. Stopped to removed build up and belt then tracked over.
13-Dec-17	04:50	2h 10m	unplanned	1028 conv stopped empty causing the product bin to take us out on hihi.

Signed on behalf of the operator
 Dated: 03-Jan-18



Form Sinter Operational Cont.

Operator: Tata Steel UK Ltd
Location: Port Talbot Works
Permit: BL7108 / RP3730BV

Signed on behalf of the operator
Dated: 03-Jan-18

Signed on behalf of the operator
Dated: 03-Jan-18

RELEASES INTO AIR

Operational summary for quarter ending 31-Dec-17

Operator: Tata Steel UK Ltd

Location: Port Talbot Works

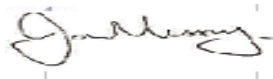
Permit: BL7108 / RP3730BV / BL7108IM (V009)

Release Points: A10A & A63

PARTICULATE MATTER (mg/Nm3) - CONTINUOUS EMISSIONS MONITORING											
Release point	Month	Limit	Maximum daily mean	Minimum daily mean	Standard deviation of daily means	Maximum hourly mean	Minimum hourly mean	Standard deviation of hour means	Monthly mean	abatement availability %	% data capture over month
A10A	Oct	15	1.1	0.4	1.1	11.0	0.5	0.4	0.7	100%	100%
	Nov	Daily mean	1.1	0.7	0.6	5.0	0.9	1.9	0.9	100%	100%
	Dec		1.2	0.7	0.5	14.8	0.9	0.4	0.9	100%	100%
A63	Oct	25	Inconsistent data during the period - to be investigated.								
	Nov	Hourly mean									
	Dec										

Signed on behalf of the Operator

Dated 03/01/18



Form I&S CEMS Part 3

RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-17

Operator: Port Talbot Works

Location: Port Talbot Works

Permit: BL7108 / RP3730BV

	NOx (tonnes)	Lead (tonnes)	PM10 (tonnes)	CO2 (k tonnes)
Morfa	504			
Iron & Steel	650	1.7	310	1476
Total	1154	1.7	310	1476

Signed on behalf of the Operator

Dated 24/01/18



Form KPI

RELEASES INTO AIR

Operational Summary for quarter ending 31-Dec-17

Operator: Tata Steel Strip Products UK

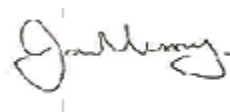
Location: Port Talbot Works

Permit: BL7108

Release Points:

PARTICULATE MATTER (DISCONTINUOUS MONITORING)		
Release Point	A6	A7
Time and date of sampling	30-Oct-17 10:41	26-Oct-17 11:24
Flowrate (Nm3/hr)	248,843	201,039
Particulate measured conc. (mg/Nm3)	7.8 (+/-0.7)	2.0 (+/-1.0)
Particulate limit (mg/Nm3)	10	10
Sampling method used	BS EN 13284	BS EN 13284
Analytical method used	Gravimetric	Gravimetric
Fuel Usage		
Natural gas (%)	3%	0%
BF gas (%)	70%	96%
Coke oven gas (%)	5%	4%
BOS (%)	4%	

Signed on behalf of the Operator



Dated

15/01/2018

Form Blast Furnace DCM P

RELEASES INTO AIR

Operational summary for quarter ending

31-Dec-17

Operator: Tata Steel UK Ltd

Location: Port Talbot Works

Permit: BL7108

Release Points: A4A, A5A, & iron plating

Blast Furnace Bleeder (A4A,A5A) openings					
Bleeder(s)	Date	Time	Duration (s)	Reason	Preventative actions taken
5	10-Dec-17	08:50:12:40/13:20/14:20/15:25	16s/17s/16s/15s/15s	Furnace in checking practice all coke on way down. South bleeder failed to close x 2 same flashed, and set last to open.	1. Continue to manage the higher fines loading through screening the material and reclaim management of the piles – Raw materials team. 2. Continue to investigate sinter quality issues to understand the root cause of the poor sinter – Technical team. 3. Speak to LKAB pellets about the high fines loading in the current cargo – Technical team.
4	29-Dec-17	08:25:00/16:10	9s	Whilst reducing high top pressure to bring BF4 off blast the semi - clean bleeder opened.. same closed and re-selected to auto oly to re-open.	1. Review sinter plant operations when operating with single fan and negative impact on sinter quality – SP Technical. 2. Raise concerns with LKAB KPBCO quality with supplier and mitigate for poor quality issues – BF Technical
5	31-Dec-17	17:15	15s	Snort was already opened in readiness for checking furnace during period of unsettled process, snort opened further but unfortunately unable to avoid the semi clean bleeder opening.Pressure relieved and bleeder closed.	1. Continue to manage the higher fines loading through screening the material and reclaim management of the piles – Raw materials team. 2. Continue to investigate sinter quality issues to understand the root cause of the poor sinter – Technical team. 3. Speak to LKAB pellets about the high fines loading in the current cargo – Technical team.
5	01-Oct-17	06:22/23:07/23:16/00:36/01:57/02:21/02:51	14,17,9,15,13,13 seconds	High levels of slag alumina was recorded in the slag up to 24hrs after recovering the furnace thermal level. It is likely that when the liquidous temperature was less than 1400°C not all of the slag was being removed from the furnace and especially higher alumina slag was left behind which also would have increased the furnace	Update the unplanned shutdown procedure to include actions to take including burdening for a safe coke rate if there are two consecutive shutdowns before the furnace has been thermally compensated. Update and distribute the out of control furnace process procedure to include actions for a severe thermal dip.Change all the dowlleg baggins at the next available opportunity to avoid further unplanned shutdowns
Total BF4			1		
Total BF5			3		

RELEASES INTO AIR

Operational summary for the six months to

31-Dec-16

Operator: Tata Steel UK Ltd

Release Point: A1

Location: Port Talbot Works

Permit: BL7108

Release Point	Sinter Main (A1)				
	No Longer a requirement in the permit	PAH's * (ug/Nm3)	Dioxins** (ng/Nm3)	Dioxins *** (ng/Nm3)	Mercury (mg/Nm3)
Permit limit			0.4		0.05
Measured conc. according to condition 10.1.3b		70.0 (+/- 15.9)	0.48 (+/- 0.08)	0.50 (+/- 0.08)	0.01 (+/-0.007)
Measured oxygen (%)		17.0	17.0	17.0	17.0
Measured conc. according to condition 10.1.3a (17%O2)		70.0	0.5	0.5	0.01
Cogeners<LoD at zero			0.48	0.50	
Cogeners<LoD at LoD			0.48	0.50	
Analytical method used		BS ISO 11338	BS EN 1948	BS EN 1948	BS EN 13211
Date of sampling		25-Apr-17	25-Apr-17	25-Apr-17	26-Jun-17
Sample start time		11:41	11:41	11:41	10:07
Sample end time		16:57	16:55	16:55	13:03
Limit of detection		0.6	0.001	0.001	0.090
Continuous particulate result during sampling (hourly mean)		8	8	8	12
Process status at time of sam					
Mean sulphur content of sinter blend in use (%)		0.042	0.042	0.042	0.041
Reverts content of sinter blend in use (%)		9.9	9.9	9.9	10.1
Mean chloride content of sinter blend in use (%)		0.016	0.016	0.016	N/A
Throughput during sampling period (% of maximum)		50	50	50	46

* PAH's as B[a]P

** Dioxins and furans as ITEQ

*** Dioxins and furans as WHO TEQ

- Data not available from labs as samples were not received for analysis. This has been investigated and an improvement has been put in place to resolve this issue.

Nb: Dioxins and Furans ITEQ ng/m3 Limit on average of all extractive spot sample carried out by the operator during a single calendar year.

Average of all extractive spot samples in 2016 - 0.3875ng/Nm3

Signed on behalf of the Operator

Dated

12/01/2018

Form Sinter DCM 2

RELEASES INTO AIR

Operational Summary for the month Oct-2017

Operator: Tata Steel UK Ltd

Permit: BL7108 / RP3730BV

Location: Port Talbot Works

Release Point: A1

Day	% max throughput	% data capture	% EP availability	% UJT availability	Sinter Blend			Particulate Matter (mg/m3)								
								Daily average	4 hour rolling average				Hourly average			
					Mean sulphur % w/w	Mean chloride % w/w	Mean reverts % w/w		Maximum	Mean	Minimum	Standard deviation	Maximum	Mean	Minimum	Standard deviation
01-Oct-17	69	100%	100%	88%	0.046	0.03	8.31%	78	121	79	41	25	216	78	10	41
02-Oct-17	73	100%	100%	71%	0.046	0.03	8.31%	78	118	81	52	20	179	78	0	34
03-Oct-17	54	100%	100%	47%	0.046	0.03	8.31%	68	124	66	0	32	173	68	0	49
04-Oct-17	62	100%	100%	22%	0.04	0.014	9.66%	74	100	75	39	18	135	74	0	36
05-Oct-17	69	100%	100%	17%	0.04	0.014	9.66%	41	69	43	27	9	77	41	0	15
06-Oct-17	53	100%	100%	42%	0.04	0.014	9.66%	36	61	35	0	14	75	36	0	21
07-Oct-17	62	100%	100%	100%	0.04	0.014	9.66%	21	59	24	0	24	66	21	0	26
08-Oct-17	68	100%	100%	99%	0.04	0.014	9.66%	36	61	33	0	26	74	36	0	27
09-Oct-17	3	100%	100%	100%	0.04	0.014	9.66%	9	96	13	0	30	201	9	0	41
10-Oct-17	No Data Available at this time sinter plant was off line															
11-Oct-17																
12-Oct-17																
13-Oct-17																
14-Oct-17																
15-Oct-17																
16-Oct-17																
17-Oct-17																
18-Oct-17																
19-Oct-17																
20-Oct-17	8	100%	100%	100%	0.04	0.014	9.66%	53	217	48	0	75	300	53	0	89
21-Oct-17	18	100%	100%	100%	0.04	0.014	9.66%	60	137	59	0	44	165	60	0	54
22-Oct-17	32	100%	100%	100%	0.04	0.014	9.66%	39	88	41	2	21	88	39	0	27
23-Oct-17	49	100%	100%	100%	0.04	0.014	9.66%	37	55	37	16	9	69	37	0	17
24-Oct-17	54	100%	100%	100%	0.041	0.014	11.40%	42	69	42	14	12	141	42	0	28
25-Oct-17	56	100%	100%	100%	0.041	0.014	11.40%	49	97	47	9	18	179	49	0	34
26-Oct-17	40	100%	100%	100%	0.041	0.014	11.40%	42	80	44	0	26	107	42	0	35
27-Oct-17	70	100%	100%	100%	0.041	0.014	11.40%	66	111	62	21	28	147	66	25	29
28-Oct-17	49	100%	100%	100%	0.041	0.014	11.40%	61	113	61	0	30	154	61	0	42
29-Oct-17	65	100%	100%	100%	0.041	0.014	11.40%	71	105	72	50	15	166	71	42	26
30-Oct-17	50	100%	100%	100%	0.041	0.014	11.40%	57	92	59	16	24	131	57	0	35
31-Oct-17	64	100%	100%	100%	0.041	0.014	11.40%	57	73	50	33	13	89	50	23	16
Month ave	41	100%	100%	90%	0.04	0.02	0.1	34	-	40	-	-	-	34	-	-
Month max.	73	-	-	-	0.05	0.03	0.1	78	217	-	-	-	300	-	-	-
Limit	-	-	-	-	0.06	-	-	40	-	-	-	-	-	-	-	-

* No data available.

Signed on behalf of the Operator

Dated 22/12/2017

Form Sinter CEMS

RELEASES INTO AIR

Operational Summary for the month Nov-2017

Operator: Tata Steel UK Ltd

Permit: BL7108 / RP3730BV

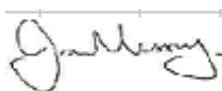
Location: Port Talbot Works

Release Point: A1

Day	% max throughput	% data capture	% EP availability	% UJT availability	Sinter Blend			Daily average	Particulate Matter (mg/m3)							
					Mean sulphur % w/w	Mean chloride % w/w	Mean reverts % w/w		4 hour rolling average				Hourly average			
									Maximum	Mean	Minimum	Standard deviation	Maximum	Mean	Minimum	Standard deviation
01-Nov-17	58	100%	100%	100%	0.041	0.014	11.40%	78	133	79	21	33	194	78	0	41
02-Nov-17	30	100%	100%	100%	0.048	0.013	11.16%	65	125	65	0	47	246	65	0	66
03-Nov-17	61	100%	100%	100%	0.048	0.013	11.16%	96	145	97	60	24	245	96	55	38
04-Nov-17	70	100%	100%	100%	0.048	0.013	11.16%	105	141	101	74	18	236	105	74	33
05-Nov-17	68	100%	100%	100%	0.048	0.013	11.16%	97	139	100	80	19	162	97	63	24
06-Nov-17	56	100%	100%	100%	0.048	0.013	11.16%	84	126	85	0	33	160	84	0	50
07-Nov-17	63	100%	100%	100%	0.051	0.016	13.21%	35	94	39	0	40	141	35	0	44
08-Nov-17	19	100%	100%	100%	0.051	0.016	13.21%	0	0	0	0	0	0	0	0	0
09-Nov-17	1	100%	100%	100%	0.051	0.016	13.21%	0	0	0	0	0	0	0	0	0
10-Nov-17	14	100%	100%	100%	0.051	0.016	13.21%	88	287	80	0	108	301	88	0	119
11-Nov-17	40	100%	100%	100%	0.051	0.016	13.21%	91	160	94	0	48	176	91	0	61
12-Nov-17	60	100%	100%	100%	0.051	0.016	13.21%	82	107	80	56	16	125	82	48	23
13-Nov-17	62	100%	100%	100%	0.051	0.016	13.21%	91	129	91	62	23	151	91	58	28
14-Nov-17	64	100%	100%	100%	0.051	0.016	13.21%	108	122	108	93	9	201	108	77	28
15-Nov-17	20	100%	100%	100%	0.051	0.016	13.21%	43	121	47	0	53	160	43	0	58
16-Nov-17	65	100%	100%	100%	0.048	0.012	14.68%	87	194	86	50	42	206	87	44	52
17-Nov-17	67	100%	100%	100%	0.048	0.012	14.68%	51	62	50	40	7	78	51	36	11
18-Nov-17	79	100%	100%	100%	0.048	0.012	14.68%	66	80	65	45	11	101	66	44	16
19-Nov-17	74	100%	100%	100%	0.048	0.012	14.68%	106	143	99	66	20	247	106	53	45
20-Nov-17	29	100%	100%	100%	0.048	0.012	14.68%	64	181	72	0	58	299	64	0	73
21-Nov-17	64	100%	100%	100%	0.048	0.012	14.68%	65	130	65	33	29	223	65	0	44
22-Nov-17	55	100%	100%	100%	0.048	0.019	14.76%	66	97	64	38	18	128	66	17	33
23-Nov-17	74	100%	100%	100%	0.048	0.019	14.76%	84	142	85	59	27	192	84	54	38
24-Nov-17	58	100%	100%	100%	0.048	0.019	14.76%	65	102	66	31	15	145	65	0	36
25-Nov-17	78	100%	100%	100%	0.048	0.019	14.76%	84	118	80	42	23	151	84	42	31
26-Nov-17	70	100%	100%	100%	0.048	0.019	14.76%	56	89	60	43	13	138	56	33	20
27-Nov-17	74	100%	100%	100%	0.048	0.019	14.76%	94	124	91	57	19	154	94	65	25
28-Nov-17	32	100%	100%	100%	0.04	0.013	15.99%	89	207	86	0	62	294	89	0	89
29-Nov-17	46	100%	100%	100%	0.04	0.013	15.99%	69	168	75	0	55	231	69	0	62
30-Nov-17	41	100%	100%	100%	0.04	0.013	15.99%	47	106	49	0	33	232	47	0	58
Month ave	53	100%	100%	100%	0.05	0.01	0.1	72	-	72	-	-	-	72	-	-
Month max.	79	-	-	-	0.05	0.02	0.2	108	287	-	-	-	301	-	-	-
Limit	-	-	-	-	0.06	-	-	40	-	-	-	-	-	-	-	-

* No data available.

Signed on behalf of the Operator



Dated 26/01/2018

Form Sinter CEMS

RELEASES INTO AIR

Operational Summary for the month Dec-2017

Operator: Tata Steel UK Ltd

Permit: BL7108 / RP3730BV

Location: Port Talbot Works

Release Point: A1

Day	% max throughput	% data capture	% EP availability	% UJT availability	Sinter Blend			Particulate Matter (mg/m3)								
					Mean sulphur % w/w	Mean chloride % w/w	Mean reverts % w/w	Daily average	4 hour rolling average				Hourly average			
									Maximum	Mean	Minimum	Standard deviation	Maximum	Mean	Minimum	Standard deviation
01-Dec-17	71	100%	100%	100%	0.0396	0.014	15.99%	53	66	56	38	8	76	53	32	12
02-Dec-17	49	100%	100%	100%	0.0396	0.014	15.99%	28	37	29	21	5	42	28	19	6
03-Dec-17	57	100%	100%	100%	0.0396	0.014	15.99%	38	65	37	21	13	87	38	20	16
04-Dec-17	38	100%	100%	100%	0.0396	0.014	15.99%	54	155	46	0	36	237	54	0	58
05-Dec-17	60	100%	100%	100%	0.0396	0.014	15.99%	102	179	109	65	26	192	102	0	40
06-Dec-17	31	100%	100%	100%	0.0379	0.014	14.52%	81	211	72	0	66	260	81	0	83
07-Dec-17	64	100%	100%	100%	0.0379	0.014	14.52%	32	178	44	0	57	140	32	0	47
08-Dec-17	68	100%	100%	100%	0.0379	0.014	14.52%	25	46	23	0	18	59	25	0	20
09-Dec-17	71	100%	100%	100%	0.0379	0.014	14.52%	59	114	59	33	27	137	59	30	30
10-Dec-17	72	100%	100%	100%	0.0379	0.014	14.52%	60	79	60	45	10	86	60	25	16
11-Dec-17	66	100%	100%	100%	0.0379	0.017	9.35%	58	77	58	35	11	95	58	0	22
12-Dec-17	67	100%	100%	100%	0.0379	0.017	9.35%	46	82	46	26	15	138	46	0	25
13-Dec-17	35	100%	100%	100%	0.0379	0.017	9.35%	54	138	51	0	42	204	54	0	62
14-Dec-17	32	100%	100%	100%	0.0379	0.017	9.35%	51	139	52	0	45	262	51	0	63
15-Dec-17	82	100%	100%	100%	0.0379	0.017	9.35%	67	116	62	47	16	181	67	42	34
16-Dec-17	69	100%	100%	100%	0.0379	0.017	9.35%	52	125	58	34	27	105	52	11	24
17-Dec-17	80	100%	100%	100%	0.0379	0.014	8.86%	52	62	51	42	6	84	52	40	10
18-Dec-17	81	100%	100%	100%	0.0379	0.014	8.86%	80	94	78	62	9	105	80	32	16
19-Dec-17	61	100%	100%	100%	0.0379	0.014	8.86%	57	108	60	17	28	117	57	0	35
20-Dec-17	15	100%	100%	100%	0.0379	0.014	8.86%	13	58	15	0	20	118	13	0	28
21-Dec-17	56	100%	100%	100%	0.0379	0.014	8.86%	64	163	60	12	40	301	64	0	61
22-Dec-17	80	100%	100%	100%	0.0379	0.014	8.86%	39	63	40	28	11	62	39	10	12
23-Dec-17	77	100%	100%	100%	0.0379	0.014	3.83%	36	56	37	19	9	86	36	0	16
24-Dec-17	55	100%	100%	100%	0.0379	0.014	3.83%	30	46	29	19	8	92	30	16	17
25-Dec-17	82	100%	100%	100%	0.0379	0.014	3.83%	47	58	47	35	6	66	47	27	10
26-Dec-17	73	100%	100%	100%	0.0379	0.014	3.83%	43	91	44	24	21	125	43	20	27
27-Dec-17	73	100%	100%	100%	0.0379	0.016	6.29%	66	123	61	34	24	150	66	29	31
28-Dec-17	45	100%	100%	100%	0.0379	0.016	6.29%	82	210	87	0	59	302	82	0	81
29-Dec-17	73	100%	100%	100%	0.0379	0.016	6.29%	63	97	61	43	17	188	63	18	30
30-Dec-17	83	100%	100%	100%	0.0379	0.016	6.29%	61	81	62	39	12	87	61	37	16
31-Dec-17	64	100%	100%	100%	0.0379	0.016	6.29%	61	137	82	48	26	171	82	16	29
Month ave	62	100%	100%	100%	0.04	0.01	0.1	53	-	54	-	-	-	54	-	-
Month max.	83	-	-	-	0.04	0.02	0.2	102	211	-	-	-	302	-	-	-
Limit	-	-	-	-	0.06	-	-	40	-	-	-	-	-	-	-	-

* No data available.

Signed on behalf of the Operator

Dated 25/01/2018

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