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		Review Date	January 2022		
Phumudzo Thivha	funi	D	ate: 2021/07/15		

Limpopo Dept. of Economic Development, Environment and Tourism Private Bag 9484 POLOKWANE 0700 Enquiries: TR. Rammutla Tel: 014 762 6375

ThivhafuniPO@ledet.gov.za

Ref: 12/4/12L-W2/A3 – Jan 2020 Rev1

Dear Phumudzo

MEDUPI POWER STATION MONTHLY EMISSIONS REPORT FOR THE MONTH OF JANUARY 2020

This document serves as a revised monthly report required in terms of Section 7.7.1 of Medupi Power Station Provisional Atmospheric Emission License (AEL), 12/4/12L-W2/A3.

This report is a reflection of Unit 2, 3, 4, 5 and 6 gaseous and particulate emissions performance against the AEL limit for the month of January 2020 only.

1. Raw Materials and Products

 Table 1: Quantity of raw materials and products for Unit 2, 3, 4, 5 and 6 in January 2020

Raw Materials and	Raw Material Type	Unit	Maximum Permitted Consumption/ Rate (Quantity)	Unit 2,3, 4, 5 and 6 consumption January 2020
Products	Coal	Tons/month	1 875 000	660 960
used	Fuel Oil	Tons/month	40 000	3517
Production Rates	Product/ By- Product Name	Unit	Maximum Production Capacity Permitted (Quantity)	Unit 2, 3, 4, 5 and 6 Production Rate in Month of January 2020
	Energy	MW	4 800	2867.9
	Ash Emitted	Tons/month	not specified	228.6

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Table 2: Daily consumption and production rates

	Report	table ho	ours of C	Operatio	n	Fu	el Cons	umption	(tons)	Production (MW)
Date	2	e	4	5	9		Oil		Coal	Units
Date	Unit 2	Unit	Unit 4	Unit	Unit	Aux Boiler	Units	Total	Units	2,3,4,5 &6
01- Jan-20	16.3	24.0	24.0	24.0	24.0	0	6	6	32742	3029.5
02- Jan -20	0.0	24.0	24.0	24.0	24.0	0	1	1	31796	2877.3
03- Jan -20	23.1	24.0	24.0	24.0	24.0	0	0	0	31134	2682.2
04- Jan -20	24.0	24.0	24.0	24.0	24.0	0	255	255	27079	2530.0
05- Jan -20	24.0	24.0	24.0	24.0	24.0	0	97	97	26131	3008.9
06- Jan -20	24.0	24.0	24.0	24.0	24.0	0	86	86	31057	3054.3
07- Jan -20	24.0	24.0	24.0	24.0	24.0	0	15	15	31266	3020.1
07- Jan -20	24.0	24.0	23.9	24.0	24.0	0	33	33	29830	2867.6
09- Jan -20	24.0	24.0	0.0	24.0	24.0	0	57	57	30423	2437.3
10- Jan -20	5.9	24.0	0.0	24.0	24.0	0	103	103	22673	2818.7
11- Jan -20	1.7	24.0	21.8	24.0	24.0	0	397	397	26889	2543.5
12- Jan -20	0.0	24.0	24.0	24.0	24.0	0	242	242	27113	2642.1
13- Jan -20	22.2	24.0	24.0	24.0	24.0	0	52	52	28297	2655.7
14- Jan -20	24.0	24.0	24.0	10.2	24.0	0	87	87	28945	2958.7
15- Jan -20	24.0	24.0	24.0	4.3	24.0	0	140	140	29764	3272.2
16- Jan -20	1.8	24.0	24.0	24.0	24.0	0	13	13	34311	2827.0
17- Jan -20	4.1	24.0	24.0	24.0	24.0	0	254	254	26517	3140.2
18- Jan -20	24.0	24.0	24.0	24.0	24.0	0	44	44	33420	2822.8
19- Jan -20	24.0	24.0	24.0	24.0	24.0	0	61	61	29998	3010.1
20- Jan -20	24.0	24.0	24.0	24.0	24.0	0	83	83	30238	2603.1
21- Jan -20	24.0	24.0	24.0	24.0	24.0	0	285	285	27608	2477.0
22- Jan -20	24.0	8.4	23.3	24.0	24.0	0	289	289	26818	2727.5
23- Jan -20	24.0	4.8	0.0	24.0	24.0	0	253	253	28178	2620.9
24- Jan -20	24.0	24.0	0.0	24.0	24.0	0	47	47	28162	2340.2
25- Jan -20	24.0	24.0	0.0	24.0	23.5	0	166	166	25365	2792.4
26- Jan -20	24.0	0.0	19.3	24.0	0.0	0	132	132	28953	1817.2
27- Jan -20	24.0	0.0	24.0	24.0	0.0	0	19	19	19325	2077.3
28- Jan -20	24.0	0.0	24.0	24.0	4.8	0	178	178	21156	2417.0
29- Jan -20	24.0	0.0	24.0	24.0	24.0	0	45	45	25650	2403.1
30- Jan -20	24.0	0.0	24.0	24.0	24.0	0	11	11	25522	2354.3
31- Jan -20	24.0	0.0	24.0	24.0	24.0	0	20	20	25054	2366.7

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2. Abatement Technology

 Table 3: Abatement Equipment Control Technology utilisation for month of January 2020

Associated Unit/Stack	Technology Type	Efficiency
Unit 1	Fabric Filter Plant (FFP)	-
Unit 2	Fabric Filter Plant (FFP)	99.954%
Unit 3	Fabric Filter Plant (FFP)	99.897%
Unit 4	Fabric Filter Plant (FFP)	99.913%
Unit 5	Fabric Filter Plant (FFP)	99.896%
Unit 6	Fabric Filter Plant (FFP)	99.693%

3. Energy Source Characteristics

Table 4: Energy Source Material Characteristics for the month of January 2020

Characteristic	Stipulated RangeMonthly Average Content(% by weight on a dry basis)(% by weight on a dry basis)				
	Coal				
Sulphur Content	1.3 - 2.2	2.08			
Ash Content	35 - 39	33.2			

 Table 5: Energy Source Material Characteristics for the month of January 2020

Characteristic	Stipulated Range (%) Monthly Average Content (%)				
	Oil				
Sulphur Content	0.5 - 3.5	2.4			
Ash Content	0.02 - 0.1	0.011			

4. Emissions Reporting

Medupi Power Station uses Continuous Emission Monitoring System which uses the extractive method for analysis.

The emission limits are as follows:

 SO_2 Monthly = 3500 mg/Nm³

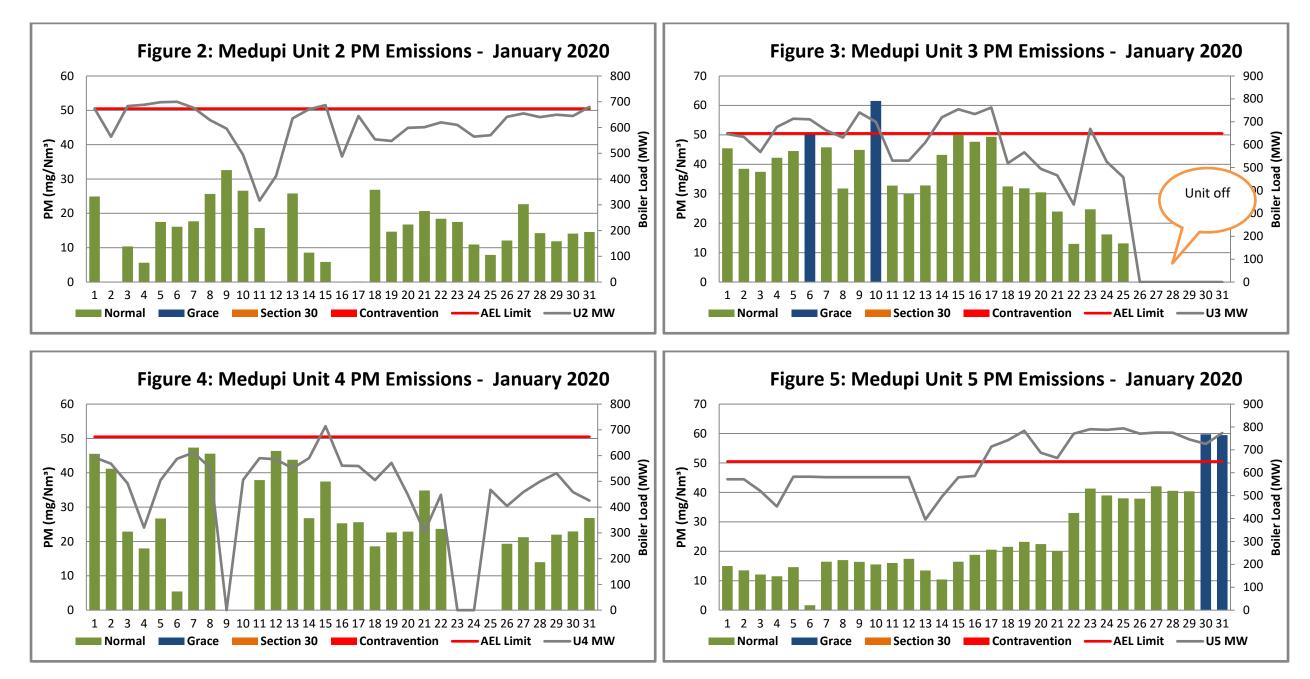
Dust Daily= 50 mg/Nm³

NO₂ Daily= 750 mg/Nm³

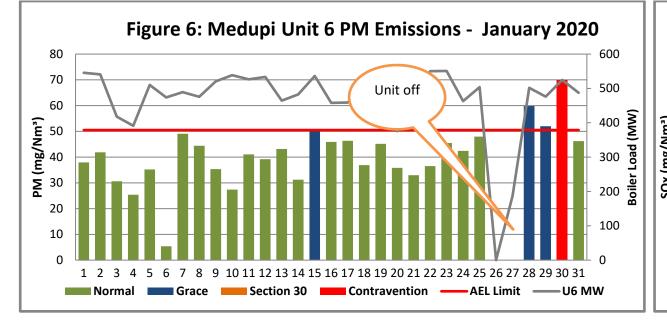
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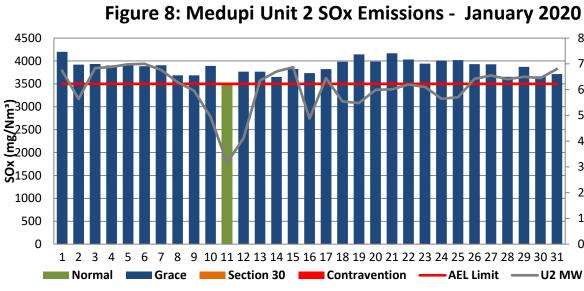
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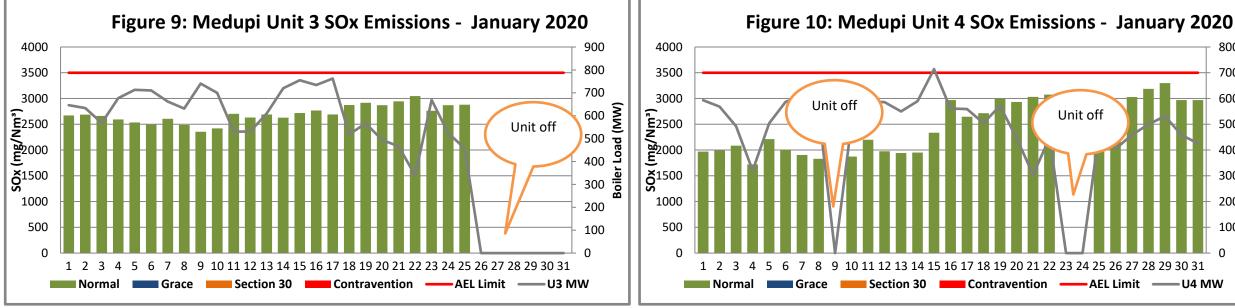
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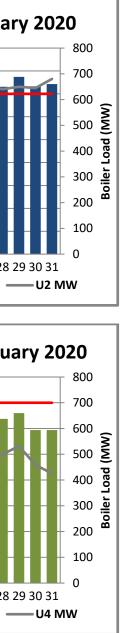


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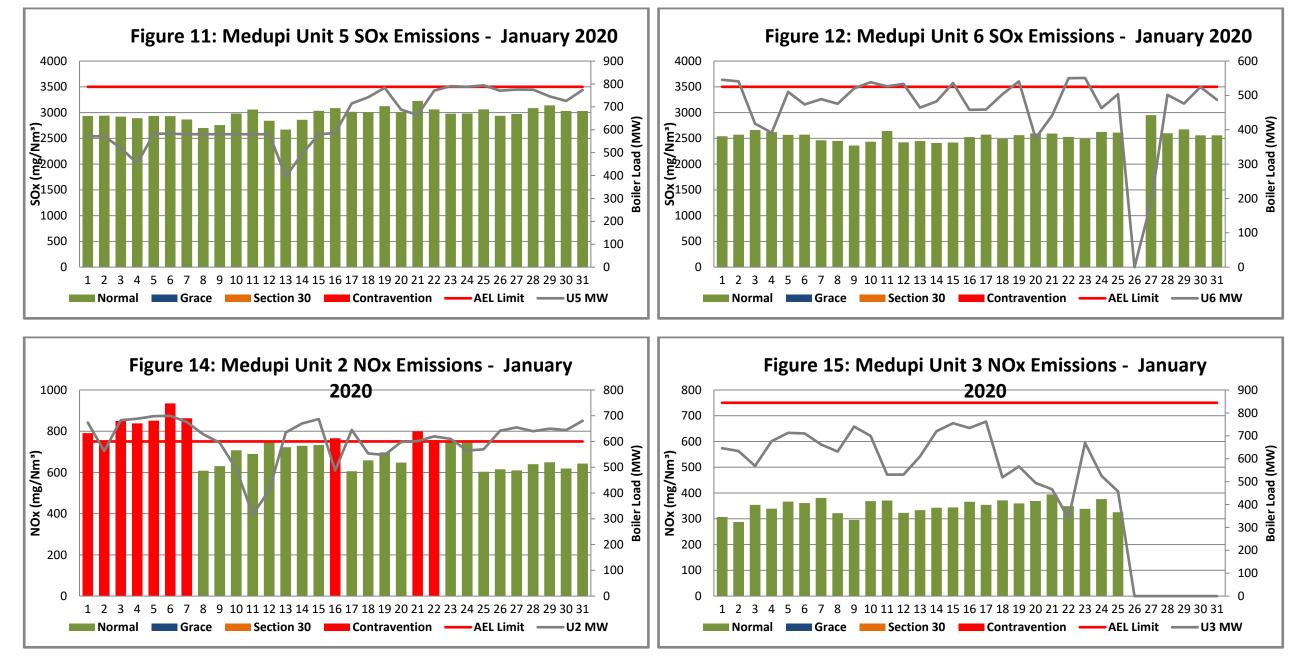




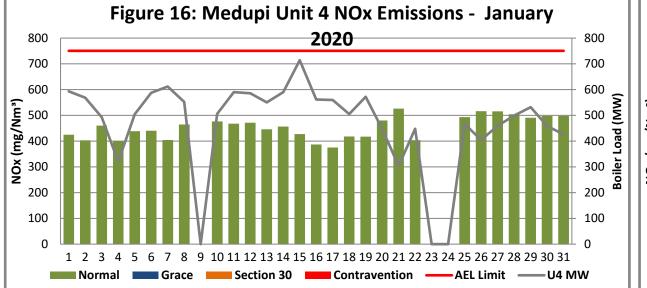


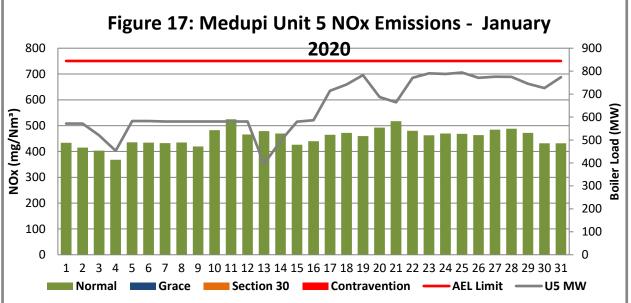


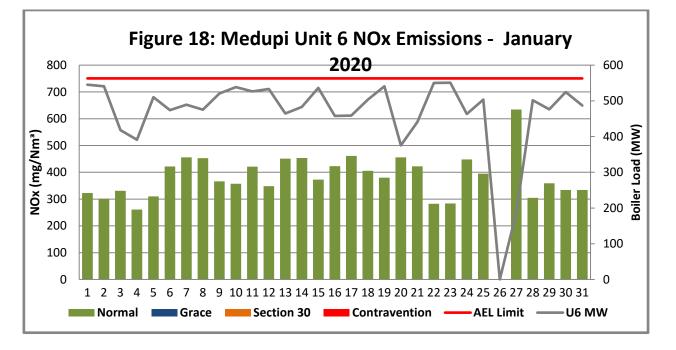
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Table 6: Monthly tonnages for the month of January 2020

Unit	PM (tons)	SO ₂ (tons)	NO ₂ (tons)	CO (tons)
1	-	-	-	-
2	27.7	7 008	1 296	108
3	52.2	3 714	482	49
4	37.9	3 998	763	36
5	60.7	8 572	1 306	30
6	57.3	4 596	696	57
SUM	235.8	27 888	4 542	280

5. Comments on the performance and availability of each unit

NOx exceeded the limit 10 times on unit 2, Unit 6 PM emissions exceeded the limit on 4 occasions as reflected on the Unit 6 graph above. Unit 2 exceeded SO₂ the Monthly emissions limit of 3500mg/Nm³, this is due to high sulphur content in the coal. Unit 3 and 5 exceeded the limit on two occasions, particulate emissions are associated with .damaged bags in the PJFF Plant.

6. Continuous Emission Monitoring Systems (CEMS)

Unit 2, 3, 4, 5 and 6 Continuous Emission Monitoring Systems were in operation at all times when the unit was on load.

CEMS CO_2 monitor verification test not yet conducted on all Units as a result of challenges on the equipment, the Power Station received the spares new spares and has started with the process of replacement.

Table 7: Periods during which	CEMS was inoperative
-------------------------------	----------------------

Date	Time	CEMS status	Comments
N/A	N/A	N/A	Data for the reporting period is available

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Table 8: CEMS Monitor Reliability

Associated Unit/Stack	РМ	SO2	NO	02
Unit 1	-	-	-	-
Unit 2	99.6	99.6	98.0	98.2
Unit 3	100.0	99.9	99.9	99.9
Unit 4	99.5	95.0	96.8	94.4
Unit 5	99.6	99.3	99.3	99.3
Unit 6	99.6	99.2	99.2	99.2

7. CEMS Calibration certificates and equipment used for calibration

See attached Appendix A

8. Ambient Air Quality Monitoring Report

The Ambient Air Quality Monitoring and Dust fall-out report are emailed to the Licensing authority on a monthly basis.

9. Visual inspection of the exterior walls of the fuel oil tanks and TVOC Estimation

Visual inspection was conducted and there were no leaks observed on the exterior walls of the fuel oil tanks.

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Table 9: Total Volatile Organic Compound (TVOC) for January 2020

FINAL OUTPUT:	Result	Unit
Breathing losses:	0.7	4 kg/month
Working losses:	0.1	0 kg/month
TOTAL LOSSES (Total TVOC Emissions for the month):	0.8	4 kg/month

10. Air quality improvements initiatives and public education and awareness campaigns

No awareness campaign.

11. Complaints Register

Table 10: Complaints for the month of January 2020

Source Code/ Name	Air pollution complaints received	Calculation of Impacts/ emissions associated with the incident	Date of complaint and date of response by the license holder	Results of investigation	Action taken to resolve the complaint
N/A	No complaints received	N/A	N/A	N/A	N/A

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Compiled by:	Lufuno Tshidzumba
Verified by:	Malose Langa System Engineer Boiler
Supported by:	Sithokozile Hlongwa pp Boller Engineering Manager
Supported by:	Rosetta Rammutla Environmental Manager
Supported by:	Jabulani Mkhatshwa Engineering Group Manager

I Dan Mashigo, declares that the information provided in this report is accurate and correct.

Yours sincerely

Dan Mashigo GENERAL MANAGER: MEDUPI POWER STATION (Acting)

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APPENDIX 1: CEMS Calibration certificates

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		C	ALIBRATIC	ON CE	RTIFI	CATE			
							CERT	FIFICATE	NO:
								3316	
CUST	OMER:		Medupi Pow	er Station	1	JOB N	0:	SC1593	
CONT	ACT NAM	E:	Christo Vors	ter		PHON	E:	014 762	2255
MODE	EL:		Dr Fodisch N	/GA 23		SERIA	L NO:	13668	
AUXI	LIARYEQ	UIPMENT:	Unit 4						
c	HAN	PRIOR	FINAL	TEST GAS		GAS	CERT	AS IFICATE MBER	EXPIRY DATE
1	ZERO	-4 ppm	0 ppm	Air	21.	0%		Air	
1	SPAN	807 ppm	804 ppm	co	803.9	9 ppm		ADA	
2	ZERO	-3 ppm	0 ppm	Air		0%		Air	
-	SPAN	819 ppm	851 ppm	NO		9 ppm		32	
3	ZERO	-13 ppm	0 ppm	Air		0%		Air	
	SPAN	2199 ppm	2162 ppm	802		7 ppm		05E	
4	ZERO SPAN	0.09 %	0.0 %	N2 02		19 % 15 %		132 Air	
Date o		nder standards tion: 2	ameter. Calibrati, , analysers were 26 Nov 2019 Feb 2020				un gus, i		I MUS GUILE
Techn	iician:		l Faber						
Å	zier+Lanc						GÌ		b .

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12 Angelier Street, Bardene, BOK3BURG, 3A, 1459 PO Box 328, ISANDO, 8A, 1600 VAT REG #: 421 021 2249 www.e-shalvitcs.co.za

Tel: 0861 000 032 Intl. Tel: +27 11 918 6994 Fax: +27 11 894 1037 CO REG #: 2004/007607/07 Info@e-analytics.co.za

		С	ALIBRATI	ON CE	rtifi	CAT			
							CERT	IFICATE	NO:
								3317	
CUST	OMER:		Medupi Pov	ver Station		JOB N	0:	SC1593	
CONT	ACT NAM	E:	Christo Vors	ster		PHON	E:	014 762	2255
MODE	iL:		Dr Fodisch I	MGA 23		SERIA	L NO:	13670	
AUXI	LIARYEQ	UIPMENT:	Unit 5						
c	HAN	PRIOR	FINAL	TEST GAS		GAS	CERT	AS IFICATE MBER	EXPIRY DATE
	ZERO	1 ppm	0 ppm	Air	21.	0 %		Air	
1	SPAN	761 ppm	804 ppm	co) ppm		0A	
	ZERO	-3 ppm	0 ppm	Air		0 %		Air	
2	SPAN	815 ppm	851 ppm	NO	850.9	9 ppm	1	32	
3	ZERO	-17 ppm	0 ppm	Air	21.	0%		Air	
-	SPAN	2206 ppm	2162 ppm	802	2161.	7 ppm	59	05E	
4	ZERO	-0.08 %	0.0 %	N2		9%	1	32	
-	SPAN	20.85 %	20.95 %	02	20.9	95 %		Air	
Date o	of Calibra	tion: 2	26 Nov 2019						
Calibr	ation Due	e Date: F	Feb 2020						
Techn	ician:		l Faber						
Techn A			J Faber						•
Å	zier+Long		J Faber				G	1	
J. Bit	zier+Lang RVO		J Faber			TE	LEDYN	E	RUMENTS

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			CALIBRATI		RIIFI	CAI			
							CERT	TIFICATE	NO:
								3318	
CUSTO	OMER:		Medupi Pov	ver Station	1	JOBN	IO:	SC1593	
CONT	ACT NAM	E:	Christo Vor	ster		PHON	IE:	014 762	2255
MODE	L:		Dr Fodisch	MGA 23		SERIA	L NO:	13669	
AUXIL	JARYEG	UIPMENT:	Unit 6						
c	HAN	PRIOR	FINAL	TEST GAS		GAS LUE	CERT	AS IFICATE MBER	EXPIRY DATE
1	ZERO	-3 ppm	0 ppm	Air	21.	0%		Air	
· ·	SPAN	817 ppm	804 ppm	co	803.9	9 ppm	8	ADA	
2	ZERO	-11 ppm	0 ppm	Air	21.	0%		Air	
•	SPAN	883 ppm	851 ppm	NO	850.9	9 ppm	1	32	
3	ZERO	-35 ppm	0 ppm	Air	21.	0%		Air	
<u> </u>	SPAN	2265 ppm	2162 ppm	802	2161.	7 ppm	55	05E	
	ZERO	0.03 %	0.0 %	N2	99.9	99 %	1	32	
-	SPAN	20.59 %	20.95 %	02	20.9	95 %		Air	
	ZERO SPAN RT: Inspe	0.03 % 20.59 % ct all sample	0.0 %	N2 02	99.5 20.5 te analy:	99 % 95 % sers with	zero ano	132 Ar İ span gas	, calibration
	f Calibra ation Du		26 Nov 2019 Feb 2020						





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CUSTOMER:						0000		NO.
						CER	TIFICATE	NO:
							3315	
CONTACT NA		Medupi Pow	er Station		JOB N	0:	SC1593	
	ME:	Christo Vors	ter		PHON	IE:	014 762	2255
MODEL:		Dr Fodisch M	IGA 23		SERIA	L NO:	15712	
AUXILIARYE	QUIPMENT:	Unit 3						
	1	1					AS	EXPIRY DATE
CHAN	PRIOR	FINAL	TEST GAS		GAS	CERT	IFICATE	EARIE
1 ZERO	8 ppm	0 ppm	Air	21.	0%		Air	
SPAN	802 ppm	804 ppm	co) ppm		80A	
2 ZERO	16 ppm	0 ppm	Air		0 %		Air	
SPAN	849 ppm	851 ppm	NO) ppm		132	
3 ZERO	23 ppm	0 ppm	Air		0%		Air	
SPAN	2227 ppm	2162 ppm	802		7 ppm		905E	
4 ZERO	0.05 %	0.0%	N2	99.9	99 %	1	132	
EPORT: Insp		20.95 % ines and rotamet standards, analy		te analy:		zero an		, calibration
REPORT: Insp as done accord	ect all sample l ling to cylinder	ines and rotamet standards, analy	er. Calibra	te analy:	sers with	zero an	d span gas	, calibration
EPORT: Insp	ect all sample l ling to cylinder	ines and rotamet	er. Calibra	te analy:	sers with	zero an	d span gas	, calibration
REPORT: Insp as done accord	ect all sample h ling to cylinder ation: 2	ines and rotamet standards, analy	er. Calibra	te analy:	sers with	zero an	d span gas	, calibration
SPAN REPORT: Insp as done accord	ect all sample h ling to cylinder ation: 2 ue Date: F	ines and rotamet standards, analy 26 Nov 2019	er. Calibra	te analy:	sers with	zero an	d span gas	, calibration
SPAN REPORT: Insp as done accord	ect all sample h ling to cylinder ation: 2 ue Date: F	ines and rotamet standards, analy 26 Nov 2019 Feb 2020	er. Calibra	te analy:	sers with	zero an	d span gas	, calibration
SPAN REPORT: Insp as done accord	ect all sample h ling to cylinder ation: 2 ue Date: F	ines and rotamet standards, analy 26 Nov 2019 Feb 2020	er. Calibra	te analy:	sers with	zero an test gas.	d span gas	, calibration
SPAN REPORT: Insp as done accord	ect all sample l ling to cylinder ation: 2 ue Date: 4	ines and rotamet standards, analy 26 Nov 2019 Feb 2020	er. Calibra	te analy:	sers with	zero an test gas.	d span gas	, calibration
EPORT: Insp	ect all sample h	ines and rotamet	er. Calibra	te analy:	sers with	zero an	d span gas	, calibratio

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