

Figure 6
Combustion Gas and VOC Emissions from Lithoman 2
Wyndeham Heron, Maldon (02/09/2009)

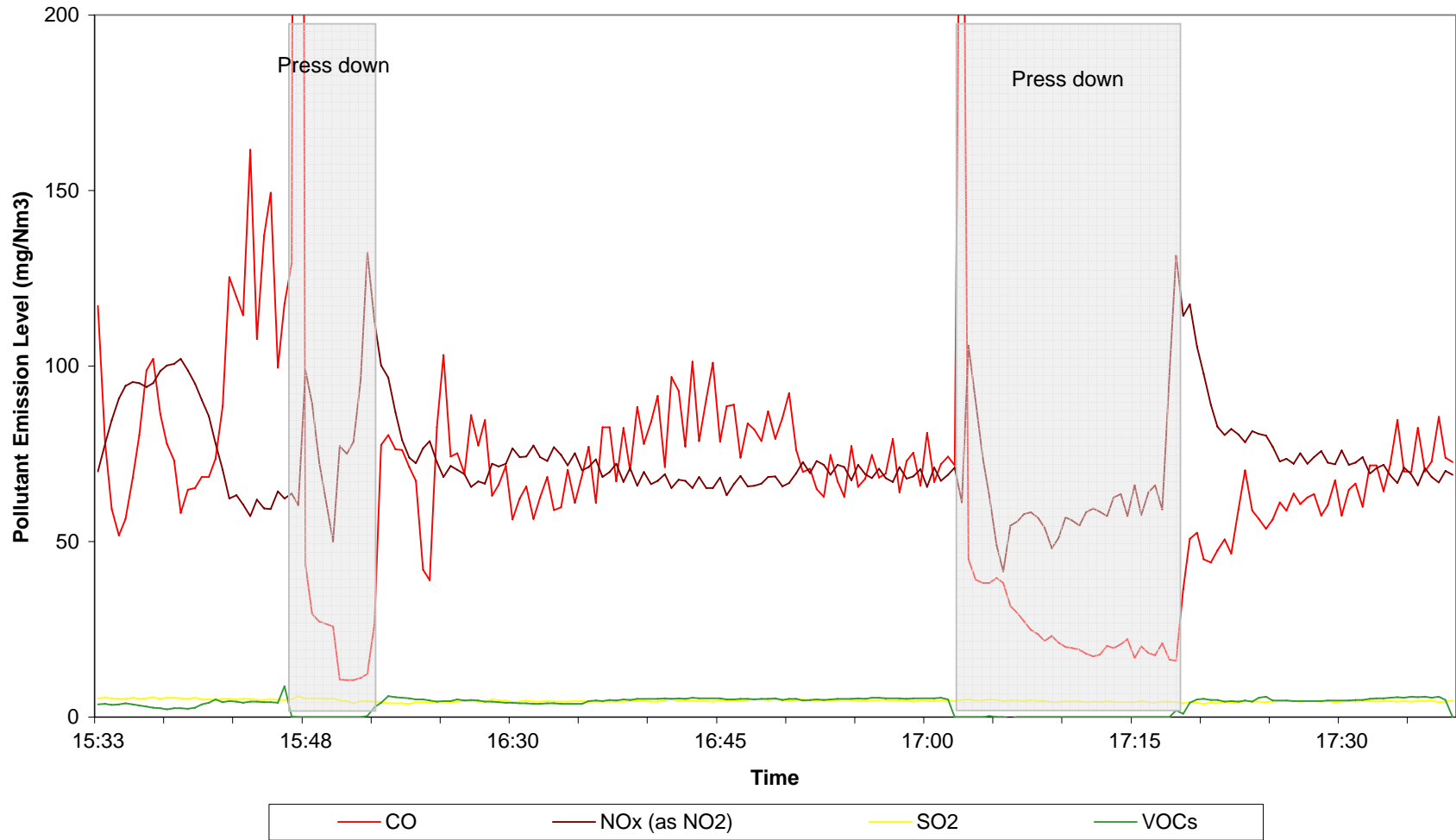


TABLE 6a
Gaseous Analysis using Horiba (Model PG 250) Analyser
 Wyndeham Heron, Maldon
Combustion Gas and VOC Emissions from Lithoman 2 (02/09/09)

Mean Ambient Pressure =
 Stack Temperature =

1009 mbar
 322 °C

Job no: 4029
 Data entered by: DF

	Carbon Monoxide CO (ppm)	Oxides of Nitrogen NOx (ppm)	Sulphur Dioxide SO2 (ppm)	VOCs (ppm)	Results Adjusted for Span and Zero Drift				Conversion from ppm to mg/Nm ³			
					CO (ppm)	NOx (ppm)	SO2 (ppm)	VOCs (ppm)	CO (mg/Nm ³)	NOx (as NO ₂) (mg/Nm ³)	SO2 (mg/Nm ³)	VOCs (ppm)
Average	59.9	36.5	1.5	2.9	59.9	36.2	1.6	2.9	74.9	74.4	4.7	4.6
Maximum	129.3	57.7	1.9	5.5	129.3	57.3	2.0	5.5	161.6	117.7	5.6	8.8
Minimum	29.2	28.2	1.2	0.0	29.2	27.9	1.3	0.0	36.5	57.3	3.8	0.0

**TABLE 6b
ANALYSER CALIBRATIONS**

Client Name: Wyndeham Heron, Maldon

Combustion Gas and VOC Emissions from Lithoman 2 (02/09/09)

Job no: 4029 **Data entered by:** DF

Analyser: 2

Type of Gas	CO		NO		SO2		VOCs		
Certified Calibration Values	79.7	ppm +/-2%	50.3	ppm +/-2%	206.0	ppm +/-2%	7.97	ppm +/-2%	
Period									
Span PreCal direct to analyser	80.3	ppm	50.4	ppm	206.3	ppm	0.1	ppm	
Zero PreCal through sample line	-0.2	ppm	0.1	ppm	1.1	ppm	7.9	ppm	
Span PreCal through sample line	80.1	ppm	51.2	ppm	202.7	ppm	8.0	ppm	
Zero PostCal through sample line	0.5	ppm	0.1	ppm	0.2	ppm	-0.4	ppm	
Span PostCal through sample line	80.5	ppm	50.1	ppm	198.1	ppm	7.4	ppm	
Span Drift	-0.5	%	2.3	%	2.2	%			
Zero Drift	-0.9	%	-0.1	%	0.4	%			
Is data valid without adjustment	YES		NO		NO				
Does data require adjustment	NO		YES		YES				
Is data invalid	NO		NO		NO				

F10

F11

H10

H11

ng cells sho

D12

D13

D14

D15

Table 6c
Combustion Gas Emissions from Lithoman 2 (02/09/09)

UNCERTAINTY OF CARBON MONOXIDE BY HORIBA 1

Reading =

59.9

 ppm
Span Gas Certified Value =

79.7

 ppm +/-2%

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.5990	0.3588
Zero Drift/Lower limit of detection	0.1ppm	0.1000	0.0100
Span Drift	2% of value	1.1980	1.4352
Linearity	1.2% of value	1.2000	1.4400
Setting Gas Divider	0.25% of value	0.1498	0.0224
Interference	2.9% of value	1.7371	3.0175
Span Gas	1% of span gas certified value	0.7970	0.6352

Sum U ²	6.92	
Total U	2.63	ppm
95% confidence	5.26	ppm
or	6.58	mg/Nm ³

UNCERTAINTY OF OXIDES OF NITROGEN BY HORIBA 1

Reading =

36.2

 ppm
Span Gas Certified Value =

50.3

 ppm

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.3620	0.1310
Zero Drift/Lower limit of detection	0.4ppm	0.4000	0.1600
Span Drift	1.9% of value	0.6878	0.4731
Linearity	0.63% of value	0.6300	0.3969
Setting Gas Divider	0.25% of value	0.0905	0.0082
Interference	1.2% of value	0.4344	0.1887
Span Gas	1% of span gas certified value	0.5030	0.2530

Sum U ²	1.61	
Total U	1.27	ppm
95% confidence	2.54	ppm
or	5.21	mg/Nm ³

UNCERTAINTY OF SULPHUR DIOXIDE BY HORIBA 1

Reading =

1.6

 ppm
Span Gas Certified Value =

206

 ppm

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.0160	0.0003
Zero Drift/Lower limit of detection	1.2ppm	1.6000	2.5600
Span Drift	1.9% of value	0.0304	0.0009
Linearity	1.44% of value	2.2800	5.1984
Setting Gas Divider	0.25% of value	0.0040	0.0000
Interference	1.2% of value	0.0192	0.0004
Span Gas	1% of span gas certified value	2.0600	4.2436

Sum U ²	12.00	
Total U	3.46	ppm
95% confidence	6.93	ppm
or	19.79	mg/Nm ³

TABLE 6d

UNCERTAINTY OF VOC BY SIGNAL3

Client Name: Wyndeham Heron, Maldon

Job No: 4029

Reading = 2.9 ppm as C3H8
 Span Gas= 7.97 ppm+/-2%

Parameter	Uncertainty criteria	U	U ²
Repeatability	1% of value	0.029	0.001
Detection threshold	0.2ppm	0.2	0.040
Noise	0.1 ppm	0.1	0.010
Linearity	0.06% of value	0.0174	0.000
Setting Gas Divider	0.25% of value	0.00725	0.000
Temperature Drift	1% of value	0.029	0.001
Span Gas	1% of Value	0.0797	0.006

Sum U ²	0.06
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Total U	0.24	ppm
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95% confidence	0.48	ppm as C3H8
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or **0.78** mg/Nm³ as carbon