

## SUMMARY OF EMISSION TEST RESULTS – 18 AUGUST 2017

Parameter	Unit	Location	EPL 5803 Point 1 100 Percentile Concentration Limit
		Battery Fabrication Baghouse	
Stack Temperature	°C	19	--
Velocity	m/s	4.6	--
Volumetric Flow	m <sup>3</sup> /s	0.57	--
Moisture	%	0.9	--
Molecular Weight Dry Stack Gas	g/g mole	28.8	--
Gas Density	kg/m <sup>3</sup>	1.29	--
Stack pressure	kPa	101.0	--
Oxygen	%	20.9	--
Cadmium (Cd)	mg/m <sup>3</sup>	0.00022	--
Lead (Pb)	mg/m <sup>3</sup>	0.070	--
Type I & II Substances in Aggregate	mg/m <sup>3</sup>	0.084	10
Total Solid Particulates	mg/m <sup>3</sup>	<0.1	250

## Key:

°C	=	degrees Celsius
%	=	percentage
<	=	less than
kg/m <sup>3</sup>	=	Kilograms per cubic metre
kPa	=	Kilo Pascals
g/g mole	=	grams per gram mole
m/s	=	metres per second
m <sup>3</sup> /min	=	dry cubic metre per minute 0°C and 101.3 kilopascals (kPa)
mg/m <sup>3</sup>	=	milligrams per cubic metre at 0°C and 101.3 kilopascals (kPa)
--	=	not specified

**DETAILED EMISSION TEST RESULTS – TSP**

<b>Emission Test Results</b>	<b>TSP</b>
Project Number	5859
Project Name	Battery Energy Power Solutions
Test Location	Battery Fabrication Baghouse
Date	18 August 2017
RUN	1
Sample Start Time (hrs)	8:50
Sample Finish Time (hrs)	10:10
Sample Location (Inlet/Exhaust)	Exhaust
Stack Temperature (°C)	19
Stack Cross-Sectional area (m <sup>2</sup> )	0.135
Average Stack Gas Velocity (m/s)	4.6
Actual Gas Flow Volume (am <sup>3</sup> /min)	37
Total Normal Gas Flow Volume (m <sup>3</sup> /min)	34
Total Normal Gas Flow Volume (m <sup>3</sup> /sec)	0.57
Total Stack Pressure (kPa)	101.0
Analysis	TSP
Method	TM-15
SEMA Lab Number	726492
Mass In Sample (mg)	< 0.1
Air Volume Sampled (am <sup>3</sup> )	1.017
Normal Sample Volume (m <sup>3</sup> )	0.961
<b>Concentration at Stack O<sub>2</sub> (mg/m<sup>3</sup>)</b>	<b>&lt; 0.1</b>
<b>EPL 5803 Concentration Limit (mg/m<sup>3</sup>)</b>	<b>250</b>
Mass Emission Rate (g/s)	< 0.00006
Moisture Content (% by volume)	0.9
Molecular Weight Dry Stack Gas (g/g-mole)	28.8
Dry Gas Density (kg/m <sup>3</sup> )	1.29
Isokinetic Sampling Rate (%)	94.7
Sample Storage Period	3 months
Sampling Performed by	JW, PWS
Sample Analysed by (Laboratory)	SEMA
Calculations Entered by	JW
Calculations Checked by	PWS

## Abbreviations of Personnel

PWS = Peter W Stephenson  
 JW = Jay Weber

**DETAILED EMISSION TEST RESULTS – METALS**

<b>Emission Test Results</b>	<b>Metals - Type I &amp; II</b>
Project Number	5859
Project Name	Battery Energy Power Solutions
Test Location	Battery Fabrication Baghouse
Date	18 August 2017
RUN	1
Sample Start Time (hrs)	8:50
Sample Finish Time (hrs)	10:10
Sample Location (Inlet/Exhaust)	Exhaust
Stack Temperature (°C)	19
Stack Cross-Sectional area (m <sup>2</sup> )	0.135
Average Stack Gas Velocity (m/s)	4.6
Actual Gas Flow Volume (am <sup>3</sup> /min)	37
Total Normal Gas Flow Volume (m <sup>3</sup> /min)	34
Total Normal Gas Flow Volume (m <sup>3</sup> /sec)	0.57
Total Stack Pressure (kPa)	101.0
Analysis	Metals
Method	TM-12,13,14 (USEPA M29)
SEMA Lab Number	726493
Mass In Sample (mg)	0.08
Air Volume Sampled (am <sup>3</sup> )	0.962
Normal Sample Volume (m <sup>3</sup> )	0.91
<b>Concentration at Stack O<sub>2</sub> (mg/m<sup>3</sup>)</b>	<b>0.084</b>
<b>EPL 5803 Concentration Limit (mg/m<sup>3</sup>)</b>	<b>10</b>
Mass Emission Rate (g/s)	0.000048
Moisture Content (% by volume)	1.1
Molecular Weight Dry Stack Gas (g/g-mole)	29
Dry Gas Density (kg/m <sup>3</sup> )	1.3
Isokinetic Sampling Rate (%)	90.5
Sample Storage Period	Consumed in Analysis
Sampling Performed by	JW, PWS
Sample Analysed by (Laboratory)	Envirolab
Calculations Entered by	JW
Calculations Checked by	PWS

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PWS = Peter W Stephenson  
 JW = Jay Weber