2 RESULTS

2.1 Boiler 1 (B Mill)

Date	13/01/2021	**Client**	Ben Furney Flour Mills Pty Ltd
Report	R010348	**Stack ID**	Boiler 1 (B Mill)
Licence No.	4979	**Location**	Dubbo
Ektimo Staff	Aaron Davis / Harrison Handicott	**State**	NSW
Process Conditions	The boiler was operating normally		210104

Sampling Plane Details	
Sampling plane dimensions	250 mm
Sampling plane area	0.0491 m²
Sampling port size, number	nil, sampled at exit
Access & height of ports	Stairs 10 m
Duct orientation & shape	Horizontal Circular
Downstream disturbance	Exit 0 D
Upstream disturbance	Bend 0 D
No. traverses & points sampled	1 4
Sample plane compliance to AS4323.1	Non-compliant

Comments
Stack volumetric flowrate was measured under full-fire conditions
The number of traverses sampled is less than the requirement
The number of points sampled is less than the requirement

The sampling plane is deemed to be non-compliant due to the following reasons:
The downstream disturbance is <1D from the sampling plane
The upstream disturbance is <2D from the sampling plane
The stack or duct does not have the required number of access holes (ports)

Stack Parameters		
Moisture content, %v/v	4.2	
Gas molecular weight, g/g mole	28.7 (wet)	29.1 (dry)
Gas density at STP, kg/m³	1.28 (wet)	1.30 (dry)
Gas Flow Parameters		
Flow measurement time(s) (hhmm)	1000 & 1110	
Temperature, °C	214	
Temperature, K	487	
Velocity at sampling plane, m/s	9.6	
Volumetric flow rate, actual, m³/s	0.47	
Volumetric flow rate (wet STP), m³/s	0.26	
Volumetric flow rate (dry STP), m³/s	0.25	
Mass flow rate (wet basis), kg/hour	1200	

Gas Analyser Results	Average		Minimum		Maximum	
Sampling time	1003 - 1102		1003 - 1102		1003 - 1102	
	Concentration mg/m³	Mass Rate g/min	Concentration mg/m³	Mass Rate g/min	Concentration mg/m³	Mass Rate g/min
Combustion Gases						
Nitrogen oxides (as NO_2)	19	0.28	<4	<0.06	84	1.2
	Concentration %v/v		Concentration %v/v		Concentration %v/v	
Carbon dioxide	1.4		<0.4		5.9	
Oxygen	19.4		14.5		20.9	

Isokinetic Results	Results	
Sampling time	1005-1105	
	Concentration mg/m³	Mass Rate g/min
Solid Particles	<2	<0.03
Isokinetic Sampling Parameters		
Sampling time, min	60	
Isokinetic rate, %	95	
Velocity difference, %	3	

2.2 Boiler (Fulton TVP)

Date	13/01/2021	**Client**	Ben Furney Flour Mills Pty Ltd
Report	R010348	**Stack ID**	Boiler (Fulton TVP)
Licence No.	4979	**Location**	Dubbo
Ektimo Staff	Aaron Davis / Harrison Handicott	**State**	NSW
Process Conditions	The boiler was operating normally		21104

Sampling Plane Details	
Sampling plane dimensions	250 mm
Sampling plane area	0.0491 m²
Sampling port size, number	nil, sampled at exit
Access & height of ports	Scissor lift 15 m
Duct orientation & shape	Horizontal Circular
Downstream disturbance	Exit 0 D
Upstream disturbance	Bend 6 D
No. traverses & points sampled	1 4
Sample plane compliance to AS4323.1	Non-compliant

Comments
Stack volumetric flowrate was measured under full-fire conditions
The number of traverses sampled is less than the requirement
The number of points sampled is less than the requirement

The sampling plane is deemed to be non-compliant due to the following reasons:
The downstream disturbance is <1D from the sampling plane
The stack or duct does not have the required number of access holes (ports)

Stack Parameters		
Moisture content, %v/v	8.1	
Gas molecular weight, g/g mole	28.6 (wet)	29.5 (dry)
Gas density at STP, kg/m³	1.28 (wet)	1.32 (dry)
Gas Flow Parameters		
Flow measurement time(s) (hhmm)	1140 & 1255	
Temperature, °C	219	
Temperature, K	492	
Velocity at sampling plane, m/s	4.1	
Volumetric flow rate, actual, m³/s	0.2	
Volumetric flow rate (wet STP), m³/s	0.11	
Volumetric flow rate (dry STP), m³/s	0.099	
Mass flow rate (wet basis), kg/hour	500	

Gas Analyser Results	Average		Minimum		Maximum	
Sampling time	1150 - 1247		1150 - 1247		1150 - 1247	
	Concentration mg/m³	Mass Rate g/min	Concentration mg/m³	Mass Rate g/min	Concentration mg/m³	Mass Rate g/min
Combustion Gases						
Nitrogen oxides (as NO_2)	71	0.42	4.5	0.027	120	0.74
	Concentration %v/v		Concentration %v/v		Concentration %v/v	
Carbon dioxide	4.7		<0.4		6.6	
Oxygen	16		14.1		20.3	

Isokinetic Results	Results	
Sampling time	1150-1250	
	Concentration mg/m³	Mass Rate g/min
Solid Particles	<3	<0.02
Isokinetic Sampling Parameters		
Sampling time, min	60	
Isokinetic rate, %	102	
Velocity difference, %	<1	