Stack Air Emission Test Report

Client Name : GMS COMPOSITE KNITTING IND. LTD.
Client Address : Shardagonj, Kashimpur, Gazipur
Sampling Date : 09 June 2016
Reporting Date : 11 June 2016

Description of Sampling:
Name of the combustion Unit: Printing
Fuel Type: Natural Gas

Key information of Device:	Campus-1, Building-1, Printing		
Location of the device	4th Floor	5th Floor	5th Floor
Device Name	Pluefix Plus$_1$	Pluefix Plus$_2$	Pluefix Plus$_3$
Brand	Ansal co.	Ansal co.	Ansal co.
Model	PLX3	PLX3	PLX3
Device number	08122147	08122144	08122146
Country	Turkey	Turkey	Turkey
Fuel	Gas Line	Gas Line	Gas Line

Sampling was done by automatic sampler connected with the analyzer. During the sampling procedure, all the instruction stated in the Wl-01 was followed. The machine probe was set to the center point of the exhaust. Sampling was done for specific time intervals mentioned in the work instruction and recorded in a field data collection Sheet.

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Description of the methods:

All the tests have been performed using continuous stack emission monitoring (CEMS) test methods. Kane-940 continuous analyzer was used to monitor CO, SO2, CO2, No and NO2. The Analyzer is designed to meet the BS EN 50319 standard method. CO, NO and SO2 is measured using Electrochemical sensors and CO2 is measured using Non-Dispersive Infra-Red (NDIR), Method.

Description of instrument:

Parameter	Regulation	Accuracy	Range
Temp Measurement Flue Temperature with probe Inlet temperature	1.0^0C/F $.01^0$C/F	±2.0^0C±0.3%reading ±1.0^0C±0.3%reading	0-600^0C 32-1112^0F
Pressure	0.01mbar	±2% of full scale	+150mbar to 150mbar
Gas Measurement			
Carbon Monoxide (Standard Compensated)	0.1% 1ppm	±2% ±20ppm<400ppm ±5%<5000ppm ±10%>5000ppm	0-21% 0-10000ppm
Carbon Monoxide (High Range)	0.01%	±5% reading from 0.1% to 10%	0-10%
Nitric Oxide (Standard)	0.01%	±5ppm>100ppm ±5%>100ppm	0-5000ppm
Nitric Oxide (Low range)	1ppm	±5ppm<30ppm ±5ppm<30ppm	0-100ppm
Nitrogen Dioxide	1ppm	±5ppm<100ppm ±10ppm<500ppm ±5%500ppm	0-1000ppm
Sulphur Dioxide	1ppm	±5ppm<100ppm ±5%>100ppm	0-5000ppm
Ambient Operation rang		0^0C to 45^0C/10% to 90%rh non condensing	

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Instrument Calibration:
The temperature probe has been calibrated by temperature simulator EX/R/117. The CO2 Sensor has calibrated by using CO Test gas, CO standard certified gas, the CO sensor has calibrated by ambient air and standard certified gas for both lower and higher detection limit respectively. The pressure sensor has calibrated by dead wrights taster and E/C/100 for both lower and higher detection limit respectively. The measured flow rate is tested by TL529 and pump suction is calibrated by EX/X/186.

Measurement Uncertainties:
The Uncertainty Assigned to the above measurement is 2^0C for temperature, ±2% for gas measured and 0.05% for pressure.

Table-1: Result of Air Emission Monitoring.

Run (10 minutes interval)		Measured Pollutants					
		O %	CO mg/Nm^3	CO_2 %	NO mg/Nm^3	NO_x mg/Nm^3	SO_2 mg/Nm^3
Run-1	Pluefix Plus$_1$	1.3	658	4.6	911	117	00
	Pluefix Plus$_2$	1.3	708	4.8	887	124	00
	Pluefix Plus$_3$	1.3	698	4.8	902	119	00
Run-2	Pluefix Plus$_1$	1.3	702	4.6	917	117	00
	Pluefix Plus$_2$	1.3	706	4.8	881	123	00
	Pluefix Plus$_3$	1.3	698	4.8	901	120	00
Run-3	Pluefix Plus$_1$	1.3	685	4.7	914	117	00
	Pluefix Plus$_2$	1.3	706	4.7	882	124	00
	Pluefix Plus$_3$	1.3	697	4.8	897	123	00

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Table-2: Standard Permissible of Air Emission.

Agency	Pollutants					
	O %	CO mg/Nm^3	CO_2 %	NO mg/Nm^3	NO_x mg/Nm^3	SO_2 mg/Nm^3
DoE	NYS	0-500	NYS	NYS	150 (Gas) 300(Oil)	NYS
US EPA	0-30%	0-1000	NYS	NYS	150 (Gas) 300(Oil)	NYS
World Bank	NYS	NYS	NYS	NYS	320 (Gas) 460 (Liquid)	NYS (GAS) 2000 (Liquid)

***NYS = Not Yet Set**
US EPA = US Environmental Protection Agency
DoE = Depart of Environment (Bangladesh)
O_2 = Oxygen
CO_2 = Carbon dioxide
NO_x = Oxide of Nitrogen [$NO+NO_2$]
SO_2 = Sulfur Dioxide
CO = Carbon Monoxide

Sampling Graph

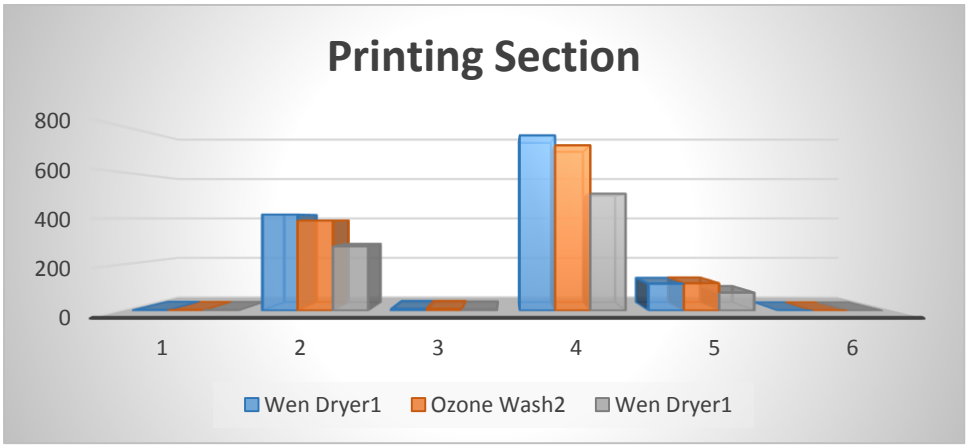

Table-2: Result Shown As Graph

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Compliance Enviro Comment:

The Stack Emission From the stack point of the generator has been analyzed for the parameter of NOx, SO2, CO & CO2 to evaluate the effect of the plant's emission while running on 100% Diesel on the air environment. From the analysis, it has been observed that the emission of CO and SO2 is within the standard limit of DoE, US EPA and World Bank.

All are tested flue gas are found in acceptable limit.

It is recommended that gas-musk should be provided to related workers to avoid occupational health hazard.

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Compliance Enviro Services

Noman Rahman
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Compliance Enviro Services

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Testing Equipment:

Air Pollution contamination of the atmosphere caused by the discharge, accidental or deliberates of a wide range of toxic substances. Often the amount of the released substance is relatively high in a certain locality, so the harmful effects are more noticeable. The major sources of air pollution are transportation engines, power and heat generation, industrial processes and the burning of solid waste. A new source of air pollution is an increasing 'hole' in the ozone layer in the atmosphere above Antarctica, coupled with growing evidence of global ozone depletion. Air pollution has also long been known to have an adverse effect on human beings, plants, livestock and aquatic ecosystem through acid rain.

Recently as in other parts of the world air pollution has received priority among environmental issues in Asia. This problem is acute in Dhaka, the capital of Bangladesh and also the hub of commercial activity.

Compliance Enviro Services high quality equipment are available to assess your indoor air quality. Now most of the customers are committed to environmental aspect. As a result Air Quality test is a vital requirement of customers. So Compliance Enviro Services is also committed to assess your indoor Air Quality with transparency & Quality. To assess this Air Quality we have to follow some standards, such as ECR, 1997, WHO, DoE, World Bank etc. Compliance Enviro Services has a air emission quality testing machine from Testo and the model is –TESTO 340-Flue Gas Analyzer.

Testo 340- Flue Gas Analyzer.

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