

Appendix V

Calibration Certificates

The appendix consists of calibration certificates for the multi gas analyser, smoke meter, pressure sensor & certificate of properties of Karanja biodiesel. The multi gas analyser and smoke meter, are of make INDUS Scientific Pvt. Ltd, Bengaluru. The pressure sensor is of make PCB Peizotronics and the biodiesel is commercially procured from MINT Biofuels, Pune.

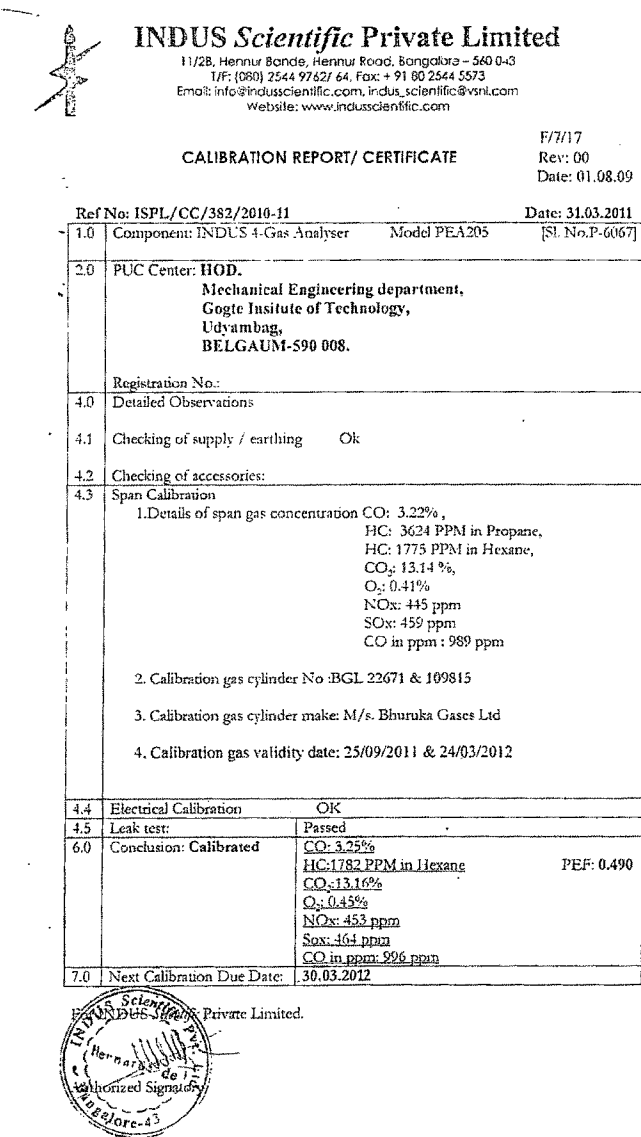


Figure V.1 Calibration Certificate of Multigas Analyser



INDUS Scientific Private Limited

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CALIBRATION REPORT/ CERTIFICATE

F7/17
 Rev: 00
 Date: 01.08.09

Ref No: JSPL/CC/383/2010-11

Date: 31/03/2011

1.0	Component: INDUS Make Smoke Meter Model No.OMS 103 [Sr. No. O-3277] [Upgraded as per revised Test Procedure MORTH/CMVR/TAP/115/116 Issue No. 2 Part VIII]
2.0	PUC Center: HOD, Mechanical Engineering department, Gogte Institute of Technology, Udyambag, BELGAUM-590 008. Registration No.:
3.0	Objective of the test: To carry out Physical and calibration of Smoke Meters as per the test procedure specified in Annexure 1 of CMVR / TAP 115-116 Part-8.
4.0	Detailed Observations
4.1	Checking of supply / earthing. OK
4.2	Checking of accessories:
4.3	Span Calibration Details of Natural Density filters used for mid point calibration filter value $[K=1.60m^{-1}]$
4.4	Electrical Calibration OK
4.5	RPM & Oil Temperature OK
5.0	One no. of Diesel vehicle checked for idling Emission / Free acceleration. Measurement
6.0	Conclusion: Filter Value: $K: 1.60m^{-1}$ Calibrated
7.0	Next Calibration Due Date: 30/07/2011

For INDUS Scientific Private Limited

Authorised Signatory

Figure V.2 Calibration Certificate of Smoke Meter

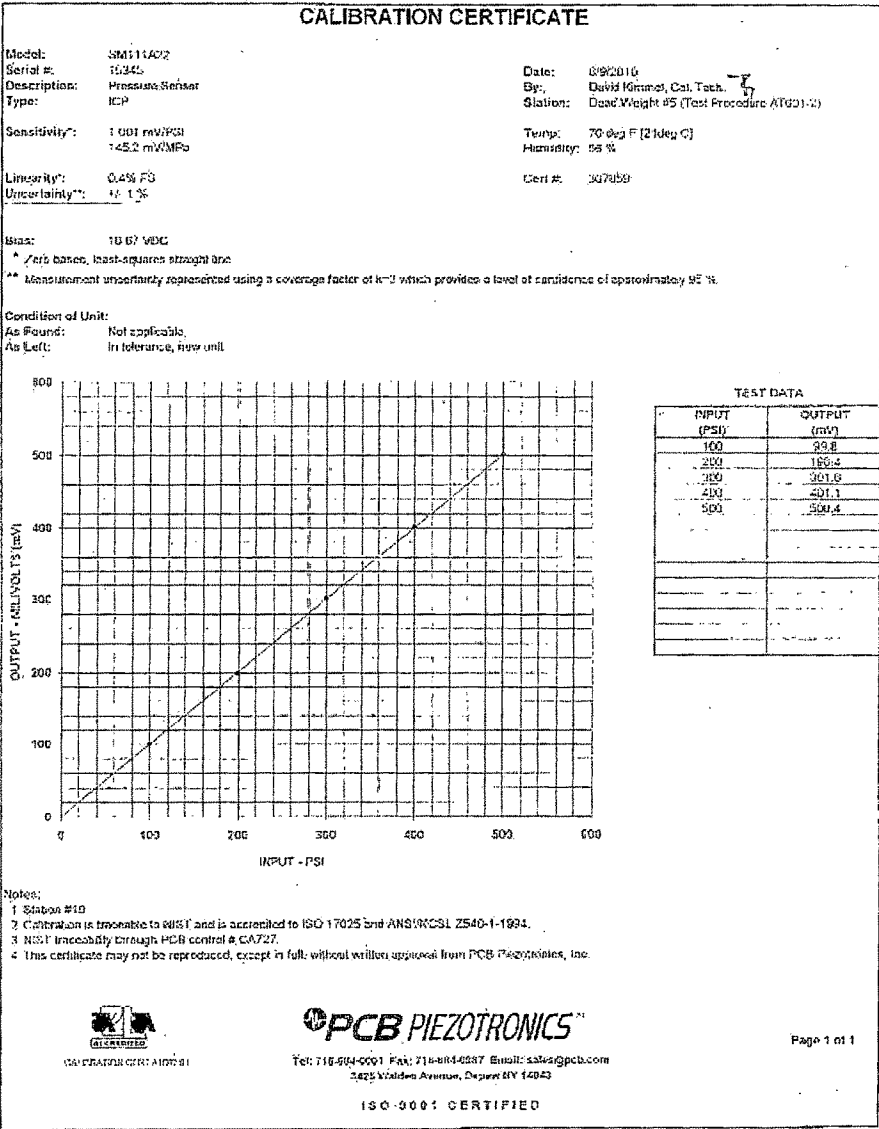


Figure V.3 Calibration Certification of the Piezosensor

Mint Biofuels Ltd.

CERTIFICATE OF ANALYSIS

BATCH NO : K 10504
Material : Biodiesel
FEED : Karanja
Quantity : 70 Lit (2 Plastic cones)

NO.	PROPERTY	UNIT	VALUE	ASTM D 5751 - 09 STANDARDS
1	Kinematic Viscosity @ 40 °C	cSt	5.21	1.8 - 6.0
2	Flash Point (Closed cup)	°C	163	130 min
3	Density @15 °C	kg/cu m	874	Not mentioned
4	Water and Sediments	% volume	< 0.05	0.05 max
5	Free Glycenn	% mass	0.012	0.020 max
6	Total Glycenn	% mass	0.180	0.240 max
7	Copper strip corrosion		Class I	No 3 max
8	Carbon Residue (100%) Sample	% mass	0.028	0.05 max
9	Acid Number	mgKOH/gm	<0.50	0.50 max
10	Calorific Value	Kcal/Kg	9300 to 9500	Not mentioned

Customer : To Ruturaj Patil
 Report Date : 17/09/2010

Prepared by	Checked by
 17/9/10 prakash patil (Chemist)	 17/9/10 sunil wadskar (Sr.Chemist)

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Figure V.4 Properties of Karanja Biodiesel