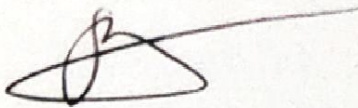


*We would like to express our  
heartfelt gratitude to*

# Charotar University of Science & Technology

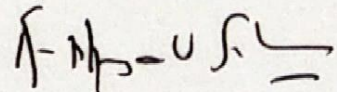
*for their participation and support for the  
Tide Turners Plastic Challenge 2019*



**Sam Baratt**  
**Chief**  
Youth and Education Alliance.  
UN Environment



**Radhika Suri**  
**Director**  
Environment Education  
WWF-India



**Kartikeya V. Sarabhai**  
**Director**  
CEE



No. GPCB/EA-313/ 422741

12 SEP 2017

RPAD

To,  
Charotar University of Science and Technology ( CHARUSAT)  
Charusat Campus, Changa  
District: Anand  
Gujarat - 388 421

**Sub:-** Recognition as Schedule- I Environmental Auditor.

Sir,

This refers to your application for the recognition as Environmental Auditor, subsequent interview and visit of your Laboratory by Environment Audit Committee members. It is recommended by the Environment Audit Committee members, to recognize your firm as Schedule-I Environmental Auditor for carrying out the Environmental Audit under Environment Audit Scheme with following conditions.

- 1) Recognition is valid upto **31/12/2019**.
- 2) You shall have maximum **One** team for the Environment Audit.
- 3) You shall carry out maximum **15** nos. of Environment Audit.
- 4) Team members shall be as under :

Sr. No.	Name	Designation
1	Mr. Gaurav Kapse	Environment Engineer
2	Mr. Arjav Shastri	Chemical Engineer
3	Dr. Seema Amin	Chemist
4	Mr. Jinit Patel	Microbiologist

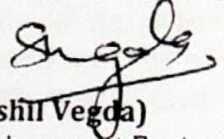
- 5) You shall prepare and submit the Environment Audit report and to comply the conditions for Environment Auditors as per the Hon'ble High Court order dated 20/12/1996, 13/03/1997, 16/09/1999, and also the Guidelines prepared by Gujarat Pollution Control Board in this regard, for the Environment Audit Scheme along with the Adequacy and Efficacy certificates as per prescribed format.
- 6) Environment Audit Report shall be submitted in prescribed format.
- 7) You shall apply for renewal of Environmental Auditor 3 months before expiry of the recognition with the scrutiny fees to this Board.
- 8) This recognition is subject to periodic evaluation of your facility and subject to change based on performance.

(P.T.O)

- 9) In case of change in man power, team member or any other suggestion, recommendation or any issue, you shall appear before the Environment Audit Committee.

This letter is issued with the permission of competent authority.

**For and on behalf of GPCB,**



**(Sushil Vegda)**

Senior Environment Engineer  
Environment Audit Section



**National Accreditation Board for  
Testing and Calibration Laboratories**

(A Constituent Board of Quality Council of India)



**CERTIFICATE OF ACCREDITATION**

**ENVIRONMENTAL ENGINEERING LABORATORY,  
M.S. PATEL DEPARTMENT OF CIVIL ENGINEERING**

has been assessed and accredited in accordance with the standard

**ISO/IEC 17025:2005**

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

Charusat Campus-Changa, Off. Nadiad-Petlad Highway, Gujarat

in the field of

**TESTING**

**Certificate Number** TC-8130

**Issue Date** 26/11/2018

**Valid Until** 25/11/2020

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.

(To see the scope of accreditation of this laboratory, you may also visit NABL website [www.nabl-india.org](http://www.nabl-india.org))

Signed for and on behalf of NABL



89076970100030002321

*Anil Relia*

Anil Relia  
Chief Executive Officer



# National Accreditation Board for Testing and Calibration Laboratories

(A Constituent Board of Quality Council of India)



## SCOPE OF ACCREDITATION

**Laboratory** Environmental Engineering Laboratory, M.S. Patel Department of Civil Engineering, Charusat Campus-Changa, Off. Nadiad-Petlad Highway, Gujarat

**Accreditation Standard** ISO/IEC 17025: 2005

**Certificate Number** TC-8130

Page 1 of 5

**Validity** 26.11.2018 to 25.11.2020

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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### CHEMICAL TESTING

<b>I. ATMOSPHERIC POLLUTION</b>				
1.	Ambient Air	Particulate Matter PM <sub>10</sub>	IS 5182 (Part 23): 2012 Gravimetric Method	10 µg/m <sup>3</sup> to 1000 µg/m <sup>3</sup>
		Particulate Matter PM <sub>2.5</sub>	(EEL/SOP-32 B & SOP 33) Issue No: 01 dated 01/01/2018 Based on USEPA CFR 40 Part 50	10 µg/m <sup>3</sup> to 200 µg/m <sup>3</sup>
		Sulphur Dioxide	IS 5182 (Part 2): 2001 (RA 2012)	4 µg/m <sup>3</sup> to 1050 µg/m <sup>3</sup>
		Oxides of Nitrogen	IS 5182 (Part 6): (RA 2012) IS 11255 (Part 1): 1985 (RA 2009)	5.0 µg/m <sup>3</sup> to 420 µg/m <sup>3</sup>
2.	Stack Emission	Particulate Matter	IS 11255(Part 2): 1985 (RA 2009)	10 mg/Nm <sup>3</sup> to 500 mg/Nm <sup>3</sup>
		Sulphur Dioxide	IS 11255 (Part 7): 201	5 mg/N m <sup>3</sup> to 1000 mg/Nm <sup>3</sup>
		Oxides of Nitrogen	IS 4758:1968 (RA 2017)	5.0 mg/Nm <sup>3</sup> to 400 mg/Nm <sup>3</sup>
3.	Noise Level (Excluding Vibration)	Noise Level Measurement (DG Set)	IS 4758:1968 (RA 2017)	30 dB to 130 dB
<b>II. POLLUTION &amp; ENVIRONMENT</b>				
1.	Effluents/Waste Water (Domestic & Industrial Waste Water)	Temperature	APHA (23rd Edition 2017) 2550 B	2 °C to 60 °C
		Colour	APHA (23rd Edition 2017) 2120 C	2 to 500 Co-Pt Units
		Turbidity	APHA (23rd Edition 2017) 2130 B	1 NTU to 800 NTU

Nabo Gopal Roy  
Convenor

Avijit Das  
Program Manager



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		pH	APHA (23 <sup>rd</sup> Edition 2017) 4500 H+ B	2 to 12
		Electrical Conductivity	APHA (23 <sup>rd</sup> Edition 2017) 2510 B	10 µS/cm to 200000 µS/cm
		Total Dissolved Solids	APHA (23 <sup>rd</sup> Edition 2017) 2540 C	10 mg/L to 100000 mg/L
		Total Suspended Solids	APHA (23 <sup>rd</sup> Edition 2017) 2540 D	5 mg/L to 1000 mg/L
		Total Solids	APHA (23 <sup>rd</sup> Edition 2017) 2540 B	5 mg/L to 100000 mg/L
		Volatile & Fixed Solids	APHA (23 <sup>rd</sup> Edition 2017) 2540 E	5 mg/L to 1000 mg/L
		Phosphates	APHA (23 <sup>rd</sup> Edition 2017) 4500 P D	1 mg/L to 100 mg/L
		Dissolved Oxygen	APHA (23 <sup>rd</sup> Edition 2017) 4500 O C	1 mg/L to 8 mg/L
		Sulphate	APHA (23 <sup>rd</sup> Edition 2017) 4500-SO42- E	1 mg/L to 200 mg/L
		Sulphide	APHA (23 <sup>rd</sup> Edition 2017) 4500 S2- F	0.1 mg/L to 10 mg/L
		Nitrate Nitrogen	APHA (23 <sup>rd</sup> Edition 2017) 4500 NO <sub>3</sub> , - B	10 mg/L to 100 mg/L
		Alkalinity	APHA (23 <sup>rd</sup> Edition 2017) 2320 B	10 mg/L to 1000 mg/L
		Acidity	APHA (23 <sup>rd</sup> Edition 2017) 2310 B	05 mg/L to 1000 mg/L
		Chloride	APHA (23 <sup>rd</sup> Edition 2017) 4500 Cl- B	10 mg/L to 1000 mg/L
		Free Residual Chlorine	APHA (23 <sup>rd</sup> Edition 2017) 4500 Cl	1 mg/L to 5 mg/L
		Oil & Grease	APHA (23 <sup>rd</sup> Edition 2017) 5520 B	2 mg/L to 100 mg/L

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		Phenolic Compound	APHA (23rd Edition 2017) 5530 D	1 mg/L to 10 mg/L
		Biochemical Oxygen Demand	APHA (23rd Edition 2017) 5210 B	5 mg/L to 1000 mg/L
		Chemical Oxygen Demand	APHA (23rd Edition 2017) 5220 C / 5220 B)	10 mg/L to 5000 mg/L
		Sodium	APHA (23rd Edition 2017) 3500 Na B	2 mg/L to 1000 mg/L
		Potassium	APHA (23rd Edition 2017) 3500 K B	1 mg/L to 1000 mg/L
		Calcium	APHA (23rd Edition 2017) 3500 B	5 mg/L to 500 mg/L
2.	Wastes (Liquid/Slurry/ Sludge/ Solid/ Semi-Solid)	pH Value	EPA SW 846 Method 9045 C	2 to 12
		Loss on Drying @ 105 °C	APHA (23rd Edition 2017) 2540 G	0.1 % to 80 %
		Loss on Ignition @ 550 °C	APHA (23rd Edition 2017) 2540 G	0.1 % to 95 %
III.	<b>WATER</b>			
1.	Surface Water, Ground Water & Drinking Water	pH	APHA (23rd Edition 2017) 4500 H+B	4 to 10
		Color	APHA (23rd Edition 2017) 2120 C	2 - 100 Co-Pt Units
		Total Dissolved Solids	APHA (23rd Edition 2017) 2540 C	5 mg/L to 1000 mg/L
		Total Suspended Solids	APHA (23rd Edition 2017) 2540 D	5 mg/L to 150 mg/L
		Total Solids	APHA (23rd Edition 2017) 2540 B	5 mg/L to 10000 mg/L
		Volatile & Fixed Solids	APHA (23rd Edition 2017) 2540 E	5 mg/L to 3000 mg/L

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		Turbidity	APHA (23rd Edition 2017) 2130 B	1 NTU to 100 NTU
		Electric Conductivity	APHA (23rd Edition 2017) 2510 B	05 µS/cm to 10000 µS/cm
		Phosphate	APHA (23rd Edition 2017) 4500 P D	1 mg/L to 10 mg/L
		Dissolved Oxygen	APHA (23rd Edition 2017) 4500 O C	0.1 mg/L to 10 mg/L
		Sulphates	APHA (23rd Edition 2017) 4500-4500-SO42- E	1 mg/L to 500 mg/L
		Free Residual Chlorine	APHA (23rd Edition 2017) 4500 Cl	0.1 mg/L to 5.0 mg/L
		Sulphides	APHA (23rd Edition 2017) 4500 S2- F	0.1 mg/L to 10 mg/L
		Chloride	APHA (23rd Edition 2017) 4500 Cl- B	10 mg/L to 1000 mg/L
		Total Hardness	APHA (23rd Edition 2017) 2340 C	2.0 mg/L to 500 mg/L
		Calcium Hardness as CaCO3	APHA (23rd Edition 2017) 3500 B	1.0 mg/L to 200 mg/L
		Magnesium	APHA (23rd Edition 2017) 3500 Mg B	1.0 mg/L to 200 mg/L
		Nitrate Nitrogen	APHA (23rd Edition 2017) 4500 NO3, - B	0.1 mg/L to 50 mg/L
		Sodium	APHA (23rd Edition 2017) 3500 Na B	2 mg/L to 100 mg/L
		Potassium	APHA (23rd Edition 2017) 3500 K B	1 mg/L to 100 mg/L
		Calcium	APHA (23rd Edition 2017) 3500 Ca B	30 mg/L to 300 mg/L
		Alkalinity	APHA (23rd Edition 2017) 2320 B	5 mg/L to 600 mg/L

**Nabo Gopal Roy**  
Convenor

**Avijit Das**  
Program Manager





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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Acidity	APHA (23rd Edition 2017) 2310 B	05 mg/L to 800 mg/L
		Silica	APHA (23rd Edition 2017) 4500 SiO <sub>2</sub> C	1 mg/L to 20 mg/L

Nabo Gopal Roy  
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