BHARUCH ENVIRO INFRASTRUCTURE LTD. ANKLESHWAR

(NABL) AS PER ISO/IEC 17025:2005 Accredited

ISO 14001:2015 & OHSAS 18001:2007 Certified

MOEF & CC ,GOVT.OF INDIA,NEW DELHI

A Team of 25 Chemists with highly qualified & Experienced Staff

Industrial Plant Environmental Monitoring

Sampling & Analysis of VOCs, AOX, PAH, BTX, PCB'S ,TOC , Pesticides Hydrocarbons

Soil & Hazardous Waste Analysis, Illumination Monitoring, Emission Testing , Elemental Analysis

Trace Analysis ,Compost Analysis, Trace Metals **Following APHA/IS/BIS/CPCB GUIDELINES/USEPA/ASTM/EPA**

ANALYTICAL RESEARCH LABORATORY

INTRODUCTION

M/s. **Bharuch Enviro Infrastructure Limited**, Ankleshwar established in the year1997-98 a group company of **UPL LIMITED** (Manufacturing Pesticides, Agrochemicals, Specialty Chemicals & etc.) **BEIL** is engaged with the facilities of Hazardous Waste Treatment and Disposal facility consisting of Secured Landfill / Common Incinerator/ Multi Effective Evaporator (MEE) and etc.

At **BEIL**, we are constantly looking for new ways to improve our Customer value and satisfaction being having with well-equipped Analytical Laboratory. This includes periodically reviewing our expenses and price lists. This is to bring your kind attention that we have been approved by **MoEF and NABL** accredited Laboratory as per **ISO 17025:2005 standard.** It is certified under Environment Management System standard **ISO 14001:2004**, Occupational Health & Safety Assessment standard **18001:2007**.

As on today we have more than 1200 members from small large medium Industries availing above mentioned services from Ankleshwar, Vadodara, Dahej & etc.

LIKEWISE AMENITIES AT BEIL :

- Treatment Storage & Disposal Facility for Hazardous waste at Ankleshwar and Dahej
- Landfilling of Solid Waste
- Incineration Facility for Solid & Liquid Hazardous Waste
- Co-processing Facility for Hazardous Waste for supplying to cement Industry.
- Multi Effective Evaporator Facility
- Drum Decontamination
- Plastic Waste Reprocessing Facility
- E-Waste Handling
- Bio Augmentation
- Analytical Research Laboratory
- Transfiguration of Kitchen Waste to Compost

Key Instruments Presented at BEIL

Sr. No.	Name of Instrument	MODEL/TYPE
1	Gas Chromatography	Make : Shimadzu Model :2010
2	Gas Chromatography	Make : Shimadzu Model :2014
3	High Performance Liquid Chromatography	Make : Shimadzu Model :LC-2030 C Plus
4	UV Cabinet For Thin Layer Chromatography(TLC)	Make : LABFIT Model : K-297
5	TOC Analyzer (Solid & Liquid)	Make : Shimadzu Model : TOC-LCSH+SSM
6	Atomic Absorption Spectrophotometer	Make : Shimadzu Model : AA-7000
7	CHNS Analyzer	Make : Leco Model : Tru Spec-CHN
8	Ion Chromatography	Make : Shimadzu Model : 930 Compact IC Flex
9	Specific Ion Meter	Make : Metrohm Model : A-7000
10	UV-Visible Spectrophotometer	Make : Shimadzu Model : UV -1800
11	Handy Air Sampler	Make : PRIMA Model : PAS-25
12	Respirable Dust Sampler	Make : Enviro Tech Model : APM 460 BL
13	Multi Gas Monitor	Make : Uniphos Model : A 4302 (PM)
14	Wind Monitor	Make : Enviro Tech Model : WM 271
15	Fine Particulate sampler (PM2.5)	Make : Envirotech Model :APM 550
16	Bomb Calorimeter	Make : Rajdhani Model : RSB6
17	Karl Fischer Titrator	Make : VEEGO Model : Matic-MD
18	Stack sampler	Make : Vayubodhan Model : VSS 1
19	Digital PH / ORP Meter	Make : Eutech Model : PC 2700
20	Conductivity/TDS Meter	Make : Eutech Model : PC 2700
21	Digital LUX Meter	Make : METRAVI Model : ME- 1300
22	VOC Meter	Make : Photovac Model : 2020 ComboPRO

Physical Tests		
Sr. No.	**Parameter**	**Method Adopted**
1	PH Value	Electronic (PH Meter)
2	Odor	Threshold Odor Test
3	Conductivity	Conductivity Meter
4	Colour	Spectrophotometric
5	Total Dissolved Solid	Gravimetric
6	Total Solids	Gravimetric
7	Total Suspended Solids	Gravimetric
8	Fixed and Volatile Solids	Gravimetric
9	Settlable Solids	Gravimetric
10	Salinity	Electrical Conductivity Method
11	Turbidity	Nephelometric
12	Temperature	Thermometer
13	Sedimentation	Centrifuge

Inorganic (General & Non- Metallic)		
Sr. No.	**Parameter**	**Method Adopted**
1	Total Alkalinity	Color Indicator Titration
2	Acidity	Color Indicator Titration
3	Ammonical Nitrogen	Distillation followed by titrimetric Method
4	Bromide	Colorimetric
5	Chloride	Titrimetric
6	Residual Chlorine	Titrimetric
7	Cyanide	Distillation followed by colorimetric
8	Dissolved Oxygen	Winkler titrimetric- azide modification
9	Fluorides	Distillation followed by fluoride selective Electrode
10	Iodine	Crystal Violet Method
11	Total Kjeldahl Nitrogen	Macro Kjehldal method
12	Nitrate	Colorimetric
13	Nitrite	Colorimetric
14	Sulphite	Titrimetric
15	Sulphate	Turbidimetric
16	Sulfide	Iodometric
17	Phosphate	Colorimetric
18	Total Silica	Heterotopy Blue Method
19	Colloidal Silica	Heterotopy Blue Method
20	Dissolved Silica	Heterotopy Blue Method
21	Total Hardness	Titrimetric (EDTA Method)
22	Calcium Hardness	Titrimetric (EDTA Method)
23	Magnesium Hardness	Titrimetric (EDTA Method)
24	Carbonate & Bicarbonate	Colorimetric

Organic & Trace Organic		
Sr. No.	**Parameters**	**Test Method**
1	Chemical Oxygen Demand	Open Reflux Method
2	Biochemical Oxygen Demand	BIS : 3025 (Part 44)
3	Phenolic Compound	Distillation followed Colorimetric
4	Oil & Grease	Soxhlet Extractio
5	Total Organic Carbon	High Temperature Combustion Method
6	Carbon/Nitrogen Ratio	By Calculation
7	Organo Chloride	By Gas Chromatograph
8	Organo Phosphorous	By Gas Chromatograph
9	Carbamates	By Gas Chromatograph

Trace Metals		
Sr. No.	**Parameter**	**Method Adopted**
1	Lead as Pb	By AAS
2	Zinc as Zn	By AAS
3	Mercury as Hg	By HVG- AAS
4	Nickel as Ni	By AAS
5	Cadmium as Cd	By AAS
6	Arsenic as As	By HVG- AAS
7	Manganese as Mn	By AAS
8	Sodium as Na	By AAS
9	Potassium as K	By AAS
10	Aluminum as Al	By AAS
11	Boron as B	By AAS
12	Copper as Cu	By AAS
13	Iron as Fe	By AAS
14	Total Chromium as Cr^{+3}	By AAS
15	Hexavalent Chromium as Cr^{+6}	By UV
16	Sodium Absorption Ratio (SAR)	By AAS

Microbiological Tests		
Sr. No.	**Parameter**	**Method Adopted**
1	Total Coliform	Multiple Tube Technique
2	Faecal Coliform	Multiple Tube Technique
3	E-Coli	Multiple Tube Technique
4	Faecal Streptococci	Multiple Tube Technique
5	Total Plate Count	Pore Plate Method

Ambient Air Parameters		
Sr. No.	**Parameter**	**Method Adopted**
1	Respirable Particulate Matter (PM10)	Gravimetric
2	Respirable Particulate Matter (PM2.5)	Gravimetric
3	Suspended Particulate Matter (SPM)	Gravimetric
4	Sulfur Dioxide	IS 5182 Part 1 (1969)
5	Nitrogen Oxides	IS 5182 Part IV (19699)
6	Ammonia	Indophenol Blue Method
7	Hydrogen Chloride (HCL)	Titrimetric Method (Argentometric)
8	Cl2	U.V Visible Spectrophotometer
9	Hydrogen Sulfide (H2S)	Titrimetric Method
10	Cs2 (Carbon Disulfide)	Titrimetric Method
11	Carbon Monoxide	By Gas Chromatograph
12	Benzene, Toluene & Xylene (BTX)	By HPLC
13	Lead	By AAS
14	Arsenic	By AAS
15	Nickel	By AAS
16	Ozone	U.V Visible Spectrophotometer
17	PAH (Benzopyrene)	Gas Chromatograph
18	Non-Methane Hydrocarbon	Gas Chromatograph
19	Methane	Gas Chromatograph
20	Volatile organic Carbon	Gas Chromatograph /VOC Meter

Stack Parameters		
1	Particulate matter	IS 11255 (Part-1) 1985
2	Sulphur dioxide	IS 11255 Part-2) 1985
3	Velocity & flow	IS 11255 (Part-3) 2008
4	Nitrogen Oxides	IS 11255 (Part-7) 2005
5	Ammonia	IS 11255 (Part-6) 1999
6	Hydrochloric Acid (HCL)	Titrimetric Method
7	Cl2	EPA Test Method
8	Hydrogen Sulfide (H2S)	IS 11255 (Part - 4) 2006
9	Cs2 (Carbon Disulfide)	IS 11255 (Part - 4) 2006
10	Carbon Monoxide	By Gas Chromatography
11	Temperature	IS 11255 (Part-1) 1985
12	Total Hydrocarbon	By Gas Chromatography

Toxicological Tests		
Sr. No.	Parameter	Method Adopted
01	Bio Assay Test using Fish	IS 6582: 1971
02	Toxicity Factor using Zebra Fish	IS 6582 (Part-2) 2001

Hazardous Waste Analysis		
Sr. No.	**Parameters**	**Test Method**
1	% Moisture	Auto Karl Fisher Titrator
2	% TOC	Combustion Method
3	Loss on Drying	At 110°C
4	Annealing Loss	At 550°C in Muffle Furnace
5	% Fixed Carbon	At 900°C in Muffle Furnace
6	Volatile Matter	At 900°C in Muffle Furnace
7	Compatibility Test (90-10)	Inhouse Procedure
8	Gross Calorific Value	By Bomb Calorimeter
9	Net Calorific Value	By Bomb Calorimeter
10	Chloride	Titrimetric Method
11	Auto Ignition/Boiling Point/Melting Point	By Pen Sky Martens Apparatus
12	Flash Point	By Pen Sky Martens Apparatus
13	Flammability	By Burner
14	% Ash Content	At 800°C in Muffle Furnace
15	Density/Specific Gravity/Bulk Density	By Hydrometer
16	Preparation of Leachate (TCLP) Extract/Water Extract	Millipore ZHE System
17	Plane Filter Liquid Test (PFLT)	USEPA : 9095 B
18	Liquid Releasing Test (LRT)	Millipore ZHE System
19	Hazardous Waste Characteristics	USEPA Method
20	Reactivity Test	ASTMD5058-90
21	Reactivity with Lime	ASTMD5058-90
22	Reactivity Water	ASTMD5058-90
23	Reactivity with Tri Ethylamine	ASTMD5058-90
24	Elemental Analysis Carbon /Hydrogen/Nitrogen/Sulphur	by CHNS Analyzer
25	Viscosity	By Brookfield Viscometer
26	Sodium Acetate	Titrimetric

Additional Parameters		
Sr. No.	**Parameters**	**Test Method**
1	Compost Analysis	FCO Guidelines
2	Suitability Analysis	Inhouse Method
3	Purity By Gas Chromatography (GC)	GC
4	Purity By High Performance Liquid Chromatography	HPLC
5	Residual Solvent	GC
6	Noise Monitoring	By Noise Meter
7	Illumination Monitoring	By Lux Meter

List of Major Clients for Environmental Services

Sr. No.	Name of Clients	Location
1	Sun Pharmaceutical Industries Ltd.,	Ankleshwar
2	Hikal Limited	Panoli
3	Sun Pharmaceutical Industries Ltd.	Panoli
4	Asian Paints Ltd., Ankleshwar	Ankleshwar
5	Raks Pharma Pvt. Ltd.	Dahej
6	Shiva Pharmachem Limited, Dahej	Dahej
7	Tega Industries LTD.(SEZ II)	Dahej
8	Astra Specialty Compounds India Pvt. Ltd.	Dahej
9	Birla Century (A Division of Century Textiles & Ind. Ltd.	Jhagadia
10	Covestro India Pvt. Ltd.	Ankleshwar
11	Gulbrandsen Technologies India Private Limited	Jhagadia
12	Isagro (A) Agrochemicals Pvt. Ltd	Panoli
13	Iscon Balaji Food Pvt. Ltd. LIMBASI UNIT	Limbasi, ,Nadiad
14	Wockhardt Limited.	Ankleshwar
15	United Phosphorus Ltd. Unit -1	Ankleshwar
16	Ratnamani Biochemicals & Pharmaceuticals Pvt. Ltd	Ankleshwar
17	United Phosphorus Ltd. Unit -3	Ankleshwar
18	United Phosphorus Ltd. Unit -5	Jhagadia
19	United Phosphorus Ltd. Unit -11	Ankleshwar
20	United Phosphorus Ltd. Unit	Vapi
21	Meghmani Organics Ltd.	Ankleshwar
21	Sakata Inx(India) Pvt. Ltd.	Panoli