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"For the capabilities and equipment available is very good alone job and a make stone for future SLF site construction in INDIA."
- Manfred Konis, Thousferisf, Germany

<u>VISION:</u> To make BEIL & Its GROUP a world class Hazardous Waste Management Company which aims for a Clean, Green and Healthy Environment by providing reliable, economical, Waste Management solutions for treatment of Toxic / Non-Toxic Industrial, Municipal, Bio-Medical and E-Waste to minimise collected waste for disposal in a scientifically safe engineered way.

<u>MISSION</u>: To protect and preserve our natural resources and build a Sustainable future by implementing Innovative & Cost-effective solutions through advanced Technologies of Waste Management and creating a Green Environment.



# 'We strive to protect the environment that sustain us'





- BEIL has partnered with some of the world's leading organizations to develop technology that helps in handling, treatment and disposal of waste in scientific manner.
- BEIL has acquired exceptional capability in building state of the art various environmental management projects conforming to international standards and good engineering practice which places BEIL to stand apart from others in the business.

## **Key Business Areas:**

### BEIL group provides turnkey solutions for -

- Hazardous Waste (HW) Management (HW Collection and Transportation, Treatment, Storage and Disposal) and preprocessing of HW
- Effluent Treatment Plants/ Common Effluent Treatment Plants
- Incineration plants
- Municipal Solid Waste (MSW) Management (collection, transportation, treatment (producing Refused Derived Fuel (RDF), Compost & recyclables) and safe disposal (Landfilling) of the waste, Rehabilitation of contaminated sites, Scientific Closure/ Capping, Bio-remediation of open dumpsites, Bio-methanation
- Construction and Demolition waste management/recycling

- Package/mobile plants for treatment of solid waste (food and organic waste) and wastewater
- WEEE (E-waste) management/recycling
- Environmental Monitoring and Auditing
- Providing Design, Engineering, DPR preparation and PMC services for waste management Projects
- Waste to Energy (Bio-methanation), Incineration etc.
- Pre-processing of HW for Co-processing
- Biomedical waste management
- Plastic Processing Plants (waste to products)
- Drums and Tanker Decontamination facility



"An impressive, well-constructed and well managed facility, more of which are needed for effective hazardous waste management in INDIA."

-Michael cosmos, Weston solutions, USA

# "BEIL VISITORS"



Shri Narendra Modi, Former Chief Minister (Gujarat) and presently Prime Minister of India on his visit at BEIL. He named facility as "Paryavaran Mandir"



Shri Jayram Ramesh, Former Union Minister, Ministry of Environment & Forest, Government of India



Jai Shroff Exe. Director,
UPL with Australian Visitors to BEIL



Raghuvendra Rao - IAS Secretary
Ministry of Chemicals & Petro Chemicals,
GOI, New Delhi



Visitors from Cheminova Ltd. Denmark



Jun Yamamoto, Dowa Eco-System Co. Ltd. Japan



"A very good facility which point forward for hazardous waste management in systems." -Dek Westlake, UK

#### **BEIL ACHIEVEMENTS:**

- BEIL and its group companies have by now processed and safely disposed off -
  - total quantity of Hazardous Waste collected and disposed upto March 2021 is 4.7 Million MT.
  - avg. quantity of Hazardous Waste collected and disposed per day is 1354 MT in 2020-21.
  - total quantity of Hazardous Waste incinerated upto March-2021 is 2,73,265 MT.
  - avg. quantity of Hazardous Waste collected and incinerated per day is 60 MT in 2020-21.
  - avg. quantity of Industrial Effluent treated in **2020-21 is 16.3 Million Liters Per Day** in CETP at Ankleshwar and Baddi (HP).
- BEIL is authorized by GPCB for Pre-processing of HW for Co-processing.
- Executed worldwide total liner installation works for landfills and capping system for more than 2.8 Million sq.m upto March - 2021
- Completed EIA studies for more than 300 Projects.
- BEIL possess authorization from Gujarat Pollution Control Board (GPCB) for collection, transportation, storage, dismantling and refurbishment of WEEE for reuse and recycling.
- Other group companies of BEIL i.e. SSWML and KEIL are authorized by Pollution Control Board for collection, storage and transportation of WEEE and selling it to authorized recyclers.

#### **Group/Associate Companies of BEIL:**

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SHIVALIK SOLID WASTE MANAGEMENT LIMITED (SSWML)



**ENVIRO TECHNOLOGY LIMITED (ETL)** 



BEIL RESEARCH AND CONSULTANCY PVT. LTD (BRCPL)



KERALA ENVIRO INFRASTRUCTURE LIMITED (KEIL)



GHARPURE ENGINEERING AND CONSTRUCTIONS PVT. LIMITED (GECPL)



TATVA ENVIRONMENT SERVICES LLC., OMAN (TES)



UPL ENVIRONMENTAL ENGINEERS LIMITED (UPLEEL/UEEL)



TATVA GLOBAL WATER TECHNOLOGIES PVT. LIMITED (TGWTPL)

COIMBATORE INTEGRATED WASTE MANAGEMENT COMPANY PVT. LTD.(CIWMCPL)



"Good design, Landfill appears to be well operated, good health and safety systems." - R. Scaeberey, CT, USA

#### **CHWTSDF** site at Ankleshwar, Gujarat (India)

BEIL has set up and operates Common Hazardous Waste Treatment, Storage and Disposal facility (CHWTSDF) at Ankleshwar (Guj), India since 1998 on Design, Finance, Build, Own and Operate (DFBOO) basis.

- Facility can handle liquid, solid and semi-solid HW and tarry wastes.
- First hazardous waste management facility in india to be conferred under ISO 14001-2015,
   5-S and ISO 45001-2018 certifications; amongst few facilities in the world to have been awarded these certifications.
- Serving more than 1800 Industries (chemical, pesticides, pharmaceutical, paints, dye and pigments) to dispose their HW in secured landfill facility and common incineration system.

#### **Facilities Available:**

- Secured landfill
- Hazardous waste treatment. Stabilisation and Solidfication
- Common Incineration facility with Heat Recovery System (2 units each of Capacity 6.5 Million K cal/hr, Total Capacity – 120 MT/day)
- Multiple Effect Evaporter (MEE) for treatment of Hazardous waste
- NABL accredited (ISO/IEC 17025:2017) and MoEF approved lab for testing of waste and water samples, environmental monitoring and to carry out treatability study
- Plastic waste recycling
- Biogas plant (5 TPD) for kitchen waste based on BARC technology
- Drum Decontamination and Tanker decontamination facility
- Pre-processing of waste for co-processing





"It is interesting and throughout providing technology based safe landfill. It is an achievement of Great order." - R Swaminathan , E.D., NEERI, Chennai

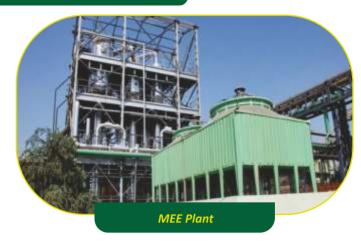
#### **FACILITIES AT BEIL, ANKLESHWAR**

















# BEIL DEDICATED TO PROTECT ENVIRONMENT

# BEIL INFRASTRUCTURE LIMITED

"Good planning, appears well, excellent future for new generation."
- M.Anders, Washington DC, USA

#### **CHWTSDF** site at Dahej, Gujarat (India)

- BEIL has set up and operates this Facility since 2015.
- Total plot area is 285,343 sq.m, and capacity of landfill is 14 Lac MT.
- Approx. 5,83,331 MT of HW has been disposed in Secured landfill from April 2015 to March - 2021.
- Common Incineration plant will be set up soon.

#### Facilities:

- Secured landfill facility
- NABL accredited lab
- Fire hydrant system
- Waste storage facilities
- Waste treatment stabilization and solidfication
- Drum de-contamination facility
- MEE (Multiple Effect Evaporator) with spray dryer
- 225 KW Solar Power Generation at capped site











CSR Initiative - Kitchen waste to Compost (Dahej Village and Jitali Village, adopted by BEIL)



# Hazardous Waste Management at Kathua, Jammu and Kashmir (India)

- Facility (set up by BEIL) is in operation since March 2018.
- Authorized for Pre-processing of Hazardous Waste for utilizing in Co-processing by Cement Industries.



"All the parameters to prevent the environment has been duly taken care of.

The practice adopted by BEIL are to be adopted by many other landfills.

The staff members of BEIL are cooperative, enthusiastic as well as inspiring."

- Chairman, SEAC, Gujarat

# CHWTSDF Site at Ambalamedu, Kochi (India) (By Kerala Enviro Infrastructure Limited (KEIL), an Associate of BEIL)

- Caters to the need for disposal of HW generated by 460 industries and two Associations (having more than 300 members) in the state of Kerala.
- CHWTSDF is in operation since August 2008.
- From Aug 2008 to March 2021, total 0.5 million MT of HW disposed in secured landfill. Total capacity is 2.7 Million MT for treatment and disposal of HW, over a span of 20 year.

#### **Facilities:**

- Secured landfill
- NABL accredited lab
- Waste storage facilities
- Waste Stabilization / Solidification facility
- Multiple Effect Evaporator (MEE)
- Capacity of Biomedical waste treatment facility: 16 MT per day





# BEIL DEDICATED TO PROTECT ENVIRONMENT

# BEIL INFRASTRUCTURE LIMITED

"Amazing, a very organized, productive and perfect facility working for both generations."
- Mr. Amaha, Director, Environment IPDC, Ethiopia

#### CHWTSDF Site at Majra, Himachal Pradesh (India) (By Shivalik Solid Waste Management Limited (SSWML) - a step down subsidiary of BEIL)

- An ISO 9001:2015, ISO 14001:2015 and ISO:45001:2018 certified company
- Caters to the need for disposal of HW generated by approx.1500 industries which include textile, steel and pharmaceutical / cosmetic industries in Majra, Himachal Pradesh.
- Facility is in operation since Oct 2008.
- From 2008 to March-2021, approx. 0.22 Million MT of HW disposed in secured landfill. **Total capacity is**1 Million MT for treatment and disposal of HW, over a span of 20 year.
- It is authorized by HPPCB for collection, storage and Transportation of Waste Oil, Used Oil, Paint Sludge, Used Lead Acid Batteries and send them to the SPCB/CPCB authorized recyclers.

#### **Facilities:**

- Secured landfill
- MoEF & CC Approved and NABL accredited laboratory (ISO/IEC 17025:2017) for Waste and Water analysis and environmental monitoring
- Waste storage facilities
- MEE (Multiple Effect Evaporator)
- Waste treatment (solidification/stabilization) facility
- Authorized by HPPCB for WEEE
   (E-Waste) collection and its management.



#### **FACILITIES AT MAJRA, HP**











**MEE Plant** 



" I am happy & impressed about the way the hazardous waste is managed here.

The staff members are committed. Good work . keep it up."

-Dr. U. Sridharan, Add. Director, MoEF,GOI, New delhi

#### 3.5 MLD Common Effluent Treatment Plant (CETP) at Ankleshwar, Gujarat (India)

- CETP was set up in 1996 and operated by Enviro Technology Ltd. (ETL), a subsidiary of BEIL.
- Treats Raw Effluent from 290 member industries.
- The activity consists of collection, transportation and treatment of Industrial Effluent generated by Member Industries in the region.

ETL have been awarded a rare accolade by the World Bank for the best CETP design for treating the waste from about 250 Small scale Industrial Units (mainly pharmaceutical, chemical, pigment, dye based industries).





"Highly impressive. Great to see disposed of hazardous material in so well controlled.

I wish we had move in India! All the very best for future."

-Dr. U. Sridharan, Add. Director, MoFF, GOI, New Delhi

# 25 MLD Common Effluent Treatment Plant (CETP) and Effluent Conveyance system (64 Km) at Baddi, Himachal Pradesh (India).

- The plant and effluent conveyance system was designed and constructed by M/s UPL Environmental Engineers Ltd. (UPLEEL), a fellow subsidiary company of BEIL.
- BEIL is operating Baddi CETP including effluent conveyance system since 2017 and have a contract for operation for 29 years.



Treats Raw Effluent from 326 member industries and 70 other industries.

#### Project cost:

- a) CETP = 620 Million INR
- b) 64 Km Effluent Conveyance System =140 Million INR





Certificate of Registration

GHARMURE ENGINEERING AND CONSTRUCTIONS PVT. LTD

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"The technology and power is so big and huge. The site is so clean. We Would like to collaborate with your company in several areas of waste management business."
- Jun Yamamoto, Dowa Eco-System Co.Ltd,Japan

# Gharpure Engineering and Constructions Pvt. Ltd. (a wholly owned subsidiary of BEIL)

**GECPL** is an ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 certified company, based at Pune (Maharashtra)

having branch in Vadodara (Gujarat).

Specialized in providing turnkey solutions with various technologies from more than two decades for development of large/medium scale Sewage/Wastewater Treatment Plant (STP/WWTP), Effluent Treatment Plant (ETP), Common ETP, Water Treatment Plant (WTP), sewage and water supply networks as well as pumping stations including Service reservoirs across the various states in India.

#### **Technologies adopted for Wastewater/Sewage/Effluent Treatment:**

- SBR/MBBR/ASP/ MBR & Extended Aeration
- Upflow Anaerobic Sludge Blanket (UASB) Reactor
- Expanded Granular Sludge Bed (EGSB) digestion
- Integrated Fixed Film Activated Sludge (IFAS)
- Bioreactor/Bio-tower
- Advanced oxidation Process
- Tertiary Treatment
- Zero Liquid Discharge
- Multiple-Effect Evaporator (MEE) with/without spray drier
- Ultra-Filtration (UF)
- Nano-technology
- Reverse Osmosis (RO)





WASTE WATER TREATMENT



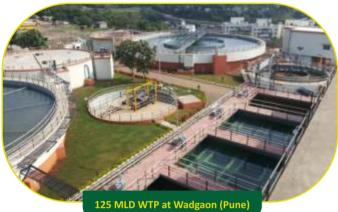




"BEIL in state of art institution with best NABL lab dealing with preventing of environmental pollution by specialised treatment of industrial organic & inorganic waste. Excellent team. Wish the team All the Best."
- Dr. Chandan, Sr. Reg. Director, Office of H & S, Ahmedabad

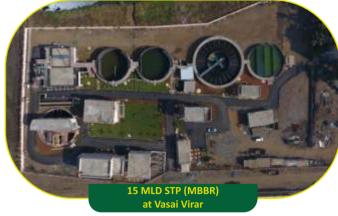
# Gharpure Engineering and Constructions Pvt. Ltd. (a wholly owned subsidiary of BEIL)



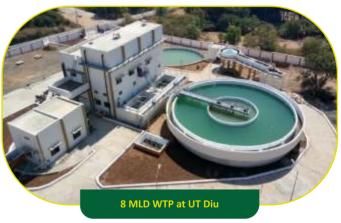
















"Excellent Facility and there is so much to learn."
-Prof. Sanjay Mahajan, IIT Bombay

## UPL Environmental Engineers Ltd., Gujarat (India), a fellow subsidiary of BEIL

Provides Turnkey solutions for development and O&M of Solid Waste Management and Wastewater / Industrial Effluent Treatment Projects.







"Very Impressive work done by the BEIL team. This model need to be republicated in other parts of the country. Congratulations. Keep it up."

-Veenu Gupta, Director, CPCB, GOI

# BEIL Research and Consultancy Pvt. Ltd. Ankleshwar, Gujarat, India. (a wholly owned subsidiary company of BEIL)

Specialised in rendering consultancy services for Design, Engineering, Project Management of:

#### (1) Various Environmental Management Projects viz.

- Integrated MSW Management Project,
- Biomining/Bioremediation,
- Sanitary/Secured Landfill,
- Rehabilitation/Closure/Capping of Open Dumpsites,
- Incineration Plant.
- MSW & Hazardous waste Processing/Treatment, Disposal projects and
- Industrial/Municipalities STP/Wastewater/Effluent Treatment/ZLD/MEE Plants across India and other countries.

#### AND

#### (2) Other areas viz.

- Design of Pharma and Chemical Processing plant,
- Re-engineering of process design to optimize the energy and Troubleshooting of the existing facility,
- Design of Continuous Process Plant based on batch or pilot plant data
- Treatability study
- Providing Environmental Consultancy for preparation & submission of Post Environment Six Monthly Compliances,
- Energy Audit (possess accreditation by BEE) and Water Audit, etc.
- Environmental Monitoring;
- EIA/EC

#### Key consultancy assignments:

- >> PMC for Development of Integrated Municipal Solid Waste Management Project at Silvassa Municipal Council
- >> Providing Consultancy Services for Investigation and Design of Bhalswa landfill Rehabilitation Project, NDMC
- Providing Consultancy services for construction of Iron Oxide Pond (IOP) and Effluent Treatment Pond (ETP) for KMML, Kerala
- >> Preparation of DPR for 5.5 MLD STP by integration with existing CETP located at Baddi, Solan (Himachal Pradesh)
- >> Preparation of DPR for expansion of CHWTSDF in FACT- CD Campus, Ambalamedu, Kochi.
- >> Design and PMC services for an IWTSDF consisting of Hazardous Waste landfill (Approx. 83,000 sq.m) and MSW landfill (Approx. 10,000 sq.m) for Special Economic Zone Authority at Duqm (SEZAD) in Oman.
- » Design and PMC services for relocation of Hazardous and Non-Hazardous Waste Storage facility (Approx. 27,000 sq.m) for Oman Oil Refineries and Petroleum Industries Company (Orpic) SAOC, Oman
- » Design and PMC services for an Engineered Sanitary Landfill (Approx. 97,500 Sq.m) in Barka, Oman for Oman Environmental Services Holding Co. SAOC (be'ah).
- » Design and PMC services for an Engineered Sanitary Landfill (Approx. 1,11,786 Sq.m) in Sohar, Oman for Oman Environmental Services Holding Co. SAOC (be'ah).
- Design and PMC services for an Engineered Sanitary Landfill (Approx. 95,000 Sq.m) in Ibri, Oman for Oman Environmental Services Holding Co. SAOC (be'ah).









"It's my first time to see such well- managed landfill site and it's amazing."
- Mr. Mervic Kuma, Sr.Environmental Expert,IPDC,Ethiopia

# Shivalik Solid Waste Management Limited (SSWML), Himachal Pradesh (a step down subsidiary of BEIL)

#### SSWML is providing consultancy services in following areas:

- Preparation of EIA reports for environment clarence (SSWML is QCI NABET accredited EIA consultant)
  - 1. Mining of minerals
  - 2. River Valley, Hydel, Drainage and Irrigation projects
  - Thermal power plants; Metallurgical industries
- 4. Pesticides industry and pesticide specific intermediates
- Common hazardous waste treatment, storage and disposal facilities (TSDFs)
- 6. Biomedical Waste Treatment Facilities
- 7. Building and large construction projects including shopping malls, multiplexes, commercial complexes, housing estates, hospitals, institutions
- 8. Common Municipal Solid Waste Management Facility (CMSWMF)
- 9. Metallurgical Industries (ferrous & non-ferrous)both primary & secondary
- 10. Oil & Gas transportation pipeline (crude & refinery/ petrochemical products) passing through national parks/ sanctuaries/ coral reefs/ ecological sensitive areas including LNG Terminal



- Environmental Audits
- Environmental Monitoring and Water/Wastewater analysis services
- Ecology and Biodiversity studies and Resettlement and Rehabilitation action plan
- Compliance to the conditions of Environmental Clearance
- Providing Consultancy for design and detailing of STP, ETP, CETP, TSDF, Municipal Waste
   Management, Kitchen Waste Management and Rain Water Harvesting.



"The waste treatment facility is nicely managed with all treatment technologies at one place which is wonderful to see."
- Mr. Hitendra Sharma, Sr. Scientific Officer HPCB ,Shimla

# MSW TRANSPORATION, TRANSFER STATION OPERATION AND PROCESSING & DISPOSAL PROJECTS BY BEIL

#### 1. Integrated Municipal Solid Waste Management Project (IMSWMP) at Coimbatore

• Set up and operated by Coimbatore Integrated Waste Management Company Pvt. Ltd. (CIWMCPL)—a SPV company formed by BEIL in 2007-08, under DBOOT basis (PPP) for 20 years concession period for Coimbatore City Municipal Corporation.

#### • The IMSWMP consists of -

- ▶ Setting up and operation of 3 transfer stations
- Secondary transportation of waste from transfer station to MSW processing plant,
- Closure of 2 existing dumpsites,
- ► MSW processing plant of capacity 600 TPD and
- ► Engineered sanitary landfill (1 Million Cu.m capacity) for disposal of inert and post processing reject waste.
- a. Closure of two old dumpsites (Kavundanpalayam and Ondipudur)
   Kavundanpalayam Closure 1.61 Ha
   Ondipudur Closure 0.61 Ha





b. Modern Mechanical Transfer stations at Peelamedu (150 TPD), Sathy Road (125 TPD) and Ukkadam (150 TPD) and Secondary Transportation of MSW from Transfer station to Waste Processing and Disposal site.





"This is a very worthwhile project and this is driven by the manufacturers in the area shows they are accomplished their responsibilities."
- Mr. Ian Ward, Geanova Asia Pacific, Australia

c. MSW Processing facility at Vellalore (MRF, Compost, RDF and recyclables) to process up to 600 TPD MSW.





d. Sanitary Landfill at Vellalore (Area - 1,00,000 sq.m to accommodate approx.1 Million MT) for disposal of post processing rejects and inert materials.





#### 2.MSW processing Project at Ahmedabad (Guj), India

- MSW Processing plant of capacity 250 TPD was commissioned in 2010 on DFBOOT/PPP basis and is presently under operation.
- Recycling MSW to produce Compost and RDF.





#### 3. MSW Processing Plant at Keru, Jodhpur

- Plant Capacity: 100 TPD for producing City Compost.
- Plant Commissioned in 2007 and subsequently operated by BEIL for 5 years i.e. upto 2012.

#### 4. MSW Processing Plant at Village - Chal, Taloja-Maharashtra

- Plant Capacity: 55 TPD (upgraded in 2012 to enhance its capacity to treat 150 TPD) for producing City Compost.
- Plant Commissioned in 2007 and subsequently operated by BEIL for 3+2 years



"A nice facility for disposing off the solid waste management. Can be an example to replicate it in other industrial estate" - Mr. R.K.Gupta, Procurement Consultant on Word Bank, MoEF

### Tatva Environment Services LLC., Sultanate of Oman (A fellow subsidiary of BEIL)

- Registered company in Sultanate of Oman, promoted by Tatva Global Environment Pvt. Ltd. (India) and Amit Dharamsey group, Oman.
- TES completed 6 (Six) Projects in Oman, Viz:
- ▶ Engineered Sanitary landfill at Barka
- ► Engineered Sanitary Landfill at Tahwa
- ▶ Engineered Sanitary Landfill at Sohar
- ► Engineered Sanitary Landfill at Ibri
- ▶ Industrial Waste Treatment, Storage and Disposal Facility at Dugm
- ▶ Hazardous and Non-Hazardous Waste storage areas at SIPC, ORPIC



- All the landfills constructed by TES are state of art facilities developed with Geosynthetic liner system as per USEPA standards.
- Awarded prestigious Dossier Construction Award in the category of 'Best EPC Contractor' in the year 2014 for Barka and in 2015 for Tahwa and Sohar Landfill projects.
- Has technological tie ups with reputed manufacturers of small scale solid waste and wastewater recycling plants for supply in Middle east / GCC region.



Landfill in Oman











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