

# STATEMENT OF QUALIFICATIONS PUBLIC HEALTH ENGINEERING

Version 2.0



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**Revision Chart**

<b>Date</b>	<b>Author</b>	<b>Approved By</b>	<b>Description of Changes</b>
31.07.2008	Manohar SP	Nagaraju.A	Version 1.0
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## 1 Executive Summary

SECON PRIVATE LIMITED (SECON) formerly SECON SURVEYS was established in the year 1981, initially to offer Survey and Investigation Services. Over the past 29 years, SECON has diversified and has grown into a Multidiscipline GIS Driven Design Consultancy firm offering services both in India and Abroad.

**SECON is an ISO 9001: 2008 Certified, NABL Accredited** Organization with headquarters at Bangalore, regional offices at New Delhi, Mumbai, Vadodara, Bhopal, Hyderabad and overseas offices in Florida (USA) and Tripoli (Libya), augment our range and reach.

SECON owns an aesthetically designed 105,000 sq.ft plug in office in Bangalore to accommodate about 1200 Work Stations. SECON renders Multidiscipline GIS Driven Design Engineering Consultancy for Infrastructure Projects. Allied Support Services include Ground Survey & Investigation, generation of data for GIS Database and Base Map Preparation, Generation of Ground Control Points / Monumentations, Mapping, 2D Data Compilations, Ground Validations, Aerial Triangulation, Digital Elevation Model (DEM), Orthorectification, 3D Planimetry & Topography feature collection by Photogrammetric, LiDAR and Remote Sensing & Satellite Image Processing and other data processing / maintenance & hosting services.



SECON provides Total solution from a single window. Following are the various service offerings:

Design Consultancy and Engineering Services	Investigation and Services
Public Health Engineering	Engineering, Property & Hydrographic Surveys
Highway Engineering & Construction Supervision	Photogrammetry, LIDAR Data Filtering & Satellite Image Processing
GIS Driven Software Development	GIS / CADD Data Development and Maintenance
Irrigation, Flood Control & Water Management	Soil Investigation & Foundation Engineering
Oil & Gas Pipeline Transportation	Route Planning, 3D Corridor Mapping, Generation of GIS Database
Town Planning & Urban Development	Ground Water & Resistivity Surveys
Right of Use Acquisition & Permitting	Underwater Leak Detection & Turnkey Solutions
Geotechnical Engineering	Terrain Evaluation & Geological Appraisal
Environment Impact & Management Plan	

## 2 Public Health Engineering Division

### 2.1 Introduction

Due to fast urbanization taking place, Water Supply and Sanitation are crucial to any Municipal Infrastructure System. Water is a basic need. The provision of safe and adequate drinking water to the urban population continues to be one of the major challenging tasks. Safe and potable water supply and scientifically designed sanitation facilities are the two basic essential amenities the community needs on top priority for healthy living. Unless there is Proper Collection, Treatment and Safe Disposal and Reuse of Wastewater generated by the community, there could be serious health concerns, pollution of water resources and environmental degradation.

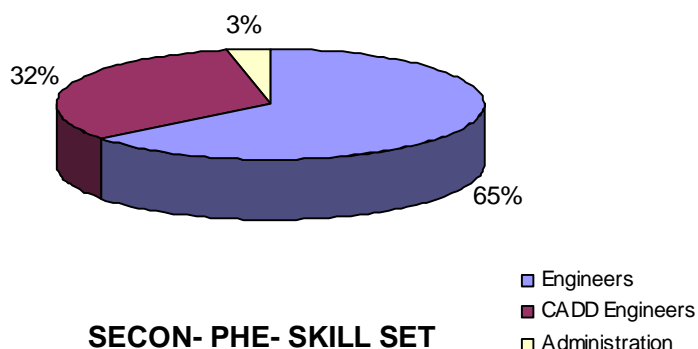
Lack of proper and adequate drainage system is serious as storm water gets pooled in low lying areas causing damage to buildings, roads and posing a threat to Public Health in general.

SECON Provides consultancy services/Technical assistance in Public Health Engineering at National and International level to Private / Public and Government sectors on Feasibility studies, Survey, Investigation, Design, Tendering and Construction Management and Supervision

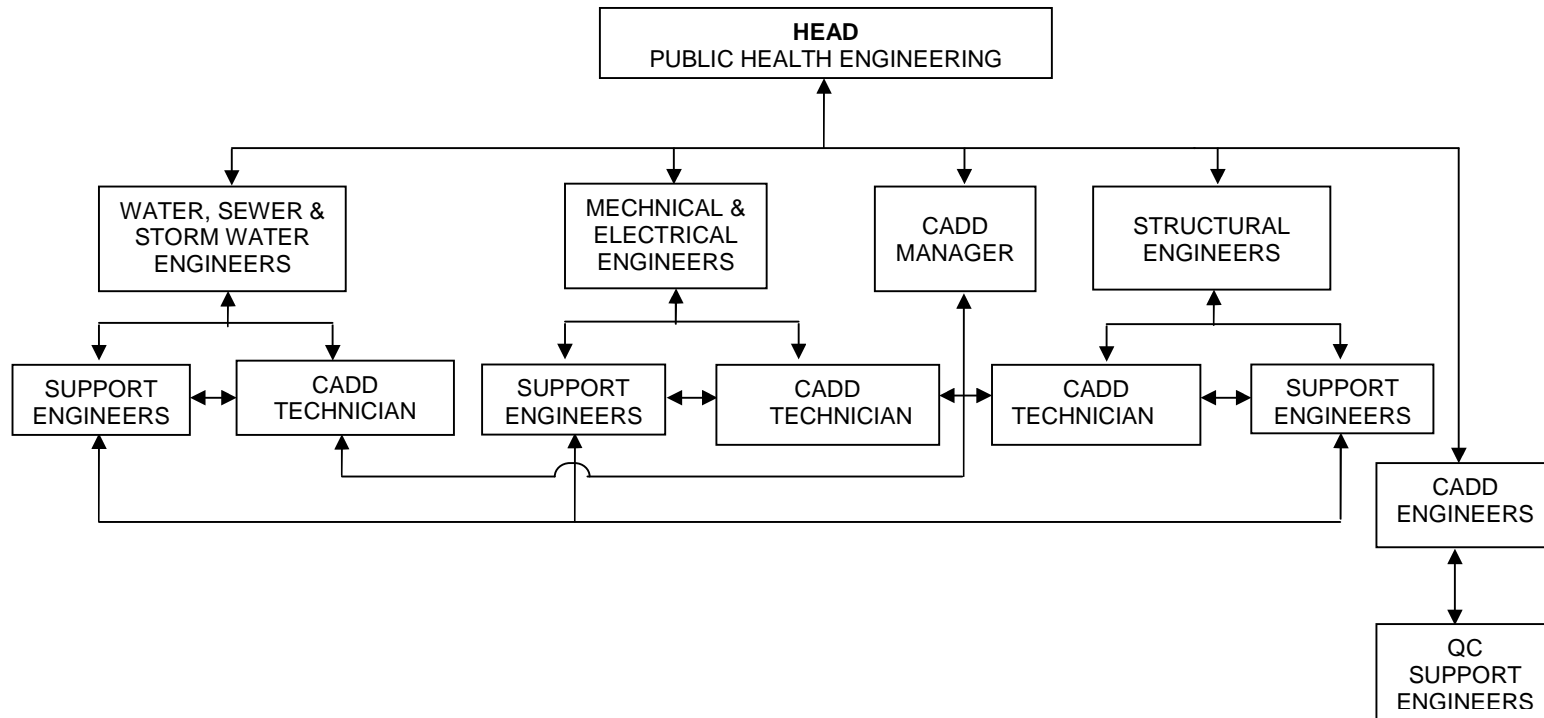
One of SECON's strengths is to view and treat water (Raw Water, Waste Water, Storm, Treated Water, and Industrial Effluent) in an integrated manner. SECON have the potential to include in-house specialists from other discipline like Water Resources, Town planning, institutional and organizational development, socio-economy, health issues, infrastructure, financial and economic assessments and more importantly the environmental aspect.

### 2.2 Skill Set

The Team composition is a very good mix of senior and experienced engineers having held responsible positions in their respective fields in both public and private sectors and have successfully implemented various infrastructural schemes. The staff composition chart will be as follows



### 2.3 Organization Chart



### 3 Facilities

#### 3.1 Hardware and Software

The Skill set of team is augmented with high end computers and latest design and drafting software.

#### 3.2 Computer Aided Optimal Design and Drawings

The department has experienced design engineers capable of undertaking complicated **Multilevel Data Analysis** using the design software for **Surge Analysis, Distribution Network Analysis**.

SECON also has **In-House Software Application** development department to develop project specific / need based software like **Design - Drawing - BOQ Interface, Electronic Quality Assurance**, etc.

Some of the important software held and used for computer aided optimal design and drawings include the following:

Components	Critical Design Parameters	Software
Transport Main & Distribution Network	<ul style="list-style-type: none"> <li>• Demand Calculation</li> <li>• Residual Head</li> <li>• Unit Head Loss</li> <li>• Velocity</li> <li>• Chlorine Concentration</li> <li>• Skeltalization</li> </ul>	<ul style="list-style-type: none"> <li>• Water GEM</li> <li>• WDN- Interface Software Developed In-House for Generation of Profile</li> <li>• DN-Extract: Interface Software Developed In-House for Bill of Quantities</li> <li>• <b>SAP (Surge Analysis Program - developed by India Institute of Science, Bangalore)</b></li> </ul>
Pumping Machinery and Pumping Station	<ul style="list-style-type: none"> <li>• Net Positive Section Head</li> <li>• Cavitations</li> <li>• Velocity, Pressure</li> <li>• Selection of Pumping Machinery</li> </ul>	<ul style="list-style-type: none"> <li>• In-House Software</li> </ul>
Water Treatment	<ul style="list-style-type: none"> <li>• Selection of Process based on the Water Quality, Techno-Economical Comparisons, Environmental Impact.</li> </ul>	<ul style="list-style-type: none"> <li>• In-House Software</li> </ul>
Sewer Collection Network	<ul style="list-style-type: none"> <li>• Demand Assessment</li> <li>• Delineating Catchments</li> <li>• Gradient and Velocity</li> <li>• d / D Ratio</li> <li>• Depth of Cut</li> </ul>	<ul style="list-style-type: none"> <li>• Sewer GEM</li> <li>• SDN-In-House Software for Generation of Profile and Planimetry</li> </ul>
Sewage Pumping Station	<ul style="list-style-type: none"> <li>• Detention Period for Sewage in Wet Well</li> <li>• Minimum &amp; Maximum Level</li> <li>• Frequency of Pump On / Off</li> </ul>	<ul style="list-style-type: none"> <li>• In-House Software</li> </ul>
Sewage Treatment Plant	<ul style="list-style-type: none"> <li>• Selection of Process based on the BOD, Techno-Economical Comparisons, Environmental Impact, Land Availability, Temperature, Location, Wind Direction, Reuse of Final Effluent, Ease of Operation and Maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• In-House Software</li> </ul>

Components	Critical Design Parameters	Software
<b>Storm Water Drainage</b>		
Rainfall Data Analysis	<ul style="list-style-type: none"> <li>• Probability Estimation</li> <li>• Return Period</li> <li>• Velocity</li> </ul>	SMADA Gumball's Analytical Methods
Runoff Estimation	<ul style="list-style-type: none"> <li>• Runoff Factors</li> <li>• Defining Catchment</li> <li>• Time of Concentration</li> <li>• Intensity</li> </ul>	In-House Software
Storm Water Collection Network	<ul style="list-style-type: none"> <li>• Maximum Discharge</li> <li>• Gradient and Velocity</li> <li>• d / D Ratio</li> <li>• Depth of Cut</li> </ul>	Storm CAD

### 3.3 GIS Driven Information System

For any Water Supply and Sewerage System to be successful, it has to cater the consumer demands like “Adequate Quantity, Acceptable Quality at Affordable Tariff”. The water managers strive balancing between ever-increasing demands. Various tools and techniques are used in the systematic approach in Water and Wastewater Management and Use of GIS (Geographic Information System) make this task easier.

GIS is a computer based system “for Capture, Storage, Retrieval, Analysis and Display of Spatial Data”. By querying of both spatial and non-spatial data various planning scenarios for decision making can be generated. Man, Machine Users, Data, Software are major components of GIS.

GIS represents the real world digitally. Data could be gathered in many ways, and overlaid to present maps, which could enable people to make the right decisions.

SECON has capability in understanding client requirement and developing project specific GIS System for Water and Wastewater Management.

### 3.4 Knowledge Base

PHE library is well equipped with collection of Manuals, Journals, Books Covering different Fields of Public Health Engineering, IS Codes, BS Codes and ASTM Standards. SECON being an ISO 9001:2008 Certified, the PHE department has all activities complied to ISO Standards and activity manuals are available for the approach to Planning, Design and Preparation of Drawings.

## 4 Service Offerings

SECON is having capability in addressing and identifying solutions in gamut of issues associated with water (both Drinking Water and Industrial Water Requirement), Sewage and Storm Water Drainage Systems. The service offerings with the complete project cycle includes the following:

- Preparation of Conceptual Report
- Project Appraisal
- Preparation of DPR based on Computer Aided Optimal Design and Drawing

- Tender Documents & Cost Estimates
- Construction Supervision & Management
- GIS Driven Information System
- Training and Capacity Building Programs

#### **4.1 Preparation of Basemap**

- Topographic / Planimetric / Urban Mapping
- Digital Terrain Models
- Preparation by Data Collection and Processing from:
  - Satellite Images
  - Photogrammetry and Lidar

##### **4.1.1 Survey and Investigation**

- Field Survey to Generate Plan / Profile / Cross Sections, Manhole Invert Elevations, Transport Main Profile, Longitudinal Sections, Developing of Hydraulic mean Gradient Levels & Intersection Levels of Distribution Networks.
- Underground Utility Location using GPR (Georadar)
- Above Ground Utility Mapping
- GPS Mapping and Inventory for GIS Asset Management
- Geotechnical Investigations
- Geological Investigations
- Hydraulic Investigations
- Hydrological Investigations

##### **4.1.2 Feasibility, Planning, Design**

Water Supply, Sewerage and Storm Water Drainage System

- Feasibility Study of the proposed system with respect to the Topographical Features, Source, Demand, Environment, Supply and other factors by considering and analyzing the existing system
- Assessment of Water Resources (Ground Water and Surface Source) & Water Supply, Preparation of Preliminary Design and Estimate for Urban / Rural Water Supply Schemes
- Water Quality Analysis using various methods, proposing suitable technology for the Treatment of Non Potable Water according to the water quality Parameters affected.
- Preparation of Engineering Study Report Involving Population Projection, Economic Analysis Water Hammer Analysis of Rising Main & Distribution System using latest Network modeling software.
- Development and Management of Water Resources
- Design of Water Treatment Plant with a Schematic Diagram

- Potable Water Supply and Public Sanitation Facility Development for low-income dwelling complexes, if required
- Diagnostic studies including flow gauging and computer-based hydraulic modeling of Sewerage Systems using Sewer CAD
- Design of the Sewage Treatment Plant
- Purification and recovery of Wastewater for Irrigation, and recharging of Ground Water Aquifers
- Sewerage Development, Treatment of Sewage and Disposal of Sewage
- Design of Storm Water Drainage Network using Storm CAD.
- Irrigation, Drainage and Flood Mitigation Works
- Aesthetic water bodies development for recreation Designed Sewer Networks, Trunk Sewers, Pumping Stations, Oxidation Ponds and Outfall
- Preparation of Detailed Working Drawings for the Network, Appurtenances and Structures

#### **4.1.3 Rate Analysis, Detailed Quantity Calculation, Bill of Quantities & Cost Estimates**

- Calculation and Presentation of Detailed Quantities for the Various Items
- Preparation of the Bill of Quantities of the items after classifying the same under various heads.
- Preparation of Rate Analysis for the Major items as per the Specifications
- Calculation of the Cost Estimates for the project based on the above
- The Rates of the items shall be based on the prevailing Market Rates / Government Rates for Material and Labour

#### **4.1.4 Preparation of Tender Documentation and Vendor Evaluation**

- Finalisation of the Technical Specifications for the various components of the project
- Preparation of Bid - Documents as per the Clients standard procedures followed such as World Bank Procurement policy, FIDIC etc.,
- Preparation of Detailed Specifications for the items
- Preparing Pre-Qualification Documents for the Contractors
- Preparation of Tender Documents for the Contractors
- Assisting the Client in Evaluation of the Tenders

#### **4.1.5 Project Implementation Supervision and Generation of As Built Drawings**

- Supervision and Quality Control of the Day-to-Day Construction
- Checking and Certification of Quantities executed as per the Specifications laid down in the Tender Document
- Contract Management of the Project
- Verification of Bills

- Assisting Client in Clearing Arbitration and Disputes
- Identification of Approved Variations from the Tender Drawings
- Preparation of as Built Drawings Incorporating the Changes, if any for Effective Management

#### **4.1.6 GIS Based Asset Management**

- Field Survey and Data Collection
- GIS Data Development (Converting Hardcopy / CAD Plans / Asbuilt Drawings into GIS Database for Water / Sewer / Storm Water Networks)
- Development of Enterprise GIS applications for Asset Management and Environmental Monitoring
- Generation of Network Mapbooks (Generation of Network System Maps in Hard Copy and Digital format Viewable on Web Based Systems)

#### **4.2 Training and Capacity Building Programs**

SECON has capacity in carrying out tailor made training and capacity building programs to various stakeholders in the field of Water and Wastewater Management.

## 5 Relevant Project Experience

Relevant experience gained in executing major International and National Projects are listed below

### International

- Preparation of **DPR for "Water Supply, Sewerage, Storm Water Collection System, Electrical Town Distribution Network, Telecom Distribution Network and Roads for 100 towns** in Tripoli Region, **Libya**
- Design of "**Storm Water Drainage Collection and Disposal System**, Design of Road and Structural Design of Civil Structures " for Shuqaiq Phase 2 and Eastern Province Water Transmission System Phase 2" in **Kingdom of Saudi Arabia**
- Engineering Survey and **Design of Water Supply System, Sewerage System, Storm Water System**, Electrical Town Distribution Network, Street Lighting, Telecommunication Network, Gas Distribution System and Roads for Al Herrah Project in Tripoli Region, Libya for **Saving Investments and Urban Development Company (SIUDC), Libya.**
- Preparation of DPR for "**Water Supply Distribution Network, Sewerage Drainage System, Storm Water Drainage System, Irrigation System, Roads and Pavement Designs with Parking Area** " for **Gargaresh Cornish Beach Development (Water Front) in Tripoli, Libya.**
- Detailed Engineering Survey, Design of **Water Supply, Fire Hydrant Network, Sewerage Network, Storm Water Network, Roads, Sidewalks, Car Parking**, Electrical Power, Road / Street Lighting Network including Lighting for side walk along the beach, Telecommunication Network and Irrigation System for gardens and green areas for complete area inside the boundary of the approved Master Plan of **Gargaresh Beach Area, Tripoli, Libya for Organization for Development of Administrative Centers (ODAC), Libya.**
- Preparation of "**Preliminary and Detailed Design Of Water Supply, Sewerage and Road Network**" for **Al Quryat Eshargiah , in Libya**
- Preparation of "**Preliminary and Detailed Design Of Water Supply, Sewerage System, storm water Drainage System Road Network, Electrical and Telecommunication Town Distribution System**" for **Al Tawarga , in Libya**

### National

- Survey Planning, design of **Anjanapura Township, Uttarhalli Hobli, Bangalore South Taluk - Design of Roads, Water Supply, Sewer, Storm Water and Cross Drainage Works.** Preparation of BOQ & Detailed Project Report and Preparation of GIS Data Base for GIS / MIS applications for Bangalore Development Authority.
- Field Survey and Geotechnical Investigation for "Consultancy Services for Preparation of Detailed Project Report for **Bangalore Water Supply and Sewerage Board (BWSSB).**
- Topographical Survey, Geotechnical Investigation, Hydro-Geological Investigation and compile the Meteorological data for **International Airport at Devanahalli, Bangalore.**

- Survey & Cadastral Survey, Hydrological Survey, Geo-Technical Investigation, Obtaining Statutory Clearances, Designing of **Water Transmission Main, Intake System** with Pumping Stations, Project Management Consultancy Service and Support Services to Hazira gas - fired Power Plant expansion project in Gujarat for **Gujarat State Energy Generation Ltd.**
- Techno Economic Feasibility Study for Transportation **of Raw Water from Cauvery River to Industrial Areas in and Around, Bangalore - Karnataka Industrial Area Development Board.**
- Provision of **Raw Water and Filtered Water Transmission Main from River Manjra** to Naubad and Kollarkhurd Industrial Area Bidar - **Karnataka Industrial Area Development Board.**
- Consultancy Service for Detailed Engineering Service for Execution of Punasa Lift Irrigation Scheme including **Water Transport Main, Water Supply Distribution Mains for Drinking Water Supply to 110 Villages** and Irrigation for 35008 Ha – **Narmada Valley Development Authority.**
- Project Management Consultancy Services for Up gradation of important road corridors in Bangalore Urban and Rural Districts for a length of 1004 Km.
- **“Engineering Survey, Investigation, Hydrological Analysis, Design of Raw Water Transmission Main, Intake System with Pumping Stations and Design of Intermediate Reservoir** to the proposed 3500 MW Coal Based Power Plant at Chhattisgarh State for KSK Mahanadi Power Company Ltd., Hyderabad.
- **“Survey, Investigation, Hydrological Analysis, Design of Barrages, Design of Dam, Raw Water Transmission Main, Intake System with Pumping Stations and Preparation of Drainage Plan”** to the Proposed Steel Plant of capacity 1 Mt / year at Madhya Pradesh State for SPJ Steel & Minerals Pvt Ltd., Kolkata,
- **“ Engineering Survey & Cadastral Survey, Hydrological Survey, Geo-Technical Investigation, Obtaining Statutory Clearances, Design of Water Transmission Main, Intake System with Pumping Stations and Project Management Consultancy Service”**to Hazira gas-fired Power Plant expansion project in Gujarat.
- Study Report for Fixing Raw Water Pipeline Alignment from Kota Barrage to Chembal Fertilizer and Fertilizer Ltd., in Gujarat
- **“Engineering Survey, Investigation, Design of Intake System and Raw water Pipeline from Ghandhak River to Sugauli”** for Hindustan Biofuels subsidiary of HPCL Ltd, Uttar Pradesh.
- **“Engineering Survey, Investigation, Design of Intake System and Raw Water Pipeline from Ghandhak River to Lauriya”** for Hindustan Biofuels subsidiary of HPCL Ltd, Uttar Pradesh.

**DESCRIPTION OF SIMILAR ASSIGNMENTS, EXPERIENCE IN SIMILAR CONDITIONS**

Sl. No.	Name of Client	Assignment Name	Assignment Highlights	Consultancy Fee (Rs. in Lakh)	Status
<b>International Projects</b>					
1.	National Consulting Bureau (NCB) Great Socialist People's Libyan Arab Jamahiriya	Preparation of <b>DPR for "Water Supply System, Sewerage System, Storm Water Collection System, Electrical Town Distribution Network, Telecom Distribution Network and Roads for 100 towns in Tripoli Region, Libya</b>	<ul style="list-style-type: none"> <li>• Project Area / Towns : 24000 Hectare / 100</li> <li>• Water Supply Distribution System : 2500 Km</li> <li>• Water Supply Transport Main : 480 Km</li> <li>• Ground Level Reservoirs : 75 No. (100 Cum to 1700 cum Capacity)</li> <li>• Elevated / Over Head Tanks : 79 No. (100 Cum to 2000 cum Capacity)</li> <li>• Water Treatment Plant : 45 Nos. ( 0.50 MLD to 84 MLD Capacity)</li> <li>• Sewerage Collection System : 2000 Km</li> <li>• Sewerage Transport Main :350 Km</li> <li>• Sewage Treatment Plant : 73 No. (0.30 MLD to 64 MLD capacity)</li> <li>• Sewage Pumping Station: 317 No.</li> <li>• Storm Water Collection Network: 1215 Km.</li> <li>• Storm Water Pumping Stations : 25 No.</li> <li>• Preparation of Detailed Project Report and Tender Documents.</li> </ul>	5515.00	Completed

Sl. No.	Name of Client	Assignment Name	Assignment Highlights	Consultancy Fee (Rs. in Lakh)	Status
2.	National Consulting Bureau (NCB) Great Socialist People's Libyan Arab Jamahiriya	Preparation of DPR for " <b>Water Supply Distribution Network, Sewerage Drainage System, Storm Water Drainage System, Irrigation System, Roads and Pavement Designs with Parking Area</b> " for <b>Gargaresh Cornish Beach Development (Water Front) in Tripoli, Libya.</b>	<ul style="list-style-type: none"> <li>• Design of 14.50 Km Water Distribution Network</li> <li>• Design of 16.50 Km Sprinkler Irrigation System with 1700 No. Sprinklers</li> <li>• Design of 10.0 Km Drip Irrigation System</li> <li>• Design of 150 m Sewerage System</li> <li>• Design of 2.5 Km Sewerage Transport Main</li> <li>• Design of 5 Nos. Sewerage Lift Stations</li> <li>• Design of 6.50 Km Storm Water Drainage Network with Marine Outfalls</li> <li>• Preparation of Detailed Project Report and Tender Documents</li> </ul>	64.00	Completed
3.	Saving Investments and Urban Development Company (SIUDC) National Consulting Bureau Tripoli, Libya	Preparation of DPR " <b>Water Supply Distribution Network, Sewerage Collection System, Storm Water Drainage System, Roads and Pavement Designs with parking area, Street Lighting &amp; Electrical Town Distribution System, Telecommunication and Gas Network</b> " for Al Harrah Township in <b>Tripoli region, Libya.</b>	<ul style="list-style-type: none"> <li>• Design of Water Supply Components such as 4 Km Transport Main, 22 Km Distribution Network, 2 No. Pumping Stations, 2 No. ground Storage Reservoirs</li> <li>• Design of 10 Km Sewer Collection System</li> <li>• Design of 5 Km Sewer Transport Main</li> <li>• Design of 2 No. Sewage Pumping Stations</li> <li>• Design of 19 Km Storm Water Drainage Network</li> <li>• Design of Storm Water Pumping Station, 1 Km Storm Transport Main</li> <li>• Design of Collection Reservoir / Recharge</li> <li>• Preparation of Detailed Project Report and Tender Documents</li> </ul>	60.00	Completed



Sl. No.	Name of Client	Assignment Name	Assignment Highlights	Consultancy Fee (Rs. in Lakh)	Status
4.	Organization For Development Of Administrative Centres (ODAC), General People's Committee, Libya	Consultancy Services for Preparation of "Concept Plan for Sewerage System for Organization For Development of Administrative Centres (ODAC), General People's Committee, Covering Western, Central, Southern and Eastern Regions" of Libya	<ul style="list-style-type: none"> <li>• Review of Existing Reports</li> <li>• Evaluation of existing Sewer Transport Main carrying capacity for additional flow</li> <li>• Evaluation of existing STP Treatment Capacity additional flow</li> <li>• Design of Sewerage Transport Main</li> <li>• Design of Sewerage Treatment Plants</li> <li>• Preparation reuse plan for STP Treated Water for Agricultural purpose</li> </ul>	809.00	Ongoing
5.	IBG Ltd, Switzerland	Design of "Storm Water Drainage Collection and Disposal System, Design of Road and Structural Design of Civil Structures " for Shuqaiq Phase 2 and Eastern Province Water Transmission System Phase 2" in Kingdom of Saudi Arabia	<ul style="list-style-type: none"> <li>• Design of Roads and Storm Water Drainage System, Storm Water Outfalls, Storm Water Pumping Stations and Storm Water Pumping Shafts.</li> <li>• Structural Design of Steel Water Tanks, Valve Shafts, Station Buildings and allied Structures.</li> <li>• Total 48 No of Water Storage and Plumbing Stations</li> <li>• Preparation of Construction Drawings</li> </ul>	324.75	Ongoing

Sl. No.	Name of Client	Assignment Name	Assignment Highlights	Consultancy Fee (Rs. in Lakh)	Status
6.	Esquire Buildcon Pvt Ltd, New Delhi, India	Preparation of “ <b>Preliminary and Detailed Design of Water Supply, Sewerage System, Storm Water Drainage System Road Network, Electrical and Telecommunication Town Distribution System</b> ” for Tawarga , in Libya	<ul style="list-style-type: none"> <li>• Population Projection and Water Demand Assessment</li> <li>• Analysis of Existing System Components to Incorporation with the Proposed System</li> <li>• Hydraulic Modeling of Water Supply Distribution System</li> <li>• Hydraulic Modeling of Sewerage System.</li> <li>• Design of Storm water Drainage System.</li> <li>• Design of Road Network</li> <li>• Design of Electrical and Telecommunication Town Distribution System</li> <li>• Preparation Preliminary and Detailed Design Report</li> <li>• Preparation of Construction Drawings</li> </ul>	206.14	Ongoing
7.	M/s. Sega Insaat Tahut A.S. Libya	Preparation of “ <b>Preliminary and Detailed Design of Water Supply, Sewerage and Road Network</b> ” for Al Quryat Eshargiah , in Libya	<ul style="list-style-type: none"> <li>• Population Projection and Water Demand Assessment</li> <li>• Analysis of Existing System Components to Incorporation with the Proposed System</li> <li>• Hydraulic Modeling of Water Supply Distribution System</li> <li>• Hydraulic Modeling of Sewerage Collection System</li> <li>• Preparation Preliminary and Detailed Design Report</li> <li>• Preparation of Construction Drawings</li> </ul>	-	Ongoing

Sl. No.	Name of Client	Assignment Name	Assignment Highlights	Consultancy Fee (Rs. in Lakh)	Status
<b>National Projects</b>					
1.	Public Work Department, Govt of Karnataka	Project Management Consultancy Services for Up Gradation of important Road Corridors in Bangalore Urban and Rural Districts for a length of 1004 Km.	<ul style="list-style-type: none"> <li>• Recommending Geometric / Junction Improvements</li> <li>• Review of the execution details submitted by the Execution Agencies</li> <li>• Preparation of Quality Manual for Implementation</li> <li>• Monitoring Progress and Reporting</li> <li>• Preparation of catch up Plans</li> <li>• Quality Control and Quality Assurance</li> <li>• Ensuring Adherence to Safety measures during Execution</li> <li>• Submission of Monthly Progress Report indicating Progress, Contractor's Performance, Quality of Works and the Project's Financial Status &amp; Forecast</li> <li>• Certification of Measurements for Payments</li> </ul>	1820.95	Completed
2.	KSK Mahanadi Power Company Ltd., Hyderabad.	<b>“Engineering Survey, Investigation, Hydrological Analysis, Design of Raw Water Transmission Main, Intake System with Pumping Stations and Design of Intermediate Reservoir</b> to the proposed 3500 MW Coal Based Power Plant at Chhattisgarh State for KSK Mahanadi Power Company Ltd., Hyderabad.	<ul style="list-style-type: none"> <li>• Design of 85 Km 1100 mm Dia MS Pipeline (Two Lines) for 1493 lps Discharge.</li> <li>• Design of 2 No. Intake Structures, 3 No. Pumping Stations and Allied Structures for Pumps of Capacity 1493 lps discharge with Head varying from 50 m to 122 m</li> <li>• Design of Earthen Reservoir to store 16 Mcm water with bund height up to 20 m.</li> <li>• Preparation of Detailed Project Report and Tender Documents.</li> </ul>	101.00	Completed

Sl. No.	Name of Client	Assignment Name	Assignment Highlights	Consultancy Fee (Rs. in Lakh)	Status
3.	Bangalore International Airport Ltd, Bangalore	Topographical Survey, Geotechnical Investigation, Hydro-Geological Investigation and compile the Meteorological data for International Airport at Devanahalli, Bangalore	<ul style="list-style-type: none"> <li>• Carrying out Topographical Survey on 1:1000 Scale showing all Topographical and Cultural features including sheet Rocks and their Extent</li> <li>• Providing the Demarcation and setting out facilities</li> <li>• Equally splitting the flight catering around area of 7 Acres into 3 parts of 2.33 acres each</li> <li>• Soil Investigation at locations identified by the Client</li> <li>• Analysis of field and laboratory Test Data and Preparation of Geo-technical Reports in duplicate and CD</li> <li>• Geo-technical Investigation through 7 Borehole Locations</li> </ul>	93.57	Completed
4.	SPJ Steel & Minerals Pvt Ltd.,Kolkata,	<p><b>“Survey, Investigation, Hydrological Analysis, Design of Barrages, Design of Dam, Raw Water Transmission Main, Intake System with Pumping Stations and Preparation of Drainage Plan”</b></p> <p>to the Proposed Steel Plant of capacity 1 Mt / year at Madhya Pradesh State for SPJ Steel &amp; Minerals Pvt Ltd.,Kolkata,</p>	<ul style="list-style-type: none"> <li>• Transport Main : 27Km, Diametre ranging from 400 mm to 1000 mm Dia MS Pipelines for discharge 125 lps to 950 lps</li> <li>• Intake / Pumping Stations : 3 No. Intake Structures, 3 No. Pumping Stations and Allied Structures for Pumps of Capacity 125 lps to 475 lps discharge with Head varying from 67 m to 119 m</li> <li>• Reservoir : Design of One barrage with storage capacity 24.70 Mcm, One Dam with storage capacity 3.85 Mcm and One dam with 1.90 Mcm Storage capacity</li> <li>• Drainage Scheme : Preparation of Drainage scheme for Steel Plant Area</li> </ul>	75.00	Completed

Sl. No.	Name of Client	Assignment Name	Assignment Highlights	Consultancy Fee (Rs. in Lakh)	Status
5.	Bangalore Development Authority, Govt of Karnataka	Survey Planning, Design of <b>Anjanapura Township, Uttarahalli Hobli, Bangalore</b> South Taluk - Design of Roads, Water Supply, Sewer, Storm Water and Cross Drainage Works. Preparation of BOQ & Detailed Project Report and Preparation of GIS Data Base for GIS / MIS Applications for Bangalore Development Authority.	<ul style="list-style-type: none"> <li>• Establishing Planimetric and Height Control using DGPS and Auto Levels</li> <li>• Topographical Survey using Total Stations</li> <li>• Preliminary Geotech and Material Investigation</li> <li>• Design of Layout including Public and Civic Amenities</li> <li>• Design of Road Alignments, Pavement and Cross Drainage Works</li> <li>• Design of Storm Water Drainage System, Electrical Supply &amp; Distribution System, Water Supply and Sanitary Scheme</li> <li>• Preparation of Bill of Quantities, Cost Estimates and finalization of Tender Documents</li> </ul>	17.48	Completed
6.	Chembal Fertilizer Ltd., Gujarat	Study Report for Fixing Raw Water Pipeline Alignment from Kota Barrage to Chembal Fertilizer, Gujarat	<ul style="list-style-type: none"> <li>• Water Adequacy Analysis to meet the 10 mgd requirement from Kota barrage</li> <li>• Capacity Analysis of existing Right Bank Canal to convey required water</li> <li>• Fixing of Pipe 50 Km Pipeline Alignment Carrying Economical Analysis to select suitable Alignment</li> </ul>	8.50	Completed
7.	Bangalore Water Supply and Sewerage Board (BWSSB)	Field Survey and Geotechnical Investigation for "Consultancy Services for Preparation of Detailed Project Report" for Bangalore Water Supply and Sewerage Board (BWSSB)	<ul style="list-style-type: none"> <li>• Soil Investigation at locations identified by the Client</li> <li>• Analysis of Field and Laboratory Test Data and preparation of Geo-Technical Reports</li> <li>• Geo-Technical Investigation through 15 Borehole Locations</li> <li>• Conducting Laboratory Test as per relevant Indian Standards and as Specified</li> <li>• Submission of Soil Investigation Report in Duplicate and Soft Copy in CD.</li> </ul>	3.18	Completed

Sl. No.	Name of Client	Assignment Name	Assignment Highlights	Consultancy Fee (Rs. in Lakh)	Status
8.	Government of Madhya Pradesh Narmada Valley Development Authority (NVDA)	Consultancy Service for Detailed Engineering Service for Execution of Punasa Lift Irrigation Scheme including <b>Water Transport Main, Water Supply Distribution Mains for Drinking Water Supply to 110 Villages</b> and Irrigation for 35008 Ha - <b>Narmada Valley Development Authority.</b>	<ul style="list-style-type: none"> <li>• Transport Main: 20 Km, Diameter Ranging 1400 mm to 2100 MS Pipelines for discharge ranging from 2 to 6 Cum / Sec.</li> <li>• Distribution Main : 459 Km</li> <li>• 3 No. of Reservoirs of Balancing Reservoir</li> <li>• Catchment Area : 35008 Hectare</li> </ul>	334.64	Ongoing
9.	Gujarat State Energy Generation Ltd., Hazira	<b>“Engineering Survey &amp; Cadastral Survey, Hydrological Survey, Geo-Technical Investigation, Obtaining Statutory Clearances, Design of Water Transmission Main, Intake System with Pumping Stations and Project Management Consultancy Service”</b> to Hazira gas-fired Power Plant expansion project in Gujarat.	<ul style="list-style-type: none"> <li>• Design of Intake Structures, Pumping Station and Electro Mechanical Components for 315 lps Discharge for 34 m Head .</li> <li>• Design of 22Kms ,800mm Diameter MS Transport Main for discharge of 630 lps</li> <li>• Design of allied Structures and Buildings.</li> <li>• Preparation of Detailed Project Report and Tender Documents.</li> <li>• Project Management Consultancy during Implementation</li> </ul>	59.91	Ongoing

Sl. No.	Name of Client	Assignment Name	Assignment Highlights	Consultancy Fee (Rs. in Lakh)	Status
10.	Hindustan Biofuels Ltd.Uttara Pradesh	“ <b>Engineering Survey, Investigation, Design of Intake System and Raw Water Pipeline from Ghandhak River to Sugauli</b> ” for Hindustan Biofuels subsidiary of HPCL Ltd, Uttar Pradesh.	<ul style="list-style-type: none"> <li>• Fixing of Pipeline Alignment</li> <li>• Carrying Topographical Survey and Geotechnical Investigation</li> <li>• Designing of Intake at Ghandhak River</li> <li>• Designing of Raw Water Pipeline System and Surge Analysis</li> <li>• Preparation of Detailed Project Report , Cost <b>Estimates</b> and Tender Documents</li> </ul>	13.00	Ongoing
11.	Hindustan Biofuels Ltd.Uttara Pradesh	“ <b>Engineering Survey, Investigation, Design of Intake System and Raw Water Pipeline from Ghandhak River to Lauriya</b> ” for Hindustan Biofuels subsidiary of HPCL Ltd,Uttar Pradesh	<ul style="list-style-type: none"> <li>• Fixing of Pipeline Alignment</li> <li>• Carrying Topographical Survey and Geotechnical Investigation.</li> <li>• Designing of Intake at Ghandhak River</li> <li>• Designing of Raw Water Pipeline System and Surge Analysis</li> <li>• Preparation of Detailed Project Report, Cost Estimates and Tender Documents</li> </ul>	11.00	Ongoing