



## **London Office**

ECL

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## **IRAQ Office**

SULYMANIYAH

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**Engineering Office / Belgrade Branch**

KAPETANA ZAVISICA 3, 11000  
BELGRADE,  
REPUBLIC OF SERBIA

**UAE OFFICE**

PO BOX-120409,  
SAIF Office, P8-11-48,  
Saif Zone, Sharjah,  
UNITED ARAB EMIRATES

**Company Related Web Sites:**

[www.voltecltd.com](http://www.voltecltd.com)

**Activities**

**Group:** Design, Engineering and Construction.



## **THE GROUP**

### **ECL**

### **Voltec Engineering**

### **Voltec Ltd Free Zone**

### **Voltec for Oil Services**

### **IK consultant**

The Group have been incorporated in London, United Kingdom in 1988 with initial shareholding of GBP 1,000,000 fully issued and fully paid at time of Incorporation.

The Group established by a number of professional engineers who gained World class experience in firms like Ove Arup, DSSR, GMW and Energoprojekt .

In 1992 the Group established a specialized company in Water Engineering, Dams and Hydro Power in the UK as an affiliate of ECL Ltd, named ITSC Hydroengineering with GBP 500,000 fully issued and fully paid. The shareholders in this company were 51% ECL and 49% EnergoProjekt Hydroengineering of Belgrade.

The Group have started to shift all consulting engineering works and production to Belgrade Branch.in 2002 ECL bought all EnergoProjekt Hydroengineering shares and the Group became independent with Engineering Staff in (4) four main locations. In the UK overall management and Group Headquarters, Main Design and Engineering Offices in Belgrade, Serbia and Montenegro .

Voltec Engineering is a local Iraqi company and an independent legal entity registered in Sulaimaniyah-IRAQ in 2009 responsible for all Iraq Operations.

The Group have a multi-disciplinary team of engineers and provide a wide range of Engineering Services with particular expertise in Water Engineering, Water and Wastewater Treatment, Dams and Hydropower Irrigation Systems and Solid Waste Treatment. Power Generation and Oil & Gas

The Project list in the last ten years includes the following:-

#### **1) Serbia and Montenegro**

- 3 WWTP for Belgrade Preliminary Design and Feasibility Study.
- Sewage Network in 7 Towns in Montenegro.
- Survey and Maintenance Programme for 25 Dams, including Celijc, Bovan, Vruljci, Gruza, and Barje.
- Hydropower Dam – Ducola, Montenegro.
- 4 Desalination Plants in Montenegro.
- Water Treatment Plant in Tamarin.

**No. 10 Malik Mahmood St., 305 Rojhalat, Sulaimaniyah-IRAQ**



## 2) **Russian Federation**

- Jaroslave Water Treatment Plant – Turnkey.
- 6 Indoor Sports Arenas in six cities in Tumen Region – Turnkey.
- 3 Office Buildings in Nizhnyevartovsk – Turnkey.
- General Hospital in Nizhnyevartovsk – Turnkey.
- Solid Waste Treatment, Moscow BOT – Contract Stage in JV with FISIA BABCOCK.

## 3) **Cyprus**

- 2 WWTP and Sewage Networks for Nicosia – Design, Engineering and Site Supervision.

## 4) **Macedonia**

- Water Treatment Plant, Kocani – Design, Engineering and Site Supervision.

## 5) **Tunis**

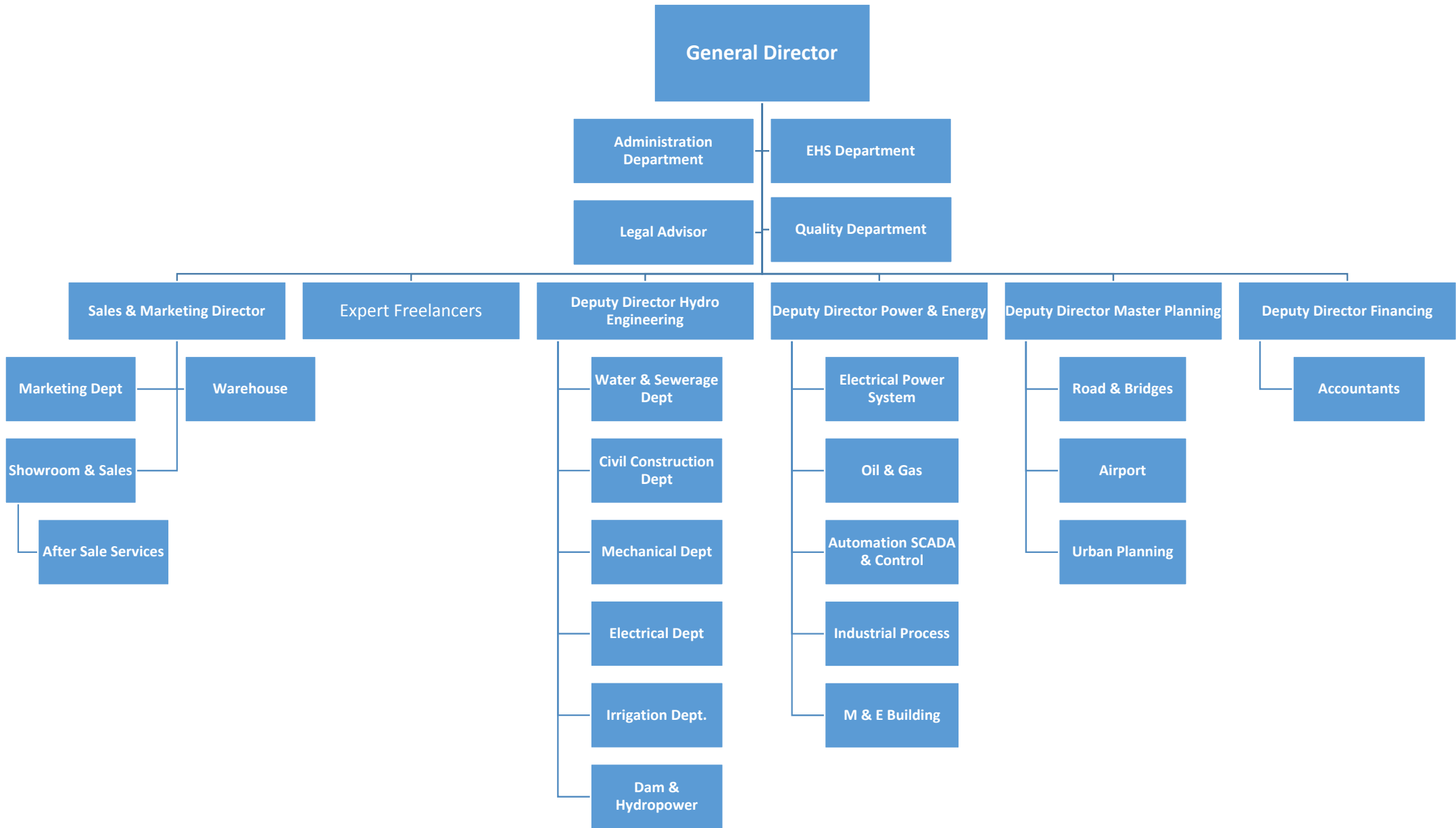
- Solid Waste Separation System, Tunis.

## 6) **Algeria**

- Environmental Impact Assessment, Ksar Sebahi – Dam and Irrigation Project.

## 7) **Iraq**

- Nassiriya Water Treatment Plant – Design and Engineering.
- Makhool Dam – Evaluation of Feasibility Study.
- Kerkh WWTP – Rehabilitation.
- Diwaniya WWTP – Rehabilitation.
- Zaafaraniya Waste Water Pumping Station – Design and Build.
- Shariq Dijlah Water Intake- Detailed Design and Put in Operation.
- Azmar Tunnel Design and Supervision
- Sarchinar Power Station , Design & Built
- Tasluja-Taq Taq 132 KV overhead line design.
- Sulaimaniyah University power station, Design & Built
- Samawa Electricity Network Study, load analysis, substation upgrade, Network GIS
- Kut Electricity Network Study, load analysis, substation upgrade, Network GIS
- Airport Cargo Village design and supervision
- Zubair & Rafidhiya Oilfield development projects
- Electrical, Mechanical, Instrument and control commissioning support at West Qurna 1
- Electrical & Instrumentation Supply & Installation and Commissioning Works for Crude Oil Blending, Degassing Project at Qaiyarah Oilfield
- Water Supply Improvement project in Kurdistan Region package II
- Khor Al-Zubair Power Station –Rehabilitation Of Gas Turbines



## - PRESENTATION OF THE CONSORTIUM

Thanks to the multi-disciplined orientation, we can offer a broad spectrum of services, based on water, power generation and distribution, oil & gas and process engineering.

Experts from various specialist fields work out multi-disciplined solutions, which are technically, ecologically, socio-economically and financially optimized and well balanced.

From the establishment of programs for geological surveys through preparation of Tender Documents, to undertaking construction supervision, we are qualified partners for projects of the most varied kind and size.

The Group brings a disciplined and controlled approach to:

- Data collection and interpretation
- Assessment of existing facilities and structures
- Feasibility studies for funding agencies
- Socio-economic investigations
- Demand and revenue assessment
- Environmental audit and impact studies

The Group applies these skills to the assessment of a wide range of projects in the environmental and energy sectors, including:

- **Water resource and regional development**
- **Dams and hydroelectric power engineering**
- **Water & Wastewater treatment**
- **Land reclamation and irrigation**
- **Infrastructure and environmental engineering**
- **Hydropower Plants and electro-mechanical systems**
- **Oil & Gas**
- **Electrical Network and Substations**

We support our Clients through all stages of the project from planning through setting up of the networks, to the development of the processes and applications. We have accumulated knowledge needed to achieve full management and control of its projects.

The Group offers a wide range of options to secure the construction, commissioning and operation of the project in the manner that best supports the Client's financial plan and the funding agency budget.

The multidisciplinary teams provide a comprehensive design service in:

- **Water and wastewater treatment and effluent reuse**
- **Dams and hydroelectric power engineering**
- **Foundation design**
- **River hydraulics**
- **Electrical and mechanical plant design**
- **Control system**
- **Solid waste control**
- **Oil & Gas Production Facility**

- **Complex structures**

Within the selected form of contract, ECL group can provide consulting services including:

- Project planning
- Cost evaluation and budget control
- Customized proposals
- Contractor documentation and bills of quantities
- Contractor pre-qualification and evaluation
- Bid analysis and evaluation
- Construction supervision
- Inspection and testing of plants and materials
- Quality assurance procedures
- Analysis and certification of payment
- Program monitoring and management
- Commissioning and acceptance of the works
- Maintenance and operation manuals
- Training of Client personnel



## - EQUIPMENT SUPPLY

We are the sole representative and agent of some high Technology Manufacture from Europe and United States in the field of water and power system:

- 1- **VAG–Armaturen**; German Manufacture of Quality Valves and Fittings for Water, Waste Water and Gas.
- 2- **F.G Wilson**; British Manufacturer of Diesel, Gas, Power Generators up to 2.5 MVA.
- 3- **US Pipe** ; U.S Manufacturer of Pipes
- 4- **HYDRO-VACUUM**: Pumps Manufacturer
- 5- **Hawker Sedley**; U.K Leading Manufacturer of Switch Gears, Substations and Control.
- 6- **Brush Transformers**; U.K Leading Manufacturer of Power, Control, Distribution Transformers.
- 7- **Hambaker Ductile Pipes and Fittings**; British Leading Company in Europe for Fabricating Ductile Iron Pipes, Fittings and Penstocks.
- 8- **DAB** ; Leading European Manufacturer of Water and Waste Water Pumps.
- 9- **KLINGER**: German Manufacturer of Gaskets of Water, Oil & Gas

# Our Products







## - VOLTEC REFERENCES WORLD WIDE

- BUILDING & CONSTRUCTIONS
- POWER AND ENERGY
- OIL & GAS
- WATER SUPPLY SYSTEMS AND WATER TREATMENT PLANTS
- SEWERAGE SYSTEMS AND WASTEWATER TREATMENTS
- ENVIRONMENTAL ENGINEERING
- MASTER PLANNING & CONSULTANCY
- DAMS

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**VOLTEC SELECTED REFERENCES  
BUILDING & CONSTRUCTIONS**


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**Firm's References  
Relevant Services  
That Best Illustrate Qualifications**


Assignment Name: <b>GRAND MILLINUM 5 STAR HOTEL</b>		Country: <b>IRAQ</b>
Location within Country: <b>SULAIMANIYAH</b>		Professional Staff Provided by <b>VOLTEC</b>
Name of Client: <b>FAROUK GROUP</b>		No. of Staff: <b>100 Personnel</b>
Address: <b>Sulaimaniyah, IRAQ</b>		Duration of Assignment: <b>2 Year</b>
Start Date (Month/Year): <b>2007</b>	Completion Date <b>2013</b>	Approx. Value of Services (7,500,000.00\$):
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s): <b>-</b>
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <ul style="list-style-type: none"> <li>- Sinan Said</li> <li>- Dhirar ahmad</li> <li>- Nawar Thamer</li> </ul>		
<b>Narrative Description of Project: Supply and installation of Electrical works; Selection, procurement and Installation of all Electrical equipment ,M.V substation, main distribution boards, motor control center, bus riser, final distribution boards, and total of 70.0000 meter of cables.</b>		





**Firm's References  
Relevant Services  
That Best Illustrate Qualifications**

Assignment Name: <b>Erbil Medical Diagnosis Center</b>		Country: <b>IRAQ</b>
Location within Country: Erbil		Professional Staff Provided by <b>VOLTEC</b>
Name of Client: MDC		No. of Staff: 25 Personnel
Address: <b>Erbil-IRAQ</b>		Duration of Assignment: 1 Year
Start Date (Month/Year): 2008	Completion Date Feb. 2009	Approx. Value of Services (350,000.00\$):
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s): -
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <ul style="list-style-type: none"> <li>- Ahmed M Rasheed</li> <li>- Sinan Said</li> <li>- Dhirar Salim</li> <li>- Mustafa rasheed</li> <li>-</li> </ul>		
<p>Narrative Description of Project:</p> <p>Medical Diagnosis Center Building of New Diagnosis Center which includes all radiology, MIR, x-rays, and scanning facilities. The work includes the supply and installation of all architectural materials electro-mechanical systems.</p>		
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**Firm's References  
Relevant Services  
That Best Illustrate Qualifications**


Assignment Name: <b>REHABILITATION OF MINISTRY OF CULTURE BUILDING</b>		Country: <b>IRAQ</b>
Location within Country: <b>Baghdad</b>		Professional Staff Provided by <b>VOLTEC</b>
Name of Client: <b>Ministry of Culture</b>		No. of Staff: 70 Personnel
Address: <b>Baghdad, IRAQ</b>		Duration of Assignment: 2 Year
Start Date (Month/Year): Dec 2003	Completion Date June 2005	Approx. Value of Services (6,500,000.00\$):
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s): -
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <ul style="list-style-type: none"> <li>- Sinan Said</li> <li>- Nabeel Ahmed</li> <li>- Muhammed Hilmi</li> <li>- wahab alhasani</li> </ul>		
Narrative Description of Project: <p>The work included the re-instatement of the building to its pre-war condition and renewal of all services and fittings. VOLTEC added value by introducing new materials and techniques that harmoniously integrated within the existing building framework. Design orientated construction is VOLTEC approach to evolve existing buildings to survive new demands adequately and independently</p>		
		

**Firm's References  
Relevant Services  
That Best Illustrate Qualifications**


Assignment Name: <b>AL SHA'AB STADIUM</b>		Country: <b>IRAQ</b>
Location within Country: <b>Baghdad</b>		Professional Staff Provided by <b>VOLTEC</b>
Name of Client: <b>Iraq Olympic Committee</b>		No. of Staff: 60 Personnel
Address: <b>Baghdad, IRAQ</b>		Duration of Assignment: 1 Year
Start Date (Month/Year): Apr 2004	Completion Date Feb 2005	Approx. Value of Services (3,400,000.00\$):
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s): -
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <ul style="list-style-type: none"> <li>- Sinan Said</li> <li>- Nabeel Ahmed</li> <li>- Muhammed Hilmi</li> </ul>		
<p>Narrative Description of Project:</p> <p>This building of national importance an icon of Iraqi Football tradition has gone through much needed refurbishment and maintenance in a long time. The work involved a regeneration of the original concept with adaptation to new realities as a result of four decades of changing requirements by the sport as well as the space purification from the past political dependency. The works included a general face lift and a new look for the VIP section, as well as rehabilitation of all Mechanical, Electrical and all other services</p>		
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**Firm's References  
Relevant Services  
That Best Illustrate Qualifications**

Assignment Name: <b>Medina Airport Hotel</b>		Country: <b>Saudi Arabia</b>
Location within Country: Medina City		Professional Staff Provided by <b>VOLTEC</b>
Name of Client: Scott Brownrigg		No. of Staff: 15 Personnel
Address: <b>UK</b>		Duration of Assignment: 1 Year
Start Date (Month/Year):	Completion Date	Approx. Value of Services (26,000,000.00\$):
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s): -
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <ul style="list-style-type: none"> <li>- Nabeel Ahmed</li> <li>- Maurice Rozario</li> </ul>		
Narrative Description of Project:  This project consists of Design Coordination, Civil, Structural Design and MEP Design.		
		

**Firm's References  
Relevant Services  
That Best Illustrate Qualifications**



Assignment Name: <b>ITSC BUILDING</b>		Country: <b>IRAQ</b>
Location within Country: <b>SULAIMANIYAH</b>		Professional Staff Provided by <b>VOLTEC</b>
Name of Client: <b>VOLTEC</b>		No. of Staff: 50 Personnel
Address: <b>Sulaimaniyah, IRAQ</b>		Duration of Assignment: 2 Year
Start Date (Month/Year): 2018	Completion Date Jan 2020	Approx. Value of Services (2,500,000.00\$):
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s): -
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <ul style="list-style-type: none"> <li>- Sinan Said</li> <li>- Nabeel Ahmed</li> <li>Farhad Sabir</li> <li>- Maurice Rozario</li> </ul>		
Narrative Description of Project: Complete Design & Build of Office Building consists of six Floors, Showroom and Two Basements		
		

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VOLTEC SELECTED REFERENCES  
POWER AND ENERGY

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## Firm's References Relevant Services That Best Illustrate Qualifications


Assignment Name: <b>165 MW Power Generation Plant</b>		Country: <b>IRAQ</b>
Location within Country: Kalar Town, Iraq		Professional Staff Provided by <b>VOLTEC</b>
Name of Client: Aggreko Middle East Limited FZE		No. of Staff: 45 Personnel
Address: <b>UAE , Sharjah</b>		Duration of Assignment: 7 Months
Start Date (Month/Year): Nov 2020	Completion Date Ongoing	Approx. Value of Services (650,000.00 US\$):
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s): -
Name of Senior Staff (Project Director/Co-Ordinator, Team Leader) involved and functions performed: <ul style="list-style-type: none"> <li>- Sinan Said</li> <li>- Hawzhin Azad Karim</li> <li>- Hamza M Ibrahim</li> </ul>		
Narrative Description of Project: <ul style="list-style-type: none"> <li>- Supply and construct of cooling water system, fire fighting system, gas pipe work and skids, fire and gas system for 165 MW power station serve Kalar Oil field</li> </ul>		
		

**Firm's References  
Relevant Services  
That Best Illustrate Qualifications**

Assignment Name: <b>Umm Qasir Power Plant Project</b>		Country: <b>IRAQ</b>
Location within Country: Umm Qasir Port		Professional Staff Provided by <b>VOLTEC</b>
Name of Client: BUTEC		No. of Staff: 150 Personnel
Address: <b>Basrah-IRAQ</b>		Duration of Assignment: 7 Months
Start Date (Month/Year): Aug 2019	Completion Date Feb. 2020	Approx. Value of Services (765,000.00US\$):
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s): -
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <ul style="list-style-type: none"> <li>- Sinan Said</li> <li>- Khaldoon Sami</li> <li>- Hamza M Ibrahim</li> </ul>		
Narrative Description of Project: <ul style="list-style-type: none"> <li>- Electrical &amp; Mechanical Works at Umm Qasir Power plant Project Installation of Wartsela Generation Units, installation of Power Transformers, switchgears, instrumentation, Fire and Gas, All Mechanical System and pipe works include fire fighting networks, water treatment and gas skid. Final Acceptance Certificate issued in 2021</li> </ul>		
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## Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name: <b>4 substations 132/33kV , 3X63MVA</b>		Country: <b>IRAQ</b>
Location within Country: <b>Nasiriya &amp; Kut</b>		Professional Staff Provided by <b>VOLTEC</b>
Name of Client: <b>DG Transmission Project</b>		No. of Staff:
Address: <b>IRAQ,</b>		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <b>2012</b>	Completion Date (Month/Year): <b>2013</b>	Approx. Value of Services (in current US\$):
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s): -
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <b>Eng Sinan Said– Project Director</b> <b>Eng Nawar Thamer– Senior Electrical Engineer</b> <b>Eng Khaldoon Sami- Senior Automation &amp; SCADA Engineer</b> <b>Eng Ahmed Salim – Senior Electrical Engineer</b>		
Narrative Description of Project: <b>filtration testing of power transformers , testing of switchgears</b>		
		




## Firm's References

### Relevant Services That Best Illustrate Qualifications


Assignment Name: <b>Testing of 400/15kV single phase transformers , eight 132kV/ 6.6kV transformers , six 132/ 33/11kV Transformers , GIS switchgears 400kV, 132kV Gis</b>		Country: <b>IRAQ</b>
Location within Country: <b>Aukashat / Akaz Gas</b>		Professional Staff Provided by <b>VOLTEC</b>
Name of Client: <b>DG Transmission Project</b>		No. of Staff:
Address: <b>IRAQ,</b>		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <b>Jan 2013</b>	Completion Date (Month/Year): <b>Nov 2013</b>	Approx. Value of Services (in current US\$):
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s): -
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <b>Eng Sinan Said– Project Director</b> <b>Eng Nawar Thamer– Senior Electrical Engineer</b> <b>Eng Khaldoun Sami- Senior Automation &amp; SCADA Engineer</b> <b>Eng Ahmed Salim – Senior Electrical Engineer</b>		



## Firm's References Relevant Services That Best Illustrate Qualifications


Assignment Name: <b>Sarchinar 8 MW Power Station</b>		Country: <b>IRAQ</b>
Location within Country: <b>Sulaimaniyah</b>		Professional Staff Provided by VOLTEC <b>5</b>
Name of Client: <b>Directorate of Water in Sulaimaniyah</b>		No. of Staff: <b>35</b>
Address: <b>Sulaimaniyah,</b>		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <b>Nov 2007</b>	Completion Date (Month/Year): <b>March 2008</b>	Approx. Value of Services (in current US\$): <b>one million USD</b>
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s): <b>-</b>
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <b>Eng Sinan Said– Project Director</b> <b>Eng Nawar Thamer– Senior Electrical Engineer</b> <b>Eng Khaldoon Sami- Senior Automation &amp; SCADA Engineer</b> <b>Eng Omar Majeed- Senior Design Engineer</b> <b>Eng Tariq Bazirgan- Senior Civil Engineer</b>		
Narrative Description of Project:  Design and construction of 8 MW power supply station for Sarchinar water project. The work includes complete design of civil works, electrical system synchronization, and PLC control, fuel storage and feeding, supply of all equipment and materials, installation and startup.		
		

## Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name: <b>Tasluja 53 MW Power station-Marine type engine generators</b>		Country: <b>IRAQ</b>
Location within Country: <b>Sulaimaniyah</b>		Professional Staff Provided by VOLTEC <b>10</b>
Name of Client: <b>UIENC Korean Company</b>		No. of Staff: <b>35</b>
Address: <b>Sulaimaniyah,</b>		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <b>JUN 2006</b>	Completion Date (Month/Year): <b>JAN 2008</b>	Approx. Value of Services (in current US\$): <b>1.4 million USD</b>
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s): <b>-</b>
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <b>Eng Sinan Said– Project Director</b> <b>Eng Nawar Thamer– Senior Electrical Engineer</b> <b>Eng Khaldoon Sami- Senior Automation &amp; SCADA Engineer</b> <b>Eng Omar Majeed- Senior Design Engineer</b> <b>Eng Hanza Maoulod - Senior Mechanical Engineer</b>		
Narrative Description of Project:  Installation of 30 marine type Generators ,Design ,supply & fabrication of Nine fuel Tanks with total capacity of 4100 Cubic meters , installation of pipes network, cable ways and cable termination .		
		



## Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name: <b>University of Sulaimaniyah 12 MVA Power Station</b>		Country: <b>IRAQ</b>
Location within Country: <b>Sulaimaniyah</b>		Professional Staff Provided by VOLTEC <b>4</b>
Name of Client: <b>TEPE-FDC</b>		No. of Staff: <b>6</b>
Address: <b>Sulaimaniyah,</b>		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <b>JUN 2007</b>	Completion Date (Month/Year): <b>DEC 2007</b>	Approx. Value of Services (in current US\$): <b>1.6 million USD</b>
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s): <b>-</b>
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <b>Eng Sinan Said– Project Director</b> <b>Eng Nawar Thamer– Senior Electrical Engineer</b> <b>Eng Khaldoon Sami- Senior Automation &amp; SCADA Engineer</b> <b>Eng Omar Majeed- Senior Design Engineer</b>		
Narrative Description of Project:  Supply and installation of 6x2200KVA, F.G.Wilson generators, and the work include the installation and parallel operation to achieve the safe, KVAR/KW load sharing and start/stop load sequences  All control panels wiring and programming (power, data and network) where locally done as standby mode power station.		
		

## Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name: <b>Samawa Electricity Network Engineering Services</b>		Country: <b>IRAQ</b>
Location within Country: <b>Samawa</b>		Professional Staff Provided by VOLTEC <b>6</b>
Name of Client: <b>ALMIDRAR Company</b>		No. of Staff: <b>25</b>
Address: <b>Samawa,</b>		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <b>Nov 2017</b>	Completion Date (Month/Year): <b>April 2018</b>	Approx. Value of Services (in current US\$): <b>305,000.00 USD</b>
Name of Associated Firm(s), if any: <b>enzen</b>		No. of Months of Professional Staff Provided by Associated Firm(s): <b>1 staff for the whole period</b>
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <b>Eng Sinan Said– Project Director</b> <b>Eng Abdulammer Abdulhussain– Senior Electrical Engineer</b> <b>Eng Khaldoon Sami- Senior Automation &amp; SCADA Engineer</b> <b>Eng Krishna V- Software Analysis</b> <b>Eng Shahad Sami- GIS Expert</b> <b>Eng Ali Saib Abd – Site Survey</b>		
Narrative Description of Project: The assignment envisions benchmarking the baseline performance, analyzing the current Infrastructure ( 132kv substation ,33/11kv substation ,11kv feeders )with the purpose to achieve optimization of the network and also to give recommendations from the perspective of future planning. The scope of work includes voltage studies and load growth studies, network vulnerability studies ,power analysis field measurement and improvement measures, network planning and optimization after mapping the network on Digital platform. On the basis of the analysis, recommendations submitted which include Bill of Quantity (BOQ) for proposed substation , network and planning report.		
		<p style="text-align: center;"><b>INDEX</b></p> <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: blue; margin-right: 5px;"></span> <b>33kV_SS</b></li> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: red; margin-right: 5px;"></span> <b>132kV_SS</b></li> <li><b>HT LINE</b></li> <li><span style="display: inline-block; width: 20px; border-bottom: 1px solid red; margin-right: 5px;"></span> <b>132 kV Single Feeder</b></li> <li><span style="display: inline-block; width: 20px; border-bottom: 3px double red; margin-right: 5px;"></span> <b>132 kV Double Feeder</b></li> <li><span style="display: inline-block; width: 20px; border-bottom: 1px solid blue; margin-right: 5px;"></span> <b>33 kV Single Feeder</b></li> <li><span style="display: inline-block; width: 20px; border-bottom: 3px double blue; margin-right: 5px;"></span> <b>33 kV Double Feeder</b></li> <li><span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; margin-right: 5px;"></span> <b>Samawa AOI</b></li> </ul>
System Study and Proposal for Samawah City		

## Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name: <b>KUT Electricity Network Engineering Services</b>		Country: <b>IRAQ</b>
Location within Country: <b>Samawa</b>		Professional Staff Provided by VOLTEC <b>5</b>
Name of Client: <b>ALMIDRAR Company</b>		No. of Staff: <b>25</b>
Address: <b>Samawa,</b>		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <b>Feb 2018</b>	Completion Date (Month/Year): <b>Ongoing</b>	Approx. Value of Services (in current US\$): <b>305,000.00 USD</b>
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s):
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <b>Eng Sinan Said– Project Director</b> <b>Eng Mohammed Shahir–Electrical Engineer</b> <b>Eng Khaldoon Sami- Senior Automation &amp; SCADA Engineer</b> <b>Eng Ahmed Jasim- Software Analysis</b> <b>Eng Shahad Sami- GIS Expert</b>		
Narrative Description of Project: The assignment envisions benchmarking the baseline performance, analyzing the current Infrastructure with the purpose to achieve optimization of the network and also to give recommendations from the perspective of future planning. The scope of work includes voltage studies and load growth studies, network vulnerability studies and improvement measures, network planning and optimization after mapping the network on Digital platform. On the basis of the analysis, recommendations submitted which include Bill of Quantity (BOQ) for proposed network and planning report.		

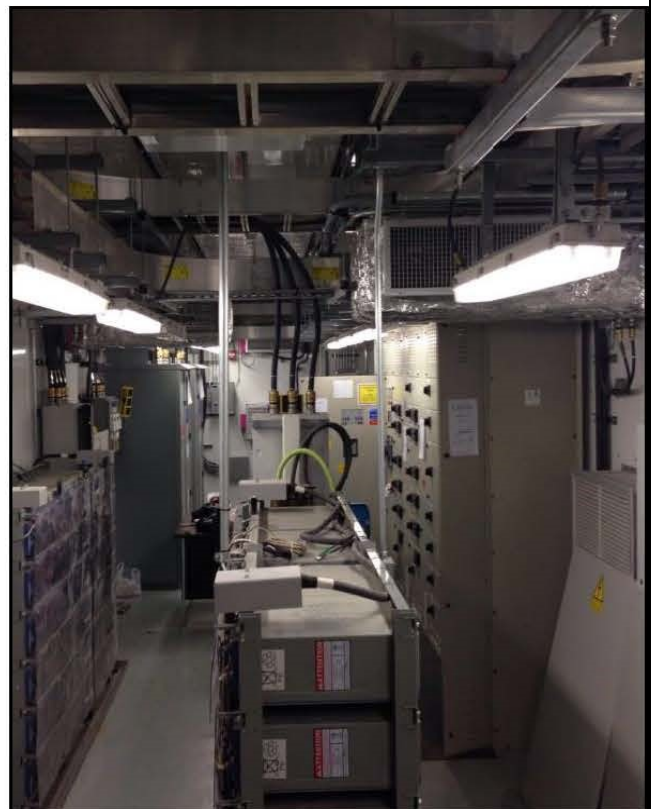


## Firm's References Relevant Services That Best Illustrate Qualifications


Assignment Name: <b>West Qurna – Basrah 35 MW power plant for Degassing Station 7</b>		Country: <b>IRAQ</b>
Location within Country: <b>Basrah-West Qurna 1</b>		Professional Staff Provided by <b>VOLTEC 5</b>
Name of Client: <b>Wood Group</b>		No. of Staff: <b>15</b>
Address: <b>Dubai</b>		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <b>March 2016</b>	Completion Date (Month/Year): <b>Ongoing</b>	Approx. Value of Services (in current US\$): <b>4 Million</b>
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s):
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <b>Eng Sinan Said– Project Director</b> <b>Eng Mustafa A. Rasheed –Commissioning Leader</b> <b>Eng Khaldoon Sami- Senior Instruments Engineer</b> <b>Eng Nawar Thamer- Senior Electrical Engineer</b> <b>Eng Ali Jaafar- Mechanical Engineer</b>		

**Narrative Description of Project:**

**Electrical, Mechanical, Instrument & control commissioning of the early power solar turbine power generation ,balance of plant.**



## Firm's References Relevant Services That Best Illustrate Qualifications


Assignment Name: <b>Mussaieb Power Station</b>		Country: <b>IRAQ</b>
Location within Country: <b>Mussaieb</b>		Professional Staff Provided by <b>VOLTEC 25</b>
Name of Client: <b>Ministry of Electricity</b>		No. of Staff: <b>100</b>
Address: <b>Dubai</b>		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <b>April 2004</b>	Completion Date (Month/Year): <b>March 2005</b>	Approx. Value of Services (in current US\$): <b>1.5 Million</b>
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s):
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <b>Eng Sinan Said– Project Director</b> <b>Eng Khaldoon Sami- Senior Automation &amp; SCADA Engineer</b> <b>Eng Nawar Thamer- Senior Electrical Engineer</b> <b>Eng Qasim Al Obaidi- Senior Mechanical Engineer</b> <b>Eng Tariq Bazirgan- Senior Civil Engineer</b>		
Narrative Description of Project: <b>Civil and electro Mechanical Works including 8300m3 concrete casting, design of utilities and piping network, tanks fabrication and installation of 4000m3 and 8000m3 capacity, installation of 10 gas turbine including utilities and polishing unit .</b>		
		

## Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name: <b>Design of Hydropower generation and 132 KV substation for Taq Taq Dam</b>		Country: <b>IRAQ</b>
Location within Country: <b>Taq Taq</b>		Professional Staff Provided by <b>VOLTEC 5</b>
Name of Client: <b>Ministry of Municipality</b>		No. of Staff:
Address:		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <b>2017</b>	Completion Date (Month/Year): <b>2018</b>	Approx. Value of Services (in current US\$): <b>1.5 Million</b>
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s):
Name of Senior Staff (Project Director/Coordinator, Team Leader) involved and functions performed: <b>Vicko Letica (Project Manager)</b> <b>Bana petrovic Mechanical Engineer (ME)</b> <b>Marina Vasiljevic (Project Manager for environmental part of Hydro Power Plant)</b> <b>Miomir Vasiljevic Leading project Engineer</b> <b>Biljana Trajkovic (Team Engineer)</b> <b>Sinan Said (Electrical Designer)</b>		
Narrative Description of Project:  <b>Hydrology study, basic design for the hydro power generation, detail design of the Penstock, power house, turbine and MV switch yard and substation.</b>		



## Firm's References Relevant Services That Best Illustrate Qualifications


Assignment Name: <b>Iraq Distribution Network</b>		Country: <b>IRAQ</b>
Location within Country:		Professional Staff Provided by <b>VOLTEC 5</b>
Name of Client: <b>Washinton Group</b>		No. of Staff:
Address:		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <b>Jan 2006</b>	Completion Date (Month/Year): <b>May 2006</b>	Approx. Value of Services (in current US\$): <b>6 Million</b>
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s):
Name of Senior Staff (Project Director/Coordinator, Team Leader) involved and functions performed: Haki Ismael Kadhum senior electrical engineer Nawar thamer electrical engineer Mohamed ihsan electrical engineer Yehea alobaidi electrical engineer		
Narrative Description of Project:  <b>Complete Supply and Commission of 25 Power Transformer 33/11 KV Substations.</b>		
<div style="display: flex; justify-content: space-around;">    </div>		

## Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name: <b>Cathodic Copper Smelting Plant</b>		Country: <b>IRAQ</b>
Location within Country:		Professional Staff Provided by <b>VOLTEC 20</b>
Name of Client: <b>Al Shaheed General Company</b>		No. of Staff:
Address:		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <b>1999</b>	Completion Date (Month/Year): <b>2003</b>	Approx. Value of Services (in current US\$): <b>6.5 Million</b>
Name of Associated Firm(s), if any: <b>BORE COPPER INSTITUTE</b>		No. of Months of Professional Staff Provided by Associated Firm(s):
Name of Senior Staff (Project Director/Coordinator, Team Leader) involved and functions performed: Zoran senior process engineer Molos Popovic senior electrical engineer Ivan Ninkov senior mechanical engineer Andra Tucovic senior process engineer		
Narrative Description of Project:  <b>Design, Supply and supervision of copper refinery to produce cathodic copper for cable industry ,design include the process equipment electrochemical cells and power supply .</b>		



## Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name: <a href="#">Taq Taq-Tasluja 132 KW overhead line</a>		Country: <a href="#">IRAQ</a>
Location within Country: <a href="#">Sulaimaniyah</a>		Professional Staff Provided by VOLTEC 4
Name of Client: <a href="#">KRG/ Ministry of Electricity</a>		No. of Staff:
Address: <a href="#">Erbil</a>		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <a href="#">2009</a>	Completion Date (Month/Year): <a href="#">2010</a>	Approx. Value of Services (in current US\$):
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s):
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: Wasfi alhayali project manager Ahmad salim kurdi senior electrical engineer		
Narrative Description of Project:  <a href="#">Design and supervision of complete turnkey work 80 km line length. Of 132kv O.H.L</a>		
		

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**VOLTEC SELECTED REFERENCES**

**Oil & Gas**

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 Sonangol  
Pesquisa & Produção

IRAQ

Electrical & Instrumentation Supply & Installation and  
Commissioning Works for Crude Oil Blending, Degassing  
Project at Qaiyarah Oilfield



## QAIYARAH OILFIELD

**Supply of Transformer, Switchgears, RMUs, MCC, Cables, Fire & Gas Instrument, Installation of E & I and Commissioning of Crude Oil Blending Project at South Degassing Station, North Degassing Station and Oil Wells.**

**Work Started in August 2020, SDS completed, NDS Phase 0 Completed, NDS Phase 1 is Ongoing, Oil Well Upgradation site is on going.**



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IRAQ

## Engineering Design For the Rail Loading Facility at Qaiyarah Refinery



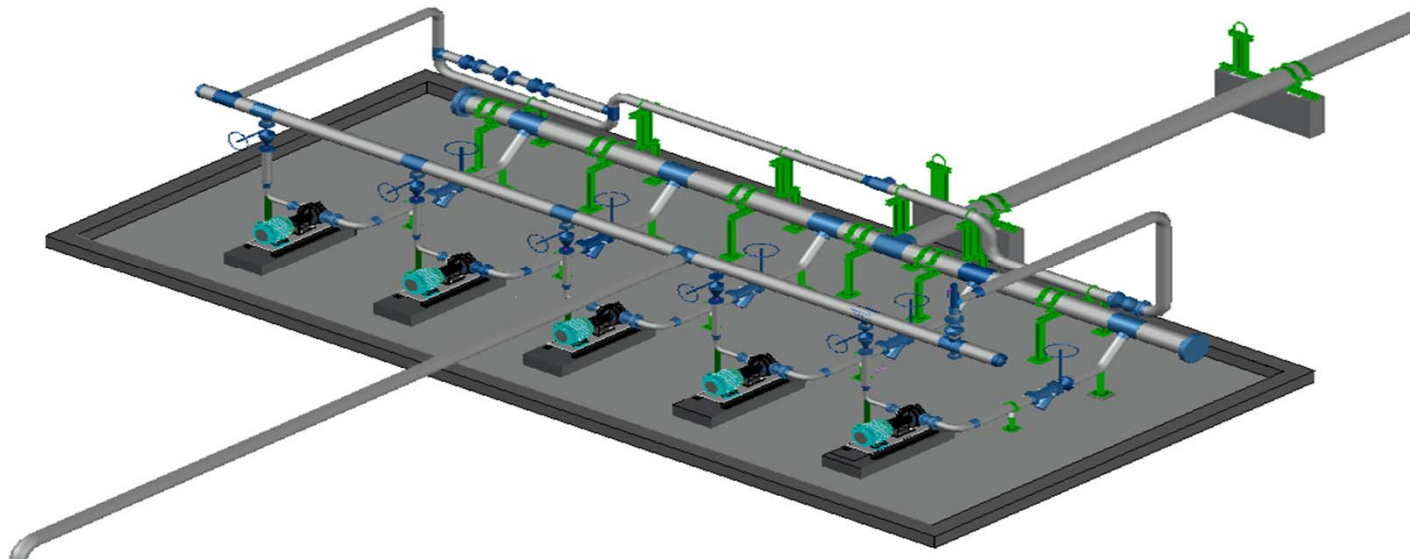


## QAIYARAH OILFIELD

- Engineering Design For the Rail Loading Facility at Qaiyarah Refinery

Basic design, detail design, tender document for rail loading facility, work includes design of storage tanks, pump station, flow meters, rail loading arms. All civil, piping, mechanical, electrical, SCADA, detail drawing, specifications, data sheets, procurement package...etc.

Work started in July 2020 and completed in April 2021.



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IRAQ

## Refurbishment of 11,000 M3 Tanks at Qaiyarah Refinery



## QAIYARAH OILFIELD

- Refurbishment of 11,000 M3 Tanks at Qaiyarah Refinery

Semi finished two float roof crude oil tanks, works include Technical evaluation of tank integrity , design and construction of float roof Rim Seal, fire fighting and foam system, tank nozzels, earthing system, lightening, lights, radar level, mixers, heaters, hydrostatic testing and painting.

Work started in Feb 2021 and ongoing.



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IRAQ

## Mechanical Works at Qaiyarah Refinery



## QAIYARAH OILFIELD

- Fabrication, installation of North Degassing station, piping and Mechanical. Works Include crude oil piping, Naphtha Decanting Facility, Naphtha Transfer Facility, Modification on Existing Tanks, Installation of Pumps, Fire Fighting Network.  
Work started in July 2020 and completed in March 2021.





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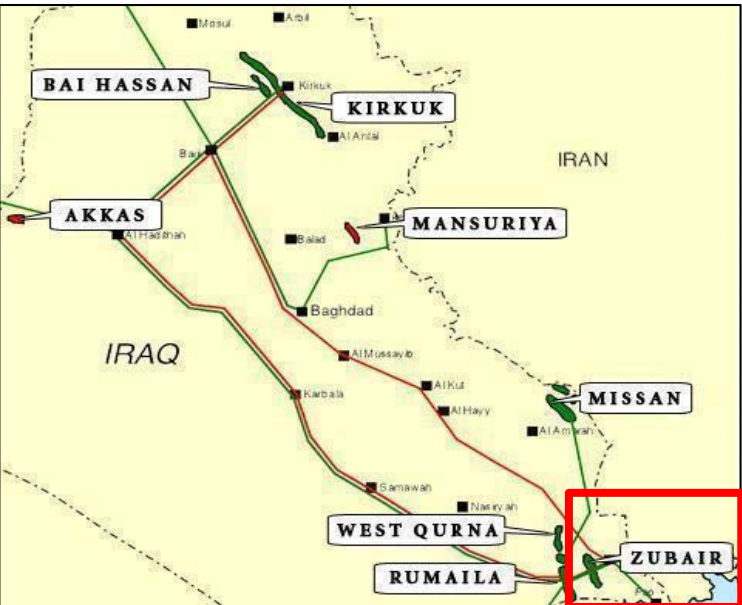
**Weatherford®**



## Zubair Oil Field Development Project Iraq

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# Zubair Oil Field Development Project





# Zubair Oil Field Development Project

## Project Highlights:

- **Client:** ENI IRAQ
- **Contractor:** Weatherford Oil Tools Middle East
- **Year:** 2014 - ongoing
- **Project:** Zubair Oil Field – Initial Production Facilities (Zubair and Rafidiya)
- **Scope of Work:** Complete electrical and instrumentation works
  - 160 personnel in Zubair
  - 160 personnel in Rafidiya

# Zubair/Rafidiya: Scope Of Work

## **Electrical Installation Works**

- Earthing and Lightning Protection
- Cable laying (LV, MV, HV, Control, space heater, UPS)
- Glanding and Termination (LV, MV, HV, Control, space heater, UPS)
- Cable Ladder Trays and Fittings with Accessories
- Lighting and Small Power (street lighting installation, convenience sockets, welding sockets)
- Testing

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# Zubair/Rafidiya: Electrical Installation Work



Cable Ladder Work



Cad Welding



Excavation Work



Cable Pulling

# Zubair/Rafidiya: Scope Of Work

## **Instrument Installation Works**

- Tubing
- Instrument Installation
- Instrument Cable Laying
- Instrument Cable Glanding and Termination
- Junction Box Frames and Supports
- Fire and Gas Detection: installation, cable laying, glanding and termination
- Telecommunication/PAGA/CCTV Systems: equipment installation, cabling, glanding and termination



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## Zubair/Rafidiya: Instrument Installation Work



Light Fixture Installation



Instrumentation Termination



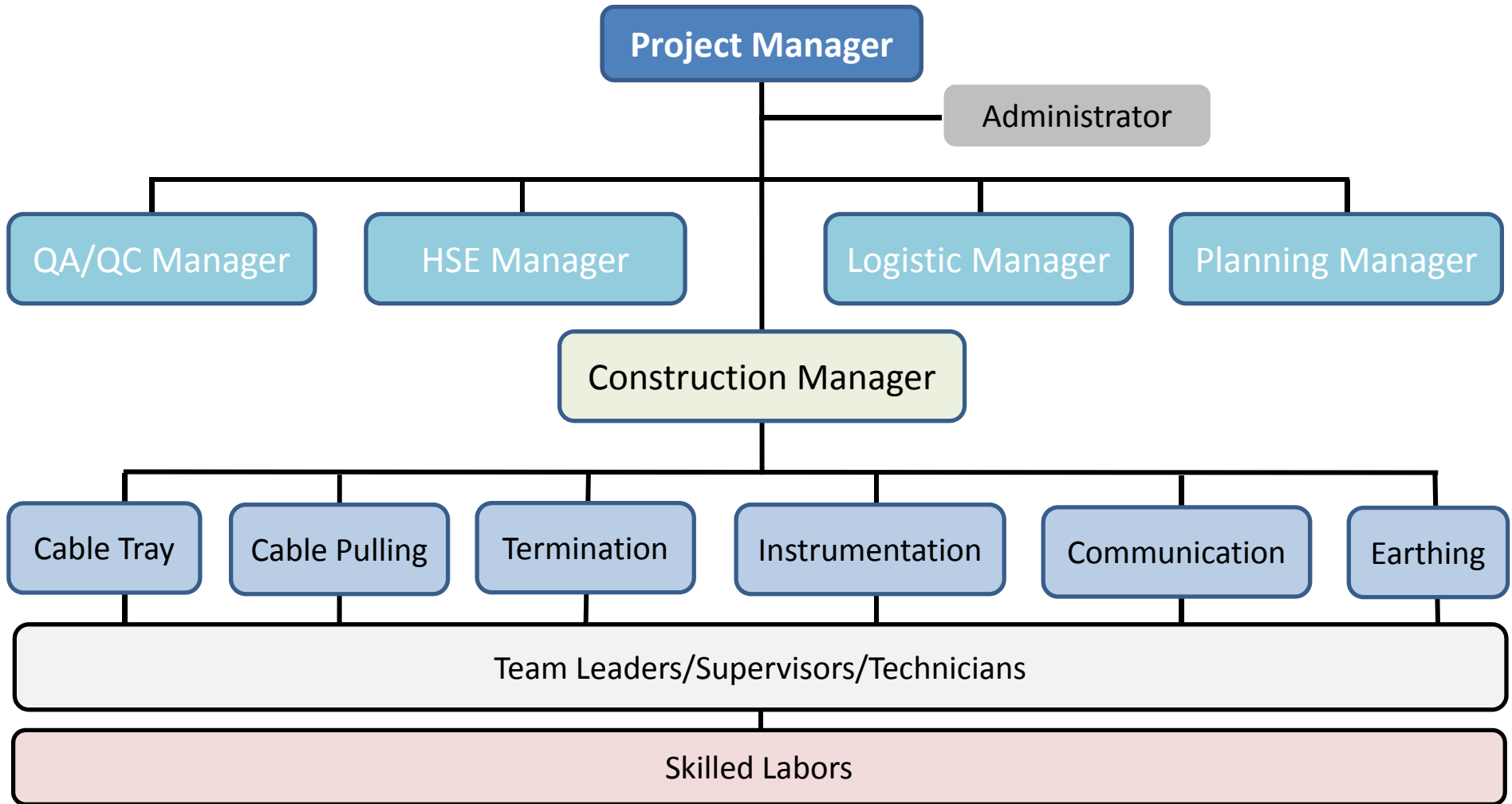
Installation of Tubing



Installation of Instrument Devices



# Project Organizational Chart



## Zubair/Rafidiya: HSE Practices

30:1 ratio of workers to supervisors and HSE inspectors

- HSE Plan
- Daily Tool Box Talk
- Maintenance of equipment registers
- Reporting of safety incidents and near misses
- Supply of Personal Protective Equipment
- Supply of harness and fall arrest lanyards (working at height)

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# Zubair/Rafidiya: HSE Practices



Daily Tool Box Meeting



TSI Personnel Winning HSE awards



TSI joining Weatherford HSE Meeting



Housekeeping Work



# Zubair/Rafidiya: Project Quality Documents

- Quality Plan
- Request For Inspection (RFI)
- Inspection Test Plan (ITP)
- Punch list
- Inspection Test Record (ITR)
- Material Record Book (MRB)

PROJECT: Weatherford		TAG No: 25121920087PL	
UNIT: ELECTRICAL		TAG DESCRIPTION: FROM Street Lighting Pole Junction Box TO Street Lighting Pole Junction Box	
SYSTEM: 803		CREATED DATE: 01/16/2016	
SUB SYSTEM: 13-4955-8			

Item	Inspection Test Description	PL	Complete Yes/No
	Equipment must be inspected in de-energized state. Check for no voltage.		YES
01	Confirm building, JB, equipment etc. has been aligned and levelled		YES
02	Confirm cable is as per IFC cable schedule or cable diagram (size, type and rating)		YES
03	Check labeling, numbering and core furling correct.	YES	
04	Check that Bending radius, clearing and support according to specification.		YES
05	Check that cables has been dressed correctly on cable ladder and secured as it enters building or junction box so that there is no vertical or lateral forces exerted on the gland or gland plate ie; cable is perpendicular to gland plate. Confirm that any cable entry outside is suitably weathertight.		YES
06	Complete point to point continuity check of Cable		YES
07	Complete insulation resistance test on LV cables, test voltage 500VDC, minimum reading 10 MOhms. Instrument cables at 250VDC, minimum reading 10 MOhms		YES
08	After termination make sure that all cuttings and debris are cleared away.		YES
09	Confirm correct type of glands have been installed according to area classification, NB for areas designated as hazardous on the IFC hazardous area drawings, a separate Mechanical Completion Checksheet for Certified Equipment needs to be completed. Confirm that glands have been fitted correctly and tightened to the correct torque.		YES
10	Correct IP washer and earth tag serrated washer and earth lead are fitted. (where applicable). Confirm that gland grommet has been installed where required.		YES
11	Check earth bonding is correct to design drawings and specifications. Confirm that that gland to earth resistance is < 0.1 Ohm		YES
12	Check that cable strapping has been done correctly		YES
13	Single core cables earthed as per Project Specification		NA
14	Check that terminations have been completed in accordance with the IFC termination drawings and a continuity and phasing check has been carried out on each one		YES
15	Check that all terminations have the correct lug terminal size, sleeving and label etc fitted and are correctly tightened and that there is no core damage. Spare cores earthed and left!		YES
16	Check that all spare cores are identified and earthed down.		YES
17	Check that all cable lug nuts have been tightened to the specified torque and then marked as such. (unless specifically requested by commissioning team to leave cables un-tightened for purposes of hi-pot testing bus bars)		NA
18	Check that any punch list items raised are entered on to the master punch list		YES

No.	Cat	Priority	Tag Number	Description	Completed	Raised By	Raised Date	Responsible Person	Responsible Group	Area
3240	E	Medium	2282171847016	Remove tag raised for cables at R.E. Junction	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3241	E	Medium	2282171847018	Earth tag raised for cables at R.E. Junction	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3242	E	Medium	2282171847019	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3243	E	Medium	2282171847020	Permanent cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3244	E	Medium	2282171847021	Shield cable raised at cables at R.E. Junction	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3245	E	Medium	2282171847022	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3246	E	Medium	2282171847023	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3247	E	Medium	2282171847024	Permanent Cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3248	E	Medium	2282171847025	Tag tag to be missing from at feeder side	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3249	E	Medium	2282171847026	Tag tag to be missing from at feeder side	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3250	E	Medium	2282171847027	Shield cables raised at cables at R.E. Junction	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3251	E	Medium	2282171847028	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3252	E	Medium	2282171847029	Permanent cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3253	E	Medium	2282171847030	Permanent Cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3254	E	Medium	2282171847031	Remove tag raised for cables at R.E. Junction	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3255	E	Medium	2282171847032	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3256	E	Medium	2282171847033	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3257	E	Medium	2282171847034	Permanent cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3258	E	Medium	2282171847035	Permanent Cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3259	E	Medium	2282171847036	Remove tag raised for cables at R.E. Junction	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3260	E	Medium	2282171847037	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3261	E	Medium	2282171847038	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3262	E	Medium	2282171847039	Permanent cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3263	E	Medium	2282171847040	Permanent Cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3264	E	Medium	2282171847041	Remove tag raised for cables at R.E. Junction	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3265	E	Medium	2282171847042	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3266	E	Medium	2282171847043	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3267	E	Medium	2282171847044	Permanent cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3268	E	Medium	2282171847045	Permanent Cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3269	E	Medium	2282171847046	Remove tag raised for cables at R.E. Junction	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3270	E	Medium	2282171847047	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3271	E	Medium	2282171847048	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3272	E	Medium	2282171847049	Permanent cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3273	E	Medium	2282171847050	Permanent Cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3274	E	Medium	2282171847051	Remove tag raised for cables at R.E. Junction	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3275	E	Medium	2282171847052	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3276	E	Medium	2282171847053	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3277	E	Medium	2282171847054	Permanent cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3278	E	Medium	2282171847055	Permanent Cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3279	E	Medium	2282171847056	Remove tag raised for cables at R.E. Junction	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3280	E	Medium	2282171847057	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3281	E	Medium	2282171847058	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3282	E	Medium	2282171847059	Permanent cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3283	E	Medium	2282171847060	Permanent Cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3284	E	Medium	2282171847061	Remove tag raised for cables at R.E. Junction	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3285	E	Medium	2282171847062	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3286	E	Medium	2282171847063	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3287	E	Medium	2282171847064	Permanent cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3288	E	Medium	2282171847065	Permanent Cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3289	E	Medium	2282171847066	Remove tag raised for cables at R.E. Junction	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3290	E	Medium	2282171847067	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3291	E	Medium	2282171847068	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3292	E	Medium	2282171847069	Permanent cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3293	E	Medium	2282171847070	Permanent Cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3294	E	Medium	2282171847071	Remove tag raised for cables at R.E. Junction	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3295	E	Medium	2282171847072	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3296	E	Medium	2282171847073	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3297	E	Medium	2282171847074	Permanent cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3298	E	Medium	2282171847075	Permanent Cables tag missing to be provided	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3299	E	Medium	2282171847076	Remove tag raised for cables at R.E. Junction	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
3300	E	Medium	2282171847077	Shield cables raised at device	<input type="checkbox"/>	Manoharan Rajan	1/16/2016	AKASH HALEET	CONSTRUCTION	25001

No.	Cat	Priority	Tag Number	Description	Completed	Raised By	Raised Date	Responsible Person	Responsible Group	Area
4150	E	Low	2282196521196	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
4151	E	Low	2282196521197	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
4152	E	Low	2282196521198	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
4153	E	Low	2282196521199	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
4154	E	Low	2282196521200	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
4155	E	Low	2282196521201	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
4156	E	Low	2282196521202	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
4157	E	Low	2282196521203	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
4158	E	Low	2282196521204	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
4159	E	Low	2282196521205	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
4160	E	Low	2282196521206	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
4161	E	Low	2282196521207	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
4162	E	Low	2282196521208	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
4163	E	Low	2282196521209	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
4164	E	Low	2282196521210	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
4165	E	Low	2282196521211	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
4166	E	Low	2282196521212	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
4167	E	Low	2282196521213	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
4168	E	Low	2282196521214	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH HALEET	CONSTRUCTION	25001
4169	E	Low	2282196521215	PTC tag required for the cable at the cable box	<input type="checkbox"/>	MANOJ AL-GHAFIR	1/16/2016	AKASH H		

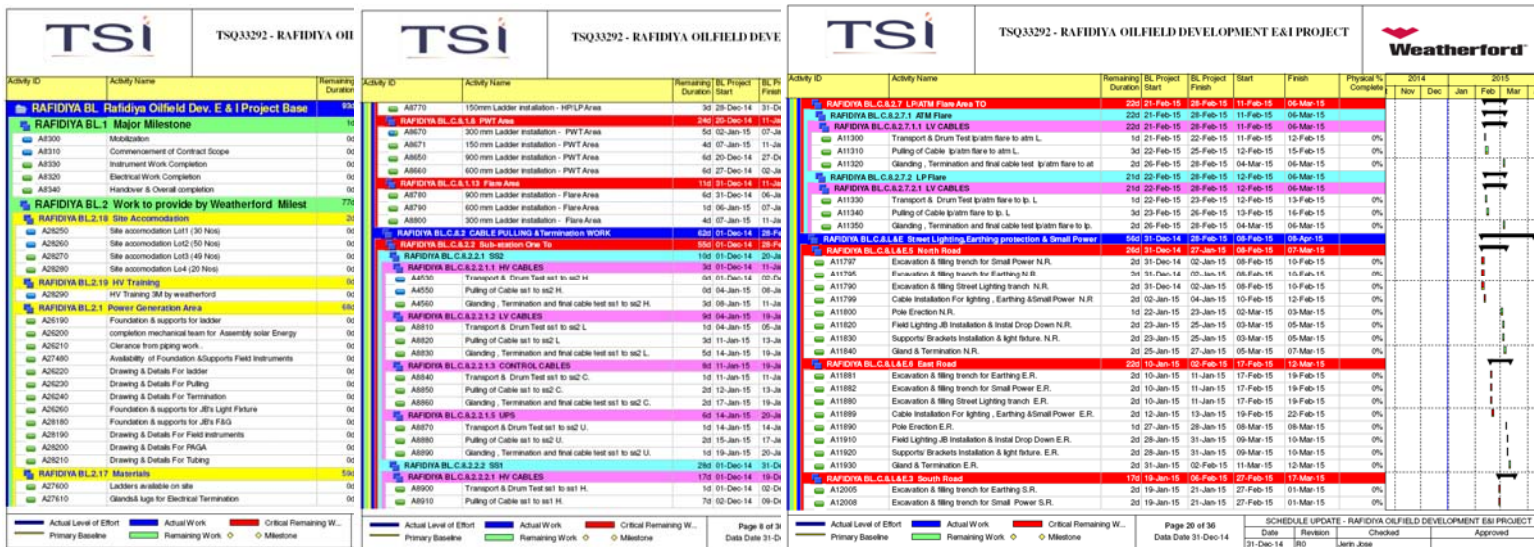




# Zubair/Rafidiya: Schedule

## 1. Schedule

- Detailed schedule (level 1, 2, 3 and 4)
- Critical path
- Weightage Breakdown Structure
- Progress S-curve








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VOLTEC SELECTED  
REFERENCES WATER SUPPLY  
SYSTEMS & WATER  
TREATMENT PLANTS

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**Firm's References  
Relevant Services  
That Best Illustrate Qualifications**


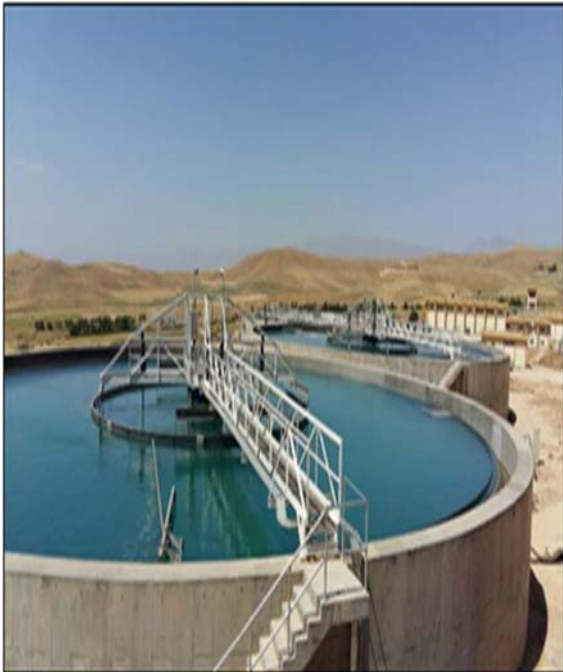

Assignment Name: <b>Water Supply Improvement Project In Kurdistan Region (II)</b>		Country: <b>IRAQ</b>
Location within Country: Sulaimaniyah & Halabja Cities		Professional Staff Provided by <b>VOLTEC</b>
Name of Client: KRG General Directorate of Water & Sewerage Contact with Japanese Fund Institute JICA		No. of Staff: 70 Personnel
Address: <b>Erbil-IRAQ</b>		Duration of Assignment: 1 Year
Start Date (Month/Year): Feb 2021	Completion Date Feb. 2022	Approx. Value of Services (6,530,627.00\$):
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s): -
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <ul style="list-style-type: none"> <li>- Sinan Said</li> <li>- Khaldoon Sami</li> <li>- Hamza M Ibrahim</li> <li>- Bassim Qassim</li> </ul>		
Narrative Description of Project:  Upgrade of Sulaimaniyah & Halabja Water Supply System, works include Supply and installation of Ductile pipes & HDPE Pipes, valves, flowmeters, Solar Energy, Flow & Control System.		
		

## Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name: <b>OPERATION &amp; MAINTENANCE OF WATER SUPPLY IMPROVEMENT PROJECT IN KURDISTAN REGION PACKAGE II</b>		Country: IRAQ
Location within Country: IRAQ		Professional Staff Provided by VOLTEC
Name of Client: SsangYong Engineering & Construction Company Ltd		No. of Staff: 68
Address: Sulaimania -Iraq		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): Sep 2016	Completion Date (Month/Year): June 2018	Approx. Value of Services (in current US\$): 990,000.00
Name of Associated Firm(s), if any: VOLTEC, Iraq		No. of Months of Professional Staff Provided by Associated Firm(s):
Name of Senior Staff (Project Director/Coordinator, Team Leader) involved and functions performed: Alkesandar Putnik – Head of Operation Moayed Zedan– Mechanical Engineer -Khaldoon Sami Fyadh– Automation and SCADA Engineer Nawar Thamer – Electrical Engineer Mohammed Ameer- Planning Engineer		
Narrative Description of Project: Full Operation & Maintenance of Halabja WTP (2200 m3/hr) <ul style="list-style-type: none"> <li>- Water production and water quality control.</li> <li>- Preventative maintenance of all mechanical, electrical and instrument equipment, as well as SCADA.</li> </ul>		
		



## Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name: <b>WATER SUPPLY IMPROVEMENT PROJECT IN KURDISTAN REGION PACKAGE II</b>		Country: <b>IRAQ</b>
Location within Country: <b>IRAQ</b>		Professional Staff Provided by <b>VOLTEC</b>
Name of Client: <b>SsangYong Engineering and Construction Company</b>		No. of Staff: <b>106</b>
Address: <b>Sulaimania -Iraq</b>		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <b>Aug 2015</b>	Completion Date (Month/Year): <b>Sep 2016</b>	Approx. Value of Services (in current US\$): <b>1,010,000.00</b>
Name of Associated Firm(s), if any: <b>VOLTEC, Iraq</b>		No. of Months of Professional Staff Provided by Associated Firm(s):
Name of Senior Staff (Project Director/Coordinator, Team Leader) involved and functions performed: <b>Sinan Said – Project Director</b> <b>Moayed Zedan– Mechanical Engineer</b> <b>-Khaldoon Sami Fyadh– Automation and SCADA Engineer</b> <b>Nawar Thamer – Electrical Engineer</b> <b>Gunther Trumheler – Commissioning Expert</b> <b>Stephan Girgic – Mechanical Engineer</b>		
Narrative Description of Project: All Mechanical, Electrical & Instruments installation, Start Up and Commissioning Works. <ul style="list-style-type: none"> <li>- Installation of all Switch Gears 33 KV &amp; 11 KV, all electrical and instruments cables termination etc....</li> <li>- Installation of all pumps, valves and pipes,</li> <li>- Grit removal, clariflocculators, filtration building and cranes.</li> </ul>		
		
		

## Firm's References Relevant Services That Best Illustrate Qualifications

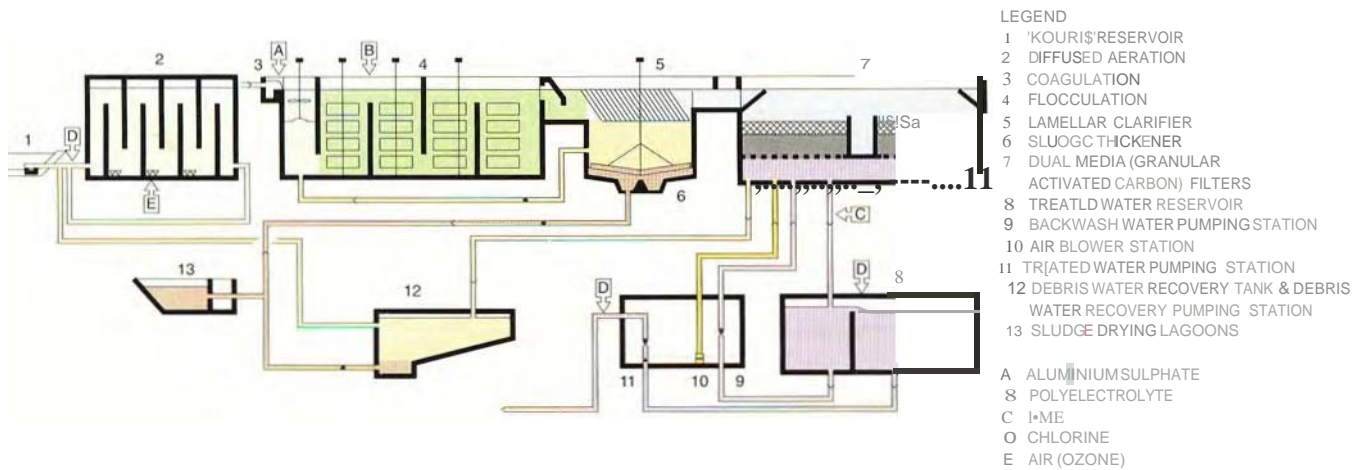
Assignment Name: <b>SUPPLY &amp; INSTALLATION OF DOKAN – SULAIMANIYAH WTP</b>		Country: <b>IRAQ</b>
Location within Country: <b>IRAQ</b>		Professional Staff Provided by <b>VOLTEC</b>
Name of Client: <b>Nokan Group</b>		No. of Staff: <b>95</b>
Address: <b>Sulaimania -Iraq</b>		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <b>Jul 2008</b>	Completion Date (Month/Year): <b>Mar 2009</b>	Approx. Value of Services (in current US\$): <b>11,000,000.00</b>
Name of Associated Firm(s), if any: <b>VOLTEC, Iraq</b>		No. of Months of Professional Staff Provided by Associated Firm(s):
Name of Senior Staff (Project Director/Coordinator, Team Leader) involved and functions performed: <b>Sinan Said – Project Director</b> <b>Othman Aziz– Mechanical Engineer</b> <b>-Khaldoon Sami Fyadh– Automation and SCADA Engineer</b> <b>Nawar Thamer – Electrical Engineer</b> <b>Imad Namdar- Mechanical Engineer</b> <b>Tareq Salahaddin Abdulkarim- Civil Engineer</b>		
Narrative Description of Project: <b>Supply and Installation of Dokan-Sulaimaniyah WTP 12000m3/hr WTP.</b> <ul style="list-style-type: none"> <li>- Installation of 56 Vertical Multistage turbine 1.2 MW 6.6KV pumps.</li> <li>- Installation of all pump stations valves and pipes.</li> <li>- Supply of 33KV substation, 6.6KV soft starter, 50,000 meter cabling.</li> <li>- Supply of Valves and Pipes.</li> </ul>		
		



## Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name: <b>DESIGN FOR DOKAN WATER Treatment Plant Sulaimania – IRAQ</b>		Country: <b>IRAQ</b>
Location within Country: <b>IRAQ</b>		Professional Staff Provided by <b>VOLTEC</b> <span style="float: right;"><b>8</b></span>
Name of Client: <b>DOKAN WTP</b>		No. of Staff: <span style="float: right;"><b>12</b></span>
Address: <b>Sulaimania -Iraq</b>		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <b>2008</b>	Completion Date (Month/Year): <b>2009</b>	Approx. Value of Services (in current US\$): <b>160,000 USD \$</b>
Name of Associated Firm(s), if any: <b>VOLTEC, Iraq</b>		No. of Months of Professional Staff Provided by Associated Firm(s):
Name of Senior Staff (Project Director/Coordinator, Team Leader) involved and functions performed: <b>Dipl.-Ing. Andra Tucovic – Project Director</b> <b>Dipl.-Ing. Ivan Nenkov– Mechanical Engineer</b> <b>Dipl.-Ing. Visoslav Ristic– Hydraulic Engineer</b> <b>Dipl.-Ing. Milos Popovic – Electrical Engineer</b> <b>Dipl. Arch. Dragan Manojlovic - Architect</b> <b>Dipl.-Ing. Slobodan Mojsic – Structural Expert</b>		
<p>Narrative Description of Project: Water intake and raw water pumping station water treatment and 2 boosting station , upgrade the exist project to 12000 m3/hr</p> <ul style="list-style-type: none"> <li>- Hydraulic calculations</li> <li>• Mechanical design</li> <li>• Power supply and control of the pumps</li> <li>• Preparation of drawings</li> <li>• Preparation of the bill of quantities</li> <li>• Selection of the equipment</li> <li>• Estimation of Total Cost of the Works</li> <li>• Contract Administration and Project Management</li> </ul>		
		

## Limassol Plant Serving Limassol, Cyprus



### PURPOSE

Treatment of water from the 'Kouris' reservoir for potable water supply to the City of Limassol. Removal of organic and mineral suspended matter, iron, manganese and asbestos, followed by disinfection of water.

### PLANT CHARACTERISTICS

Nominal Plant capacity 3500 m<sup>3</sup>/h; first phase 1750 m<sup>3</sup>/h.

Aeration: diffused air, nominal retention time 6 min.

Blowers: phase 1 - 170 m<sup>3</sup>/h (2+1); provision for ozone application.

Coagulation: through hydraulic jump.

Flocculation: three steps with variable speed mixers, total retention time of 20 minutes.

Sedimentation: three lamellar clarifiers (phase 1), nominal surface load 1,2 m/h; integrated sludge thickeners; sludge recirculation to rapid mixing compartment.

Chemical storage and dosing facilities for aluminium sulphate, polyelectrolyte, lime, and chlorine.

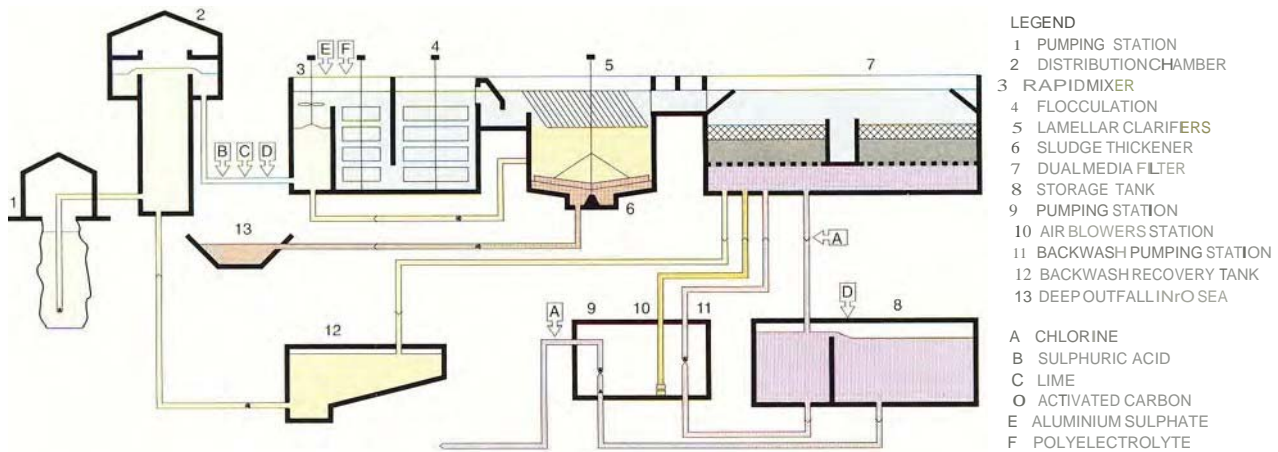
Filtration: six open rapid gravity sand/antracite filters (phase 1) each with filtration area of 46m<sup>2</sup>, nominal filtration rate 8 m/h; constant level control; provision for granular activated carbon application.

Backwash water recovery system.

Sludge dewatering in eight sludge drying lagoons (phase 1).

Treated water reservoir: capacity 10.000 m<sup>3</sup>.

Fonte Gaj Plant  
Serving Labin, Croatia



**PURPOSE**

Treatment of Karst spring water for potable water supply of the City of Labin. Removal of organic and mineral suspended matter followed by disinfection of water.

**PLANT CHARACTERISTICS**

Total Plant capacity 1,800 m<sup>3</sup>/h in 2 phases.

Two intakes.

Two pumping stations: first two pumps - capacity 360 m<sup>3</sup>/h each; second two pumps - capacity 1,180 m<sup>3</sup>/h each

Coagulation rapid propeller type mixer

Flocculation: two steps with variable speed mixers, total retention time 16 minutes.

Sedimentation: two lamellar clarifiers- surface load 18 m/h with integrated sludge thickeners.

Chemical storage and dosing facilities for sulphuric acid, aluminium sulphate, polyelectrolyte, lime, chlorine.

Filtration: twelve open rapid gravity sand filters each with filtration area of 26m<sup>2</sup>; nominal filtration rate 7 m/h; declining rate filtration control.

Filter backwash: two backwash water pumps - velocity 40 m/h; one air scour blower - velocity 90 m/h.

Sludge conditioning with lime.

Sludge dewatering by means of drying beds.

Storage tank: capacity 4,000 m<sup>3</sup>.

Distribution pumping station: three pumps of 600 m<sup>3</sup>/h with heads up to 400 m.

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**VOLTEC SELECTED REFERENCES**

**MASTER PLANNING &**

**CONSULTANCY SERVICES**


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## Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name: <b>Master plan for Sulaimaniyah International Airport</b>		Country: <b>IRAQ</b>
Location within Country: <b>Sulaimaniyah</b>		Professional Staff Provided by <b>VOLTEC 5</b>
Name of Client: <b>Sulaimaniyah International Airport</b>		No. of Staff: <b>20</b>
Address: <b>Sulaimaniyah</b>		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <b>March 2011</b>	Completion Date (Month/Year): <b>August 2011</b>	Approx. Value of Services (in current US\$): <b>1 Million</b>
Name of Associated Firm(s), if any: <b>GMW/URS Scottwilson</b>		No. of Months of Professional Staff Provided by Associated Firm(s): <b>6</b>
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <b>Eng Sinan Said - Project Director</b> <b>Eng Nabeel Ahmed – Architect</b> <b>Eng Maurice Rosario-Airport Architect</b> <b>Eng Michael Jackson – Global Head of Airport Planning</b> <b>Eng Kieron Bradely – Associate planner</b>		
Narrative Description of Project: <b>Data Collection, Traffic forecast, Terminal proposal, future master plan for the airport</b>		
		





## Firm's References Relevant Services That Best Illustrate Qualifications



Assignment Name: <b>Master Plan and Development of Slemani-Tasluja Corridor</b>		Country: <b>IRAQ</b>
Location within Country: <b>Sulaimaniyah</b>		Professional Staff Provided by <b>VOLTEC 5</b>
Name of Client: <b>Sulaimaniyah Municipality</b>		No. of Staff: <b>10</b>
Address: <b>Sulaimaniyah</b>		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <b>Jan 2014</b>	Completion Date (Month/Year): <b>September 2018</b>	Approx. Value of Services (in current US\$): <b>1 Million</b>
Name of Associated Firm(s), if any: <b>GMW Architects</b>		No. of Months of Professional Staff Provided by Associated Firm(s): <b>2</b>
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <b>Eng Sinan Said - Project Director</b> <b>Eng Nabeel Ahmed – Architect</b> <b>Eng Maurice Rosario-Architect</b> <b>Eng Marina Valsjevic – Environment Report</b> <b>Eng Niaz Said – Urban planning</b>		
Narrative Description of Project: Preparing master plan and detailed urban plan for Slemani-Tasluja Corridor, preparing pre design studies followed by Master plan and detailed urban plan based on the state of the art technology and high standard and planning Regulations. Include power substation ,energy centers and utilities		
		



## Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name: <b>Sulaimaniyah Airport Cargo Village</b>		Country: <b>IRAQ</b>
Location within Country: <b>Sulaimaniyah Airport</b>		Professional Staff Provided by <b>VOLTEC4</b>
Name of Client: <b>GulfMar</b>		No. of Staff: <b>4</b>
Address: <b>Sulaimaniyah</b>		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <b>2012</b>	Completion Date (Month/Year): <b>2014</b>	Approx. Value of Services (in current US\$): <b>300,000.00 USD</b>
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s):
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <b>Eng Sinan Said - Project Director</b> <b>Eng Khaldoon Sami- Automation Engineer</b> <b>Eng Nawar Thamer- Electrical Engineer</b> <b>Eng Mofaq Al Saor – Civil Engineer</b>		
Narrative Description of Project: Consultancy work, assisting the client to efficiently implement the project applying the highest internationally recognized engineering standards and practice. Checking All workshop Drawings, Checking Quality of Materials and verification of specification and country of Origin.		
		
		

## Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name: <b>Ventilation, Fire Fighting, Automation and Lighting System for Azmar Tunnel In Sulaimaniyah</b>		Country: <b>IRAQ</b>
Location within Country: <b>Sulaimaniyah</b>		Professional Staff Provided by <b>VOLTEC4</b>
Name of Client: <b>Directorate General of Roads, Reconstruction and Huosing in Sulaimaniyah</b>		No. of Staff: <b>4</b>
Address: <b>Sulaimaniyah</b>		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): <b>Jan 2011</b>	Completion Date (Month/Year): <b>Dec 2013</b>	Approx. Value of Services (in current US\$): <b>1 Million</b>
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s):
Name of Senior Staff (Project Director/Co-ordinator, Team Leader) involved and functions performed: <b>Eng Sinan Said - Project Director</b> <b>Eng Khaldoon Sami- Automation Engineer</b> <b>Eng Nawar Thamer- Electrical Engineer</b> <b>Eng Qasim Al Obaidi – Mechanical Engineer</b>		
Narrative Description of Project: Consultancy work, assisting the client to efficiently implement the project applying the highest internationally recognized engineering standards and practice.		
		
		

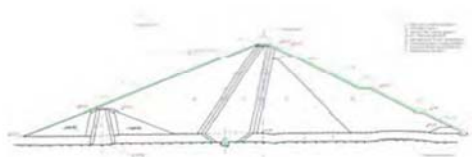
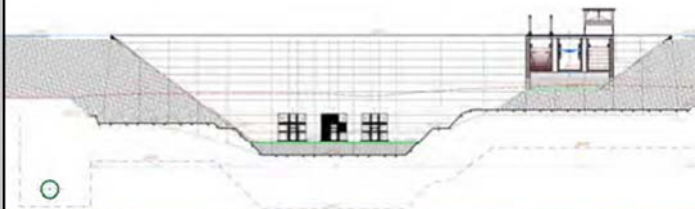
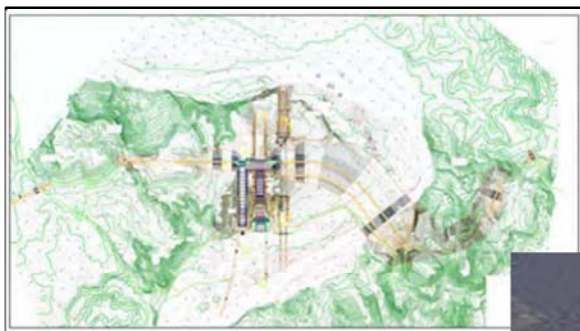
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VOLTEC SELECTED REFERENCES

DAMS

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## TAQ-TAQ DAM PROJECT



Contract title:	<b>PLANING REPORT &amp; INVESTIGATION WORKS FOR TAQ-TAQ DAM</b>
Location/River:	Taq-Taq town / Lesser Zab River – IRAQ
Employer:	Ministry of Water Resources IRAQ
Commencement date:	2004.
Completion date:	2006.
Contract price:	1,485,840 USD
Investments cost:	1,050,000,000 USD

### Hydrology data

Catchment area	1850 km <sup>2</sup>
Average discharge	217 m <sup>3</sup> /s
PMF flood	8700 m <sup>3</sup> /s

### Dam

Type	Fill dam with central clay core and concrete gravity part
Height	90 m
Crest length	1900 m
Embankment vol.	14 x 10 <sup>6</sup> m <sup>3</sup>
Concrete vol.	0.54 x 10 <sup>6</sup> m <sup>3</sup>

### Reservoir total storage

2858 x 10<sup>6</sup> m<sup>3</sup>

### Spillway

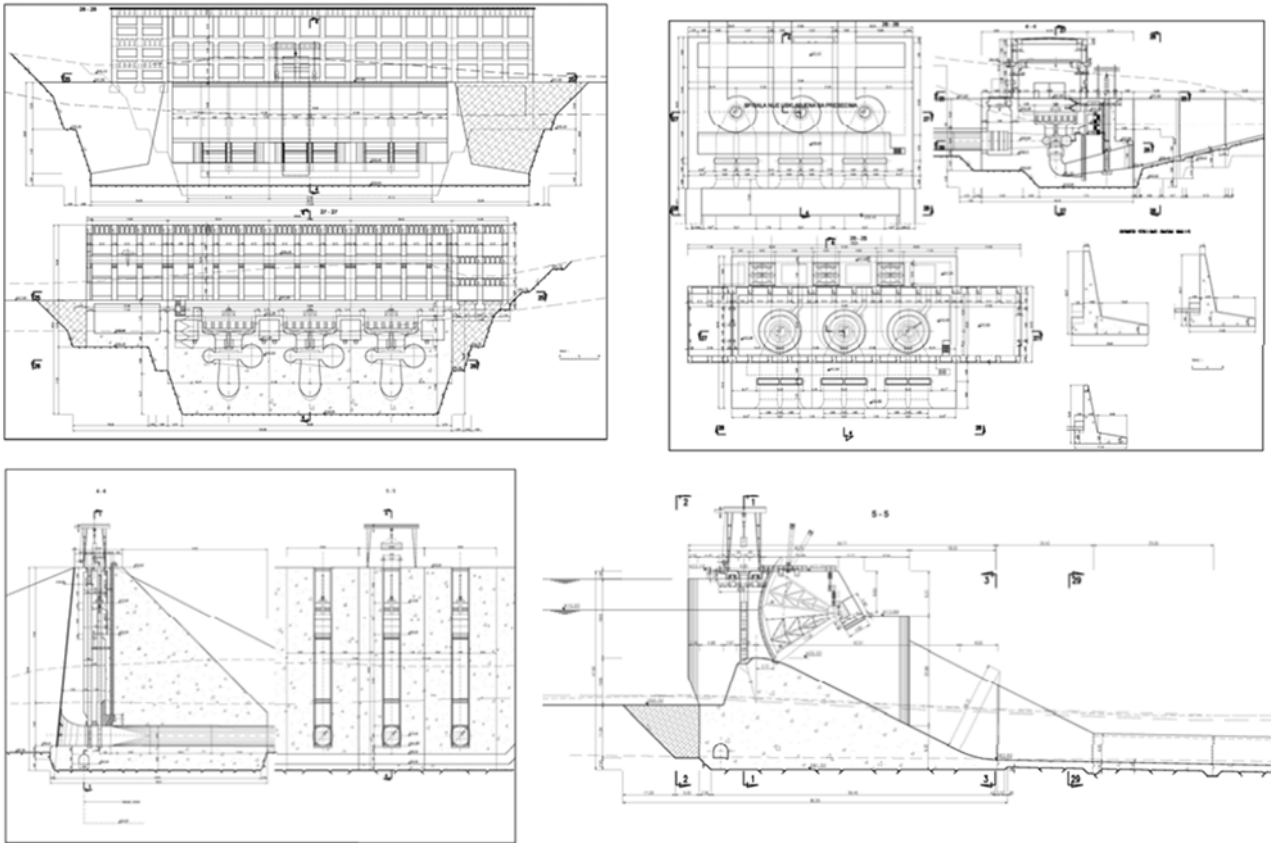
Type	Gated (radial gates) / 3 bays
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### Hpp

Installed Capacity (270 MW, 3 Unit)

Turbine Type Fransis





**Description of the Project:** Location of designed Taq-Taq Dam is on river Lesser Zab, some 5 km upstream from Taq-Taq town in Iraq. Taq-Taq Dam presents the second step on Lesser Zab river, downstream from Dokan Dam and upstream from Dibbis Dam. The main purpose of  $2900 \times 10^6 \text{ m}^3$  large Taq-Taq reservoir is irrigation, regulation of water released from Dokan power station, flood control for downstream area and power generation.

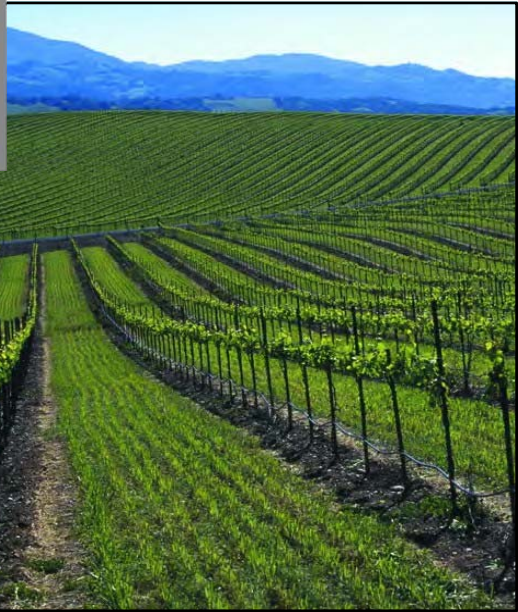
Taq-Taq Dam, 90 m high, is designed as a fill dam with central clay core. It will regulate the river average annual discharge providing the water for irrigation (Kirkuk irrigation system and other downstream consumers). Three gated spillway bays with chute and ski jump bucket have sufficient capacity to convey the maximum designed flood with retention in the reservoir storage available. Designed power station has the installed capacity of 270 MW with discharge of  $450 \text{ m}^3/\text{sec}$ . Other appurtenant structures include diversion tunnels, bottom outlet, power intake and fuse plug.

**The Services Provided:** Performance of Topographical & Geological Investigation Works and Preparation of Planning Report have been the most essential goals of the Project, including the following specific Consulting Services:

- Preparation of Investigation Works Program & Performance of Investigation Works;
- Determination of General Layout, optimization and engineering design of the Dam, Appurtenant Structures & HPP;
- Preparation of Hydrological, Topographical, Geological & Earthquake Hazard Study;
- Implementation of Cost Estimate with Construction Time Schedule & Economic with Financial analysis;
- Preparation of Environmental Impact Assessment Study.



## STUDY OF NEW IRRIGATION AREA IN TAQ-TAQ DAM VICINITY



Contract title:	<b>PRE-FEASIBILITY STUDY OF THE NEW IRRIGATION AREA – TAQ-TAQ DAM PROJECT</b>
Location/River:	Taq-Taq town / Lesser Zab River - IRAQ
Employer:	Ministry of Water Resources IRAQ
Commencement date:	2006.
Completion date:	2006.
Contract price:	1,485,840 USD
Investments cost:	1,050,000.00 USD

### Hydrology data

Catchment area	1850 km <sup>2</sup>
Average discharge	217 m <sup>3</sup> /s
PMF flood	8700 m <sup>3</sup> /s

### Dam

Type	Fill dam with central clay core and concrete gravity part
Height	90.0 m
Crest length	1900 m
Embankment vol.	14 x 10 <sup>6</sup> m <sup>3</sup>
Concrete vol..	0.54 x 10 <sup>6</sup> m <sup>3</sup>

### Reservoir total storage

2858 x 10<sup>6</sup> m<sup>3</sup>

### Spillway

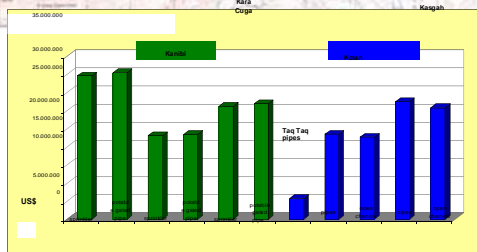
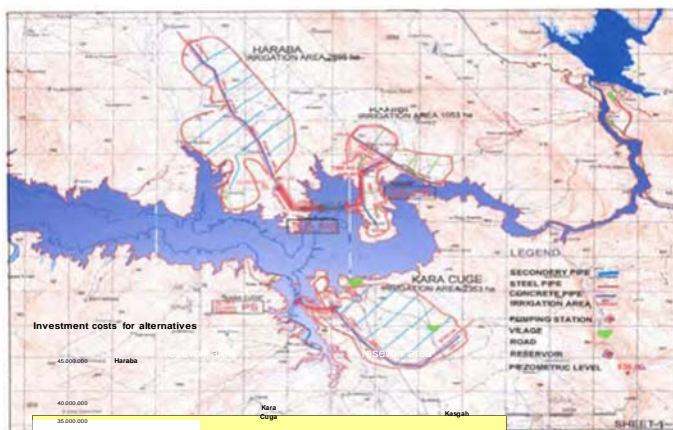
Type	Gated / 3 bays
------	----------------

### HPP

Installed capacity	270 MW (3 units)
Turbina type	Francis

### New irrigation area

In reservoir area	6300 ha
Downstream of reservoir	8965 ha



**Description of the Project:** After construction of the designed Taq-Taq Dam, the area of 90 km<sup>2</sup> will be impounded, and total of 17000 inhabitants will be resettled. In order to mitigate negative effects induced by resettlements and to provide better life conditions possibility of resettlement to the region in the vicinity of the dam and reservoir as well as possibility and feasibility of irrigation of the new area which will be given as compensation was analyzed in the Pre-feasibility study.

The appropriate areas for irrigation in the vicinity of dam (8965 ha) and reservoir (6300 ha) were determined based on the available maps and satellite images. Water demands were estimated in accordance with climatic characteristics, demands of typical crops in the area etc. Irrigation systems and their technical solutions were elaborated and costs and benefits estimated. Economical analyses was performed and feasibility confirmed.

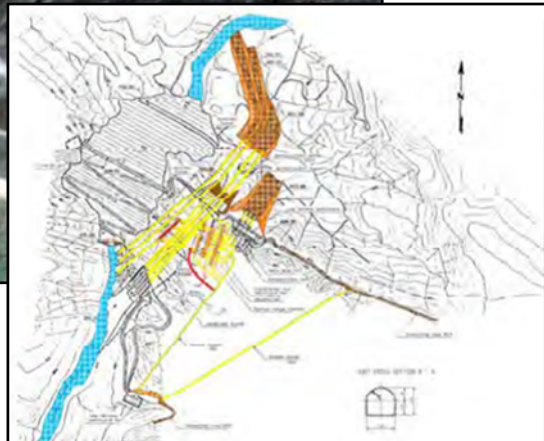
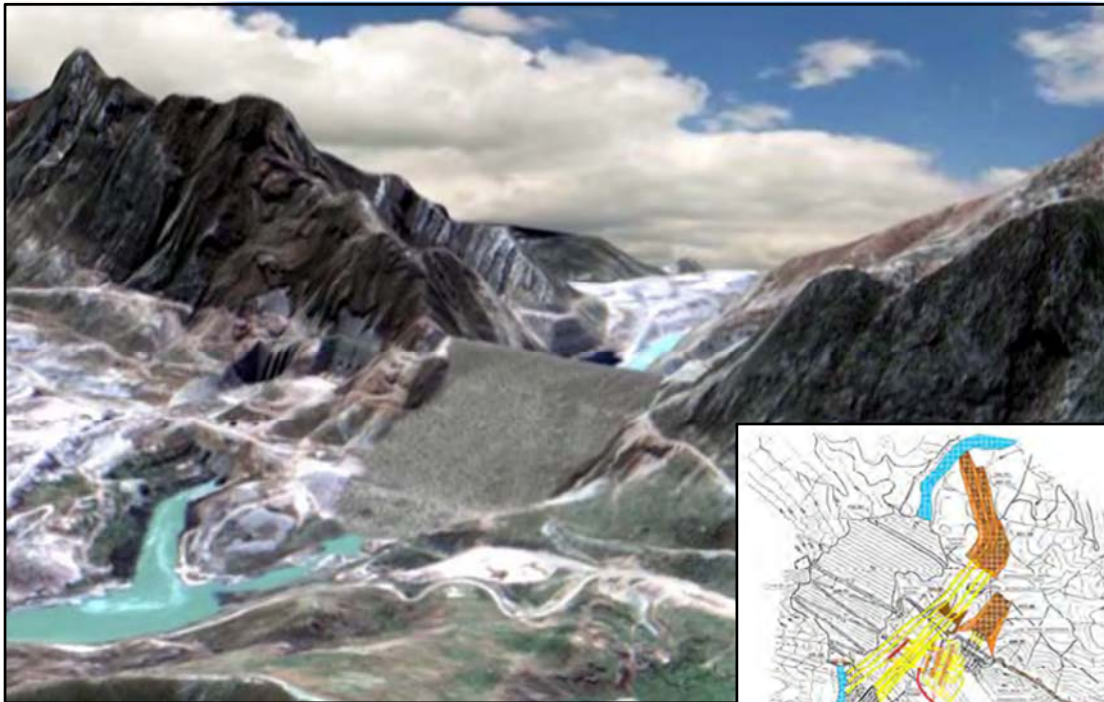
Additional study was performed to evaluate impact of new irrigation areas on the performance of the Taq-Taq reservoir. Additional water balance simulations indicated that the impact is negligible.

**The Services Provided:**

- Preparation and analyses of available documents and maps;
- Determination of general layout, and preliminary design of the irrigation systems;
- Implementation of Cost Estimate and Benefit analyses;
- Evaluation of new irrigation systems on original Taq-Taq Dam Project.



## BEKHME DAM PROJECT



Contract title:	<b>UPDATING OF PLANNING REPORT &amp; TENDER DOCUMENTS FOR BEKHME DAM</b>
Location/River:	Bekhme gorge / Greater Zab River IRAQ
Employer:	Ministry of Water Resources IRAQ
Commencement date:	2004.
Completion date:	2005.
Contract price:	1,200,000 USD
Investments cost:	3,100,000,000 USD

### Hydrology data

Catchment area	16600 km <sup>2</sup>
Average discharge	377 m <sup>3</sup> /s
PMF flood	25850 m <sup>3</sup> /s

### Dam

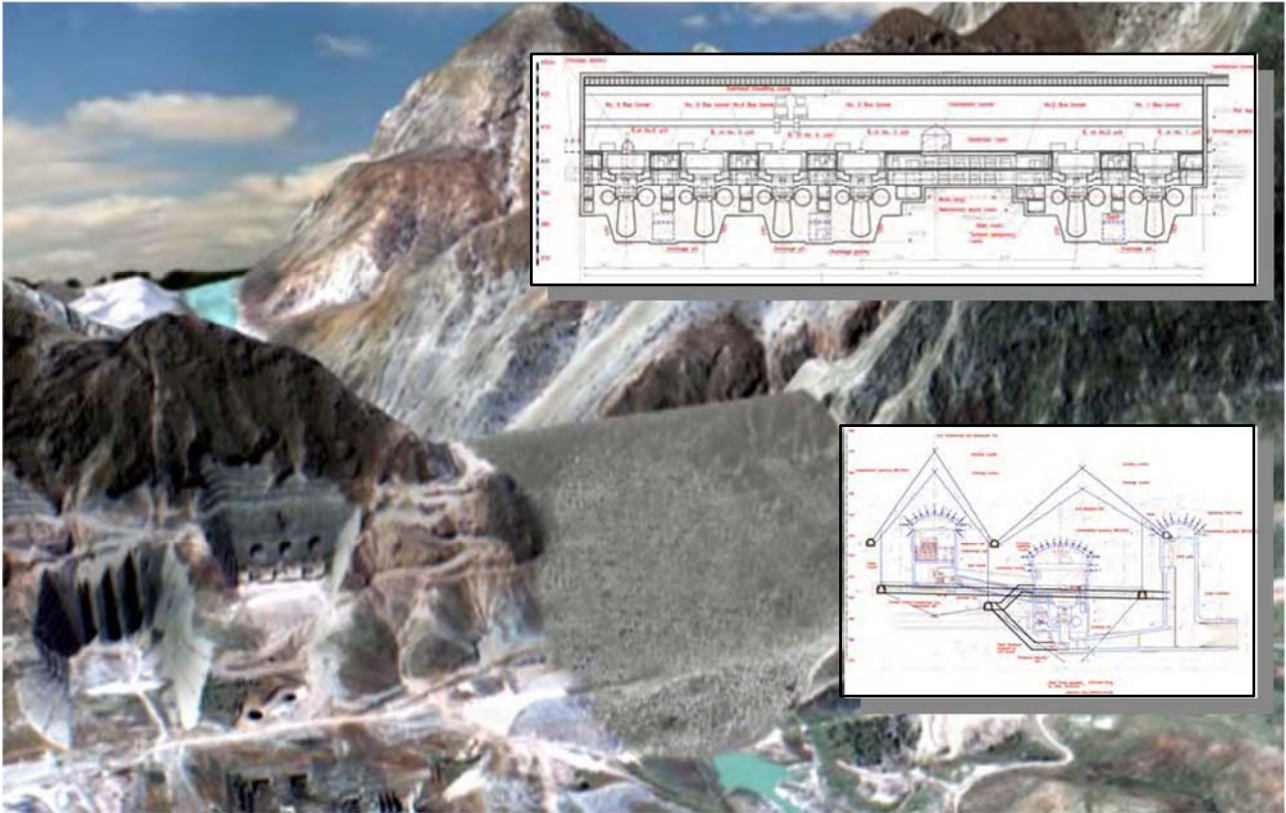
Type	Rockfill dam with central clay core
Height	230 m Crest
length	600 m
Embankment vol.	34 x 10 <sup>6</sup> m <sup>3</sup>
Reservoir total storage	17000 x 10 <sup>6</sup> m <sup>3</sup>

### Spillway

Type	Gated (radial gates) / 3 tunnels
Capacity:	8865 m <sup>3</sup> /s

### HPP

Installed capacity	1500 MW (6 units)
Turbine type	Francis



**Description of the Project:** Main purpose of Bekhme Dam Project is power generation, irrigation and flood control. System is composed of the following structures: Rockfill dam; Spillway, Bottom outlet & Diversion tunnels; Water conveyance facilities; Underground power house, Transformer & Switchyard hall.

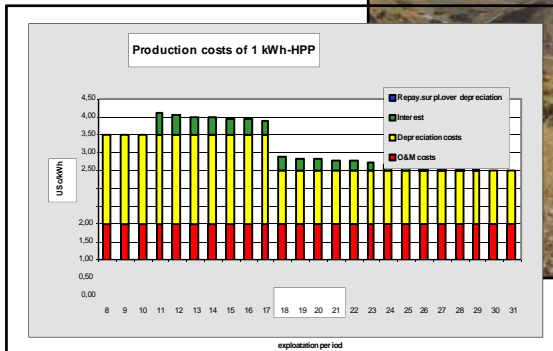
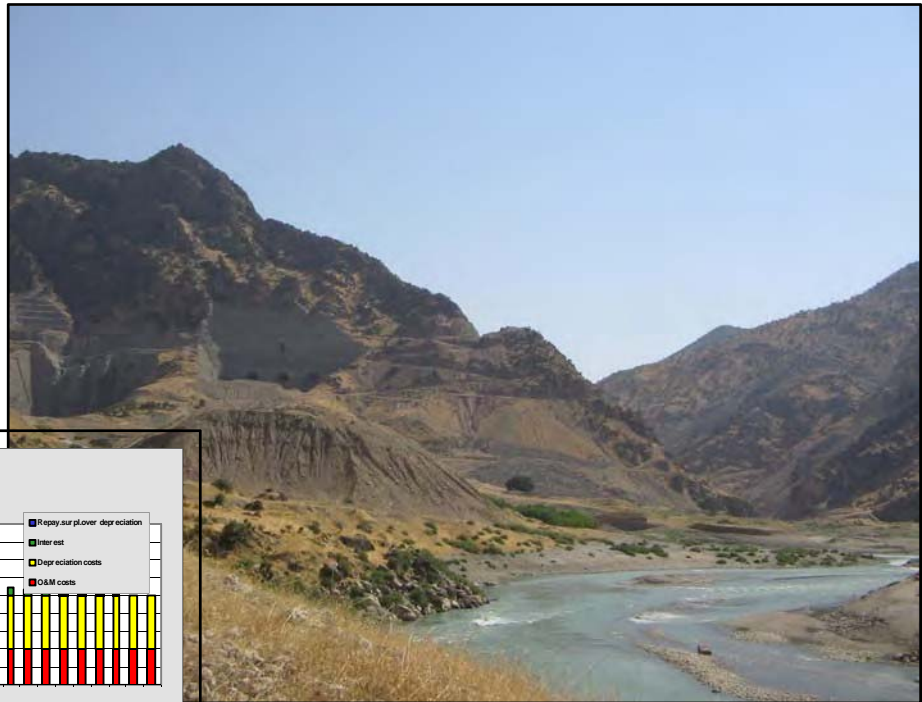
The commencement of Bekhme Dam Project construction, based on original EPDC (Japan) project was in 1986. The works were suspended in 1990, due to Kuwait-Iraq war together with the following UN sanctions and it haven't been continued, yet. The estimation of percentage of completed permanent works, made in 2004, was about 27%.

In the light of mentioned above the following Consulting Services within this Contract have been provided:

**The Services Provided:** Updating of original EPDC (Japan) Planning Report & Tender Documents have been the most essential goals of the project, including the following specific Consulting Services:

- Assistance to Ministry of Water Resources and State Commission for Dams and Reservoirs in continuing activities for Bekhme Dam Project;
- Review of status of executed works at Bekhme site;
- Engineering evaluation of the previous projects and works;
- Estimation of total cost of the remaining works;
- Updating of Hydrological, Topographical & Geological Report;
- Preparation of Environmental Impact Assessment Study;
- Updating of Contract Documents for Civil works & Equipment;
- Establishment of Tendering Procedure and rendering assistance to Client during Tendering Procedure.

## BEKHME DAM PROJECT- ECONOMIC AND FINANCIAL EVALUATION



Contract title: **ECONOMIC AND FINANCIAL EVALUATION OF BEKHME DAM MULTIPURPOSE PROJECT**

Location: Bekhme gorge / Greater Zab River – IRAQ

Employer: Ministry of Water Resources IRAQ

Commencement date: 2006.

Completion date: 2006.

Contract price: 150,000 USD

Investments cost (including irrigation): 4,900,000,000 USD

### Hydrology data

Catchment area: 16600 km<sup>2</sup>  
Average discharge: 377 m<sup>3</sup>/s  
PMF flood: 25850 m<sup>3</sup>/s

### Dam

Type: Rockfill dam with central clay core  
Height: 230 m  
Crest length: 600 m  
Embankment vol.: 34 x 10<sup>6</sup> m<sup>3</sup>  
Reservoir total storage: 17000 x 10<sup>6</sup> m<sup>3</sup>

### Spillway

Type: Gated (radial gates) / 3 tunnels  
Capacity: 8865 m<sup>3</sup>/s

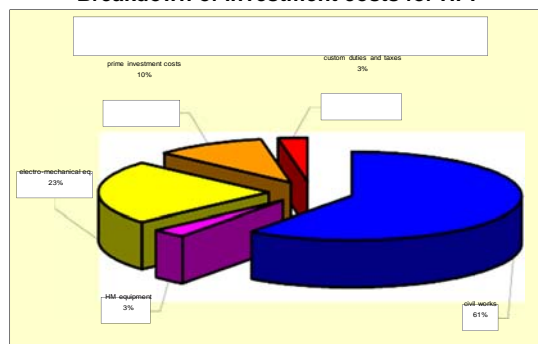
### HPP

Installed capacity: 1500 MW (6 units)  
Turbine type: Francis



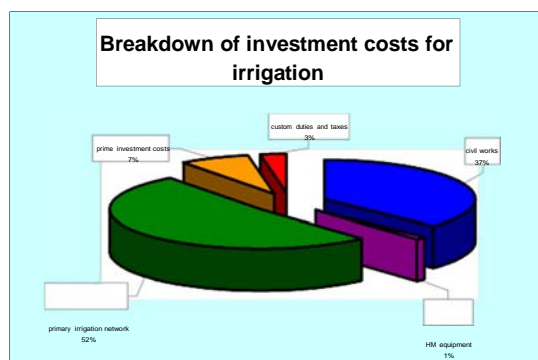
No	ITEM	IRR	B-C in US\$ for disc.rate 6%	B/C for disc.rate 6%
<b>A</b>	<b>Bekhme Multipurpose Project</b>			
1	basic analysis	14.74%	6,732,810,889	2.09
2	Investment and operating costs +10%	13.42%	6,117,594,785	1.90
3	Investment and operating costs -10%	16.30%	7,348,026,994	2.33
4	Alternative TPP, total costs +10%	15.36%	7,269,020,198	2.18
5	Alternative TPP, fuel costs rise yearly +3%	15.73%	9,483,054,415	2.54
6	Alternative TPP, total costs -10%	14.12%	6,196,601,581	2.01
7	Irrigation benefits +10%	15.40%	7,420,730,718	2.21
8	Irrigation benefits -10%	14.06%	6,044,891,061	1.98
9	Flood control benefits +10%	14.89%	6,797,178,946	2.10
10	Flood control benefits -10%	14.60%	6,668,442,833	2.08
11	Without Flood control benefits	13.42%	6,089,130,322	1.99
12	without multiplicative effects	12.33%	4,439,744,796	1.72
13	without flood control and mult.effects	11.06%	3,796,064,228	1.62
14	All costs +35 % and all benefits - 32 %	5.99%	-8,317,157	1.00

**Breakdown of investment costs for HPP**



No	ITEM	IRR	B-C in US\$ for disc.rate 6%	B/C for disc.rate 6%
<b>B</b>	<b>Bekhme Irrigation only</b>			
1	basic analysis	10.15%	1,397,462,542	1.44
2	Investment and operating costs +20%	8.04%	759,728,612	1.20
3	Investment and operating costs +44%	6.00%	1,781,838	1.00
4	Irrigation benefits -20%	7.58%	480,236,104	1.15
5	Irrigation benefits -30%	6.00%	526,677	1.00
6	All costs +20 % and irrigation benefits - 17 %	6.00%	265,122	1.00

**Breakdown of investment costs for irrigation**



No	ITEM	IRR	B-C in US\$ for disc.rate 6%	B/C for disc.rate 6%
<b>C</b>	<b>Bekhme HPP only</b>			
1	basic analysis	11.79%	2,398,601,686	1.81
2	Investment and operating costs +10%	10.72%	2,102,252,546	1.64
3	Investment and operating costs -10%	13.05%	2,694,950,826	2.01
4	Alternative TPP, total costs +10%	12.93%	2,934,810,995	1.99
5	Alternative TPP, fuel costs rise yearly +3%	13.97%	5,148,845,212	2.74
6	Alternative TPP, total costs -10%	10.61%	1,862,392,378	1.63
7	All costs +28 % and all benefits - 30 %	6.00%	125,063	1.00

**Description of the Project:** The Bekhme Dam design was finished and construction begun in 1986, but construction works were suspended in 1991 due to the war. The Updated Planning report and Tender Documentation for continuation of works on this dam were finished in 2006.

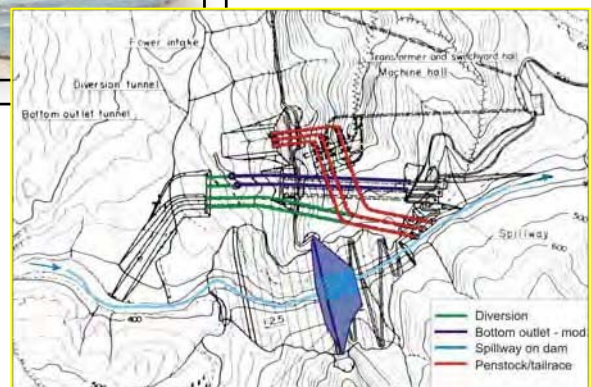
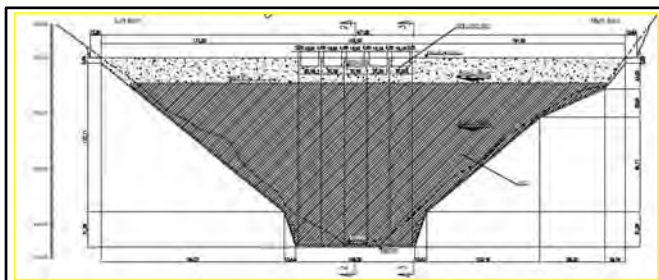
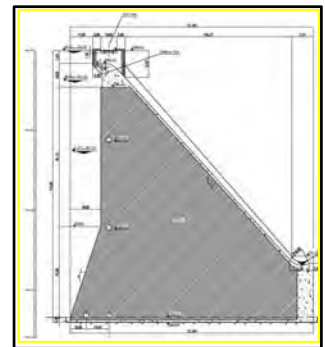
This economic and financial evaluation was done in course of assessment the project economic and financial viability today, and to provide an overview of possible issues in the financing of such a multipurpose project. This analysis integrates economical, financial, institutional, technical, sociological and environmental considerations.

In this project more than 500 million USD is already invested and the total remaining works amount 4,400 million USD. Performed analyses shows that this project is both economically and financially feasible.

**The Services Provided:**

- Identifying, evaluating and comparing economic costs and analysing sensitivities;
- Analyses of HPP production effects;
- Analyses of irrigation effects;
- Economical evaluation of project;
- Financial evaluation of project.

## ALTERNATIVES WITH REDUCING BEKHME DAM HEIGHTS



Contract title: **PRE-FEASIBILITY STUDY OF THE ALTERNATIVES WITH REDUCING BEKHME DAM HEIGHTS**

Location/River: Bekhme gorge / Greater Zab River  
IRAQ

Employer: Ministry of Water Resources  
IRAQ

Commencement date: 2006.

Completion date: 2007.

Contract price: 400,000 USD

Investments cost  
(including irrigation): 3,510,000,000 USD

### Hydrology data

Catchment area 166000 km<sup>2</sup>  
Average discharge 377 m<sup>3</sup>/s  
PMF flood 25 850 m<sup>3</sup>/s

### Dam-Alternative 1

Type RCC dam  
Height 170 m  
Crest length 471 m  
Concrete vol. 2.6 x 10<sup>6</sup> m<sup>3</sup>

### Reservoir total storage

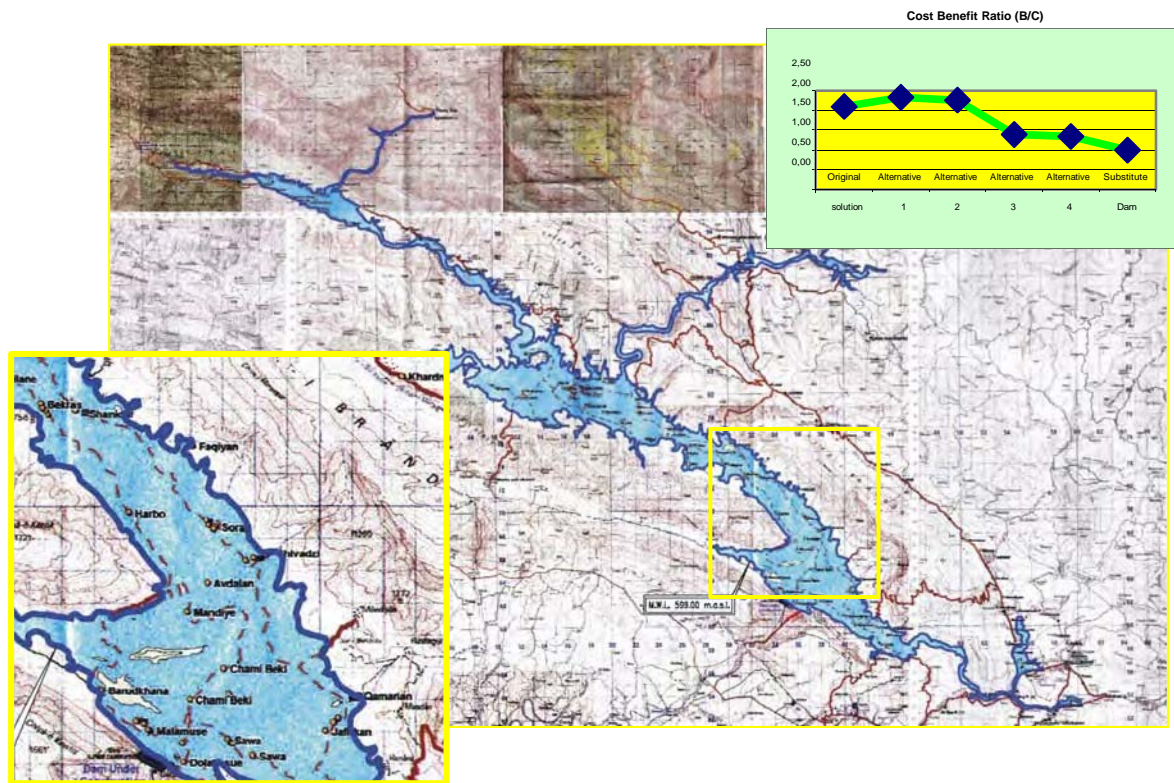
8110 x 10<sup>6</sup> m<sup>3</sup>

### Spillway

Type Ungated / 5 bays

### HPP

Installed capacity 840 MW (6 units)  
Turbine type Fransis



**Description of the Project:** The commencement of Bekhme Dam Project construction, based on original EPDC (Japan) project started in 1986. The works were suspended in 1990. Since then, a lot of villages have been founded in the area envisaged for the impoundment, so resettlement of the villagers became a serious issue. Due to that reason, an analysis of alternatives with reduced dam heights was performed.

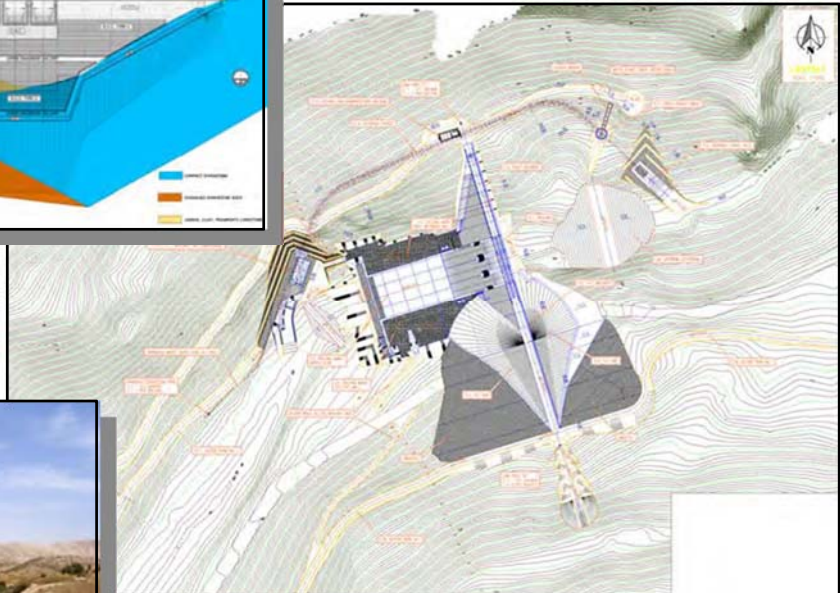
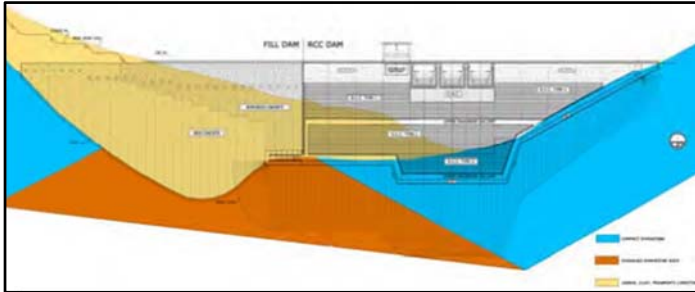
A pre-feasibility study of four alternative technical solutions was done. Two dam types – RCC and fill dam type – as well as two maximum impoundment levels (reduction from 599 m a.s.l. to 550 m a.s.l. and to 517 m a.s.l.) were analyzed. Proposed technical solutions incorporated more than 90 % of already executed constructions at the dam site. For each alternative, construction costs and resettlement costs were estimated as well as reduced effects of irrigation and power production. A thorough economical analysis was performed. Characteristic parameters B-C (Net Present Value), B/C, EIRR (Economic internal rate of return) and LRIC (Long Run Incremental Costs) were evaluated for alternatives and compared with parameters for original solution. An optimal alternative (RCC, 550 m a.s.l.) was recommended.

**The Services Provided:**

- Review of existed documents and data and their systematisation ;
- Determination of general layout, optimization and engineering design of the Dam, Appurtenant Structures & HPP for each alternative;
- Engineering calculations;
- Estimation of total cost for each alternative;
- Analyses and evaluation of potential irrigation and power production effects for each alternative;
- Estimation of reduction of resettlement costs as well as preparation of list of impoundment villages for each alternative;
- Evaluation of characteristic economic parameters and recommendation of optimal alternative.



## BASSARA DAM and IRRIGATION PROJECT



Contract title: **PRELIMINARY & PLANNING REPORT WITH INVESTIGATION WORKS, FINAL DESIGN & TENDER DOCUMENTS FOR BASSARA DAM**

Location/River: Bassara gorge / Tawooq Chai River  
IRAQ

Employer: Ministry of Water Resources  
IRAQ

Commencement date: 2005.

Completion date: 2007.

Contract price: 2,305,000. USD

Investment cost: 110,600,000. USD

### Hydrology data

Catchment area 574 km<sup>2</sup>  
Average discharge 8 m<sup>3</sup>/s  
PMF flood 2870 m<sup>3</sup>/s

### Dam

Type RCC & Fill dam with central diaphragm  
Height 67.0 m  
Crest length 284.7 m  
Concrete vol. 0.26 x 10<sup>6</sup> m<sup>3</sup>  
Embankment vol. 0.26 x 10<sup>6</sup> m<sup>3</sup>

### Reservoir total storage

54 x 10<sup>6</sup> m<sup>3</sup>

### Spillway

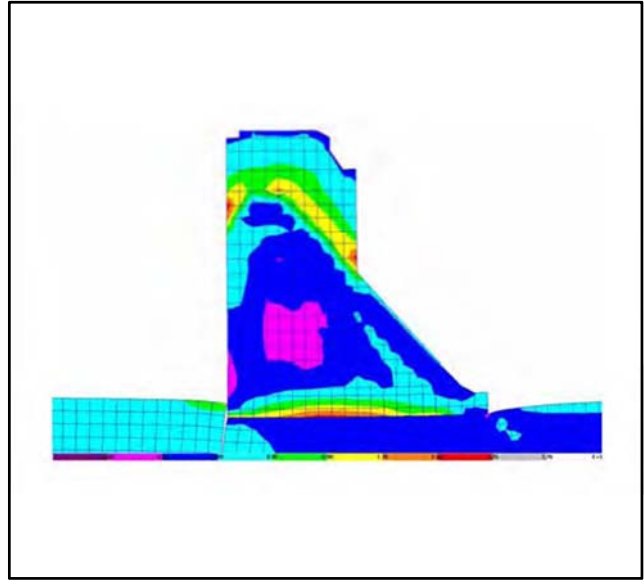
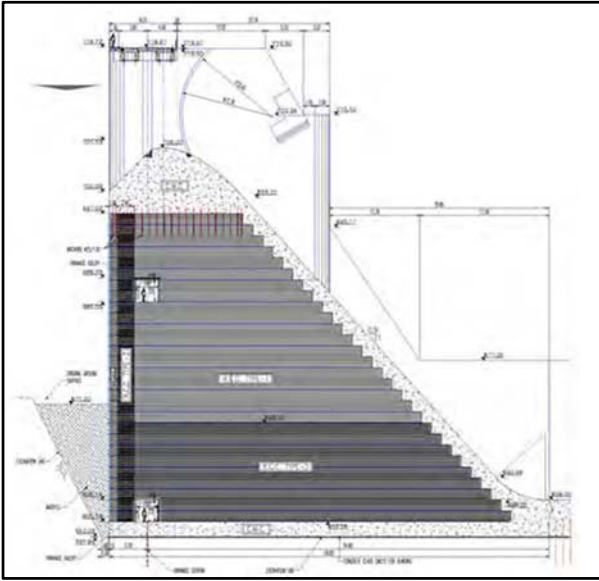
Type Gated (radial gates) / 3 bays

### HPP

Installed capacity 4.8 MW (2 units)  
Turbine type Francis

### Irrigation area

2900 ha



**Description of the Project:** Location of designed Bassara Dam is on river Tawooq Chai, some 20 km far from Sulaimanyah town in Iraq. The main purpose of 54 millions m<sup>3</sup> large Bassara reservoir is to enable regulation of Tawooq Chai for irrigation of 2900 ha of cultivated land. Beside this, construction of the dam will improve river low flows regime. The water head difference which will be formed with the dam will be used for electric power production, so the HPP of 4.8 MW is proposed. Bassara dam is designed as a combination of RCC Dam with Spillway & Fill Dam with central concrete diaphragm. Appurtenant structures includes diversion tunnel, water intake tower, bottom outlet with penstock & irrigation pipe and HPP.

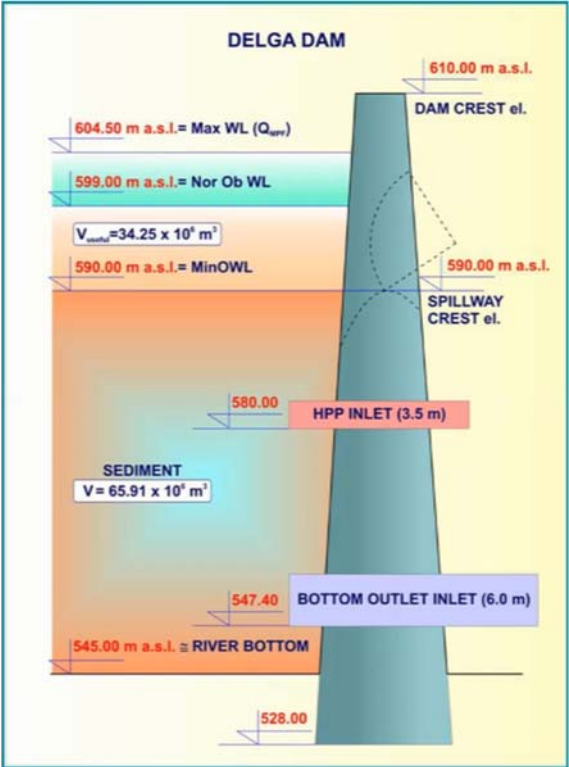
Location of the Irrigation field is some 11 km downstream of the dam location. Water from the Bassara reservoir to the irrigation field is conveyed through a 1400 mm main pipe. For further water distribution a network of primary and secondary level pipes is designed. The total length of all pipes in the network including the main pipeline is approx. 90 km.

**The Services Provided:** Performance of Topographical & Geological Investigation Works and Preparation of Preliminary & Planning Report, Final Design & Tender Documents have been the most essential goals of the Project, including the following specific Consulting Services:

- Preparation on Investigation Works Program & Performance of Investigation Works;
- Determination of General Layout, Optimization and Engineering Design of the Dam, Appurtenant Structures & HPP at Preliminary with Planning Report & Final Design stage;
- Preparation of Hydrological, Topographical & Geological Study at Preliminary & Planning Report stage;
- Implementation of Earthquake Hazard Study at Planning Report stage;
- Preparation of Environmental Impact Assessment Study at Preliminary & Planning Report stage;
- Implementation of Cost Estimate with Construction Time Schedule at Preliminary with Planning Report & Final Design stage;
- Preparation of Economic & Financial Analysis at Preliminary & Planning Report stage;
- Establishment of Tendering Procedure and Rendering Assistance to Client during Tendering Procedure.

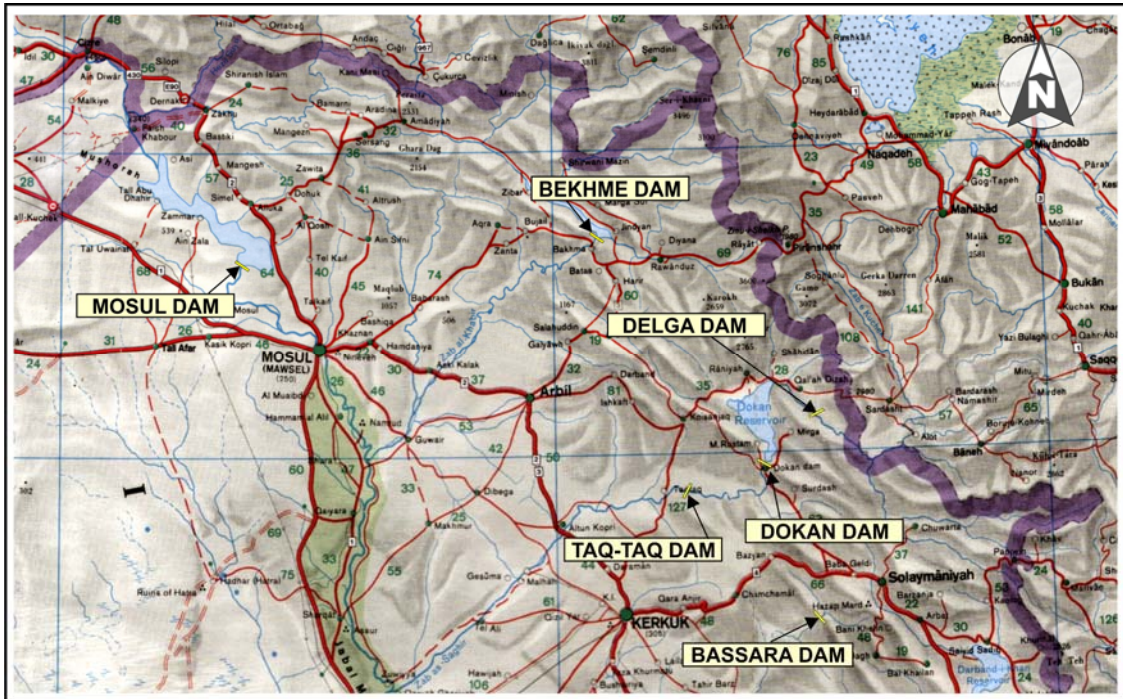


## DELGA DAM and IRRIGATION PROJECT



Contract title: **FEASIBILITY STUDY AND DESIGN FOR DELGA DAM IN PISHDAR DISTRICT/ SULAIMANIYA GOVERNORATE**

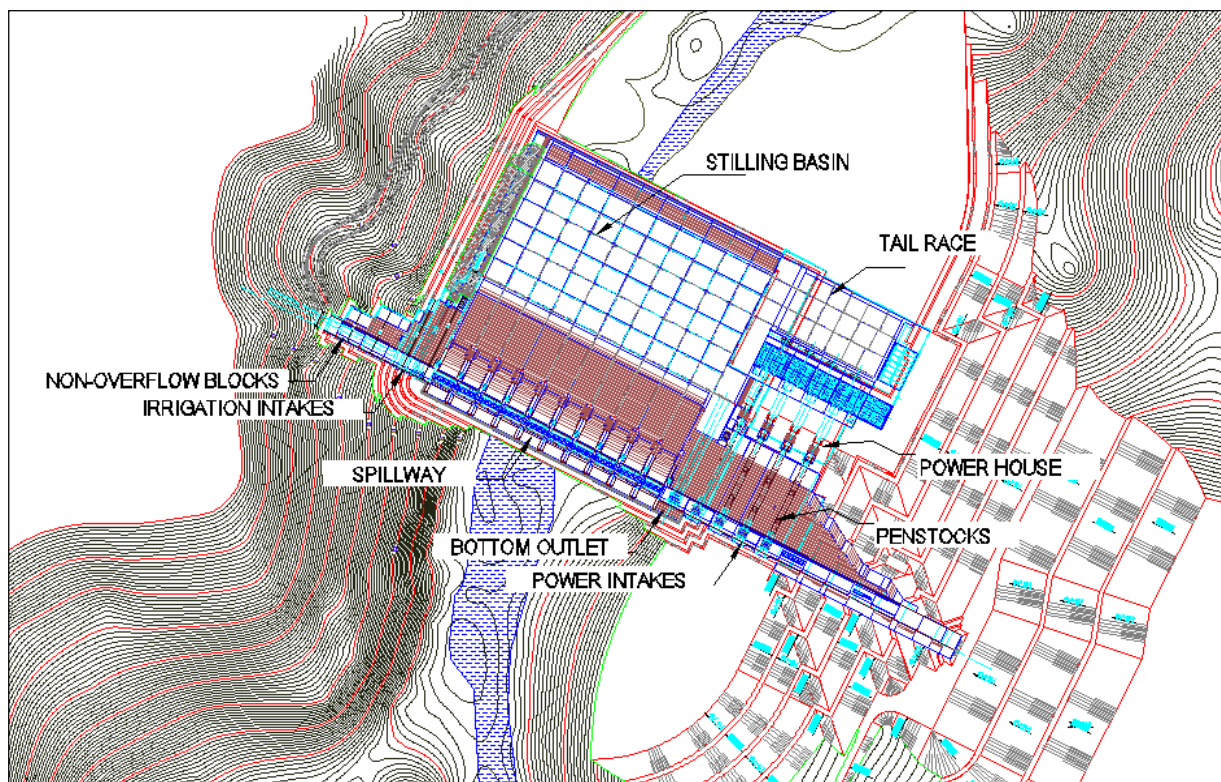
Delga Dam is located at Lesser Zab River at app. 20 km upstream of existing Dokan reservoir and app. 26 km from Iranian border line measured along to Lesser Zab River. Dam profile is located app 10 km southeast of Quala Diza town and app 5 km southeast of Nuraddin village. Some 2 km downstream from the dam location Delga village is located. Elevation of this village is about 580 m a.s.l., so Delga Dam and reservoir will not jeopardize this settlement.



Dam site is located app. 20 km upstream from existing Dokan Dam and 25.6 km downstream from Iranian border. The Delga Dam with the crest level of 610.00 m a.s.l. will form a reservoir of sufficient storage for irrigation requirements and energy production. Hydro power plant is proposed to utilize water which will be normally released from the reservoir to the river downstream.

On the basis of detailed geological site investigation concrete gravity dam is proposed.

River diversion during dam construction is proposed to be carried out in phases and for this purpose are designed following temporary structures: one diversion channel and three stages cofferdams. Diversion channel is located in concrete gravity block between spillway and power intake parts in location of future bottom outlet.



*Delga Dam layout*





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Quality Management Systems

Scope of work

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Certificate No: AQR-10004

Originally Registered: 15 APR 2020

Latest Issue: 17 MAR 2023

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Scope of work

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IAF 28, 34

Certificate No: AQR-30004

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