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IRAQ Office

SULYMANIYAH NO. 10 MALIK MAHMOOD ST., 305 ROJHALAT

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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

<u>Activities</u>

Group: Design, Engineering and Construction.

THE GROUP
ECL
Voltec Engineering
Voltec Itd 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

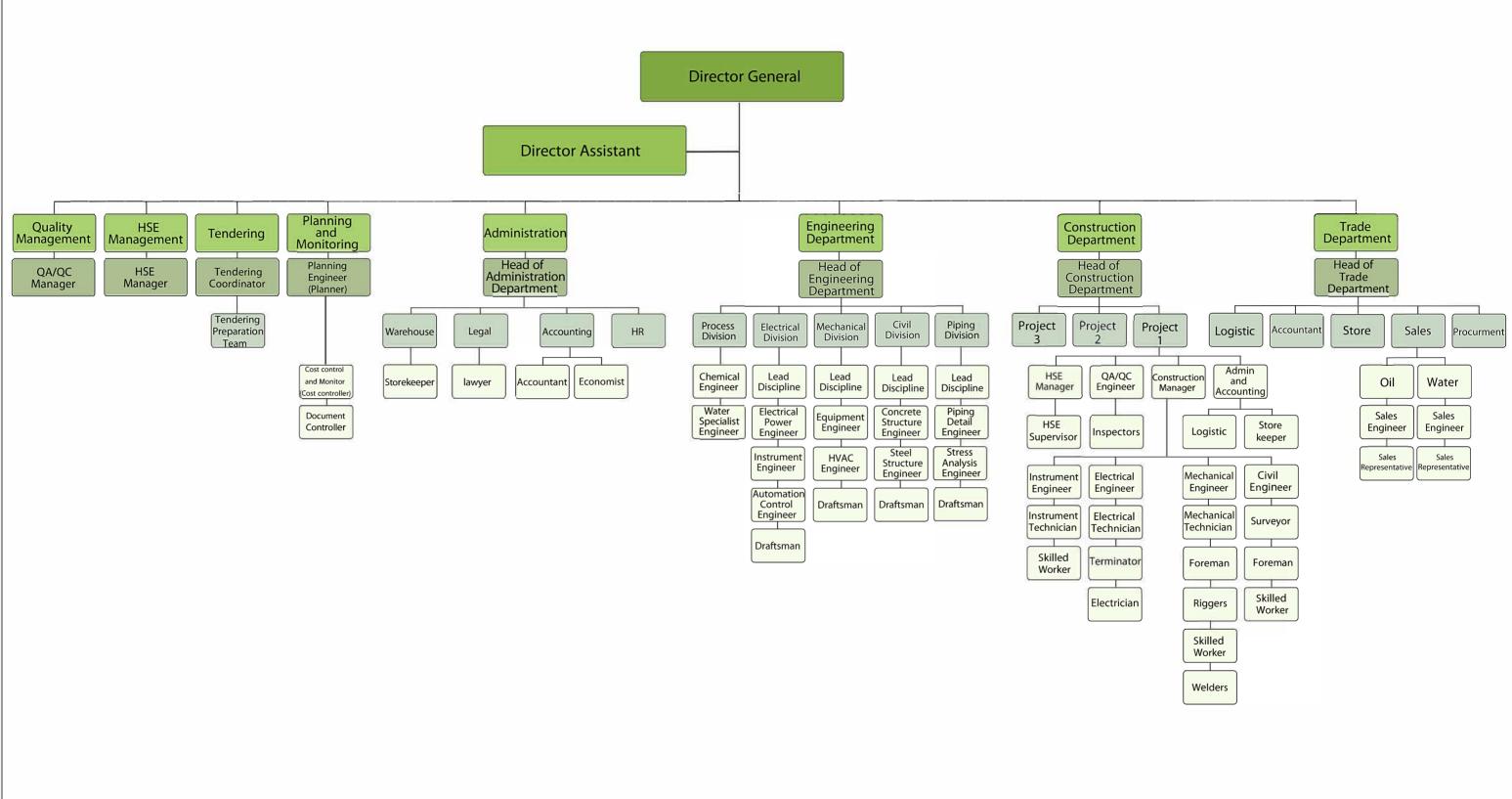
• Solid Waste Separation System, Tunis.

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



VOLTEC SELECTED REFERENCES POWER AND ENERGY

Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name: 165 MW Power Generation Plant		Country: IRAQ
Location within Country:		Professional Staff Provided by
Kalar Town, Iraq		No. of Staff: 45 Personnel
Name of Client: Aggreko Middle East Limited FZE		
Address: UAE , Sharjah		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:

- Sinan Said
- Hawzhin Azad Karim
- Hamza M Ibrahim

Narrative Description of Project:

- 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



Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name:		Country: IRAQ
Umm Qasir Power Plant Project		in o voz
Location within Country:		Professional Staff Provided by VOLTEC
Umm Qasir Port		-
Name of Client:		No. of Staff: 150 Personnel
BUTEC		
Address:		Duration of Assignment:
Basrah-IRAQ		7 Months
Start Date (Month/Year):	Completion Date	Approx. Value of Services (765,000.00US\$):
Aug 2019	Feb. 2020	(703,000.0003\$).
Name of Associated Firm(s), if an	hy:	No. of Months of Professional Staff Provided by Associated Firm(s):
Name of Senior Staff (Project Dir	ector/Co-ordinator, Team Leade	r) involved and functions performed:
- Sinan Said		,
- Khaldoon Sami		
- Hamza M Ibrahim		
Narrative Description of Project:		
- Electrical & Mechanical Work	ks at Umm Qasir Power plant Pr	oject
Installation of Wartsela Generation Units, installation of		
instrumentation, Fire and Gas, All Mechanical System and pip		
water treatment and gas skid. Final Acceptance Certificate issued in 2021		
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Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name: 4 substations 132/33kV , 3X63MVA		Country: IRAQ
Location within Country: Nasiriya & Kut		Professional Staff Provided by VOLTEC
Name of Client:		No. of Staff:
DG Transmission Project		
Address: IRAQ,		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): 2012	Completion Date (Month/Year): 2013	Approx. Value of Services (in current US\$):
Name of Associated Firm(s), if an	ıy:	No. of Months of Professional Staff Provided by Associated Firm(s): -
Eng Sinan Said– Project Director Eng Nawar Thamer– Senior Ele Eng Khaldoon Sami- Senior Auto Eng Ahmed Salim – Senior Elect	ectrical Engineer mation & SCADA Engineer	
	<text></text>	

Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name:		Country:
Testing of 400/15kV single phase transformers , eight 132kV/ 6.6kV transformers , six 132/ 33/11kV Transformers , GIS switchgears 400kV, 132kV Gis		
Location within Country: Aukashat / Akaz Gas		Professional Staff Provided by VOLTEC
Name of Client: DG Transmission Project		No. of Staff:
Address: IRAQ,		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): Jan 2013	Completion Date (Month/Year): Nov 2013	Approx. Value of Services (in current US\$):
Name of Associated Firm(s), if a	ny:	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: Eng Sinan Said– Project Director

Eng Nawar Thamer– Senior Electrical Engineer Eng Khaldoon Sami- Senior Automation & SCADA Engineer Eng Ahmed Salim – Senior Electrical Engineer



Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name:		Country:
Sarchinar 8 MW Power Stati	on	
Location within Country:		Professional Staff Provided by
Sulaimaniyah		VOLTEC 5
Name of Client:		No. of Staff: 35
Directorate of Water in Sulaimani	yah	
Address:		No. of Staff Months:
Sulaimaniyah,		Duration of Assignment:
Start Date (Month/Year):	Completion Date	Approx. Value of Services
Nov 2007	(Month/Year):	(in current US\$): one million USD
	March 2008	
Name of Associated Firm(s), if any:		No. of Months of Professional Staff Provided by Associated Firm(s):
		-
Name of Senior Staff (Project Dir	ector/Co-ordinator, Team Leade	r) involved and functions performed:
Eng Sinan Said– Project Director		
Eng Nawar Thamer- Senior Ele	· · · · · · · · · · · · · · · · · · ·	
Eng Khaldoon Sami- Senior Auto	•	
Eng Omar Majeed- Senior Design Engineer		
Eng Tariq Bazirgan- Senior Civil Engineer		
Narrative Description of Project:		
Design and construction of 8 MW	power supply station for Sarchir	nar water project. The work includes
complete design of civil works, ele	ectrical 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:		Country:	
		IRAQ	
Tasluja 53 MW Power station-Marine type engine			
generators			
Location within Country:		Professional Staff Provideo	
Sulaimaniyah		VOLTEC	10
Name of Client:		No. of Staff:	35
UIENC Korean Company			
Address:		No. of Staff Months:	
Sulaimaniyah,		Duration of Assignment:	
Start Date (Month/Year):	Completion Date	Approx. Value of Services	
JUN 2006	(Month/Year):	(in current US\$): 1.4 million	USD
	JAN 2008		
Name of Associated Firm(s), if an	iy:	No. of Months of Profession	
		Provided by Associated Fin	
Name of Sonier Staff (Draiget Dir	actor/Co. ordinator Toom Loads	involved and functions nor	formed
Name of Senior Staff (Project Dir Eng Sinan Said– Project Director		er) involved and functions per	ionneu.
Eng Nawar Thamer– Senior Ele			
Eng Khaldoon Sami- Senior Auto	-		
	•		
Eng Omar Majeed- Senior Desig	-		
Eng Hanza Maoulod - Senior Me			
Narrative Description of Project:			
Installation of 30 marine type Gen	erators Design supply & fabric	ation of Nine fuel Tanks with	total
capacity of 4100 Cubic meters , ir			
capacity of 4100 Ouble meters, in	istaliation of pipes network, car	sie ways and cable termination	
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Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name: University of Sulaimaniyah 12 MVA Power Station		Country: IRAQ
Location within Country: Sulaimaniyah		Professional Staff Provided by VOLTEC 4
Name of Client: TEPE-FDC		No. of Staff: 6
Address: Sulaimaniyah,		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): JUN 2007	Completion Date (Month/Year): DEC 2007	Approx. Value of Services (in current US\$): 1.6 million USD
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: Eng Sinan Said– Project Director Eng Nawar Thamer– Senior Electrical Engineer Eng Khaldoon Sami- Senior Automation & SCADA Engineer Eng Omar Majeed- Senior Design Engineer		

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:		Country:	
Samawa Electricity Network	Engineering Services	IRAQ	
Location within Country: Samawa		Professional Staff Provided by VOLTEC 6	
Name of Client: ALMIDRAR Company		No. of Staff: 25	
Address: Samawa,		No. of Staff Months: Duration of Assignment:	
Start Date (Month/Year): Nov 2017	Completion Date (Month/Year): April 2018	Approx. Value of Services (in current US\$): 305,000.00 USD	
Name of Associated Firm(s), if an enzen	ıy:	No. of Months of Professional Staff Provided by Associated Firm(s): 1 staff for the whole period	
132kv substation ,33/11kv substa network and also to give recomm work includes voltage studies and measurement and improvement r	- Senior Electrical Engineer omation & SCADA Engineer is marking the baseline performance tion ,11kv feeders)with the purp endations from the perspective of d load growth studies, network vu neasures, network planning and of the analysis, recommendatior	Inerability studies ,power analysis fie optimization after mapping the netwo as submitted which include Bill of	eld
A MARY A MARY		INDEX 33kV_SS 132kV_SS 132kV_SS HT LINE 132 kV Single Feeder 132 kV Double Feeder 33 kV Single Feeder 33 kV Double Feeder Samawa AOI	

System Study and Proposal for Samawah City

Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name:		Country:	
KUT Electricity Network Engineering Services			
Location within Country:		Professional Staff Provided by	_
Samawa		VOLTEC	5
Name of Client:		No. of Staff:	25
ALMIDRAR Company			
Address:		No. of Staff Months:	
Samawa,		Duration of Assignment:	
Start Date (Month/Year):	Completion Date	Approx. Value of Services	
Feb 2018	(Month/Year):	(in current US\$): 305,000.00 USE)
	Ongoing		
Name of Associated Firm(s), if any:		No. of Months of Professional Sta	ıff
		Provided by Associated Firm(s):	
Name of Senior Staff (Project Dir	ector/Co-ordinator. Team Leade	I r) involved and functions performe	d:
Eng Sinan Said– Project Director			
Eng Mohammed Shahir–Electric			
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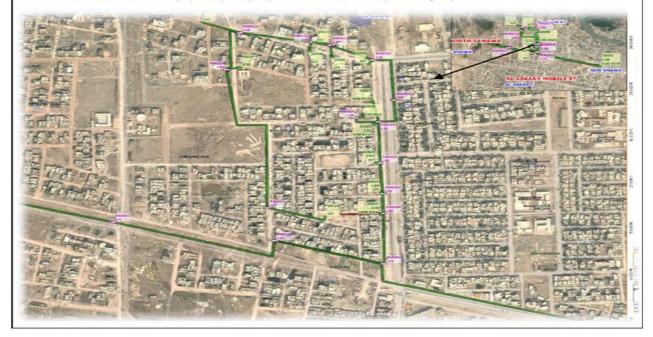
Eng Khaldoon Sami- Senior Automation & SCADA Engineer

Eng Ahmed Jasim- Software Analysis

Eng Shahad Sami- GIS Expert

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

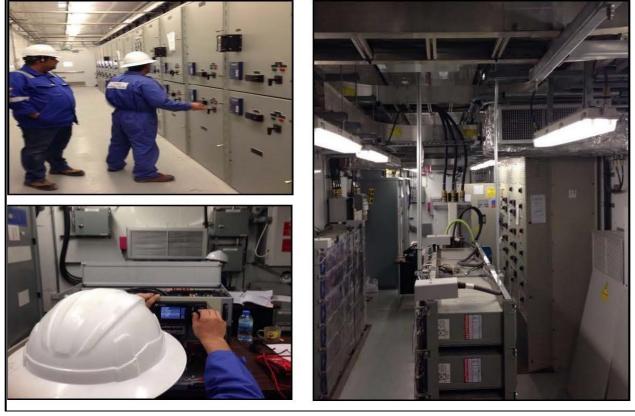
Assignment Name:		Country:
West Qurna – Basrah 35 MW power plant for Degassing Station 7		
Location within Country: Basrah-West Qurna 1		Professional Staff Provided by VOLTEC 5
Name of Client: Wood Group		No. of Staff: 15
Address: Dubai		No. of Staff Months: Duration of Assignment:
Start Date (Month/Year): March 2016	Completion Date (Month/Year): Ongoing	Approx. Value of Services (in current US\$): 4 Million
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: Eng Sinan Said– Project Director Eng Mustafa A. Rasheed –Commissioning Leader Eng Khaldoon Sami- Senior Instruments Engineer Eng Nawar Thamer- Senior Electrical Engineer

Eng Ali Jaafar- Mechanical Engineer

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:		Country:	
Mussaieb Power Station		IKAQ	
Location within Country: Mussaieb		Professional Staff Provided by VOLTEC 25	
Name of Client: Ministry of Electricity		No. of Staff: 100	
Address: Dubai		No. of Staff Months: Duration of Assignment:	
Start Date (Month/Year): April 2004	Completion Date (Month/Year): March 2005	Approx. Value of Services (in current US\$): 1.5 Million	
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:			

Eng Sinan Said– Project Director

Eng Khaldoon Sami- Senior Automation & SCADA Engineer

Eng Nawar Thamer- Senior Electrical Engineer

Eng Qasim Al Obaidi- Senior Mechanical Engineer

Eng Tariq Bazirgan- Senior Civil Engineer

Narrative Description of Project:

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 .



Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name:		Country: IRAQ		
Design of Hydropower generation and 132 KV substation for Tag Tag Dam				
Location within Country:		Professional Staff Provided by		
Таq Таq		VOLTEC 5		
Name of Client:		No. of Staff:		
Ministry of Municipality				
Address:		No. of Staff Months: Duration of Assignment:		
Start Date (Month/Year):	Completion Date	Approx. Value of Services		
2017	(Month/Year): 2018	(in current US\$): 1.5 Million		
Name of Associated Firm(s), if an	ny:	No. of Months of Professional Staff Provided by Associated Firm(s):		
Name of Senior Staff (Project Dir	ector/Coordinator, Team Leader) involved and functions performed:		
Vicko Letica (Project Manager)				
Bana petrovic Mechanical Engine	er (ME)			
Marina Vasiljevic (Project Manag		o Power Plant)		
Miomir Vasiljevic Leading project				
Biljana Trajkovic (Team Engineer)			
Sinan Said (Electrical Designer)				
Narrative Description of Project:				
Hydrology study, basic design for the hydro power generation, detail design of the Penstock, power house, turbine and MV switch yard and substation.				
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Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name:		Country:		
Iraq Distribution Network	IRAQ			
Location within Country:		Professional Staff Provided by VOLTEC 5		
Name of Client:		No. of Staff:		
Washinton Group				
Address:		No. of Staff Months: Duration of Assignment:		
Start Date (Month/Year): Jan 2006	Completion Date (Month/Year): May 2006	Approx. Value of Services (in current US\$): 6 Million		
Name of Associated Firm(s), if a		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: Complete Supply and Commission of 25 Power Transformer 33/11 KV Substations.				
		<image/>		
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Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name:		Country: IRAQ		
Cathodic Copper Smelting Plant				
Location within Country:		Professional Staff Provided by VOLTEC 20		
Name of Client:		No. of Staff:		
Al Shaheed General Company				
Address:		No. of Staff Months: Duration of Assignment:		
Start Date (Month/Year): 1999	Completion Date (Month/Year): 2003	Approx. Value of Services (in current US\$): 6.5 Million		
Name of Associated Firm(s), if a BORE COPPER INSTITUE	any:	No. of Months of Professional Staff Provided by Associated Firm(s):		
Name of Senior Staff (Proiect D	virector/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:				
Design, Supply and supervision of copper refinery to produce cathodic copper for cable industry ,design include the process equipment electrochemical cells and power supply .				

Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name:		Country: IRAQ			
Taq Taq-Tasluja 132 KW overhead line					
Location within Country: Sulaimaniyah		Professional Staff Provided by VOLTEC 4			
Name of Client:		No. of Staff:			
KRG/ Ministry of Electricity					
Address:		No. of Staff Months:			
Erbil		Duration of Assignment:			
Start Date (Month/Year): 2009	Completion Date (Month/Year): 2010	Approx. Value of Services (in current US\$):			
Name of Associated Firm(s), if an	ıy:	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: Design and supervision of complete turnkey work 80 km line length. Of 132kv O.H.L					



VOLTEC SELECTED REFERENCES Oil & Gas

Project Name: Cathodic Protection for 60 wells

Voltec successfully completed a cathodic protection project for 60 wells, which included the installation of anodes, power supply, and a solar power system to feed the cathodic protection system. The project involved securing the well head and pipelines against corrosion using a comprehensive cathodic protection setup. We installed steel structure frames and a photovoltaic array consisting of 10 solar panels, complemented by a reliable 12V battery bank with 6 cells to ensure consistent power storage. Our team also implemented an efficient charge controller, along with cable pulling and termination, and earthing system installation. Additionally, excavation and backfilling processes were conducted, and canister anodes were installed to complete the setup, providing long-term protection for the oil well and pipelines

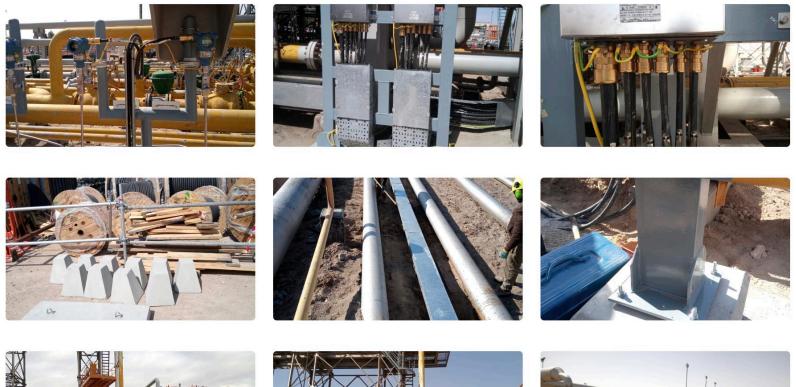
Location: Basra – West Qurna 1 Client Name: Exxon Mobil Start Date: 21st Jan 2024 Finish Date: 31st May 2024



Project Name: Re-Instrumentation DS2 Control System Upgrade

Voltec successfully completed the conversion from pneumatic to electronic control loops for DS-2 Train-1, enhancing operational efficiency and reliability. The project scope of work included modification of existing control system, fabrication of pipe spools, new steel structure platforms fabrication for all the vessels, installation of new junction boxes, cable tray construction, cable pulling, installation of pressure transmitters, level transmitters, and new control valve electronic positions. Procurement, construction, and commissioning of all converted control loops in DS-2 Train-1 were also integral parts of the project.

Location: Basra – North Rumaila Client Name: Wood Group PLC (Ghabet El Iraq for General Contracting & Engineering Services, Engineering Consultancy Company Ltd) Start Date: August 2023 Finish Date: March 2024









Project Name: Gas Pipe Network

The scope of work consisted of precision pipe fabrication, which included cutting, beveling, welding, and valve installation as per design specifications. We constructed robust pipe supports from reinforced concrete and ensured quality through radiographic testing of weld joints. Our pre-commissioning work involved nitrogen flushing and pneumatic pressure testing. We applied specialized paint and thermal insulation, using rock wool and aluminum cladding. Additionally, our team fabricated steel structures for cable tray bridges and platforms, installed and constructed concrete slabs for equipment mounting, and managed earthworks for service water and sewage networks, encompassing excavation and piping. We also provided certified heavy lifting and access equipment, operated by our skilled professionals.

Location: Sulaymaniyah – Khormor Gas Field Client Name: Aggreko Start Date: 8th Jan 2024 Finish Date: 25th Feb 2024

















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.





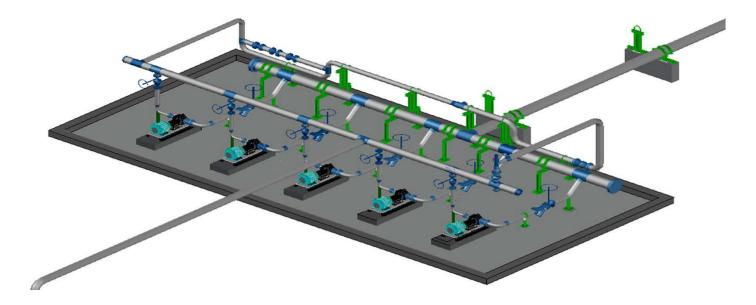
Engineering Design For the Rail Loading Facility at Qaiyarah Refinery

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.





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.







Mechanical Works at Qaiyarah Refinery

QAIYARAH OILFIELD

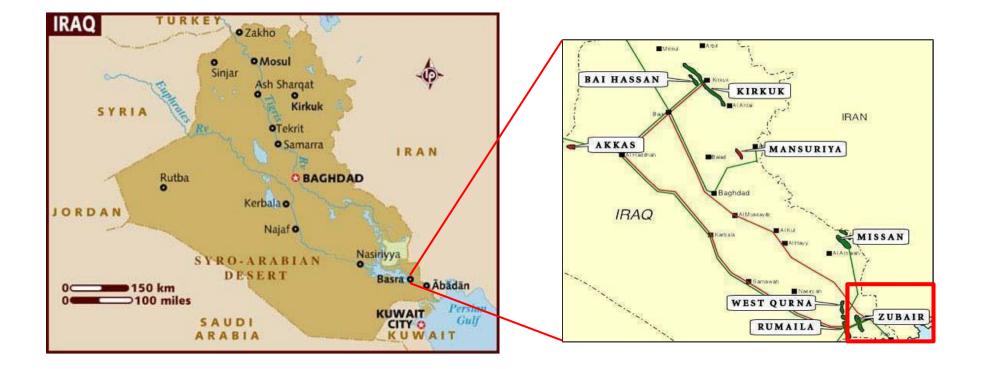
 Fabrication, installation of North Degassing station, piping and Mechanical. Works Include crude oil piping, Naphtha Decanting Facility, Naphtha Transfer Facility, Modification on Existing Tanks, Installation of Pumps, Fire Fighting Network.
 Work started in July 2020 and completed in March 2021.





Zubair Oil Field Development Project Iraq

voltec Zubair Oil Field Development Project



voltec 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
 - \rightarrow 160 personnel in Zubair
 - \rightarrow 160 personnel in Rafidiya

voltec 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

voltec Zubair/Rafidiya: Electrical Installation Work



Cable Ladder Work



Cad Welding



Excavation Work



Cable Pulling

voltec 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

voltec Zubair/Rafidiya: Instrument Installation Work



Light Fixture Installation



Instrumentation Termination

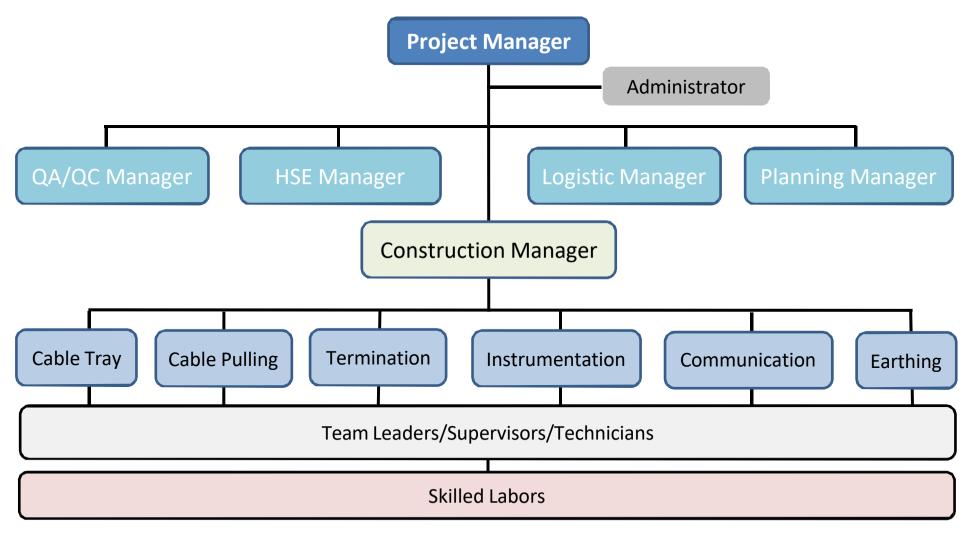


Installation of Tubing



Installation of Instrument Devices

voltec Project Organizational Chart



voltec 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)

voltec 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)

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								Weathe	erford		Punc	hlist Rep	port					*											
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20,44		Medium	842898217980,7217	Wate Earth 5 paraper connections need to be connected at 28		Vinannei Viutse	14/06/2215	Apa Xhulle Votamnes	CONSTRUCTION	259921	_	Baden 2		Farrant of calify read to having	0	Materian Public	25070345	BADK, MCYN	CONSTRUCTION .	200421	10288 C	Mater Inscriptions	Participant calling by receiping to be arrivable	-	Sharrad Thitte	2010-02-1	Robuston Dates Loop	IDN/NUCTOR	20401

SYSTEM	ECTRICAL	TAC	3 No: 2513215200087PL 3 DESCRIPTION - FROM Stre TO Street Lighting Pole Jun	eet Lighting Pole Junction Inction Box				
SUB SY	STEM : 13-9550	22	EATE DATE: \$/16/2015					
₩ Weatherford		Mechanical Comp Checksheet LV & Control Cable Glands, T	Electrica E-A-304					
	and Final Installation Checks							
ltem		Inspection TestDescription		PL	Comple Yes/N			
	Equipment n	upment must be inspected in de-energised state. Check for no voltage.						
01	Confirm built	ling, 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	03 Check labeling, numbering and core ferruling correct.			YES				
04	Check that B	ending radius, cleating and support according	to specification.		YES			
05	Check that c building or ju gland or glan entry outside	rs	YES					
06					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		tion make sure that all cuttings and debris are			YES			
09	for areas des Mechanical (act type of glands have been installed accordin ignated as hazardous on the IFC hazardous a completion Checksheet for Certifled Equipmen	rea drawings, a separate t needs to be completed.	1B	YES			
10	correct IP wa applicable). (glands have been fitted correctly and lightened sher and earth tag serrated washer and earth confirm that gland shroud has been installed w	lead are fitted. (where here required.		YES			
11	Check earth that gland to	bonding is correct to design drawings and spe- earth resistance is < 0.1 Ohm	cifications. Confirm that		Yes			
12		able stripping has been done correctly			YES			
13		ables earthed as per Project Specification			NA			
14	Check that te	rminations have been completed in accordanc	e with the IFC termination	1	VES			
15	Check that all	a continuity and phasing check has been carr I terminations have the correct lug/terminal feri correctly tightened and that there is no core di ight	ule, sleeving and label etc	2	YES			
16	Check that al	spare cores are identified and earthed down.			YES			
17	marked as su	cable lug nuts have been tightened to the spe ch. (unless specifically requested by commiss ited for purposes of hi-pot testing bus bars)	cified torque and then ioning team to leave		NA			
18	Check that an	y punch list items raised are entered on to the	master punch list		YES			



Zubair/Rafidiya: Schedule

1. Schedule

Detailed schedule (level 1, 2, 3 and 4)

Critical path

Weightage Breakdown Structure

Progress S-curve

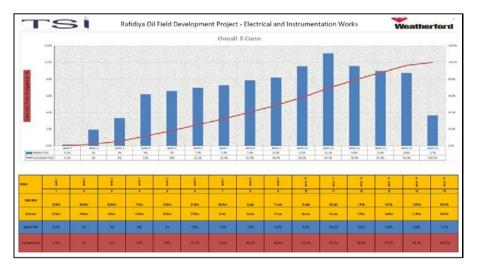
y ID	Activity Name Remaining Duration	Katalay ID	Activity Name			Adavey ID	Activity Name		Remaining BL Project	BL Project	Start	Finish	Physical % Complete	2014		2
	Annual Statistics and a statistical property in the second statistics of the property second statistics of the	and a store	- All Constraints		Duration Start Firesh		C.8.2.7 LPIATM Flam Area To		221 21-Feb-15		11 5 4 10	06-Mar-15		Nov	Dec Ja	n Feb
RAFIDIYA	3L Rafidiya Oilfield Dev. E & I Project Base 934	A8770	150mm Ladder Installation	- HPLP Area	3d 29-Dec-14 31-De		LC.8.2.7.1 ATM Flare	0	22d 21-Feb-15			06-Mar-15		1		- i -
RAFIDIYA	BL.1 Major Milestone 1d		LGA18 PWT Ame		24d 20-Dec-14 11-Ja		LC.8.2.7.1.1 LV CABLES		22d 21-Feb-15			06-Mar-15				-
A#300	Mebilization 01	A8670	300 mm Ladder installator		5d 02-Jan-15 07-Ja	A11300	Transport & Drum Test Ip/a	atm flare to atm L.	1d 21-Feb-15			12-Feb-15	0%	1 1		- E E E
ARDIO	Commencement of Contract Scope 00	📾 A6671	150 mm Ladder installation		4d 07-Jan-15 11-Ja	A11310	Pulling of Cable (platm flar	re to atm L	3d 22-Feb-15	25-Feb 15	12-Feb-15	15-Feb-15	0%	1 1		
A8530	Instrument Work Completion 0d	📾 A8650	900 mm Ladder Installation		6d 20-Dec-14 27-De	A11320		d final cable test lo/atm flare to at	2d 25-Feb-15	28-Feb-15	04-Mar-15	06-Mar-15	0%	++		
A\$320	Electrical Work Completion 00	📾 A8660	600 mm Ladder Installation	t - PWT Area	6d 27-Dec-14 02-Ja		L.C.8.2.7.2 LP Flare		21/1 22.Eab. 15	28.Eab.15	12,Eab. 15	06-Mar.15				- i -
A8340	Handover & Overall completion 00		LC.E.1.13 Film Ann		11d 01-Dec-14 11-Ja		LC.8.2.7.2.1 LV CABLES		21d 22-Feb-15	28-Feb 15	12-Feb-15	06-Mar-15		1 1		-
		G A8780	900 mm Ladder installation		6d 31-Dec-14 06-Ja	A11330	Transport & Drum Test (p)	/atm flare to lp. L	1d 22-Feb-15		12-Feb-15	13-Feb-15	0%	1 1		1.1
	BL.2 Work to provide by Weatherford Milest 77d	📾 A8790	600 mm Ladder installation		1d 06-Jan-15 07-Ja	A11340	Pulling of Cable lo/atm flam	e to lo. L	3d 23-Feb-15	26-Feb-15	13-Feb-15	16-Feb-15	0%			
	2.18 Site Accomodation 20	C088A 📖	300 mm Ladder installation		4d 07-Jan 15 11-Ja	A11350		d final cable test lo/atm flare to lo.	2d 25-Feb-15	28-Feb-15	04-Mar-15	06-Mar-15	0%	++		
A28250	Sile accemodation Let1 (30 Nos) 00		C.8.2 CABLE PULLING &Terr	nineton WORK	62d 01-Dec-14 28-Fe			thing protection & Small Power	56d 31-Dec-14	28-Feb-15	08-Feb-15	08-Apr-15		1 1		_
A28260	Site accomodation Lot2 (50 Nos) 00		L.C.A.1.2 Sub-assess One To		55d 01-Dec-14 28-Pe		C&L&E5 North Road		26d 31-Dec-14			07-Mar-15		1 1		-
A28270	Site accomodation Lot3 (49 Nos) 00		R.C.8221 SS2		10d 01-Dec-14 20-Ja 3d 01-Dec-14 11-Ja	A11797	Excavation & filling trench f	for Small Power N.R.	2d 31-Dec-14	02-Jan-15	08-Feb-15	10-Feb-15	0%			
A28280	Site accomodation Lo4 (20 Nos) 0d	A4530	BLCB2211 HV CABLES Transport & Drum Test as		05 01-Dec-14 02-De	A11795	Excavation & filling trench t	for Earthing N.R.	2d 31-Dec-14	02-Jan-15	08-Feb-15	10-Feb-15	0%	1 1		1.
	.2.19 HV Training 00	A4550	Pulling of Cable ss1 to ss2		0d 04-Jan-15 08-Ja	A11790	Excavation & filling Street L	Lighting tranch N.R.	2d 31-Dec-14	02-Jan-15	08-Feb-15	10-Feb-15	0%	++		- 1 C
A28290	HV Training SM by weatherford 0d				ad 04-Jan-15 11-Ja	A11799	Cable Installation For John	ing , Earthing &Small Power N.R.	2d 02-Jan-15	04-Jan-15	10-Feb-15	12-Feb-15	0%	1 1		11
RAFIDIYABI	.2.1 Power Generation Area 680	🖨 A4560	BLCA2212 LY CABLES	d final cable test sof to so2 H.		A11800	Pole Erection N.R.	g	1d 22-Jan-15	22-Jan-15	02-Mar-15	03-Mar-15	0%			
A26190	Foundation & supports for ladder 00	A8810	Transport & Drum Test of	10.001	9d 04-Jan-15 19-Ja 1d 04-Jan-15 05-Ja	A11820	Field Lighting JB Installatio	n & Instal Drop Down N.R.	2d 23-Jan-15	25-Jan-15	03-Mar-15	05-Mar-15	0%	1 1		1
A26200	completion mechanical team for Assembly solar Energy 00	A8820	and the second se		3d 11-Jan-15 13-Ja	A11830	Supports/ Brackets Installa		2d 23-Jan-15	25. Jan. 15	03-Mar-15	05-Mar-15	0%	1		
A26210	Clerance from piping work . 0d	A8820	Pulling of Cable ss1 to ss2	t final cable test soft to so? L.		A11840	Gland & Termination N.R.	aon a ign aoare. n.r.	2d 25-Jan-15			07-Mar-15	0%	·++		
AZ7480	Availability of Foundation & Supports Field Instruments 0d						C&LAE6 East Road		22d 10-Jan-15					1 1		
A26220	Drawing & Details For ladder 0d	A5540	BLC.8.2.2.1.3 CONTROL CAB Transport & Drum Test sa		0d 11-Jan-15 19-Ja 1d 11-Jan-15 11-Ja	A11881	Excavation & filling trench f	to: Earthing E.B.	2d 10-Jan-15		17-Feb-15	19-Feb-15	0%	1		11
A26230	Drawing & Details For Pulling 0d	A6850	Pulling of Cable sit to ss2		2d 12-Jan 15 13-Ja	A11882	Excavation & filling trench f		2d 10-Jan-15		17-Feb-15	19-Feb-15	0%	1 1		- 1 1
A26240	Drawing & Details For Termination 00	A8860		f final cable test ss1 to ss2 C.	2d 12-Jan 15 19-Ja 2d 17-Jan 15 19-Ja	A11890	Excavation & filling Street L		24 10-340-15	11-Jan-15	17-Feb 15	19-Feb 15	0%	1		
A26260	Foundation & supports for JB's Light Faiture 0d		BLCA2215 UPS	I WHE CADAL MISC SHIT IS SHE U.	6d 14-Jan 15 20-Ja	A11889		ing . Earthing &Small Power E.R.	21 12-Jan-15	12, 10, 15	19-Feb-15	22 Feb 15	0%	· ÷ · · · · • •		
A28160	Foundation & supports for JB's F&G 00	A6870	Transport & Drum Test sat	i hone di la	1d 14-Jan 15 14-Ja	A11690	Pole Erection E.R.	rų, cararų sonairowei c.r.	1d 27-Jan-15		08-Mar-15	08-Mar-15	0%			
A28190	Drawing & Details For Field instruments 00	A8880	Putting of Cable sat to sa2		2d 15-Jan-15 17-Ja	A11910	Field Lighting JB Installatio	e ê jastel Deze Deze E D	2d 28-Jan-15		09-Mar-15	10-Mar-15	0%	1 1		
A28200	Drawing & Details For PAGA 00	and a second second			1d 19-Jan-15 20-Ja	A11910	Supports/ Brackets Installa					10-Mar-15	0%	1 1		
A28210	Drawing & Details For Tubing 0d	🖬 A8990	Ganding, Termination and NLC 8.2.2.2 SS1	d final cable test so1 to ss2 U.	10 19-Jan 15 20-Ja 28d 01-Dec 14 31-De	A11920	Gland & Termination E.R.	tion & ignt tidure. E.H.	2d 28-Jan-15		09-Mar-15		0%	1 1		
BAFIDIYA BI	2.17 Materials 500		RLCA2221 HV CARLES		17d 01-Dec-14 19-De				2d 31-Jan-15				0%			
A27600	Ladders available on site 00	AB900	Transport & Drum Test st	the sect of	1d 01-Dec-14 02-De		C&L&E3 South Road		17d 19-Jan-15					1 1		
A27610	Glandså kapi for Electrical Termination 0d	AR910	Pulling of Cable as1 to as1		7d 02-Dec 14 09-De	A12005	Excavation & filling trench f		2d 19-Jan-15				0%			
	Longore 27 and 20 and an an an and a line and	La Proprio	worked or creative and to an i	n	14 150 0407 14 04104	A12008	Excavation & filling trench f	for small Power S.H.	2d 19-Jan-15	21-Jan 15	27+Fe0-15	01-Mar-15	0%			

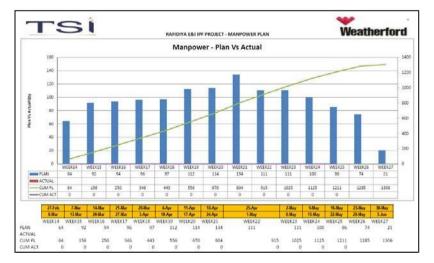
voltec Zubair/Rafidiya: Mobilization Plan

2. Manpower Loading

Overall manpower histogram

- Table for indirect manpower
- Categorized manpower table and histogram for direct labors





VOLTEC SELECTED

REFERENCES WATER SUPPLY

SYSTEMS & WATER

TREATMENT PLANTS

Assignment Name: Water Supply Improvement Region (II)	Country: IRAQ						
Location within Country: Sulaimaniyah & Halabja Cities	Professional Staff Provided by VOLTEC						
Name of Client:		No. of Staff: 70 Personnel					
KRG General Directorate Contact with Japanese Fu	•						
Address: Erbil-IRAQ		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 an	hy:	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: Sinan Said Khaldoon Sami Hamza M Ibrahim Bassim Qassim 							
Narrative Description of Project: Upgrade of Sulaimaniyah & of Ductile pipes & HDPE Pip	Halabja Water Supply System, bes, valves, flowmeters, Solar E	works include Supply and installation nergy, Flow & Control System.					

1118							
Assignment Name:	Country:						
OPERATION & MAINTENAN		IRAQ					
IMPROVEMENT PROJECT I							
PACKAGE II							
Location within Country:	Professional Staff Provided by						
IRAQ	VOLTEC						
Name of Client:		No. of Staff: 68					
SsangYong Engineering & Consti	ruction Company Ltd						
Address:		No. of Staff Months:					
Sulaimania - Iraq		Duration of Assignment:					
Start Date (Month/Year):	Completion Date	Approx. Value of Services					
Sep 2016	(Month/Year):	(in current US\$): 990,000.00					
	June 2018						
Name of Associated Firm(s), if an	V:	No. of Months of Professional Staff					
VOLTEC, Iraq		Provided by Associated Firm(s):					
Name of Senior Staff (Project Dir	ector/Coordinator Team Leader) involved and functions performed:					
Alkesandar Putnik – Head of Ope							
Moayed Zedan– Mechanical Eng							
-Khaldoon Sami Fyadh– Autor Engineer	mation and SCADA						
Nawar Thamer – Electrical Engin	ieer						
Mohammed Ameer- Planning Engineer							
Narrative Description of Project:							
Full Operation & Maintenance of Halabja WTP (2200 m3/hr)							
 Water production and water quality control. Preventative maintenance of all mechanical, electrical 							
	and instrument equipment, as well as SCADA.						
and the second sec							
ALC: NO.		~ ~ ~					
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		and the second second					

Assignment Name: WATER SUPPLY IMPROVED KURDISTAN REGION PACK	N	Country: IRAQ					
Location within Country: IRAQ			Professional Staff Provided b VOLTEC	у			
Name of Client:		No. of Staff:	106				
SsangYong Engineering and Cor							
Address:		No. of Staff Months:					
Sulaimania -Iraq			Duration of Assignment:				
Start Date (Month/Year): Aug 2015				0			
Name of Associated Firm(s), if an VOLTEC, Iraq			No. of Months of Professional Staff Provided by Associated Firm(s):				
Name of Senior Staff (Project Dir Sinan Said – Project Director	ector/Coordinator, 7	eam Leader) involved and functions perfor	med:			
Moayed Zedan- Mechanical Eng	jineer						
-Khaldoon Sami Fyadh– Auto Engineer	mation and SCAD	A					
Nawar Thamer – Electrical Engir	neer						
Gunther Trumheler – Commissio							
Stephan Girgic – Mechanical En	•						
 Installation of all Switch 0 electrical and instrumen Installation of all pumps 	 All Mechanical, Electrical & Instruments installation, Start Up and Commissioning Works. Installation of all Switch Gears 33 KV & 11 KV, all electrical and instruments cables termination etc Installation of all pumps, valves and pipes, Grit removal, clariflocculators, filtration building and cranes. 						

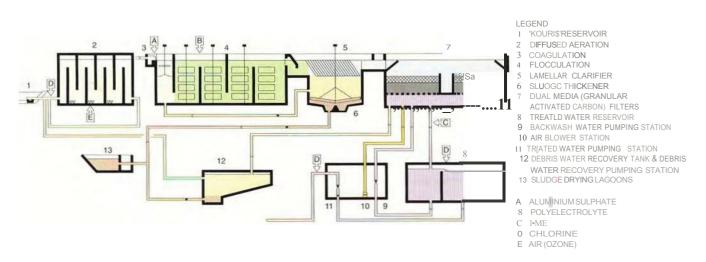
Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name: SUPPLY & INSTALLATION C SULAIMANIYAH WTP	Country: IRAQ					
Location within Country: IRAQ		Professional Staff Provided by VOLTEC				
Name of Client:	No. of Staff: 95					
Nokan Group						
Address:	No. of Staff Months: Duration of Assignment:					
Sulaimania -Iraq	Completion Date					
Start Date (Month/Year): Jul 2008	Completion Date (Month/Year): Mar 2009	Approx. Value of Services (in current US\$): 11,000,000.00				
Name of Associated Firm(s), if an VOLTEC, Iraq	iy:	No. of Months of Professional Staff Provided by Associated Firm(s):				
Name of Senior Staff (Project Dir Sinan Said – Project Director	ector/Coordinator, Team Leader) involved and functions performed:				
Othman Aziz- Mechanical Engine	eer					
-Khaldoon Sami Fyadh- Autor	mation and SCADA					
Engineer						
Nawar Thamer – Electrical Engin						
Imad Namdar- Mechanical Engin						
Tareq Salahaddin Abdulkarim- C	ivii Engineer					
 Narrative Description of Project: Supply and Installation of Dokan-Sulaimaniyah WTP 12000m3/hr WTP. Installation of 56 Vertical Multistage turbine 1.2 MW 6.6KV pumps. Installation of all pump stations valves and pipes. Supply of 33KV substation, 6.6KV soft starter, 50,000 meter cabling. Supply of Valves and Pipes. 						

Assignment Name:	Country: IRAQ					
DESIGN FOR DOKAN WATE Sulaimania – IRAQ						
Location within Country: IRAQ	Professional Staff Provided by VOLTEC	8				
Name of Client: DOKAN WTP	No. of Staff:	12				
Address: Sulaimania -Iraq		No. of Staff Months: Duration of Assignment:				
Start Date (Month/Year): 2008	Completion Date (Month/Year): 2009	Approx. Value of Services (in current US\$): 160,000 USD \$				
Name of Associated Firm(s), if an VOLTEC, Iraq	y:	No. of Months of Professional Staff Provided by Associated Firm(s):				
Name of Senior Staff (Project Director/Coordinator, Team Leader) involved and functions performed: DiplIng. Andra Tucovic – Project Director DiplIng. Ivan Nenkov– Mechanical Engineer DiplIng. Viseslav Ristic– Hydraulic Engineer DiplIng. Milos Popovic – Electrical Engineer Dipl. Arch. Dragan Manojlovic - Architect DiplIng. Slobodan Mojsic – Structural Expert						
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 - Hydraulic calculations - Mechanical design - Power supply and control of the pumps - Preparation of drawings - Preparation of the bill of quantities - Selection of the equipment - Estimation of Total Cost of the Works - Contract Administration and Project Management						

Wells

Limassol Plant Serving Limassol, Cyprus



PURPOSE

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

PLANT CHARACTERISTICS

Nominal Plant capacity 3500 m3fh; first phase 1750 m3fh.

Aeration: diffused air. nominal retention time 6 min.

Blowers: phase 1 - 170 m3Jh (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 surlace load 1,2 m/h; integrated sludge thickeners; sludge recirculation to rapid mixing compartment.

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

Filtration: six open rap1d gravity sand/anthracite filters (phase 1) each with filtration area of 46m2, nominal filtration rate 8 m/h; constant level control; provision for granular activated carbon application.

Backwash water recovery system.

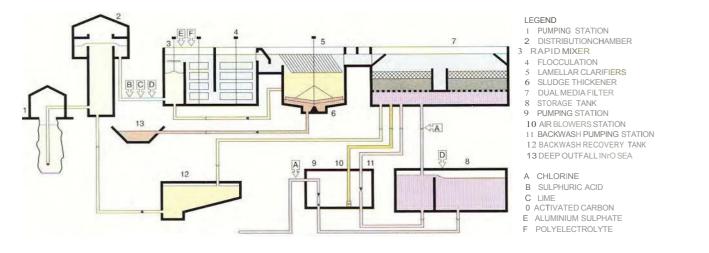
Sludge dewatering in eight sludge drying lagoons {phase 1).

Treated water reservoir: capacity 10.000 m3.



Wells

Fonte Gaj Plant Serving Lobin, 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 m3fh in 2 phases.

Two intakes.

Two pumping stations: first two pumps - capacity 360 m3fh each; second two pumps - capacity 1,180 m3/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 26m2; 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 m3.

Distribution pumping station: three pumps of 600 m3Jh with heads up to 400 m.



VOLTEC SELECTED REFERENCES

MASTER PLANNING & CONSULTANCY SERVICES

Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name: Master plan for Sulaimaniya	Country: IRAQ						
Location within Country: Sulaimaniyah	Professional Staff Provided by VOLTEC 5						
Name of Client: Sulaimaniyah International Airport	t	No. of Staff: 20					
Address:		No. of Staff Months:					
Sulaimaniyah Start Date (Month/Year): March 2011	Completion Date (Month/Year): August 2011	Duration of Assignment: Approx. Value of Services (in current US\$): 1 Million					
Name of Associated Firm(s), if an GMW/URS Scottwilson	y:	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: Eng Sinan Said - Project Director Eng Nabeel Ahmed – Architect Eng Maurice Rosario-Airport Architect Eng Michael Jackson – Global Head of Airport Planning Eng Kieron Bradely – Associate planner							
Data Collection, Traffic forecast, T	erminal proposal, future master p	<image/>					

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

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





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



VOLTEC SELECTED REFERENCES BUILDING & CONSTRUCTIONS

		Country: IRAQ		
Assignment Name: GRAND	IRAQ			
Location within Country: SULAIMANIYAH		Professional Staff Provided by VOLTEC		
Name of Client: FAROUK GROUP		No. of Staff: 100 Personnel		
Address: Sulaimaniyah, IRAQ		Duration of Assignment: 2 Year		
Start Date (Month/Year): 2007	Completion Date 2013	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):		
Name of Senior Staff (Project	t Director/Co-ordinator, Team Lead	er) involved and functions performed:		
- Sinan Said				
- Dhirar ahmad				
- Nawar Thamer				
-	oject: Supply and installation of			
procurement and Installatio	n of all Electrical equipment ,M.V	/ substation, main distribution boards,		
motor control center, bus ri	iser, final distribution boards, an	d total of 70.0000 meter of cables.		
		2 2 2 2 2 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1		
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Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name:		Country:		
Erbil Medical Diagnosis Center				
Location within Country:		Professional Staff Provided by		
Erbil		VOLTEC		
Name of Client:		No. of Staff: 25 Personnel		
MDC				
Address:		Duration of Assignment:		
Erbil-IRAQ		1 Year		
Start Date (Month/Year):	Completion Date	Approx. Value of Services		
2008	Feb. 2009	(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:				
- Ahmed M Rasheed				
- Sinan Said				
- Dhirar Salim				

- Mustafa rasheed

Narrative Description of Project:

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 electromechanical systems.



Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name:		Country:	
		IRAQ	
REHABILITATION OF MINISTRY			
Location within Country:		Professional Staff Provided by	
Baghdad		VOLTEC	
Name of Client:		No. of Staff: 70 Personnel	
Ministry of Culture			
Address:		Duration of Assignment:	
Baghdad, IRAQ		2 Year	
Start Date (Month/Year):	Completion Date	Approx. Value of Services	
Dec 2003	June 2005	(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:			
- Sinan Said			
- Nabeel Ahmed			

- Muhammed Hilmi
- wahab alhasani

Narrative Description of Project:

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



Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name:		Country:
AL SHA'AB STADIUM		IRAQ
Location within Country: Baghdad		Professional Staff Provided by VOLTEC
Name of Client:		No. of Staff: 60 Personnel
Iraq Olympic Committee		
Address:		Duration of Assignment:
Baghdad, IRAQ		1 Year
Start Date (Month/Year):	Completion Date	Approx. Value of Services
Apr 2004	Feb 2005	(3,400,000.00\$):
Name of Associated Firm(s), if an	hy:	No. of Months of Professional Staff Provided by Associated Firm(s):
Name of Senior Staff (Project Dir	ector/Co-ordinator, Team	Leader) involved and functions performed:
- Sinan Said		

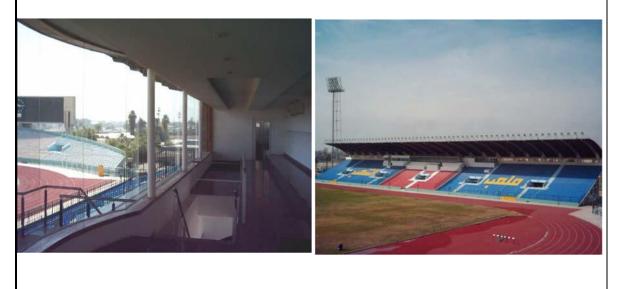
- Nabeel Ahmed

voltec

- Muhammed Hilmi

Narrative Description of Project:

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



Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name:		Country:
Medina Airport Hotel		Saudi Arabia
Medina Anport Hoter		
Location within Country:		Professional Staff Provided by VOLTEC
Medina City Name of Client:		No. of Staff: 15 Personnel
Scott Brownrigg		
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
Address:		Duration of Assignment:
UK		1 Year
Start Date (Month/Year):	Completion Date	Approx. Value of Services (26,000,000.00\$):
Name of Associated Firm(s), if an	IV:	No. of Months of Professional Staff
		Provided by Associated Firm(s):
Name of Senior Staff (Project Dire	ector/Co-ordinator Team Leade	- r) involved and functions performed:
- Nabeel Ahmed		i involved and functions performed.
- Maurice Rozario		
Narrative Description of Project:		
This project consists of Design C	coordination, Civil, Structural De	sign and MEP Design.
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#### Firm's References Relevant Services That Best Illustrate Qualifications

Assignment Name:		Country:
ITSC BUILDING		
Leasting within Country		Drefessional Staff Dravidad by
Location within Country: SULAIMANIYAH		Professional Staff Provided by VOLTEC
Name of Client:		No. of Staff: 50 Personnel
VOLTEC		
Address:		Duration of Assignment:
Sulaimaniyah, IRAQ	Ormulation Data	2 Year
Start Date (Month/Year): 2018	Completion Date Jan 2020	Approx. Value of Services (2,500,000.00\$):
2010	Jan 2020	(2,000,000.00¢).
Name of Associated Firm(s), if an	ny:	No. of Months of Professional Staff
		Provided by Associated Firm(s):
Name of Senior Staff (Project Dir	ector/Co-ordinator Team Leade	r) involved and functions performed:
- Sinan Said		
- Nabeel Ahmed		
Farhad Sabir		
- Maurice Rozario		
Narrative Description of Project:		
Complete Design & Build of Offic	e Building consists of six Floors.	Showroom and Two Basements
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### VOLTEC SELECTED REFERENCES DAMS

#### **TAQ-TAQ DAM PROJECT**





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Contract title:	PLANING REPORT & INVESTIGATION WORKS FOR TAQ-TAQ DAM
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 Average discharge PMF flood Dam Type

#### Height Crest length Embankment vol. Concrete vol.

#### Reservoir total storage

<u>Spillway</u>

Туре

1850 km² 217 m³/s 8700 m³/s

Fill dam with central clay core and concrete gravity part 90 m 1900 m 14 x 10⁶ m³ 0.54 x 10⁶ m³ 2858 x 10⁶ m³

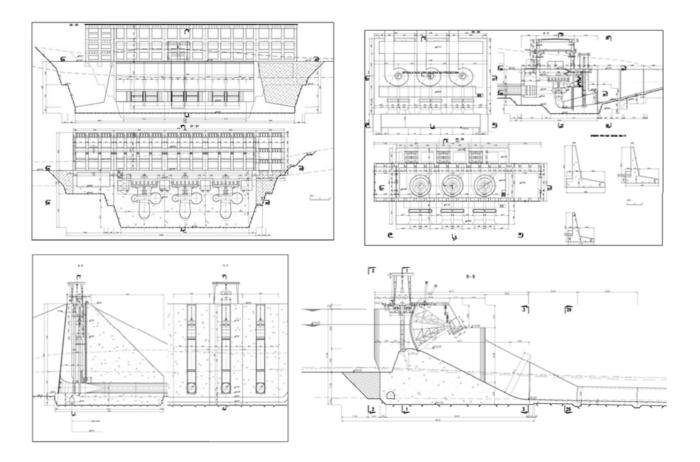
Gated (radial gates) / 3 bays

#### Нрр

Installed Capacity (270 M

(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 x  $10^6$  m³ 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 m³/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:

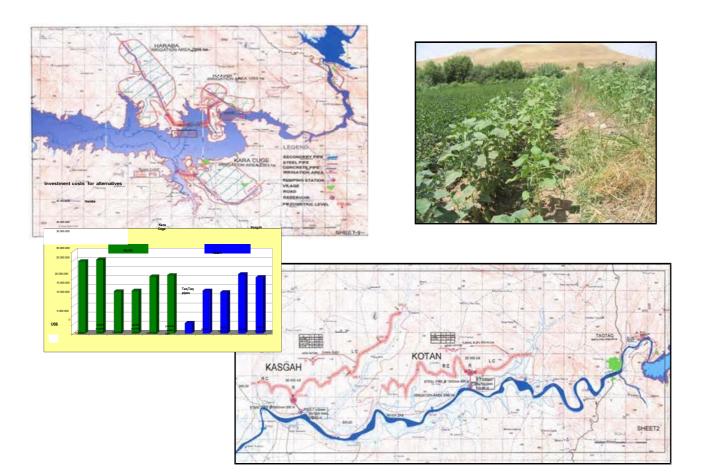
- Preparation of Investigation Works Program & Performance of Investigation Works;
- Determination of General Layout, optimization and engineering design of the Dam, Appurtenant Structures & HPP;
- Preparation of Hydrological, Topographical, Geological & Earthquake Hazard Study;
- Implementation of Cost 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:	PRE-FEASIBILITY STUDY OF THE NEW IRRIGATION AREA – TAQ-TAQ DAM PROJECT	Hydrology data Catchment area Average discharge PMF flood Dam	1850 km ² 217 m ³ /s 8700 m ³ /s
Location/River:	Taq-Taq town / Lesser Zab River - IRAQ	Туре	Fill dam with central clay core and concrete
Employer:	Ministry of Water Resources IRAQ	Height	gravity part 90.0 m
Commencement date:	2006.	Crest length Embankment vol.	1900 m 14 x 10 ⁶ m ³
Completion date:	2006.	Concrete vol	$0.54 \text{ x } 10^6 \text{ m}^3$
Contract price:	1,485,840 USD	Reservoir total storage	2858 x 10 ⁶ m ³
Investments cost:	1,050,000.00 USD	<u>Spillway</u> Type <u>HPP</u>	Gated / 3 bays
		Installed capacity Turbina type	270 MW (3 units) Fransis
		New irrigation area	
		In reservoir area Downstream of	6300 ha 8965 ha

reservoir



**Description of the Project:** After construction of the designed Taq-Taq Dam, the area of 90 km² 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 Prefeasibility 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 preformed 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:	UPDATING OF PLANNING REPORT & TENDER DOCUMENTS FOR BEKHME DAM
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

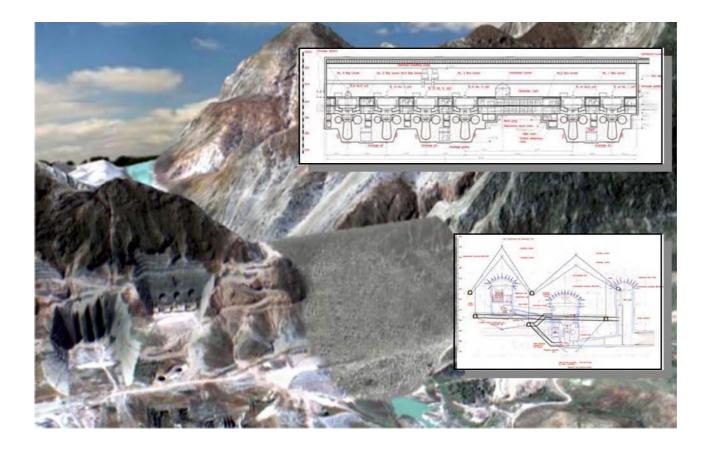
Hydrology data	
Catchment area	16600 km ²
Average discharge	377 m ³ /s
PMF flood	25850 m ³ /s
<u>Dam</u>	
Туре	Rockfill dar
	central clay
Height	230 m Crest
length	600 m
Embankment vol.	$34 \text{ x} 10^6 \text{ m}^3$
Reservoir total storage	17000 x 10 ⁶
<u>Spillway</u>	
Туре	Gated (radia
	/ 3 tunnels
Capacity:	8865 m ³ /s
HPP	
Installed capacity	1500 MW (
Turbine type	Fransis
J I	

1

m with y core st 3 )⁶ m³

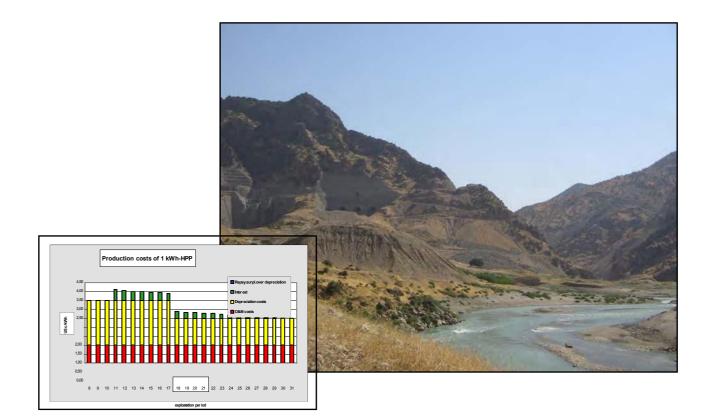
ial gates)

(6 units)



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

#### **BEKHME DAM PROJECT- ECONOMIC AND FINANCIAL EVALUATION**

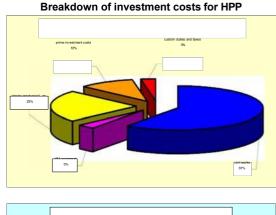


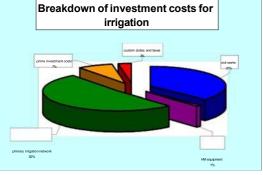
Contract title:	ECONOMIC AND FINANCIAL EVALUATION OF BEKHME DAM MULTIPURPOSE PROJECT	<u>Hydrology data</u> Catchment area Average discharge PMF flood <u>Dam</u>	16600 km ² 377 m ³ /s 25850 m ³ /s
Location:	Bekhme gorge / Greater Zab River – IRAO	Туре	Rockfill dam with central clay core
Employer:	Ministry of Water Resources IRAQ	Height length Embankment vol.	230 m Crest 600 m 34 x 10 ⁶ m ³
Commencement date:	2006.	Reservoir total storage	17000 x 10 ⁶ m ³
Completion date:	2006.	<u>Spillway</u>	
Contract price:	150,000 USD	Type Capacity:	Gated (radial gates) / 3 tunnels 8865 m ³ /s
Investments cost (includig irrigation):	4,900,000,000 USD	HPP Installed capacity Turbine type	1500 MW (6 units) Fransis

No	ITEM	IRR	B-C in US\$ for disc.rate 6%	B/C for disc.rate 6%
A	Bekhme Multipurpose Project			
	basic analysis	14.74%		
	Investment and operating costs +10%	13.42%		
	Investment and operating costs -10%	16.30%	7,348,026,994	2.33
	Alternative TPP, total costs +10%	15.36%	7,269,020,198	
	Alternative TPP, fuel costs rise yearly +3%	15.73%	9,483,054,415	
	Alternative TPP, total costs -10%	14.12%	6,196,601,581	2.01
	Irrigation benefits +10%	15.40%	7,420,730,718	2.21
	Irrigation benefits -10%	14.06%	6,044,891,061	1.98
	Flood control benefits +10%	14.89%	6,797,178,946	2.10
	10 Flood control benefits -10%	14.60%	6,668,442,833	
	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

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

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

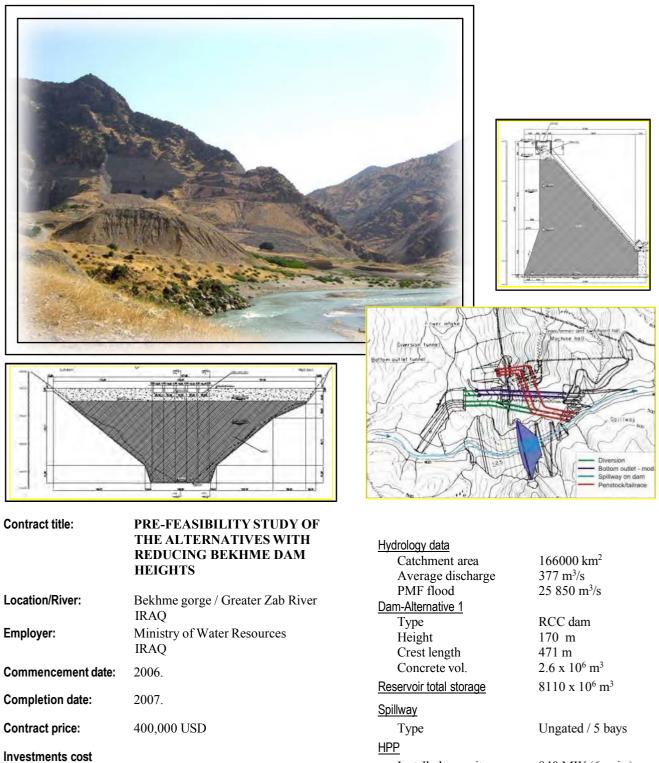
This economic and financial evaluation was done in course of assessment the project economic and financial viability today, and to provide and overview of possible issues in the financing of such a multipurpose project. This analysis integrates economical, financial, institutional, technical, sociological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

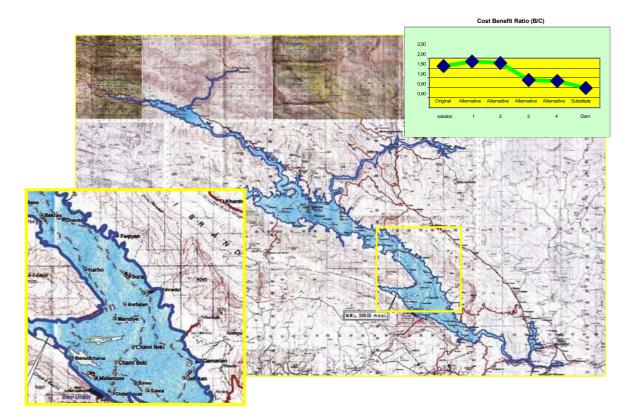
#### **ALTERNATIVES WITH REDUCING BEKHME DAM HEIGHTS**



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

Installed capacity Turbine type

840 MW (6 units) Fransis



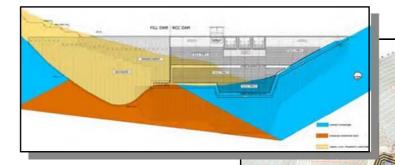
**Description of the Project:** The commencement of Bekhme Dam Project construction, based on original EPDC (Japan) project started in 1986. The works were suspended in 1990. Since than, a lot of villages have been founded in the area envisaged for the impoundment, so resettlement of the villagers became 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 preformed. 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.

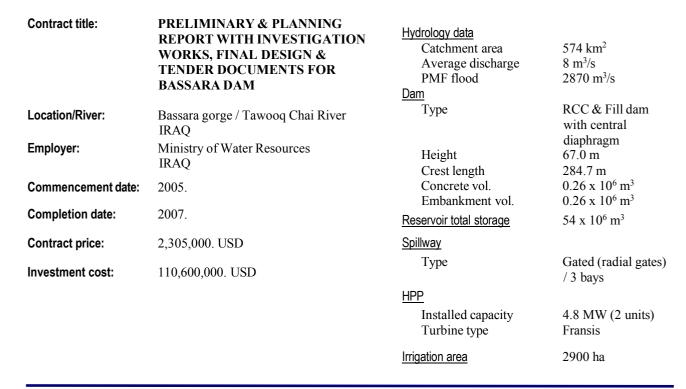
#### The Services Provided:

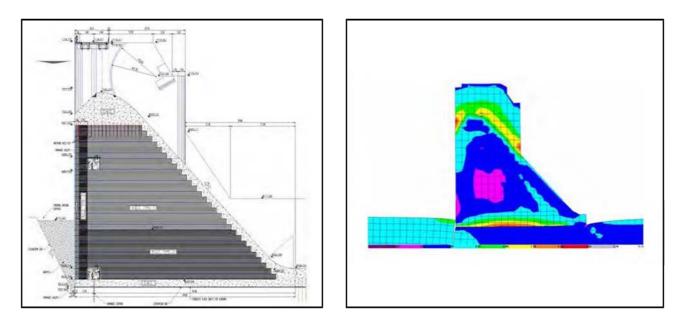
- Review of existed documents and data and their systematisation ;
- Determination of general layout, optimization and engineering design of the Dam, Appurtenant Structures & HPP for each alternative;
- Engineering calculations;
- Estimation of total cost for each alternative;
- Analyses and evaluation 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**







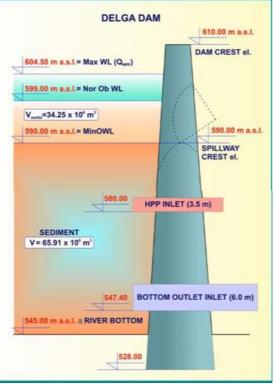


Description of the Project:	Location of designed Bassara Dam is on river Tawooq Chai, some 20 km far from Sulaimanyah town in Iraq. The main purpose of 54 milions m ³ large Bassara reservoir is to enable regulation of Tawooq Chai for irrigation of 2900 ha of cultivated land. Beside this, construction 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;		
	<ul> <li>Preparation of Hydrological, Topographical &amp; Geological Study at Preliminary &amp; Planning Report stage;</li> </ul>		
	Implementation of Earthquake Hazard Study at Planning Report stage;		
	<ul> <li>Preparation of Environmental Impact Assessment Study at Preliminary &amp; Planning Report stage;</li> </ul>		
	• 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**

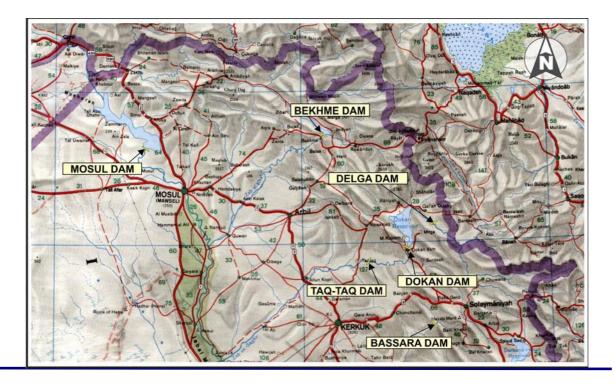


Contract title: FEASIBILITY STUDY AND DESIGN FOR DELGA DAM IN PISHDAR DISTRICT/ SULAIMANIYA GOVERNORATE



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.

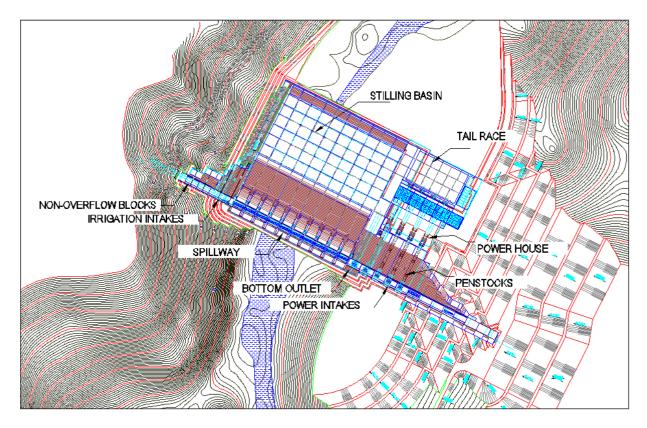


Dam site is located app. 20 km upstream from existing Dokan Dam and 25.6 km downstream from Iranian border. The Delga Dam with the crest level of

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



### **VOLTEC ENGINEERING**

at 10 MALIK MAHMOUD STREET,305 ROZHHALAT SULAIMANIA, IRAQ

Quality Registrar Systems certify that the management system of the above organization has been audited and found to be in compliance with the QRS & ISO standard requirements for registration of the management system standard detailed below:

### ISO 45001:2018

Occupational Health and Safety Management Systems

Scope of work

### ENGINEERING DESIGN & CONSTRUCTION OF ELECTRICAL AND MECHANICAL WORK, WATER TREATMENT AND OIL & GAS PROJECT

IAF 28, 34 Certificate No: AQR-30004 Originally Registered: 15 APR 2020 Latest Issue: 17 MAR 2023 Valid up-to: 14 APR 2026

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#### **UAE OFFICE ADDRESS**

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WORLDWIDE CERTIFICATION

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### **VOLTEC ENGINEERING**

at 10 MALIK MAHMOUD STREET,305 ROZHHALAT SULAIMANIA, IRAQ

Quality Registrar Systems certify that the management system of the above organization has been audited and found to be in compliance with the QRS & ISO standard requirements for registration of the management system standard detailed below:

### ISO 9001:2015

**Quality Management Systems** 

Scope of work

ENGINEERING DESIGN & CONSTRUCTION OF ELECTRICAL AND MECHANICAL WORK, WATER TREATMENT AND OIL & GAS PROJECT

IAF 28, 34 Certificate No: AQR-10004 Originally Registered: 15 APR 2020 Latest Issue: 17 MAR 2023 Valid up-to: 14 APR 2026

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# CERTIFICATE

This is to certify that the Environmental Management System of

### **Voltec Engineering**

No. 10 Malik Mahmood St. 305 Rojhalat, Sulaimaniyah, Iraq

has been assessed and found to conform to the requirements of

# ISO 14001:2015

### **Environmental Management System**

This Certificate is valid for the following scope:

Engineering design & Construction of Electrical and Mechanical Work, Water treatment and oil & Gas project

Certificate No.: SP05062024ISOXIV0I Registration Date:05.06.2024 Issue Date: 05.06.2024 Expiry Date: 05.06.2027 Recertification Date:05.06.2025



StanPect Certification Key Location: No.6 Abbeycourt, Frenchpark – Ireland Pine Hill, Scalthwaiterigg – United Kingdom stanpect.co.uk

Taylor J. Will CTO STANPECT

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