



Ayaz Hasan PhD, MS

Hay-Malik Abdullah, Exit-12,
Riyadh 11233, Saudi Arabia
+966-580527836
waterforlife2000@gmail.com
ayhasan@mewa.gov.sa

Water Consultant – Planning, Development & Management

Highly motivated, hardworking and dedicated Water Resource Planner, having strong analytical & managerial skills in broad & diversified fields including integrated water resources using Decision Support System (DSS) to engineering solutions using advanced techniques, to ensure on-time, budget-compliant completion of projects while maintaining high-quality standards.

Achievements

- Contributed in high-level national strategic water resource planning & management projects of Ministry in collaboration with World Bank & UNDP
 1. *Development of Unified Water Strategy for GCC Countries*
 2. *Development of National Water Strategy 2030 for the Kingdom,*
 3. *Formulation of National Water Law*
 4. *Development of Independent National Water Regulator*
 5. *Formulation of Recycled Water Management Initiative (RWMI) for the Kingdom.*
 6. *Delineation of Water Resource Management Units (WRMU)s for the Kingdom*
- Develop Decision Support System (DSS) for effective and knowledge based decision making of water resource management
- Hydrological designed railway route and designed hydraulic structures (bridges & culverts) of Saudi Land-bridge Project of Riyadh city to Jeddah city port Section (more than 1200 km).
- Hydrological Study of Marwani Dam catchment area using Geo-mapper and Google Earth
- Conceptually designed and prepared engineering layouts of largest drinking water well field of production capacity 400,000 cubic meters/day for Madinah city using GIS and Numerical model technique.
- Worked as Project Manager from (URS Corporation) for multimillion (\$) challenging project of soil and groundwater contamination investigation and remediation with ammonia for integrated largest fertilizer facilities of Saudi Arabia.

Areas of Expertise

- ✓ Innovative Solutions for Integrated Water Resource Management using Decision Support System (DSS)
- ✓ Development of national, city (IWRM) plans, and future utility investments.
- ✓ Hydrogeological Investigations & Numerical Modeling for Groundwater Resource Evaluation and Development
- ✓ Design of Gravity Drainage System as Engineering Solution of Rising Groundwater Levels using GIS and Groundwater Modeling techniques
- ✓ Optimization of drinking water Well-fields Design and Operation Plans using numerical models and SMART approach.
- ✓ Engineering Design of Wastewater Reuse Schemes

Professional Experience

- More than **(22)** years of working experience of supervision of multimillion \$ projects of water hydraulic design, hydrological studies, resource development, sustainable management and

groundwater contamination investigation and remediation, during work in multinational consulting companies as URS Corporation (AECOM) & SWS and also with Saudi government.

Work History

Ministry of Environment, Water & Agriculture, Riyadh, Dec. 2017 – present

(MOWE has mandate to plan, develop, and manage water resources of the Kingdom)

Senior Water Consultant (UNDP) for capacity building and sustainable management of water

Job Description & Accomplishments

- 1) To conduct and supervise detailed hydrogeological and water resources assessment studies of secondary water resources (aquifers and reservoirs). The major tasks includes preparation of field work plan, supervision of drilling operation, collection of aquifer data from exploration wells, review and supervision of hydrological and groundwater modeling work activities and update all previous models of Ministry with the help of new hydrogeological data.
- 2) Investigation and exploration of suitable sites for aquifer storage and recharge (ASR) and managed aquifer recharge (MAR) using hydrological, geological and remote sensing techniques for stormwater and Treated sewage effluent (TSE).
- 3) Conduct and supervise geotechnical and hydrogeological investigations to estimate risks and expected storage volumes.

Ar-Riyadh Development Authority, KSA December, 2016 – November, 2017

Responsible of urban development and management of resources of Riyadh City

IWR Planner/Water Modeler

Job Description & Accomplishments

- Evaluated and updated Riyadh Water Balance Model using the updated and detailed components of surface, groundwater, recycled and desalinated water as integrated water cycle for 2016 data
- Prepared Riyadh Water Status Report 2016, using the water resource and use data of Riyadh metropolitan city.
- Developed terms of reference (TOR) for new Riyadh Water Science Museum.

Ministry of Water & Electricity, Riyadh, Saudi Arabia June 2008 –Sept. 2016

(MOWE has mandate to plan, develop, and manage water resources of the Kingdom)

Water Consultant

Job Description & Accomplishments

- Performed supervision of detailed hydrogeological investigation studies of major aquifers of Kingdom including drilling, testing of wells and conducted technical review of project deliverables.
- Contributed in various national water resources planning & management projects in collaboration with World Bank & UNDP.
- Drafted a number of Terms of Reference (TOR) and project contract documents (PCD) of aquifer studies and engineering design of wastewater reuse schemes.
- Supervised and review fieldwork activities and project deliverables of national hydrogeological and groundwater resources studies.

Schlumberger Water Services, Riyadh, KSA Jan. 2007 - June 2008

Multinational Water Company provide services in the field of water resource development, hydrological studies and aquifer recharge and recovery in Middle East

Senior Hydro geologist

Job Description & Accomplishments

- Developed business plans including preparing technical and financial proposals, work plans, schedules, and cost estimates of water and environmental projects.

- Arranged clients meeting and presented business plans & proposals for investigation of groundwater contamination to Royal Commission, MOWE & Petro-lube and got project of 4 million US\$.
- Prepared technical and financial proposals of natural radioactive groundwater contamination investigation and remediation project and presented to MOWE.
- Developed standard procedure and manual of project management office (PMO)

URS Corporation, USA, (Now AECOM) Jul., 2001 - Dec, 2007

Global engineering and environmental company provide solutions in the field of soil and groundwater contamination investigation and remediation of complex and highly challenging problems

Hydrogeologist/ Groundwater Modeler

Job Description & Accomplishments

- Performed Environmental Site Audit, supervised field investigations including drilling and Installation of Production and Observation Wells, sampling and analysis of groundwater and supervised pumping tests in wells to calculate aquifer parameters (transmissivity, permeability, storativity) and constructed numerical model of multi-aquifer system of SADAF Plant and adjacent area. .
- Developed numerical model for evaluation and design of well pumping scheme for long-term & sustainable extraction of 15,000 m³/d of groundwater from RC well fields in Jubail industrial city.
- Developed a numerical model of groundwater flow system underlying KAAU University Camus and prepared design of subsurface Gravity Drainage System (GDS).

Ar-Riyadh Development Authority, KSA Mar.ch, 1996– June 2001

Responsible of urban development and management of resources of Riyadh City

Hydrogeologist/GW Modeler

Job Description & Accomplishments

- Constructed Groundwater Flow Model of shallow Riyadh aquifer underlying Wadi Hanifah and Riyadh city using state of the art **Visual ModFlow** software.
- Designed subsurface gravity drainage system (SGDS) in various districts of Riyadh city as solution of rising water table problem.
- Worked and contributed in development of Riyadh Water Resource Model (RWaRM) for MEDSTAR.

Education

PhD: Geology (Hydrogeology) - 2006

University of Karachi - University Road, Karachi, Pakistan

Thesis Topic **Application of GIS & Groundwater Modeling in Analysis of Groundwater Flow System underlying Karachi City, Pakistan**

Thesis Advisor Dr. Syd Iqbal Mohsen, University of Karachi, Karachi, Pakistan Thesis

Reviewer Dr. Timothy Durbin, Sacramento, California, USA - Dr. Gabor Korvin, Earth Sciences Department, KFUPM, Dhahran KSA

Master of Science (MS): Hydrogeology - 1995

King Fahd University of Petroleum and Minerals (KFUPM) - Dhahran, KSA

Thesis Topic **Modeling of Groundwater Flow System underlying Wadi Al-Miyah, Eastern Saudi Arabia**

Emphasis in Groundwater and Solute Transport Modeling

Recipient of MS Graduate Scholarship (as Research Assistant)

Top 2 % of class

Master of Science (MSc.): Geology (Hydrogeology) - 1989

University of Karachi - University Road, Karachi, Pakistan, Emphasis in Groundwater investigation, development and sustainable management, Top 3 % of class

Affiliation

Member, American Water Works Association (AWWA) (2015 - Present)

Member, National Groundwater Association (NGA) (2016 - Present)

Member, American Rivers (AR) (2012 - Present)

Certifications

- Attended two weeks training course on Construction of Hydrogeo-Database using **Decision Support System with GIS**, during September 2014, conducted by BRGM, Global Experts Group & Abu-Nayyan Trading Group, in Riyadh KSA.
- Attended one week training course on **Sustainable Urban Water Management**, during August 2013, conducted by Department of Civil and Environmental Engineering, Colorado State University, USA.
- Attended two weeks training course on **GIS Data Management & Groundwater Modeling**, during March 2005, conducted by Waterloo Hydrogeologic Incorporated, Canada, in Dubai, UAE.
- Attended one week training course on **Health & Safety Training (8-hrs) Supervisors**, during March 2004, conducted by URS Corporation, London, in Dubai, UAE
- Attended a two weeks training course on **Mastering Visual Basic 6 Fundamentals # 1303aCP**, during June 2000, conducted certified Microsoft course by CompuBase, Riyadh,

List of Key Projects conducted & supervised as Advisor/Consultant to Deputy Minister of Water Affairs, Saudi Ministry of Water Affairs

A. Water Consultant for review and supervision for Ministry of Water & Electricity
<ul style="list-style-type: none">• <i>Development of unified Water Sector Strategy for GCC member states</i>• <i>Development of National Water Strategy (NWS) for the Kingdom –</i>• <i>Develop Project Document and supervise UNDP project: Capacity Development for Sustainable Development & Management of Water Resources in Saudi Arabia</i>• <i>Formulation of National Water Law for the Kingdom– (Consultant: Norton Rose)</i>• <i>Establishment of National Water Regulator – (Consultant: WB)</i>
B. Senior Hydrogeologist for business development and technical support in SWS
<ul style="list-style-type: none">• <i>Detailed hydrogeological studies of Major aquifers (Wajid, Wasia-Biyadh aquifers) for assessment of water resources of Kingdom.</i>
C. Hydrogeologist and Groundwater Modeler in URS Corporation
<ul style="list-style-type: none">• <i>Hydro-geological Investigations for Groundwater Resources Evaluation of SADAF Salt Plant, Jubail</i>• <i>Joint Site Investigation & Control of Ammonia Contamination in Groundwater in SAFCO, IBB & Al-Bayroni Fertilizer Facilities in Jubail Industrial City</i>• <i>Groundwater Contamination & Human-health Risk Assessment due to contamination of groundwater with EDC in Petrokemya Jubail Industrial City</i>• <i>Gasoline Underground Storage Tank collapse and Groundwater Remediation for RASGAS Plant, Qatar</i>• <i>Evaluation of Groundwater Resources Potential and Numerical Modeling of Royal Commission Well Fields</i>• <i>Evaluation of potential leakage beneath Al-Million Reservoir, Makkah Al-Mukaramah</i>
D. Hydrogeologist and Groundwater Modeler in Arriyadh Development Authority for Metropolitan Development Strategy for Arriyadh, (MEDSTAR)".
<ul style="list-style-type: none">• <i>Development of Groundwater Flow Model for sustainable management of water resources of Riyadh City</i>