

# ASHISH DAW

GEOSCIENTIST

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## **KEY QUALIFICATIONS AND SKILLS**

### **PROJECT MANAGEMENT AND COMMUNICATION**

- Team leadership responsibilities.
- Project conceptualization, planning, and implementation.
- Proposal writing, budgeting.
- Technical report preparation and presentation to technical and non-technical audiences.
- Training program development.

### **WATER RESOURCES DEVELOPMENT, PLANNING AND PROTECTION**

- Watershed sustainability analysis.
- Groundwater modeling using analytical and finite solutions methods.
- Drilling applications, test/production well drilling program design and implementation.
- Aquifer pumping test design, implementation and evaluation.
- Aquifer storage recovery and horizontal collector well design and application.
- Monitoring and Evaluation.

### **GIS AND REMOTE SENSING**

- Build and maintain GIS databases for various projects.
- Identify sensitive habitats and demarcate buffer zones.
- Prepare maps for field programs and end of project reports.
- Integrate GIS and Microsoft Excel to create groundwater contour maps.
- Stereo aerial photo analysis.
- Satellite image processing.

### **ENVIRONMENTAL EVALUATION, PROTECTION, AND REMEDIATION**

- Design and implement spill and contaminated plume delineation and cleanup programs for residential heating oil tanks.
- Preparation of RIRs and RARs.
- Field program coordinator for groundwater monitoring and sampling on industrial and commercial sites.

## **EDUCATION**

**Graduate Studies in Hydrogeology**, SUNY Buffalo, Buffalo, New York, Sept. 2003 to Dec. 2005.

**Masters of Science in Applied Geology**, June 2003, Anna University, Chennai (Madras), India.

*Thesis: Image Processing of Digital ASTER Data for Improved Lithological Mapping.*

**Bachelor of Science in Geology**, April 2001. Fergusson College, University of Pune, Pune, India.

## **EMPLOYMENT HISTORY**

**UHL & Associates, Inc.**

Geoscientist  
April 2006 to Present

**Uhl, Baron, Rana & Associates, Inc.**

Geoscientist

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October 2009 to April 2006

Feb. 2006 to Feb. 2007

**Dept. of Geology, University at Buffalo**

Teaching and Research Assistant

August 2003 to December 2005

## **PROFESSIONAL PROFILE**

Ashish Daw is a Geoscientist with a Bachelor's Degree in Geology, and a Master's Degree in Applied Geology. He has completed graduate studies in Hydrogeology at the State University of New York, Buffalo. Mr. Daw began his career with the Netherlands Assisted Project Office in Hyderabad, where he participated in a project to identify areas of wells in the State of Andhra Pradesh with acceptable fluoride concentrations, and set a framework for sharing and distributing high quality water.

On international projects, Mr. Daw has worked on MCC, USAID and World Bank funded projects in Senegal, Niger, Ethiopia, Liberia, and Afghanistan. Presently, Mr. Daw is working with the ATA & Govt. of Ethiopia to help identify regolith's and points of groundwater seepage in the western parts of the Country, and map watershed basins. With MCC and MCA-Niger, Mr. Daw is assisting the project with identifying groundwater permitting requirements, compliance, drilling requirements for water supply systems for Milking Centers, Cattle Markets, and Small-Scale Irrigation in Tillaberi, Dosso, Tahoua, and Maradi Regions of Niger. In Senegal he is currently overseeing the repair and rehabilitation of community water supply systems in Tambacounda and Matam Regions, and in 2017, he completed borehole diagnostics and well redevelopment and testing, and training programs on several wells in Ziguinchor, Sedhiou, and Kolda Regions.

In 2016, Mr. Daw worked in Senegal and Niger evaluating numerous Groundwater-Based Solar Pumping Systems. Mr. Daw has conducted training programs for local staff in borehole diagnostics, development and water sampling procedures. In 2014-2016 for projects in Ethiopia, he assisted in developing a groundwater-recharge based "Irrigable Land Potential" calculator. In 2011 Mr. Daw implemented a World Bank funded project to select and sample 200 water- supply points in the capital city of Monrovia, Liberia, where he led the field team and trained local staff. His expert GIS skills have been tapped to create fundamental base maps and related databases for many groundwater supply projects conducted for large development entities (World Bank, USAID, ADB), including projects in Liberia, Afghanistan, Sri Lanka and Lebanon. He has processed and interpreted satellite images to identify potential well drilling sites for projects in Afghanistan, Cameroon and Sri Lanka.

Within the United States, Mr. Daw has performed and managed many water-supply related and environmental projects. He has installed and tested numerous municipal and private commercial water-supply wells in bedrock and unconsolidated settings. He managed a highly successful well redevelopment program to restore capacity of a major 1.4 MGD production well critically needed by a large water utility. Other programs of note have included installing test wells to assess the feasibility of extracting and filtering river water during periods of high-flow by horizontal collector wells, and drilling bedrock wells up to 1000 feet (300m) to reach into an abandoned iron-ore mine being considered as a possible water storage reservoir. Mr. Daw has sited wells using state-of-the-art methods, including the identification of lineaments and faults from aerial photographs, and working closely in the field with geophysicists. He has evaluated hydrogeological properties and aquifer characteristics through research of scientific data databases, and the implementation and analysis of long and short-term pumping tests. He is experienced with analytical and numerical groundwater models and their applications and created an analytical element model (AEM) for simulating groundwater flow and contaminant transport that supported a water allocation permit issued for a production well by the state of New Jersey.

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Mr. Daw is fluent in English, Hindi, Marathi, and can communicate in various Indian dialects.

## **REPRESENTATIVE PROJECTS**

### **Ethiopia Agricultural Transformation Agency (ATA), Govt. Of Ethiopia, Shallow Groundwater Mapping in Fincha-Gimbi, Tepi-Gibe & Adiremets – Aksum Sub Basins, Ethiopia, 2018 to Present.**

Remote sensing and GIS specialist on a Govt. of Ethiopia funded Shallow Groundwater Mapping Project in northern and western Ethiopia. Present focus is on western Ethiopia to map regolith's using remote sensing data and map watershed basins from DEMs. Field work will involve ground truthing of remote sensing outputs and interpretation.

### **Stantec and MCC, Development and Implementation Oversight Support of the Climate Resilient Communities Project (CRC), Niger, 2018 to Present.**

Groundwater specialist in assisting MCC and MCA-Niger on site selection, groundwater permitting requirements, compliance, drilling requirements for Milk Centers, Cattle Markets and Small Scale Irrigation in Tillaberi, Dosso, Tahoua, and Maradi Regions of Niger.

### **MWH (now part of Stantec), NRCE & USAID, Project ACCES, Senegal, 2016 to Present.**

Field Team Leader for a USAID funded project on assessing and redevelopment of village water supply production wells in Ziguinchor, Sedhiou, and Kolda Regions of Senegal. Responsible for conducting and training participants on down hole video techniques and investigations, identifying causation for screen blockage, preparing a redevelopment and pumping test program that involves airlift and double surge blocks, step and constant rate drawdown pumping tests. The results of this analysis were used to identify reasons for borehole failures and establish long-term sustainable pumping test yields.

Presently overseeing repairs and rehabilitation of community supply systems in Tambacounda and Matam Regions.

### **MWH (now part of Stantec) & USAID, Knowledge Management Task Order, Ethiopia, Senegal, and Niger, 2014 to 2016.**

Field Team Leader for a USAID funded project on the causation of well failures and well life cycle in Senegal and Niger. Responsible for demonstrating down hole video logging techniques, identifying potential causes for well failure, training locals on pumping test techniques and field water quality analysis. Evaluated numerous Groundwater-Based Solar Pumping Systems in Senegal and Niger.

Project GIS Expert for a USAID funded Knowledge Management Project for Small Irrigation in Ethiopia. Responsibilities included preparing watershed basin maps using DEMs, water balance analysis, and developing a tool for estimating irrigation potential for a specific area. Presented this work at a USAID E3 Bureau seminar.

### **Litani River Basin Management Support, International Resource Group (IRG), Litani River Basin, Lebanon, 2010 to 2012.**

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Project Hydrogeologist for a USAID funded water resources study in Bekaa Valley, Lebanon. Responsibilities included developing groundwater level contour maps for wet and dry seasons and water balance analysis. Contour maps were created from a dataset of 200 surveyed wells. A Hydrogeological Reference Report for the Litani River Basin was prepared and subsequently used as a physical framework for developing a groundwater model for the basin.

### **Bakwa Groundwater Study, Farah Province, Afghanistan, 2009 to 2010.**

Interpreted Landsat satellite imagery and prepared project figures and field base maps for a USAID-funded groundwater study for irrigation potential.

### **World Water & Power Corporation, Sri Lanka, 2014 and 2006 to 2007, and 2015.**

Initial site assessment in 2015, of Provinces in Sri Lanka severely affected by Chronic Kidney Diseases. Development of a water supply plan to address this issue.

Worked on a USTDA-funded (United States Trade and Development Agency) water supply project for six villages in Hambantota District, Sri Lanka.

- Interpreted lineaments and fractures from aerial photographs using stereoscopy.
- Used ASTER and LandSAT satellite images to identify target areas for geophysical investigations.
- Test and production well drilling locations were confirmed following the combined results of geophysics and imagery analysis.
- Used GIS to create project base maps.

### **University of Delaware and Engineers Without Borders, Bamendjou District, Cameroon, Africa, 2007.**

Procured and analyzed Landsat images for the students and developed base maps. This project was a collaboration between students from the University of Delaware and Engineers Without Borders to develop a solar-based groundwater pumping and distribution system.

### **Suez and United Water, 2013 and 2017-2018**

- Assisted the Owego system in Owego, New York, with falling in compliance with Susquehanna River Basin (SRBC) water supply and permitting requirements.
- Conducted and analyzed a 72-hour constant rate aquifer test on production well.
- Monitored air entrainment in pumped water.
- Prepared a pumping test report for submittal and approval to the New York State Department of Environmental Conservation.

### **Clinton Borough Water Department, New Jersey 2006 to 2011.**

- Supervised the drilling, construction and development of a 0.5 MGD production well in a dolomite/limestone formation.
- Conducted and analyzed a step-drawdown test to calculate the well efficiency and sustainable long-term pumping rate.
- Conducted and analyzed a 72-hour constant rate aquifer test on production well.

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- Created an Analytical Element Ground water model to determine pollutant paths from point sources under pumping conditions and recommend pumping scenarios. This study resulted in the New Jersey Department of Environmental Protection issuing a Water Allocation permit for a critically needed municipal production well.

### **East Orange Water Commission, New Jersey, 2010 to 2011.**

- Conducted short-term specific capacity tests to assess decrease in well efficiency.
- Developed well redevelopment program for wells completed in sand and gravel formation.
- Redeveloped large capacity wells in the East Orange Wellfield using time tested methods such as simultaneous airlift and double surge blocks, acid and chlorine treatment, and newer techniques such as air-surgings, and air-bursting.
- Developed bedrock and glacial wells redevelopment specifications.

### **City of Orange Water Department, New Jersey, 2009 to 2010.**

- Supervised the drilling, construction and development of a 1.4 MGD replacement production well in coarse glacial outwash material.
- Conducted and analyzed a step-drawdown test on the replacement production well to calculate the well efficiency and sustainable long-term pumping rate.
- Conducted and analyzed a 72-hour constant rate aquifer test on replacement production well.
- Report and permit preparation.

### **Morris County Municipal Utilities Authority, New Jersey, 2015 to 2016 and 2006 to 2007. 2015.**

- Reviewed Water Allocation Permit Report for production well completed in a former Iron Ore mine.
- Supervised the investigation of a production well to determine the cause of severely increased turbidity, and the successful redevelopment of this well to open partially closed screens, reduce entrance velocities, increase specific capacity, and achieve an acceptable level of turbidity. Participated in the redesign of this high capacity well.
- Supervised the drilling, construction and development of shallow wells in coarse glacial outwash materials adjacent to the Rockaway River to evaluate the feasibility of extracting river water during periods of high-flow. This program utilized an innovative sonic drilling technique that proved optimal in this setting. Conducted and analyzed short and long-term aquifer tests to evaluate aquifer characteristics and modeled yields for potential horizontal collector wells.
- Supervised the drilling and construction of bedrock wells into stopes of an abandoned iron- ore mine being considered for use as a water storage reservoir. Conducted and analyzed a long-term aquifer test to determine the interconnection of the mine stopes and the natural flux of groundwater into the mine.
- Supervised and analyzed two step-drawdown and two 72-hour constant rate pumping tests to assess impacts of higher pumping rates.

### **Washington Township Municipal Utilities Authority, New Jersey, 2007.**

- Analyzed long-term pump test results and prepared a hydrogeologic report as part of a Water Allocation Permit Application submitted to the New Jersey Department of Environmental Protection.

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- Analyzed Very Long Frequency (VLF) survey data, aerial photography, and Landsat images to identify and map lineaments and fracture zones. This study was followed by field geophysics to accurately identify lineaments and fractures to drill and construct three production wells.
- Assisted the lead geophysicist in conducting a Vertical Electrical Sounding (VES) survey to identify the thickness of a fractured zone. The results of this study were used to select an appropriate drilling method and well construction.
- Transferred VES data points into the GIS system and developed resistivity surface maps using kriging methods. The outputs resulted in base maps showing the VES location and the corresponding vertical surface resistivity for each VES location.

### **Boonton Township Water Department, New Jersey, 2008.**

Conducted and analyzed a step-drawdown test on a replacement production well to calculate well efficiency and a sustainable long-term pumping rate.

### **Dykstra & Walker Design Group, Jefferson & Montville Townships, 2015 & 2016.**

- Conducted unsaturated zone vertical permeability testing, and saturated zone hydraulic conductivity testing for septic system design.
- Prepared hydrogeologic report in support of a Discharge to Groundwater Permit Application

### **Valley Crest Farms, Clinton & Bloomsbury Townships, New Jersey, 2008, 2016, and 2018.**

- Conducted a resource evaluation of natural springs, proposed to be used as sources for bottling potable water.
- Delineate surface watershed boundary to identify contribution to natural springs.
- Calculated groundwater recharge estimates using precipitation data and stream base flow.
- Identified and quantified current groundwater use within the watershed basin.
- Recommended sustainable extraction rates from springs.

### **Spring Meadow Farm, Delaware Township, New Jersey, 2008.**

- Managed a watershed study to determine groundwater recharge in the basin.
- Supervised drilling, construction and development of two wells in sandstone/shale bedrock.
- Conducted and analyzed a 24-hour pumping test to determine the effects of pumping on wetlands and neighboring properties.
- Prepared a hydrogeologic report as part of a study to determine the viability of using a natural spring as a source for potable drinking water.

### **Aqua Pennsylvania, West Chester, Pennsylvania, 2008**

- Provided oversight on installing shallow monitoring wells.
- Conducted slug tests for calculating the hydraulic conductivity of the rock.
- Estimated collector well yields using calculated aquifer parameters.

### **Princeton Hydro, Southampton Township, New Jersey, 2007 to 2008**

Conducted multiple soil borings to examine lake-bottom sediments and define the historical lake bottom for dredging purposes.

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## **Lafayette Township, New Jersey, 2006**

Conducted and analyzed slug and permeability tests to determine aquifer characteristics.

## **City of Lambertville Environmental Commission, New Jersey, 2007**

Assisted the commission in updating the zoning, soils, geology, soils, flood, wetlands and open space maps for the 2008 Environmental Resource Inventory Report.

## **Chubb Insurance Company, 2006 to 2012**

Provided oversight of soil and groundwater remediation of releases from residential heating oil underground storage tanks in New Jersey.

## **New Jersey Manufacturers Insurance Company, 2012 to Present**

- Provide technical oversight on residential and commercial of soil and groundwater contamination projects.
- Prepare remediation scope of work.
- Prepare and submit Remedial Action Reports (RARs) for approval and release of liability.
- Liaise between property owners, insurance companies and contractors.

## **PUBLICATIONS AND PRESENTATIONS**

- Presented a Paper on “Assessment of Causation of Boreholes Failures Senegal & Niger” at Global Water Alliance – 11<sup>th</sup> Annual Conference – Groundwater: The Hidden and Disappearing Resource, April 5, 2018, at Villanova University, Pennsylvania.
- Kumpel, E., Albert, J., Peletz, R., de Waal, D., Hirn, M., Danilenko, A., Uhl, V., Daw, A., Khush, R., 2016, Urban Water Services in Fragile States: An Analysis of Drinking Water Sources and Quality in Port Harcourt, Nigeria, and Monrovia, Liberia, Am J Trop Med Hyg. 2016 Jul 6; 95(1):229-38.
- Presented a paper on “GIS a Tool For Groundwater Basin Analysis” at Esri International User Conference, Jul. 8–12, 2013 in San Diego, California.
- Fredrick, K. C., Becker, M. W., Matott, S. L., Daw, A., Bandilla, K., Flewelling, D. M., 2006, Development of a numerical groundwater flow model using SRTM elevations, Hydrogeology Journal, v. 15-1, p 171 – 181.
- Becker, M. W., Daw, A., 2005, Influence of lake morphology and clarity on water surface temperature as measured by EOS ASTER, Remote Sensing of Environment, v. 99, p 288 – 294.

## **EXPERT TESTIMONY**

- Provided expert testimony to Township Planning Boards.

## **CERTIFICATIONS**

- OSHA 40-Hour HAZWOPER Certified since 2006.

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- Regulatory Training in Underground Storage Tanks – November 2011.

### **COMPUTER SKILLS**

**Highly skilled:** MS Office, ArcGIS, ENVI, AutoCAD, Visual Bluebird, CorelDraw.  
**Proficient:** ERDAS Imagine, Surfer, Adobe Photoshop and Dreamweaver, Maple.