



Mario R Lluria, PhD

Professional Experience: 47 years ♦ HSI Experience: 4 years

Education:

Post Doctoral
(Hydrochemistry),
University of Sevilla, 1969

Doctor of Science
(Chemistry), University of
Habana, 1965

Bachelor of Science
(Geology and Geophysics)
Massachusetts Institute of
Technology, 1963

Professional Registration:

Geologist: State of
Arkansas No. 1526, 1990

Applied Hydrogeology:
E.S.T.I.M., Spain, 1967

Relevant Skills:

- Groundwater exploration & development
- Aquifer recharge
- Water quality
- Groundwater monitoring & remediation
- Geophysical surveys & exploration

Summary

Senior Hydrogeologist, performs project management, Client service and Agency coordination for both large and small scale projects. He provides technical guidance in the areas of recharge planning, conceptual recharge facility design, environmental permitting, facility operations and system evaluations. He performs geologic and geophysical evaluations using advance methods for well siting. He is a National and International leader in the areas of artificial recharge, geology and geophysics. He performs water quality and geochemical analyses for groundwater and blended water sources.

Technical Experience

Project Manager, Walton Development and Management - Silver Reef, Pinal County, AZ

Dr. Lluria performed project manager oversight for the development of a recharge feasibility study for a planned development to determine optimum locations and methodologies for recharging wastewater. Available existing data was summarized including: lithologic data and well drillers' logs, geologic reports, water level data, soils data, and well capacities. Data deficiencies and needs were identified and documented. Preliminary recharge alternatives were presented and permit requirements and needs for an Underground Storage Facility and Aquifer Protection Permits were outlined as a part of the study.

Project Manager, Salt River Project (SRP), AZ

Dr. Lluria provided technical direction and guidance in all aspects of groundwater work including but not limited to groundwater exploration, monitoring and development, application of geophysical and geochemical techniques, groundwater and soil contamination studies and planning, designing, permitting, construction and operation of groundwater recharge facilities. As project manager for the Granite Reef underground Storage Project (GRUSP) and the New River Agua Fria Underground Storage Project (NAUSP) Dr. Lluria was responsible from site selection to operation of these large spreading recharge facilities. He developed the SRP well recharge program and tested a wellhead treatment system to recharge raw irrigation canal water. This treatment system that consisted of filtration and disinfection by ozonation was developed jointly with the Industrial Technology Department at Arizona State University.

Project Manager, Water Campus Project, City of Scottsdale, Scottsdale, AZ

Dr. Lluria served as project manager for the evaluation of 10 years worth of performance data on the 27 standard vadose zone recharge wells at the Water Campus. Based on the performance of these wells, a rate of plugging was determined for the purpose of estimating of the number of new wells that would

Mario R Lluria, PhD (*continued*)

Professional Activities:

100+ international/national publications on geology, geophysics, geochemistry and groundwater

Key note speaker and invited presenter in 12 international meetings

Short courses including:

Groundwater Recharge Polytechnic University (Barcelona, Spain)

International Groundwater Congress – 2000 (Brazil)

IAH-ALHSUD Congress – 1995 (Chile)

Professional Societies And Committees:

Member of 12 International/national professional Societies and Committees

Chairman of the Standard Guidelines for Managed Aquifer Recharge

be needed as a result of the next plant expansion. A review of the internal piping was also performed on the 28 emergency vadose zone recharge wells resulting a design recommendation to allow the emergency wells to become part of the normal recharge operating system. A conceptual design document was developed documenting all of the information developed in this phase of the project.

Other Work Experience:

Senior Project Hydrologist, Boyle Engineering Company

Project management and technical direction of groundwater recharge projects. Served as consultant for the City of Scottsdale groundwater recharge master plan and directed the preparation of the city's proposal for the High Plains Groundwater Demonstration Act Grant. Part of this work was used later for the development of the very successful Water Campus treatment-managed aquifer recharge Facility.

Years: 1986-1987

Senior Project Hydrologist, Cella Barr Associates

Provided project management and technical direction to a large number of groundwater projects which included water supply to new developments, municipalities and industry, carried out soil and groundwater contamination studies and geotechnical support for engineering studies. Was project manager for the City of Phoenix Cave Creek Recharge Project which was the first ASR well in Arizona. This was the pioneer of the municipal recharge facilities in Arizona. A very successful pilot test was performed which demonstrated the feasibility of recharge by injection in the alluvial aquifer system of the Salt River Valley groundwater basin using treated water. It also proved that existing production wells can be converted to dual purpose wells (recharge/recovery) for a small capital investment.

Years: 1984-1986

Professional Geologist, Senior Geologist, Exxon Company

Exploration for mineral deposits in the southeast, southwest, northwest and mid-continent regions of the United States. Exploration as for porphyry copper deposits, massive sulphide deposits, carbonate hosted deposits, detachment fault gold deposits, volcanogenic gold deposits and uranium deposits. Dr. Lluria was a project geologist for the discovery of two world class deposits: The Cumberland zinc deposit in Tennessee and the Crandon deposit in Wisconsin. Dr. Lluria was in charge of research and the development of a hydrogeochemical technique that was very successful in the discovery of deeply buried metallic ore deposits in several types of geologic settings.

Years: 1968-1984

Manager, Senior Geologist, Geotecnica, S.A. Madrid Spain

Dr Lluria was in charge of regional office of a geologic-engineering consulting firm that carried out mining exploration, geological engineering and geochemical services. He installed the first private geochemical exploration laboratory in Spain. He mapped and drilled tested metallic mineral targets. Dr. Lluria was also in charge of a well recharge project to control sea water intrusion in a coastal area.

Years: 1965-1969