

Michael L. Maloy, CPG

Principal
Senior Geologist

PROFESSIONAL SUMMARY

Mr. Maloy is a Senior Geologist and Branch Manager for Analytical Services, Incorporated. His responsibilities include coordinating staff resources to complete comprehensive hydrogeologic studies, source water assessments, groundwater monitoring programs, environmental site assessments, and remedial design projects. Mr. Maloy's duties involve maintaining client contact, coordinating field operations, overseeing data analysis, and conducting technical review ultimately providing comprehensive technical reports designed to meet the needs of the client. Prior to joining ASI, Mr. Maloy worked as a Geologist with Virginia Geotechnical Services, P.C., and more recently as the Consulting Manager for ENSAT Corporation.

FIELDS OF EXPERTISE

Groundwater Availability and Potential Impact Assessments
Aquifer Testing Proposal Design
Fracture Trace Analysis
Geophysical Survey Design and Interpretation of Results
Hydrogeologic Mapping
Interfacing with Regulatory Agencies
Soils Evaluation
Comprehensive Environmental Site Assessments
Technical Writing
Project Cost Estimation

EDUCATION

B.S., Geology, James Madison University, Harrisonburg, Virginia 1994
Magna Cum Laude

PROFESSIONAL TRAINING

Resistivity Imaging Workshop for Professionals – Advanced Geosciences, Inc. Austin Texas (2000)
40 hr OSHA Hazardous Waste Operations and Emergency Response Course, 1994
8 hr OSHA HAZWOPER Refresher (yearly)
8 hr OSHA Confined Space Awareness (yearly)
8 hr DOT Hazardous Materials Awareness, 1995
8 hr AEG Short Course -Aeration Technologies for Soil and Groundwater Remediation

SELECTED PROJECT EXPERIENCE

Mr. Maloy, was the program manager for a county-wide study of the hydrogeologic settings with regard to groundwater availability; a study of groundwater sensitivity based on source value and potential impact; and the development of hydrogeologic assessment standards for Albemarle County. The approved workscope was completed on time and within budget. A presentation of findings was made to the board which included draft groundwater assessment standards. Mr. Maloy worked with Albemarle County staff to further refine the standards with guidance from the Groundwater Committee. The Assessment Standards have recently been adopted by Albemarle County.

Mr. Maloy managed the assessment and development of substantial groundwater resources within the Culpeper Basin. The project was challenging as the planned development consisted of 330 homes and the entire site was underlain by diabase geology, typically known for low groundwater yields. Mr. Maloy performed a comprehensive fracture trace analysis of the site area (approximately 300 acres) to identify major zones of fracture concentration across the site. Geophysical surveys lines were then completed at select locations to better confirm suspect zones of fracture concentration. The results of the fracture trace analysis and geophysical surveys were utilized along with available geologic and soils mapping to select three drilling targets. Well drilling permits were obtained for the three drilling targets and the wells were completed generating a combined air lift yield of 770 gallons per minute (300 gpm, 300 gpm, and 170 gpm). Simultaneous pump testing of the three wells was conducted for a period of 65 hours. The aquifer tests generated favorable results with the wells reaching near stabilized conditions with minimal drawdown. Approximately 1.2 million gallons of water were pumped and discharged during the test.

Mr. Maloy prepared an aquifer testing workplan designed to satisfy requirements for the rezoning of a rural property for use as an aggregate quarry in Loudoun County. The workplan, which was approved, addressed review of geology, identification of potential contaminant sources, well site selection, and aquifer testing methodology. Well site targets were located in suspect transmissive zones within the underlying bedrock. Fracture trace analysis and high-resolution resistivity were utilized to identify the well target locations. Five test wells were subjected to a simultaneous constant drawdown pump test (400 feet bgs for a minimum of 48 hours) and 14 observation wells (three of which were domestic supply wells) were utilized as monitoring points. Monitoring was conducted for five days prior to the test, during the test, and a minimum of five days after the test. Results generated from the aquifer testing were utilized to provide a detailed hydrogeological report for submittal to Loudoun County. The report met the County's criteria and the rezoning was approved.

Mr. Maloy has recently completed a second Detailed Hydrogeologic Study for another proposed quarry expansion in Loudoun County. The workscope involved developing a workplan for aquifer testing and presenting it to County Staff. Upon obtaining approval,

simultaneous testing of three wells was conducted which involved monitoring of numerous observation wells, including bedrock wells and overburden piezometers. Measurements of stream flow were made at set intervals throughout the test as per Loudoun County's direction to aid in evaluating any measurable effects of baseflow to a stream which flowed thru the subject site. Our report, which is currently in review, includes a recommended groundwater monitoring program to aid in evaluating potential off-site impact throughout the life of the quarry.

Mr. Maloy coordinated with County Staff to design a 72 hour pump test on wells associated with an active community supply system. The hydrogeologic testing was completed to evaluate groundwater availability and potential for offsite impact associated with the development of approximately 100 new residential units at a prestigious golf community in Keswick, Virginia. The work plan was approved and the test successfully completed. A detailed report was prepared for submittal to both the Virginia Health Department Office of Water Programs and to Albemarle County's Groundwater Manager. The report received approval from both agencies. Recently the results were presented to the Albemarle County Planning Commission, where unanimous approval was obtained for the project.

Mr. Maloy has managed numerous hydrogeologic studies designed to meet local ordinance requirements for the development of subdivisions, golf courses, and quarries throughout Virginia. Aquifer tests have been designed to meet the specific project needs. Pump test designs have addressed both constant rate and constant drawdown testing requirements over varying hydrogeologic conditions.

Mr. Maloy conducted a geophysical investigation to evaluate the suspect integrity of a parking lot in Hamilton, Ontario. High-resolution resistivity was utilized in an attempt to identify subsurface anomalies that had high resistance values. Such anomalies were believed to represent void space that was causing serious subsidence over a large parking area. In addition to interpreting the geophysical data, historical aerial photography was stereoscopically analyzed to determine the location of former structures and potential subsurface voids. Geotechnical drilling was performed in select locations to confirm suspect subsurface conditions that threatened the integrity of the parking lot. Following the investigation, a comprehensive report was prepared and a remedial plan developed and implemented.

Mr. Maloy has extensive experience in designing and overseeing the completion of geophysical survey data generated over varying bedrock geology in Central Virginia. Most of the geophysical surveys have utilized resistivity techniques, although other methods (VLF) have been utilized. Targets for high yield wells have been identified over granitic basement rock, Triassic siltstone and diabase, and limestone. In addition to identifying anomalies that may represent transmissive zones within bedrock, survey data can also reveal information on geologic structure that may affect (target) well placement.