RESUME

Steven K. Barrett
Principal, Water Resources Specialist

Education

- M.Eng., Geographic Information Systems, University of Colorado at Denver, 2009
- B.S., Environmental Studies, University of Kansas, 1997

Registrations/Affiliations

- Water Well Meter Tester Certification, 2010
- Level 3 MS Access DB Certificate, 2008
- GIS Certificate, College of Engineering & Applied Science, University of Colorado at Denver, 2007

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Experience Overview

Mr. Barrett has over 18 years of experience in the water resources field. Prior to working at HRS, he worked for the Colorado Division of Water Resources; Assistant Water Commissioner on the Animas River, Division 7 Durango Office; Engineering Technician for the Ground Water Supply Department, Denver Office; and Hydrographer, Division 1 Greeley Office. Through his work with the Colorado Division of Water Resources, he developed a strong understanding of the priority system and how water rights are administered and accounted for in the State of Colorado.

Since beginning work at HRS in 2008, Mr. Barrett has assisted clients in numerous projects ranging from change of use cases and augmentation plan development to client water rights protection, water rights accounting, water rights valuations and water resources planning.

Representative Experience

- Project manager for a gravel pit application/Replacement Plan in the Upper Big Sandy Designated Basin. This project involved a site visit to drill test holes for the assessment of geologic materials and water levels. Project work also included: correspondence with Groundwater Commission Staff, coordination with other consultants and attorneys regarding the contract for replacement water, and the development and submittal of the final Replacement Plan package to properly quantify and replace depletions caused by the operation of the gravel pit. The submittal package resulted in an approved gravel pit permit and replacement plan.
- Preparation of a change of use application package for an irrigation well inside the Northern High Plains Designated Basin. Project work included: analysis of well use, review and analysis of FSA crop records, power records, and aerial photographs, water demand analysis, historical consumptive use analysis, and discussions with the Ground Water Commission Staff. This resulted in an approved an amended final permit and Findings and Order by the Colorado Ground Water Commission for a change of use from irrigation to commercial and irrigation use.
- Development and maintenance of a municipal reservoir accounting spreadsheet used to account for daily inflows, outflows, and changes in reservoir storage involving multiple water rights. The accounting sheet was developed according to the Division One - Reservoir Accounting Guidelines and was approved by the Division Engineer's Office. Continue ongoing coordination with client and other consultants/entities regarding reservoir operations.
- Prepared a nontributary well permit application and supporting engineering report to demonstrate the proposed well met the statutory definition of nontributary. Project work included an aquifer test analysis, well depletion timing analysis, use of Hantush sloping bed method, evaluation of well logs, demand estimate, preparation of engineering report, and correspondence with SEO staff. This resulted in the successful issuance of a nontributary well permit and findings by the State Engineer's Office.
- Plan for Augmentation for a Dakota Well - Project work included water supply and water demand analyses for a commercial grow operation. A well stream depletion timing analysis was completed for a geologically

complex area and used to develop of a set of unit response factors (URFs). These analyses were used in the development of a substitute water supply plan that was approved by the SEO and later approved by the Division 2 Water Court as a permanent Plan for Augmentation.

- Completion of a lawn irrigation return flow ("LIRF") analysis for the Cottonwood Water and Sanitation District in the Cherry Creek alluvial basin. Applied the widely accepted Cottonwood Curve analysis to determine a deep percolation percentage for both commercial and residential accounts. The resulting LIRF deep percolation percentages will be used in the determination of return flow credits under the client's plan for augmentation.
- San Luis Valley water right evaluations - Review and analysis of the subject water rights (decrees and permits), irrigation practices, subdistrict records, and physical supply for over 50 farms in the San Luis Valley. Prepared a report summarizing our findings and recommendations for future operations. This work was completed as part of our client's due diligence before purchasing the subject farms.
- Assisted in a court approved, complex change of use/augmentation plan water court case involving reservoir shares and ditch shares in the Greeley Canal No. 2 located on the Cache La Poudre River. A parcel specific analysis was completed which included: use of individual soil moisture water budget spreadsheets to calculate consumptive use on a per share basis for each farm analyzed, review of aerial photos and calculation of irrigated areas using a GIS, timing of return flows and well depletions using the AWAS program, and revision of existing accounting spreadsheets to account for new uses and augmentation components.
- Prepared four change of use applications for wells inside the North Kiowa-Bijou Designated Basin. Project work included: site visit to observe client's operations, analysis of well use, review and analysis of FSA crop records, power records, and aerial photographs, review of well PCC tests, in depth cattle consumptive use analysis, and historical consumptive use analysis. Final project work included preparation of the application package and negotiations with the Ground Water Commission Staff resulting in approval of the four change of use applications by the Ground Water Commission Staff.
- Cherry Creek Alluvial Aquifer Modeling Project –Responsible for the data collection and database components of this project and collectively working on the ground water modeling portions of this project with other Cherry Creek consultants.
- Completion of a water supply/demand analysis for a water and sanitation district inside the closed basin of the San Luis Valley. Project work included: analysis of client's leased water rights, review and analysis of streamflow and diversion records, quantification of future demand, consumptive use analysis, and development of project geodatabase.
- Performed several historical consumptive use analyses to compliment work in change of use cases, plans for augmentation, and water right valuations.
- Development and maintenance of accounting spreadsheets for depletion/accretion timing for various well and recharge projects.
- Call analyses using CDSS call chronology records to determine the number of days a water right was in priority or could potentially be in priority. Exchange Analysis to determine exchange potential within a specified river reach.
- Conducted numerous streamflow measurements to determine flow rates in various rivers, creeks and ditches. These measurements were made using standard measurement techniques and completed as part of gain/loss assessments.
- Used a combination of pivot tables and database queries to manipulate/standardize large amounts of data from different sources. These data were then organized in a single database for input into Colorado State University's IDS CU and AWAS programs to calculate consumptive use and stream accretions/depletions for the client.
- GIS data management which included: custom data queries to facilitate project needs, processing of fieldwork data and integration into GIS projects, design and implementation of geodatabases based on project requirements, efficiently working with data sets in differing coordinate systems by re-projecting them into a uniform projection/datum, and collection and/or creation of new imagery and GIS coverages as needed.
- GIS Data Processing/Spatial Analyses work which included: use of ArcGIS model builder to streamline complex geoprocessing tasks, georeferencing of aerial photos which were then used to quantify historically irrigated areas, use of advanced spatial analysis techniques to develop subsurface layers which were used

as input into ground water models, production of numerous presentation quality figures/maps for final reports, and use of GIS to convert shape files to KMZ files which can then be input into Google Earth for client presentations or client use.

- Assisted with well development work including well step tests and pumping tests.
- Setup, installed, and has maintained several data loggers in monitoring wells for various HRS clients. Responsible for updates and maintenance of associated client databases.
- Examination of decrees, diversion records, streamflow data, and well logs to meet project objectives.

Water Court Experience

- Meridian Service Metropolitan District Replacement Plan., Upper Black Squirrel Designated Basin, Case No. 15GW14, deposition on behalf of Upper Black Squirrel Ground Water Management District, Booker Trust, & Farmer Family, Dec 2016.