

Database Utilization to Manage and Maintain the Integrity of Rural Water Supplies

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Summary

Community groundwater supplies supported by water treatment facilities are well regulated under provincial Acts and Regulations. Single wells providing a source of rural domestic water to households and small facilities are generally unregulated and may represent unsecure water supplies. Although these small water supplies are essential to the health and operations of rural communities (country residential developments, villages, first Nations and Metis Settlements, etc.) and small commercial and industrial facilities, ensuring their integrity and quality can be challenging for users and operators. The concerns are compounded when a community or operation have many households and facilities located across expanding geographic regions, and where third-party service providers obtain and transport water to the sites from a variety of water sources. On-site water sourcing and storage infrastructure may also vary considerably across the rural community and facility asset base. Although essentially unregulated, rural water supply security and integrity can be achieved through the implementation of scheduled monitoring and maintenance programs. Although the value of a well-managed monitoring and maintenance program becomes quickly realized by the community and facility operations, the ability to manage even a moderately sized water supply integrity program is challenged by the compilation and analysis of large, expanding water quality and quantity data sets.

Managing a water supply integrity program using a fit-for-purpose database offers a wide variety of benefits, as data is easily accessible and searchable. The database allows for automation of notifications and detection of exceedances, correspondence, producing summary tables, sample bottle orders and scheduling maintenance events. The database also assists with improved data reliance, QA/QC and management of updates to client contacts. A case study will be reviewed that outlines a data-driven compliance and maintenance program that Waterline has developed to assist clients with maintaining the integrity of their water supplies.