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Contaminants in Private Well Water in Selected Counties in Eastern Maryland

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Abstract Text:

The results represent part of a broader project designed to collect and analyze well water samples used for drinking purposes from volunteering underserved farms, families and communities (UFFC) in the Delmarva (Maryland, Delaware, and Virginia) Region. This presentation focuses on activities in four counties in Maryland. Somerset, Dorchester, Wicomico and Worcester counties were selected to investigate potential drinking water quality problems and potential hazards to UFFC in these counties. Survey questions were prepared to complement water sampling and analysis efforts. The overall objectives of this project were to, (1) collect well water samples and analyze them for various parameters, (biological and chemical) by physiographic regions throughout the Mid-Atlantic, (2) prepare educational and training materials on drinking water quality for extension and NRCS field agents to assist UFFC in the Mid-Atlantic Region, and (3) to help UFFC locate government programs that would provide monetary assistance to alleviate or solve identified drinking water quality problems.

Our main objective was to quantify the levels of selected anions, cations, and trace elements in well water of rural families. Other assessments were to quantify the content of total dissolved solids, electrical conductivity, total and fecal coliforms, hardness index, and determine the pH. The targeted group for this research was farms and families who rely on wells as their primary source of drinking water. Questionnaires were also developed and data ascertained on pertinent information associated with drinking water sources, knowledge of well installation and well placement among other parameters.

This information was placed in a database where geospatial information technologies, GIS and GPS, were applied to provide spatial relationships associated with well location, and water quality content parameters. In addition, results are presented on data ascertained from questionnaires. Safe drinking water clinics were held to discuss results and proper well construction, location and management for those who provided samples as well as for the local community.

Impact Statement:

This project quantified the levels of selected anions, cations, and trace elements in private well water of rural families. Other assessments were to quantify the content of total dissolved solids, electrical conductivity, total and fecal coliforms, hardness index, and determine the pH.