

Meridian South Well Survey

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A well survey was performed during 2014 in an area located near Meridian Street and Southport Road in southern Marion County (Figure 1). This survey focused on properties located on specific streets in this area: Banta Road, Brill Road, Jordan Road, Lockwood Lane, Loretta Drive, Meridian Street, and Tulip Drive. The survey focused on this area due to the fact that this hydro geologic region contains New Albany Shale as part of the bedrock. New Albany Shale has been shown to have a high affinity to contain arsenic (Indiana Geologic Survey, 2000). Since arsenic is introduced into private wells through erosion of these natural deposits, the main objective of this survey was to assess the arsenic and bacterial contamination of the well water in the households in this area. The assessments were then used to inform and educate the residents of the risks associated with these contaminants and how to mitigate these risks.

A total of one hundred fifty-three (153) properties were selected for the study area, and each was initially sent a letter explaining the objective of the sampling project. Each resident was encouraged to call the Marion County Public Health Department (MCPHD) to schedule a sample. Residents who did not initially call and schedule an appointment were hand delivered a door hanger and were encouraged to call MCPHD to glean more information. Out of the possible one hundred fifty-three (153) properties, twenty (20) were excluded from the statistical determinations after discovering that they were serviced by municipal water. Twenty-four properties (24) partook in the survey resulting in 18% participation. The well water was sampled and analyzed for coliform and E. coli bacteria, anions, metals and volatile organic chemicals.

Out of the twenty-four (24) properties that were sampled, only one (1) contained results with arsenic concentrations that were above the Maximum Contamination Level (MCL). Due to the propensity to cause skin and circulatory issues as well as cancer, EPA has set the MCL for arsenic in public water drinking supplies at 10 ug/l. The data shows that the arsenic concentration of the sample was 87.1 ug/l. The resident was given a fact sheet explaining the risks associated with consuming water with elevated arsenic concentrations. Reverse osmosis was recommended as a treatment option for arsenic and other chemical contaminants. At the time of this report, the property owner is still pursuing treatment options for the arsenic.

Bacterial contamination was determined to be an issue in this area with thirteen (13) out of the twenty-four (24), or 54% of the wells showing a presence of either total coliform or E. coli bacteria. The residents were informed of the risks of ingesting bacterially contaminated water. Chlorination was recommended as a treatment option for the bacterial contamination. Follow-up samples were completed for the households that chose to chlorinate the systems. Out of the thirteen (13) properties with unsatisfactory bacteria results; five (5) were chlorinated and resampled showing satisfactory results. At the time of this report, two (2) properties are still pursuing mitigation and treatment options.

Figure1



