Letter Health Consultation

Review of Groundwater Sample Results

PANOLA-BETHANY WATER SUPPLY COMPANY

BETHANY, PANOLA COUNTY, TEXAS

Prepared by
Texas Department of State Health Services

MARCH 28, 2013

Prepared under a Cooperative Agreement with the
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Agency for Toxic Substances and Disease Registry
Division of Community Health Investigations
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

You May Contact ATSDR TOLL FREE at
1-800-CDC-INFO
or
Visit our Home Page at: http://www.atsdr.cdc.gov

LETTER HEALTH CONSULTATION

Review of Groundwater Sample Results

PANOLA-BETHANY WATER SUPPLY COMPANY

BETHANY, PANOLA COUNTY, TEXAS

Prepared By:

Texas Department of State Health Services
Under a cooperative agreement with the
U.S. Department of Health and Human Services
Agency for Toxic Substances and Disease Registry

TEXAS DEPARTMENT OF STATE HEALTH SERVICES

P.O. Box 149347
Austin, Texas 78714-9347
1-888-963-7111
TTY: 1-800-735-2989
www.dshs.state.tx.us

DAVID L. LAKEY, M.D.
COMMISSIONER

March 28, 2013

Stacey B. Dwyer, P.E.
Associate Director, Source Water Protection Branch
EPA Region 6
1445 Ross Avenue (6WQ-SD)
Dallas, Texas 75202

RE: Review of Groundwater Sample Results
Panola-Bethany Sampling Project - June 2012
Bethany, Panola County, Texas

Ms. Dwyer:

The U.S. Environmental Protection Agency (EPA) Region 6 asked the Texas Department of State Health Services (DSHS) to evaluate water sample data collected from the Panola-Bethany Water Supply Company to determine whether human health effects from drinking the water were possible [1].

Background

The Panola-Bethany Water Supply Company (ID 1830011) has five groundwater wells which serve a population of 1,626 [2]. Oil and gas operations are occurring near the water system and citizens are concerned that a salt water disposal well in the area could affect the quality of their drinking water. Salt Water Disposal (SWD) Well No. 1 is located approximately 770 feet (0.15 mile) south of the Panola-Bethany public water well No. 4 [3].

In response to these concerns, EPA Region 6 collected water samples from water wells and the distribution system of the Panola-Bethany Water Supply Company.

Discussion

On June 5, 2012, EPA Region 6 staff collected raw water samples from all five water wells at the wellheads prior to the point of chlorination. A post-chlorination sample was collected from the southern end of the distribution system, near 10410 State Line Road [3].

Samples were analyzed for hydrocarbons, disinfection by-products, radioactivity, metals, and aesthetic qualities (e.g., taste, odor, color). Analyses were performed by Test America Laboratories, EPA National Air and Radiation Environmental Laboratory, and EPA Region 6 Laboratory [3].

To assess the potential health risks associated with the contaminants found in the groundwater, contaminants in the raw well water and distribution samples were compared to health-based comparison values (CVs) provided by the Agency for Toxic Substances and Disease Registry (ATSDR). These CVs are guidelines for levels of chemicals in specific environmental media (air, soil, and water) considered safe for human contact. EPA's Primary Maximum Contaminant Levels (MCLs) and Secondary MCLs also were used for comparison.

We relied on the information provided in the referenced documents and assumed that adequate quality assurance and quality control (QA/QC) procedures were followed with regard to data collection, chain-of-custody, laboratory procedures, and data reporting.

Results and Conclusion

DSHS reviewed and evaluated the test results of the Panola-Bethany Water Supply Company samples collected on June 5, 2012. None of the samples had analytes exceeding health-based comparison values; therefore, effects on human health are not expected to result from the contaminants measured in this water [Table 1].

Recommendations

Based on the information available for this review, we do not have any additional recommendations at this time.

If you have any questions, please contact me at (512) 776-6039.

Sincerely,

Tom Ellerbee, Manager
Public Health Assessment and Consultation Program
Exposure Assessment, Surveillance & Toxicology Group
Texas Department of State Health Services

References

1. U.S. Environmental Protection Agency Region 6. Electronic Correspondence from Jatin H. Mistry, Life Scientist, Drinking Water Section. August 4, 2012.

2. Texas Commission on Environmental Quality. Water Utility Database. Panola-Bethany Water Supply Company. Water System Data Sheet Report. Available at http://www10.tceq.state.tx.us/iwud/. Last accessed on December 7, 2012.

3. U.S. Environmental Protection Agency Region 6. Panola Bethany Sampling Project for Panola-Bethany Water Supply Company. November 7, 2012.

4. Texas Commission on Environmental Quality. Public Water Supply Program. Available at http://www.tceq.state.tx.us/assets/public/compliance/monops/water/02twqmar/10_pws.pdf. Last accessed on February 15, 2013.

5. U.S. Department of the Interior. Office of Surface Mining. Technical Measures for the Investigation and Mitigation of Fugitive Methane Hazards in Areas of Coal Mining. September 2001. Available at http://www.osmre.gov/resources/newsroom/news/Archive/2001/090601.pdf. Last accessed February 15, 2013.

6. U.S. Department of Energy. Office of Legacy Management. Fernald Preserve. 2011 Site Environmental Report. Issued May 2012 (S08629). Available at http://www.lm.doe.gov/Fernald/2011_site_environmental_report.pdf. Last accessed February 15, 2013.

Table 1 - Analysis Results of Panola-Bethany Water Supply Company Samples (collected June 5, 2012).

Analyte	Well #1	Well #2	Well #3	Well #4	Well #5	Distribution Sample	Comparison Values
Barium (mg/L)	0.09	0.02	0.11	0.07	0.09	0.09	2 mg/L child - chronic EMEG, intermediate EMEG, RMEG 2 mg/L - EPA MCL 7 mg/L adult - chronic EMEG, intermediate EMEG, RMEG
Chloride(mg/L)	23.7	22.6	12.2	30.8	10.6	14	250 mg/L - EPA Secondary MCL
Chlorine residual (mg/L)	1.44	NA	NA	NA	1.18	1.68	4 mg/L - EPA MRDL
Chromium (mg/L)	0.002	0.002	0.002	0.002	0.002	0.002	0.1 mg/L - EPA MCL (hexavalent) - child 0.01mg/L EMEG 0.03mg/L RMEG 0.05mg/L intermediate EMEG (hexavalent) - adult 0.11 mg/L RMEG 0.18 mg/L intermediate EMEG (trivalent) - child 15 mg/L RMEG (trivalent) - adult 53 mg/L RMEG
Fluoride (mg/L)	0.1	0.13	0.1	0.12	0.13	0.14	2 mg/L - EPA Secondary MCL 4 mg/L - EPA MCL
Gross Alpha (pCi/L)	0	0	4.14	0.55	0	0	15 pCi/L - EPA MCL
Gross Beta (pCi/L)*	2.63	2.93	2.89	3.45	0.82	0	50 pCi/L (4 millirems/yr - EPA MCL)
Lead (mg/L)	U	0.013	U	U	U	0.003	0.015 mg/L - EPA MCL Action Level
Methane (mg/L)**	0.12	0.14	0.03	0.21	0.04	0.02	10 mg/L
pH	7.49	7.75	7.33	7.48	6.83	6.89	6.5 to 8.5 - EPA Secondary MCL
Ra226 (pCi/L)	0.11	0.02	0.13	0.12	0.18	0.16	5 pCi/L - EPA MCL (Radium 226/228)
Sulfate (mg/L)	0.71	ND	ND	1.28	0.64	0.69	250 mg/L - EPA Secondary MCL
Total Dissolved Solids (mg/L)	228	200	206	219	200	176	500 mg/L - EPA Secondary MCL
Total Trihalomethanes (mg/L)	NA	NA	NA	NA	NA	0.002	0.08 mg/L - EPA MCL
U234 (pCi/L)***	0.04	0.11	0.08	0.04	0.06	0.04	20.271 pCi/L (0.03 mg/L - EPA MCL)
U235 (pCi/L)***	0.04	0.04	0	0.04	0.1	0.07	20.271 pCi/L (0.03 mg/L - EPA MCL)
U238 (pCi/L)***	0.01	0.02	0.04	0.05	0.09	0.03	20.271 pCi/L (0.03 mg/L - EPA MCL)

* compliance with the MCL is assumed if gross beta particle activity is <50 pCi/L [4]
** US Department of the Interior Office of Surface Mining [5]
*** the EPA MCL 0.03 mg/L x 675.7 = 20.271 pCi/L [6]
EMEG Environmental Media Evaluation Guide
MCL Maximum Contaminant Level
mg/L milligrams per liter
MRDL Maximum Residual Disinfectant Level
NA Not Applicable
ND Not Detected at the reporting limit
pCi/L picocuries per liter
pH hydrogen ion concentration (a measure of the acidity or alkalinity)
RMEG Reference Dose Media Evaluation Guide
Undetected