

# Bedrock Water Quality Map

## TOWNSEND

### Arsenic Probability

This map is intended to complement the USGS Scientific Investigations Report 2011-5013, **Arsenic and Uranium in Water from Private Wells Completed in Bedrock of East-Central Massachusetts: Concentrations, Correlations with Bedrock Units, and Estimated Probability Maps**. That report presents the results of a statistical study of bedrock water quality based primarily on 478 samples from private wells. This is a relatively small number of samples for such a large and diverse study area. The confidence intervals around probabilities used here are broad. Users are urged to carefully read the original report.

The geologic map underlying this work is at a scale of 1:250,000 or about 4 miles per inch. Although presented on a two dimensional map, bedrock geology is a three dimensional phenomenon. Contact zones almost never go straight down. Because this town map is at a much larger scale than the original, the necessity of presenting 3D geology in only two dimensions, and the wide confidence intervals in the statistical analysis, users should interpret this map as a general indicator of expected water quality. The only way to be sure of the quality of water in any given well is to have that water tested.

| % Probability of Exceeding the Public Drinking Water Standard of 10 Micrograms per liter (10 PPB) |                | City/Town Statistics |         |
|---------------------------------------------------------------------------------------------------|----------------|----------------------|---------|
|                                                                                                   |                | Acres                | Percent |
| <div></div>                                                                                       | < 1.0%         | 0                    | 0       |
| <div></div>                                                                                       | 1.0% to 4.0%   | 0                    | 0       |
| <div></div>                                                                                       | 5.0% to 10.0%  | 0                    | 0       |
| <div></div>                                                                                       | 10.0% to 25.0% | 21104                | 99.8    |
| No Data                                                                                           |                | 49.2                 | 0.2     |
| Total                                                                                             |                | 21153.2              |         |

Pond, Lake or Ocean

Reservoir

Fresh Water Wetlands

Cranberry Bog

Salt Water Wetlands

Perennial Stream; Shoreline

Intermittent Stream

Intermittent Shoreline

Ditch/Canal

Aqueduct

Dam

Pipeline

Powerline

Active Rail Lines

Limited Access Highway

Multi-lane Hwy, Not Limited Access

Other Numbered Highway

Major Road, Collector

Minor Road, Ramp

MA Town Boundary

MA Interstate Boundary

County Boundaries

DEP Region Boundary

Town Halls

Fire Stations

Local Police Station

State Police Station

County Sheriff Station

Public School

Private School

Charter School

Collaborative Program School

Special Education School

Private College

Public College

Libraries

Hospital with ER

Multi-lane Hwy, Not Limited Access

Nursing Home

Rest Home

MBTA Station

Airports

Prison

Camp

Campground

Cemetery

Convention Center

Court House

Field - Playground

Fish Hatchery

Golf Course

Industrial Park

Lighthouse

Marina

Monument

Museum

Park

Parking Lot

Pier - Wharf

Places of Worship

Post Office

Public Pool

Shopping Center

Ski Area

Sports Facility

Theater

Tower

MAP LEGEND

Contour Interval 3 Meters

Mass StatePlane NAD83 Coordinates shown in RED

Map Created March, 2011

Deval Patrick

Governor

Richard K. Sullivan Jr.

Secretary of Energy and Environmental Affairs

MassDEP

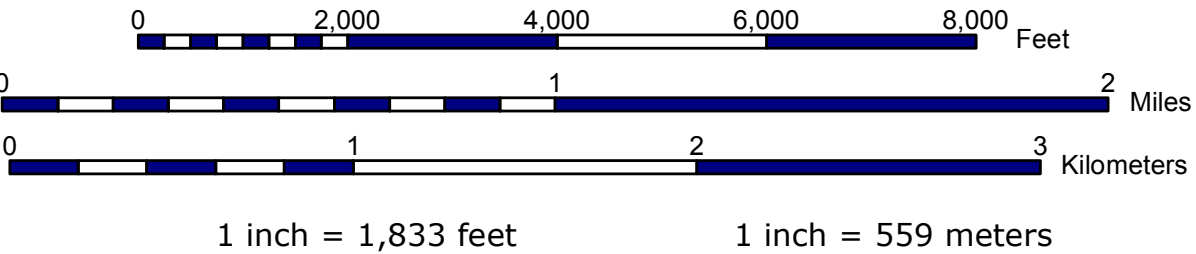
GIS

Massachusetts Department of Environmental Protection

TOWNSEND  
FALLS WITHIN THE  
MassDEP CENTRAL Region



Map Scale 1:22000



**DATA SOURCES**  
TOPOGRAPHIC CONTOURS: MassGIS, 1:5,000, 3 Meter contour elevations, generated from digital ortho DTMs.  
WETLANDS: USMass Resource Mapping Project (RMP/USGS/MA DEP/MassGIS). Source Scale 1:12,000 to 1:140,000. Wetland information derived on this map consists of several wetlands datasets, including 999 Orthophoto Wetlands (1:12,000) and USGS Hydrology Wetlands (1:250,000).  
POLITICAL BOUNDARIES: MassGIS. This political boundary data layer has been created from latitude and longitude coordinates found in the 48 volume harbor and Land Commission Town Boundary Atlas.  
ROADS: Mass Department of Transportation 1:5000. Road centerlines aligned with 1:5000 Orthophotos. Abbreviated from DOT roads database. Trains @ 1:5000. Pipelines and Powerlines @ 1:25000.  
GEOGRAPHIC FEATURES: USGS/MA DEP/USGS Geographic Names Information System (GNIS) features matched to parcel data or orthophoto. Hydrography names taken from USGS NED features and placed using Maplex.

This map is for illustrative purposes only. It represents the best statewide data available at the date of printing. There are other important natural resources that are not shown on this map because the digital spatial data do not exist.