

# Bedrock Water Quality Map

## DOUGLAS

### 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)**

Color	City/Town Statistics Acres	Percent
< 1.0%	24208.2	99.8
1.0% to 4.0%	0	0
5.0% to 10.0%	0	0
10.0% to 25.0%	0	0
No Data	266.9	0.2
<b>Total</b>	<b>24475.1</b>	

**MAP LEGEND**

Pond, Lake or Ocean	Town Halls	Cemetery
Reservoir	Fire Stations	Convention Center
Fresh Water Wetlands	Local Police Station	Court House
Cranberry Bog	State Police Station	Field - Playground
Salt Water Wetlands	County Sheriff Station	Fish Hatchery
Perennial Stream; Shoreline	Public School	Golf Course
Intermittent Stream	Private School	Industrial Park
Intermittent Shoreline	Charter School	Lighthouse
Ditch/Canal	Collaborative Program School	Marina
Aqueduct	Special Education School	Monument
Dam	Private College	Museum
Pipeline	Libraries	Park
Powerline	Hospital with ER	Pier - Wharf
Active Rail Lines	Multi-lane Hwy, Not Limited Access	Places of Worship
Limited Access Highway	Other Numbered Highway	Nursing Home
Multi-lane Hwy, Not Limited Access	Major Road, Collector	Rest Home
Other Numbered Highway	Minor Road, Ramp	MA State Boundary
Major Road, Collector	MA Town Boundary	Prison
Minor Road, Ramp	MA Interstate Boundary	Camp
MA Town Boundary	County Boundaries	Campground
MA Interstate Boundary	County Boundaries	DEP Region Boundary
County Boundaries	County Boundaries	
County Boundaries	County Boundaries	

**Cultural Features**

Contour Interval 3 Meters  
Mass StatePlane NAD83 Coordinates shown in RED

**DOUGLAS FALLS WITHIN THE MassDEP CENTRAL Region**

**Map Location**

**Map Scale 1:22000**

0 2,000 4,000 6,000 8,000 10,000 Feet

0 1 2 Miles

0 1 2 3 Kilometers

1 inch = 1,833 feet      1 inch = 559 meters

**DATA SOURCES**

TOPOGRAPHIC CONTOURS: MassGIS, 1:5,000, 3 Meter contour elevations, generated from digital ortho photos.

WETLANDS: US Mass Resource Mapping Project (UMR/MR/MRMA) color maps, Source Scale 1:1,000 to 1:40,000. Wetland information shown on this map consists of several wetland datasets, including DEP Orthophoto Wetlands (1:25,000) and USGS Hydrology Wetlands (1:25,000).

GEOGRAPHIC FEATURES: USGS MassDEP USGS Geographic Names Information System (GNIS) features matched to parcel data or orthophoto, hydrography names taken from USGS WEP features and placed using Maplex.

HYDROGRAPHY: USGS/MassGIS, 1:25,000 or less. Hydrography from the USGS National Hydrography Database except within public water supply watersheds where the resolution is approximately 1:10,000.

POLITICAL BOUNDARIES: MassGIS. This political boundary dataset has been created from latitude and longitude coordinates found in the 88 volume *Historical and Land Commission Town Boundary Atlas*.

ROADS: Mass Department of Transportation 1:5000. Road centerlines, aligned with 1:5000 Orthophotos. Attributes from DOT roads database.

TRAINS AND TRANS LINES: Mass Department of Transportation Trains @ 1:5000, Pipelines and Powerlines @ 1:25000.

**Map Created March, 2011**

**Deval Patrick**  
Governor

**Richard K. Sullivan Jr.**  
Secretary of Energy and Environmental Affairs

**MassDEP**  
GIS  
Massachusetts Department of Environmental Protection

**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.**