

Bedrock Water Quality Map

ERVING

Uranium Probability

This map is intended to compliment 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 30 Micrograms per liter (30 PPB)	City/Town Statistics	
	Acres	Percent
<= 1.0%	675.7	7.3
1.1% to 4.7%	0	0
4.8% to 13.0%	0	0
13.1% to 25.4%	0	0
Granite/Pegmatite*	2.8	0
No Data	8515.4	92.7
Total	9193.9	

* Areas mapped as granite and pegmatite are located outside of the USGS SIR 2011-5013 study area. Although no precise uranium probability values exist for these bedrock units, these types of bedrock generally have an increased probability of containing naturally occurring radionuclides such as radium, uranium, or radon in well water at concentrations exceeding public drinking water limits.

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	Public College	Park
Powerline	Libraries	Parking Lot
Active Rail Lines	Hospital with ER	Pier - Wharf
Limited Access Highway	Hospital	Places of Worship
Multi-lane Hwy, Not Limited Access	Nursing Home	Post Office
Other Numbered Highway	Rest Home	Public Pool
Major Road, Collector	MBTA Station	Shopping Center
Minor Road, Ramp	Airports	Ski Area
MA Town Boundary	Prison	Sports Facility
MA Interstate Boundary	Camp	Theater
County Boundaries	Campground	Tower
DEP Region Boundary		

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

ERVING FALLS WITHIN THE MassDEP WESTERN Region

Map Location

Massachusetts Department of Environmental Protection

Map Scale 1:18000

0 2,000 4,000 6,000 8,000 Feet
0 1 2 Miles
0 1 2 Kilometers

1 inch = 1,500 feet 1 inch = 457 meters

DATA SOURCES
TOPOGRAPHIC CONTOURS: MassGIS, 1:5,000, 3 Meter contour elevations, generated from digital ortho DTMs.
WETLANDS: US Mass Resource Mapping Project (EMRP) USGS/MA DEP/MassGIS, Source Scale 1:12,000 to 1:40,000. Wetland information shown on this map consists of several wetlands datasets, including the DEP Orthophoto Wetlands (1:12,000) 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 NFD 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 data layer has been created from latitude and longitude coordinates found in the DEP Orthophoto Wetlands (1:12,000) and USGS Hydrology Wetlands (1:25,000).
ROADS: Mass Department of Transportation 1:5000. Road centerlines aligned with 1:5000 OrthoPhotos. Attributes from DOT roads database.
TRAINS AND TRANSLINES: Mass Department of Transportation Trains @ 1:5000, Pipelines and Powerlines @ 1:25000.

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.