

2003 - 2019 TRWA Sampling Results for Nitrate (mg/l) at Lower River, Tidal Estuary Locations TNT-01/02 and TMR-01

TARGET FOR CONCERN - GREATER THAN 0.4 MG/L												
	TNT-01				TNT-02				TMR-01			
	Taunton R., Center St., Berkley				Taunton R., Plain St., Taunton				Three Mile R., Rt. 138, North Dighton			
Year	Average*	Low	High		Average*	Low	High		Average*	Low	High	
2019	0.51	0.29	0.76		0.62	0.32	0.92		0.5	0.31	0.79	
2018	0.56	0.25	1.33		0.61	0.32	0.88		0.7	0.3	0.95	
2017	1.34	0.39	2.51		0.93	0.28	1.53		1.85	0.35	5.19	
2016	1.01	0.63	1.70		1.22	0.43	2.60		2.19	0.76	4.70	
2015	0.82	0.66	1.10		0.96	0.53	1.80		1.23	0.75	1.80	
2014	1.37	0.52	2.10		1.11	0.62	1.70		2.19	0.38	6.20	
2013	0.89	0.33	1.60		0.55	0.00	1.10		0.96	0.34	1.40	
2012	0.72	0.39	1.10		0.66	0.43	0.98		1.16	0.46	1.80	
2011	0.54	0.31	0.86		0.58	0.30	0.87		0.77	0.28	2.10	
2010	0.54	0.34	0.85		0.56	0.30	0.88		0.73	0.57	0.89	
2009	0.58	0.37	1.10		0.41	0.29	0.82		0.57	0.30	1.00	
2008	1.23	0.69	1.60		1.13	0.62	1.80		1.17	0.64	1.60	
2007	1.24	0.91	1.70		1.78	0.82	2.80		1.63	0.96	2.70	
2006	0.88	0.31	1.70		0.94	0.42	1.60		1.12	0.50	1.80	
2005	0.94	0.37	1.60		1.02	0.35	1.70		0.86	0.42	1.50	
2004	1.22	0.90	1.40		1.95	1.60	2.30		1.60	1.00	2.20	
2003	2.55	0.85	6.14		1.45	0.65	2.37		2.59	0.88	8.88	
Average	1.00	0.50	1.71		0.97	0.49	1.57		1.28	0.54	2.68	

Average* is for the water quality months of May through October used in NPDES permit total nitrogen limitation averaging.

Water Quality Protection **Instream Target Nitrate Value (0.4 mg/l) Basis:**

Water Quality Target Values for Nitrogen are expressed as **Total Nitrogen (TN) = Nitrate + Organic Nitrogen + Ammonia + Nitrite**. Like many environmental groups TRWA measures only **Nitrate** because of its low cost (\$12 / sample) and low reporting level (0.05 mg/l). The MassDEP in a large number of TMDLs for estuaries has recommended **TN** values between 0.39 to 0.5 mg/l for estuaries without eel grass in good to fair condition. The Cape Cod Commission recommends values 0.34 to 0.39 while the Buzzards Bay Project /MACZM recommends 0.39 to 0.44 mg/l. After consultation with MassDEP and Rhode Island DEM (downstream state) EPA selected a TN target estuary value of 0.45 mg/l as a medium target for the Taunton River. Had EPA and MassDEP decided to protect for eelgrass which existed in Mount Hope Bay prior to 1930 (excellent water quality), the TN target would be lower or approximately 0.35 mg/l TN.

Because Nitrate is only a portion of Total Nitrogen we consider **Nitrate values greater than 0.4 mg/l high for both the tidal portion of the estuary below Route 24 at the Raynham/Taunton Bridge (SB) and above because of transport concerns to the salt waters of the estuary**. When measured nitrate values begin to approach 0.4 mg/l TRWA will begin measuring TN periodically.

Sample Location Map, Collection Method - Standard Operating Procedures (SOP), and Sample Analysis Contractors													
Sampling Locations Map May Be Found At:													
https://www.google.com/maps/d/edit?mid=zhnldTn8bGeU.kyo7mjQZ3YFQ&usp=sharing													
Samples Are Collected by Trained TRWA Volunteers Following Chain of Custody and SOP Procedures Developed by TRWA and Veolia North America:													
https://savethetaunton.org/wp/wp-content/uploads/2019/06/TRWA-Sampling-SOP-3-16-2019.pdf													
Samples Analyzed by:													
2016 -2018													
Microbac, Dayville, CT A MassDEP Certified Laboratory													
https://www.microbac.com/our-laboratories/dayville-connecticut/#services													
2015 - 2004													
R.I. Analytical, Warwick, RI A MassDEP Certified Laboratory													
http://www.rianalytical.com/pages/cfHome.cfm													
2003													
US Filter - Taunton, MA													