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Another way of doing municipal chlorine testing

Using the eXact iDip® Photometer for Municipality field testing

By Howard Ray, Andrew Roberts, and Balaji Tatineni

On May 27th, 2014 a study was conducted using the eXact iDip® Smart Photometer during a regular weekly field testing operation carried out by a serving a town of approximately 60,000. During this testing operation, a total of 17 test sites around the perimeter of the town were visited, including 6 water towers and multiple government, commercial and residential properties. One purpose of this weekly regulatory required testing is to determine Free Available Chlorine Residual around the perimeter of the city. The routine test method is to use verified equipment such as the Hach® DR-890 Colorimeter with DPD-1 reagent.

Testing is done by a lab certified technician. To confirm how the iDip would perform in the field a side by side study was done between the eXact iDip® Photometer and the Hach® DR-890. Both test meters use DPD-1 reagent, and both tests methods use USEPA Compliant methodology as detailed in 4200Cl G. Each sample was tested in duplicate and the eXact iDip® was calibrated for accuracy at each location prior to testing. Data evaluation (Table 1) shows that iDip results compared favorably with the Hach® results at a 0.95 correlation coefficient (95% correlation). This makes the eXact iDip® Photometer an alternative, easy, and cost effective method for regulatory municipal water testing. A similar study is being prepared for total chlorine testing.

Table 1 on back.

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Table 1 - *ppm Chlorine*

		eXact iDip® Photometer		
Sample #	HACH® DR-890 colorimeter (ppm)	rep 1 (ppm)	rep 2 (ppm)	eXact iDip® Photometer mean (ppm)
1	0.94	1.03	1.08	1.06
2	0.75	0.87	0.81	0.84
3	1.34	1.46	1.41	1.44
4	1.03	1.14	1.14	1.14
5	1.04	1.03	1.03	1.03
6	1.23	1.30	1.30	1.30
7	1.05	1.24	1.14	1.19
8	1.59	1.51	1.57	1.54
9	1.04	1.03	1.03	1.03
10	1.60	1.57	1.57	1.57
11	1.34	1.51	1.57	1.54
12	1.47	1.51	1.46	1.49
13	1.32	1.46	1.57	1.52
14	1.49	1.57	1.57	1.57
15	1.84	1.73	1.73	1.73
16	1.64	1.62	1.57	1.60
17	2.00	2.06	2.06	2.06