



A Waters Company

# WP-288 2009 TNI Evaluation Final Complete Report

Josh Kirkpatrick  
Quality Assurance Manager  
Basic Laboratory - Chico  
2218 Railroad Ave  
Redding, CA 96001  
(530) 243-7234 x204

EPA ID:  
ERA Customer Number:  
Report Issued:  
Study Dates:

CA01570  
B664812  
03/04/19  
01/14/19 - 02/28/19

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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**WP Minerals (cat# 581, lot# P288-506)**

1505	Alkalinity as CaCO3	mg/L	59	59.4	50.5 - 68.3	Acceptable	SM 2320 B-1997 1997	1/24/2019	0.114	58.7	2.98	Jennifer Wing
1575	Chloride	mg/L		94.8	83.1 - 107	Not Reported				92.9	3.81	
1610	Conductivity at 25°C	µmhos/cm	514	527	474 - 580	Acceptable	SM 2510 B-1997 1997	1/24/2019	-0.561	520	10.7	Jennifer Wing
1730	Fluoride	mg/L		0.809	0.603 - 1.01	Not Reported				0.784	0.0626	
1125	Potassium	mg/L		30.9	24.7 - 37.1	Not Reported				30.2	1.41	
1155	Sodium	mg/L		88.7	71.0 - 106	Not Reported				85.6	4.26	
2000	Sulfate	mg/L		35.9	29.2 - 41.3	Not Reported				35.3	2.04	
1955	Total Dissolved Solids at 180°C	mg/L	333	349	304 - 394	Acceptable	SM 2540 C-1997 1997	1/25/2019	-0.440	342	19.4	Jennifer Wing
1950	Total Solids at 105°C	mg/L		354	309 - 399	Not Reported				349	20.1	

**WP Hardness (cat# 580, lot# P288-507)**

1960	Total Suspended Solids	mg/L	81.3	88.0	72.3 - 97.6	Acceptable	SM 2540 D-1997 1997	1/25/2019	-0.674	83.3	2.96	Jennifer Wing
1035	Calcium	mg/L		86.2	73.3 - 99.1	Not Reported				83.7	3.35	
1085	Magnesium	mg/L		19.2	16.3 - 22.1	Not Reported				18.7	0.867	
1550	Calcium Hardness as CaCO3	mg/L		215	183 - 247	Not Reported				209	7.73	
1755	Total Hardness as CaCO3	mg/L	285	294	250 - 338	Acceptable	SM 2340 C-1997 1997	1/28/2019	0.0557	284	10.9	Jennifer Wing

**WP pH (cat# 577, lot# P288-977)**

1900	pH	S.U.	8.90	8.99	8.79 - 9.19	Acceptable	SM 4500-H+ B-2000 2000	1/21/2019	-1.21	9.00	0.0825	Jennifer Wing
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**WP Settleable Solids (cat# 883, lot# P288-911)**

1965	Settleable Solids	mL/L	21	18.4	14.5 - 23.9	Acceptable	SM 2540 F-1997 1997	1/21/2019	0.343	20.5	1.58	
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**WP Simple Nutrients (cat# 584, lot# P288-505)**

1515	Ammonia as N	mg/L		9.79	7.78 - 11.8	Not Reported				9.76	0.640	
1820	Nitrate + Nitrite as N	mg/L	2.90	2.99	2.40 - 3.55	Acceptable	EPA 353.2 2 1993	1/29/2019	-0.516	2.99	0.178	Jennifer Wing
1810	Nitrate as N	mg/L	2.90	2.99	2.34 - 3.63	Acceptable	EPA 353.2 (calc)	1/29/2019	-0.437	2.97	0.171	Jennifer Wing
1870	ortho-Phosphate as P	mg/L	0.997	1.02	0.867 - 1.17	Acceptable	SM 4500-P E-1999 1999	1/29/2019	-0.309	1.02	0.0670	Jennifer Wing

**WP Nitrite (cat# 888, lot# P288-770)**

1840	Nitrite as N	mg/L	2.74	3.01	2.60 - 3.43	Acceptable	EPA 353.2 2 1993	1/29/2019	-2.00	3.01	0.134	Jennifer Wing
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**WP Nitrite (cat# 888, lot# P288-770)**

1840	Nitrite as N	mg/L	2.79	3.01	2.60 - 3.43	Acceptable	SM 4500-NO2 B-2000 2000	1/29/2019	-1.63	3.01	0.134	Jennifer Wing
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**WP Demand (cat# 578, lot# P288-516)**

1530	BOD	mg/L	127	111	59.8 - 162	Acceptable	SM 5210 B-2001 2001	1/30/2019	0.983	111	16.6	Jennifer Wing
1555	CBOD	mg/L		101	46.9 - 154	Not Reported				104	18.4	
1565	COD	mg/L		181	145 - 210	Not Reported				179	11.3	
2040	TOC	mg/L		71.7	60.1 - 82.6	Not Reported				71.4	4.00	

**WP Turbidity (cat# 893, lot# P288-777)**

2055	Turbidity	NTU	20.8	19.9	16.6 - 23.3	Acceptable	SM 2130 B-2001 2001	1/24/2019	0.795	20.0	1.06	Jennifer Wing
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**WP Total Residual Chlorine (cat# 587, lot# P288-501)**

1945	Free Residual Chlorine	mg/L	1.50	1.64	1.21 - 1.93	Acceptable	SM 4500-Cl G-2000 2000	2/15/2019	-0.242	1.52	0.0967	Bryan Ervin
1940	Total Residual Chlorine	mg/L	1.51	1.64	1.21 - 1.93	Acceptable	SM 4500-Cl G-2000 2000	2/15/2019	-0.587	1.57	0.103	Bryan Ervin

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**WP WasteWatR™ Coliform MicrobE™ (cat# 576, lot# P288-083)**

2500	Total Coliforms (MF)	CFU/100mL		690	322 - 1050	Not Reported				581	121	
2530	Fecal Coliforms (MF)	CFU/100mL		690	121 - 970	Not Reported				342	142	
2525	E.coli (MF)	CFU/100mL		690	209 - 1030	Not Reported				465	138	
2500	Total Coliforms (MPN)	MPN/100mL	548	662	301 - 1440	Acceptable	SM 9223 B (Colilert-18 Quanti-Tray)-2004 2004	1/22/2019	-0.0347	657	189	Jennifer Wing
2530	Fecal Coliforms (MPN)	MPN/100mL		662	230 - 984	Not Reported				476	126	
2525	E.coli (MPN)	MPN/100mL	548	662	316 - 1330	Acceptable	SM 9223 B (Colilert-18 Quanti-Tray)-2004 2004	1/22/2019	-0.0327	648	169	Jennifer Wing

Per Section 6.4.3 a of the 2009 TNI Standard, "The assigned values for quantitative microbiology analytes shall be equal to the mean of the assigned value verification and/or homogeneity testing per Sections 7.1 and 7.2". The final acceptance limits are derived from the calculated study mean and study standard deviation from laboratory-reported results. Disagreement between the assigned values and study means/acceptance limits are due to the inherent variability of microbiology methods and differences in the methods used by ERA and participant laboratories. For quantitative microbiology analytes, the assigned value is not used in the evaluation of laboratories.

**WP WasteWatR™ Coliform MicrobE™ (cat# 576, lot# P288-083)**

2500	Total Coliforms (MF)	CFU/100mL		690	322 - 1050	Not Reported				581	121	
2530	Fecal Coliforms (MF)	CFU/100mL		690	121 - 970	Not Reported				342	142	
2525	E.coli (MF)	CFU/100mL		690	209 - 1030	Not Reported				465	138	
2500	Total Coliforms (MPN)	MPN/100mL	816	662	301 - 1440	Acceptable	SM 9223 B (Colilert Quanti-Tray)-2004 2004	1/22/2019	0.0413	657	189	Jennifer Wing
2530	Fecal Coliforms (MPN)	MPN/100mL		662	230 - 984	Not Reported				476	126	
2525	E.coli (MPN)	MPN/100mL	816	662	316 - 1330	Acceptable	SM 9223 B (Colilert Quanti-Tray)-2004 2004	1/22/2019	0.0450	648	169	Jennifer Wing

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**WP WasteWatR™ Coliform MicrobE™ - SM 9221 (cat# 576A, lot# P288-083A)**

2500	Total Coliforms (MPN)	MPN/100mL	800	662	59.6 - 3700	Acceptable	SM 9221 B + C-2006 2006	1/23/2019	0.0832	470	607	Jennifer Wing
2530	Fecal Coliforms (MPN)	MPN/100mL	800	662	62.7 - 3650	Acceptable	SM 9221 B + E + C-2006 2006	1/23/2019	0.0804	479	598	Jennifer Wing
2525	E.coli (MPN)	MPN/100mL		662	195 - 1970	Not Reported				620	296	

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