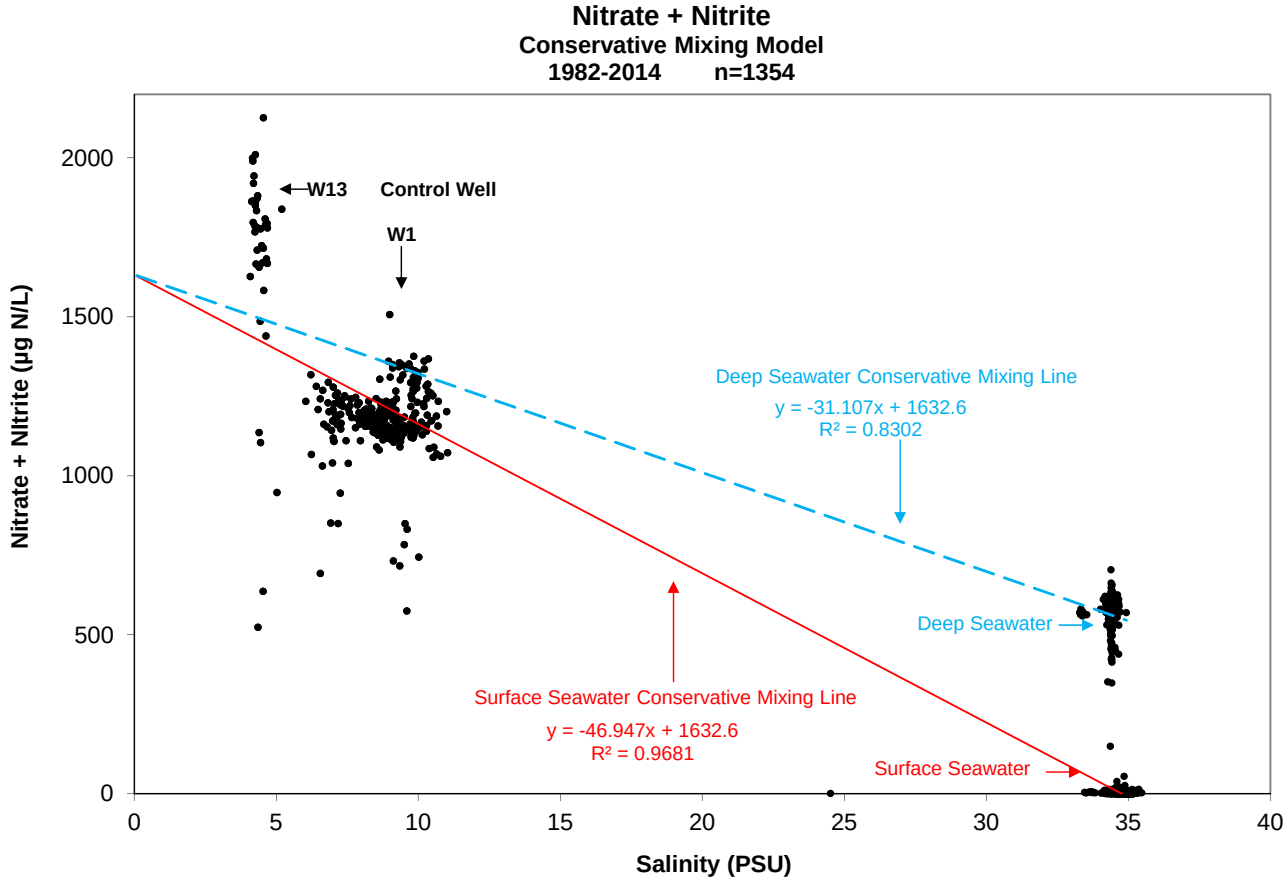
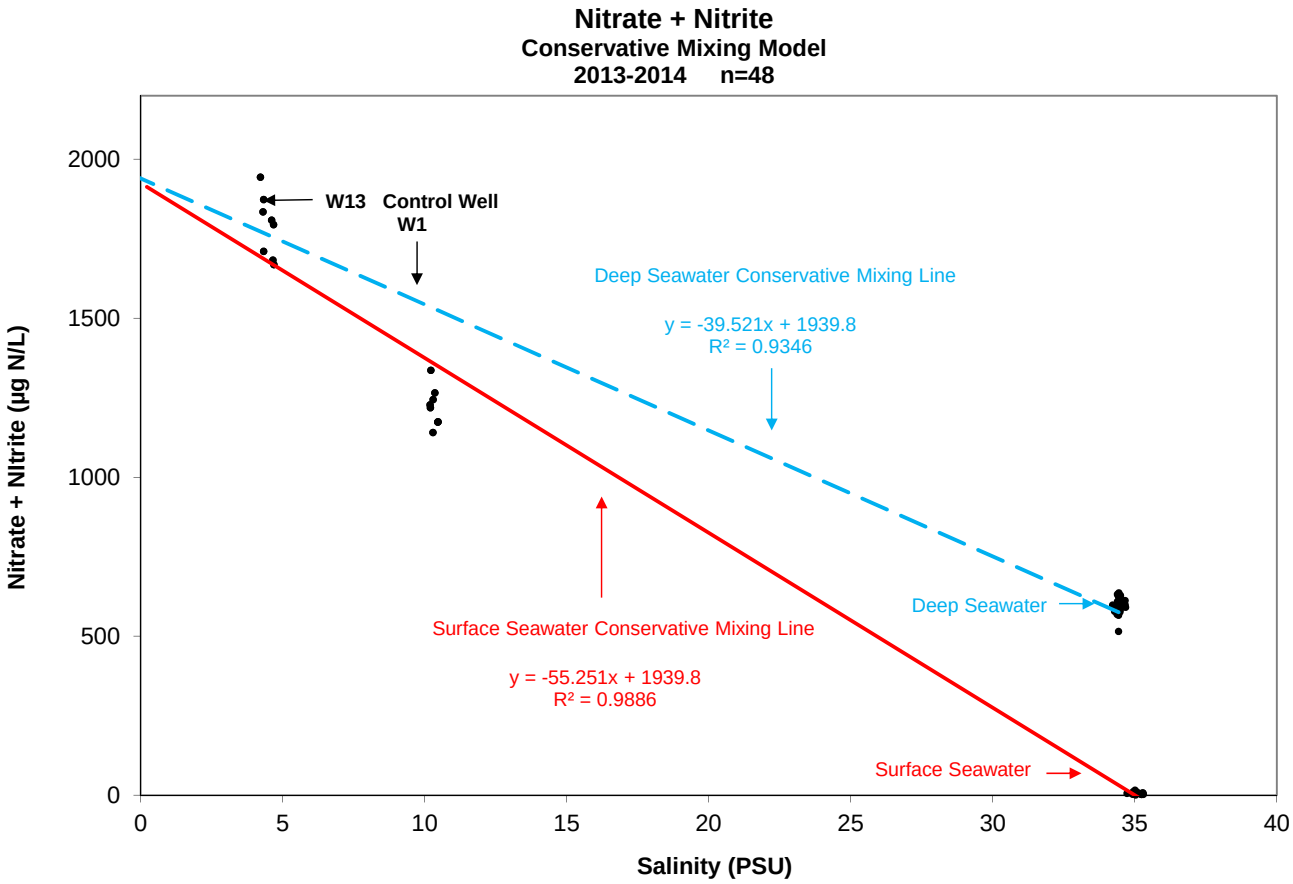
APPENDIX B - NELHA Groundwater Data Tables and Graphs

Conservative Mixing Model …...……... Appendix B-MPM-1
Well 1 ……...……..... Appendix B-1-1
Well 2 ……...…….. Appendix B-2-1
Well 2A ……...…… Appendix B-2A-1
Well 2B …… Appendix B-2B-1
Well 3 ……...……. Appendix B-3-1
Well 3A ……...…….Appendix B-3A-1
Well 3B …… Appendix B-3B-1
Well 4 ……...……. Appendix B-4-1
Well 4A ……...…… Appendix B-4A-1
Well 5 ……...…….. Appendix B-5-1
Well 5A ……...…….Appendix B-5A-1
Well 5B …… Appendix B-5B-7
Well 6 ……...…….. Appendix B-6-1
Well 6A ……...…… Appendix B-6A-1
Well 6B …… Appendix B-6B-1
Well 7 ……...…….. Appendix B-7-1
Well 7A ……...…….Appendix B-7A-1
Well 7B …… Appendix B-7B-1
Well 8 ……...…….. Appendix B-8-1
Well 8A ……...…… Appendix B-8A-1
Well 8B …… Appendix B-8B-1
Well 9 ……...…….. Appendix B-9-1
Well 9A ……...…….Appendix B-9A-1
Well 9B …… Appendix B-9B-7
Well 10 ……...…….. Appendix B-10-1
Well 10A ……...…… Appendix B-10A-1
Well 10B …… Appendix B-10B-1
Well 11 ……...…… Appendix B-11-1
Well 11A ……...…… Appendix B-11A-1
Well 11B …… Appendix B-11B-1
Well 12 ……...…….. Appendix B-12-1
Well 12A ……...…… Appendix B-12A-1
Well 12B …… Appendix B-12B-1
Well 13 ……...…….. Appendix B-13-1
Seawater Return Trench 4 ……..……. Appendix B-SRT4-1
Seawater Return Trench 5 ……... Appendix B-SRT5-1
Anchialine Pond A1 ……...…….……..…...Appendix B-A1-1
Anchialine Pond A2 ……...…….…....…... Appendix B-A2-1
Anchialine Pond A3……...…….…....…... Appendix B-A3-1
Coastal Site C24 ……...……...……..…..... Appendix B-C24-1

Conservative Mixing Model

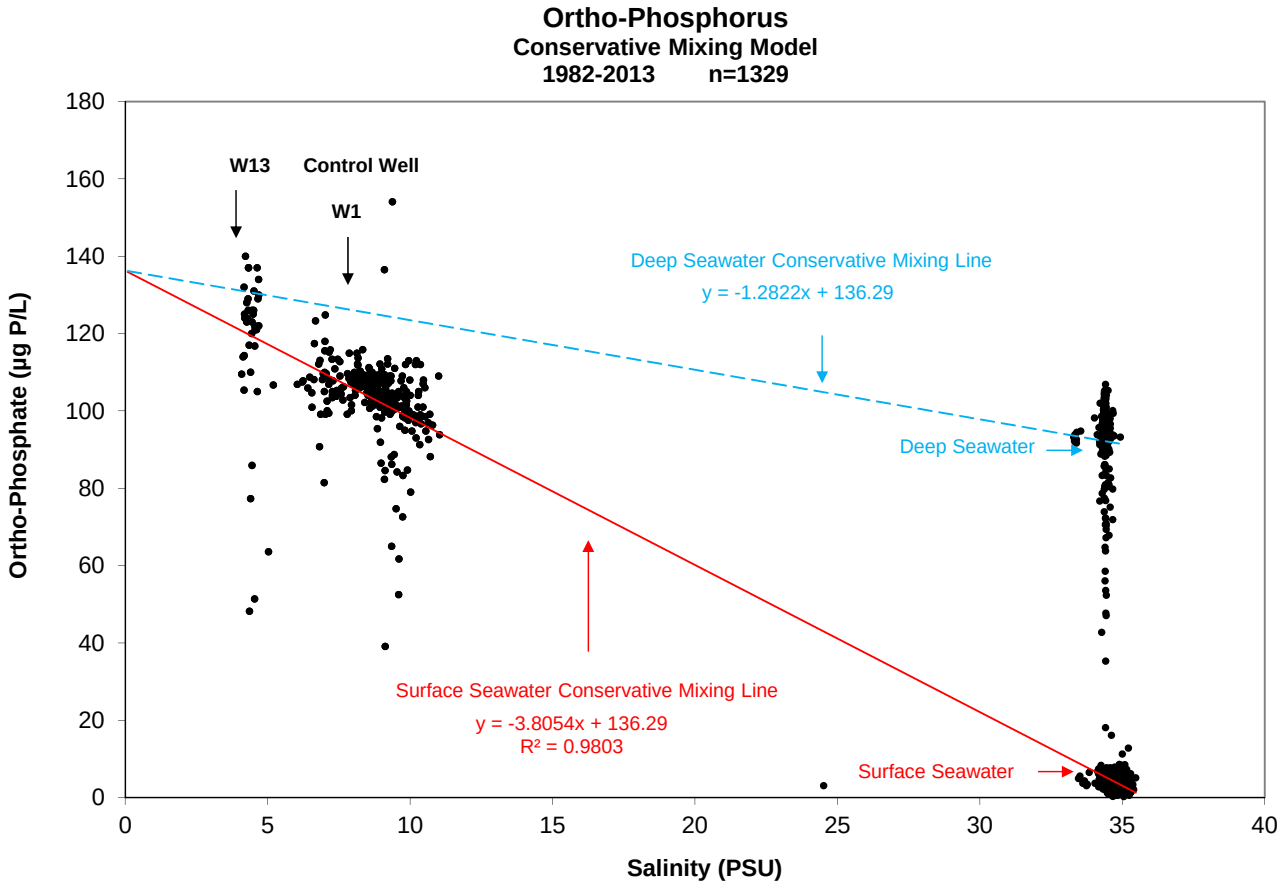
Control Well to Surface and Deep Seawater
Nitrate + Nitrite, Ortho-Phosphate, and Silicate

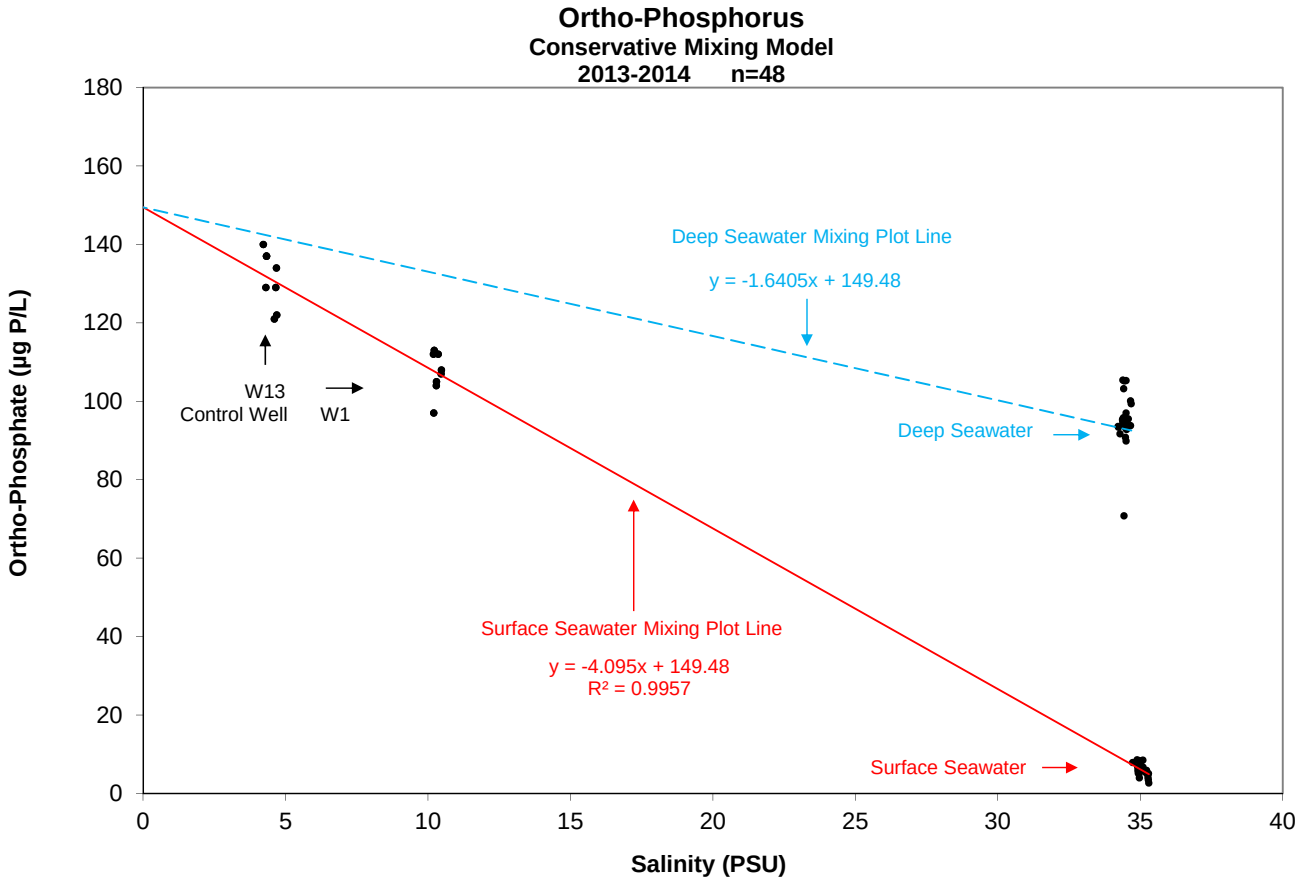




Conservative Mixing Model

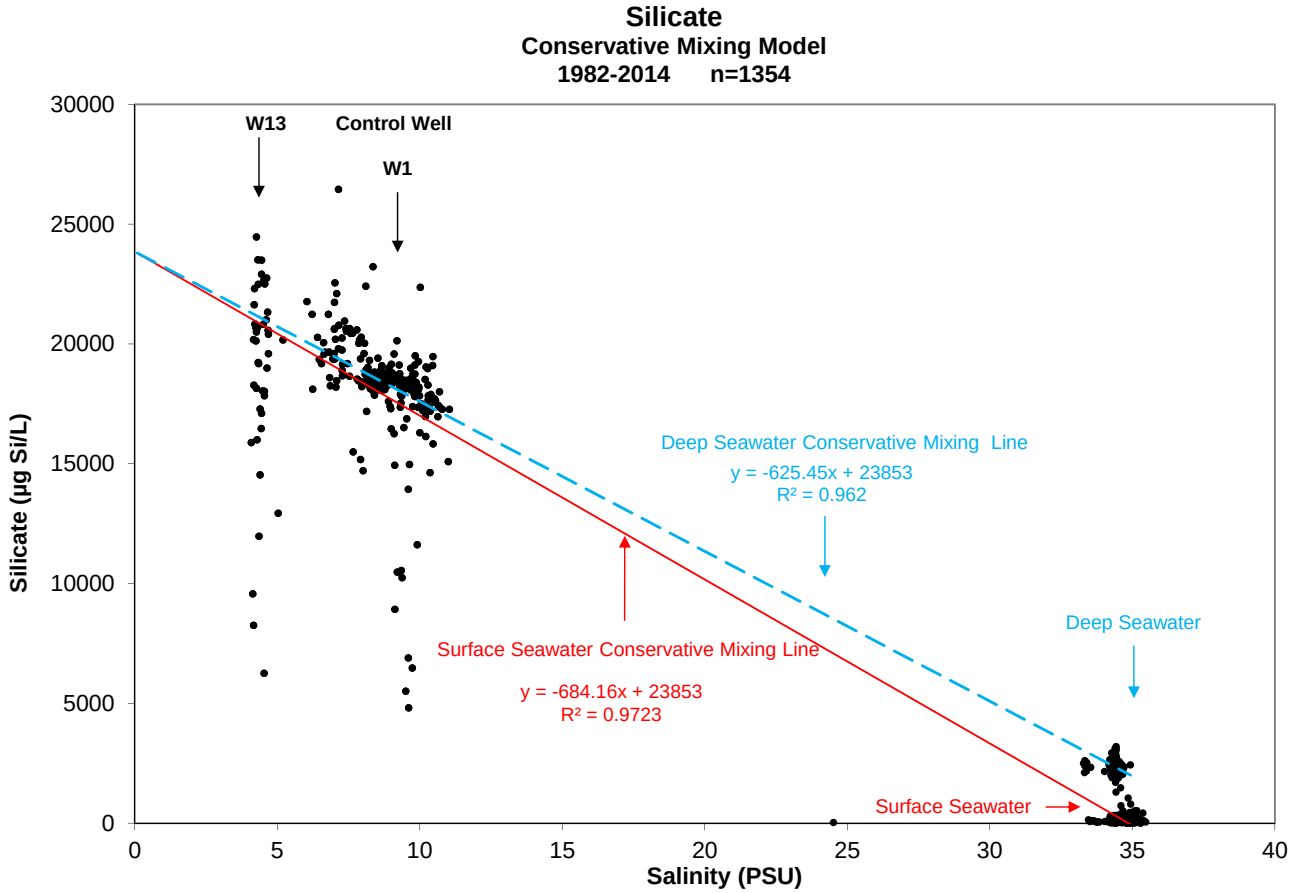
Control Well to Surface and Deep Seawater
Nitrate + Nitrite, Ortho-Phosphate, and Silicate

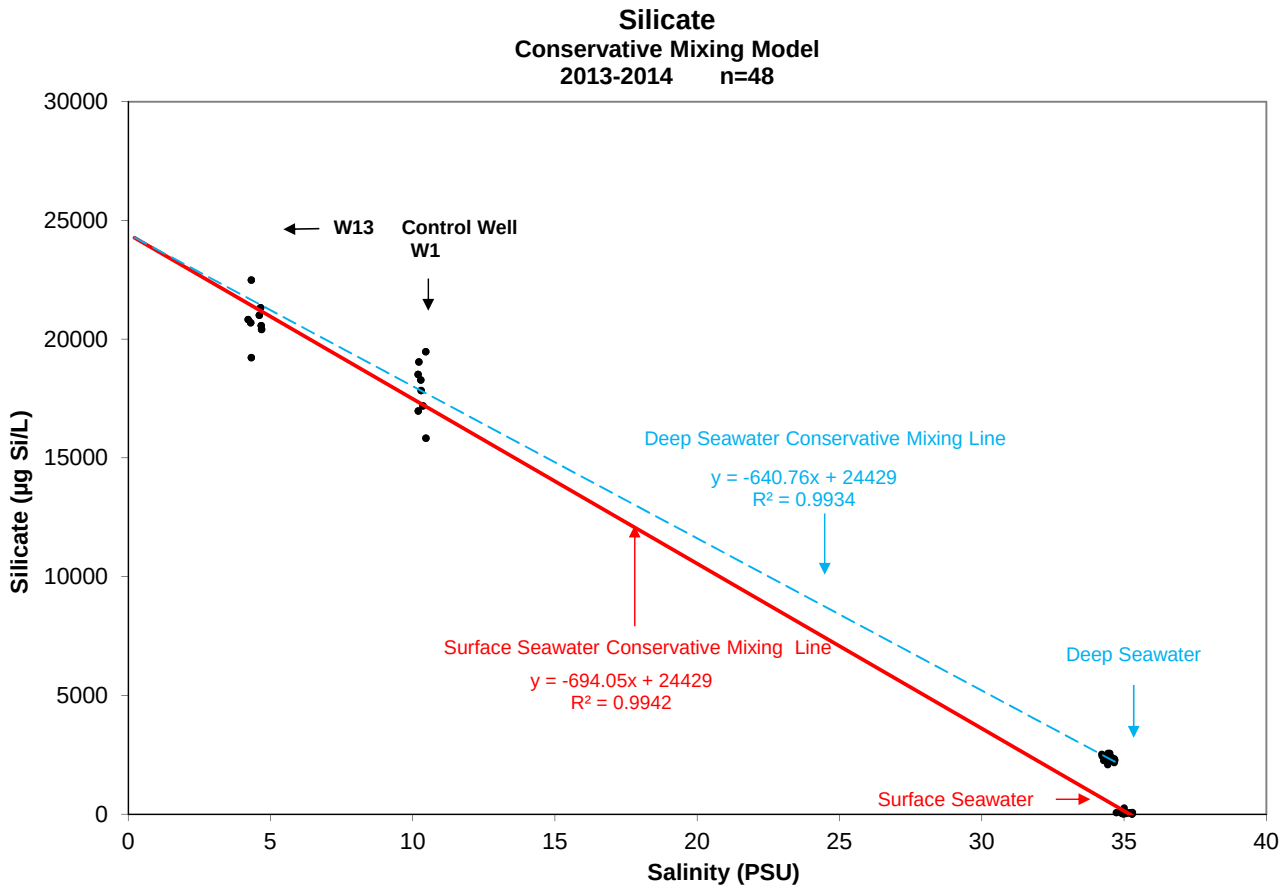




Conservative Mixing Model

Control Well to Surface and Deep Seawater
Nitrate + Nitrite, Ortho-Phosphate, and Silicate





NELHA Water Quality Laboratory

Well 1 Data Table

July 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W1	-36.58	7/3/89					3.74	116	88.6	1241	0.19	2.7								20.9	7.89	7.200	7.89		NA	NA
W1	-36.58	8/11/89	923				3.49	108	60.8	852	0.06	0.8								19.9	7.82	6.920	7.27		<1	NA
W1	-36.58	8/16/89	1115				3.26	101	49.5	693	0.06	0.8								19.8	7.80	6.555	6.52		<1	NA
W1	-36.58	8/23/89	1335				3.49	108	60.7	850	0.06	0.8								20.0	7.85	7.181	6.54		<1	NA
W1	-36.58	8/30/89	1430				3.66	113	67.5	945	0.06	0.8								20.1	7.81	7.261	7.90		<1	NA
W1	-36.58	8/30/89	1430				3.72	115	67.5	945	0.06	0.8											NA		NA	NA
W1	-36.58	10/31/89	840				3.72	115	90.0	1261	0.06	0.8	740	20783	3.88	120	97.2	1361	0.45	20.0	7.75	7.156	7.83		<1	NA
W1	-36.58	11/16/89	705				3.71	115	87.3	1223	0.00	0.0	713	20025	3.81	118	94.5	1324	1.05	20.1	7.70	7.862	7.70		<1	NA
W1	-36.58	12/13/89	930				3.81	118	91.3	1279	0.05	0.7	735	20643	3.92	121	91.8	1286	0.76	19.6	7.76	7.013	8.13		<1	NA
W1	-36.58	1/10/90	1142				3.62	112	82.4	1154	0.01	0.1	756	21233	3.17	98	85.6	1199	0.62	20.5	7.91	6.792	7.77		<1	NA
W1	-36.58	2/14/90	850				3.73	116	79.9	1119	0.09	1.3	774	21738	3.95	122	80.8	1132	0.81	19.9	7.82	7.008	7.96		<1	NA
W1	-36.58	3/6/90	1110				3.42	106	91.5	1282	0.03	0.4	722	20278	3.64	113	93.0	1303	0.59	20.0	7.93	6.412	7.86		<1	NA
W1	-36.58	4/2/90	1315				3.45	107	88.1	1234	0.44	6.2	775	21766	3.62	112	94.9	1329	0.60	20.8	8.03	6.041	7.67		<1	NA
W1	-36.58	5/16/90	1446				3.51	109	86.3	1209	0.00	0.0	689	19351	3.56	110	91.9	1288	0.60	19.5	7.92	6.476	7.64		<1	NA
W1	-36.58	6/6/90	1447				3.66	113	79.3	1111	0.17	2.4	683	19182	3.63	112	84.1	1178	0.57	20.0	7.96	7.462	7.54		<1	NA
W1	-36.58	7/12/90	1412				3.98	123	83.0	1163	0.02	0.3	700	19660	4.10	127	88.1	1234	0.67	20.3	7.95	6.680	7.52		<1	NA
W1	-36.58	8/7/90	1351				3.20	99	83.9	1175	0.11	1.5	690	19379	3.58	111	84.2	1180	0.57	20.4	7.95	7.026	7.58		<1	NA
W1	-36.58	9/6/90	1157				3.04	94	84.7	1186	0.00	0.0			3.67	114	86.0	1205	0.35	20.4	7.93	6.835	7.58		<1	NA
W1	-36.58	10/3/90	1205				3.54	110	81.6	1143	0.00	0.0	690	19379	3.62	112	81.7	1145	1.21	20.4	7.95	6.950	7.53		<1	NA
W1	-36.58	10/31/90	1400				3.36	104	81.9	1147	0.19	2.7	673	18902	3.48	108	83.9	1175	1.01	20.4	7.94	7.276	7.53		<1	NA
W1	-36.58	12/7/90	1123				3.37	104	83.2	1165	0.08	1.1	682	19154	3.59	111	87.8	1230	0.65	20.3	7.94	7.289	7.39		<1	NA
W1	-36.58	1/10/91	1020				3.79	117	90.6	1269	0.28	3.9	697	19576	3.93	122	90.8	1272	1.12	21.5	7.96	6.640	7.42		<1	NA
W1	-36.58	2/6/91	712				3.48	108	76.2	1067	0.13	1.8	645	18115	3.53	109	76.5	1072	0.71	19.9	7.96	6.242	7.54		<1	NA
W1	-36.58	3/6/91	1050				3.47	107	94.1	1318	0.04	0.6	756	21233	3.51	109	94.8	1328	0.91	20.4	7.96	6.222	8.02		<1	NA
W1	-36.58	4/2/91	903				3.38	105	88.7	1242	0.35	4.9	683	19182	3.40	105	89.7	1256	2.13	20.1	7.94	6.552	7.61		<1	NA
W1	-36.58	5/21/91	1102				3.50	108	79.1	1108	0.00	0.0	719	20193	3.60	112	49.6	695	0.56	20.0	7.92	7.038	7.28		<1	NA
W1	-36.58	6/25/91	1027				3.49	108	73.6	1031	0.00	0.0	714	20053	3.55	110	76.8	1076	0.46	20.3	7.94	6.626	7.75		<1	<1
W1	-36.58	7/23/91	1117				2.63	81	74.3	1041	0.00	0.0	689	19351	2.76	85	81.2	1137	0.65	17.6	7.93	6.984	7.75		<1	<1
W1	-36.58	8/22/91	1028				2.93	91	87.8	1230	0.00	0.0	700	19660	3.33	103	93.6	1311	0.60	20.2	7.94	6.823	7.85		<1	<1
W1	-36.58	9/23/91	1112				3.65	113	92.4	1294	0.15	2.1	662	18593	3.73	116	94.9	1329	0.64	20.6	7.91	6.837	7.80		<1	<1
W1	-36.58	10/22/91	919				3.21	99	82.9	1161	0.00	0.0	942	26457	3.25	101	87.5	1226	0.49	20.0	7.91	7.148	7.63		<1	<1
W1	-36.58	11/20/91	1118				4.03	125	79.3	1111	0.00	0.0	803	22553	4.17	129	82.7	1158	1.41	20.2	7.91	7.021	7.76		<1	<1
W1	-36.58	12/10/91	1109				3.34	103	85.2	1193	0.00	0.0	703	19744	3.43	106	88.8	1244	0.66	20.3	7.92	7.268	7.69		<1	<1
W1	-36.58	1/28/92	1055				3.45	107	84.6	1185	0.00	0.0	705	19800	3.55	110	86.1	1206	1.55	20.5	7.94	7.148	7.81		<1	<1
W1	-36.58	2/18/92	1038				3.20	99	85.8	1202	0.13	1.8	650	18256	3.31	103	92.2	1291	0.52	20.4	7.92	6.859	7.78		<1	62
W1	-36.58	3/17/92	1107				3.39	105	83.7	1172	0.00	0.0	698	19604	3.42	106	88.5	1240	0.90	20.1	7.94	6.990	7.85		<1	<1
W1	-36.58	4/7/92	1103				3.31	103	85.1	1192	0.00	0.0	787	22103	3.38	105	87.0	1219	0.63	20.2	7.93	7.087	8.24		<1	<1
W1	-36.58	5/5/92	1101				3.55	110	86.3	1209	0.00	0.0	734	20615	3.58	111	91.0	1275	0.88	20.1	7.92	7.002	7.79		<1	<1
W1	-36.58	6/22/92	1037				3.20	99	82.2	1151	0.00	0.0	733	20587	3.26	101	83.1	1164	0.73	20.0	7.89	7.793	7.64		<1	<1
W1	-36.58	7/28/92	1013				3.54	110	87.6	1227	0.20	2.8	648	18199	3.55	110	89.0	1246	0.67	20.4	7.90	7.055	7.84		<1	<1
W1	-36.58	8/25/92	1057				3.52	109	74.2	1039	0.00	0.0	735	20643	3.53	109	86.6	1214	0.55	20.3	7.91	7.538	7.63		<1	<1
W1	-36.58	9/21/92	1015				3.23	100	83.0	1162	0.15	2.1	656	18435	3.32	103	89.6	1255	0.63	20.3	7.92	7.936	7.53		<1	<1
W1	-36.58	10/26/92	1028				3.58	111	87.0	1219	0.00	0.0	746	20952	3.60	112	89.5	1253	0.61	20.3	7.91	7.361	7.61		<1	<1
W1	-36.58	11/16/92	1047				3.36	104	84.9	1189	0.03	0.4	713	20025	3.36	104	90.0	1260	0.81	20.1	7.92	8.064	7.53		<1	<1
W1	-36.58	12/7/92	1033				3.39	105	87.3	1223	0.00	0.0	721	20250	3.54	110	89.6	1256	0.68	20.1	7.93	7.271	7.73		<1	<1
W1	-36.58	1/25/93	1031				3.42	106	87.2	1221	0.01	0.1	730	20508	3.31	103	92.6	1296	0.66	20.2	7.94	7.595	7.56		<1	<1
W1	-36.58	2/22/93	1003				3.37	104	85.6	1198	0.03	0.4	728	20441	3.38	105	93.2	1306	0.53	20.1	7.95	7.581	7.62		<1	<1
W1	-36.58	3/15/93	959				3.28	102	85.0	1190	0.00	0.0	722	20283	3.23	100	86.8	1216	0.59	19.7	7.95	7.943	7.56		<1	<1
W1	-36.58	4/26/93	1002				3.32	103	88.7	1242	0.00	0.0	728	20446	3.36	104	91.7	1285	0.54	20.1	7.94	7.638	7.64		<1	<1
W1	-36.58	5/24/93	1019				3.35	104	89.4	1252	0.00	0.0	735	20643	3.35	104	88.7	1242	0.49	20.1	7.93	7.412	7.68		<1	<1
W1	-36.58	6/21/93	1023				3.40	105	89.1	1248	0.12	1.7	731	20531	3.50	108	93.6	1312	0.47	20.0	7.93	7.425	7.71		<1	<1

NELHA Water Quality Laboratory

Well 1 Data Table

July 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W1	-36.58	8/30/93	1115				3.34	103	87.8	1230	0.00	0.0	718	20165	3.35	104	99.6	1395	0.65	20.5	7.90	7.890	7.66		<1	<1
W1	-36.58	10/25/93	1008				3.46	107	83.9	1175	0.10	1.4	674	18930	3.55	110	85.2	1194	0.58	20.1	7.92	8.115	7.52		<1	<1
W1	-36.58	3/1/94	929				3.56	110	88.1	1235	0.11	1.5	654	18368	3.56	110	109	1524	0.63	20.1	7.90	8.253	7.08		<1	<1
W1	-36.58	6/20/94	954				3.40	105	85.2	1193	0.08	1.1	667	18740	3.41	106	99.0	1387	0.62	20.1	7.90	8.085	7.48		<1	<1
W1	-36.58	8/22/94	805				3.50	108	86.1	1206	0.06	0.8	798	22412	3.56	110	96.5	1352	0.62	20.2	7.90	8.104	7.55		<1	<1
W1	-36.58	10/24/94	1041				3.38	105	81.1	1135	0.04	0.6	657	18438	3.39	105	82.7	1158	0.47	20.2	7.91	8.485	7.40		<1	<1
W1	-36.58	1/23/95	1116				3.38	105	82.8	1159	0.09	1.3	643	18070	3.45	107	86.1	1205	0.44	20.6	7.89	8.482	7.34		<1	<1
W1	-36.58	2/13/95	1101				3.49	108	84.9	1190	0.21	2.9	646	18129	3.49	108	91.5	1281	0.50	20.1	7.92	8.262	7.40		<1	<1
W1	-36.58	3/13/95	1145				3.53	109	84.0	1177	0.04	0.6	827	23227	3.57	111	86.1	1206	0.51	20.3	7.92	8.361	7.42		<1	<1
W1	-36.58	4/24/95	1033				3.49	108	84.1	1179	0.11	1.5	688	19312	3.50	108	86.6	1213	0.48	20.1	7.91	8.237	7.43		<1	<1
W1	-36.58	5/8/95	1132				3.49	108	83.6	1171	0.14	2.0	651	18292	3.50	108	90.3	1265	0.54	20.4	7.89	8.324	7.41		<1	<1
W1	-36.58	6/19/95	1112				3.53	109	85.1	1191	0.16	2.2	663	18621	3.53	109	88.4	1238	0.54	20.3	7.87	8.547	7.43		<1	<1
W1	-36.58	7/24/95	1039				3.44	107	85.4	1196	0.15	2.1	671	18851	3.55	110	87.9	1231	0.76	20.3	7.89	8.213	6.98		<1	<1
W1	-36.58	8/21/95	1126				3.42	106	82.6	1157	0.23	3.2	653	18326	3.45	107	86.4	1210	0.46	20.3	7.93	8.528	7.21		<1	<1
W1	-36.58	9/11/95	1002				3.42	106	84.6	1185	0.20	2.8	659	18506	3.47	107	88.3	1236	0.57	20.5	7.90	8.170	7.38		<1	<1
W1	-36.58	10/16/95	1034				3.37	104	79.5	1113	0.20	2.8	653	18348	3.46	107	81.1	1136	0.67	20.7	7.92	8.760	broken		<1	<1
W1	-36.58	11/6/95	1035				3.46	107	85.2	1193	0.18	2.5	677	19017	3.52	109	91.0	1274	0.61	20.3	7.94	8.178	7.27		<1	<1
W1	-36.58	12/4/95	1028				3.44	107	84.3	1181	0.01	0.1	665	18674	3.45	107	86.3	1209	0.68	20.1	7.91	8.259	7.27		1	3
W1	-36.58	1/29/96	1111				3.43	106	81.2	1138	0.13	1.8	663	18618	3.51	109	85.4	1196	0.85	21.0	7.91	8.420	7.43		<1	<1
W1	-36.58	2/26/96	1138				3.43	106	82.6	1156	0.13	1.8	648	18204	3.51	109	85.3	1194	0.60	21.8	7.89	8.514	7.33		<1	<1
W1	-36.58	3/5/96	1037				3.52	109	85.2	1193	0.14	2.0	664	18642	3.53	109	88.7	1242	0.66	20.5	7.90	8.164	7.49		1556	1248
W1	-36.58	4/1/96	1111				3.46	107	83.8	1174	0.22	3.1	652	18299	3.47	107	86.8	1216	0.70	20.8	7.87	8.212	7.50		<1	<1
W1	-36.58	5/8/96	1123				3.46	107	82.4	1154	0.05	0.7	652	18322	3.47	107	85.9	1204	0.53	20.8	7.86	8.360	7.32		3	19
W1	-36.58	6/17/96	1038				3.55	110	85.2	1194	0.33	4.6	698	19600	3.62	112	88.4	1238	0.51	20.4	7.89	8.045	7.43		<1	<1
W1	-36.58	7/16/96	1045				3.47	107	85.6	1199	0.13	1.8	690	19383	3.59	111	88.3	1237	0.57	20.5	7.90	7.919	7.40		<1	<1
W1	-36.58	8/5/96	1128				3.50	108	82.9	1162	0.19	2.7	644	18090	3.52	109	87.0	1218	0.50	21.0	7.88	8.689	7.27		1	<1
W1	-36.58	9/3/96	1049				3.41	106	81.8	1146	0.17	2.4	671	18839	3.52	109	85.5	1198	0.45	21.1	7.88	8.666	7.29		<1	<1
W1	-36.58	10/8/96	1209				3.50	108	83.6	1171	0.11	1.5	636	17866	3.65	113	88.9	1246	0.58	20.7	7.92	8.410	7.36		<1	136
W1	-36.58	11/4/96	1115				3.44	107	83.1	1164	0.18	2.5	670	18826	3.48	108	86.3	1209	0.56	21.0	7.86	8.642	7.34		<1	<1
W1	-36.58	12/16/96	1050				3.45	107	82.7	1159	0.20	2.8	654	18358	3.49	108	86.2	1207	0.59	20.4	7.89	8.874	7.24		<1	<1
W1	-36.58	1/13/97	1131				3.64	113	87	1212	0.02	0.3	664	18652	3.83	119	89.4	1252	0.62	20.9	7.91	7.533	7.73		<1	<1
W1	-36.58	2/11/97	1136				3.23	100	89	1253	0.21	2.9	658	18469	3.24	100	92.5	1296	0.59	21.1	7.91	7.088	7.86		<1	<1
W1	-36.58	3/11/97	1108				3.48	108	88	1235	0.04	0.6	665	18671	3.5*	0	90.3	1265	0.56	20.4	7.93	7.290	7.77		<1	<1
W1	-36.58	4/22/97	1118				3.43	106	85	1184	0.20	2.8	552	15495	3.46	107	94.8	1328	0.56	20.6	7.92	7.664	7.24		<1	<1
W1	-36.58	5/27/97	1023				3.52	109	88	1230	0.09	1.3	540	15175	3.61	112	95.3	1335	0.51	19.9	7.92	7.923	7.44		<1	<1
W1	-36.58	6/16/97	1042				3.45	107	84	1175	0.19	2.7	524	14708	3.49	108	93.7	1313	0.55	19.6	7.97	8.009	7.40		<1	<1
W1	-36.58	7/16/97	952				3.50	108	84	1181	0.30	4.2	657	18461	3.62	112	91.2	1277	0.52	19.8	7.92	7.854	7.45		<1	<1
W1	-36.58	8/25/97	1050				3.42	106	78	1091	0.07	1.0	691	19404	3.44	107	80.9	1133	0.53	19.1	7.98	8.535	7.14		<1	<1
W1	-36.58	9/22/97	1131				3.30	102	77	1081	0.07	1.0	657	18461	3.34	103	78.5	1100	0.51	20.3	8.03	8.625	7.12		<1	<1
W1	-36.58	10/15/97	1008				3.54	110	89	1247	0.07	1.0	660	18531	3.69	114	100	1402	0.51	20.0	8.03	7.801	7.32		<1	<1
W1	-36.58	11/3/97	953				3.45	107	86.5	1212	0.12	1.7	642	18034	3.56	110	96.2	1347	0.49	20.0	8.00	8.365	7.29		<1	<1
W1	-36.58	12/15/97	1110				3.48	108	79.3	1111	0.11	1.5	649	18219	3.68	114	84.0	1177	0.58	20.3	8.04	7.966	7.48		<1	<1
W1	-36.58	1/6/98	930				3.49	108	83.4	1168	0.01	0.1	658	18475	3.77	117	88.9	1245	0.62	19.8	8.04	8.321	7.45		<1	<1
W1	-36.58	2/2/98	1127				3.42	106	82.6	1157	0.04	0.6	658	18491	3.59	111	85.9	1203	0.59	20.1	8.02	8.231	7.41		<1	<1
W1	-36.58	3/9/98	1121				3.67	114	83.4	1168	0.33	4.6	660	18539	3.69	114	85.3	1195	0.60	20.1	7.89	8.174	7.40		<1	<1
W1	-36.58	4/13/98	955				3.62	112	84	1172	0.23	3.2	662	18604	3.68	114	86.6	1212	0.61	19.9	7.90	8.158	7.46		<1	<1
W1	-36.58	5/11/98	1048				3.71	115	83	1156	0.03	0.4	612	17188	3.86	120	84.8	1188	0.58	20.0	7.89	8.135	7.41		<1	<1
W1	-36.58	6/1/98	1038				3.55	110	86.2	1208	0.18	2.5	661	18569	3.61	112	89.8	1258	0.55	20.1	7.89	8.667	7.32		<1	<1

NELHA Water Quality Laboratory

Well 1 Data Table

July 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W1	-36.58	7/13/98	1039				3.58	111	82	1151	0.04	0.6	660	18545	3.78	117	86	1207	0.55	20.3	7.87	8.571	7.22		<1	<1
W1	-36.58	8/10/98	1055				3.74	116	86.6	1213	0.06	0.8	660	18522	3.80	118	90.5	1268	0.54	20.0	7.86	8.335	7.53		7	<1
W1	-36.58	9/14/98	1052				3.62	112	79.9	1119	0.11	1.5	656	18435	3.67	114	81	1138	0.53	20.2	7.86	8.941	7.28		<1	<1
W1	-36.58	10/12/98	950				3.53	109	81.2	1137	0.05	0.7	654	18379	3.66	113	86	1198	0.57	20.5	7.90	8.885	7.66		<1	<1
W1	-36.58	11/2/98	1017				3.61	112	86.4	1210	0.06	0.8	670	18823	3.73	116	89.3	1251	0.65	20.1	7.89	8.167	7.41		<1	<1
W1	-36.58	12/15/98	1056				3.59	111	82.5	1156	0.15	2.1	665	18677	3.63	112	84.2	1180	0.60	20.1	7.89	8.556	7.30		<1	<1
W1	-36.58	1/11/99	1025				3.39	105	82	1151	0.31	4.3	658	18477	3.34	103	86	1200	0.62	20.1	7.87	8.758	7.27		<1	<1
W1	-36.58	2/2/99	1028				3.41	106	84	1178	0.13	1.8	658	18489	3.51	109	92	1286	0.65	19.9	7.88	8.643	7.32		<1	2
W1	-36.58	3/1/99	1033				3.43	106	80.5	1128	0.01	0.1	659	18517	3.55	110	83.3	1167	0.53	20.2	7.87	8.592	7.99		<1	<1
W1	-36.58	4/5/99	1025				3.44	107	82.7	1158	0.11	1.5	660	18525	3.52	109	85.5	1198	0.58	20.0	7.87	8.752	7.30		<1	<1
W1	-36.58	5/3/99	1049				3.45	107	84.1	1178	0.17	2.4	662	18590	3.56	110	91.7	1284	0.55	20.2	7.86	8.581	7.29		<1	<1
W1	-36.58	6/1/99	1020				3.43	106	84.1	1178	0.24	3.4	661	18556	3.56	110	87.7	1228	0.57	20.2	7.87	8.550	7.33		<1	<1
W1	-36.58	7/14/99	1038				3.49	108	82.6	1157	0.08	1.1	656	18418	3.52	109	86.3	1209	0.55	20.0	7.87	8.478	7.33		<1	<1
W1	-36.58	8/23/99	1048				3.42	106	79.8	1118	0.14	2.0	656	18416	3.61	112	80.8	1132	0.53	20.1	7.90	8.825	7.16		<1	<1
W1	-36.58	9/7/99	1042				3.51	109	88.1	1234	0.05	0.7	651	18272	3.60	112	99.9	1399	0.56	20.2	7.91	8.872	7.20		<1	<1
W1	-36.58	10/5/99	1024				3.48	108	83.9	1175	0.09	1.3	654	18362	3.52	109	85.4	1196	0.51	20.0	7.92	8.726	7.23		<1	<1
W1	-36.58	11/1/99	1056				3.37	104	79.6	1115	0.10	1.4	634	17817	3.43	106	83.5	1170	0.53	20.1	7.91	9.363	7.10		<1	<1
W1	-36.58	12/14/99	1047				3.48	108	85.5	1198	0.06	0.8	653	18326	3.55	110	87.1	1220	0.51	20.0	7.89	9.021	6.84		<1	<1
W1	-36.58	1/10/00	1106				3.47	107	80.9	1133	0.13	1.8	655	18382	3.51	109	85.7	1200	0.52	20.0	7.89	8.776	7.13		<1	<1
W1	-36.58	2/7/00	1107				3.50	108	83.4	1168	0.13	1.8	644	18095	3.56	110	87.0	1219	0.53	20.1	7.92	8.773	7.07		<1	<1
W1	-36.58	3/21/00	1106				3.25	101	83.0	1163	0.11	1.5	664	18660	3.09	96	86.1	1206	0.60	20.2	7.91	8.581	7.19		<1	1
W1	-36.58	4/10/00	1140				3.40	105	82.7	1158	0.04	0.6	660	18522	3.24	100	88.9	1245	0.59	19.8	7.92	8.903	7.03		<1	<1
W1	-36.58	5/15/00	1049				3.34	103	82.5	1156	0.25	3.5	627	17607	3.35	104	88.6	1241	0.58	20.4	7.91	8.901	7.26		35	<1
W1	-36.58	6/5/00	1052				3.36	104	83.6	1171	0.09	1.3	647	18183	3.36	104	90.0	1261	0.57	20.4	7.91	8.523	7.29		<1	<1
W1	-36.58	7/26/00	1115				3.35	104	79.4	1112	0.09	1.3	650	18267	3.38	105	79.9	1119	0.72	20.2	7.92	9.293	7.01		<1	<1
W1	-36.58	8/29/00	1025				3.43	106	83.4	1168	0.05	0.7	655	18382	3.48	108	85.4	1196	0.49	20.6	7.87	8.655	7.19		<1	<1
W1	-36.58	9/5/00	1041				3.31	103	80.1	1122	0.10	1.4	654	18365	3.40	105	80.4	1126	0.50	21.1	7.87	9.407	6.92		<1	5
W1	-36.58	10/24/00	1055				3.50	108	80.8	1132	0.18	2.5	676	18997	3.74	116	83.0	1163	0.53	20.2	7.88	8.918	6.89		<1	<1
W1	-36.58	11/13/00	1036				3.08	95	81.0	1134	0.20	2.8	658	18483	3.22	100	88.8	1244	0.51	20.3	7.87	8.854	6.90		<1	<1
W1	-36.58	12/18/00	1028				3.36	104	83.1	1164	0.21	2.9	656	18410	3.44	107	90.3	1264	0.69	20.3	7.89	9.248	6.81		<1	<1
W1	-36.58	1/22/01	1044				3.30	102	85.0	1191	0.10	1.4	660	18525	3.54	110	86.3	1209	0.67	20.0	7.86	8.827	6.75		<1	<1
W1	-36.58	2/5/01	1056				3.28	102	82.0	1149	0.10	1.4	660	18548	3.54	110	84.8	1188	0.67	20.1	7.89	8.950	6.74		<1	<1
W1	-36.58	3/5/01	1050				3.36	104	87.8	1230	0.10	1.4	653	18351	3.56	110	89.6	1255	0.58	20.1	7.85	9.012	6.74		<1	<1
W1	-36.58	4/17/01	1037				3.49	108	82.0	1149	0.05	0.7	668	18747	3.54	110	86.7	1214	0.60	20.5	7.85	8.974	7.32		<1	<1
W1	-36.58	5/15/01	1019				3.34	103	85.0	1191	0.14	2.0	657	18455	3.34	103	88.9	1245	0.53	20.1	7.86	8.986	7.28		<1	<1
W1	-36.58	6/12/01	1057				3.38	105	82.2	1151	0.07	1.0	654	18374	3.44	107	86.0	1204	0.52	20.0	7.88	9.045	7.25		<1	<1
W1	-36.58	7/23/01	1033				3.27	101	87.4	1225	0.09	1.3	669	18800	3.30	102	91.7	1284	0.61	20.3	7.86	8.692	8.20		<1	<1
W1	-36.58	8/8/01	1022				3.36	104	86.1	1206	0.07	1.0	682	19154	3.36	104	88.1	1235	0.53	20.0	7.85	9.003	7.16		<1	<1
W1	-36.58	9/17/01	924				3.40	105	88.0	1232	0.07	1.0	680	19093	3.50	108	90.5	1267	0.58	20.5	7.87	8.668	7.39		<1	1
W1	-36.58	10/22/01	930				3.48	108	81.7	1144	0.09	1.3	644	18079	3.48	108	80.9	1133	0.59	20.0	7.87	9.685	6.99		<1	<1
W1	-36.58	11/5/01	948				3.26	101	81.9	1147	0.06	0.8	649	18222	3.44	107	93.2	1306	0.54	19.9	7.85	9.607	7.00		<1	<1
W1	-36.58	12/12/01	930				3.26	101	87.1	1220	0.36	5.0	669	18800	3.35	104	97.6	1367	0.56	21.8	7.87	8.940	7.27		<1	<1
W1	-36.58	1/7/02	914				3.48	108	81.7	1144	0.08	1.1	681	19121	3.56	110	83.0	1163	0.48	20.0	7.87	9.280	6.75		<1	<1
W1	-36.58	2/19/02	940				3.52	109	83.1	1163	0.08	1.1	663	18621	3.68	114	86.1	1206	0.41	19.8	7.86	9.287	6.72		<1	<1
W1	-36.58	3/18/02	921				3.46	107	80.7	1130	0.13	1.8	658	18477	3.62	112	83.3	1166	0.43	20.0	7.89	9.226	6.78		<1	<1
W1	-36.58	4/8/02	953				3.58	111	85.6	1199	0.08	1.1	656	18433	3.74	116	88.9	1245	0.48	20.0	7.68	9.002	6.75		<1	<1
W1	-36.58	5/29/02	935				3.36	104	85.9	1204	0.09	1.3	653	18326	3.42	106	87.4	1224	0.57	20.0	7.89	8.888	7.24		<1	<1
W1	-36.58	6/17/02	1110				3.52	109	80.5	1128	0.17	2.4	637	17890	3.64	113	84.9	1190	0.42	20.0	7.87	9.332	7.11		<1	<1

NELHA Water Quality Laboratory

Well 1 Data Table

July 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W1	-36.58	7/15/02	11:12				3.48	108	84.5	1184	0.07	1.0	637	17902	3.55	110	85.5	1198	0.57	20.0	7.93	9.326	7.12		<1	<1
W1	-36.58	8/20/02	11:00				3.42	106	78.9	1105	0.09	1.3	658	18472	3.60	112	78.6	1101	0.49	20.1	7.89	9.141	7.31		<1	<1
W1	-36.58	9/23/02	11:37				3.38	105	87.5	1225	0.15	2.1	657	18455	3.58	111	75.7	1061	0.43	20.7	7.90	8.966	7.35		<1	<1
W1	-36.58	10/14/02	10:50				3.27	101	83.0	1163	0.08	1.1	651	18272	3.44	107	71.9	1006	0.42	20.3	7.94	9.711	7.12		<1	<1
W1	-36.58	11/4/02	10:58				3.49	108	87.9	1232	0.02	0.3	658	18491	3.58	111	78.9	1105	0.44	20.2	7.92	9.085	7.32		<1	<1
W1	-36.58	12/17/02	11:30				3.26	101	81.8	1146	0.16	2.2	659	18503	3.47	107	76.4	1071	0.42	21.0	7.92	9.176	7.18		<1	<1
W1	-36.58	1/29/03	10:37				3.38	105	86.7	1215	0.48	6.7	656	18424	3.45	107	93.5	1310	0.62	20.3	7.90	9.023	7.31		<1	<1
W1	-36.58	2/10/03	10:25				3.20	99	82.5	1156	0.13	1.8	668	18761	3.43	106	87.4	1224	0.51	20.1	7.90	9.295	7.12		<1	<1
W1	-36.58	3/19/03	11:10				3.46	107	79.5	1114	0.11	1.5	668	18770	3.69	114	87.5	1226	0.56	20.1	7.97	9.048	7.21		<1	<1
W1	-36.58	4/28/03	10:45				3.53	109	86.4	1210	0.17	2.4	659	18506	3.54	110	91.2	1277	0.45	20.6	7.97	9.105	7.28		<1	<1
W1	-36.58	5/12/03	10:26				3.50	108	85.3	1195	0.19	2.7	717	20137	3.57	111	92.0	1289	0.42	20.4	7.99	9.198	7.30		<1	<1
W1	-36.58	6/3/03	10:57				3.53	109	85.6	1199	0.51	7.1	656	18430	3.75	116	90.0	1260	0.41	20.3	7.86	8.995	7.26		<1	<1
W1	-36.58	7/29/03	11:14				3.41	106	87.9	1231	0.16	2.2	663	18607	3.55	110	97.7	1369		20.4	7.95	8.791	7.51		<1	1
W1	-36.58	8/26/03	11:00				3.32	103	86.1	1206	0.52	7.3	654	18362	3.44	107	95.7	1340		21.3	7.86	8.950	7.14		<1	<1
W1	-36.58	9/15/03	11:03				3.46	107	88.7	1242	0.30	4.2	658	18466	3.77	117	91.6	1283		20.9	7.85	9.235	7.31		<1	<1
W1	-36.58	10/6/03	10:59				3.62	112	80.8	1131	0.54	7.6	662	18593	3.70	115	86.6	1214		20.4	7.88	9.211	NA		<1	<1
W1	-36.58	10/28/03	11:41				3.38	105	86.2	1207	0.30	4.2	664	18635	3.54	110	99.6	1395		19.8	7.86	9.217	NA		<1	<1
W1	-36.58	11/14/03	14:33																	20.7			7.38			
W1	-36.58	12/15/03	10:43				3.35	104	80.4	1127	0.90	12.6	666	18708	3.42	106	81.9	1147		20.4	7.87	9.751	7.07		<1	<1
W1	-36.58	1/26/04	11:14				3.22	100	84.0	1177	0.20	2.8	661	18553	3.34	103	85.6	1199		20.1	7.94	9.340	7.02		<1	1
W1	-36.58	2/5/04	10:48				3.36	104	93.6	1310	0.17	2.4	669	18800	3.52	109	104	1450		20.6	7.88	9.017	7.20		<1	<1
W1	-36.58	3/2/04	10:20				3.46	107	86.6	1214	**1.04**	14.6	668	18772	3.54	110	92.1	1290		20.4	7.92	8.770	6.89		<1	<1
W1	-36.58	4/22/04	9:00				3.42	106	88.7	1243	0.13	1.8	661	18559	3.48	108	94.4	1322		20.5	7.91	8.521	7.44		<1	5
W1	-36.58	5/18/04	8:37				3.30	102	85.3	1195	0.14	2.0	670	18829	3.37	104	88.0	1233		20.6	7.91	8.41	8.73		<1	<1
W1	-36.58	6/8/04	8:40				3.40	105	85.7	1201	**2.45**	34.3	674	18924	3.47	107	92.0	1289		20.3	7.86	8.64	7.38		<1	TNTC
W1	-36.58	7/19/04	9:36				3.32	103	93.1	1304	0.16	2.2	643	18062	3.30	102	**128**	1790		20.3	7.85	8.65	7.34		<1	TNTC
W1	-36.58	8/25/04	8:54				3.18	98	84.1	1178	0.16	2.2	667	18725	3.35	104	90.5	1268		20.4	7.86	8.82	7.21		<1	<1
W1	-36.58	9/28/04	8:46				3.22	100	87.9	1232	0.18	2.5	660	18522	3.36	104	100	1406		20.4	7.86	9.11	9.38		<1	<1
W1	-36.58	10/5/04	9:07				3.22	100	80.5	1127	0.18	2.5	643	18059	3.42	106	84.5	1183		20.4	7.88	9.85	6.80		<1	<1
W1	-36.58	11/9/04	9:56				3.30	102	81.4	1141	0.09	1.3	648	18205	3.46	107	86.2	1208		20.6	7.87	9.30	7.13		<1	<1
W1	-36.58	12/6/04	10:30				3.18	98	80.0	1121	0.20	2.8	645	18124	3.28	102	84.4	1182		20.9	7.88	9.75	6.94		<1	<1
W1	-36.58	1/10/05	9:59				3.34	103	81.8	1146	0.10	1.4	658	18486	3.42	106	84.4	1182		20.8	7.91	9.556	7.01		<1	<1
W1	-36.58	2/9/05	9:59				3.32	103	87.8	1230	0.13	1.8	657	18449	3.41	106	107	1497		20.7	7.91	9.114	7.13		<1	<1
W1	-36.58	3/15/05	10:24				3.28	102	84.7	1186	0.23	3.2	659	18500	3.48	108	90.3	1265	0.37	20.9	7.91	9.148	7.19		<1	<1
W1	-36.58	4/19/05	9:38				3.32	103	81.0	1134	0.16	2.2	658	18477	3.36	104	85.7	1200		21.2	7.93	9.105	7.23		<1	<1
W1	-36.58	5/23/05	10:23				3.30	102	87.6	1227	0.10	1.4	662	18579	3.36	104	91.9	1287		20.6	7.89	9.098	8.10		<1	<1
W1	-36.58	6/15/05	9:27				3.28	102	84.6	1185	0.14	2.0	646	18135	3.58	111	94.1	1318		20.5	7.85	9.517	7.03		<1	<1
W1	-36.58	7/18/05	9:55				3.32	103	82.1	1150	0.18	2.5	665	18682	3.50	108	84.4	1182	0.56	20.6	7.86	9.184	7.10		1	3
W1	-36.58	8/9/05	10:06				3.24	100	81.8	1145	0.26	3.6	647	18157	3.36	104	84.8	1188	0.38	21.0	7.91	9.435	7.01		1	3
W1	-36.58	9/20/05	9:55				3.28	102	81.0	1134	0.14	2.0	656	18413	3.44	107	81.4	1140	0.59	20.8	7.88	9.499	7.11		<1	76
W1	-36.58	10/17/05	9:53				3.34	103	82.8	1160	0.20	2.8	656	18421	3.54	110	87.7	1228		20.7	7.88	9.461	7.12		169	<1
W1	-36.58	11/7/05	9:23				3.12	97	77.5	1086	0.02	0.3	637	17890	3.36	104	82.2	1152		20.2	7.87	10.387	6.83		3	<1
W1	-36.58	12/21/05	8:52				3.18	98	75.6	1058	0.16	2.2	625	17562	3.38	105	78.6	1101	0.57	20.4	7.89	10.528	6.78		<1	1
W1	-36.58	1/23/06	9:52				3.28	102	82.3	1153	0.08	1.1	655	18399	3.42	106	83.6	1170		20.9	7.87	9.869	6.98		<1	<1
W1	-36.58	2/14/06	9:48				3.31	103	85.4	1196	0.18	2.5	651	18275	3.34	103	87.7	1229	0.48	20.6	7.85	9.878	6.97		<1	<1
W1	-36.58	3/20/06	10:31				3.33	103	79.9	1119	0.11	1.5	654	18368	3.43	106	84.7	1186	1.09	20.4	7.92	9.821	6.98		<1	<1
W1	-36.58	4/25/06	10:54				3.22	100	83.6	1171	0.14	2.0	634	17806	3.33	103	76.2	1068	0.45	21.3	7.95	9.827	6.83		<1	<1
W1	-36.58	5/22/06	10:10				3.15	98	81.5	1142	0.58	8.1	618	17357	3.59	111	73.9	1034	0.42	20.5	7.91	9.939	6.81		<1	<1
W1	-36.58	6/26/06	10:19				3.06	95	82.3	1153	0.22	3.1	623	17497	3.31	103	77.3	1083	0.44	20.8	7.92	10.065	6.81		<1	<1

NELHA Water Quality Laboratory

Well 1 Data Table

July 1989 - December 2014

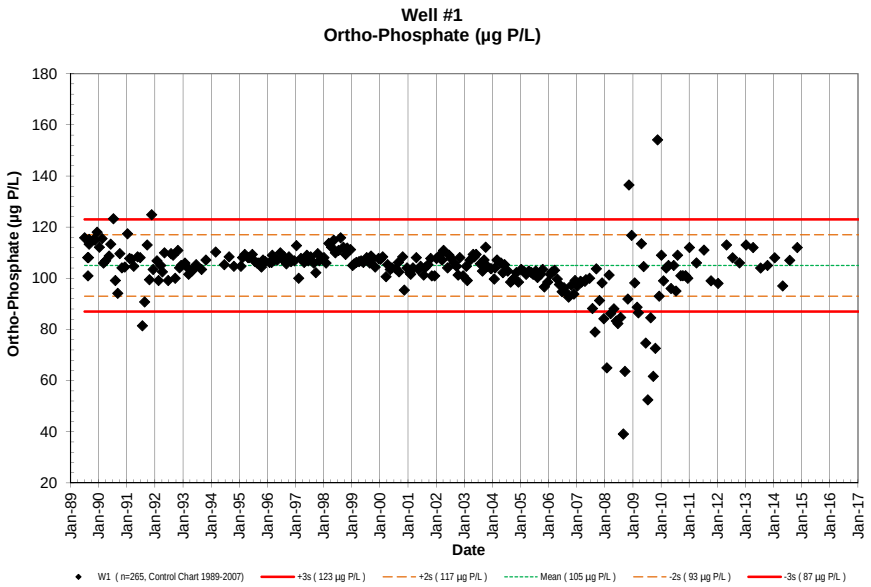
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W1	-36.58	7/20/06	10:29				3.11	96	75.8	1062	0.16	2.2	615	17273	3.33	103	74.3	1040	0.42	21.2	7.87	10.789	7.07		<1	1
W1	-36.58	8/7/06	10:45				3.06	95	77.8	1090	0.06	0.8	628	17638	3.20	99	70.8	991	0.45	20.7	7.90	10.551	7.14		<1	<1
W1	-36.58	9/18/06	10:10				2.99	93	76.3	1069	0.21	2.9	621	17441	3.26	101	68.8	963	0.40	20.9	7.89	10.649	6.96		<1	<1
W1	-36.58	10/23/06	10:50				3.14	97	82.7	1158	0.18	2.5	629	17666	3.24	100	64.4	902	0.40	21.4	7.87	10.294	7.08		<1	<1
W1	-36.58	11/27/06	9:55				3.03	94	76.6	1073	0.31	4.3	615	17273	3.15	98	65.2	913	0.38	20.5	7.88	11.038	6.72		<1	1
W1	-36.58	12/11/06	11:29				3.20	99	82.6	1157	0.20	2.8	641	18003	3.28	102	74.9	1050	0.43	20.5	7.88	10.695	6.78		1	1
W1	-36.58	1/8/07	10:17				3.13	97	84.8	1188	0.30	4.2	604	16964	3.25	101	77.4	1085	0.39	20.2	7.95	10.639	6.83		1684	860
W1	-36.58	2/20/07	10:42				3.19	99	80.6	1129	0.32	4.5	619	17385	3.36	104	89.6	1255	0.47	20.7	7.89	10.146	6.98		1	<1
W1	-36.58	3/5/07	10:20				3.18	98	87.9	1231	0.25	3.5	648	18199	3.35	104	92.9	1301	0.47	21.4	7.93	9.971	7.00		<1	<1
W1	-36.58	4/18/07	10:45				3.19	99	92.3	1293	0.3	4.2	647	18171	3.33	103	77.4	1085	0.40	21.1	7.91	9.737	6.79		1	1
W1	-36.58	5/1/07	10:33				3.21	99	84.5	1184	0.22	3.1	637	17890	3.40	105	78.7	1103	0.42	20.7	7.90	9.808	6.76		<1	<1
W1	-36.58	6/18/07	10:24				3.23	100	91.0	1275	0.18	2.5	655	18396	3.40	105	77.1	1081	0.38	21.0	7.94	9.854	7.26		<1	<1
W1	-36.58	7/26/07	14:42	-30.78	0.64	High	2.85	88	88.1	1234	0.01	0.1	618	17348	3.03	94	87.1	1220		20.3	7.80	10.71	6.25			
W1	-36.58	8/28/07	12:22		0.21	Flood	2.55	79	53.1	744	0.59	8.2	796	22365	2.63	82	54.5	763		20.4	7.86	10.02	6.54			
W1	-36.58	9/13/07	10:16		0.15	Ebb	3.35	104	90.4	1266	0.16	2.2	667	18745	3.31	103	90.8	1271		20.2	7.72	9.83	7.40			
W1	-36.58	10/24/07	15:24	-31.58	0.46	Ebb	2.95	91	92.0	1289	0.92	12.9	614	17249	2.99	93	89.3	1250		20.1	7.78	10.34	6.41			
W1	-36.58	11/26/07	10:46		0.30	Ebb	3.17	98	93.5	1309	0.91	12.8	681	19118	2.74	85	100.7	1410		20.2	7.87	9.83	6.51			
W1	-36.58	12/20/07	13:11		0.24	Ebb	2.72	84	60.7	850	0.20	2.8	601	16878						20.0	7.99	9.54	6.58			
W1	-36.58	1/28/08	11:25	-30.78	0.18	Ebb	2.10	65	51.2	717	0.54	7.6	376	10548						20.3	7.78	9.35	6.22			
W1	-36.58	2/27/08	9:37		0.15	Ebb	3.27	101	95.9	1343	0.11	1.6	618	17358						20.1	7.79	9.32	6.90			
W1	-36.58	3/18/08	11:27	-29.93	0.06	Flood	2.78	86	77.9	1091	0.56	7.9	651	18295						20.6	7.79	9.36	5.71			
W1	-36.58	4/28/08	10:27	-31.39	0.15	Flood	2.84	88	96.8	1355	0.19	2.6	625	17541						20.6	7.81	9.34	6.64			
W1	-36.58	5/30/08	11:24		0.24	Flood	2.69	83	89.5	1254	0.21	2.9	619	17384						20.7	7.81	9.75	6.35			
W1	-36.58	6/20/08	10:04		-0.06	Low	2.66	82	96.4	1350	0.68	9.5	697	19579						25.4	7.67	9.10	6.10			
W1	-36.58	7/25/08	10:53	-30.78	0.55	High	2.73	85	85.5	1198	0.63	8.8	414	11616						20.2	7.87	9.91	6.08			
W1	-36.58	8/30/08	9:00		0.00	Low	1.26	39	52.3	733	0.71	9.9	318	8922						20.7	7.81	9.13	7.86			
W1	-36.58	9/19/08	1022	-30.92	0.37	Ebb	2.05	64	67.6	947	1.05	14.7	461	12937						24.1	7.88	5.03	8.12	0.50		
W1	-36.58	10/27/08	1136	-31.35	0.24	Flood	2.97	92	97.1	1361	0.49	6.9	619	17390						22.1	7.54	8.96	7.80	0.41		
W1	-36.58	11/10/08	946	-31.26	0.18	Flood	4.41	137	95.6	1339	0.11	1.5	579	16260						23.3	7.90	9.10	6.74	0.19		
W1	-36.58	12/15/08	908	-31.01	0.43	Ebb	3.77	117	151.8	2126	0.06	0.8	642	18025						24.1	8.08	4.55	8.29			
W1	-36.58	1/23/09	1025	-31.35	0.08	Low	3.17	98	107.6	1507	0.54	7.6	586	16456						22.8	7.93	9.00	6.64	0.17		
W1	-36.58	2/23/09	1254	-31.36	0.15	Flood	2.86	89	96.3	1348	0.23	3.2	588	16513						21.3	7.79	9.44	7.09	0.23		
W1	-36.58	3/13/09	1118	-31.43	-0.03	Ebb	2.79	87	81.3	1139	0.13	1.8	616	17301						21.6	7.82	8.98	7.04	0.25		
W1	-36.58	4/20/09	1021	-31.36	0.15	Flood	3.66	114	90.4	1266	0.41	5.7	373	10480						21.8	7.78	9.21	7.07			
W1	-36.58	5/21/09	955	-31.44	0.08	Flood	3.38	105	93.0	1302	0.16	2.2	643	18057						23.7	8.32	9.37	6.56	0.21		
W1	-36.58	6/16/09	934	-31.26	0.30	Flood	2.41	75	56.0	784	0.74	10.4	196	5510						23.8	7.34	9.51	6.64	0.13		
W1	-36.58	7/13/09	1106	-31.29	0.37	Ebb	1.69	53	41.1	575	0.32	4.5	246	6897						23.0	7.9	9.6	6.90	0.06		
W1	-36.58	8/20/09	1020	-31.40	0.03	Low	2.73	85	83.9	1176	0.06	0.8	532	14936						23.7	7.92	9.12	6.58	0.13		
W1	-36.58	9/21/09	1019	-31.22	0.30	Ebb	1.99	62	59.4	832	0.19	2.7	171	4812						24.0	8.66	9.61	6.58	0.06		
W1	-36.58	10/19/09	958	-31.12	0.37	Ebb	2.34	73	87.0	1218	1.97	27.6	231	6476						21.1	8.71	9.74	6.85	0.02		
W1	-36.58	11/16/09	935	-31.31	0.18	Ebb	4.98	154	79.1	1108	0.96	13.4	365	10247						21.4	7.80	9.38	6.89	0.02		
W1	-36.58	12/7/09	947	-31.14	0.55	Ebb	3.00	93	97.2	1361	0.45	6.3	574	16134						21.1	7.88	10.21	6.28	0.07		
W1	-36.58	1/5/10	924	-31.10	0.43	Ebb	3.52	109	85.8	1202	1.93	27.0	537	15090						21.1	7.80	11.00	6.34	0.05		
W1	-36.58	2/1/10	909	-31.07	0.24	Ebb	3.20	99	97.7	1368	0.50	7.0	521	14630						21.0	7.91	10.36	6.82	0.27		
W1	-36.58	3/9/10	830	-31.38	0.09	Low	3.36	104	93.3	1307	0.14	2.0	580	16294						21.1	7.81	10.00	6.42	0.30		
W1	-36.58	4/6/10	802	-31.42	0.24	Low	3.39	105	95.5	1338	0.29	4.0	496	13936						21.9	7.88	9.60	6.93	0.12		
W1	-36.58	5/11/10	818	-31.49	-0.03	Low	3.10	96	82.5	1155	2.28	32.0	533	14970						21.1	7.99	9.64	6.98	0.13		
W1	-36.58	6/15/10	859	-31.38	0.12	Ebb	3.39	105	95.0	1331	0.79	11.0	653	18337						21.9	7.88	9.87	6.74	0.11		

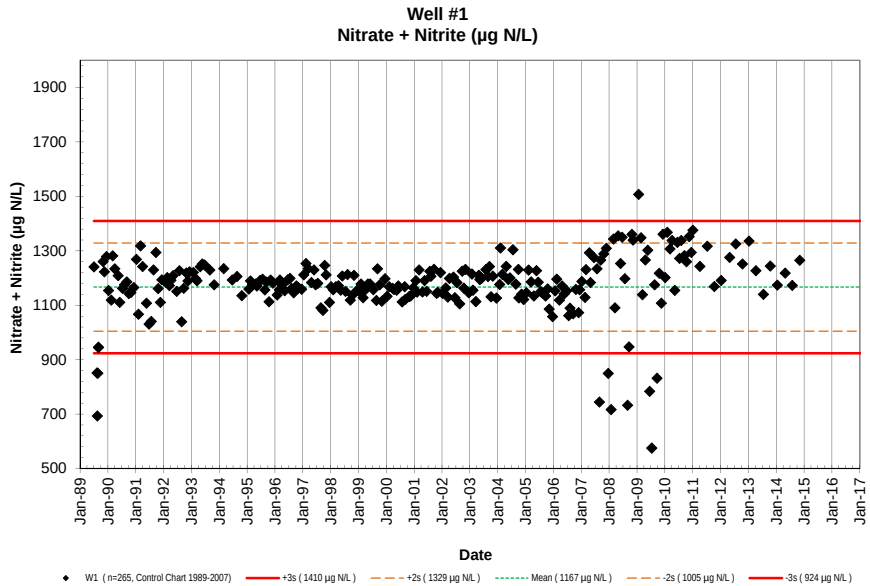
NELHA Water Quality Laboratory

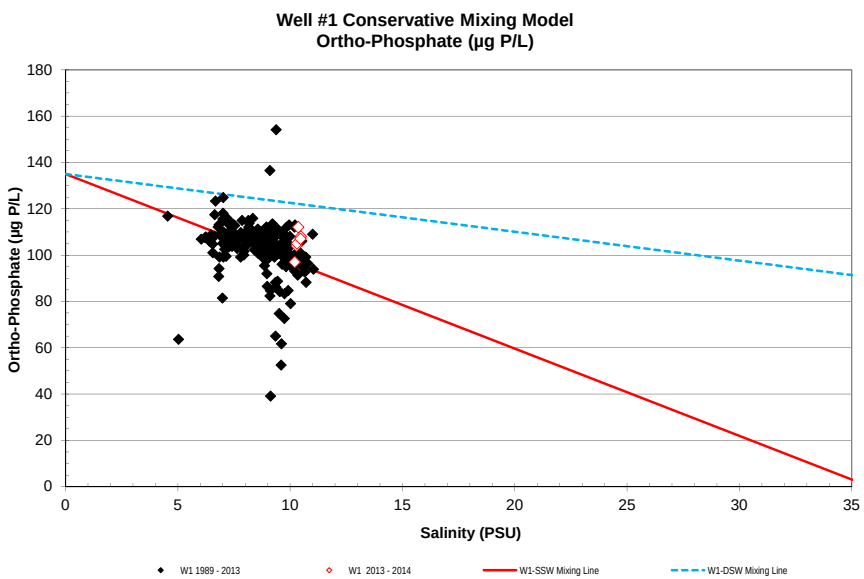
Well 1 Data Table

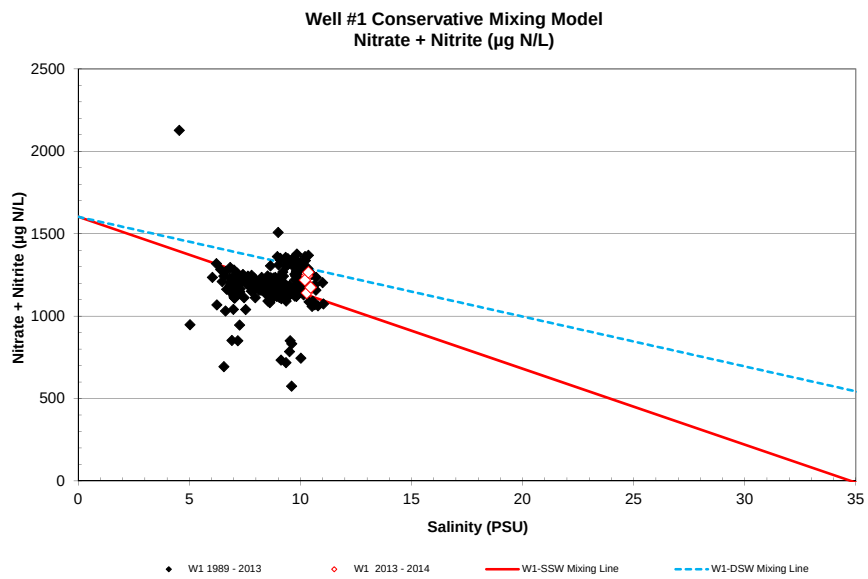
July 1989 - December 2014

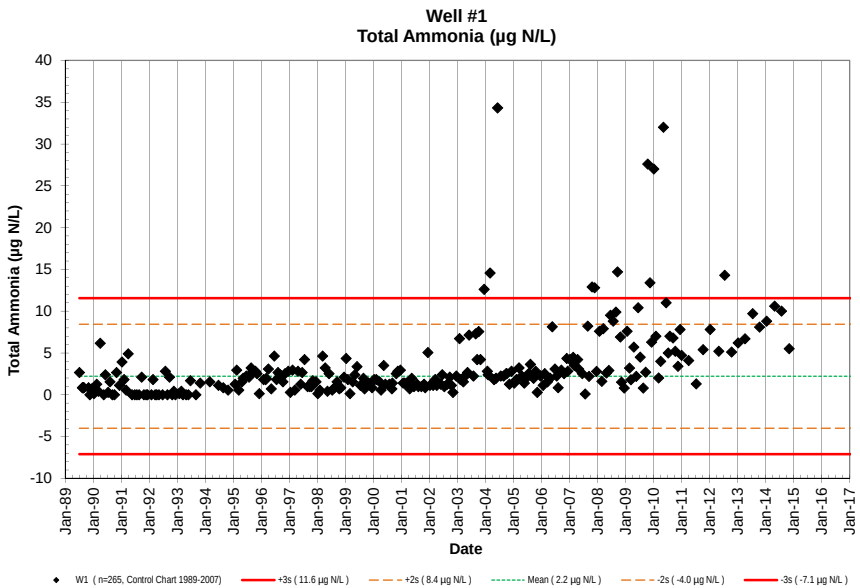
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W1	-36.58	7/13/10	832	-31.30	0.12	Ebb	3.07	95	90.8	1272	0.36	5.0	641	17994						22.0	7.91	9.82	6.46	0.11		
W1	-36.58	8/3/10	829	-31.22	0.37	Flood	3.52	109	95.5	1338	0.50	7.0	663	18614						22.2	7.91	9.73	6.66	0.19		
W1	-36.58	9/14/10	826	-31.14	0.55	Flood	3.26	101	91.5	1282	0.49	6.8	676	18972						22.1	7.87	10.28	6.80	0.08		
W1	-36.58	10/12/10	817	-30.99	0.67	High	3.26	101	90.0	1260	0.37	5.2	680	19099						22.1	7.89	10.45	6.37	0.08		
W1	-36.58	11/16/10	808	-31.19	0.21	Low	3.26	101	96.5	1352	0.24	3.4	676	18986						21.9	7.89	9.68	6.78	0.07		
W1	-36.58	12/14/10	828	-31.18	0.30	Flood	3.23	100	92.4	1294	0.56	7.8	645	18102						21.8	7.89	9.96	6.77	0.04		
W1	-36.58	1/4/11	830	-31.07	0.30	Ebb	3.62	112	98.2	1376	0.34	4.7	694	19504						21.8	7.87	9.84	6.69	0.03		
W1	-36.58	4/5/11	822	-31.28	0.06	Ebb	3.42	106	88.7	1243	0.29	4.1	656	18420						22.1	7.82	9.78	5.99	0.10		
W1	-36.58	7/12/11	824	-31.53	-0.06	Flood	3.58	111	94.0	1317	0.09	1.3	658	18477						21.8	7.84	9.46	6.60	0.05		
W1	-36.58	10/11/11	842	-31.18	0.18	Ebb	3.20	99	83.5	1169	0.39	5.4	613	17218						22.1	7.79	10.11	6.88	0.18		
W1	-36.58	1/10/12	843	-31.13	0.37	Ebb	3.16	98	85.0	1191	0.56	7.8	619	17376						21.6	7.76	10.32	6.33	0.09		
W1	-36.58	5/1/12	839	-31.35	0.03	Flood	3.65	113	91.1	1276	0.37	5.2	686	19266						21.9	7.79	9.95	6.60	0.10		
W1	-36.58	7/18/12	823	-31.38	0.03	Ebb	3.49	108	94.6	1325	1.02	14.3	635	17842						21.5	7.84	9.99	6.87	0.11		
W1	-36.58	10/16/12	853	-31.11	0.34	Ebb	3.42	106	89.4	1252	0.36	5.1	631	17710						21.6	7.82	10.52	6.51	0.05		
W1	-36.58	1/8/13	912	-31.27	0.05	Low	3.65	113	95.4	1336	0.44	6.2	678	19043						21.5	7.90	10.22	6.66	0.33		
W1	-36.58	4/9/13	843	-31.38	-0.06	Low	3.62	112	87.6	1227	0.48	6.7	659	18517						21.3	7.88	10.19	6.85	0.02		
W1	-36.58	7/17/13	912	-31.38	0.40	Flood	3.36	104	81.4	1140	0.69	9.7	651	18284						21.3	7.81	10.29	6.50	0.08		
W1	-36.58	10/15/13	844	-31.33	0.15	Flood	3.39	105	88.8	1244	0.58	8.1	635	17840						21.5	7.82	10.30	6.88	0.12		
W1	-36.58	1/15/14	823	-31.06	0.30	Ebb	3.49	108	83.8	1174	0.63	8.8	564	15829						20.7	7.90	10.47	6.73	0.02		
W1	-36.58	4/29/14	940	-31.43	-0.06	Low	3.13	97	87.0	1218	0.76	10.6	604	16974						21.5	7.91	10.20	7.28	0.09		
W1	-36.58	7/29/14	912	-31.29	0.18	Ebb	3.45	107	83.7	1173	0.71	10.0	693	19472						21.3	7.88	10.46	6.93	0.13		
W1	-36.58	11/5/14	913	-31.15	0.09	Low	3.62	112	90.3	1265	0.39	5.5	612	17189						24.1	7.79	10.36	6.09	0.43		
W1	-36.58	1/1/15																								
W1	-36.58	4/1/15																								

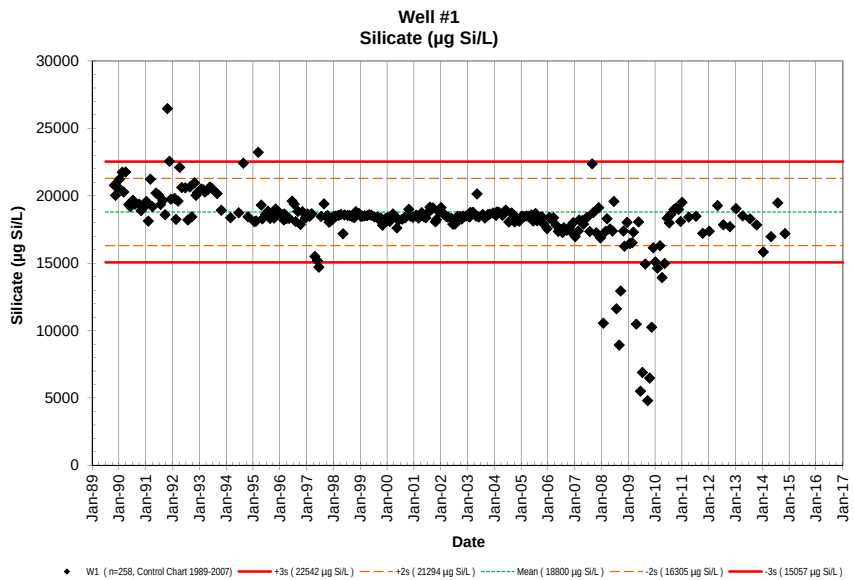

Well #1
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W1 (n=265, Control Chart 1989-2007)
+3s (123 µg P/L)
+2s (117 µg P/L)
Mean (105 µg P/L)
-2s (93 µg P/L)
-3s (87 µg P/L)

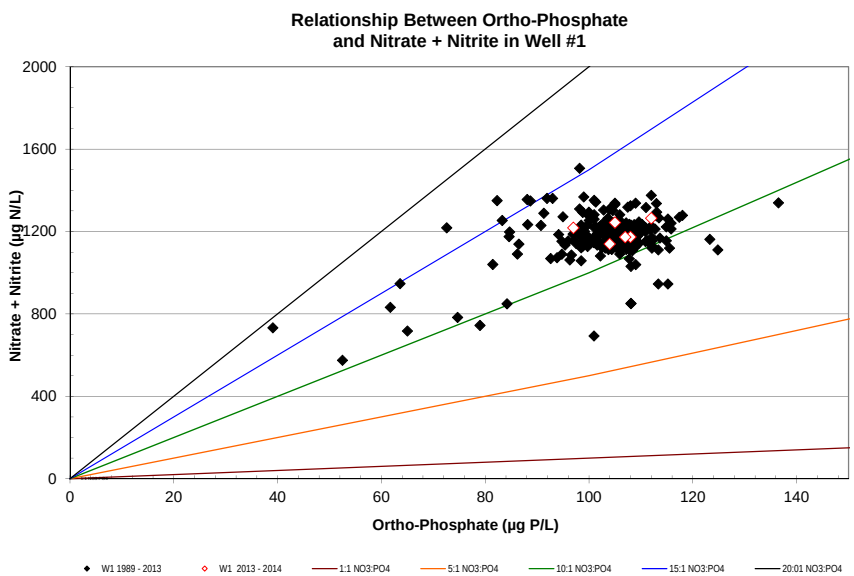

Well #1
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W1 (n=265, Control Chart 1989-2007)
+3s (1410 µg N/L)
+2s (1329 µg N/L)
Mean (1167 µg N/L)
-2s (1005 µg N/L)
-3s (924 µg N/L)

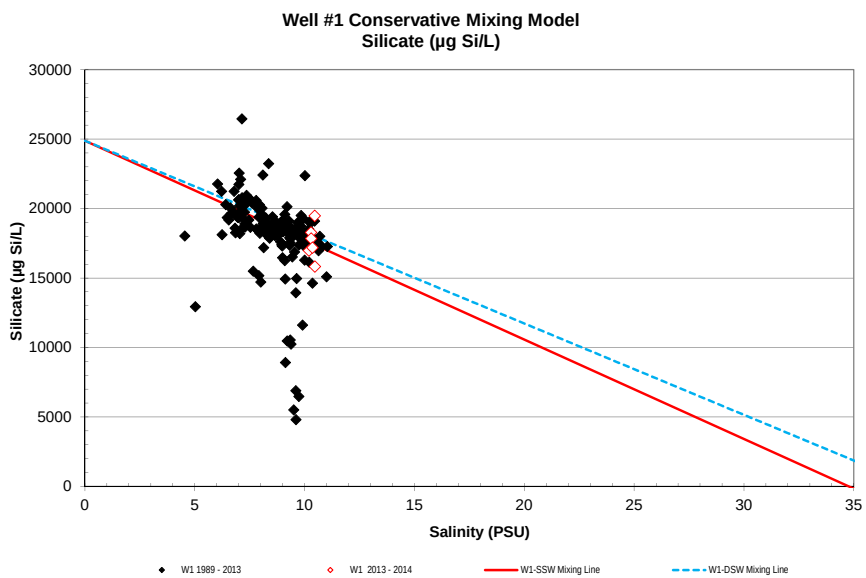

Well #1 Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W1 1989 - 2013
W1 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

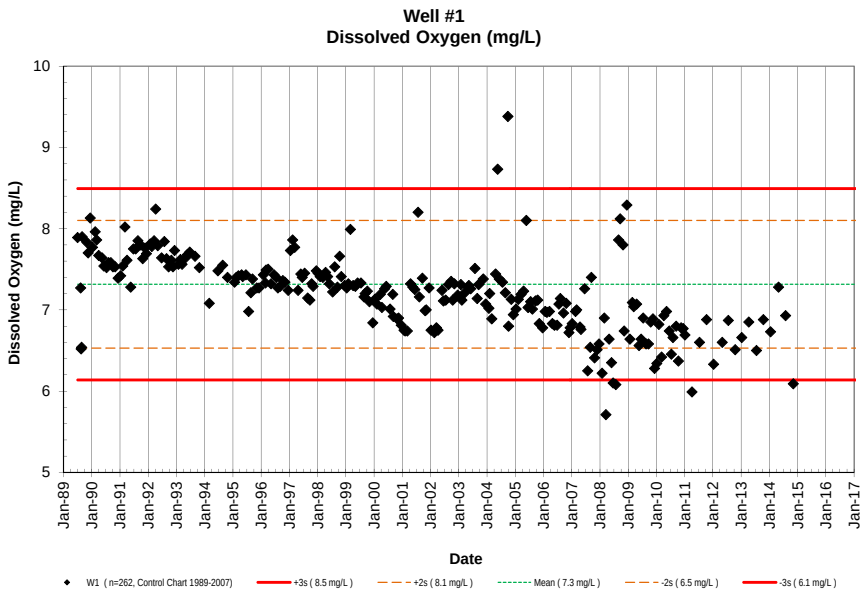

Well #1 Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W1 1989 - 2013
W1 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

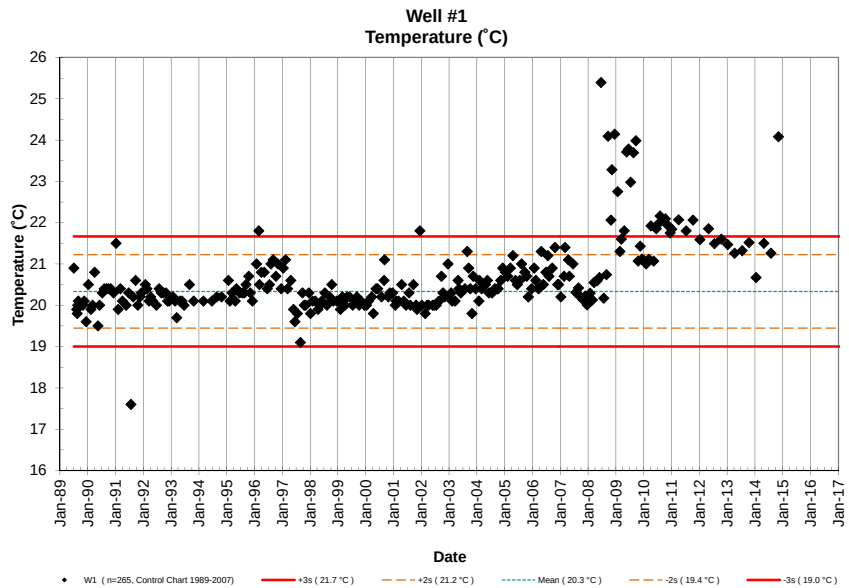

Well #1
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W1 (n=265, Control Chart 1989-2007)
+3s (11.6 µg N/L)
+2s (8.4 µg N/L)
Mean (2.2 µg N/L)
-2s (-4.0 µg N/L)
-3s (-7.1 µg N/L)

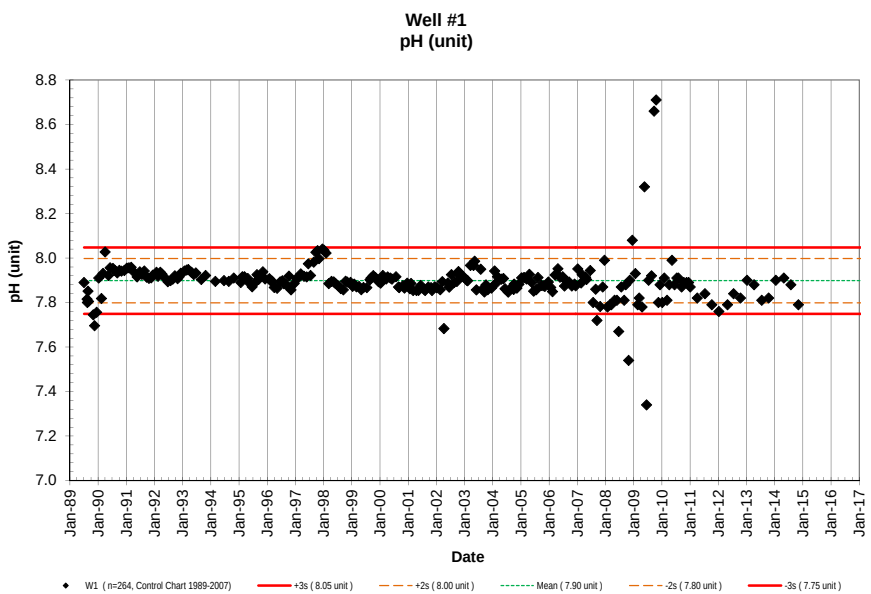

Well #1
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W1 (n=258, Control Chart 1989-2007)
+3s (22542 µg Si/L)
+2s (21294 µg Si/L)
Mean (18800 µg Si/L)
-2s (16305 µg Si/L)
-3s (15057 µg Si/L)

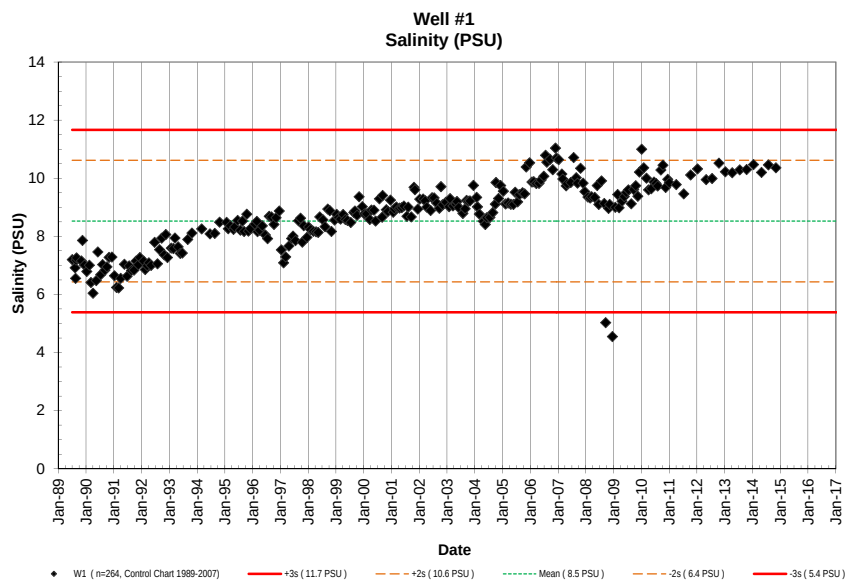

Relationship Between Ortho-Phosphate
and Nitrate + Nitrite in Well #1
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W1 1989 - 2013
W1 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

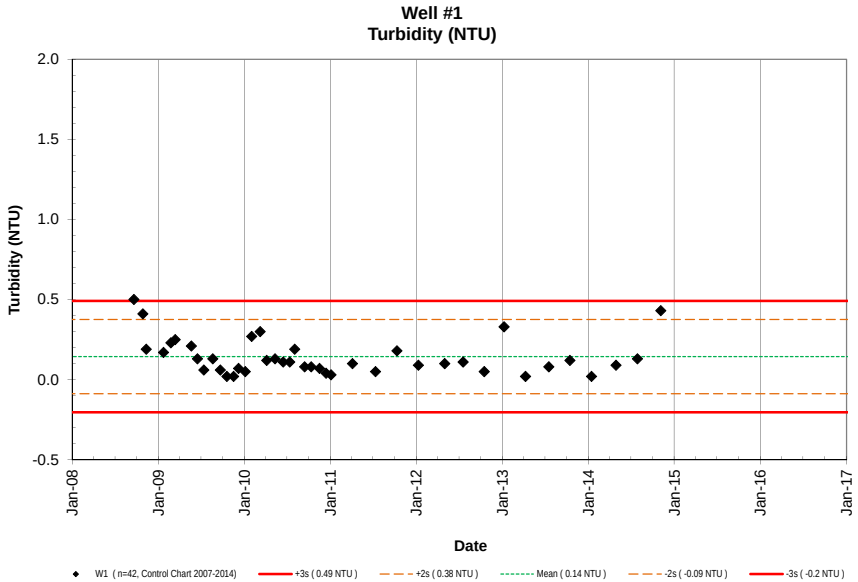

Well #1 Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W1 1989 - 2013
W1 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

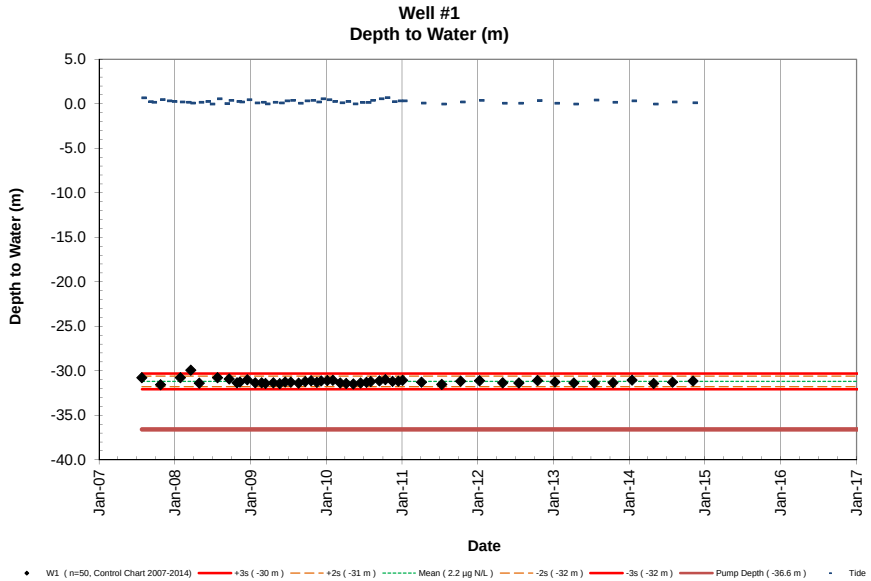

Well #1
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W1 (n=262, Control Chart 1989-2007)
+3s (8.5 mg/L)
+2s (8.1 mg/L)
Mean (7.3 mg/L)
-2s (6.5 mg/L)
-3s (6.1 mg/L)


Well #1
Temperature (˚C)
Temperature (˚C)
Date
W1 (n=265, Control Chart 1989-2007)
+3s (21.7 °C)
+2s (21.2 °C)
Mean (20.3 °C)
-2s (19.4 °C)
-3s (19.0 °C)


Well #1
pH (unit)
pH (unit)
Date
W1 (n=264, Control Chart 1989-2007)
+3s (8.05 unit)
+2s (8.00 unit)
Mean (7.90 unit)
-2s (7.80 unit)
-3s (7.75 unit)


Well #1
Salinity (PSU)
Salinity (PSU)
Date
W1 (n=264, Control Chart 1989-2007)
+3s (11.7 PSU)
+2s (10.6 PSU)
Mean (8.5 PSU)
-2s (6.4 PSU)
-3s (5.4 PSU)


Well #1
Turbidity (NTU)
Turbidity (NTU)
2.0
1.5
1.0
0.5
0.0
-0.5
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W1 (n=42, Control Chart 2007-2014)
+3s (0.49 NTU)
+2s (0.38 NTU)
Mean (0.14 NTU)
-2s (-0.09 NTU)
-3s (-0.2 NTU)


Well #1
Depth to Water (m)
Depth to Water (m)
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
-30.0
-35.0
-40.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W1 (n=50, Control Chart 2007-2014)
+3s (-30 m)
+2s (-31 m)
Mean (2.2 µg N/L)
-2s (-32 m)
-3s (-32 m)
Pump Depth (-36.6 m)
Tide

NELHA Water Quality Laboratory

Well 2 Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W2	-13.11	6/28/89					0.95	29.4	35.4	496	0.38	5.3								18.4	7.73	26.36	4.47		NA	NA
W2	-13.11	8/11/89	1020				1.16	35.9	22.3	312	0.31	4.3								18.5	7.70	27.26	4.19		<1	NA
W2	-13.11	8/16/89	935				1.28	39.6	23.9	335	0.52	7.3								18.5	7.68	27.28	4.27		<1	NA
W2	-13.11	8/23/89	917				1.34	41.5	25.7	360	0.52	7.3								17.9	7.70	27.65	4.39		<1	NA
W2	-13.11	8/30/89	935				1.19	36.9	23.9	335	0.31	4.3								18.2	7.70	27.38	4.07		<1	NA
W2	-13.11	8/30/89	935				1.19	36.9	23.9	335	0.31	4.3													NA	NA
W2	-13.11	10/31/89	915				1.20	37.2	22.7	318	0.19	2.7	308	8650	1.46	45	27	376	0.44	18.2	7.73	27.59	4.20		<1	NA
W2	-13.11	11/16/89	750				1.29	40.0	27.5	385	0.00	0.0	315	8847	1.50	46	28	392	0.57	18.7	7.90	26.95	5.02		<1	NA
W2	-13.11	12/13/89	1016				1.16	35.9	26.5	371	0.04	0.6	286	8032	1.40	43	27	371	0.45	18.4	7.74	28.31	6.36		<1	NA
W2	-13.11	1/11/90	802				0.93	28.8	23.9	335	0.06	0.8	300	8426	1.07	33	25	350	0.44	18.4	7.72	27.89	4.30		<1	NA
W2	-13.11	2/14/90	940				1.24	38.4	25.6	359	0.03	0.4	270	7583	1.53	47	27	377	0.54	18.5	7.70	27.49	4.03		<1	NA
W2	-13.11	3/6/90	1316				0.61	18.9	14.2	199	0.22	3.1	278	7808	1.51	47	26	360	0.42	18.5	7.84	28.23	3.90		<1	NA
W2	-13.11	4/4/90	1100				1.18	36.5	24.7	346	0.00	0.0	326	9156	1.32	41	24	342	0.60	18.5	7.89	27.92	4.04		<1	NA
W2	-13.11	5/17/90	1351				1.14	35.3	22.5	315	0.08	1.1	268	7527	1.38	43	23	328	0.43	18.8	7.83	28.72	4.03		<1	NA
W2	-13.11	6/16/90	1305				1.26	39.0	23.2	325	0.08	1.1	277	7780	1.45	45	25	345	0.46	18.9	7.92	28.31	3.85		<1	NA
W2	-13.11	7/17/90	1340				1.33	41.2	23.7	332	0.02	0.3	296	8313	1.87	58	27	371	0.34	18.9	7.90	27.74	3.93		<1	NA
W2	-13.11	8/8/90	1327				0.97	30.0	24.7	346	0.20	2.8	283	7948	1.51	47	25	352	0.81	18.9	7.88	28.09	3.83		<1	NA
W2	-13.11	9/5/90	1340				1.49	46.2	23.6	330	0.12	1.7			1.49	46	24	341	0.38	18.9	7.90	28.12	3.83		<1	NA
W2	-13.11	10/4/90	1340				1.22	37.8	23.0	323	0.03	0.4	293	8229	1.61	50	23	329	1.15	18.9	7.89	27.83	3.85		<1	NA
W2	-13.11	11/1/90	1355				1.09	33.8	25.2	354	0.09	1.3	288	8089	1.56	48	26	366	0.39	18.9	7.89	27.67	3.80		<1	NA
W2	-13.11	12/10/90	1357				1.03	31.9	25.1	351	0.00	0.0	270	7580	1.34	42	25	353	0.23	19.0	7.89	28.55	3.69		<1	NA
W2	-13.11	1/9/91	1000				1.01	31.3	27.0	378	0.00	0.0	285	8004	1.08	33	28	387	0.29	17.2	7.94	27.61	3.83		10	NA
W2	-13.11	2/6/91	957				0.77	23.8	23.8	333	0.00	0.0	255	7162	1.06	33	25	353	0.51	18.8	7.90	27.87	3.73		<1	NA
W2	-13.11	3/6/91	1020				0.96	29.7	24.6	345	0.08	1.1	289	8117	1.08	33	26	367	0.58	18.6	7.91	27.60	3.78		<1	NA
W2	-13.11	4/3/91	1005				0.88	27.3	29.1	408	0.00	0.0	263	7386	1.07	33	31	434	0.46	18.8	7.90	28.57	3.72		<1	NA
W2	-13.11	5/22/91	1026				0.95	29.4	12.7	178	0.09	1.3	343	9633	1.02	32	13	183	0.24	18.7	7.90	27.16	3.83		<1	NA
W2	-13.11	6/26/91	1031				0.78	24.2	23.2	325	0.32	4.5	290	8145	1.10	34	24	335	0.39	18.8	7.90	28.27	3.74		<1	<1
W2	-13.11	7/24/91	1101				1.04	32.2	22.2	311	0.28	3.9	292	8201	1.08	33	23	324	0.31	18.7	7.90	27.94	3.78		<1	<1
W2	-13.11	8/23/91	1024				0.88	27.3	21.2	297	0.46	6.4	307	8622	1.07	33	25	346	0.33	18.7	7.87	27.66	3.79		<1	<1
W2	-13.11	9/24/91	957				0.84	26.0	20.8	291	0.80	11.2	273	7667	0.91	28	23	318	0.33	18.7	7.86	28.92	3.72		<1	<1
W2	-13.11	10/23/91	1016				1.43	44.3	23.4	328	0.00	0.0	379	10644	2.88	89	25	345	0.43	18.7	7.98	28.23	3.71		<1	<1
W2	-13.11	11/20/91	958				1.39	43.1	25.1	352	0.10	1.4	341	9577	1.45	45	27	381	0.39	18.7	7.87	27.18	3.89		<1	<1
W2	-13.11	12/11/91	1100				1.25	38.7	25.9	363	0.00	0.0	311	8735	1.51	47	28	389	0.37	18.7	7.91	27.01	3.85		<1	<1
W2	-13.11	1/29/92	1058				1.00	31.0	26.7	374	0.00	0.0	314	8819	1.05	33	28	394	1.12	18.6	7.91	26.47	3.94		<1	<1
W2	-13.11	2/19/92	1119				0.94	29.1	31.4	440	0.00	0.0	277	7780	1.15	36	40	553	0.30	18.7	7.91	27.66	3.78		<1	<1
W2	-13.11	3/17/92	1033				0.93	28.8	25.8	361	0.00	0.0	111	3117	0.99	31	28	394	0.41	18.6	7.90	27.36	3.85		<1	<1
W2	-13.11	4/8/92	1030				0.93	28.8	24.3	340	0.28	3.9	285	8004	1.06	33	27	374	0.43	18.8	7.89	27.83	3.83		<1	<1
W2	-13.11	5/6/92	1105				0.91	28.2	23.7	332	0.25	3.5	313	8791	1.01	31	26	360	1.04	18.7	7.89	27.64	3.84		<1	<1
W2	-13.11	6/23/92	1041				1.03	31.9	25.2	353	0.80	11.2	325	9128	1.11	34	28	395	0.62	18.8	7.89	27.18	3.94		<1	<1
W2	-13.11	7/29/92	1037				0.93	28.8	24.5	343	ND	0.0	303	8510	1.02	32	26	368	0.45	18.9	7.87	27.53	3.86		<1	<1
W2	-13.11	8/25/92	1023				1.14	35.3	24.2	339	0.16	2.2	312	8763	1.14	35	27	373	0.78	18.8	7.86	27.97	3.79		<1	<1
W2	-13.11	9/22/92	1103				1.08	33.5	20.9	293	0.10	1.4	345	9689	1.24	38	19	260	0.31	18.8	7.89	27.07	3.85		<1	<1
W2	-13.11	10/27/92	1049				1.19	36.9	28.8	403	0.21	2.9	352	9886	1.26	39	32	444	0.68	18.8	7.90	25.98	4.00		<1	<1
W2	-13.11	11/17/92	1112				1.06	32.8	28.8	403	0.31	4.3	338	9479	1.19	37	31	435	0.54	18.6	7.91	26.07	3.99		<1	<1
W2	-13.11	12/8/92	1013				0.97	30.0	25.8	361	0.35	4.9	325	9122	1.09	34	29	407	0.47	18.6	7.91	26.94	3.91		<1	<1
W2	-13.11	1/26/93	1031				0.98	30.4	24.9	348	0.20	2.8	308	8639	1.07	33	26	369	0.37	18.7	7.92	27.85	3.82		<1	<1
W2	-13.11	2/23/93	1018				0.98	30.4	25.3	355	0.15	2.1	328	9215	1.03	32	29	410	0.28	18.6	7.93	27.40	3.83		<1	1
W2	-13.11	3/16/93	1010				1.01	31.3	24.9	349	0.19	2.7	327	9173	1.15	36	26	366	0.46	18.6	7.92	27.67	3.88		<1	<1
W2	-13.11	4/27/93	1007				0.97	30.0	25.1	352	0.33	4.6	349	9802	1.07	33	27	371	0.29	18.7	7.91	27.46	3.86		<1	<1
W2	-13.11	5/25/93	1001				0.97	30.0	23.9	335	0.32	4.5	324	9100	1.00	31	25	353	0.22	18.7	7.90	27.88	3.83		<1	<1
W2	-13.11	6/28/93	1027				0.96	29.7	25.8	361	0.16	2.2	339	9521	1.12	35	28	391	0.25	18.7	7.90	27.07	3.93		<1	<1
W2	-13.11	8/31/93	929				1.07	33.1	24.4	341	0.06	0.8	333	9352	1.08	33	28	389	0.31	18.8	7.89	27.50	3.90		<1	<1
W2	-13.11	10/26/93	916				1.01	31.3	25.3	354	0.27	3.8	318	8931	1.05	33	26	371	0.33	18.7	7.90	27.36	3.89		<1	<1
W2	-13.11	3/1/94	857				1.12	34.7	23.7	333	0.21	2.9	272	7639	1.16	36	31	428	0.41	18.7	7.88	27.84	3.66		<1	<1
W2	-13.11	6/21/94	953				1.07	33.1	23.5	329	0.09	1.3	265	7432	1.16	36	27	379	0.39	18.7	7.89	28.18	3.80		<1	<1

NELHA Water Quality Laboratory

Well 2 Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W2	-13.11	8/23/94	1024				1.17	36.2	28.0	392	0.09	1.3	321	9015	1.20	37	31	429	0.35	18.9	7.89	26.20	4.03		<1	<1
W2	-13.11	10/25/94	1043				1.11	34.4	24.6	344	0.74	10.4	274	7690	1.13	35	27	378	0.28	18.8	7.92	27.37	3.94		1	<1
W2	-13.11	1/24/95	1039				1.06	32.8	22.8	319	0.00	0.0	263	7378	1.11	34	24	335	0.25	18.6	7.91	28.08	3.79		<1	14
W2	-13.11	2/14/95	1016				1.04	32.2	24.0	336	0.15	2.1	272	7636	1.09	34	24	338	0.21	18.8	7.92	27.97	3.81		<1	<1
W2	-13.11	3/14/95	1106				1.08	33.5	24.2	339	0.14	2.0	269	7541	1.19	37	25	346	0.24	18.8	7.90	27.38	3.88		<1	<1
W2	-13.11	4/26/95	1056				1.09	33.8	24.6	344	0.15	2.1	275	7715	1.24	38	26	363	0.32	18.9	7.89	27.26	3.90		<1	<1
W2	-13.11	5/8/95	1058				1.10	34.1	23.2	324	0.30	4.2	273	7679	1.14	35	25	355	0.33	18.9	7.86	27.62	3.85		<1	<1
W2	-13.11	6/27/95	1035				1.06	32.8	23.8	333	0.42	5.9	278	7797	1.12	35	25	352	0.30	18.9	7.91	27.54	3.91		<1	<1
W2	-13.11	7/25/95	1047				1.00	31.0	23.7	332	0.06	0.8	270	7569	1.05	33	25	350	0.36	18.9	7.89	27.74	3.76		<1	<1
W2	-13.11	8/22/95	1140				1.07	33.1	23.7	332	0.18	2.5	277	7780	1.11	34	25	351	0.24	19.1	7.88	27.55	3.80		<1	<1
W2	-13.11	9/11/95	1108				0.99	30.7	23.1	323	0.26	3.6	269	7563	0.99	31	25	343	0.26	18.8	7.91	27.69	3.83		<1	<1
W2	-13.11	10/16/95	1126				1.00	31.0	22.1	309	0.37	5.2	264	7420	1.06	33	23	323	0.45	18.9	7.93	28.39	3.69		<1	<1
W2	-13.11	11/6/95	1133				1.09	33.8	23.1	324	0.23	3.2	281	7878	1.13	35	25	350	0.35	18.9	7.93	27.81	3.76		<1	<1
W2	-13.11	12/4/95	1118				1.03	31.9	23.3	326	0.15	2.1	267	7502	1.18	37	24	342	0.40	18.9	7.90	27.85	3.71		<1	<1
W2	-13.11	1/29/96	1138				1.04	32.2	23.0	323	0.01	0.1	269	7561	1.09	34	25	356	0.40	19.1	7.90	27.85	3.80		<1	<1
W2	-13.11	2/26/96	1229				1.03	31.9	23.0	322	0.26	3.6	293	8221	1.11	34	24	338	0.33	19.5	7.89	27.86	3.86		<1	<1
W2	-13.11	3/5/96	1125				1.05	32.5	32.5	456	0.25	3.5	272	7644	1.12	35	25	350	0.35	19.0	7.88	27.67	3.88		3	3
W2	-13.11	4/1/96	1157				1.08	33.5	23.3	327	0.59	8.3	292	8187	1.13	35	25	347	0.38	19.7	7.88	27.75	3.85		<1	<1
W2	-13.11	5/8/96	1208				1.08	33.5	22.4	314	0.15	2.1	266	7484	1.10	34	24	336	0.21	19.4	7.86	28.18	3.80		<1	<1
W2	-13.11	6/17/96	1123				1.10	34.1	24.8	348	0.19	2.7	304	8530	1.20	37	27	372	0.26	19.3	7.89	26.95	3.82		<1	<1
W2	-13.11	7/16/96	1133				1.07	33.1	25.4	355	0.34	4.8	291	8166	1.20	37	27	378	0.29	19.3	7.89	26.79	3.85		<1	<1
W2	-13.11	8/5/96	1212				1.12	34.7	26.0	364	0.43	6.0	291	8184	1.19	37	29	399	0.35	19.5	7.90	26.57	3.92		<1	<1
W2	-13.11	9/3/96	1136				1.08	33.5	25.1	351	0.45	6.3	311	8747	1.12	35	27	377	0.31	19.5	7.89	26.93	3.86		<1	<1
W2	-13.11	10/8/96	1143				1.09	33.8	24.7	346	0.21	2.9	302	8475	1.16	36	27	378	0.30	19.2	7.88	27.05	3.89		3	1
W2	-13.11	11/4/96	1201				1.03	31.9	24.3	340	0.27	3.8	283	7944	1.05	33	26	365	0.35	19.4	7.87	27.29	3.94		<1	<1
W2	-13.11	12/16/96	1136				1.11	34.4	23.9	334	0.34	4.8	320	8978	1.14	35	26	365	0.32	19.3	7.90	27.22	3.90		<1	<1
W2	-13.11	1/13/97	1216				1.11	34.4	18	257	0.14	2.0	255	7170	1.26	39	22	303	0.57	19.8	7.97	28.77	4.78		<1	<1
W2	-13.11	2/11/97	1224				1.03	31.9	25	346	0.18	2.5	290	8153	0.96	30	27	373	0.40	19.6	7.92	26.93	3.97		<1	<1
W2	-13.11	3/11/97	1155				0.95	29.4	24	329	0.19	2.7	280	7861	1.00	31	25	346	0.35	19.3	7.93	27.55	3.85		<1	<1
W2	-13.11	4/22/97	1206				1.03	31.9	22	314	0.39	5.5	270	7577	1.11	34	25	347	0.35	19.3	7.91	28.05	3.64		<1	1
W2	-13.11	5/27/97	1058				1.03	31.9	24	334	0.04	0.6	279	7839	1.13	35	28	391	0.31	18.2	7.94	27.49	3.85		24	1104
W2	-13.11	6/16/97	1110				1.05	32.5	23	324	0.45	6.3	280	7870	1.13	35	25	354	0.33	18.5	7.95	27.42	3.85		<1	267
W2	-13.11	7/16/97	1022				1.08	33.5	25	343	0.16	2.2	272	7628	1.16	36	26	361	0.48	18.9	7.95	27.21	3.87		<1	6
W2	-13.11	8/25/97	1118				1.09	33.8	26	363	0.26	3.6	306	8597	1.20	37	27	375	0.33	19.1	8.04	26.62	3.84		<1	<1
W2	-13.11	9/22/97	1057				1.09	33.8	23	325	0.24	3.4	263	7398	1.19	37	24	333	0.32	19.3	8.07	27.81	3.74		<1	1
W2	-13.11	10/15/97	1034				1.06	32.8	24	332	0.15	2.1	268	7538	1.17	36	25	353	0.30	18.8	8.07	27.61	3.74		<1	1
W2	-13.11	11/3/97	1022				1.05	32.5	22.9	321	0.17	2.4	256	7187	1.17	36	25	346	0.27	19.0	8.04	28.03	3.82		<1	1576
W2	-13.11	12/15/97	1039				1.01	31.3	23.0	322	0.19	2.7	266	7457	1.12	35	25	346	0.35	18.9	8.07	27.82	3.87		35	11
W2	-13.11	1/6/98	957				1.12	34.7	23.9	335	0.02	0.3	279	7844	1.25	39	26	364	0.40	18.9	8.07	27.52	3.90		<1	<1
W2	-13.11	2/2/98	1055				1.04	32.2	23.5	329	0.04	0.6	276	7738	1.14	35	26	363	0.40	19.0	8.06	27.38	3.80		<1	<1
W2	-13.11	3/9/98	1052				1.10	34.1	22.1	310	0.02	0.3	268	7538	1.14	35	24	333	0.34	18.9	7.88	28.34	3.80		<1	<1
W2	-13.11	4/13/98	1022				1.07	33.1	22	311	0.21	2.9	266	7479	1.13	35	24	342	0.34	18.9	7.89	28.22	3.82		<1	<1
W2	-13.11	5/11/98	1119				1.11	34.4	21	295	0.07	1.0	247	6929	1.21	37	22	310	0.39	19.0	7.89	28.88	3.74		<1	<1
W2	-13.11	6/1/98	1107				1.03	31.9	21.1	296	0.14	2.0	252	7076	1.14	35	23	315	0.26	19.3	7.88	28.93	3.79		<1	<1
W2	-13.11	7/13/98	1107				1.13	35.0	22	304	0.03	0.4	261	7328	1.22	38	23	323	0.32	18.9	7.88	28.44	3.77		<1	<1
W2	-13.11	8/10/98	1122				1.07	33.1	21.3	298	0.11	1.5	256	7179	1.17	36	23	315	0.37	18.9	7.85	28.61	3.81		<1	<1
W2	-13.11	9/14/98	1128				1.24	38.4	24.2	338	0.16	2.2	291	8159	1.38	43	26	363	0.36	18.9	7.87	27.21	3.96		<1	<1
W2	-13.11	10/12/98	1016				1.16	35.9	25.9	363	0.05	0.7	321	9013	1.27	39	28	388	0.32	19.3	7.88	26.37	4.34		2	120
W2	-13.11	11/2/98	1042				1.04	32.2	23.5	329	0.05	0.7	272	7628	1.16	36	25	347	0.44	19.3	7.89	27.54	3.94		<1	9
W2	-13.11	12/15/98	1026				1.07	33.1	21.8	305	0.07	1.0	267	7485	1.14	35	25	344	0.40	18.9	7.87	28.75	3.77		<1	6
W2	-13.11	1/11/99	1051				1.03	31.9	20	286	0.18	2.5	259	7260	1.13	35	22	308	0.38	19.0	7.88	28.47	3.88		<1	3
W2	-13.11	2/2/99	1055				0.97	30.0	21	292	0.08	1.1	257	7207	1.05	33	23	317	0.40	18.9	7.87	28.80	3.82		<1	<1
W2	-13.11	3/1/99	1107				0.96	29.7	19.7	276	0.04	0.6	249	6993	1.04	32	23	318	0.32	19.2	7.86	29.23	4.12		<1	<1
W2	-13.11	4/5/99	1052				1.07	33.1	22.4	314	0.05	0.7	271	7600	1.14	35	25	346	0.35	19.1	7.88	28.05	3.89		<1	<1
W2	-13.11	5/3/99	1117				0.96	29.7	20.8	291	0.16	2.2	262	7353	1.10	34	23	317	0.32	18.1	7.85	28.96	3.85		<1	<1
W2	-13.11	6/1/99	1046				1.10	34.1	22.1	310	0.40	5.6	288	8097	1.18	37	24	338	0.33	19.1	7.86	28.14	3.78		<1	<1

NELHA Water Quality Laboratory

Well 2 Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W2	-13.11	7/14/99	1105				1.00	31.0	20.1	282	0.04	0.6	262	7353	1.10	34	22	308	0.29	19.2	7.86	28.84	3.74		<1	<1
W2	-13.11	8/23/99	1114				1.03	31.9	20.8	291	0.16	2.2	273	7667	1.16	36	25	354	0.27	19.3	7.91	28.37	3.81		<1	<1
W2	-13.11	9/7/99	1115				1.31	40.6	25.4	356	0.09	1.3	288	8100	1.42	44	30	419	0.31	19.2	7.93	27.93	3.93		<1	<1
W2	-13.11	10/5/99	1052				1.06	32.8	23.2	325	0.01	0.1	266	7471	1.13	35	25	343	0.26	19.0	7.92	26.92	3.79		<1	<1
W2	-13.11	11/1/99	1124				1.06	32.8	22.2	311	0.08	1.1	265	7451	1.16	36	24	342	0.30	18.9	7.93	28.34	3.73		<1	94
W2	-13.11	12/14/99	1117				1.04	32.2	22.7	318	0.13	1.8	266	7474	1.14	35	26	366	0.30	19.0	7.87	28.00	3.67		<1	<1
W2	-13.11	1/10/00	1135				1.04	32.2	20.5	287	0.13	1.8	256	7181	1.07	33	28	388	0.34	19.0	7.88	28.82	3.73		<1	<1
W2	-13.11	2/7/00	1134				0.98	30.4	20.1	282	0.17	2.4	243	6814	1.05	33	21	297	0.28	19.0	7.92	29.36	3.68		<1	<1
W2	-13.11	3/21/00	1134				0.90	27.9	20.6	289	0.14	2.0	259	7283	0.99	31	23	326	0.31	19.1	7.91	28.67	3.68		<1	<1
W2	-13.11	4/10/00	1215				0.97	30.0	20.1	282	0.02	0.3	250	7013	1.06	33	22	312	0.31	19.1	7.91	29.13	3.65		<1	<1
W2	-13.11	5/15/00	1116				1.03	31.9	22.4	314	0.17	2.4	269	7541	1.04	32	25	352	0.29	19.0	7.92	28.10	3.79		<1	<1
W2	-13.11	6/5/00	1119				1.00	31.0	20.4	286	0.04	0.6	273	7670	1.00	31	23	317	0.31	19.0	7.91	28.20	3.80		<1	<1
W2	-13.11	7/26/00	1145				0.98	30.4	20.0	280	0.03	0.4	258	7254	0.95	29	23	321	0.24	19.0	7.92	28.93	3.72		<1	<1
W2	-13.11	8/29/00	1055				1.08	33.5	22.0	308	0.07	1.0	254	7128	1.15	36	23	321	0.32	19.3	7.87	28.42	3.77		<1	<1
W2	-13.11	9/5/00	1109				1.11	34.4	23.6	331	0.06	0.8	272	7645	1.21	37	25	343	0.34	19.1	7.88	27.79	3.78		<1	<1
W2	-13.11	10/24/00	1122				1.02	31.6	17.5	245	0.20	2.8	248	6954	1.20	37	23	328	0.52	20.8	8.02	28.83	4.47		<1	<1
W2	-13.11	11/13/00	1102				0.90	27.9	21.8	305	0.27	3.8	254	7142	0.95	29	30	414	0.34	20.6	7.92	28.75	3.65		<1	<1
W2	-13.11	12/18/00	1054				1.07	33.1	21.9	307	0.21	2.9	271	7617	1.15	36	24	342	0.38	19.2	7.90	28.66	3.61		<1	<1
W2	-13.11	1/22/01	1118				1.12	34.7	23.8	333	0.18	2.5	278	7813	1.28	40	24	343	0.44	19.1	7.88	27.91	3.58		<1	<1
W2	-13.11	2/5/01	1123				0.94	29.1	22.3	312	0.21	2.9	276	7746	1.04	32	26	366	0.40	18.9	7.89	28.42	3.53		<1	<1
W2	-13.11	3/5/01	1115				1.02	31.6	31.4	440	0.07	1.0	259	7280	1.18	37	40	564	0.35	19.1	7.86	28.69	3.74		<1	<1
W2	-13.11	4/17/01	1105				1.22	37.8	49.2	689	0.02	0.3	271	7606	1.26	39	56	784	0.41	18.9	7.85	28.44	4.07		<1	<1
W2	-13.11	5/15/01	1045				1.38	42.7	89.7	1256	0.16	2.2	260	7311	1.34	42	92	1293	0.52	19.0	7.83	28.44	4.32		<1	<1
W2	-13.11	6/12/01	1134				1.66	51.4	102	1429	0.04	0.6	261	7325	1.68	52	106	1478	0.59	19.1	7.83	28.18	4.55		<1	<1
W2	-13.11	7/25/01	916				2.25	69.7	107	1500	0.03	0.4	268	7535	2.22	69	112	1573	0.65	18.9	7.81	27.71	7.40		<1	5
W2	-13.11	8/20/01	906				2.82	87.3	121	1695	0.09	1.3	259	7269	2.82	87	128	1796	0.73	18.7	7.78	27.89	5.13		<1	<1
W2	-13.11	9/19/01	1028				2.62	81.2	112	1572	0.05	0.7	258	7240	2.90	90	120	1677	0.73	18.8	7.80	27.66	5.38		<1	<1
W2	-13.11	10/24/01	1020				3.31	102.5	118	1654	0.01	0.1	252	7080	3.42	106	135	1885	0.83	18.4	7.76	27.54	5.33		TNTC	<1
W2	-13.11	11/7/01	1055				3.12	96.6	126	1765	0.02	0.3	253	7117	3.12	97	175	2450	0.81	18.3	7.77	27.63	5.33		14	<1
W2	-13.11	12/19/01	1036				3.28	101.6	137	1925	0.19	2.7	234	6572	3.12	97	209	2927	0.78	18.2	7.77	28.10	5.33		<1	<1
W2	-13.11	1/9/02	1026				3.57	110.6	126	1766	0.19	2.7	258	7249	3.44	107	130	1822	0.76	17.9	7.74	27.75	5.50		<1	<1
W2	-13.11	2/25/02	1105				3.10	96.0	98.9	1385	0.05	0.7	238	6687	3.14	97	115	1614	0.68	17.9	7.82	28.27	6.03		<1	<1
W2	-13.11	3/20/02	1044				3.02	93.5	98.1	1374	0.10	1.4	232	6521	3.12	97	103	1437	0.62	17.6	7.78	28.36	6.09		<1	<1
W2	-13.11	4/10/02	1117				2.98	92.3	90.0	1260	0.10	1.4	226	6333	3.14	97	94	1312	0.69	17.7	7.78	28.25	6.13		<1	<1
W2	-13.11	5/22/02	933				3.18	98.5	103	1441	0.16	2.2	233	6555	3.18	98	108	1517	1.03	17.3	7.81	28.12	6.36		<1	<1
W2	-13.11	6/19/02	953				3.66	113.4	124	1742	0.19	2.7	242	6791	3.78	117	138	1937	0.75	17.2	7.78	27.64	6.28		<1	<1
W2	-13.11	7/22/02	942				3.42	105.9	127	1783	0.07	1.0	226	6359	3.60	112	137	1918	0.77	17.5	7.80	28.29	6.27		<1	<1
W2	-13.11	8/21/02	953				3.84	118.9	123	1716	0.19	2.7	232	6519	4.00	124	133	1856	0.72	17.1	7.77	27.98	6.23		<1	1
W2	-13.11	9/25/02	1138				3.60	111.5	112	1566	0.24	3.4	238	6679	3.76	116	109	1524	0.65	17.2	7.77	27.98	6.28		27	<1
W2	-13.11	10/15/02	924				3.98	123.3	124	1735	0.13	1.8	230	6446	4.13	128	133	1861	0.77	17.1	7.80	27.99	6.26		<1	<1
W2	-13.11	11/17/02	1118				4.23	131.0	118	1653	0.10	1.4	237	6667	4.50	139	116	1619	0.63	17.1	7.80	27.86	6.15		<1	72
W2	-13.11	12/18/02	1146				3.96	122.7	115	1614	0.05	0.7	230	6462	4.25	132	89	1245	0.74	17.3	7.74	27.84	6.28		<1	<1
W2	-13.11	1/29/03	1037				3.96	122.7	105	1474	<0.1	0.0	232	6516	4.12	128	125	1751	0.72	20.3	7.90	27.68	6.50		<1	<1
W2	-13.11	2/10/03	1058				4.03	124.8	99.3	1391	0.15	2.1	236	6634	4.30	133	114	1597	0.69	16.9	7.76	29.70	6.60		<1	<1
W2	-13.11	3/20/03	1020				3.72	115.2	89.3	1251	0.04	0.6	228	6415	3.85	119	108	1510	0.69	17.4	7.75	28.22	6.39		<1	<1
W2	-13.11	4/30/03	1117				3.65	113.1	95.0	1330	0.15	2.1	222	6229	3.87	120	103	1443	0.70	17.1	7.77	34.44	6.30		<1	1
W2	-13.11	5/14/03	1027				3.77	116.8	89.0	1246	0.09	1.3	227	6373	3.87	120	95	1328	0.61	17.3	7.81	28.16	6.12		<1	133
W2	-13.11	6/4/03	1115				3.54	109.6	88.7	1242	0.01	0.1	222	6241	3.74	116	102	1423	0.64	17.6	7.69	28.38	6.08		<1	<1

NELHA Water Quality Laboratory

Well 2 Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W2	-13.11	7/30/03	1044				3.51	108.7	83.4	1169	0.02	0.3	224	6291	3.67	114	90	1259		19.3	7.91	28.34	6.16		<1	<1
W2	-13.11	8/28/03	1025				3.50	108.4	87.4	1224	0.02	0.3	224	6297	3.72	115	115	1604		18.1	7.74	28.09	6.01		<1	311
W2	-13.11	9/16/03	1101				3.92	121.4	91.8	1286	0.38	5.3	246	6903	3.96	123	100	1406		17.8	7.75	27.25	5.84		<1	TNTC
W2	-13.11	10/8/03	1101				3.64	112.7	77.5	1086	0.30	4.2	231	6496	3.74	116	95	1331		17.8	7.75	27.94	NA		<1	TNTC
W2	-13.11	11/5/03	1102				3.64	112.7	87.1	1220	0.40	5.6	240	6732	3.82	118	94	1312		17.6	7.75	27.70			<1	8
W2	-13.11	11/14/03	1452																	17.8			5.65			
W2	-13.11	12/22/03	1003				3.74	115.8	79.0	1106	<0.10	0.0	235	6586	3.97	123	83	1165		17.8	7.73	28.06	5.61		<1	<1
W2	-13.11	1/26/04	1043				3.78	117.1	86.4	1210	0.10	1.4	234	6575	4.02	125	93	1305		17.6	7.71	27.88	5.55		<1	<1
W2	-13.11	2/11/04	1030				3.72	115.2	72.0	1009	0.13	1.8	226	6336	3.94	122	80	1114	1.27	17.8	7.70	28.06	5.57		<1	<1
W2	-13.11	3/16/04	1302				3.76	116.5	61.7	865	0.22	3.1	239	6718	4.06	126	72	1010		18.7	7.73	27.67	4.94		<1	<1
W2	-13.11	4/20/04	1104				3.58	110.9	64.6	905	0.02	0.3	230	6457	3.80	118	70	979		17.8	7.71	27.60	5.34		<1	1
W2	-13.11	5/11/04	1010				3.26	101.0	53.5	749	0.25	3.5	326	9156	3.32	103	59	831		18.5	7.90	27.05	5.65		<1	<1
W2	-13.11	6/2/04	1104				3.40	105.3	52.7	739	0.18	2.5	231	6496	3.52	109	54	752		18.1	7.71	26.83	5.29		<1	<1
W2	-13.11	7/14/04	1113				3.34	103.5	57.3	803	0.18	2.5	237	6651	3.64	113	70	982		18.7	7.71	26.93	5.48		<1	<1
W2	-13.11	8/23/04	1108				3.28	101.6	52.2	731	0.35	4.9	240	6741	3.70	115	58	815		18.6	7.73	26.85	5.41		<1	<1
W2	-13.11	9/27/04	950				3.38	104.7	52.5	735	0.17	2.4	249	6988	3.56	110	65	903		18.7	7.71	26.82	5.35		<1	<1
W2	-13.11	10/5/04	951				3.44	106.5	53.1	743	0.17	2.4	246	6920	3.62	112	59	824		18.5	7.74	26.52	5.45		<1	<1
W2	-13.11	11/9/04	1032				3.28	101.6	58.2	815	0.15	2.1	226	6345	3.54	110	62	875		NA	7.68	27.14	5.66		<1	<1
W2	-13.11	12/6/04	1105				3.50	108.4	62.2	871	0.13	1.8	235	6586	3.66	113	69	966		18.8	7.74	26.72	5.72		<1	<1
W2	-13.11	1/10/05	1032				3.48	107.8	61.5	862	0.07	1.0	221	6196	3.56	110	65	917		19.0	7.75	28.28	5.81		<1	<1
W2	-13.11	2/9/05	1029				3.42	105.9	58.8	824	0.08	1.1	220	6176	3.60	112	73	1023		18.9	7.76	28.21	5.90		<1	<1
W2	-13.11	3/15/05	1055				3.22	99.7	50.7	710	0.22	3.1	219	6148	3.48	108	63	879	0.57	18.9	7.77	28.01	5.82		<1	<1
W2	-13.11	4/19/05	1007				3.20	99.1	52.0	729	0.15	2.1	218	6109	3.44	107	54	753		19.0	7.76	28.17	5.88		<1	<1
W2	-13.11	5/23/05	1053				3.16	97.9	59.9	838	0.18	2.5	218	6123	3.40	105	58	815		19.3	7.71	28.47	6.04		<1	<1
W2	-13.11	6/13/05	915				3.32	102.8	60.8	852	0.10	1.4	216	6052	3.50	108	65	910		19.1	7.73	28.24	5.81		<1	<1
W2	-13.11	7/18/05	1025				3.28	101.6	50.1	702	0.06	0.8	224	6300	3.70	115	55	773	0.61	19.1	7.72	28.02	5.58		<1	<1
W2	-13.11	8/9/05	1035				3.14	97.3	52.9	741	0.16	2.2	217	6097	3.36	104	57	794	0.53	19.1	7.75	28.17	5.70		<1	<1
W2	-13.11	9/20/05	1023				3.24	100.4	58.2	815	0.23	3.2	218	6131	3.44	107	63	886	0.73	19.0	7.73	28.15	5.81		<1	<1
W2	-13.11	10/17/05	1023				3.38	104.7	59.1	828	0.14	2.0	219	6151	3.66	113	63	881		18.9	7.72	28.29	5.80		<1	<1
W2	-13.11	11/7/05	952				3.50	108.4	73.7	1033	0.02	0.3	218	6134	3.70	115	76	1070		18.6	7.73	28.42	6.04		<1	<1
W2	-13.11	12/21/05	921				3.62	112.1	62.5	875	0.2	2.8	223	6249	3.80	118	67	937	0.83	18.5	7.75	27.92	5.82		<1	<1
W2	-13.11	1/23/06	1023				3.54	109.6	57.7	808	0.25	3.5	220	6179	3.70	115	60	835		18.6	7.70	28.36	5.9		<1	<1
W2	-13.11	2/14/06	1038				3.54	109.6	53.3	747	0.27	3.8	219	6151	3.74	116	55	769	0.57	18.4	7.72	28.36	5.88		<1	<1
W2	-13.11	3/20/06	941				3.38	104.7	50.1	702	0.30	4.2	214	6010	3.56	110	53	742	0.58	18.5	7.74	28.77	5.65		<1	<1
W2	-13.11	4/25/06	1010				3.30	102.2	49.2	689	0.11	1.5	203	5701	3.42	106	45	625	0.55	18.6	7.75	28.77	5.59		<1	<1
W2	-13.11	5/22/06	1040				3.22	99.7	52.3	733	0.21	2.9	200	5617	3.64	113	48	676	0.60	18.9	7.74	28.87	5.66		<1	<1
W2	-13.11	6/26/06	1053				3.01	93.2	50.8	712	0.12	1.7	206	5786	3.19	99	51	708	0.57	18.6	7.77	28.64	5.41		<1	<1
W2	-13.11	7/20/06	1058				3.16	97.9	56.0	784	0.24	3.4	210	5898	3.48	108	49	691	0.54	18.7	7.77	28.68	5.99		912	>5,000
W2	-13.11	7/27/06															46	643	0.63			28.87	5.95		1	5372
W2	-13.11	8/7/06	1115				3.02	93.5	57.6	807	0.25	3.5	210	5898	3.37	104	58	809	0.64	19.4	7.80	28.49	6.78		20	1140
W2	-13.11	9/18/06	1038				2.97	92.0	55.9	783	0.28	3.9	212	5954	3.32	103	62	873	0.62	19.1	7.77	28.45	5.57		<1	2
W2	-13.11	10/23/06	1015				2.83	87.7	52.0	728	0.32	4.5	209	5870	3.00	93	51	713	0.58	18.6	7.75	28.18	5.75		<1	<1
W2	-13.11	11/27/06	1034				3.10	96.0	66.4	930	0.17	2.4	215	6038	3.23	100	53	746	0.56	18.4	7.78	28.26	5.65		<1	<1
W2	-13.11	12/11/06	1056				3.12	96.6	68.8	964	0.28	3.9	215	6038	3.31	103	54	752	0.60	18.3	7.78	28.20	5.84		<1	<1
W2	-13.11	1/8/07	1146				3.12	96.6	63.2	885	0.27	3.8	202	5673	3.32	103	60	836	0.54	18.7	7.78	28.304	5.85		<1	<1
W2	-13.11	2/20/07	1115				3.35	103.8	70.8	992	0.32	4.5	196	5505	3.53	109	78	1091	0.62	18.1	7.86	28.408	6.04		<1	<1
W2	-13.11	3/5/07	1113				3.20	99.1	68.1	954	0.35	4.9	209	5870	3.35	104	72	1005	0.59	18.2	7.82	28.445	5.73		<1	<1
W2	-13.11	4/18/07	1112				3.25	100.7	62.5	875	0.2	2.8	210	5898	3.30	102	58	816	0.53	18.6	7.85	28.582	5.55		<1	<1
W2	-13.11	5/1/07	1101				3.25	100.7	62.2	871	0.3	4.2	209	5870	3.37	104	59	831	0.55	18.3	7.84	28.485	5.56		<1	<1
W2	-13.11	6/18/07	1055				3.23	98.0	61.2	857	0.18	2.5	215	6038					0.47	18.6	7.87	28.413	5.75		<1	<1

NELHA Water Quality Laboratory

Well 2 Data Table

June 1989 - December 2014

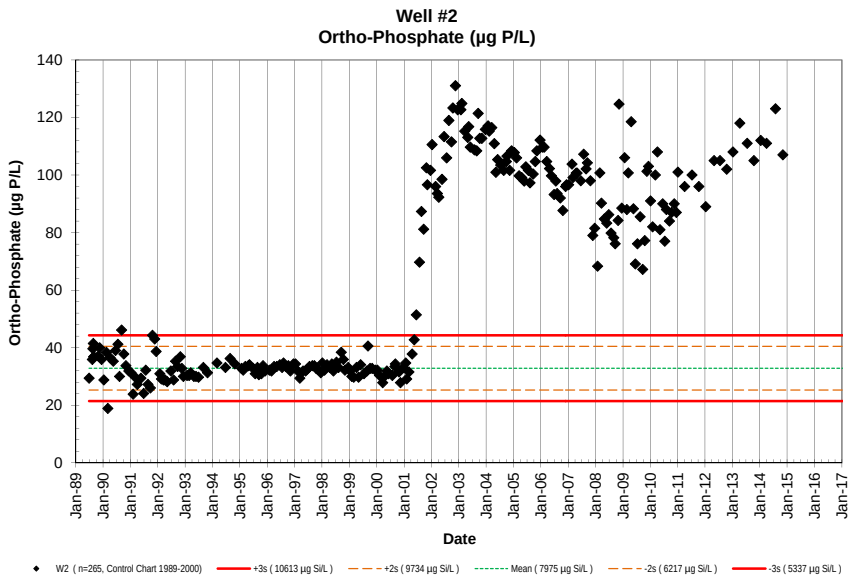
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W2	-13.11	7/26/07	1339	-1.68	0.61	Flood	3.46	107	70.2	983	1.91	26.7	237	6649	3.55	110	69	972		17.9	7.72	28.35	5.34			
W2	-13.11	8/28/07	1140	-1.95	0.08	Flood	3.30	102	62.5	876	0.01	0.1	191	5371	3.19	98.80	63	888		18.0	7.72	28.29	5.40			
W2	-13.11	9/13/07	1108	-1.88	0.15	Low	3.36	104	59.0	827	0.01	0.2	208	5845	3.56	110.30	64	901		18.2	7.83	28.34	5.42			
W2	-13.11	10/24/07	1439	-1.88	0.46	High	3.16	98	61.2	857	0.16	2.3	208	5849	3.16	97.94	60	838		18.2	7.83	28.11	5.42			
W2	-13.11	11/26/07	1139	-2.03	0.15	Ebb	2.55	79	68.2	955	0.01	0.1	210	5910	2.96	91.75	74	1030		18.5	7.77	28.47	5.05			
W2	-13.11	12/20/07	1232	-1.88	0.23	High	2.63	82	46.5	651	0.61	8.6	176	4939						18.1	7.85	28.23	5.05			
W2	-13.11	1/28/08	1314	-1.83	0.06	Ebb	2.21	68	26.1	365	0.25	3.5	167	4676						18.4	7.62	28.70	4.74			
W2	-13.11	2/27/08	1107	-1.80	0.09	Ebb	3.25	101	62.0	869	0.60	8.4	198	5564						18.0	7.63	28.37	5.33			
W2	-13.11	3/20/08	1131	-2.03	0.00	Low	2.91	90	59.4	832	0.06	0.8	131	3673						18.0	7.71	28.54	5.14			
W2	-13.11	4/28/08	1125	-1.98	0.18	High	2.73	85	57.5	805	0.19	2.6	198	5568						18.3	7.66	28.28	4.98			
W2	-13.11	5/30/08	1225	-1.55	0.49	Flood	2.69	83	51.2	718	0.21	2.9	203	5714						18.2	7.67	28.26	5.28			
W2	-13.11	6/26/08	1032	-1.62	0.43	High	2.78	86	54.4	762	0.29	4.0	239	6721						18.5	7.70	28.19	5.57	0.40		
W2	-13.11	7/25/08	1212	-1.62	0.52	Ebb	2.58	80	47.1	660	0.20	2.8	176	4951						17.9	7.62	28.25	5.50			
W2	-13.11	8/30/08	953		0.03	Low	2.52	78	52.5	735	0.13	1.8	205	5753						17.9	7.66	28.64	6.05			
W2	-13.11	9/19/08	926	-1.63	0.58	Ebb	2.46	76	46.0	644	0.33	4.6	143	4008						21.2	7.53	28.26	6.31	0.10		
W2	-13.11	10/27/08	1220	-1.90	0.27	Flood	2.72	84	52.4	734	0.34	4.8	199	5576						19.4	7.47	28.02	3.17	0.21		
W2	-13.11	11/10/08	1034	-1.91	0.24	Flood	4.02	125	54.0	757	0.16	2.2	203	5697						19.7	7.67	28.06	5.70	0.49		
W2	-13.11	12/15/08	1002	-1.90	0.43	Ebb	2.86	89	65.4	917	0.41	5.7	200	5612						19.9	7.91	27.68	6.48			
W2	-13.11	1/23/09	1339	-2.04	0.15	High	3.42	106	65.2	913	0.00	0.0	184	5160						20.0	7.86	28.30	5.74	0.55		
W2	-13.11	2/23/09	1444	-1.94	0.24	Flood	2.84	88	22.2	310	0.15	2.1	67	1883						19.1	7.83	26.56	6.08	0.09		
W2	-13.11	3/13/09	1455	-2.06	0.24	Flood	3.25	101	63.9	896	0.13	1.8	189	5310						19.3	7.77	28.64	5.82	0.05		
W2	-13.11	4/20/09	1209	-2.11	0.30	Flood	3.83	119	56.5	791	1.26	17.6	157	4422						19.1	7.70	29.09	5.73	0.63		
W2	-13.11	5/21/09	1442	-1.83	0.61	High	2.85	88	48.2	676	0.55	7.7	210	5905						17.8	7.84	28.73	5.16	0.13		
W2	-13.11	6/16/09	1113	-1.90	0.40	Flood	2.23	69	38.0	533	0.77	10.8	154	4322						17.9	7.51	27.65	5.00	0.04		
W2	-13.11	7/13/09	1519	-2.15	0.21	Flood	2.46	76	38.7	543	0.32	4.5	118	3311						17.9	7.70	28.83	4.79	0.06		
W2	-13.11	8/18/09	1419	-1.66	0.70	Flood	2.76	86	50.1	702	0.58	8.1	176	4936						18.2	7.20	27.52	5.02	0.06		
W2	-13.11	9/21/09	1418	-2.20	0.18	Flood	2.17	67	33.5	470	0.58	8.1	106	2976						18.6	8.24	28.75	4.69	0.07		
W2	-13.11	10/19/09	1209	-2.19	0.12	Low	2.49	77	48.8	684	0.53	7.4	83	2339						18.7	7.94	29.03	4.81	0.04		
W2	-13.11	11/16/09	1357	-2.26	0.18	Flood	3.27	101	51.8	726	0.90	12.6	194	5439						18.5	7.73	29.43	4.98	0.04		
W2	-13.11	12/7/09	1313	-2.20	0.18	Ebb	3.33	103	59.9	839	1.10	15.4	195	5469						19.0	7.78	29.17	5.01	0.08		
W2	-13.11	1/5/10	1038	-1.94	0.30	Ebb	2.94	91	52.5	736	1.50	21.0	206	5792						18.8	7.75	28.10	4.88	0.10		
W2	-13.11	2/1/10	1107	-2.14	0.00	Ebb	2.65	82	59.5	833	0.79	11	199	5577						18.6	7.83	27.79	4.86	0.24		
W2	-13.11	3/9/10	1057	-2.23	0.12	Flood	3.23	100	60.6	849	0.36	5	215	6033						18.0	7.75	28.69	5.04	0.19		
W2	-13.11	4/6/10	953	-2.28	0.15	Flood	3.49	108	55.3	775	0.93	13	213	5980						19.2	7.79	28.78	5.46	0.04		
W2	-13.11	5/11/10	1033	-2.28	0.09	Flood	2.62	81	45.7	640	0.93	13	196	5503						19.5	7.88	28.49	4.74	0.24		
W2	-13.11	6/15/10	1127	-2.35	0.06	Low	2.91	90	51.4	720	0.36	5	225	6318						17.9	7.76	28.61	4.60	0.13		
W2	-13.11	7/13/10	1043	-2.32	0.00	Low	2.49	77	60.5	848	0.21	3	212	5945						17.8	7.73	28.83	4.70	0.12		
W2	-13.11	8/3/10	1037	-1.86	0.52	Flood	2.84	88	64.3	900	0.21	3	226	6351						17.7	7.80	28.45	4.88	0.07		
W2	-13.11	9/14/10	1039	-1.75	0.58	Ebb	2.71	84	69.4	972	0.22	3.1	224	6295						17.6	7.81	28.45	5.61	0.08		
W2	-13.11	10/12/10	1034	-1.78	0.55	Ebb	2.81	87	66.7	934	0.11	1.6	236	6640						17.7	7.83	28.27	5.33	0.11		
W2	-13.11	11/16/10	949	-1.97	0.27	Flood	2.91	90	68.4	958	0.10	1.4	231	6483						17.7	7.84	28.05	5.30	0.10		
W2	-13.11	12/14/10	1030	-1.94	0.37	High	2.81	87	71.6	1003	0.25	3.5	220	6181						17.7	7.84	28.10	5.14	0.05		
W2	-13.11	1/4/11	1019	-2.16	0.06	Ebb	3.26	101	80.3	1125	0.89	12.4	223	6274						17.7	7.84	28.36	5.36	0.04		
W2	-13.11	4/5/11	1108	-2.28	-0.06	Low	3.10	96	69.1	968	0.15	2.1	211	5921						17.4	7.76	28.47	4.77	0.13		
W2	-13.11	7/12/11	1036	-2.27	0.18	Flood	3.23	100	76.7	1074	0.11	1.5	199	5595						16.9	7.88	28.69	5.49	0.02		
W2	-13.11	10/11/11	1051	-2.16	0.12	Low	3.10	96	68.7	962	0.24	3.4	202	5671						17.1	7.89	28.96	4.87	0.11		
W2	-13.11	1/10/12	1048	-2.21	0.06	Ebb	2.87	89	77.2	1081	0.18	2.5	189	5320						17.1	7.87	29.08	5.55	0.05		
W2	-13.11	5/1/12	1046	-2.03	0.34	Flood	3.39	105	75.0	1051	0.14	1.9	212	5947						17.1	7.88	28.94	4.99	0.06		
W2	-13.11	7/18/12	1006	-2.18	0.00	Flood	3.39	105	86.8	1216	0.34	4.8	202	5680						16.8	7.98	29.09	5.93	0.05		
W2	-13.11	10/16/12	1047	-2.11	0.09	Ebb	3.29	102	82.4	1154	0.18	2.5	203	5712						16.8	7.94	28.78	5.95	0.10		
W2	-13.11	1/8/13	1111	-2.12	0.15	Flood	3.49	108	76.8	1076	0.21	3	239	6710						16.8	7.89	28.73	6.23	0.04		
W2	-13.11	4/9/13	1054	-2.31	-0.03	Flood	3.81	118	87.0	1218	0.19	2.7	191	5351						16.6	7.94	29.05	6.25	0.15		

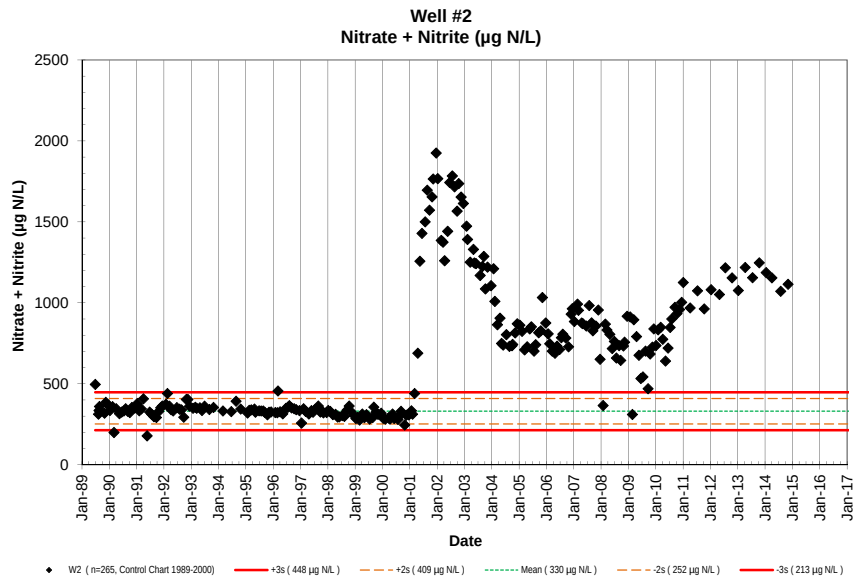
NELHA Water Quality Laboratory

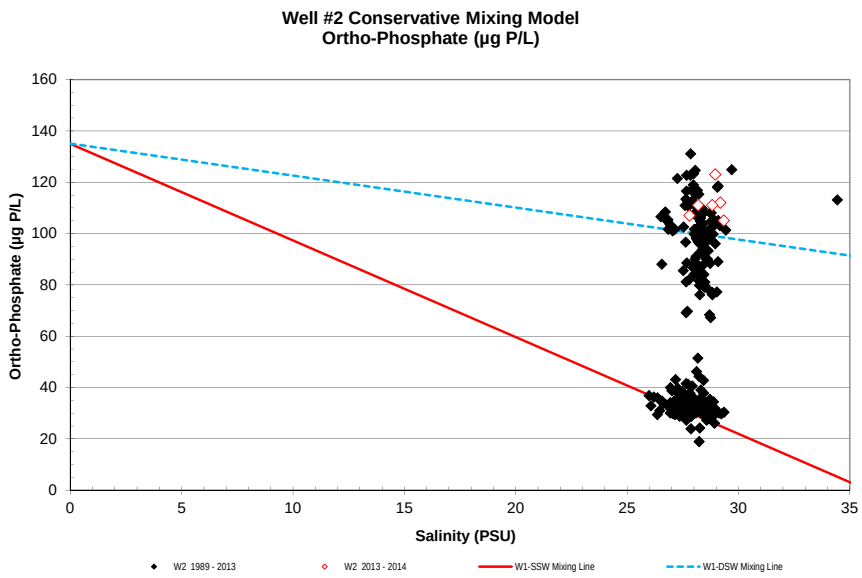
Well 2 Data Table

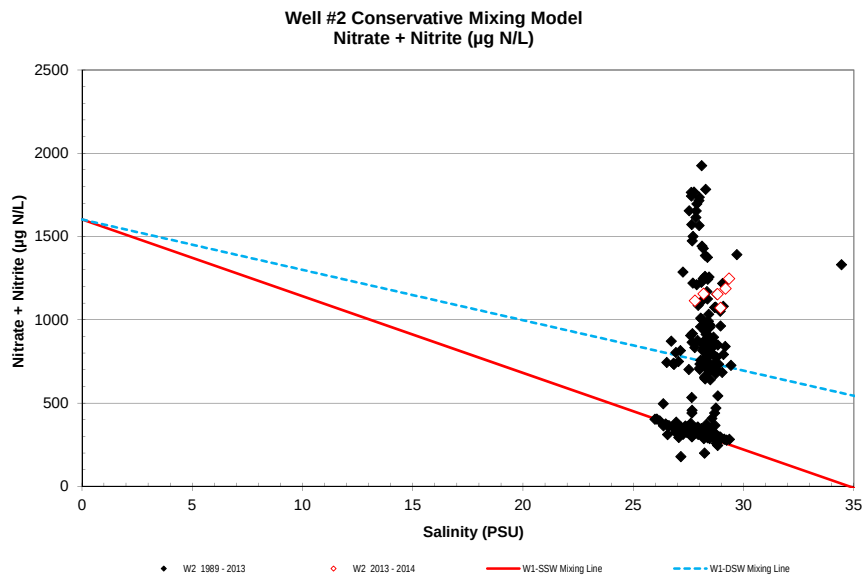
June 1989 - December 2014

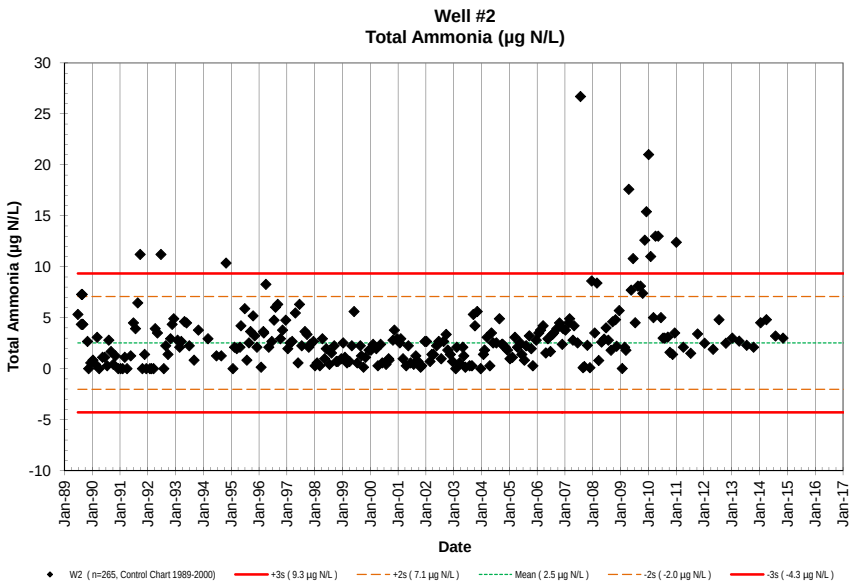
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W2	-13.11	7/17/13	1143	-1.89	0.58	Flood	3.58	111	82.5	1155	0.16	2.3	225	6316						16.8	7.91	28.19	5.87	0.02		
W2	-13.11	10/15/13	1035	-1.96	0.30	Flood	3.39	105	89.0	1247	0.15	2.1	199	5591						16.7	7.90	29.34	6.27	0.05		
W2	-13.11	1/15/14	1032	-1.98	0.06	Ebb	3.62	112	84.7	1187	0.32	4.5	197	5546						17.0	7.95	29.18	5.80	0.07		
W2	-13.11	4/1/14	1132	-2.33	0.00	Flood	3.58	111	82.4	1154	0.34	4.8	201	5646						17.0	7.81	28.82	6.24	0.15		
W2	-13.11	7/29/14	1111	-2.21	0.12	Low	3.97	123	76.5	1071	0.23	3.2	197	5534						16.8	7.85	28.96	7.77	0.15		
W2	-13.11	11/5/14	1108	-2.05	0.15	Flood	3.45	107	79.5	1114	0.21	3	208	5840						17.4	7.74	27.80	6.10	0.22		
W2	-13.11	1/1/15																								
W2	-13.11	4/1/15																								

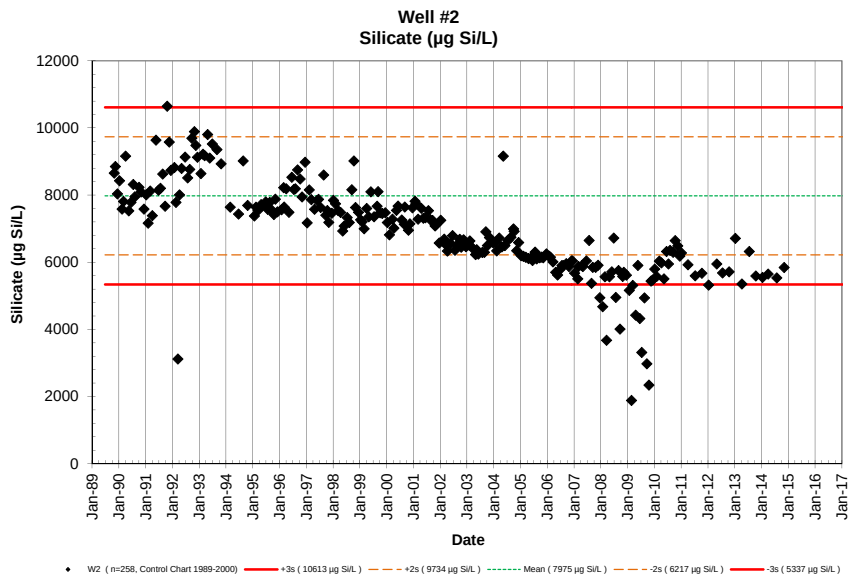

Well #2
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W2 (n=265, Control Chart 1989-2000)
+3s (10613 µg Si/L)
+2s (9734 µg Si/L)
Mean (7975 µg Si/L)
-2s (6217 µg Si/L)
-3s (5337 µg Si/L)

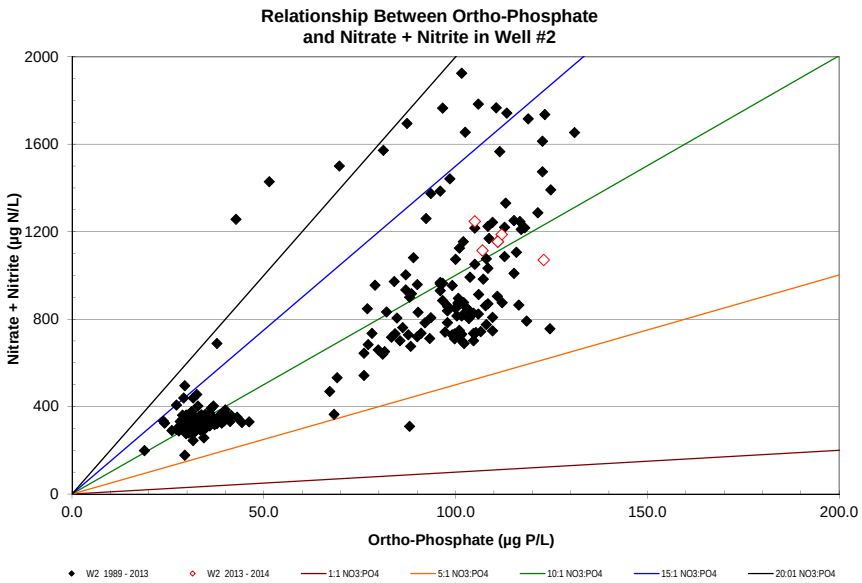

Well #2
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W2 (n=265, Control Chart 1989-2000)
+3s (448 µg N/L)
+2s (409 µg N/L)
Mean (330 µg N/L)
-2s (252 µg N/L)
-3s (213 µg N/L)

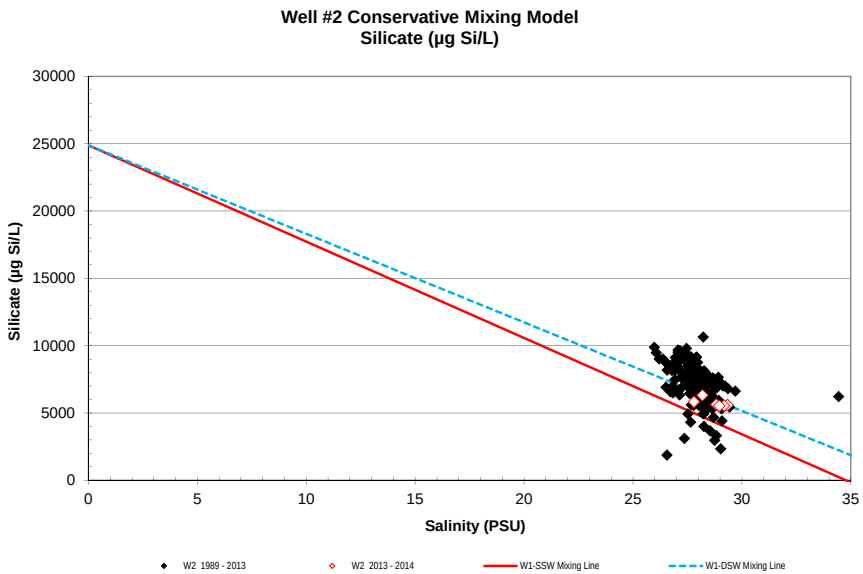

Well #2 Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W2 1989 - 2013
W2 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

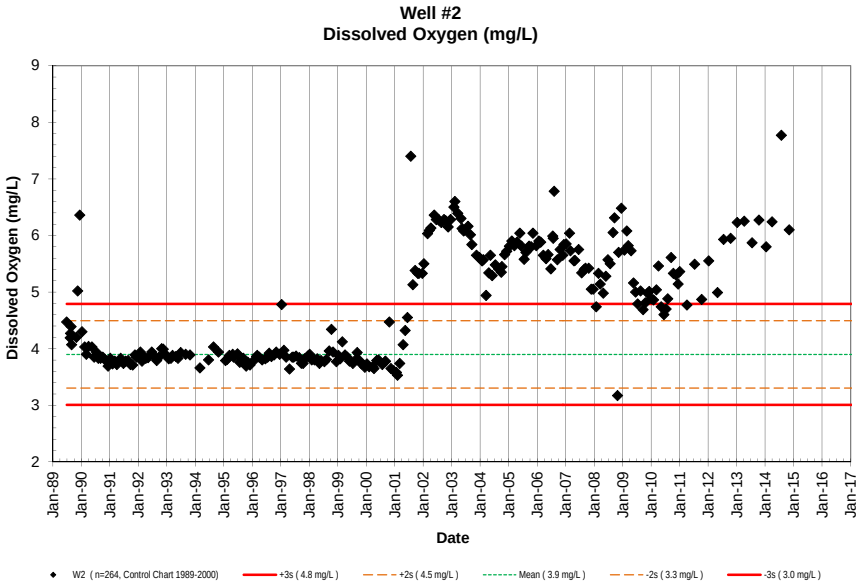

Well #2 Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W2 1989 - 2013
W2 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

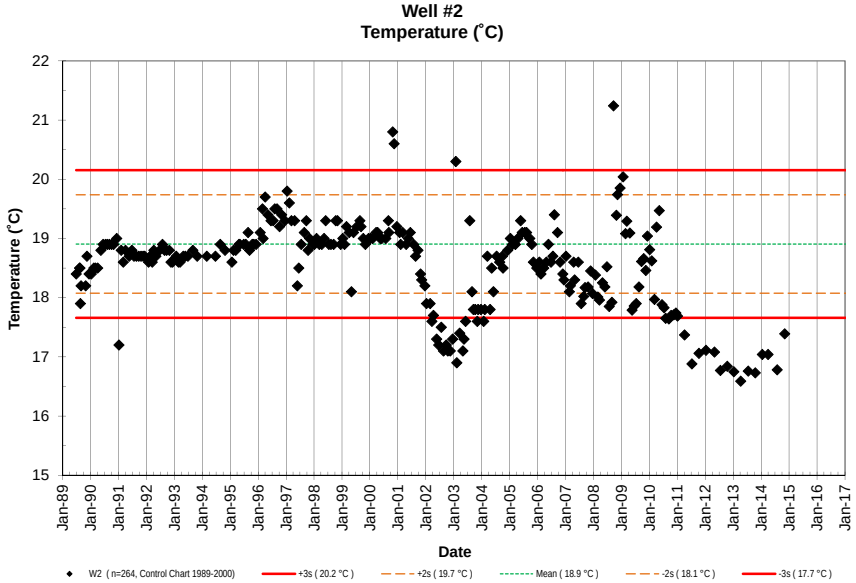

Well #2
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W2 (n=265, Control Chart 1989-2000)
+3s (9.3 µg N/L)
+2s (7.1 µg N/L)
Mean (2.5 µg N/L)
-2s (-2.0 µg N/L)
-3s (-4.3 µg N/L)

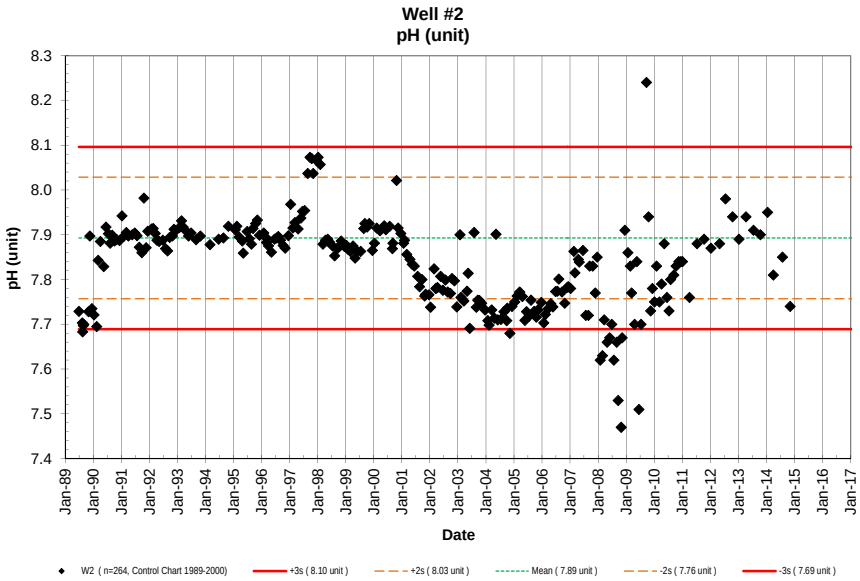

Well #2
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W2 (n=258, Control Chart 1989-2000)
+3s (10613 µg Si/L)
+2s (9734 µg Si/L)
Mean (7975 µg Si/L)
-2s (6217 µg Si/L)
-3s (5337 µg Si/L)

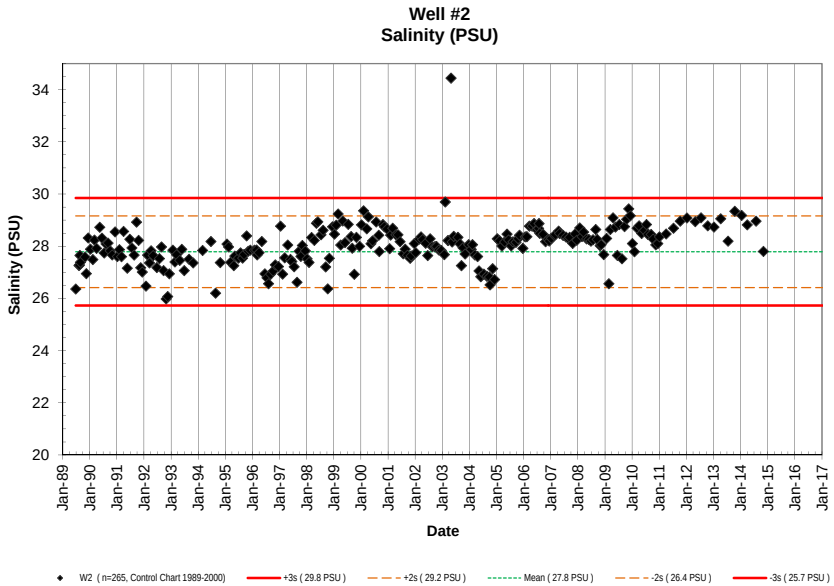

Relationship Between Ortho-Phosphate
and Nitrate + Nitrite in Well #2
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W2 1989 - 2013
W2 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

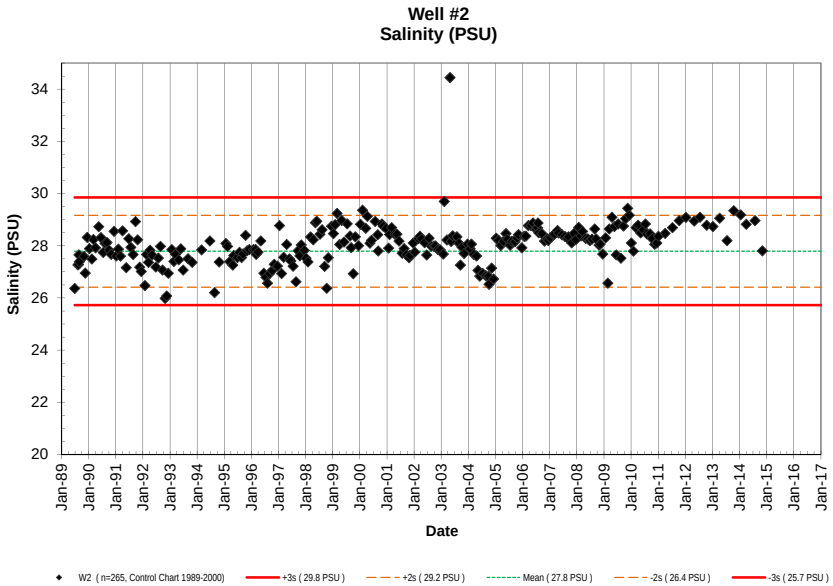

Well #2 Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W2 1989 - 2013
W2 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

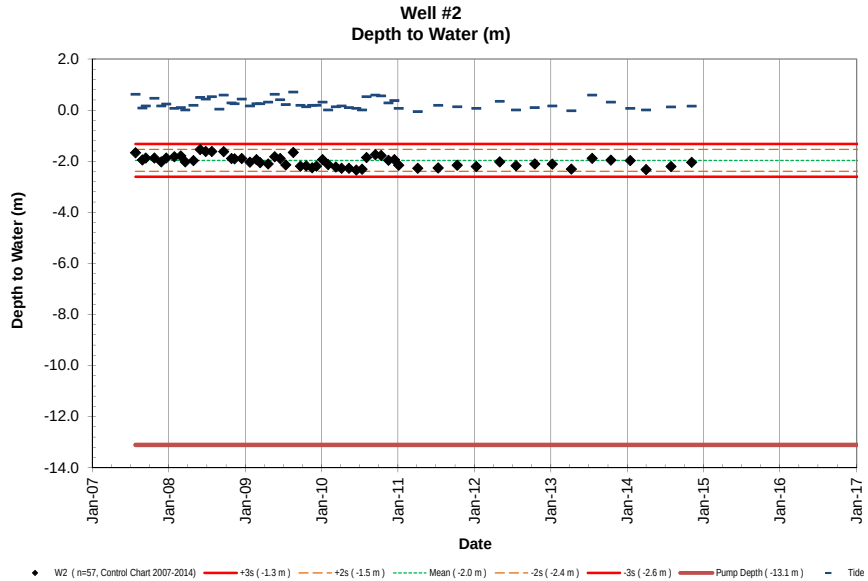

Well #2
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W2 (n=264, Control Chart 1989-2000)
+3s (4.8 mg/L)
+2s (4.5 mg/L)
Mean (3.9 mg/L)
-2s (3.3 mg/L)
-3s (3.0 mg/L)


Well #2
Temperature (˚C)
Temperature (˚C)
Date
W2 (n=264, Control Chart 1989-2000)
+3s (20.2 °C)
+2s (19.7 °C)
Mean (18.9 °C)
-2s (18.1 °C)
-3s (17.7 °C)


Well #2
pH (unit)
pH (unit)
Date
W2 (n=264, Control Chart 1989-2000)
+3s (8.10 unit)
+2s (8.03 unit)
Mean (7.89 unit)
-2s (7.76 unit)
-3s (7.69 unit)


Well #2
Salinity (PSU)
Salinity (PSU)
Date
W2 (n=265, Control Chart 1989-2000)
+3s (29.8 PSU)
+2s (29.2 PSU)
Mean (27.8 PSU)
-2s (26.4 PSU)
-3s (25.7 PSU)


Well #2
Salinity (PSU)
Salinity (PSU)
Date
W2 (n=265, Control Chart 1989-2000)
+3s (29.8 PSU)
+2s (29.2 PSU)
Mean (27.8 PSU)
-2s (26.4 PSU)
-3s (25.7 PSU)


Well #2
Depth to Water (m)
Depth to Water (m)
Date
W2 (n=57, Control Chart 2007-2014)
+3s (-1.3 m)
+2s (-1.5 m)
Mean (-2.0 m)
-2s (-2.4 m)
-3s (-2.6 m)
Pump Depth (-13.1 m)
Tide

NELHA Water Quality Laboratory

Well 2A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W2A	-6.71	6/28/89					2.42	75	56.3	789	3.60	50.4								19.3	7.765	16.524	5.89		NA	NA
W2A	-6.71	8/11/89	1050				2.21	68	44.0	616	0.31	4.3								19.3	7.750	16.574	5.46		<1	NA
W2A	-6.71	8/16/89	1000				2.44	76	48.4	678	0.42	5.9								19.2	7.705	15.049	6.12		<1	NA
W2A	-6.71	8/23/89	1015				2.27	70	45.7	640	0.27	3.8								18.9	7.729	18.099	5.77		<1	NA
W2A	-6.71	8/30/89	1035				2.56	79	53.2	745	0.42	5.9								19.1	7.755	15.759	6.60		<1	NA
W2A	-6.71	8/30/89	1035				2.56	79	53.2	745	0.42	5.9													NA	NA
W2A	-6.71	10/31/89	940				2.60	81	59.1	828	0.05	0.7	570	16009	2.76	85.5	60.6	849	0.48	19.1	7.816	15.824	6.02		1	NA
W2A	-6.71	11/16/89	814				2.32	72	49.1	688	0.06	0.8	500	14043	2.61	80.8	51.8	726	0.69	19.4	7.774	18.471	6.60		1	NA
W2A	-6.71	12/13/89	1045				2.82	87	64.8	908	0.08	1.1	557	15644	3.07	95.1	66.3	929	0.34	19.6	7.838	14.620	6.66		<1	NA
W2A	-6.71	1/11/90	826				2.05	63	54.6	765	0.01	0.1	571	16037	2.26	70.0	56.0	784	1.85	19.2	7.775	16.089	7.76		<1	NA
W2A	-6.71	2/14/90	1005				2.44	76	54.9	769	0.00	0.0	535	15026	2.89	89.5	44.2	619	0.61	19.4	7.756	15.801	6.19		<1	NA
W2A	-6.71	3/6/90	1345				2.28	71	54.3	761	0.11	1.5	528	14829	2.71	83.9	54.3	761	0.56	19.2	7.889	16.258	5.76		<1	NA
W2A	-6.71	4/4/90	1130				2.45	76	52.1	730	0.41	5.7	587	16486	2.56	79.3	53.5	749	0.50	19.3	7.932	16.460	5.24		4	NA
W2A	-6.71	5/17/90	1430				2.51	78	53.3	747	0.05	0.7	519	14576	2.74	84.9	28.5	399	0.44	19.3	7.895	15.853	5.83		<1	NA
W2A	-6.71	6/16/90	1335				3.25	101	47.9	671	0.36	5.0	491	13790	3.60	111.5	83.2	1165	0.75	19.4	7.936	17.880	5.33		3	NA
W2A	-6.71	7/17/90	1407				2.53	78	47.0	658	0.00	0.0	496	13930	2.77	85.8	50.0	700	0.65	19.8	7.918	18.216	5.59		<1	NA
W2A	-6.71	8/8/90	1355				2.10	65	51.6	723	0.17	2.4	504	14155	2.77	85.8	52.8	740	0.84	19.9	7.909	17.192	5.36		<1	NA
W2A	-6.71	9/5/90	1432				2.45	76	49.2	689	0.00	0.0			2.45	75.9	49.8	698	0.32	19.7	7.924	17.677	5.36		<1	NA
W2A	-6.71	10/4/90	1426				2.24	69	47.1	660	0.04	0.6	508	14253	2.65	82.1	50.0	701	1.40	19.6	7.916	17.663	5.02		<1	NA
W2A	-6.71	11/1/90	1438				2.30	71	49.7	696	0.03	0.4	505	14183	2.55	79.0	51.2	716	0.44	19.5	7.916	17.530	5.32		<1	NA
W2A	-6.71	12/10/90	1446				2.33	72	57.3	803	0.15	2.1	501	14071	2.65	82.1	59.5	833	0.35	19.6	7.927	16.072	5.64		<1	NA
W2A	-6.71	1/9/91	1025				2.36	73	56.7	794	0.05	0.7	512	14380	2.38	73.7	58.7	823	0.38	19.3	7.916	16.241	5.66		14	NA
W2A	-6.71	2/6/91	1016				2.11	65	49.7	696	0.11	1.5	475	13341	2.28	70.6	51.1	716	0.64	19.4	7.922	15.837	5.76		<1	NA
W2A	-6.71	3/6/91	1036				2.27	70	53.9	755	0.22	3.1	510	14324	2.39	74.0	54.1	758	0.61	19.2	7.925	15.907	5.75		<1	NA
W2A	-6.71	4/3/91	1021				2.16	67	59.4	832	0.00	0.0	507	14239	2.30	71.2	66.5	931	0.49	19.3	7.928	15.958	5.75		<1	NA
W2A	-6.71	5/22/91	1049				2.03	63	31.9	447	0.00	0.0	567	15924	2.28	70.6	26.2	367	0.51	19.3	7.919	16.735	5.45		<1	NA
W2A	-6.71	6/26/91	1117				2.30	71	53.6	751	0.00	0.0	534	14998	2.35	72.8	55.7	780	0.38	19.3	7.926	16.574	5.63		<1	<1
W2A	-6.71	7/24/91	1113				2.01	62	49.6	695	0.08	1.1	512	14380	2.16	66.9	50.4	706	0.40	17.6	7.924	16.810	5.54		<1	<1
W2A	-6.71	8/23/91	1057				2.19	68	53.7	752	0.15	2.1	540	15166	2.27	70.3	56.7	794	0.52	19.2	7.908	16.337	5.63		<1	<1
W2A	-6.71	9/24/91	1014				2.34	72	54.8	768	0.00	0.0	546	15335	2.40	74.3	58.0	812	0.44	19.5	7.896	15.377	6.06		<1	<1
W2A	-6.71	10/23/91	1029				2.61	81	57.1	800	0.00	0.0	746	20952	2.63	81.5	59.5	833	0.52	19.5	7.920	15.033	6.03		<1	<1
W2A	-6.71	11/20/91	1011				2.85	88	53.5	749	0.00	0.0	616	17301	2.96	91.7	56.8	796	0.44	19.3	7.896	15.408	6.00		<1	<1
W2A	-6.71	12/11/91	1043				2.35	73	54.2	759	0.00	0.0	533	14970	2.48	76.8	56.8	796	0.44	19.3	7.918	16.006	5.79		<1	<1
W2A	-6.71	1/29/92	1039				2.25	70	53.4	748	0.00	0.0	529	14857	2.28	70.6	54.9	769	1.10	19.5	7.914	16.094	5.78		<1	<1
W2A	-6.71	2/19/92	1059				2.40	74	43.6	611	0.00	0.0	507	14239	2.52	78.1	59.4	832	0.42	19.5	7.940	15.048	6.09		<1	2
W2A	-6.71	3/17/92	1014				2.36	73	58.8	824	0.00	0.0	552	15503	2.43	75.3	62.1	870	0.62	19.5	7.937	14.577	6.20		<1	<1
W2A	-6.71	4/8/92	1009				2.34	72	54.3	761	0.09	1.3	520	14604	2.42	75.0	57.1	800	0.46	19.4	7.904	15.405	5.99		<1	<1
W2A	-6.71	5/6/92	1045				2.31	72	55.3	775	0.00	0.0	568	15953	2.40	74.3	59.1	828	0.74	19.5	7.904	15.949	6.07		<1	<1
W2A	-6.71	6/23/92	1023				2.16	67	50.5	707	0.17	2.4	548	15391	2.16	66.9	52.1	730	0.64	19.4	7.896	17.027	5.66		<1	<1
W2A	-6.71	7/29/92	1018				2.27	70	54.7	766	ND	0.0	557	15644	2.34	72.5	56.3	789	0.51	19.2	7.893	15.408	6.02		<1	<1
W2A	-6.71	8/25/92	1003				2.37	73	48.7	682	0.00	0.0	553	15531	2.37	73.4	54.1	757	0.59	19.5	7.881	17.292	5.50		<1	<1
W2A	-6.71	9/22/92	1044				2.16	67	47.9	670	0.00	0.0	553	15531	2.25	69.7	49.1	688	0.46	19.4	7.896	17.537	5.37		<1	<1
W2A	-6.71	10/27/92	1031				2.55	79	58.7	823	0.00	0.0	580	16290	2.64	81.8	61.7	864	0.53	19.6	7.919	15.357	6.10		4	6
W2A	-6.71	11/17/92	1053				2.16	67	52.7	737	0.20	2.8	531	14913	2.50	77.4	56.0	784	0.56	19.4	7.913	17.460	5.50		0	0
W2A	-6.71	12/8/92	955				2.54	79	58.4	818	0.12	1.7	578	16233	2.56	79.3	61.1	856	0.45	19.4	7.928	15.492	6.02		28	1
W2A	-6.71	1/26/93	1013				2.33	72	57.0	798	0.10	1.4	562	15781	2.48	76.8	61.5	861	0.50	19.4	7.933	16.134	5.87		<1	1
W2A	-6.71	2/23/93	1000				2.39	74	60.1	842	0.07	1.0	595	16719	2.42	75.0	69.2	970	0.42	19.4	7.932	14.885	6.07		<1	<1
W2A	-6.71	3/16/93	952				2.28	71	54.3	760	0.08	1.1	572	16071	2.31	71.5	57.8	809	0.49	19.2	7.923	16.522	5.70		<1	<1
W2A	-6.71	4/27/93	950				2.30	71	56.1	785	0.43	6.0	595	16711	2.40	74.3	58.3	816	0.42	19.4	7.910	16.373	5.76		<1	<1
W2A	-6.71	5/25/93	942				2.32	72	55.9	783	0.14	2.0	581	16318	2.32	71.9	60.3	845	0.34	19.4	7.903	16.269	5.84		<1	<1
W2A	-6.71	6/28/93	1010				2.07	64	51.1	716	0.08	1.1	548	15391	2.23	69.1	54.4	762	0.42	19.4	7.899	17.611	5.43		<1	<1
W2A	-6.71	8/31/93	912				2.50	77	58.6	821	0.00	0.0	594	16694	2.50	77.4	70.0	981	0.82	19.5	7.915	15.246	6.06		<1	<1
W2A	-6.71	10/26/93	859				2.48	77	55.8	781	0.56	7.8	549	15419	2.50	77.4	56.8	796	0.52	19.4	7.915	15.958	5.79		152	135
W2A	-6.71	3/1/94	840				2.53	78	57.2	801	0.15	2.1	510	14324	2.54	78.7	73.5	1029	0.52	19.4	7.899	16.134	5.65		<1	<1
W2A	-6.71	6/21/94	936				2.51	78	56.4	790	0.16	2.2	608	17073	2.56	79.3	67.4	944	0.44	19.3	7.907	16.192	5.85		<1	<1

NELHA Water Quality Laboratory

Well 2A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W2A	-6.71	8/23/94	1006				2.49	77	63.0	883	0.32	4.5	589	16537	2.55	79.0	70.2	984	0.58	20.2	8.151	15.342	7.00		3	4
W2A	-6.71	10/25/94	1025				2.43	75	53.7	753	0.23	3.2	499	14003	2.45	75.9	56.3	788	0.44	19.4	7.947	16.410	5.76		<1	<1
W2A	-6.71	1/24/95	1022				2.64	82	59.0	827	0.02	0.3	508	14256	2.70	83.6	62.0	868	0.39	19.4	7.943	15.339	5.30		<1	<1
W2A	-6.71	2/14/95	959				2.71	84	64.1	898	0.53	7.4	539	15144	2.75	85.2	65.6	918	0.38	19.6	7.921	14.278	5.94		<1	<1
W2A	-6.71	3/14/95	1048				2.39	74	54.5	764	0.07	1.0	480	13475	2.42	75.0	55.5	778	0.41	19.5	7.897	16.569	6.32		<1	<1
W2A	-6.71	4/26/95	1038				2.44	76	56.3	789	0.12	1.7	495	13888	2.57	79.6	60.0	840	0.48	19.9	8.067	16.307	6.69		<1	<1
W2A	-6.71	5/8/95	1041				2.23	69	51.6	723	0.23	3.2	451	12675	2.28	70.6	55.9	783	0.41	20.2	7.951	17.912	7.17		<1	<1
W2A	-6.71	6/27/95	1018				1.99	62	48.8	683	0.39	5.5	468	13155	2.15	66.6	50.4	706	0.50	20.2	7.810	17.332	4.89		<1	<1
W2A	-6.71	7/25/95	1030				2.39	74	58.2	816	0.07	1.0	515	14453	2.49	77.1	60.3	845	0.47	20.1	7.852	15.220	5.57		<1	<1
W2A	-6.71	8/22/95	1121				2.43	75	53.1	744	0.32	4.5	473	13279	2.50	77.4	56.1	786	0.42	20.4	8.078	17.349	6.49		3	<1
W2A	-6.71	9/11/95	1108				2.31	72	55.5	777	0.21	2.9	486	13644	2.31	71.5	58.2	815	0.52	18.8	7.914	16.618	6.70		1	<1
W2A	-6.71	10/16/95	1126				2.18	68	51.6	723	0.33	4.6	644	18084	2.21	68.5	52.8	739	0.56	20.0	8.089	17.750	6.43		<1	1
W2A	-6.71	11/6/95	1114				2.73	85	54.4	762	0.22	3.1	485	13619	2.30	71.2	57.2	801	0.53	20.1	7.992	16.875	6.31		1	<1
W2A	-6.71	12/4/95	1059				2.30	71	53.4	748	0.13	1.8	468	13130	2.42	75.0	55.2	773	0.58	20.1	7.935	17.661	6.30		1	2
W2A	-6.71	1/29/96	1151				2.33	72	56.9	796	0.01	0.1	487	13680	2.39	74.0	59.7	836	0.63	20.6	7.961	16.505	6.81		<1	<1
W2A	-6.71	2/26/96	1209				2.28	71	55.0	770	0.17	2.4	494	13874	2.35	72.8	56.9	797	0.56	20.4	8.045	16.760	6.82		<1	<1
W2A	-6.71	3/5/96	1106				2.38	74	60.0	840	0.18	2.5	502	14098	2.47	76.5	63.0	882	0.63	20.2	8.028	15.275	6.84		1	1
W2A	-6.71	4/1/96	1139				2.35	73	56.4	790	0.41	5.7	503	14123	2.45	75.9	59.1	827	0.56	20.7	7.914	16.211	6.71		<1	<1
W2A	-6.71	5/8/96	1150				2.39	74	54.9	769	0.16	2.2	483	13578	2.48	76.8	58.0	812	0.45	20.5	7.929	16.680	6.75		<1	<1
W2A	-6.71	6/17/96	1106				2.24	69	53.7	753	0.14	2.0	501	14070	2.35	72.8	56.3	788	0.49	21.4	8.100	17.038	6.84		1	<1
W2A	-6.71	7/16/96	1114				2.17	67	52.9	741	0.21	2.9	479	13451	2.35	72.8	55.2	773	0.49	21.0	7.960	17.164	6.55		1	<1
W2A	-6.71	8/5/96	1155				2.34	72	54.4	762	0.30	4.2	462	12968	2.35	72.8	59.9	839	0.40	21.0	7.971	17.310	6.99		<1	<1
W2A	-6.71	9/3/96	1118				2.37	73	57.2	801	0.31	4.3	510	14337	2.47	76.5	59.6	835	0.33	20.9	7.979	16.406	6.64		1	<1
W2A	-6.71	10/8/96	1126				2.46	76	55.6	779	0.13	1.8	520	14604	2.63	81.5	60.8	852	0.35	20.2	7.896	15.763	5.67		<1	<1
W2A	-6.71	11/4/96	1142				2.32	72	53.2	745	0.19	2.7	509	14308	2.35	72.8	63.9	895	0.41	20.2	7.874	16.648	5.58		<1	<1
W2A	-6.71	12/16/96	1117				2.35	73	50.6	709	0.30	4.2	493	13843	2.38	73.7	52.1	730	0.42	19.9	7.905	17.773	5.36		<1	1
W2A	-6.71	1/13/97	1158				2.49	77	58	815	0.12	1.7	508	14253	2.61	80.8	60.4	846	0.70	20.7	7.974	13.921	6.58		<1	<1
W2A	-6.71	2/11/97	1206				2.23	69	56	784	0.19	2.7	520	14602	2.28	70.6	58.2	815	0.49	20.4	7.924	15.082	6.07		14	<1
W2A	-6.71	3/11/97	1136				2.55	79	63	886	0.12	1.7	551	15461	2.70	83.6	65.5	918	0.49	20.2	7.959	13.155	6.49		<1	<1
W2A	-6.71	4/22/97	1147				2.38	74	52	721	0.26	3.6	463	13001	2.42	75.0	60.3	845	0.55	20.2	7.938	15.024	5.84		<1	<1
W2A	-6.71	5/27/97	1052				2.27	70	56	790	0.10	1.4	456	12799	2.37	73.4	60.1	842	0.44	19.0	7.946	15.736	5.78		<1	<1
W2A	-6.71	6/16/97	1105				2.23	69	51	712	0.26	3.6	435	12203	2.26	70.0	54.9	769	0.47	19.2	7.955	16.781	5.43		<1	<1
W2A	-6.71	7/16/97	1017				2.32	72	53	737	0.08	1.1	485	13624	2.46	76.2	56.9	797	0.46	19.7	7.953	16.436	5.53		<1	<1
W2A	-6.71	8/25/97	1113				2.49	77	51	710	0.28	3.9	510	14332	3.10	96.0	51.9	726	0.40	20.0	8.029	16.886	5.27		<1	<1
W2A	-6.71	9/22/97	1039				2.29	71	51	717	0.10	1.4	491	13798	2.40	74.3	52.5	735	0.44	20.0	8.068	16.669	5.53		<1	2
W2A	-6.71	10/15/97	1029				2.55	79	60	835	0.12	1.7	518	14545	2.72	84.2	66.7	934	0.46	20.0	8.068	14.684	5.90		<1	<1
W2A	-6.71	11/3/97	1017				2.58	80	58.9	825	0.24	3.4	515	14461	2.83	87.7	65.8	922	0.47	19.8	8.040	15.214	5.90		<1	<1
W2A	-6.71	12/15/97	1034				2.52	78	56.1	786	0.04	0.6	521	14635	2.69	83.3	59.2	829	0.51	19.7	8.075	15.080	6.17		<1	<1
W2A	-6.71	1/6/98	952				2.35	73	51.3	719	0.01	0.1	490	13762	2.56	79.3	54.3	761	0.48	19.5	8.067	17.110	5.51		<1	<1
W2A	-6.71	2/2/98	1048				2.38	74	52.5	735	0.13	1.8	512	14369	2.55	79.0	55.3	775	0.47	19.6	8.064	16.237	5.69		<1	<1
W2A	-6.71	3/9/98	1047				2.59	80	56.4	789	0.23	3.2	524	14703	2.71	83.9	58.8	824	0.49	19.7	7.897	15.467	5.91		<1	<1
W2A	-6.71	4/13/98	1017				2.67	83	58	817	0.09	1.3	562	15790	2.73	84.6	61.8	866	0.48	19.8	7.921	14.915	6.12		<1	<1
W2A	-6.71	5/11/98	1114				2.50	77	51	716	0.25	3.5	481	13518	2.72	84.2	53.7	752	0.46	19.6	7.918	15.526	5.99		<1	58
W2A	-6.71	6/1/98	1102				2.58	80	55.5	778	0.17	2.4	526	14767	2.68	83.0	61.2	857	0.41	19.6	7.903	17.339	5.59		<1	<1
W2A	-6.71	7/13/98	1102				2.59	80	56	778	0.23	3.2	517	14526	2.74	84.9	59	824	0.40	19.8	7.901	15.799	5.86		1	<1
W2A	-6.71	8/10/98	1117				2.74	85	59.6	834	0.11	1.5	535	15026	2.88	89.2	64.6	905	0.40	19.6	7.896	14.871	5.59		1	<1
W2A	-6.71	9/14/98	1120				2.28	71	46.0	644	0.16	2.2	475	13343	2.37	73.4	48	666	0.35	19.8	7.871	18.572	5.22		<1	<1
W2A	-6.71	10/12/98	1011				2.20	68	46.9	657	0.16	2.2	472	13265	2.49	77.1	49	684	0.40	19.9	7.874	18.434	5.66		<1	1
W2A	-6.71	11/2/98	1037				2.52	78	57.1	800	0.04	0.6	523	14686	2.68	83.0	59.6	835	0.83	19.9	7.905	15.721	5.84		<1	<1
W2A	-6.71	12/15/98	1021				2.56	79	54.3	761	0.04	0.6	527	14787	2.69	83.3	61.0	854	0.56	19.9	7.900	16.190	5.72		<1	<1
W2A	-6.71	1/11/99	1046				2.43	75	52	721	0.22	3.1	508	14262	2.54	78.7	55	775	0.51	19.6	7.893	16.638	5.74		<1	<1
W2A	-6.71	2/2/99	1050				2.60	81	61	861	0.16	2.2	536	15057	2.70	83.6	66	926	0.70	19.8	7.912	14.962	6.32		<1	<1
W2A	-6.71	3/1/99	1102				2.68	83	60.8	852	0.01	0.1	546	15337	2.78	86.1	63.3	887	0.52	19.6	7.915	14.376	7.10		<1	<1
W2A	-6.71	4/5/99	1047				2.49	77	56.6	793	0.21	2.9	525	14753	2.63	81.5	59.2	829	0.44	19.6	7.901	15.676	5.99		<1	<1
W2A	-6.71	5/3/99	1112				2.60	81	61.0	854	0.19	2.7	537	15073	2.74	84.9	66.1	926	0.48	19.7	7.894	15.092	7.33		<1	<1
W2A	-6.71	6/1/99	1041				2.60	81	58.4	818	0.29	4.1	527	14790	2.70	83.6	61.6	863	0.50	19.7	7.903	15.104	6.17		<1	<1

NELHA Water Quality Laboratory

Well 2A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W2A	-6.71	7/14/99	1100				2.62	81	60.4	846	0.06	0.8	538	15096	2.78	86.1	62.8	880	0.48	19.9	7.906	14.738	6.26		<1	<1
W2A	-6.71	8/23/99	1109				2.30	71	47.9	671	0.15	2.1	504	14141	2.46	76.2	49.8	698	0.41	19.9	7.929	17.348	5.44		<1	<1
W2A	-6.71	9/7/99	1110				2.42	75	53.7	752	0.09	1.3	494	13869	2.63	81.5	61.3	859	0.39	19.9	7.938	17.010	5.59		<1	<1
W2A	-6.71	10/5/99	1047				2.35	73	52.9	741	0.04	0.6	506	14200	2.45	75.9	55.0	770	0.39	19.8	7.933	16.866	5.54		<1	3
W2A	-6.71	11/1/99	1119				2.16	67	47.7	668	0.10	1.4	472	13262	2.41	74.6	51.2	717	0.34	19.6	7.933	18.554	5.17		<1	<1
W2A	-6.71	12/14/99	1112				2.41	75	54.3	761	0.08	1.1	503	14124	2.52	78.1	57.3	803	0.40	19.7	7.868	16.633	5.44		<1	19
W2A	-6.71	1/10/00	1130				2.48	77	57.0	798	0.16	2.2	522	14672	2.64	81.8	61.6	863	0.41	19.7	7.915	15.794	5.91		<1	<1
W2A	-6.71	2/7/00	1129				2.67	83	62.2	871	0.14	2.0	536	15062	2.80	86.7	66.6	933	0.48	19.7	7.960	14.663	6.25		<1	46
W2A	-6.71	3/21/00	1129				2.64	82	63.8	894	0.16	2.2	558	15683	2.56	79.3	68.7	962	0.57	19.8	7.962	13.574	6.52		<1	26
W2A	-6.71	4/10/00	1210				2.21	68	58.5	819	0.02	0.3	539	15132	2.39	74.0	62.3	873	0.48	19.7	7.954	15.574	5.96		<1	2
W2A	-6.71	5/15/00	1111				2.36	73	53.9	755	0.33	4.6	499	14026	2.37	73.4	57.1	800	0.44	19.9	7.941	16.560	5.66		<1	1
W2A	-6.71	6/5/00	1114				2.54	79	59.2	829	0.09	1.3	535	15017	2.52	78.1	64.8	908	0.49	19.8	7.955	14.905	6.29		<1	1
W2A	-6.71	7/26/00	1140				2.13	66	47.4	664	0.80	11.2	471	13231	2.26	70.0	50.4	706	0.39	19.6	7.920	18.929	5.10		<1	7
W2A	-6.71	8/29/00	1050				2.47	77	56.8	796	0.05	0.7	517	14531	2.54	78.7	58.8	824	0.52	20.3	7.899	15.721	5.90		<1	1
W2A	-6.71	9/5/00	1104				2.30	71	52.4	734	0.09	1.3	489	13720	2.34	72.5	55.9	783	0.42	19.7	7.890	17.683	5.35		<1	<1
W2A	-6.71	10/24/00	1117				2.36	73	53.3	747	0.11	1.5	524	14714	2.49	77.1	55.8	782	0.44	20.1	7.927	16.776	5.43		<1	<1
W2A	-6.71	11/13/00	1057				2.41	75	85.0	1191	0.14	2.0	557	15630	2.52	78.1	88.9	1246	0.56	19.9	7.897	14.512	5.82		<1	<1
W2A	-6.71	12/18/00	1049				2.38	74	52.3	733	0.16	2.2	513	14416	2.48	76.8	57.4	804	0.62	19.9	7.906	17.607	5.24		<1	6
W2A	-6.71	1/22/01	1113				3.20	99	83.6	1171	0.18	2.5	532	14927	3.66	113.4	89.5	1254	0.59	19.8	7.886	15.284	6.09		1148	TNTC
W2A	-6.71	2/5/01	1118				2.88	89	85.1	1192	0.11	1.5	515	14467	2.98	92.3	87.2	1221	0.53	19.7	7.894	16.556	5.68		4	TNTC
W2A	-6.71	3/5/01	1110				3.40	105	82.5	1156	0.07	1.0	506	14206	3.52	109.0	96.4	1350	0.56	19.7	7.860	16.869	5.66		<1	83
W2A	-6.71	4/17/01	1110				4.02	125	95.8	1342	0.02	0.3	486	13647	4.04	125.1	102	1433	0.55	19.8	7.834	17.673	6.12		<1	<1
W2A	-6.71	5/15/01	1040				3.94	122	91.1	1277	0.09	1.3	447	12563	3.82	118.3	95.2	1333	0.54	19.5	7.826	18.087	5.82		<1	<1
W2A	-6.71	6/12/01	1119				4.65	144	99.5	1393	0.05	0.7	466	13085	4.72	146.2	104	1454	0.53	19.4	7.831	18.425	5.84		<1	35
W2A	-6.71	7/25/01	920				4.55	141	79.6	1115	0.06	0.8	474	13304	4.56	141.2	82.4	1154	0.61	19.4	7.807	18.699	5.03		<1	<1
W2A	-6.71	8/20/01	901				3.80	118	83.4	1168	0.26	3.6	505	14183	3.96	122.7	84.5	1184	0.76	19.4	7.839	17.378	6.27		<1	22
W2A	-6.71	9/19/01	1023				3.49	108	77.6	1087	0.09	1.3	503	14121	3.50	108.4	81.3	1138	0.55	19.5	7.842	16.692	6.27		<1	1
W2A	-6.71	10/24/01	1015				3.34	103	70.1	982	0.06	0.8	452	12692	3.42	105.9	76.0	1064	0.55	19.3	7.820	19.615	5.58		<1	<1
W2A	-6.71	11/7/01	1050				3.46	107	73.4	1028	0.22	3.1	444	12467	3.48	107.8	91.2	1277	0.56	19.3	7.805	19.850	5.59		<1	2
W2A	-6.71	12/19/01	1041				3.14	97	78.4	1098	0.12	1.7	485	13619	3.24	100.4	99.2	1389	0.54	19.5	7.813	18.539	5.91		<1	1268
W2A	-6.71	1/9/02	1021				3.20	99	65.4	916	0.20	2.8	483	13551	3.07	95.1	66.5	931	0.51	19.3	7.837	18.799	5.48		<1	17
W2A	-6.71	2/25/02	1100				2.84	88	75.1	1052	0.09	1.3	489	13725	2.94	91.1	79.6	1115	0.43	19.3	7.962	17.394	7.12		<1	<1
W2A	-6.71	3/20/02	1039				2.62	81	67.7	948	0.13	1.8	476	13355	3.14	97.3	71.9	1007	0.45	19.4	7.987	17.858	6.91		<1	<1
W2A	-6.71	4/10/02	1112				2.86	89	71.9	1007	0.01	0.1	475	13343	2.94	91.1	77.5	1085	0.48	19.3	7.931	17.729	6.37		<1	<1
W2A	-6.71	5/22/02	928				3.14	97	93.8	1314	0.15	2.1	491	13787	3.15	97.6	96.1	1346	0.52	19.4	7.812	17.373	7.40		<1	1
W2A	-6.71	6/19/02	948				2.92	90	70.8	991	0.26	3.6	465	13065	3.06	94.8	74.7	1047	0.42	19.3	7.857	18.892	6.24		<1	<1
W2A	-6.71	7/22/02	937				2.90	90	68.5	959	0.09	1.3	484	13579	3.10	96.0	67.7	949	0.43	19.5	7.867	17.922	5.83		<1	<1
W2A	-6.71	8/21/02	1006				2.95	91	69.3	971	0.18	2.5	488	13703	3.12	96.6	71.6	1002	0.41	19.3	7.852	17.414	6.03		<1	<1
W2A	-6.71	9/25/02	1159				2.94	91	72.0	1008	0.23	3.2	516	14484	2.98	92.3	62.9	881	0.61	19.6	7.886	16.726	7.25		<1	<1
W2A	-6.71	10/15/02	919				2.75	85	54.0	756	0.16	2.2	470	13186	2.83	87.7	55.8	781	0.48	19.6	7.877	18.782	5.71		<1	<1
W2A	-6.71	11/17/02	1113				3.29	102	69.2	969	0.03	0.4	490	13762	3.46	107.2	64.5	903	0.43	19.6	7.862	17.710	6.23		<1	<1
W2A	-6.71	12/18/02	1141				2.91	90	65.4	916	0.18	2.5	485	13624	2.95	91.4	57.6	806	0.43	19.7	7.862	17.642	6.04		<1	<1
W2A	-6.71	1/29/03	1105				2.56	79	65.8	922	<0.1	0.0	474	13315	2.65	82.1	70.7	990	0.46	19.2	7.892	18.197	6.04		<1	<1
W2A	-6.71	2/10/03	1104				2.59	80	65.1	912	0.04	0.6	497	13961	2.74	84.9	71.7	1004	0.44	19.2	7.893	17.877	6.22		<1	<1
W2A	-6.71	3/20/03	1015				2.82	87	75.4	1056	0.17	2.4	521	14644	3.04	94.2	82.5	1156	0.44	19.7	7.898	15.784	6.74		<1	<1
W2A	-6.71	4/30/03	1111				2.90	90	65.7	920	0.12	1.7	501	14082	3.02	93.5	76.5	1072	0.40	19.6	7.921	17.299	5.98		<1	1
W2A	-6.71	5/14/03	1022				2.96	92	68.9	964	0.29	4.1	496	13928	3.02	93.5	77.7	1088	0.36	19.6	7.918	17.198	6.27		<1	<1
W2A	-6.71	6/4/03	1110				2.85	88	68.2	956	0.23	3.2	473	13273	3.01	93.2	75.9	1062	0.36	19.7	7.847	17.993	6.62		<1	<1

NELHA Water Quality Laboratory

Well 2A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W2A	-6.71	7/30/03	1044				3.12	97	82.7	1158	0.44	6.2	513	14411	3.20	99.1	86.7	1214		19.3	7.905	16.286	6.43		<1	2
W2A	-6.71	8/28/03	1017				3.04	94	77.8	1089	0.42	5.9	489	13739	3.14	97.3	101	1413		20.1	7.858	17.471	6.08		<1	<1
W2A	-6.71	9/16/03	1056				3.14	97	66.9	937	0.46	6.4	477	13405	2.92	90.4	72.4	1014		19.9	7.865	18.328	5.71		<1	<1
W2A	-6.71	10/8/03	1056				2.72	84	63.4	888	0.95	13.3	475	13332	2.80	86.7	76.4	1070		19.6	7.877	17.891	NA		<1	<1
W2A	-6.71	11/5/03	1057				2.68	83	62.0	868	0.50	7.0	471	13234	2.80	86.7	68.3	957		19.4	7.883	18.450			<1	<1
W2A	-6.71	11/14/03	1447																	19.7			5.84			
W2A	-6.71	12/22/03	947				3.09	96	72.9	1021	1.00	14.0	497	13970	3.20	99.1	76.0	1064		19.8	7.926	17.309	6.15		<1	188
W2A	-6.71	1/26/04	1038				2.74	85	73.9	1035	0.40	5.6	480	13475	2.90	89.8	82.3	1153		19.3	7.875	18.097	5.61		<1	260
W2A	-6.71	2/11/04	1025				2.78	86	64.9	909	0.67	9.4	470	13211	2.96	91.7	69.6	975	0.69	19.5	7.861	18.218	5.84		<1	22
W2A	-6.71	3/16/04	1241				2.92	90	65.2	913	0.20	2.8	474	13318	3.42	105.9	72.6	1017		20.0	7.883	17.951	5.61		<1	1
W2A	-6.71	4/20/04	1059				2.44	76	51.4	721	0.04	0.6	479	13442	2.56	79.3	54.7	766		19.5	7.887	17.628	5.97		<1	<1
W2A	-6.71	5/11/04	1005				2.82	87	54.8	768	0.20	2.8	459	12891	3.08	95.4	60.8	852		19.5	7.955	18.38	5.97		<1	<1
W2A	-6.71	6/2/04	1059				2.86	89	59.9	839	0.17	2.4	462	12973	2.94	91.1	61.9	867		19.5	7.870	17.85	5.96		<1	<1
W2A	-6.71	7/14/04	1108				3.02	94	65.3	915	0.17	2.4	468	13136	3.18	98.5	69.5	974		19.5	7.866	18.29	5.89		<1	1
W2A	-6.71	8/23/04	1052				3.06	95	59.2	829	0.25	3.5	450	12624	3.22	99.7	66.9	937		19.5	7.865	18.85	5.75		<1	<1
W2A	-6.71	9/27/04	933				3.28	102	70.1	982	0.16	2.2	504	14166	3.40	105.3	94.0	1317		19.6	7.862	17.09	6.28		<1	<1
W2A	-6.71	10/5/04	935				3.20	99	63.5	890	0.23	3.2	449	12613	3.36	104.1	69.8	977		19.6	7.878	19.17	5.80		<1	<1
W2A	-6.71	11/9/04	1022				3.24	100	63.0	883	0.18	2.5	473	13276	3.40	105.3	65.5	917		19.8	7.865	17.99	5.82		3	208
W2A	-6.71	12/6/04	1100				3.10	96	64.0	897	0.22	3.1	460	12917	3.22	99.7	64.2	899		19.7	7.889	18.43	5.84		<1	85
W2A	-6.71	1/10/05	1027				3.28	102	82.8	1159	0.08	1.1	506	14214	3.30	102.2	89.5	1253		19.6	7.940	17.484	6.38		1	<1
W2A	-6.71	2/9/05	1024				3.30	102	95.9	1343	0.18	2.5	479	13442	3.43	106.2	120	1679		19.9	7.951	16.570	6.46		<1	6
W2A	-6.71	3/15/05	1050				3.04	94	71.5	1001	0.14	2.0	477	13400	3.22	99.7	79.1	1108	0.41	19.5	7.949	17.714	6.25		<1	<1
W2A	-6.71	4/19/05	1002				2.98	92	65.6	918	0.16	2.2	469	13183	3.10	96.0	70.5	987		19.7	7.934	18.105	6.23		6	14
W2A	-6.71	5/23/05	1048				2.98	92	70.0	980	0.21	2.9	477	13388	3.14	97.3	70.7	990		19.9	7.887	18.317	6.24		<1	<1
W2A	-6.71	6/13/05	910				3.08	95	68.5	959	0.22	3.1	457	12821	3.16	97.9	72.3	1013		19.8	7.901	18.982	6.16		<1	<1
W2A	-6.71	7/18/05	1020				3.20	99	70.2	983	0.16	2.2	461	12950	3.38	104.7	70.8	992	0.55	19.8	7.878	18.841	6.07		<1	<1
W2A	-6.71	8/9/05	1030				3.24	100	72.6	1016	0.20	2.8	462	12961	3.36	104.1	75.7	1060	0.49	19.7	7.913	18.546	6.49		<1	<1
W2A	-6.71	9/20/05	1018				3.40	105	80.5	1128	0.21	2.9	493	13838	3.56	110.3	82.7	1158	0.63	19.5	7.918	16.883	7.07		<1	<1
W2A	-6.71	10/17/05	1018				3.60	112	82.4	1154	0.12	1.7	494	13885	3.68	114.0	85.8	1202		19.5	7.893	16.624	7.13		<1	<1
W2A	-6.71	11/7/05	947				3.28	102	69.4	973	0.07	1.0	420	11782	3.46	107.2	71.3	998		19.2	7.897	20.552	6.29		<1	<1
W2A	-6.71	12/21/05	916				3.14	97	64.4	902	0.21	2.9	415	11661	3.28	101.6	65.3	914	0.53	18.9	7.903	20.935	6.21		<1	<1
W2A	-6.71	1/23/06	1018				3.10	96	69.9	979	0.20	2.8	456	12807	3.20	99.1	75.9	1063		19.1	7.904	18.739	6.44		<1	<1
W2A	-6.71	2/14/06	1033				3.24	100	72.8	1020	0.19	2.7	489	13745	3.42	105.9	73.3	1026	0.46	18.7	7.921	16.961	6.87		<1	<1
W2A	-6.71	3/20/06	936				3.09	96	70.7	990	0.20	2.8	472	13256	3.17	98.2	72.3	1013	0.43	18.6	7.930	18.053	6.56		<1	<1
W2A	-6.71	4/25/06	1005				2.90	90	69.7	976	0.08	1.1	458	12863	3.06	94.8	62.4	874	0.47	18.9	7.908	17.978	6.19		<1	<1
W2A	-6.71	5/22/06	1035				2.72	84	64.1	898	0.18	2.5	428	12021	3.06	94.8	56.5	791	0.42	19.0	7.884	19.657	6.64		<1	<1
W2A	-6.71	6/26/06	1048				2.94	91	76.8	1076	0.12	1.7	477	13397	3.16	97.9	72.6	1016	0.49	19.9	7.929	17.143	6.97		<1	<1
W2A	-6.71	7/20/06	1053				2.50	77	58.0	812	0.21	2.9	419	11768	2.77	85.8	53.7	752	0.39	19.3	7.892	20.219	6.75		<1	<1
W2A	-6.71	8/7/06	1110				2.65	82	68.0	952	0.20	2.8	440	12358	2.98	92.3	59.7	836	0.40	18.8	7.912	19.313	8.13		<1	<1
W2A	-6.71	9/18/06	1033				2.62	81	66.1	926	0.21	2.9	437	12273	3.03	93.9	61.0	854	0.48	19.0	7.898	19.209	6.45		<1	<1
W2A	-6.71	10/23/06	1010				3.01	93	83.1	1164	0.26	3.6	469	13172	3.15	97.6	77.8	1090	0.55	19.0	7.914	17.582	7.6		1	<1
W2A	-6.71	11/27/06	1021				2.69	83	66.4	930	0.20	2.8	423	11880	2.83	87.7	57.3	802	0.49	19.0	7.915	20.250	6.43		<1	<1
W2A	-6.71	12/11/06	1049				2.79	86	67.7	948	0.14	2.0	429	12049	3.05	94.5	60.4	846	0.47	19.0	7.910	19.686	6.58		<1	<1
W2A	-6.71	1/8/07	1141				2.91	90	74.3	1041	0.28	3.9	442	12414	3.20	99.1	68.9	965	0.41	18.9	7.934	17.927	6.95		<1	<1
W2A	-6.71	2/20/07	1110				3.21	99	87.2	1221	0.37	5.2	475	13341	3.36	104.1	93.1	1305	0.54	19.1	7.932	16.319	7.14		<1	<1
W2A	-6.71	3/5/07	1108				3.16	98	87.5	1226	0.28	3.9	486	13650	3.46	107.2	91.6	1283	0.53	19.0	7.919	16.811	7.07		<1	<1
W2A	-6.71	4/18/07	1107				2.97	92	76.4	1070	0.28	3.9	481	13509	3.06	94.8	67.6	946	0.44	19.5	7.955	17.178	6.7		<1	<1
W2A	-6.71	5/1/07	1056				2.85	88	68.3	957	0.31	4.3	449	12610	2.99	92.6	65.4	915	0.49	19.0	7.935	18.803	6.45		<1	<1
W2A	-6.71	6/18/07	1050				3.07	79	71.9	1006	0.26	23.4	471	11465	3.48		71.9		0.38	19.5	7.983	17.617	7.16		<1	<1

NELHA Water Quality Laboratory

Well 2A Data Table

June 1989 - December 2014

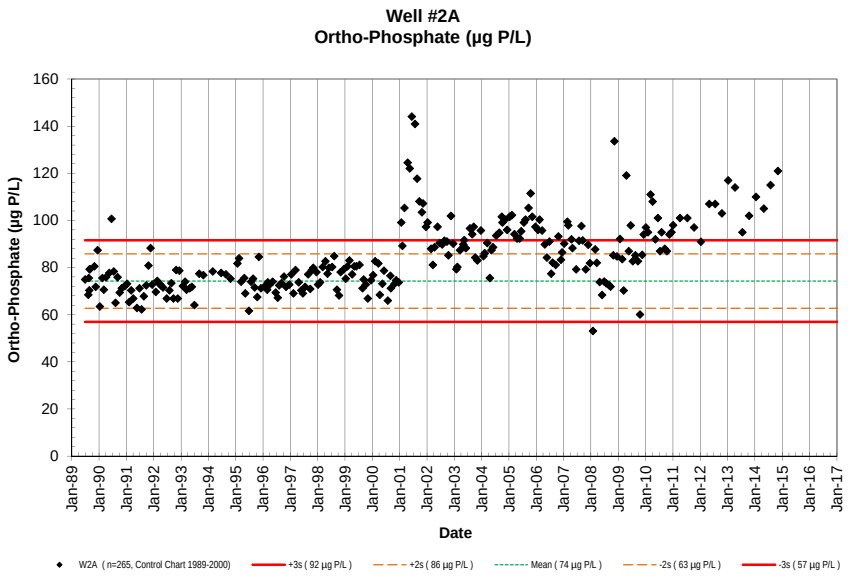
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W2A	-6.71	7/26/07	1321	-1.88	0.64	Flood	2.95	91	77.7	1088	0.11	1.6	475	13328	3.11	96.2	75.6	1059		18.5	7.87	20.22	6.44			
W2A	-6.71	8/28/07	1130	-2.23	0.08	Flood	3.15	98	78.6	1101	0.04	0.6	541	15189	3.16	97.8	78.8	1103		18.7	7.85	18.54	6.45			
W2A	-6.71	9/13/07	1134	-2.23	0.15	Low	2.96	92	71.4	1000	1.37	19.2	481	13511	3.08	95.3	76.9	1077		19.6	7.96	18.51	6.36			
W2A	-6.71	10/24/07	1416	-2.06	0.46	Flood	2.56	79	71.8	1006	1.67	23.4	408	11465	2.63	81.5	70.2	984		19.0	7.97	20.17	6.13			
W2A	-6.71	11/26/07	1127	-2.31	0.15	Ebb	2.90	90	84.1	1178	0.05	0.7	508	14279	2.75	85.3	89.3	1251		19.1	7.94	16.92	6.46			
W2A	-6.71	12/20/07	1223	-2.03	0.23	High	2.64	82	77.1	1080	0.61	8.5	372	10453						18.6	8.02	18.86	6.05			
W2A	-6.71	1/28/08	1249	-2.23	0.09	Ebb	1.71	53	47.1	660	0.38	5.3	236	6635						19.0	7.79	17.33	6.05			
W2A	-6.71	2/27/08	1046	-2.08	0.12	Ebb	2.83	88	79.4	1111	0.29	4.1	448	12579						18.8	7.79	17.69	6.73			
W2A	-6.71	3/20/08	1118	-2.29	0.00	Low	2.65	82	75.6	1059	0.82	11.5	368	10348						18.8	7.87	18.82	6.31			
W2A	-6.71	4/28/08	1113	-2.19	0.18	High	2.39	74	70.2	983	0.19	2.6	425	11926						18.8	7.86	18.90	5.96			
W2A	-6.71	5/30/08	1210	-1.88	0.49	Flood	2.21	68	61.2	858	0.21	2.9	412	11570						18.9	7.83	20.31	5.74			
W2A	-6.71	6/26/08	951	-1.98	0.37	High	2.39	74	64.7	907	0.29	4	532	14950						19.1	7.87	19.96	6.05	1.31		
W2A	-6.71	7/25/08	1151	-1.85	0.55	High	2.37	73	62.1	870	0.20	2.8	309	8686						18.6	7.65	19.17	6.40			
W2A	-6.71	8/30/08	944		0.03	Low	2.34	73	72.8	1020	0.17	2.4	516	14479						18.8	7.83	17.43	6.80			
W2A	-6.71	9/19/08	942	-1.49	0.52	Ebb	2.32	72	68.5	959	0.79	11.1	299	8410						21.5	7.74	16.90	6.65	4.74		
W2A	-6.71	10/27/08	1239	-2.08	0.27	Flood	2.75	85	84.6	1185	0.29	4.1	481	13505						21.4	7.61	16.19	7.03	2.87		
W2A	-6.71	11/10/08	1021	-2.11	0.24	Flood	4.31	134	83.9	1176	0.09	1.3	448	12590						20.9	7.87	15.45	7.00	2.36		
W2A	-6.71	12/15/08	948	-1.90	0.43	Ebb	2.73	85	88.7	1242	0.01	0.2	449	12597						20.9	8.03	16.31	7.44			
W2A	-6.71	1/23/09	1326	-2.23	0.15	High	2.97	92	96.8	1356	1.13	15.8	456	12803						21.2	7.97	15.30	7.25	0.83		
W2A	-6.71	2/23/09	1450	-2.13	0.24	Flood	2.70	84	90.8	1272	0.32	4.5	472	13261						20.1	7.90	15.13	7.61	0.79		
W2A	-6.71	3/13/09	1440	-2.24	0.24	Flood	2.27	70	56.9	797	0.51	7.1	345	9676						20.0	7.87	15.82	7.38	0.42		
W2A	-6.71	4/20/09	1218	-2.17	0.30	Flood	3.85	119	96.7	1354	3.23	45.2	400	11243						20.8	7.78	14.67	7.75	13.40		
W2A	-6.71	5/21/09	1426	-1.89	0.61	High	2.81	87	76.8	1076	1.90	26.6	464	13032						19.2	7.93	17.78	6.90	0.52		
W2A	-6.71	6/16/09	1100	-2.02	0.40	Flood	3.16	98	27.7	389	0.94	13.2	320	8996						19.2	7.64	17.69	6.76	13.40		
W2A	-6.71	7/13/09	1504	-2.18	0.21	Flood	2.67	83	70.1	982	0.23	3.2	220	6183						19.0	7.94	17.29	7.15	0.28		
W2A	-6.71	8/18/09	1403	-1.68	0.70	Flood	2.75	85	73.9	1036	0.74	10.4	558	15664						19.2	7.81	19.85	6.84	0.21		
W2A	-6.71	9/21/09	1357	-2.25	0.18	Flood	2.67	83	76.6	1073	0.49	6.8	186	5211						19.5	8.36	17.44	7.35	0.28		
W2A	-6.71	10/19/09	1111	-2.34	0.12	Low	1.94	60	63.8	893	0.41	5.7	156	4385						19.7	8.18	16.70	7.10	0.10		
W2A	-6.71	11/16/09	1340	-2.28	0.18	Flood	2.76	85	77.6	1087	0.79	11.1	345	9691						19.6	7.92	17.37	6.98	0.16		
W2A	-6.71	12/7/09	1325	-2.22	0.18	Ebb	3.03	94	96.2	1347	0.61	8.6	464	13028						19.6	7.89	16.43	6.85	0.08		
W2A	-6.71	1/5/10	1049	-2.02	0.30	Ebb	3.13	97	87.5	1225	1.14	16	430	12080						19.9	7.89	16.18	6.86	0.14		
W2A	-6.71	2/1/10	1123	-2.18	0.00	Ebb	3.07	95	97.3	1363	0.79	11	363	10206						19.8	7.97	15.69	6.97	4.83		
W2A	-6.71	3/9/10	1109	-2.26	0.12	Flood	3.58	111	86.5	1211	0.29	4	495	13913						19.2	7.94	15.34	6.96	1.02		
W2A	-6.71	4/6/10	1015	-2.35	0.15	Flood	3.49	108	93.8	1314	0.57	8	500	14031						19.0	7.94	15.59	7.58	0.15		
W2A	-6.71	5/11/10	1036	-2.31	0.09	Flood	2.97	92	79.7	1116	1.21	17	428	12015						19.0	8.00	15.60	7.50	0.16		
W2A	-6.71	6/15/10	1118	-2.42	0.06	Low	3.26	101	92.2	1291	0.57	8	537	15087						19.3	7.96	15.57	7.61	0.16		
W2A	-6.71	7/13/10	1035	-2.32	0.00	Low	2.81	87	86.8	1216	0.43	6	517	14514						19.5	7.94	15.88	7.09	0.38		
W2A	-6.71	8/3/10	1017	-1.87	0.52	Flood	3.07	95	80.7	1130	0.29	4	481	13514						19.1	7.94	17.78	6.94	0.33		
W2A	-6.71	9/14/10	1027	-1.79	0.58	Ebb	2.84	88	81.5	1142	0.61	8.6	489	13745						19.2	7.91	18.27	7.03	0.12		
W2A	-6.71	10/12/10	1045	-1.93	0.55	Ebb	2.81	87	79.2	1109	0.22	3.1	491	13777						19.5	7.94	18.55	7.05	0.12		
W2A	-6.71	11/16/10	1001	-2.00	0.27	Flood	3.03	94	84.8	1188	0.27	3.8	501	14084						19.2	7.89	17.33	7.07	2.50		
W2A	-6.71	12/14/10	1042	-1.97	0.37	High	3.07	95	89.2	1249	0.37	5.2	503	14116						19.2	7.92	16.90	7.26	0.12		
W2A	-6.71	1/4/11	1028	-2.19	0.06	Ebb	3.16	98	87.2	1222	0.66	9.3	490	13771						19.2	7.89	16.75	7.20	0.21		
W2A	-6.71	4/5/11	1100	-2.33	-0.06	Low	3.26	101	91.7	1284	0.17	2.4	485	13608						19.2	7.88	15.70	6.26	0.26		
W2A	-6.71	7/12/11	1025	-2.32	0.18	Flood	3.26	101	86.5	1212	0.16	2.3	503	14121						19.3	7.90	16.38	6.99	0.09		
W2A	-6.71	10/11/11	1044	-2.21	0.12	Low	3.13	97	84.1	1178	0.25	3.5	494	13869						19.6	7.91	16.71	7.39	0.24		
W2A	-6.71	1/10/12	1040	-2.25	0.06	Ebb	2.94	91	77.5	1086	0.37	5.2	472	13248						19.3	7.88	17.56	7.26	0.52		
W2A	-6.71	5/1/12	1054	-2.07	0.34	Flood	3.45	107	84.9	1189	0.19	2.7	496	13940						18.8	7.97	17.83	6.92	0.41		
W2A	-6.71	7/18/12	959	-2.37	0.00	Flood	3.45	107	91.0	1275	0.49	6.9	500	14037						19.4	7.89	16.44	7.50	1.28		
W2A	-6.71	10/16/12	1039	-2.18	0.09	Ebb	3.33	103	90.1	1262	0.31	4.4	538	15102						19.2	7.90	17.10	7.16	0.45		
W2A	-6.71	1/8/13	1105	-2.16	0.15	Flood	3.78	117	87.7	1229	0.54	7.5	532	14954						19.0	7.83	17.09	7.29	1.55		
W2A	-6.71	4/9/13	1045	-2.36	-0.03	Flood	3.68	114	90.8	1272	0.41	5.7	508	14264						19.1	7.96	16.20	7.59	0.51		

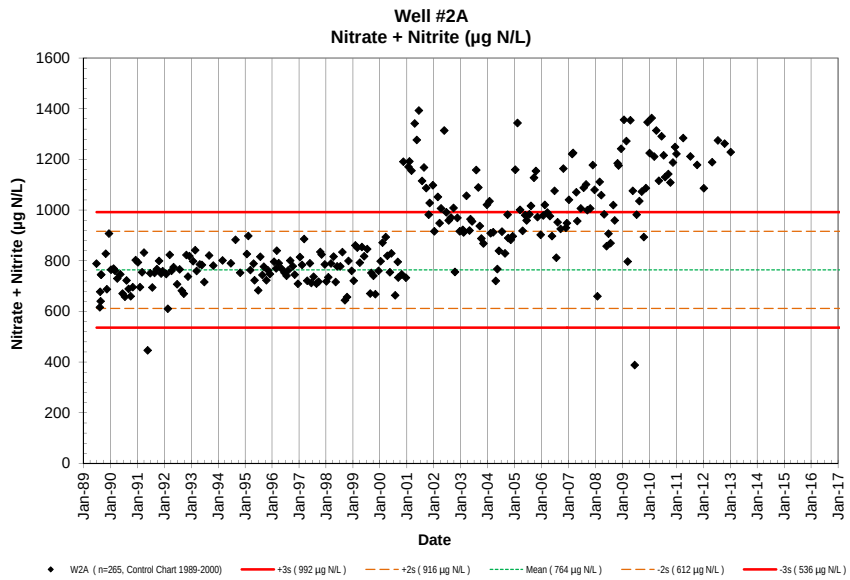
NELHA Water Quality Laboratory

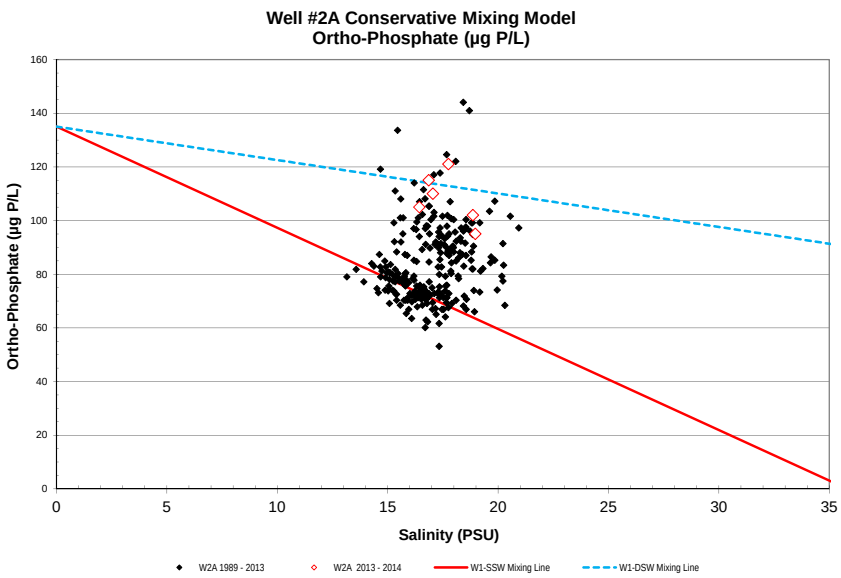
Well 2A Data Table

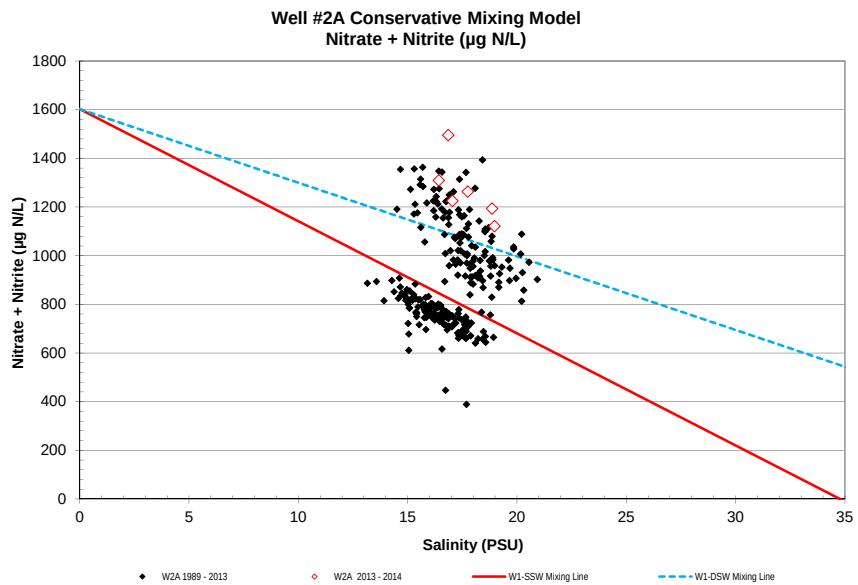
June 1989 - December 2014

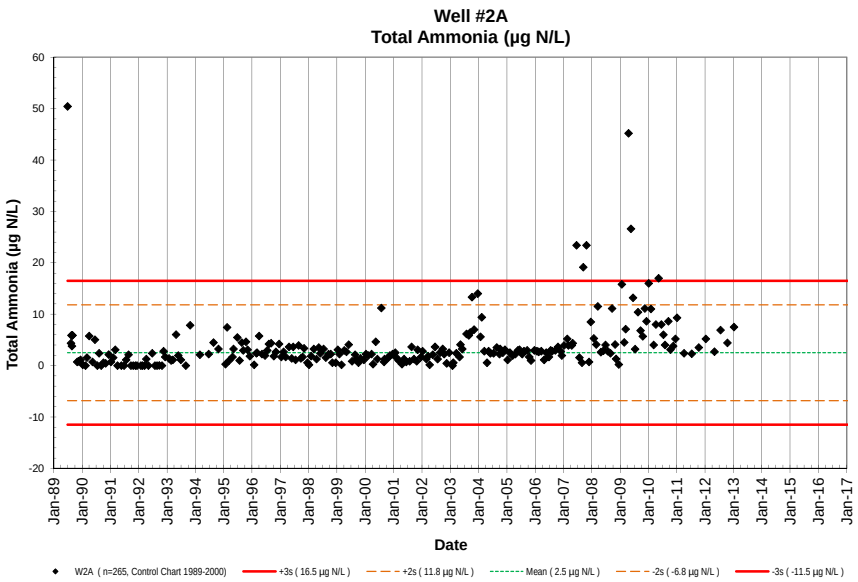
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W2A	-6.71	7/17/13	1131	-1.94	0.58	Flood	3.07	95	80.0	1121	0.42	5.9	433	12159						19.2	7.90	18.97	6.66	0.05		
W2A	-6.71	10/15/13	1026	-2.07	0.30	Flood	3.29	102	85.2	1193	0.37	5.2	447	12556						19.3	7.89	18.86	7.29	0.08		
W2A	-6.71	1/15/14	1007	-2.23	0.06	Ebb	3.55	110	87.5	1225	0.47	6.6	458	12873						19.4	7.93	17.05	7.00	0.34		
W2A	-6.71	4/29/14	1124	-2.41	0.00	Flood	3.39	105	93.5	1309	0.70	9.8	462	12974						19.4	7.86	16.43	7.69	2.42		
W2A	-6.71	7/29/14	1054	-2.26	0.12	Low	3.71	115	106.7	1495	0.79	11	481	13513						19.7	7.84	16.86	7.10	0.97		
W2A	-6.71	11/5/14	1101	-2.11	0.15	Flood	3.91	121	90.2	1263	0.64	9	449	12617						19.7	7.82	17.75	7.44	1.01		
W2A	-6.71	1/1/15																								
W2A	-6.71	4/1/15																								

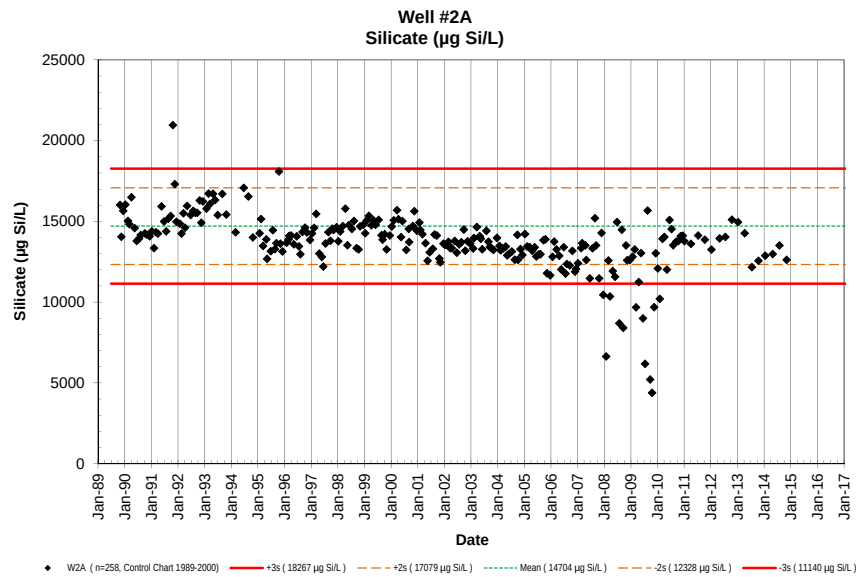

Well #2A
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W2A (n=265, Control Chart 1989-2000)
+3s (92 µg P/L)
+2s (86 µg P/L)
Mean (74 µg P/L)
-2s (63 µg P/L)
-3s (57 µg P/L)

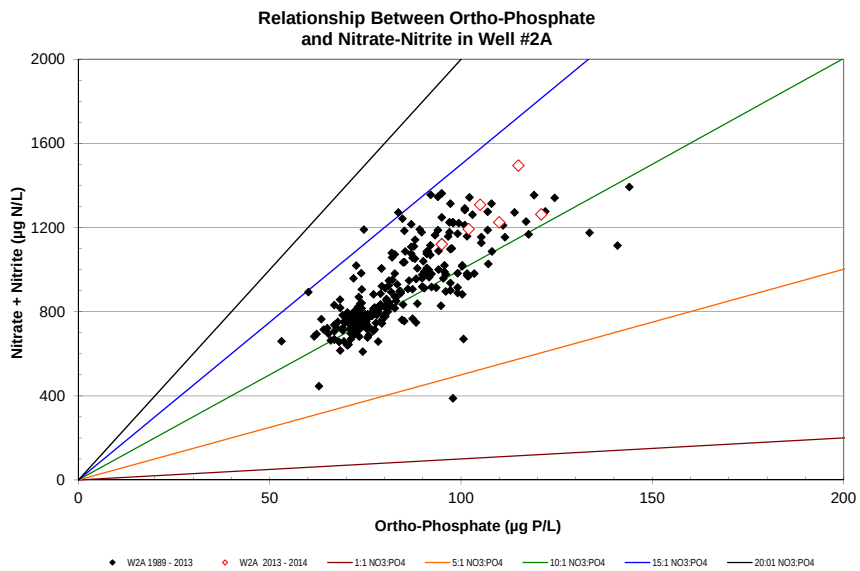

Well #2A
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W2A (n=265, Control Chart 1989-2000)
+3s (992 µg N/L)
+2s (916 µg N/L)
Mean (764 µg N/L)
-2s (612 µg N/L)
-3s (536 µg N/L)

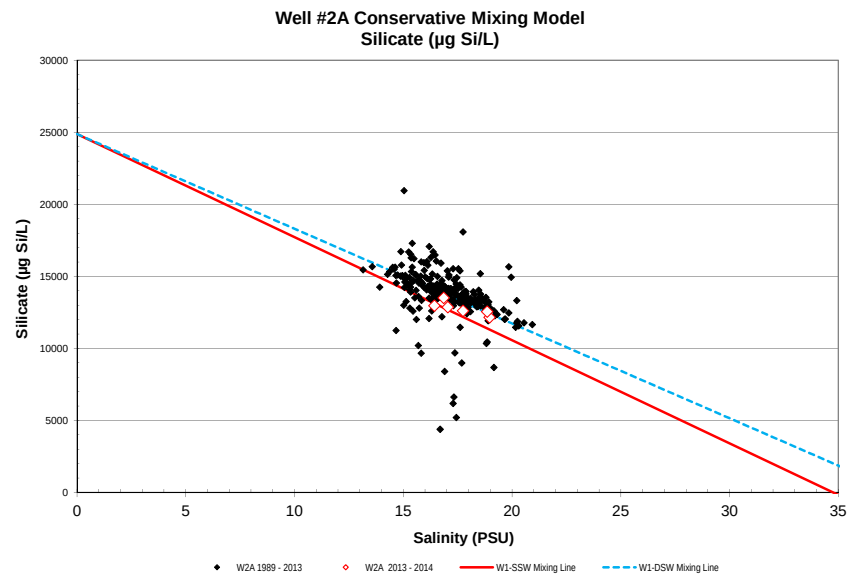

Well #2A Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W2A 1989 - 2013
W2A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

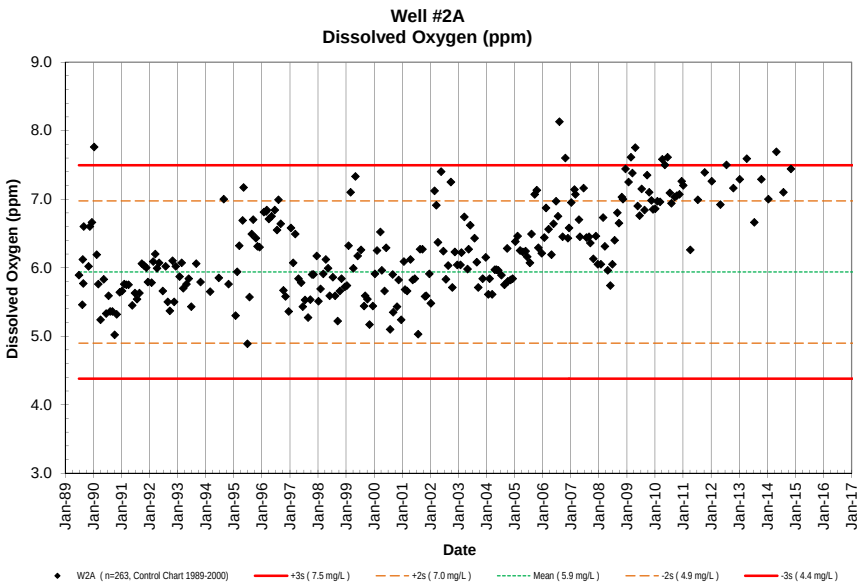

Well #2A Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W2A 1989 - 2013
W2A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

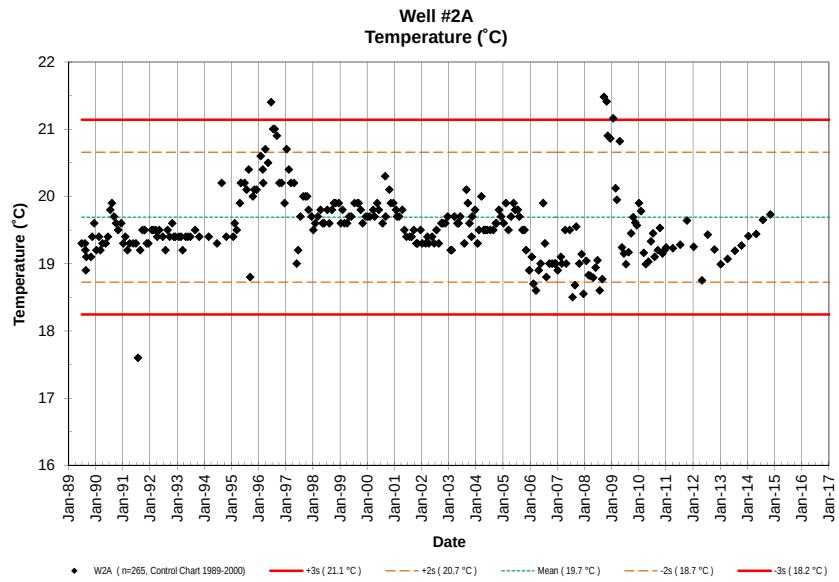

Well #2A
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W2A (n=265, Control Chart 1989-2000)
+3s (16.5 µg N/L)
+2s (11.8 µg N/L)
Mean (2.5 µg N/L)
-2s (-6.8 µg N/L)
-3s (-11.5 µg N/L)

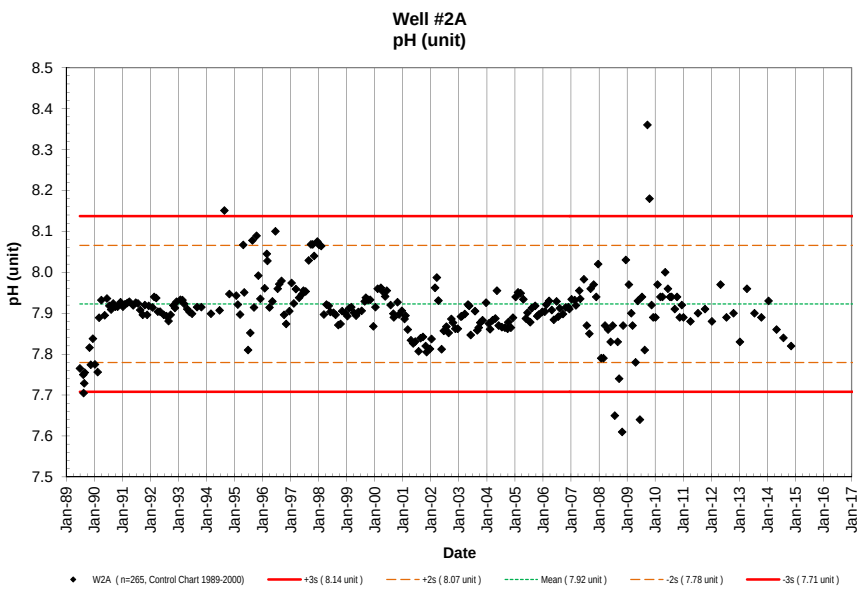

Well #2A
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W2A (n=258, Control Chart 1989-2000)
+3s (18267 µg Si/L)
+2s (17079 µg Si/L)
Mean (14704 µg Si/L)
-2s (12328 µg Si/L)
-3s (11140 µg Si/L)

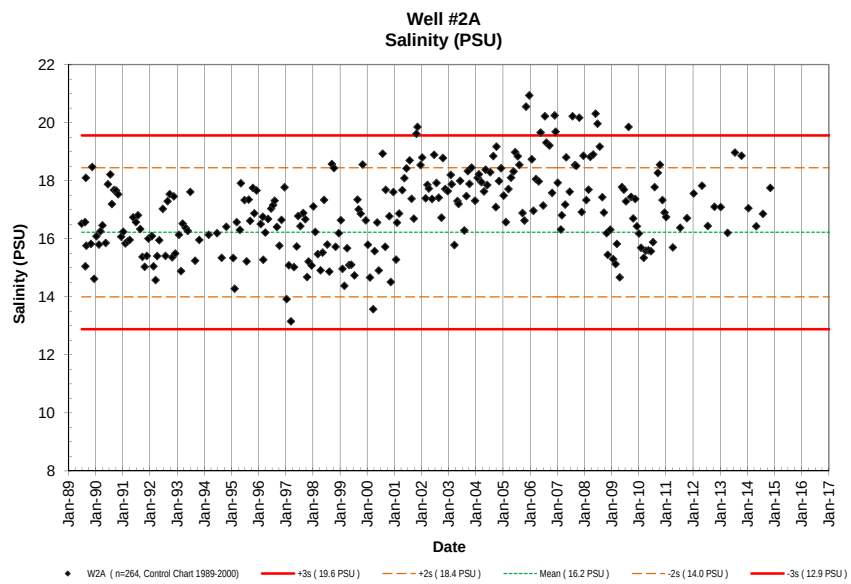

Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #2A
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W2A 1989 - 2013
W2A 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

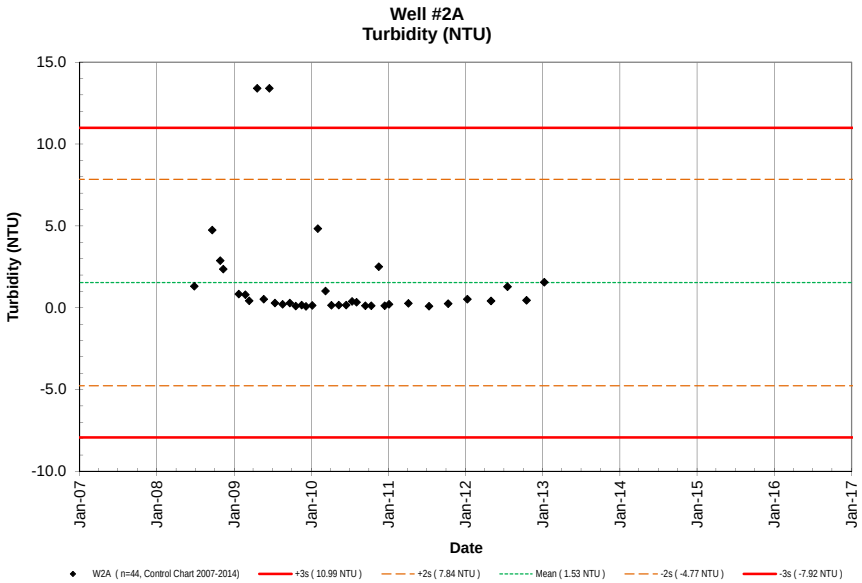

Well #2A Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W2A 1989 - 2013
W2A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

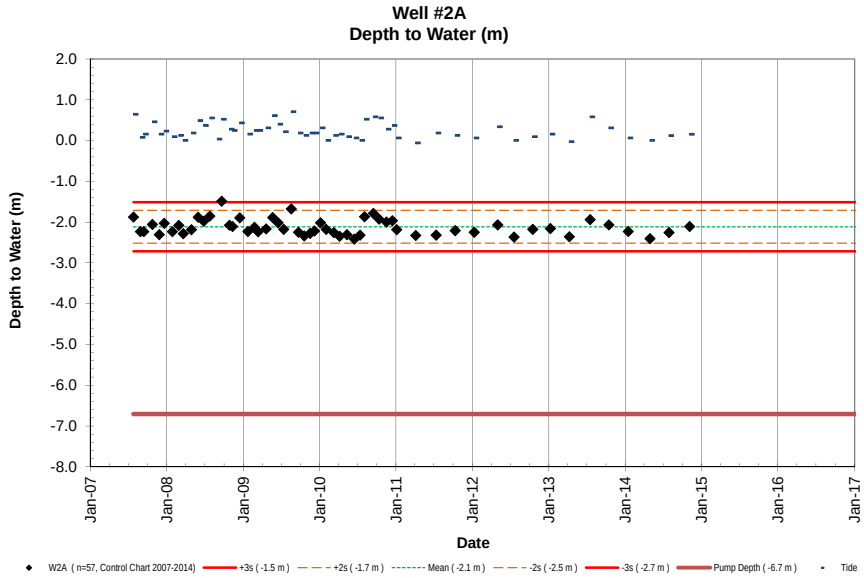

Well #2A
Dissolved Oxygen (ppm)
Dissolved Oxygen (ppm)
Date
W2A (n=263, Control Chart 1989-2000)
+3s (7.5 mg/L)
+2s (7.0 mg/L)
Mean (5.9 mg/L)
-2s (4.9 mg/L)
-3s (4.4 mg/L)


Well #2A
Temperature (˚C)
Temperature (˚C)
Date
W2A (n=265, Control Chart 1989-2000)
+3s (21.1 °C)
+2s (20.7 °C)
Mean (19.7 °C)
-2s (18.7 °C)
-3s (18.2 °C)


Well #2A
pH (unit)
pH (unit)
Date
W2A (n=265, Control Chart 1989-2000)
+3s (8.14 unit)
+2s (8.07 unit)
Mean (7.92 unit)
-2s (7.78 unit)
-3s (7.71 unit)


Well #2A
Salinity (PSU)
Salinity (PSU)
Date
W2A (n=264, Control Chart 1989-2000)
+3s (19.6 PSU)
+2s (18.4 PSU)
Mean (16.2 PSU)
-2s (14.0 PSU)
-3s (12.9 PSU)


Well #2A
Turbidity (NTU)
15.0
10.0
5.0
0.0
-5.0
-10.0
Turbidity (NTU)
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W2A (n=44, Control Chart 2007-2014)
+3s (10.99 NTU)
+2s (7.84 NTU)
Mean (1.53 NTU)
-2s (-4.77 NTU)
-3s (-7.92 NTU)


Well #2A
Depth to Water (m)
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
-6.0
-7.0
-8.0
Depth to Water (m)
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W2A (n=57, Control Chart 2007-2014)
+3s (-1.5 m)
+2s (-1.7 m)
Mean (-2.1 m)
-2s (-2.5 m)
-3s (-2.7 m)
Pump Depth (-6.7 m)
Tide

NELHA Water Quality Laboratory

Well 2B Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W2B	-3.96	6/28/89					3.65	113	86.4	1210	0.06	0.8								20.3	7.928	7.182	8.36		NA	NA
W2B	-3.96	8/11/89	1114				2.62	81	50.6	709	0.10	1.4								20.4	7.872	7.346	8.27		<1	NA
W2B	-3.96	8/16/89	1020				3.55	110	67.5	945	0.10	1.4								20.4	7.779	7.326	8.62		<1	NA
W2B	-3.96	8/23/89	1015				3.23	100	55.2	773	0.10	1.4								19.7	7.840	7.724	8.25		2	NA
W2B	-3.96	8/30/89	1055				3.31	103	58.5	819	0.10	1.4								20.3	7.890	7.355	8.19		<1	NA
W2B	-3.96	8/30/89	1055				3.31	103	65.7	920	0.15	2.1													NA	NA
W2B	-3.96	10/31/89	1010				3.60	112	81.8	1146	0.03	0.4	711	19969	3.78	117	92.6	1297	0.54	20.0	7.909	7.667	8.05		<1	NA
W2B	-3.96	11/16/89	838				3.55	110	84.5	1184	0.06	0.8	674	18930	3.86	120	89.1	1248	1.01	20.4	7.419	8.821	8.39		57	NA
W2B	-3.96	12/13/89	1105				3.58	111	83.7	1172	0.00	0.0	684	19210	3.81	118	86.7	1214	1.10	20.1	7.921	8.485	8.87		223	NA
W2B	-3.96	1/11/90	859				3.06	95	70.7	990	0.00	0.0	730	20502	3.28	102	74.8	1048	1.26	20.1	7.973	7.282	8.06		<1	NA
W2B	-3.96	2/14/90	1035				3.44	107	71.4	1000	0.00	0.0	734	20615	2.89	90	74.4	1042	1.02	20.5	7.861	7.282	8.49		5	NA
W2B	-3.96	3/6/90	1408				3.02	94	76.7	1074	0.03	0.4	653		3.27	101	78.3	1097	1.13	20.2	7.985	6.354	8.19		1	NA
W2B	-3.96	4/4/90	1155				3.35	104	81.3	1139	0.36	5.0	698	19604	3.39	105	83.1	1164	1.21	20.3	8.054	6.889	7.69		<1	NA
W2B	-3.96	5/17/90	1449				3.31	103	81.7	1144	0.00	0.0	651	18284	3.40	105	87.5	1226	0.89	20.6	7.985	7.417	8.00		<1	NA
W2B	-3.96	6/16/90	1356				2.46	76	78.9	1105	0.62	8.7	652	18312	2.56	79	50.9	713	0.85	20.5	8.028	7.754	7.95		<1	NA
W2B	-3.96	7/17/90	1433				3.77	117	78.0	1093	0.03	0.4	658	18480	3.97	123	83.1	1164	0.81	20.5	8.020	7.978	7.99		22	NA
W2B	-3.96	8/8/90	1418				3.22	100	81.3	1139	0.15	2.1	663	18621	3.62	112	82.5	1156	0.93	20.7	8.014	7.616	7.98		7	NA
W2B	-3.96	9/5/90	1454				3.41	106	80.6	1129	0.00	0.0			3.41	106	81.4	1141	0.39	20.7	8.024	7.828	7.98		59	NA
W2B	-3.96	10/4/90	1400				3.42	106	78.0	1092	0.00	0.0	664	18649	3.95	122	78.1	1094	1.42	20.7	7.999	7.613	8.70		<1	NA
W2B	-3.96	11/1/90	1414				3.36	104	80.1	1121	0.08	1.1	791	22204	3.52	109	82.4	1154	0.57	20.7	7.990	7.682	7.93		<1	NA
W2B	-3.96	12/10/90	1443				3.30	102	81.8	1146	0.14	2.0	652	18312	3.71	115	86.5	1212	0.46	20.5	7.978	7.422	7.89		<1	NA
W2B	-3.96	1/9/91	1035				3.41	106	81.9	1147	0.12	1.7	647	18171	3.41	106	86.7	1214	0.69	20.5	8.026	7.047	8.13		<1	NA
W2B	-3.96	2/6/91	1031				3.15	98	65.5	918	0.07	1.0	586	16458	3.24	100	67.6	947	0.79	20.6	8.006	6.493	8.23		<1	NA
W2B	-3.96	3/6/91	1049				3.20	99	80.8	1132	0.18	2.5	650	18256	3.35	104	82.3	1153	0.68	20.3	8.014	6.952	8.24		<1	NA
W2B	-3.96	4/3/91	1035				3.05	94	65.9	923	0.00	0.0	645	18115	3.20	99	100	1401	0.69	20.2	7.998	7.372	8.15		<1	NA
W2B	-3.96	5/22/91	1100				3.01	93	39.7	556	0.00	0.0	748	21008	3.25	101	41.0	574	0.65	20.6	8.015	7.253	8.08		<1	NA
W2B	-3.96	6/26/91	1128				3.08	95	84.3	1181	0.00	0.0	665	18677	3.18	98	87.9	1231	0.52	20.5	8.009	7.553	8.26		<1	<1
W2B	-3.96	7/24/91	1124				2.59	80	61.1	856	0.00	0.0	651	18284	2.95	91	62.7	878	0.50		8.020	7.427	8.29		<1	<1
W2B	-3.96	8/23/91	1027				3.19	99	88.3	1237	0.00	0.0	681	19126	3.22	100	91.7	1284	0.61	20.6	7.983	7.250	8.40		<1	<1
W2B	-3.96	9/24/91	1026				3.17	98	77.3	1083	0.00	0.0	655	18396	3.17	98	82.8	1160	0.66	20.6	7.950	8.078	8.21		<1	<1
W2B	-3.96	10/23/91	1038				2.98	92	79.6	1115	0.00	0.0	922	25895	3.00	93	82.0	1149	0.61	20.6	7.989	7.730	8.21		2	<1
W2B	-3.96	11/20/91	1023				3.73	116	76.7	1074	0.00	0.0	768	21570	3.87	120	80.2	1123	0.49	20.4	7.970	7.517	8.07		<1	<1
W2B	-3.96	12/11/91	1031				3.23	100	81.3	1139	0.00	0.0	659	18508	3.30	102	86.3	1209	0.66	20.4	7.981	7.639	7.98		<1	<1
W2B	-3.96	1/29/92	1025				3.56	110	80.6	1129	0.00	0.0	656	18424	3.63	112	82.8	1160	1.10	20.3	7.994	7.526	8.39		<1	<1
W2B	-3.96	2/19/92	1046				3.15	98	75.7	1060	0.00	0.0	611	17160	3.23	100	83.4	1168	0.66	20.4	7.990	8.198	8.12		1	5
W2B	-3.96	3/17/92	1000				3.12	97	80.2	1123	0.00	0.0	662	18593	3.20	99	84.3	1181	0.86	20.4	8.006	7.543	8.36		<1	<1
W2B	-3.96	4/8/92	954				3.24	100	79.7	1116	0.00	0.0	645	18115	3.31	103	82.9	1161	0.58	20.4	7.988	7.755	8.42		<1	<1
W2B	-3.96	5/6/92	1035				3.25	101	79.3	1111	0.00	0.0	701	19688	3.30	102	85.1	1192	0.94	20.6	7.977	7.745	8.50		<1	<1
W2B	-3.96	6/23/92	1009				3.25	101	80.5	1128	0.07	1.0	711	19969	3.52	109	82.0	1149	0.72	20.5	7.987	7.639	8.47		3	<1
W2B	-3.96	7/29/92	945				3.10	96	77.1	1079	ND	0.0	692	19435	3.15	98	80.0	1120	0.86	20.6	7.938	7.819	8.38		<1	<1
W2B	-3.96	8/25/92	950				3.45	107	75.9	1063	0.00	0.0	706	19828	3.45	107	85.0	1190	0.56	20.6	7.969	7.974	8.17		<1	<1
W2B	-3.96	9/22/92	1031				3.29	102	85.8	1202	0.00	0.0	711	19969	3.35	104	93.5	1310	0.60	20.6	7.992	7.827	8.19		1	<1
W2B	-3.96	10/27/92	1017				3.39	105	81.4	1140	0.00	0.0	697	19576	3.43	106	84.7	1186	0.71	20.7	7.933	8.395	8.22		10	7
W2B	-3.96	11/17/92	1018				3.29	102	86.6	1213	0.72	10.1	695	19519	3.73	116	91.4	1280	0.81	20.4	8.007	7.757	8.32		0	0
W2B	-3.96	12/8/92	942				2.74	85	83.6	1171	0.15	2.1	700	19660	3.35	104	86.6	1213	1.08	19.8	7.982	8.006	8.25		76	4
W2B	-3.96	1/26/93	1000				3.21	99	84.7	1187	0.12	1.7	688	19309	3.33	103	89.9	1259	0.65	20.3	7.969	8.197	8.23		<1	<1
W2B	-3.96	2/23/93	948				3.18	98	84.7	1186	0.00	0.0	708	19885	3.20	99	99.6	1396	0.55	20.3	7.999	7.932	8.30		<1	<1
W2B	-3.96	3/16/93	939				3.29	102	84.5	1183	0.11	1.5	707	19862	3.44	107	89.0	1247	0.66	20.0	8.008	7.960	8.34		<1	<1
W2B	-3.96	4/27/93	938				3.30	102	88.1	1235	0.05	0.7	719	20185	3.40	105	91.9	1287	0.59	20.3	8.000	7.744	8.34		1	<1
W2B	-3.96	5/25/93	930				3.26	101	86.3	1209	0.00	0.0	710	19935	3.26	101	94.3	1321	0.47	20.4	7.985	8.030	8.32		<1	<1
W2B	-3.96	6/28/93	958				3.24	100	86.4	1210	0.00	0.0	707	19856	3.29	102	91.0	1275	0.64	20.5	8.000	7.865	8.30		<1	1
W2B	-3.96	8/31/93	900				3.36	104	86.6	1213	0.00	0.0	713	20025	3.36	104	105	1467	0.63	20.5	7.988	7.859	8.39		<1	<1
W2B	-3.96	10/26/93	845				3.41	106	88.7	1242	0.27	3.8	671	18845	3.41	106	90.5	1268	1.01	20.5	8.012	7.614	8.23		12	6
W2B	-3.96	3/1/94	827				3.50	108	88.0	1233	0.13	1.8	642	18031	3.50	108	113	1579	0.64	20.2	7.958	8.291	7.84		<1	2
W2B	-3.96	6/21/94	923				3.38	105	86.1	1207	0.03	0.4	654	18372	3.38	105	104	1458	0.54	20.4	7.989	8.092	8.35		5	1

NELHA Water Quality Laboratory

Well 2B Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W2B	-3.96	8/23/94	953				3.38	105	87.8	1229	0.19	2.7	772	21690	3.38	105	96.5	1351	0.89	20.6	8.051	8.496	8.22		5	1
W2B	-3.96	10/25/94	1011				3.41	106	83.0	1163	0.26	3.6	645	18101	3.41	106	86.8	1216	0.36	20.4	8.030	8.162	8.18		1	12
W2B	-3.96	1/24/95	1009				3.46	107	84.8	1188	0.14	2.0	636	17862	3.47	107	89.2	1249	0.52	20.1	8.052	8.351	8.02		1	1
W2B	-3.96	2/14/95	946				3.41	106	87.0	1218	0.38	5.3	642	18039	3.41	106	88.4	1237	0.56	20.2	8.035	8.305	8.16		<1	<1
W2B	-3.96	3/14/95	1036				3.46	107	86.0	1205	0.04	0.6	640	17975	3.47	107	87.4	1224	0.51	20.4	8.013	8.003	8.30		<1	<1
W2B	-3.96	4/26/95	1025				3.41	106	87.4	1224	0.08	1.1	638	17919	3.47	107	96.6	1354	0.79	20.5	8.000	7.879	8.16		<1	3
W2B	-3.96	5/8/95	1029				3.42	106	85.8	1201	0.14	2.0	629	17671	3.42	106	91.6	1283	0.49	20.5	7.972	8.179	8.10		<1	<1
W2B	-3.96	6/27/95	1004				3.44	107	86.3	1209	0.27	3.8	647	18180	3.54	110	88.6	1242	0.53	20.6	8.015	7.994	8.27		<1	<1
W2B	-3.96	7/25/95	1018				3.34	103	86.6	1213	0.09	1.3	641	18000	3.39	105	89.3	1251	0.60	20.5	7.981	8.422	7.80		<1	1
W2B	-3.96	8/22/95	1107				3.41	106	84.6	1185	0.27	3.8	649	18213	3.51	109	88.0	1233	0.46	21.8	7.971	8.024	7.86		<1	1
W2B	-3.96	9/11/95	1030				3.29	102	83.8	1173	0.12	1.7	641	18000	3.29	102	87.3	1223	0.44	20.2	8.000	8.475	7.98		109	1
W2B	-3.96	10/16/95	1055				3.30	102	82.7	1158	0.31	4.3	625	17548	3.33	103	83.1	1164	0.70	20.9	8.067	9.400	7.66		2	1
W2B	-3.96	11/6/95	1059				3.28	102	83.5	1170	0.16	2.2	661	18576	3.37	104	87.7	1229	0.61	20.6	8.034	8.619	7.86		5	2
W2B	-3.96	12/4/95	1046				3.28	102	82.3	1153	0.05	0.7	627	17618	3.30	102	84.7	1186	0.66	20.5	7.996	9.273	9.42		1	3
W2B	-3.96	1/29/96	1158				3.34	103	84.1	1178	0.02	0.3	644	18081	3.41	106	92.4	1295	0.58	21.2	8.019	8.153	8.04		1	1
W2B	-3.96	2/26/96	1156				3.34	103	83.7	1172	0.14	2.0	633	17791	3.37	104	103	1448	0.68	20.8	7.997	8.154	8.12		2	1
W2B	-3.96	3/5/96	1053				3.20	99	88.3	1237	0.14	2.0	624	17516	3.25	101	92.7	1298	0.93	20.8	8.047	7.990	8.17		6	3
W2B	-3.96	4/1/96	1126				3.30	102	84.3	1181	0.29	4.1	629	17659	3.34	103	87.9	1231	0.69	21.1	7.977	8.203	8.07		<1	<1
W2B	-3.96	5/8/96	1138				3.42	106	82.7	1159	0.05	0.7	637	17896	3.45	107	86.4	1210	0.48	21.0	7.966	8.416	8.04		<1	<1
W2B	-3.96	6/17/96	1054				3.38	105	84.7	1187	0.17	2.4	676	18981	3.45	107	87.9	1231	0.66	20.7	8.016	8.183	8.14		<1	1
W2B	-3.96	7/16/96	1101				3.29	102	83.7	1173	0.18	2.5	659	18516	3.47	107	87.0	1218	0.60	21.4	8.001	8.355	7.97		13	2
W2B	-3.96	8/5/96	1143				3.31	103	82.7	1158	0.23	3.2	616	17292	3.32	103	85.9	1203	0.45	21.4	7.989	9.404	7.75		<1	1
W2B	-3.96	9/3/96	1105				3.29	102	83.0	1162	0.20	2.8	648	18197	3.36	104	86.2	1208	0.62	21.3	7.991	8.926	7.87		5	4
W2B	-3.96	10/8/96	1113				3.41	106	85.9	1203	0.10	1.4	632	17751	3.60	112	93.3	1307	0.61	21.2	7.983	7.894	8.13		<1	<1
W2B	-3.96	11/4/96	1130				3.38	105	87.3	1223	0.20	2.8	662	18579	3.40	105	91.1	1276	0.73	21.2	7.974	7.915	8.14		<1	1
W2B	-3.96	12/16/96	1105				3.26	101	86.8	1216	0.29	4.1	638	17911	3.31	103	89.6	1254	0.80	21.0	7.985	8.487	8.03		3	2
W2B	-3.96	1/13/97	1146				3.15	98	77	1084	0.02	0.3	609	17101	3.20	99	82.0	1149	0.74	21.2	7.972	7.433	8.19		1	1
W2B	-3.96	2/11/97	1153				3.05	94	81	1130	0.12	1.7	623	17497	3.1*	0	83.4	1168	0.72	21.3	7.979	7.141	8.23		<1	<1
W2B	-3.96	3/11/97	1123				3.17	98	84	1172	0.04	0.6	629	17669	3.24	100	85.6	1199	0.61	21.0	8.011	7.375	8.27		<1	<1
W2B	-3.96	4/22/97	1134				3.14	97	87	1217	0.13	1.8	535	15037	3.31	103	88.4	1238	0.65	21.3	8.014	7.588	7.86		<1	<1
W2B	-3.96	5/27/97	1039				3.33	103	88	1230	0.02	0.3	528	14821	3.55	110	94.8	1328	0.52	20.4	8.014	7.371	9.84		<1	1
W2B	-3.96	6/16/97	1100				3.31	103	83	1169	0.24	3.4	516	14495	3.36	104	91.5	1282	0.65	20.3	8.036	7.500	8.15		<1	2
W2B	-3.96	7/16/97	1012				3.36	104	85	1185	0.12	1.7	636	17874	3.48	108	93.4	1308	0.48	20.7	8.016	7.465	8.09		<1	<1
W2B	-3.96	8/25/97	1108				3.43	106	81	1141	0.21	2.9	674	18924	3.45	107	82.8	1160	0.50	21.3	8.095	7.731	9.28		<1	6
W2B	-3.96	9/22/97	1025				3.21	99	79	1108	0.08	1.1	643	18051	3.23	100	80.9	1133	0.52	21.2	8.121	8.153	7.94		<1	1
W2B	-3.96	10/15/97	1024				3.32	103	89	1247	0.07	1.0	634	17815	3.69	114	100	1402	0.58	21.0	8.105	7.492	8.00		1	<1
W2B	-3.96	11/3/97	1012				3.44	107	85.7	1200	0.07	1.0	624	17531	3.60	112	98.2	1375	0.51	20.9	8.083	8.097	8.01		<1	1
W2B	-3.96	12/15/97	1029				3.27	101	75.5	1058	0.06	0.8	266	7457	3.41	106	79.7	1116	0.60	20.2	8.116	8.521	8.06		15	1
W2B	-3.96	1/6/98	947				3.43	106	85.8	1202	0.14	2.0	635	17829	3.71	115	89.5	1254	0.65	20.3	8.128	7.858	7.94		1	12
W2B	-3.96	2/2/98	1043				3.34	103	81.2	1137	0.05	0.7	640	17983	3.48	108	85.3	1195	0.61	20.7	8.113	8.032	8.15		<1	1
W2B	-3.96	3/9/98	1042				3.49	108	83.0	1163	0.12	1.7	637	17885	3.59	111	84.7	1186	0.59	20.6	7.985	8.109	8.18		<1	<1
W2B	-3.96	4/13/98	1012				3.55	110	84	1173	0.04	0.6	645	18107	3.60	112	87.3	1223	0.60	20.6	8.006	7.946	8.33		<1	<1
W2B	-3.96	5/11/98	1109				3.62	112	82	1154	0.11	1.5	600	16851	3.79	117	85.9	1203	0.57	20.6	7.993	8.446	8.26		<1	<1
W2B	-3.96	6/1/98	1057				3.45	107	83.0	1163	0.12	1.7	640	17972	3.51	109	87.8	1229	0.49	20.5	7.995	8.787	8.12		<1	<1
W2B	-3.96	7/13/98	1057				3.55	110	83	1163	0.01	0.1	646	18146	3.73	116	87	1214	0.49	20.8	7.995	8.219	8.11		2	1
W2B	-3.96	8/10/98	1112				3.69	114	85.4	1196	0.09	1.3	643	18059	3.78	117	90.4	1266	0.59	20.7	7.973	8.296	8.25		<1	2
W2B	-3.96	9/14/98	1115				3.54	110	80.3	1124	0.16	2.2	647	18183	3.66	113	83	1162	0.61	20.7	7.979	8.450	8.07		4	3
W2B	-3.96	10/12/98	1006				3.48	108	84.7	1186	0.08	1.1	648	18208	3.68	114	87	1212	0.55	21.3	7.981	8.183	8.76		<1	<1
W2B	-3.96	11/2/98	1032				3.50	108	86.5	1212	0.04	0.6	652	18323	3.63	112	90.1	1262	0.72	21.2	7.992	8.109	8.13		1	<1
W2B	-3.96	12/15/98	1016				3.52	109	83.5	1170	0.05	0.7	638	17919	3.66	113	85.6	1199	0.65	20.6	7.988	8.621	8.08		<1	<1
W2B	-3.96	1/11/99	1041				3.37	104	87	1214	0.16	2.2	645	18124	3.49	108	90	1256	0.67	20.5	7.989	8.389	8.21		1	<1
W2B	-3.96	2/2/99	1045				3.29	102	84	1177	0.12	1.7	634	17803	3.38	105	91	1275	0.65	20.6	7.971	9.116	8.20		<1	<1
W2B	-3.96	3/1/99	1057				3.30	102	78.7	1102	0.01	0.1	626	17593	3.40	105	80.1	1122	0.50	21.7	7.969	9.202	8.90		<1	<1
W2B	-3.96	4/5/99	1042				3.40	105	85.3	1195	0.15	2.1	650	18242	3.53	109	89.1	1248	0.55	20.6	7.991	8.153	8.21		<1	<1
W2B	-3.96	5/3/99	1107				3.38	105	85.9	1203	0.17	2.4	641	18000	3.50	108	92.4	1294	0.55	21.6	7.964	8.772	8.22		<1	<1
W2B	-3.96	6/1/99	1036				3.44	107	86.3	1209	0.24	3.4	651	18272	3.50	108	91.0	1275	0.55	21.0	7.991	8.108	8.30		<1	1

NELHA Water Quality Laboratory

Well 2B Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W2B	-3.96	7/14/99	1055				3.40	105	82.2	1151	0.08	1.1	640	17986	3.42	106	84.4	1182	0.53	20.8	7.973	8.760	8.20		<1	3
W2B	-3.96	8/23/99	1104				3.33	103	80.0	1121	0.12	1.7	648	18194	3.57	111	83.3	1167	0.58	20.9	8.032	8.429	8.15		<1	<1
W2B	-3.96	9/7/99	1105				3.51	109	91.4	1280	0.14	2.0	643	18048	3.67	114	104	1458	0.59	21.0	8.036	8.352	8.21		<1	1
W2B	-3.96	10/5/99	1042				3.44	107	86.6	1213	0.12	1.7	651	18278	3.48	108	88.6	1241	0.52	20.9	8.030	8.312	8.07		<1	<1
W2B	-3.96	11/1/99	1114				3.37	104	84.0	1177	0.14	2.0	640	17983	3.44	107	88.0	1233	0.56	20.9	8.024	8.893	7.91		<1	<1
W2B	-3.96	12/14/99	1107				3.44	107	89.1	1248	0.13	1.8	648	18188	3.54	110	92.4	1294	0.57	20.8	7.959	8.303	6.94		<1	<1
W2B	-3.96	1/10/00	1125				3.31	103	80.8	1132	0.12	1.7	634	17815	3.42	106	88.1	1234	0.58	20.9	7.977	9.070	7.96		<1	22
W2B	-3.96	2/7/00	1124				3.35	104	84.3	1181	0.19	2.7	624	17514	3.44	107	88.8	1244	0.56	20.8	8.012	9.188	7.98		<1	<1
W2B	-3.96	3/21/00	1124				3.21	99	82.3	1153	0.14	2.0	542	15211	3.02	94	88.3	1237	0.61	20.6	8.014	8.632	8.11		<1	<1
W2B	-3.96	4/10/00	1205				3.34	103	83.1	1164	0.11	1.5	640	17983	3.04	94	90.1	1262	0.62	20.8	8.024	8.918	8.00		<1	<1
W2B	-3.96	5/15/00	1106				3.32	103	87.1	1220	0.33	4.6	626	17593	3.26	101	91.9	1287	0.64	20.9	8.038	8.304	8.15		<1	<1
W2B	-3.96	6/5/00	1109				3.31	103	84.5	1184	0.13	1.8	643	18053	3.39	105	91.9	1287	0.61	20.9	8.023	8.609	8.17		<1	744
W2B	-3.96	7/26/00	1135				3.28	102	83.5	1170	1.40	19.6	637	17876	3.32	103	84.6	1185	0.65	21.0	7.968	9.292	7.66		5	34
W2B	-3.96	8/29/00	1045				3.41	106	88.4	1238	0.10	1.4	638	17919	3.39	105	90.2	1263	0.67	21.6	7.958	8.566	7.95		<1	2
W2B	-3.96	9/5/00	1059				3.30	102	90.1	1263	0.11	1.5	642	18034	3.34	103	92.7	1298	0.73	21.2	7.955	8.687	7.94		<1	1
W2B	-3.96	10/24/00	1112				3.48	108	87.2	1221	0.11	1.5	671	18848	3.69	114	88.1	1234	0.72	21.1	8.000	8.490	7.78		<1	<1
W2B	-3.96	11/13/00	1052				3.00	93	146	2039	0.14	2.0	647	18174	3.12	97	154	2151	0.80	21.3	7.907	8.442	7.41		<1	1
W2B	-3.96	12/18/00	1044				3.35	104	95.1	1332	0.14	2.0	657	18449	3.49	108	97.6	1367	0.65	21.1	7.973	9.016	7.60		<1	1
W2B	-3.96	1/22/01	1108				3.78	117	98.9	1385	0.11	1.5	624	17537	3.86	120	102	1434	0.73	21.1	7.929	9.530	7.57		<1	<1
W2B	-3.96	2/5/01	1113				3.60	112	97.3	1363	0.10	1.4	631	17733	3.70	115	100	1402	0.64	20.9	7.956	9.574	7.48		<1	1
W2B	-3.96	3/5/01	1105				3.63	112	102	1422	0.08	1.1	628	17626	3.69	114	106	1486	0.64	20.9	7.928	9.500	7.52		<1	<1
W2B	-3.96	4/17/01	1115				3.64	113	97.1	1360	0.04	0.6	632	17756	3.69	114	99.0	1386	0.57	20.9	7.918	9.931	8.00		<1	2
W2B	-3.96	5/15/01	1040				3.70	115	98.0	1372	0.08	1.1	622	17478	3.58	111	100	1403	0.58	21.2	7.917	10.035	8.07		<1	<1
W2B	-3.96	6/12/01	1119				3.93	122	94.9	1329	0.02	0.3	621	17435	3.92	121	96.6	1352	0.55	20.7	7.929	10.118	8.04		<1	<1
W2B	-3.96	7/25/01	906				3.81	118	93.0	1302	0.10	1.4	606	17009	3.66	113	97.1	1361	0.74	20.8	7.899	10.753	7.81		<1	<1
W2B	-3.96	8/20/01	856				3.60	112	89.6	1254	0.09	1.3	609	17107	3.58	111	93.9	1315	0.69	21.3	7.902	11.099	7.77		1	<1
W2B	-3.96	9/19/01	1018				3.22	100	90.5	1267	0.09	1.3	636	17865	3.49	108	93.1	1304	0.69	21.2	7.909	10.491	7.78		<1	1
W2B	-3.96	10/24/01	1010				3.34	103	91.2	1277	0.04	0.6	620	17402	3.51	109	103	1443	0.61	21.1	7.922	10.443	7.77		<1	<1
W2B	-3.96	11/7/01	1045				3.44	107	90.3	1265	0.22	3.1	596	16750	3.48	108	111	1548	0.60	20.8	7.894	11.489	7.46		1	<1
W2B	-3.96	12/19/01	1026				3.28	102	97.9	1371	0.18	2.5	593	16643	3.32	103	128	1793	0.59	21.0	7.867	11.693	7.27		<1	1
W2B	-3.96	1/9/02	1016				3.33	103	97.0	1359	0.11	1.5	625	17565	3.52	109	98.2	1375	0.64	21.5	7.916	10.387	7.42		<1	<1
W2B	-3.96	2/25/02	1055				3.30	102	110	1546	0.10	1.4	617	17326	3.38	105	115	1614	0.50	20.7	7.956	10.053	7.76		<1	8
W2B	-3.96	3/20/02	1034				3.26	101	116	1623	0.14	2.0	612	17191	3.32	103	120	1681	0.57	20.8	7.793	9.368	7.64		<1	<1
W2B	-3.96	4/10/02	1107				3.34	103	99.0	1387	0.11	1.5	626	17579	3.46	107	103	1440	0.52	21.1	7.929	9.381	7.53		<1	<1
W2B	-3.96	5/22/02	923				3.32	103	102	1427	0.11	1.5	626	17573	3.47	107	106	1483	0.49	20.7	7.921	10.176	7.85		<1	<1
W2B	-3.96	6/19/02	943				3.58	111	115	1607	0.18	2.5	613	17214	3.76	116	123	1728	0.53	21.1	7.954	10.156	7.74		1	1
W2B	-3.96	7/22/02	932				3.44	107	99.6	1395	0.18	2.5	614	17253	3.58	111	103	1446	0.50	21.3	7.920	10.290	7.92		<1	<1
W2B	-3.96	8/21/02	1013				3.45	107	96.1	1346	0.17	2.4	620	17421	3.60	112	99.9	1399	0.49	21.2	7.912	9.941	7.83		<1	<1
W2B	-3.96	9/25/02	1208				3.32	103	102	1422	0.16	2.2	633	17770	3.54	110	89.0	1247	0.60	21.2	7.934	9.933	8.04		24	<1
W2B	-3.96	10/15/02	914				3.35	104	94.0	1317	0.09	1.3	611	17160	3.49	108	92.3	1293	0.64	21.2	7.936	9.917	7.99		1	1
W2B	-3.96	11/17/02	1108				3.64	113	97.8	1370	0.09	1.3	597	16753	3.88	120	86.9	1217	0.50	21.4	7.899	11.410	7.79		<1	<1
W2B	-3.96	12/18/02	1136				3.48	108	96.0	1345	0.27	3.8	614	17242	3.63	112	107	1505	0.55	21.5	7.934	10.223	8.02		<1	1
W2B	-3.96	1/29/03	1100				3.19	99	104	1457	<0.1	0.0	608	17068	3.37	104	114	1597	0.61	20.5	7.954	10.411	7.99		<1	<1
W2B	-3.96	2/10/03	1048				3.33	103	94.5	1324	0.04	0.6	626	17567	3.47	107	111	1555	0.56	20.5	7.962	9.906	7.99		<1	<1
W2B	-3.96	3/20/03	1010				3.46	107	95.7	1340	0.20	2.8	597	16770	3.42	106	108	1507	0.50	21.1	7.927	11.016	8.01		<1	<1
W2B	-3.96	4/30/03	1106				3.55	110	98.8	1384	0.29	4.1	631	17725	3.66	113	116	1625	0.51	20.9	7.961	9.875	7.98		<1	<1
W2B	-3.96	5/14/03	1017				3.81	118	99.8	1397	0.40	5.6	628	17646	3.82	118	103	1445	0.58	21.3	7.971	9.799	8.07		<1	<1
W2B	-3.96	6/4/03	1105				3.75	116	107	1502	0.98	13.7	606	17014	3.99	124	127	1772	0.49	21.7	8.004	10.198	8.07		<1	<1

NELHA Water Quality Laboratory

Well 2B Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W2B	-3.96	7/30/03	1030				3.70	115	113	1576	0.94	13.2	622	17469	3.93	122	120	1678		21.0	7.936	10.134	8.27		<1	1
W2B	-3.96	8/28/03	1011				3.80	118	122	1702	0.70	9.8	613	17205	3.98	123	172	2413		21.5	7.904	10.177	8.10		<1	1
W2B	-3.96	9/16/03	1051				3.82	118	99.8	1398	0.08	1.1	610	17132	3.92	121	110	1535		21.3	7.924	13.352	7.75		<1	1
W2B	-3.96	10/8/03	1051				3.50	108	100	1402	0.40	5.6	610	17132	3.80	118	120	1675		21.2	7.936	10.008	NA		<1	<1
W2B	-3.96	11/5/03	1052				3.52	109	108	1513	0.50	7.0	611	17163	3.80	118	113	1583		21.1	7.970	10.131			3	1
W2B	-3.96	11/14/03	1442																	21.1			8.01			
W2B	-3.96	12/22/03	927				3.48	108	97.6	1366	0.25	3.5	594	16680	3.74	116	101	1412		20.9	8.003	11.673	7.62		2	1
W2B	-3.96	1/26/04					3.40	105	111	1553	0.30	4.2	596	16731	3.51	109	117	1640		20.8	7.914	11.169	7.35		1	1
W2B	-3.96	2/11/04	1020				3.56	110	102	1434	0.80	11.2	593	16641	3.62	112	112	1566	0.72	20.6	7.900	11.060	7.65		<1	1
W2B	-3.96	3/16/04	1230				3.71	115	108	1507	0.17	2.4	604	16964	3.90	121	120	1674		21.4	7.950	8.841	7.31		<1	<1
W2B	-3.96	4/20/04	1054				3.72	115	98.8	1384	0.08	1.1	619	17393	3.72	115	100	1402		21.7	7.941	9.465	7.74		<1	<1
W2B	-3.96	5/11/04	1000				3.52	109	88.7	1242	0.21	2.9	602	16902	3.72	115	91.5	1282		21.2	7.732	10.36	7.79		<1	<1
W2B	-3.96	6/2/04	1054				3.46	107	90.5	1268	0.18	2.5	606	17014	3.52	109	93.4	1308		21.7	7.933	9.65	7.78		1	<1
W2B	-3.96	7/14/04	1103				3.50	108	95.9	1343	0.17	2.4	604	16975	3.54	110	109	1521		21.5	7.914	10.64	7.68		<1	<1
W2B	-3.96	8/23/04	1047				3.48	108	94.6	1325	0.21	2.9	590	16562	3.66	113	98.5	1380		21.2	7.930	10.68	7.68		<1	<1
W2B	-3.96	9/27/04	928				3.60	112	99.4	1392	0.14	2.0	625	17548	3.70	115	134	1873		21.2	7.918	10.49	7.71		<1	<1
W2B	-3.96	10/5/04	930				3.62	112	92.7	1299	0.15	2.1	584	16410	3.76	116	104	1455		20.7	7.942	11.25	7.59		<1	2
W2B	-3.96	11/9/04	1017				3.66	113	92.9	1302	0.16	2.2	603	16936	3.84	119	97.0	1359		21.2	7.929	10.84	7.75		<1	<1
W2B	-3.96	12/6/04	1055				3.60	112	99.9	1400	0.20	2.8	593	16652	3.88	120	98.2	1376		21.1	7.963	11.18	7.81		<1	<1
W2B	-3.96	1/10/05	1022				3.58	111	128	1793	0.11	1.5	567	15919	3.60	112	130	1817		20.7	7.980	11.917	7.64		4	<1
W2B	-3.96	2/9/05	1019				3.67	114	143	2009	0.20	2.8	566	15891	3.70	115	192	2682		21.3	7.983	10.608	7.78		<1	<1
W2B	-3.96	3/15/05	1045				3.56	110	105	1472	0.15	2.1	589	16542	3.76	116	114	1597	0.51	21.1	7.985	10.518	7.84		<1	<1
W2B	-3.96	4/19/05	957				3.56	110	102	1426	0.16	2.2	587	16472	3.60	112	104	1459		21.4	7.979	10.563	7.92		110	133
W2B	-3.96	5/23/05	1043				3.46	107	99.7	1396	0.21	2.9	590	16568	3.58	111	105	1467		21.7	7.915	11.784	7.42		<1	<1
W2B	-3.96	6/13/05	905				3.52	109	98.2	1376	0.22	3.1	578	16219	3.46	107	102	1434		21.3	7.941	11.756	7.82		<1	<1
W2B	-3.96	7/18/05	1015				3.60	112	98.4	1378	0.10	1.4	588	16511	3.76	116	101	1413	0.56	21.5	7.928	11.335	7.56		<1	<1
W2B	-3.96	8/9/05	1025				3.42	106	91.6	1283	0.23	3.2	570	16000	3.58	111	95.4	1336	0.53	21.5	7.946	12.229	7.83		<1	1
W2B	-3.96	9/20/05	1013				3.54	110	93.4	1309	0.24	3.4	566	15896	3.68	114	95.7	1340	0.55	21.7	7.944	12.981	7.88		<1	<1
W2B	-3.96	10/17/05	1013				3.64	113	95.1	1332	0.14	2.0	578	16242	3.72	115	99.1	1388		21.7	7.931	12.377	7.90		<1	<1
W2B	-3.96	11/7/05	942				3.44	107	89.8	1258	0.04	0.6	536	15040	3.60	112	94.6	1325		21.1	7.944	13.735	7.77		<1	<1
W2B	-3.96	12/21/05	911				3.48	108	94.8	1328	0.22	3.1	540	15158	3.62	112	96.2	1348	0.57	20.4	7.959	13.551	7.68		<1	1
W2B	-3.96	1/23/06	1013				3.46	107	92.8	1300	0.25	3.5	577	16205	3.58	111	100	1405		20.9	7.967	12.44	8.01		<1	1
W2B	-3.96	2/14/06	1028				3.44	107	87.4	1224	0.18	2.5	556	15604	3.62	112	87.3	1222	0.49	20.7	7.961	12.858	7.96		<1	<1
W2B	-3.96	3/20/06	931				3.48	108	92.9	1301	0.18	2.5	578	16233	3.62	112	95.7	1340	0.49	20.6	7.964	12.626	7.86		<1	<1
W2B	-3.96	4/25/06	1000				3.34	103	95.2	1333	0.11	1.5	553	15531	3.56	110	79.7	1117	0.50	20.6	7.96	12.615	7.88		<1	<1
W2B	-3.96	5/22/06	1030				3.29	102	92.2	1291	0.23	3.2	438	12301	3.79	117	79.5	1114	0.54	20.6	7.932	13.386	7.73		<1	<1
W2B	-3.96	6/26/06	1043				3.25	101	94.6	1325	0.16	2.2	544	15279	3.36	104	93.5	1310	0.53	20.1	7.966	12.883	7.81		<1	<1
W2B	-3.96	7/20/06	1048				3.23	100	89.6	1255	0.15	2.1	552	15503	3.64	113	76.0	1065	0.66	20.3	7.939	13.285	8.30		1	<1
W2B	-3.96	8/7/06	1105				3.30	102	100	1401	0.17	2.4	557	15644	3.37	104	82.0	1149	0.49	20.2	7.962	12.353	8.47		<1	<1
W2B	-3.96	9/18/06	1028				3.25	101	91.2	1277	0.19	2.7	555	15587	3.57	111	84.7	1187	0.55	20.5	7.953	12.294	8.10		<1	<1
W2B	-3.96	10/23/06	1005				3.51	109	109	1527	0.22	3.1	537	15082	3.56	110	108	1513	0.68	20.5	7.951	11.743	7.96		>5000	1364
W2B	-3.96	11/27/06	1016				3.44	107	101	1415	0.18	2.5	543	15250	3.62	112	86.6	1214	0.53	20.1	7.954	13.155	7.97		<1	1
W2B	-3.96	12/11/06	1046				3.72	115	94.1	1318	0.21	2.9	546	15335	3.94	122	84.4	1182	0.54	19.8	7.945	13.319	8.01		<1	<1
W2B	-3.96	1/8/07	1136				3.31	103	94.7	1326	0.21	2.9	514	14436	3.51	109	86.8	1216	0.47	19.2	7.96	13.243	8.04		<1	<1
W2B	-3.96	2/20/07	1105				3.48	108	101	1415	0.35	4.9	537	15082	3.64	113	111	1560	0.58	19.6	7.944	13.099	8.05		<1	<1
W2B	-3.96	3/5/07	1103				3.44	107	111	1555	0.36	5.0	553	15531	3.58	111	109	1530	0.59	20.1	7.943	12.715	8.04		<1	<1
W2B	-3.96	4/18/07	1102				3.47	107	100	1401	0.23	3.2	555	15587	3.58	111	87.3	1223	0.47	20.6	7.973	13.221	7.79		<1	1
W2B	-3.96	5/1/07	1051				3.36	104	93.4	1308	0.27	3.8	551	15475	3.51	109	87.2	1222	0.49	20.2	7.978	12.945	7.61		<1	<1
W2B	-3.96	6/18/07	1045				3.63	101	107.4	1505	0.2	1.4	548	14959	3.9	119	91.6	1283	0.44	20.4	8.001	13.445	8.21		<1	<1

NELHA Water Quality Laboratory

Well 2B Data Table

June 1989 - December 2014

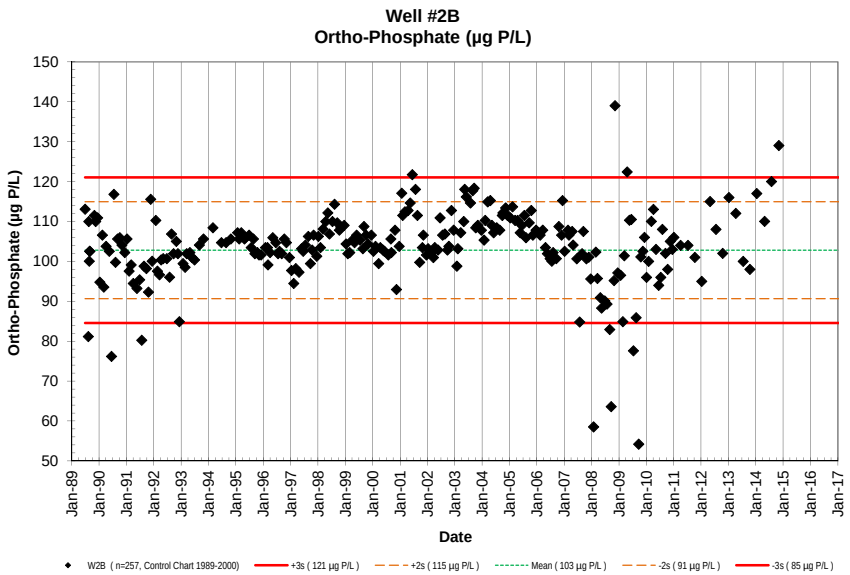
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W2B	-3.96	7/26/07	1312	-1.98	0.64	Flood	2.74	85	76.4	1070	0.0	0.1	580	16297	0.0		75.8	1062		19.9	7.91	12.98	7.62			
W2B	-3.96	8/28/07	1115	-2.44	0.08	Flood	3.29	102	99.1	1388	3.6	50.7	629	17678	3.0	94	101.7	1424		20.5	7.86	12.80	7.42			
W2B	-3.96	9/13/07	1128	-2.23	0.15	Low	3.47	108	98.8	1383	1.0	13.8	631	17726	3.3	103	97.8	1371		20.6	7.97	13.11	7.41			
W2B	-3.96	10/24/07	1358	-1.96	0.46	Flood	3.25	101	107.4	1505	0.1	1.4	533	14959	3.6	111	101.8	1426		20.1	8.03	12.75	7.31			
W2B	-3.96	11/26/07	1115	-2.31	0.15	Ebb	3.26	101	97.0	1359	0.3	3.8	562	15793	3.3	101	103.2	1446		19.8	7.93	14.03	7.17			
W2B	-3.96	12/20/07	1210	-2.08	0.23	High	3.09	96	114.5	1604	0.3	4.1	493	13840						19.8	8.03	10.85	7.43			
W2B	-3.96	1/28/08	1220	-2.29	0.09	Ebb	1.89	59	36.1	506	0.2	3.1	310	8721						19.9	7.83	12.69	6.66			
W2B	-3.96	2/27/08	1025	-2.13	0.12	Ebb	3.30	102	103.2	1446	0.2	2.6	538	15110						19.6	7.82	12.49	7.77			
W2B	-3.96	3/20/08	1057	-2.41	0.00	Low	3.09	96	97.6	1367	0.2	2.5	429	12059						19.8	7.88	12.84	7.36			
W2B	-3.96	4/28/08	1054	-2.06	0.18	High	2.93	91	99.5	1394	0.2	2.6	541	15201						20.0	7.91	12.34	7.40			
W2B	-3.96	5/15/08	1154	-2.03	0.49	Flood	2.85	88	94.5	1324	0.2	2.9	538	15117						19.8	7.88	13.00	7.14			
W2B	-3.96	6/26/08	929	-1.98	0.37	High	2.91	90	101.5	1421	0.3	4	702	19717						20.3	7.86	12.64	7.81	0.10		
W2B	-3.96	7/25/08	1137	-1.88	0.55	High	2.88	89	95.2	1334	0.2	2.8	385	10816						20.3	7.50	12.08	7.67			
W2B	-3.96	8/30/08	933		0.03	Low	2.68	83	96.8	1356	0.3	4	529	14866						20.4	7.87	12.47	7.16			
W2B	-3.96	9/19/08	953	-1.88	0.52	Ebb	2.05	64	54.6	765	1.0	14.1	379	10635						21.5	7.78	12.70	7.59	1.42		
W2B	-3.96	10/27/08	1255	-2.07	0.27	Flood	3.07	95	101.9	1427	0.3	4.7	548	15386						21.9	7.75	12.01	N/A	0.30		
W2B	-3.96	11/10/08	1010	-2.12	0.24	Flood	4.49	139	99.1	1389	0.3	4.7	496	13940						21.8	7.86	12.05	7.61	0.41		
W2B	-3.96	12/15/08	930	-1.90	0.43	Ebb	3.13	97	103.6	1452	0.0	0.0	486	13639						21.2	8.03	13.38	7.97			
W2B	-3.96	1/23/09	1316	-2.26	0.15	High	3.12	97	111.6	1563	1.3	18.1	507	14238						21.3	8.01	12.27	7.71	0.14		
W2B	-3.96	2/23/09	1417	-2.15	0.24	Flood	2.74	85	105.3	1475	0.9	13.0	537	15071						20.8	7.89	13.04	8.06	0.13		
W2B	-3.96	3/13/09	1426	-2.27	0.24	Flood	3.27	101	95.7	1340	0.1	1.9	466	13090						20.5	7.89	13.26	7.67	0.12		
W2B	-3.96	4/20/09	1236	-2.18	0.30	Flood	3.95	122	108.0	1513	1.7	24.3	410	11513						21.2	7.79	12.20	8.21	6.03		
W2B	-3.96	5/21/09	1414	-1.86	0.61	High	3.56	110	101.1	1416	0.5	7.5	558	15669						20.2	7.97	12.65	8.13	0.10		
W2B	-3.96	6/16/09	1050	-2.01	0.40	Flood	3.57	111	97.4	1364	0.5	6.6	348	9766						20.1	7.81	11.86	8.02	0.07		
W2B	-3.96	7/13/09	1453	-2.18	0.21	Flood	2.51	78	68.4	958	0.2	2.6	278	7805						19.9	7.99	12.61	8.02	0.18		
W2B	-3.96	8/18/09	1350	-1.71	0.70	Flood	2.77	86	77.6	1087	0.1	1.4	442	12415						20.5	7.90	13.58	7.74	0.09		
W2B	-3.96	9/21/09	1344	-2.24	0.18	Flood	1.75	54	44.6	624	0.2	2.2	249	6988						20.6	8.38	13.24	8.59	0.04		
W2B	-3.96	10/19/09	1055	-2.28	0.12	Low	3.26	101	102.5	1436	0.7	9.5	272	7635						20.5	7.47	13.16	7.93	0.05		
W2B	-3.96	11/16/09	1326	-2.29	0.18	Flood	3.31	103	105.5	1478	0.8	11	449	12603						20.2	7.96	13.75	7.96	0.04		
W2B	-3.96	12/7/09	1300	-2.23	0.18	Ebb	3.42	106	112.7	1579	0.5	7.2	512	14379						20.2	7.93	13.23	6.85	0.09		
W2B	-3.96	1/5/10	1042	-2.06	0.30	Ebb	3.10	96	103.0	1443	0.5	7.0	517	14524						20.7	7.92	12.91	6.63	0.10		
W2B	-3.96	2/1/10	1100	-2.20	0.00	Ebb	3.23	100	108.2	1515	0.6	9.0	459	12884						20.4	7.98	13.10	7.33	0.18		
W2B	-3.96	3/9/10	1116	-2.28	0.12	Flood	3.55	110	99.4	1392	0.2	3.0	532	14948						20.0	7.98	12.16	7.85	0.20		
W2B	-3.96	4/6/10	1005	-2.31	0.15	Flood	3.65	113	107.1	1500	0.1	2.0	532	14931						19.7	7.96	12.63	8.19	0.04		
W2B	-3.96	5/11/10	1029	-2.39	0.09	Flood	3.33	103	96.0	1344	1.8	25	576	16173						19.9	8.05	11.97	8.23	0.11		
W2B	-3.96	6/15/10	1108	-2.39	0.06	Low	3.03	94	92.7	1298	0.3	4.0	509	14283						20.1	7.98	12.67	7.46	0.15		
W2B	-3.96	7/13/10	1026	-2.39	0.00	Low	3.10	96	100.6	1409	0.4	6.0	562	15791						20.2	7.97	13.42	7.90	0.17		
W2B	-3.96	8/3/10	1020	-1.89	0.52	Flood	3.49	108	103.9	1455	0.3	4.0	567	15921						20.0	7.99	12.88	7.88	0.08		
W2B	-3.96	9/14/10	1020	-1.81	0.58	Ebb	3.29	102	98.6	1381	0.5	6.9	581	16305						20.1	7.97	13.77	8.26	0.80		
W2B	-3.96	10/12/10	1051	-1.83	0.55	Ebb	3.16	98	99.2	1390	0.3	4.7	567	15933						20.2	7.97	14.81	7.67	0.06		
W2B	-3.96	11/16/10	1008	-2.03	0.27	Flood	3.39	105	105.9	1484	0.2	3.4	575	16154						20.0	7.89	13.04	7.88	0.04		
W2B	-3.96	12/14/10	1049	-1.99	0.37	High	3.33	103	108.7	1522	0.5	6.6	566	15899						20.0	7.96	13.29	7.93	0.04		
W2B	-3.96	1/4/11	1037	-2.23	0.06	Ebb	3.42	106	104.2	1459	0.5	6.9	552	15509						19.8	7.90	14.05	7.65	0.08		
W2B	-3.96	4/5/11	1053	-2.34	-0.06	Low	3.36	104	103.5	1450	0.2	3.2	574	16121						20.1	7.91	13.19	6.80	0.16		
W2B	-3.96	7/12/11	1017	-2.13	0.18	Flood	3.36	104	97.7	1369	0.6	8.2	546	15336						20.1	7.92	13.93	7.67	0.02		
W2B	-3.96	10/11/11	1038	-2.22	0.12	Low	3.26	101	92.9	1301	0.3	3.9	547	15373						20.5	7.93	14.05	7.82	0.05		
W2B	-3.96	1/10/12	1032	-2.24	0.06	Ebb	3.07	95	86.6	1213	0.3	3.6	523	14676						19.8	7.92	15.45	7.89	0.04		
W2B	-3.96	5/1/12	1100	-2.07	0.30	Flood	3.71	115	98.2	1376	0.2	2.3	579	16248						19.9	7.92	13.84	7.77	0.05		
W2B	-3.96	7/18/12	951	-2.39	0.03	Flood	3.49	108	100.0	1400	0.6	7.8	544	15287						20.1	8.01	14.23	7.98	0.07		
W2B	-3.96	10/16/12	1034	-2.24	0.09	Ebb	3.29	102	97.3	1363	0.3	4.4	538	15102						20.1	7.90	14.49	7.53	0.04		
W2B	-3.96	1/8/13	1058	-2.20	0.15	Flood	3.75	116	99.1	1388	0.6	7.9	585	16426						19.7	7.93	14.22	7.85	0.04		
W2B	-3.96	4/9/13	1035	-2.38	-0.03	Flood	3.62	112	96.8	1356	0.5	6.7	555	15584						19.9	7.96	13.72	8.31	0.09		
W2B	-3.96	7/17/13	1120	-1.95	0.58	Flood	3.23	100	93.0	1302	0.4	5.4	517	14517						20.3	7.93	14.42	7.64	0.06		
W2B	-3.96	10/15/13	1020	-2.09	0.30	Flood	3.16	98	97.1	1360	0.6	8.9	511	14343						20.3	7.90	14.54	7.74	0.05		
W2B	-3.96	1/15/14	1000	-2.24	0.06	Ebb	3.78	117	102.2	1431	0.3	4.8	505	14185						20.0	7.97	14.27	7.91	0.02		
W2B	-3.96	4/29/14	1114	-2.42	0.00	Flood	3.55	110	105.3	1475	0.6	8.2	508	14260						20.15	7.94	14.10	6.02	0.08		

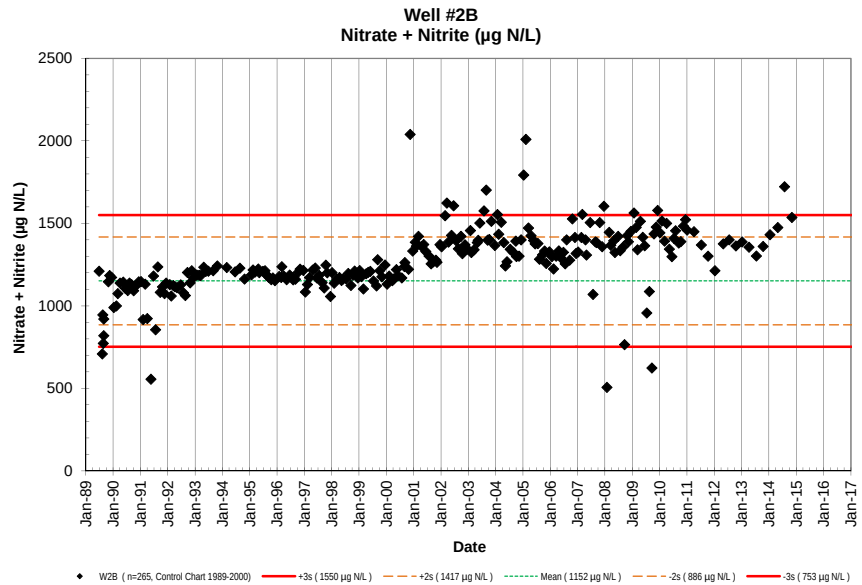
NELHA Water Quality Laboratory

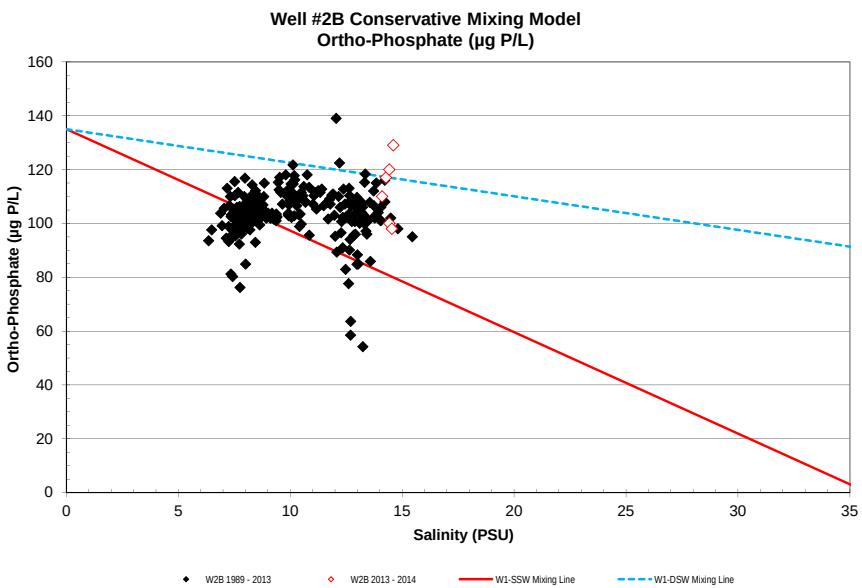
Well 2B Data Table

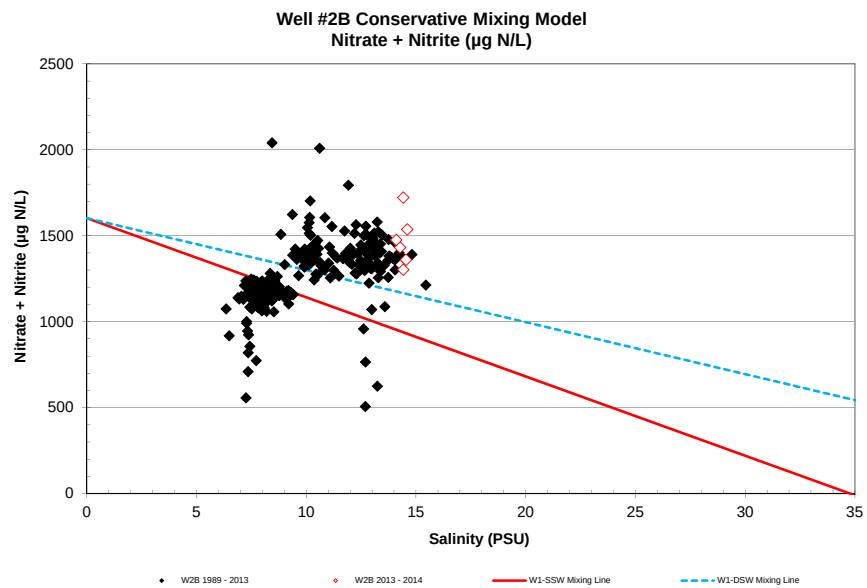
June 1989 - December 2014

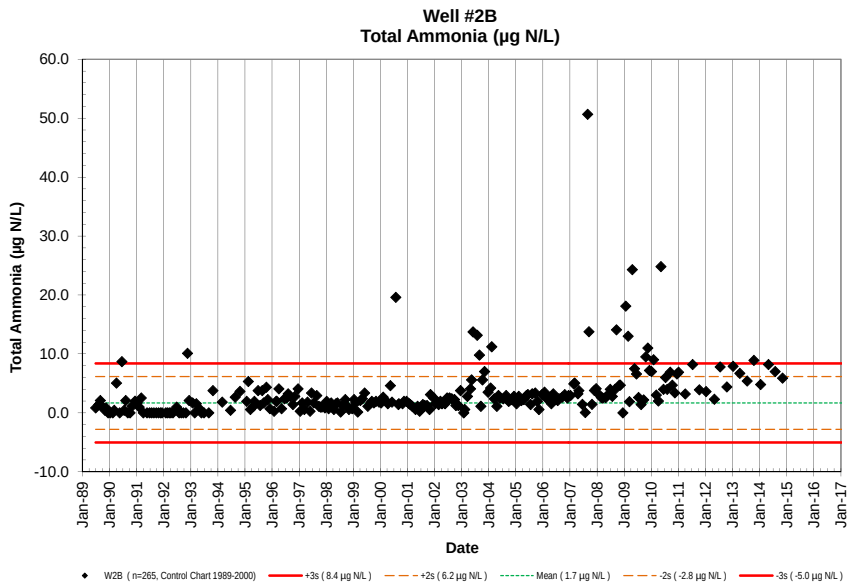
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W2B	-3.96	7/29/14	1049	-2.26	0.12	Low	3.87	120	122.9	1722	0.5	7.0	523	14679						20.43	7.89	14.42	7.73	0.19		
W2B	-3.96	11/5/14	1052	-2.13	0.15	Flood	4.16	129	109.7	1536	0.4	5.9	499	14004						20.75	7.94	14.60	8.02	0.06		
W2B	-3.96	1/1/15																								
W2B	-3.96	4/1/15																								

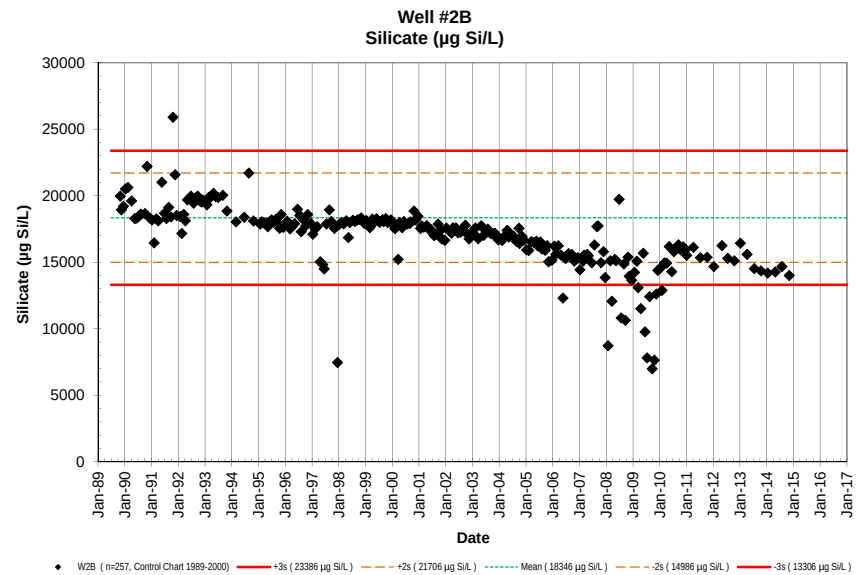

Well #2B
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W2B (n=257, Control Chart 1989-2000)
+3s (121 µg P/L)
+2s (115 µg P/L)
Mean (103 µg P/L)
-2s (91 µg P/L)
-3s (85 µg P/L)

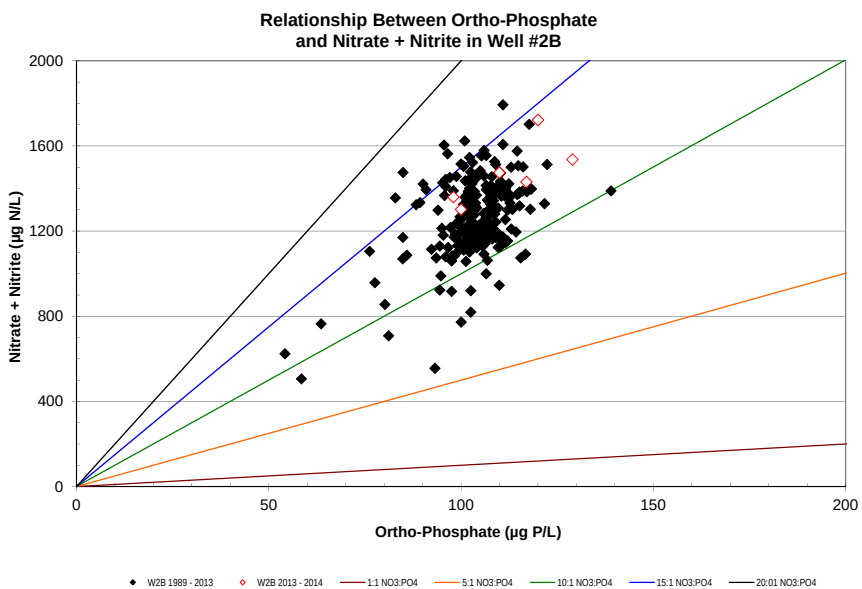

Well #2B
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W2B (n=265, Control Chart 1989-2000)
+3s (1550 µg N/L)
+2s (1417 µg N/L)
Mean (1152 µg N/L)
-2s (886 µg N/L)
-3s (753 µg N/L)

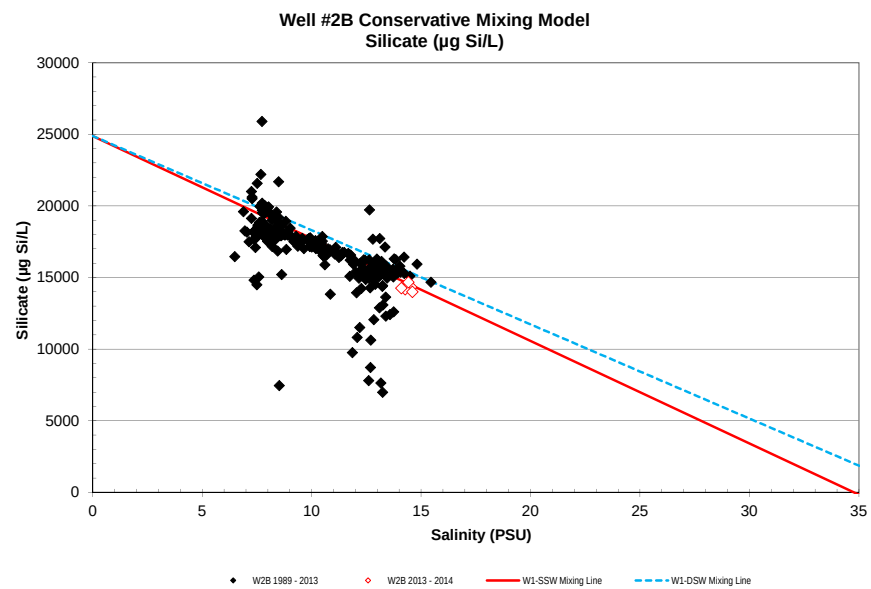

Well #2B Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W2B 1989 - 2013
W2B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

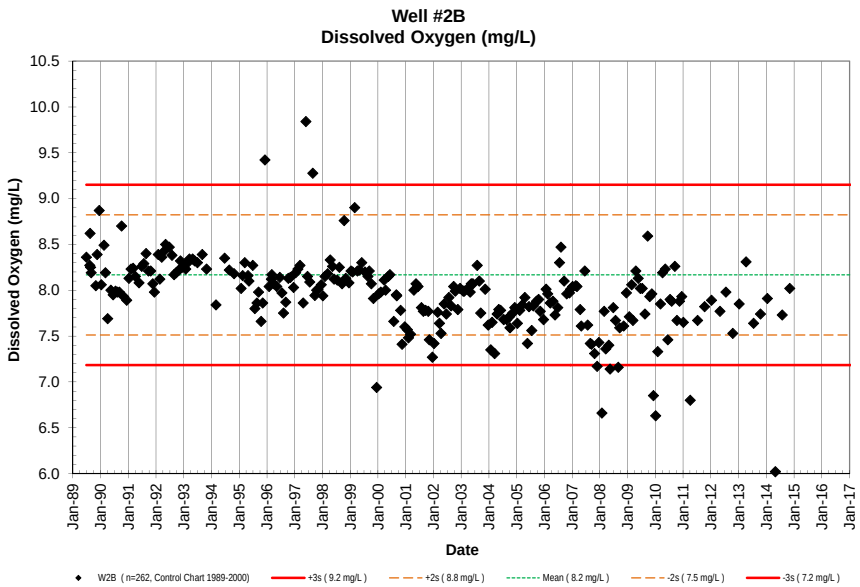

Well #2B Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W2B 1989 - 2013
W2B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

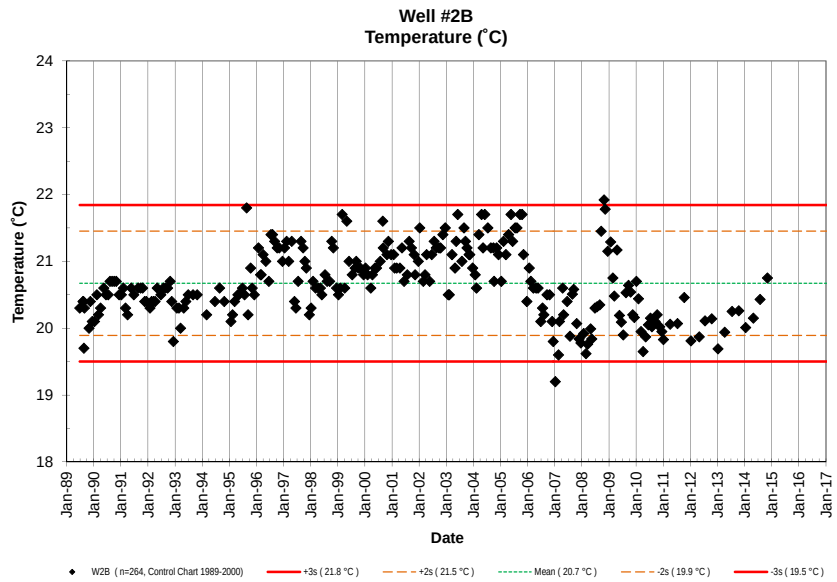

Well #2B
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W2B (n=265, Control Chart 1989-2000)
+3s (8.4 µg N/L)
+2s (6.2 µg N/L)
Mean (1.7 µg N/L)
-2s (-2.8 µg N/L)
-3s (-5.0 µg N/L)

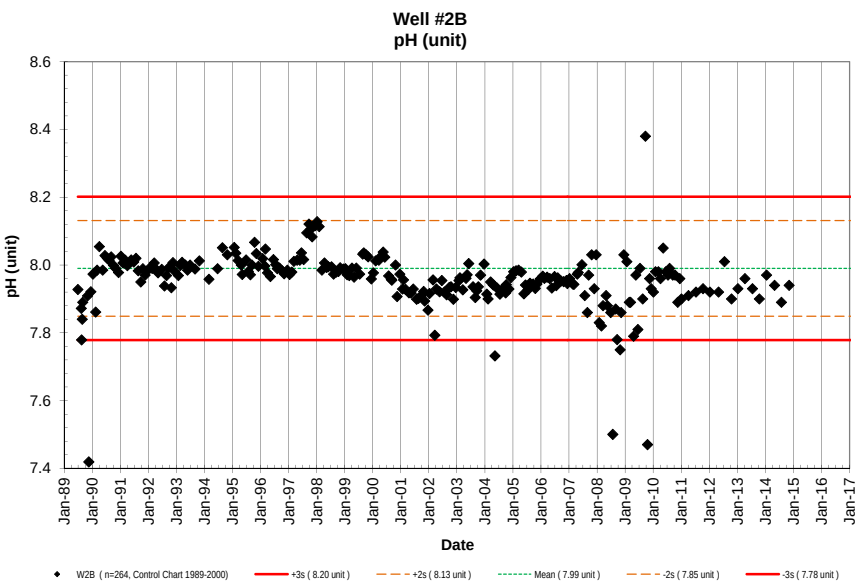

Well #2B
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W2B (n=257, Control Chart 1989-2000)
+3s (23386 µg Si/L)
+2s (21706 µg Si/L)
Mean (18346 µg Si/L)
-2s (14986 µg Si/L)
-3s (13306 µg Si/L)

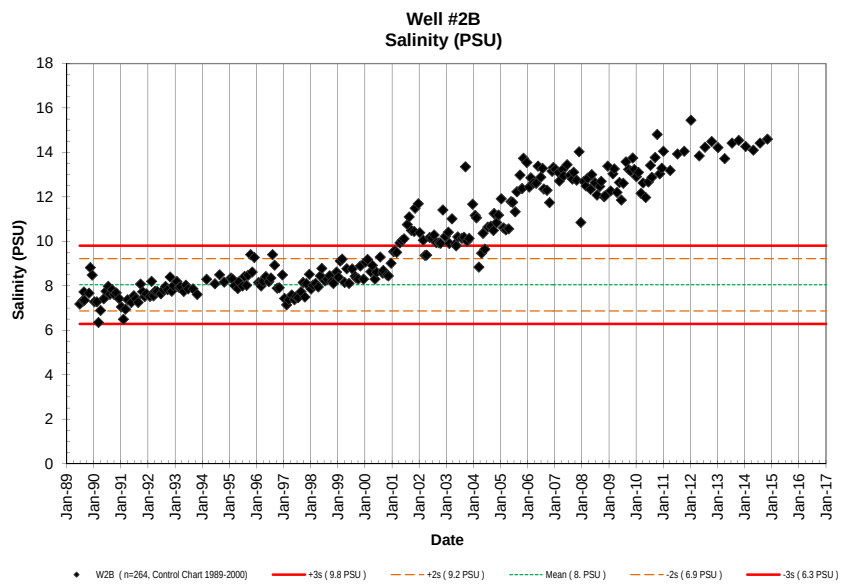

Relationship Between Ortho-Phosphate
and Nitrate + Nitrite in Well #2B
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W2B 1989 - 2013
W2B 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

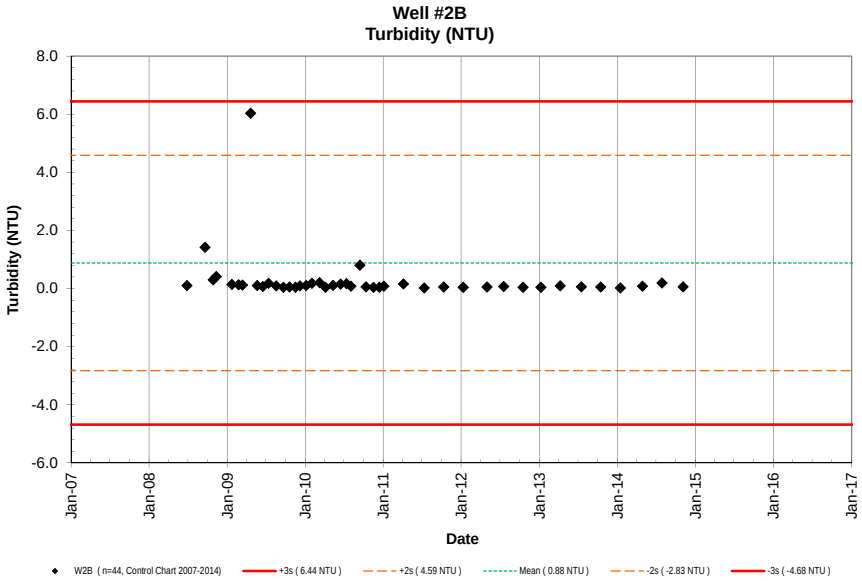

Well #2B Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W2B 1989 - 2013
W2B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

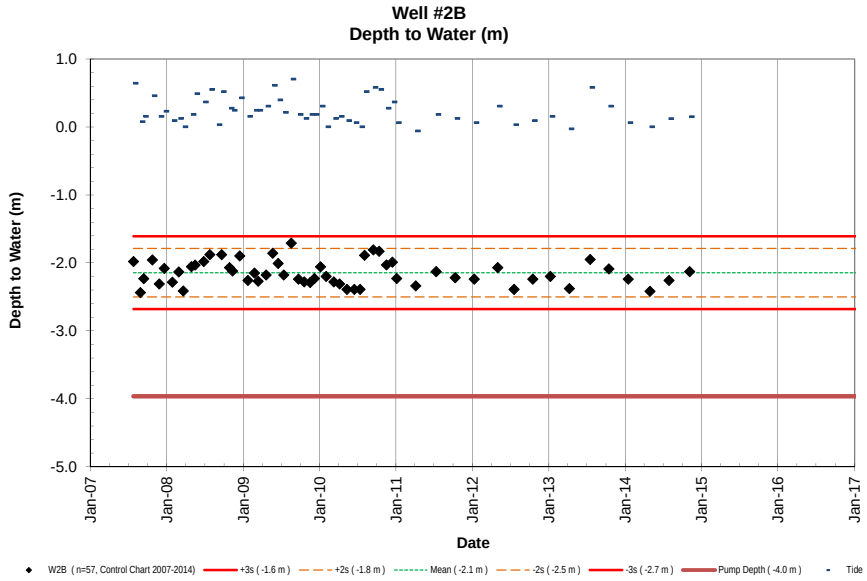

Well #2B
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W2B (n=262, Control Chart 1989-2000)
+3s (9.2 mg/L)
+2s (8.8 mg/L)
Mean (8.2 mg/L)
-2s (7.5 mg/L)
-3s (7.2 mg/L)


Well #2B
Temperature (˚C)
Temperature (˚C)
Date
W2B (n=264, Control Chart 1989-2000)
+3s (21.8 °C)
+2s (21.5 °C)
Mean (20.7 °C)
-2s (19.9 °C)
-3s (19.5 °C)


Well #2B
pH (unit)
pH (unit)
Date
W2B (n=264, Control Chart 1989-2000)
+3s (8.20 unit)
+2s (8.13 unit)
Mean (7.99 unit)
-2s (7.85 unit)
-3s (7.78 unit)


Well #2B
Salinity (PSU)
Salinity (PSU)
Date
W2B (n=264, Control Chart 1989-2000)
+3s (9.8 PSU)
+2s (9.2 PSU)
Mean (8. PSU)
-2s (6.9 PSU)
-3s (6.3 PSU)


Well #2B
Turbidity (NTU)
Turbidity (NTU)
8.0
6.0
4.0
2.0
0.0
-2.0
-4.0
-6.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W2B (n=44, Control Chart 2007-2014)
+3s (6.44 NTU)
+2s (4.59 NTU)
Mean (0.88 NTU)
-2s (-2.83 NTU)
-3s (-4.68 NTU)


Well #2B
Depth to Water (m)
Depth to Water (m)
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W2B (n=57, Control Chart 2007-2014)
+3s (-1.6 m)
+2s (-1.8 m)
Mean (-2.1 m)
-2s (-2.5 m)
-3s (-2.7 m)
Pump Depth (-4.0 m)
Tide

NELHA Water Quality Laboratory

Well 3 Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W3	-17.3736	6/27/89					1.54	48	24.8	347	0.51	7.1								21.0	7.773	25.220	4.27		NA	NA
W3	-17.3736	8/10/89	1305				1.51	47	27.6	387	0.58	8.1								20.5	7.618	25.104	5.42		<1	NA
W3	-17.3736	8/16/89	1400				1.57	49	27.6	387	0.67	9.4								20.5	7.631	25.107	5.42		<1	NA
W3	-17.3736	8/24/89	1045				1.55	48	27.6	387	0.58	8.1								20.0	7.756	25.159	4.47		<1	NA
W3	-17.3736	8/29/89	1005				1.58	49	28.1	394	0.58	8.1								20.6	7.704	24.889	4.70		<1	NA
W3	-17.3736	8/29/89	1005				1.57	49	28.1	394	0.70	9.8													NA	NA
W3	-17.3736	10/30/89	1016				1.51	47	29.1	408	0.01	0.1	380	10672	1.63	50.49	30.6	429	0.35	20.8	7.728	24.981	4.17		<1	NA
W3	-17.3736	11/16/89	941				1.61	50	29.9	419	0.06	0.8	370	10392	2.13	65.97	59.0	826	0.41	20.5	7.726	24.941	3.94		1	NA
W3	-17.3736	12/12/89	950				1.44	45	31.1	436	0.46	6.4	404	11347	1.73	53.58	32.1	450	0.67	20.1	7.767	24.775	4.94		<1	NA
W3	-17.3736	1/11/90	1036				3.06	95	70.7	990	0.00	0.0	730	20502	3.28	101.59	74.8	1048	0.32	21.7	7.726	24.763	4.43		<1	NA
W3	-17.3736	2/14/90	1340				1.55	48	28.1	394	0.27	3.8	375	10532	1.82	56.37	28.9	405	0.41	20.5	7.682	25.031	5.92		<1	NA
W3	-17.3736	3/7/90	1320				1.44	45	29.5	413	0.10	1.4	382		1.70	52.66	29.5	413	0.35	20.4	7.847	24.954	3.97		<1	NA
W3	-17.3736	4/2/90	1356				1.45	45	28.1	394	0.07	1.0	426	11964	1.73	53.58	28.6	401	0.36	20.9	7.904	25.177	4.04		<1	NA
W3	-17.3736	5/17/90	933				1.48	46	27.1	380	0.00	0.0	367	10307	1.59	49.25	28.2	395	0.36	20.6	7.841	25.331	4.73		<1	NA
W3	-17.3736	6/16/90	900				1.58	49	26.8	375	0.00	0.0	366	10279	1.80	55.75	29.1	408	0.41	20.9	7.904	25.513	3.81		<1	NA
W3	-17.3736	7/17/90	930				1.60	50	25.6	359	0.16	2.2	369	10364	1.90	58.85	27.1	380	0.38	20.8	7.899	25.882	3.73		<1	NA
W3	-17.3736	8/8/90	1020				1.29	40	26.7	374	0.21	2.9	363	10195	1.77	54.82	27.2	381	0.37	21.9	7.878	26.026	3.96		<1	NA
W3	-17.3736	9/5/90	939				1.63	50	25.7	360	0.14	2.0			1.63	50.49	26.9	377	0.27	20.7	7.878	26.018	3.96		<1	NA
W3	-17.3736	10/4/90	940				1.38	43	24.4	342	0.07	1.0	363	10195	1.99	61.64	24.5	344	0.82	20.8	7.877	26.048	3.58		<1	NA
W3	-17.3736	11/1/90	959				1.39	43	26.4	369	0.07	1.0	361	10125	1.43	44.29	25.6	359	0.34	20.8	7.867	26.273	3.76		<1	NA
W3	-17.3736	12/10/90	943				1.36	42	29.3	410	0.03	0.4	352	9886	1.75	54.20	30.3	425	0.26	20.8	7.880	25.721	3.74		<1	NA
W3	-17.3736	1/10/90	800				1.35	42	27.2	381	0.00	0.0	356	9998	1.49	46.15	28.5	399	0.30	20.7	7.874	26.065	3.84		<1	NA
W3	-17.3736	2/6/91	815				1.12	35	26.6	373	0.00	0.0	307	8622	1.45	44.91	26.8	375	0.54	20.8	7.870	25.446	3.65		<1	NA
W3	-17.3736	3/7/91	846				1.26	39	27.3	382	0.00	0.0	358	10055	1.32	40.89	27.8	389	0.57	20.5	7.881	25.492	3.77		<1	NA
W3	-17.3736	4/4/91	814				1.02	32	22.7	318	0.00	0.0	364	10223	1.38	42.74	27.2	381	0.57	20.5	7.883	25.600	3.79		<1	NA
W3	-17.3736	5/22/91	858				1.17	36	12.9	181	0.14	2.0	417	11712	1.21	37.48	13.5	189	0.32	21.6	7.883	25.680	3.67		<1	NA
W3	-17.3736	6/26/91	903				1.52	47	27.9	391	0.17	2.4	380	10672	1.63	50.49	28.6	401	0.33	20.6	7.880	25.421	3.78		<1	<1
W3	-17.3736	7/24/91	936				1.25	39	24.4	342	0.28	3.9	369	10364	1.47	45.53	26.4	370	0.51	18.0	7.879	25.715	3.71		<1	<1
W3	-17.3736	8/23/91	930				1.19	37	22.2	311	0.32	4.5	387	10869	1.25	38.72	26.1	366	0.38	20.5	7.823	25.758	3.64		<1	<1
W3	-17.3736	9/24/91	824				1.32	41	26.6	373	0.18	2.5	380	10672	1.44	44.60	28.6	401	0.35	20.5	7.840	25.423	3.77		<1	<1
W3	-17.3736	10/23/91	833				1.86	58	27.0	378	0.00	0.0	501	14071	1.97	61.02	28.6	401	0.36	20.5	7.864	25.664	3.73		<1	<1
W3	-17.3736	11/20/91	902				1.62	50	25.9	363	0.15	2.1	424	11908	1.68	52.04	27.0	378	0.28	20.5	7.862	25.441	3.76		<1	<1
W3	-17.3736	12/11/91	945				1.25	39	27.0	378	0.00	0.0	383	10757	1.28	39.65	28.0	392	0.39	20.5	7.873	25.369	3.74		<1	<1
W3	-17.3736	1/29/92	938				1.35	42	25.6	359	0.00	0.0	377	10588	1.42	43.98	29.1	408	0.92	20.6	7.882	25.174	3.83		<1	<1
W3	-17.3736	2/19/92	1008				1.41	44	28.8	403	0.02	0.3	357	10027	1.46	45.22	40.5	567	0.47	20.7	7.887	24.856	3.89		<1	<1
W3	-17.3736	3/17/92	919				1.34	42	29.0	406	0.00	0.0	380	10672	1.45	44.91	31.4	440	0.56	20.6	7.880	24.860	3.93		<1	<1
W3	-17.3736	4/8/92	909				1.37	42	28.9	405	0.31	4.3	378	10616	1.48	45.84	31.4	440	0.29	20.7	7.874	24.870	3.94		<1	<1
W3	-17.3736	5/6/92	922				1.33	41	28.2	395	0.21	2.9	400	11234	1.46	45.22	29.7	416	0.55	20.6	7.865	24.859	3.94		<1	<1
W3	-17.3736	6/23/92	921				1.35	42	28.2	395	0.33	4.6	405	11375	1.40	43.36	29.9	419	0.57	20.7	7.863	25.068	3.93		<1	<1
W3	-17.3736	7/29/92	906				1.29	40	28.3	396	ND	0.0	398	11178	1.36	42.12	29.4	412	0.57	20.7	7.843	24.839	3.91		<1	<1
W3	-17.3736	8/26/92	854				1.47	46	32.9	460	0.16	2.2	418	11740	1.47	45.53	35.1	491	0.42	20.7	7.851	24.681	3.90		<1	<1
W3	-17.3736	9/22/92	850				1.34	42	22.1	309	0.08	1.1	420	11796	1.61	49.87	21.6	302	0.35	20.7	7.863	24.918	3.85		<1	<1
W3	-17.3736	10/27/92	915				1.51	47	29.0	406	0.12	1.7	416	11684	1.56	48.32	30.9	433	0.45	20.2	7.861	24.931	3.89		<1	<1
W3	-17.3736	11/17/92	928				1.30	40	16.9	236	0.23	3.2	407	11431	1.52	47.08	31.5	441	0.74	20.2	7.874	24.961	3.91		<1	<1
W3	-17.3736	12/8/92	911				1.76	55	29.0	406	0.29	4.1	413	11599	1.42	43.98	31.8	445	0.54	20.1	7.870	24.748	3.92		<1	<1
W3	-17.3736	1/26/93	926				1.34	42	28.6	401	0.34	4.8	408	11462	1.40	43.36	31.1	436	0.37	20.6	7.891	24.617	3.94		<1	<1
W3	-17.3736	2/23/93	857				1.30	40	29.9	419	0.20	2.8	418	11740	1.33	41.20	31.3	438	0.40	20.5	7.897	24.769	3.92		<1	<1
W3	-17.3736	3/16/93	858				1.33	41	28.8	403	0.08	1.1	418	11751	1.37	42.43	29.9	419	0.41	20.5	7.887	24.848	3.94		<1	<1
W3	-17.3736	4/27/93	902				1.36	42	28.4	398	0.26	3.6	431	12113	1.43	44.29	29.7	416	0.34	20.6	7.879	24.953	3.92		<1	<1
W3	-17.3736	5/25/93	855				1.35	42	28.1	394	0.26	3.6	429	12046	1.37	42.43	29.7	416	0.24	20.6	7.871	24.943	3.88		<1	<1
W3	-17.3736	6/28/93	931				1.28	40	27.9	391	0.13	1.8	419	11768	1.46	45.22	29.7	416	0.40	20.7	7.864	25.089	3.92		<1	<1
W3	-17.3736	8/9/93	800				1.38	43	28.4	398	0.05	0.7	378	10602	1.40	43.36	31.0	434	0.56	20.9	7.850	24.854	4.02		<1	<1
W3	-17.3736	WELL SET RELOCATED																								
W3	-17.3736	6/21/94	853				0.89	28	19.3	271	2.26	31.7	305	8576	0.89	27.57	25.2	353	0.39	20.5	7.980	25.374	1.87		<1	<1

NELHA Water Quality Laboratory

Well 3 Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W3	-17.3736	8/23/94	919				1.05	33	19.3	270	0.36	5.0	376	10563	1.12	34.69	21.6	303	0.46	20.8	7.960	25.062	2.37		<1	<1
W3	-17.3736	10/25/94	940				1.14	35	22.1	309	0.55	7.7	333	9352	1.16	35.93	23.7	333	0.33	20.6	7.912	24.884	3.18		<1	<1
W3	-17.3736	11/28/94	1253				1.22	38	21.6	303	0.48	6.7	326	9142	1.31	40.58	24.2	339		20.8		24.966				
W3	-17.3736	12/13/94	955				1.24	38	23.2	325	0.64	9.0	359	10086	1.35	41.81	24.9	349		20.7		25.125				
W3	-17.3736	1/24/95	935				1.36	42	23.3	327	0.18	2.5	335	9414	1.44	44.60	24.9	349	0.33	20.4	7.891	25.080	3.42		<1	<1
W3	-17.3736	2/14/95	919				1.29	40	23.3	327	0.14	2.0	341	9583	1.38	42.74	23.8	333	0.39	20.6	7.894	25.208	3.37		<1	<1
W3	-17.3736	3/14/95	1007				1.27	39	23.4	328	0.18	2.5	342	9605	1.35	41.81	24.6	344	0.29	20.6	7.863	25.204	3.58		<1	<1
W3	-17.3736	4/25/95	1035				1.39	43	24.2	339	0.28	3.9	334	9389	1.50	46.46	25.7	360	0.28	20.4	7.881	24.898	3.67		<1	<1
W3	-17.3736	5/9/95	925				1.37	42	25.1	351	0.27	3.8	363	10206	1.41	43.67	26.7	373	0.27	20.6	7.854	24.902	3.51		<1	<1
W3	-17.3736	6/27/95	937				1.25	39	24.5	344	0.49	6.9	348	9777	1.42	43.98	26.3	369	0.26	20.7	7.868	24.993	3.61		<1	<1
W3	-17.3736	7/25/95	952				1.23	38	24.8	348	0.09	1.3	351	9852	1.38	42.74	26.0	364	0.28	20.6	7.857	25.077	3.53		<1	<1
W3	-17.3736	8/22/95	1043				1.27	39	23.1	324	0.34	4.8	355	9965	1.42	43.98	26.2	368	0.27	20.8	7.848	24.911	3.46		<1	<1
W3	-17.3736	9/12/95	812				1.30	40	25.5	357	0.23	3.2	358	10041	1.32	40.89	26.8	376	0.35	22.7	7.894	25.077	3.54		<1	<1
W3	-17.3736	10/17/95	956				1.35	42	25.3	355	0.24	3.4	364	10223	1.40	43.36	27.1	380	0.63	20.6	7.880	24.888	3.59		<1	<1
W3	-17.3736	11/7/95	917				1.40	43	24.5	343	0.43	6.0	347	9757	1.43	44.29	25.9	362	0.38	20.3	7.901	25.095	3.40		<1	<1
W3	-17.3736	12/6/95	927				1.35	42	25.4	356	0.36	5.0	354	9954	1.38	42.74	26.5	371	0.49	20.5	7.936	24.933	3.61		<1	<1
W3	-17.3736	1/30/96	1002				1.32	41	27.2	381	0.12	1.7	356	10010	1.36	42.12	27.7	387	0.35	20.4	7.934	24.953	3.67		<1	<1
W3	-17.3736	2/27/96	1014				1.38	43	25.6	359	0.17	2.4	354	9954	1.47	45.53	26.7	374	0.49	20.7	7.882	24.986	3.71		<1	<1
W3	-17.3736	3/13/96	1044				1.39	43	25.6	359	0.38	5.3	358	10052	1.45	44.91	27.4	384	0.40	20.8	7.853	24.860	3.76		<1	<1
W3	-17.3736	4/2/96	857				1.31	41	24.3	340	0.15	2.1	375	10540	1.41	43.67	27.5	385	0.35	20.8	7.864	25.056	3.72		<1	<1
W3	-17.3736	5/15/96	1011				1.38	43	25.2	353	0.12	1.7	371	10406	1.44	44.60	26.7	374	0.38	21.3	7.838	25.120	3.69		<1	<1
W3	-17.3736	6/18/96	923				1.40	43	25.1	351	0.10	1.4	362	10172	1.46	45.22	26.8	376	0.49	21.0	7.865	25.009	3.65		<1	<1
W3	-17.3736	7/17/96	956				1.38	43	25.5	357	0.12	1.7	357	10035	1.40	43.36	27.2	381	0.34	21.0	7.862	24.808	3.61		<1	<1
W3	-17.3736	8/6/96	1006				1.29	40	27.1	379	0.31	4.3	366	10291	1.38	42.74	28.5	399	0.31	21.2	7.852	24.585	3.82		<1	<1
W3	-17.3736	9/4/96	952				1.35	42	28.3	396	0.38	5.3	361	10132	1.42	43.98	30.2	423	0.43	21.0	7.864	24.540	3.83		<1	<1
W3	-17.3736	10/9/96	1005				1.31	41	27	376	0.27	3.8	373	10481	1.38	42.74	28.1	394	0.44	21.1	7.864	24.546	4.60		<1	<1
W3	-17.3736	11/6/96	952				1.36	42	27	381	0.25	3.5	366	10281	1.51	46.77	30.2	423	0.52	21.0	8.011	24.562	3.87		3	<1
W3	-17.3736	12/17/96	949				1.35	42	27	373	0.27	3.8	353	9909	1.42	43.98	29.5	413	0.34	21.0	7.938	24.615	3.85		<1	<1
W3	-17.3736	1/14/97	1006				1.30	40	27	372	0.10	1.4	368	10330	1.35	41.81	28.5	399	0.35	21.1	7.879	24.519	3.90		<1	<1
W3	-17.3736	2/10/97	1135				1.50	46	27	373	0.25	3.5	369	10369	1.50	46.46	27.9	391	0.29	21.4	7.872	24.660	3.88		<1	<1
W3	-17.3736	3/10/97	1130				1.24	38	26	365	0.06	0.8	378	10616	1.34	41.50	26.6	373	0.42	21.3	7.877	24.834	4.27		<1	<1
W3	-17.3736	4/23/97	952				1.44	45	26	361	0.27	3.8	356	9990	1.56	48.32	28.2	395	0.33	20.8	7.887	24.920	3.60		<1	<1
W3	-17.3736	5/28/97	851				1.31	41	27	373	0.06	0.8	348	9760	1.48	45.84	32.1	450	0.35	20.7	7.900	24.927	3.78		<1	<1
W3	-17.3736	6/17/97	950				1.37	42	26	357	0.19	2.7	360	10119	1.47	45.53	26.5	371	0.37	20.4	7.913	24.940	3.84		<1	<1
W3	-17.3736	7/15/97	941				1.46	45	27	378	0.10	1.4	349	9802	1.54	47.70	28.1	393	0.33	20.3	7.921	24.775	3.77		<1	<1
W3	-17.3736	8/26/97	955				1.36	42	26.2	366	0.28	3.9	355	9976	1.46	45.22	27.1	380	0.35	20.7	7.987	24.784	3.73		<1	<1
W3	-17.3736	9/23/97	1159				1.39	43	26.6	373	0.25	3.5	347	9751	1.44	44.60	27.4	384	0.37	21.7	8.024	24.822	3.91		<1	<1
W3	-17.3736	10/15/97	918				1.40	43	26.6	373	0.24	3.4	363	10187	1.55	48.01	28.1	394	0.39	21.0	8.040	24.929	3.72		<1	<1
W3	-17.3736	11/4/97	1035				1.33	41	26.9	376	0.04	0.6	342	9600	1.48	45.84	30.7	431	0.29	20.7	8.050	24.997	3.89		<1	<1
W3	-17.3736	12/16/97	953				1.45	45	24.5	343	0.02	0.3	362	10170	1.60	49.56	27.8	389	0.30	20.3	8.027	25.211	3.77		<1	<1
W3	-17.3736	1/5/98	1231				1.40	43	26	360	0.08	1.1	351	9851	1.51	46.77	27.3	382	0.34	20.9	8.028	25.171	3.83		<1	<1
W3	-17.3736	2/3/98	1048				1.38	43	26	367	0.05	0.7	366	10279	1.56	48.32	28.1	394	0.32	20.8	8.015	25.128	3.84		<1	<1
W3	-17.3736	3/10/98	1106				1.46	45	25.2	353	0.10	1.4	356	9984	1.56	48.32	27.4	384	0.34	20.9	7.842	25.304	3.83		<1	<1
W3	-17.3736	4/14/98	932				1.48	46	25	354	0.03	0.4	357	10029	1.55	48.01	29	399	0.35	20.8	7.852	25.378	3.82		<1	<1
W3	-17.3736	5/12/98	1055				1.46	45	25.0	350	0.11	1.5	354	9928	1.53	47.39	26.8	376	0.33	21.1	7.862	25.565	3.82		<1	<1
W3	-17.3736	6/2/98	1048				1.38	43	25.2	353	0.05	0.7	356	9984	1.51	46.77	27	376	0.30	20.8	7.858	25.520	3.84		<1	<1
W3	-17.3736	7/14/98	1058				1.48	46	23.9	335	0.13	1.8	359	10069	1.61	49.87	26	359	0.30	21.1	7.837	25.670	3.71		<1	<1
W3	-17.3736	8/11/98	1117				1.42	44	24.7	346	0.13	1.8	354	9951	1.53	47.39	26.7	373	0.30	20.8	7.823	25.667	3.86		<1	<1
W3	-17.3736	9/15/98	1151				1.43	44	25.8	361	0.03	0.4	361	10147	1.59	49.25	28.9	405	0.32	20.7	7.821	25.359	3.85		<1	<1
W3	-17.3736	10/13/98	1025				1.42	44	25	350	0.05	0.7	393	11035	1.50	46.46	27	374	0.32	21.0	7.838	25.384	4.10		<1	<1
W3	-17.3736	11/4/98	1058				1.36	42	26	357	0.05	0.7	369	10369	1.39	43.05	27	384	0.37	21.0	7.852	25.409	3.81		<1	<1
W3	-17.3736	12/16/98	1038				1.31	41	24.7	346	0.07	1.0	352	9886	1.44	44.60	29.0	406	0.49	22.0	7.846	25.358	3.86		<1	<1
W3	-17.3736	1/12/99	1113				1.33	41	24.5	343	0.16	2.2	353	9917	1.48	45.84	26.3	368	0.36	20.9	7.847	25.516	3.88		<1	<1
W3	-17.3736	2/3/99	1101				1.34	42	25.2	353	0.09	1.3	352	9875	1.45	44.91	29.2	409	0.46	20.9	7.855	25.719	3.86		<1	<1
W3	-17.3736	3/2/99	1109				1.35	42	24.0	336	0.06	0.8	350	9833	1.46	45.22	26.9	377	0.36	20.7	7.837	25.859	4.28		<1	<1
W3	-17.3736	4/6/99	1059				1.34	42	23.8	333	0.06	0.8	362	10161	1.44	44.60	25.6	359	0.43	20.8	7.834	25.770	3.76		<1	<1
W3	-17.3736	5/4/99	1104				1.32	41	24.1	338	0.05	0.7	351	9850	1.35	41.81	28.1	394	0.31	20.7	7.831	25.791	3.85		<1	<1
W3	-17.3736	6/2/99	1048				1.39	43	23.7	332	0.12	1.7	347	9746	1.45	44.91	26.3	368	0.31	20.9	7.833	25.799	3.81		<1	<1

NELHA Water Quality Laboratory

Well 3 Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W3	-17.3736	7/7/99	1121				1.37	42	24.1	338	0.04	0.6	356	9984	1.44	44.60	25.7	360	0.29	21.0	7.832	25.705	3.90		<1	<1
W3	-17.3736	8/25/99	1054				1.29	40	24.7	346	0.04	0.6	355	9970	1.45	44.91	26.9	377	0.30	20.7	7.879	25.759	3.80		<1	<1
W3	-17.3736	9/8/99	1057				1.31	41	25.2	353	0.04	0.6	364	10232	1.43	44.29	28.2	395	0.30	20.7	7.890	25.695	3.72		<1	<1
W3	-17.3736	10/6/99	1102				1.45	45	25.3	354	0.06	0.8	344	9647	1.54	47.70	27.2	381	0.33	20.9	7.887	25.650	3.76		<1	<1
W3	-17.3736	11/3/99	1116				1.39	43	25.4	356	0.07	1.0	352	9883	1.44	44.60	27.6	387	0.28	20.8	7.900	25.454	3.79		<1	<1
W3	-17.3736	12/15/99	1133				1.40	43	24.8	347	0.09	1.3	355	9965	1.50	46.46	30.3	424	0.36	21.1	7.840	25.699	3.59		<1	<1
W3	-17.3736	1/11/00	1108				1.31	41	25.9	363	0.18	2.5	349	9810	1.45	44.91	28.9	405	0.35	20.8	7.853	25.616	3.84		<1	<1
W3	-17.3736	2/14/00	1125				1.40	43	24.3	340	0.17	2.4	343	9619	1.42	43.98	27.9	391	0.35	20.7	7.878	25.882	3.80		<1	<1
W3	-17.3736	3/22/00	1135				1.35	42	24.7	346	0.12	1.7	350	9838	1.38	42.74	28.4	398	0.44	20.8	7.892	26.045	3.67		<1	<1
W3	-17.3736	4/12/00	1118				1.37	42	24.6	345	0.11	1.5	354	9937	1.44	44.60	27.6	387	0.39	20.9	7.880	25.933	3.69		<1	<1
W3	-17.3736	5/17/00	1055				1.36	42	24.2	339	0.02	0.3	347	9746	1.41	43.67	27.0	378	0.37	20.8	7.880	25.975	3.72		<1	<1
W3	-17.3736	6/6/00	1133				1.34	42	23.7	332	0.03	0.4	347	9757	1.41	43.67	26.5	371	0.34	21.8	7.871	25.905	3.66		<1	<1
W3	-17.3736	7/31/00	1122				1.38	43	24.0	336	0.06	0.8	344	9673	1.48	45.84	27.3	382	0.57	20.8	7.886	26.017	3.75		<1	<1
W3	-17.3736	8/30/00	1127				1.37	42	24.8	347	0.03	0.4	344	9659	1.44	44.60	26.0	364	0.31	20.9	7.847	26.061	3.61		<1	<1
W3	-17.3736	9/6/00	1106				1.36	42	23.8	333	0.04	0.6	350	9838	1.47	45.53	26.0	364	0.32	21.1	7.840	26.092	3.67		<1	<1
W3	-17.3736	10/25/00	1043				1.37	42	23.0	322	0.16	2.2	358	10046	1.45	44.91	26.7	375	0.33	22.1	7.862	26.056	4.25		<1	<1
W3	-17.3736	11/14/00	1057				1.24	38	23.4	328	0.31	4.3	347	9740	1.47	45.53	31.0	434	0.41	22.2	7.860	25.943	3.73		<1	1
W3	-17.3736	12/19/00	1048				1.32	41	25.1	352	0.18	2.5	362	10164	1.49	46.15	27.3	382	0.40	21.6	7.873	25.892	3.72		<1	<1
W3	-17.3736	1/24/01	1042				1.38	43	24.1	337	0.12	1.7	357	10035	1.34	41.50	33.8	473	0.36	21.4	7.929	26.081	3.52		<1	<1
W3	-17.3736	2/7/01	1111				1.30	40	24.5	343	0.05	0.7	353	9903	1.38	42.74	29.3	410	0.38	21.7	7.884	26.160	3.70		<1	1
W3	-17.3736	3/12/01	1056				1.29	40	23.1	324	0.03	0.4	356	9996	1.44	44.60	**27.8**	389	0.47	22.8	7.837	26.166	3.95		<1	<1
W3	-17.3736	4/18/01	1048				1.38	43	24.7	346	0.04	0.6	360	10111	1.44	44.60	25.0	350	0.33	22.1	7.822	25.975	3.82		<1	<1
W3	-17.3736	5/14/01	924				2.20	68	24.2	339	0.17	2.4	359	10086	2.52	78.05	25.9	363	0.31	21.9	7.836	26.003	4.06		<1	<1
W3	-17.3736	6/13/01	1117				1.54	48	24.9	349	0.04	0.6	363	10192	1.70	52.66	26.9	377	0.30	22.4	7.845	25.889	4.39		<1	<1
W3	-17.3736	7/25/01	1025				1.44	45	24.8	347	0.05	0.7	361	10144	1.50	46.46	27.0	378	0.36	22.1	7.839	25.926	4.14		<1	<1
W3	-17.3736	8/20/01	1019				1.28	40	24.1	337	0.07	1.0	355	9956	1.39	43.05	27.3	382	0.47	22.1	7.850	25.860	4.18		<1	<1
W3	-17.3736	9/18/01	1057				1.28	40	24.8	348	0.12	1.7	352	9897	1.30	40.27	26.4	369	0.35	22.7	7.832	25.806	4.72		<1	<1
W3	-17.3736	10/9/01	1048				1.50	46	26.9	377	0.02	0.3	359	10069	1.60	49.56	30.4	426	0.37	22.6	7.833	25.324	4.39		<1	<1
W3	-17.3736	11/6/01	1015				1.36	42	27.9	390	0.06	0.8	360	10097	1.42	43.98	32.2	451	0.33	22.7	7.844	25.392	4.42		<1	<1
W3	-17.3736	12/18/01	1010				1.02	32	25.7	359	0.11	1.5	367	10302	1.16	35.93	29.9	419	0.33	21.8	7.842	25.456	4.29		<1	<1
W3	-17.3736	1/8/02	1024				1.38	43	25.8	361	0.29	4.1	358	10049	1.57	48.63	30.8	431	0.30	22.0	7.842	25.613	4.60		<1	<1
W3	-17.3736	2/27/02	1023				1.42	44	25.0	351	0.04	0.6	350	9824	1.46	45.22	29.2	410	0.31	22.0	7.847	25.995	4.65		<1	<1
W3	-17.3736	3/19/02	1030				1.32	41	25.1	352	0.14	2.0	355	9962	1.44	44.60	26.2	367	0.33	22.2	7.859	25.968	4.13		<1	<1
W3	-17.3736	4/9/02	1022				1.30	40	25.0	350	0.10	1.4	356	10004	1.54	47.70	27.3	382	0.40	22.3	7.826	25.984	4.04		<1	<1
W3	-17.3736	5/21/02	1025				1.24	38	23.8	333	0.04	0.6	350	9830	1.30	40.27	27.0	378	0.31	22.6	7.854	26.018	4.33		<1	<1
W3	-17.3736	6/18/02	1038				1.30	40	25.7	360	0.04	0.6	360	10111	1.42	43.98	27.6	387	0.22	22.6	7.844	25.787	4.43		<1	<1
W3	-17.3736	7/17/02	1016				1.38	43	26.0	364	0.02	0.3	358	10043	1.44	44.60	25.1	352	0.29	22.8	7.860	25.795	4.65		<1	<1
W3	-17.3736	8/22/02	1055				1.38	43	24.1	337	0.13	1.8	354	9942	1.46	45.22	24.3	341	0.38	23.4	7.841	25.972	4.26		<1	<1
W3	-17.3736	9/24/02	1036				1.34	42	25.6	358	0.17	2.4	362	10178	1.48	45.84	24.6	345	0.25	22.3	7.871	25.947	4.81		<1	<1
W3	-17.3736	10/16/02	1049				1.37	42	27.1	379	0.25	3.5	364	10212	1.55	48.01	30.0	420	0.52	22.7	7.859	25.614	4.26		<1	<1
W3	-17.3736	11/6/02	1034				1.41	44	28.5	399	0.19	2.7	359	10088	1.49	46.15	23.4	328	0.42	21.9	7.854	25.758	4.17		<1	<1
W3	-17.3736	12/19/02	1122				1.17	36	25.8	361	0.04	0.6	358	10043	1.44	44.60	23.5	329	0.52	22.0	7.861	25.738	4.15		<1	<1
W3	-17.3736	1/22/03	1112				1.50	46	23.9	335	0.03	0.4	360	10097	1.62	50.18	27.6	386	0.25	21.7	7.881	25.813	4.03		<1	<1
W3	-17.3736	2/20/03	1027				1.36	42	26.2	366	0.02	0.3	262	7358	1.44	44.60	27.4	384	0.26	21.5	7.892	25.771	4.47		<1	<1
W3	-17.3736	3/18/03	1013				1.40	43	22.0	308	0.02	0.3	370	10389	1.47	45.53	24.9	349	0.21	22.3	7.861	25.942	4.72		<1	<1
W3	-17.3736	4/29/03	1020				1.47	46	24.4	342	0.04	0.6	361	10139	1.57	48.63	27.3	382	0.24	22.8	7.899	25.914	4.99		<1	<1
W3	-17.3736	5/13/03	1047				1.51	47	23.6	330	0.05	0.7	364	10234	1.65	51.11	25.1	351	0.29	21.9	7.898	25.926	3.69		<1	<1
W3	-17.3736	6/5/03	1015				1.48	46	23.0	322	0.10	1.4	352	9878	1.54	47.70	27.5	385	0.24	22.3	7.884	25.953	3.87		<1	<1

NELHA Water Quality Laboratory

Well 3 Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W3	-17.3736	7/31/03	1035				1.39	43	24.6	344	0.31	4.3	357	10012	1.53	47.39	27.5	385		22.1	7.861	25.944	4.97		<1	<1
W3	-17.3736	8/27/03	1053				1.40	43	24.9	348	0.08	1.1	349	9813	1.52	47.08	31.4	440		22.1	7.854	25.827	4.95		<1	<1
W3	-17.3736	9/17/03	1020				1.52	47	25.4	355	0.03	0.4	362	10173	1.76	54.51	27.2	381		22.9	7.845	25.721	3.91		<1	1
W3	-17.3736	10/7/03	1021				1.42	44	25.3	355	0.34	4.8	361	10125	1.46	45.22	29.7	416		22.6	7.849	25.761	NA		<1	<1
W3	-17.3736	11/4/03	1002				1.42	44	23.0	323	0.34	4.8	360	10105	1.56	48.32	29.1	408		22.7	7.866	25.641			<1	<1
W3	-17.3736	11/14/03	1138																	22.8			3.90			
W3	-17.3736	12/16/03	959				1.43	44	25.8	361	0.40	5.6	363	10181	1.42	43.98	30.4	426		22.8	7.854	25.541	3.98		<1	<1
W3	-17.3736	1/27/04	1020				1.39	43	26.2	367	0.61	8.5	358	10060	1.49	46.15	28.4	398		22.4	7.898	25.681	4.42		<1	<1
W3	-17.3736	2/10/04	1017				1.36	42	25.6	359	0.15	2.1	341	9563	1.37	42.43	27.6	387		22.3	7.850	25.789	4.03		<1	<1
W3	-17.3736	3/15/04	1021				1.52	47	26.3	368	0.04	0.6	363	10181	1.62	50.18	26.8	376		22.8	7.877	25.650	3.56		<1	<1
W3	-17.3736	4/21/04	932				1.37	42	26.9	376	0.15	2.1	362	10153	1.33	41.20	27.7	388		21.6	7.866	25.591	5.27		<1	<1
W3	-17.3736	5/12/04	927				1.46	45	26.0	364	0.16	2.2	361	10144	1.54	47.70	28.8	403		22.5	7.879	24.95	5.24		<1	<1
W3	-17.3736	6/7/04	1002				1.38	43	26.5	371	0.12	1.7	355	9973	1.50	46.46	28.3	397		22.8	7.851	24.90	4.70		<1	<1
W3	-17.3736	7/8/04	1032				1.44	45	25.9	362	0.20	2.8	368	10338	1.58	48.94	29.4	411	0.26	21.8	7.882	24.76	3.96		<1	<1
W3	-17.3736	8/24/04	1005				1.40	43	27.1	379	0.19	2.7	358	10063	1.44	44.60	28.2	396		22.2	7.870	24.59	3.94		<1	<1
W3	-17.3736	9/28/04	1015				1.32	41	26.2	367	0.16	2.2	361	10128	1.36	42.12	28.7	402		22.1	7.842	24.81	3.85		<1	<1
W3	-17.3736	10/5/04	1105				1.38	43	27.8	389	0.21	2.9	359	10094	1.48	45.84	29.9	418		22.3	7.869	24.61	3.94		<1	<1
W3	-17.3736	11/8/04	1006				1.40	43	25.6	358	0.23	3.2	357	10018	1.48	45.84	29.3	411		22.2	7.871	24.34	3.96		<1	<1
W3	-17.3736	12/7/04	1007				1.42	44	27.6	387	0.16	2.2	360	10097	1.44	44.60	30.6	428		22.2	7.902	24.45	3.94		<1	<1
W3	-17.3736	1/11/05	950				1.34	42	25.8	361	0.16	2.2	376	10557	1.40	43.36	27.9	391		22.6	7.943	25.572	4.46		<1	<1
W3	-17.3736	2/8/05	955				1.36	42	27.2	380	0.16	2.2	356	10001	1.48	45.84	32.8	460		22.6	7.942	25.714	4.02		<1	<1
W3	-17.3736	3/16/05	1043				1.32	41	28.7	401	0.29	4.1	353	9900	1.46	45.22	30.2	423	0.22	21.9	7.920	25.775	4.04		<1	<1
W3	-17.3736	4/18/05	1046				1.46	45	26.6	373	0.19	2.7	362	10175	1.62	50.18	30.8	431		22.9	7.904	25.672	3.69		<1	<1
W3	-17.3736	5/24/05	1003				1.32	41	26.3	368	0.21	2.9	347	9734	1.42	43.98	32.0	448		22.8	7.855	25.878	4.14		<1	<1
W3	-17.3736	6/13/05	1024				1.38	43	26.2	366	0.14	2.0	357	10018	1.50	46.46	28.1	394		22.9	7.875	25.669	3.94		<1	<1
W3	-17.3736	7/11/05	1025				1.52	47	25.5	357	0.18	2.5	359	10080	1.88	58.23	30.9	433		22.2	7.869	25.751	5.94		<1	<1
W3	-17.3736	8/10/05	940				1.42	44	25.9	363	0.16	2.2	356	10010	1.52	47.08	27.2	381		22.9	7.891	25.674	3.86		<1	<1
W3	-17.3736	9/21/05	933				1.38	43	26.3	369	0.06	0.8	350	9838	1.54	47.70	28.8	404	0.30	22.8	7.893	25.615	3.90		<1	<1
W3	-17.3736	10/18/05	958				1.42	44	25.7	361	0.13	1.8	351	9869	1.62	50.18	29.8	417		22.7	7.893	25.791	3.96		<1	<1
W3	-17.3736	11/3/05	943				1.40	43	26.0	364	0.26	3.6	353	9920	1.56	48.32	26.4	370		22.5	7.904	25.903	3.96		<1	<1
W3	-17.3736	12/21/05	1030				1.42	44	20.3	284	0.24	3.4	361	10125	1.52	47.08	23.0	322	0.45	22.6	7.896	25.876	4.63		<1	2
W3	-17.3736	1/24/06	937				1.40	43	24.8	348	0.31	4.3	356	10001	1.46	45.22	28.9	404		21.9	7.871	26.053	3.96		<1	<1
W3	-17.3736	2/15/06	935				1.39	43	27.4	384	0.21	2.9	352	9892	1.54	47.70	28.8	404	0.19	22.2	7.880	25.972	3.94		<1	<1
W3	-17.3736	3/21/06	928				1.34	42	25.7	360	0.17	2.4	354	9942	1.43	44.29	26.5	371	0.21	21.9	7.883	26.208	3.81		<1	<1
W3	-17.3736	4/26/06	943				1.35	42	23.4	328	<0.05	0.0	345	9689	1.47	45.53	21.4	300	0.28	21.3	7.892	26.284	3.86		<1	<1
W3	-17.3736	5/23/06	1013				1.35	42	25	350	0.09	1.3	350	9830	1.36	42.12	23.4	327	0.36	22.3	7.903	26.195	4.27		<1	<1
W3	-17.3736	6/27/06	1011				1.52	47	25.8	361	0.14	2.0	355	9970	1.64	50.80	22.7	318	0.22	21.1	7.855	26.296	3.64		<1	<1
W3	-17.3736	7/18/06	1009				1.35	42	24.8	347	0.14	2.0	347	9746	1.47	45.53	23.6	331	0.36	21.7	7.871	26.141	3.89		<1	<1
W3	-17.3736	8/8/06	949				1.34	42	24.0	336	0.05	0.7	356	9998	1.45	44.91	20.5	287	0.17	22.2	7.887	26.396	3.84		<1	<1
W3	-17.3736	9/19/06	1046				1.35	42	24.5	343	0.07	1.0	354	9942	1.47	45.53	23.5	329	0.24	22.0	7.850	26.186	3.88		<1	<1
W3	-17.3736	10/24/06	1025				1.32	41	24.7	346	0.38	5.3	353	9914	1.42	43.98	23.3	326	0.24	21.3	7.888	26.154	4.56		<1	<1
W3	-17.3736	11/28/06	1004				1.35	42	25.7	360	0.28	3.9	353	9914	1.50	46.46	23.2	325	0.25	21.3	7.875	25.875	3.81		<1	<1
W3	-17.3736	12/12/06	956				1.38	43	24.9	349	0.22	3.1	348	9774	1.41	43.67	23.4	328	0.26	21.0	7.867	25.875	3.75		<1	<1
W3	-17.3736	1/9/07	1024				1.42	44	25.0	350	0.28	3.9	348	9774	1.47	45.53	26.7	374	0.23	20.8	7.900	25.935	3.89		<1	<1
W3	-17.3736	2/22/07	1010				1.38	43	25.8	361	0.32	4.5	356	9998	1.44	44.60	28.4	397	0.26	21.4	7.879	26.033	3.81		<1	<1
W3	-17.3736	3/6/07	1035				1.36	42	26.1	366	0.37	5.2	353	9914	1.44	44.60	27.2	381	0.31	22.0	7.894	26.183	3.82		<1	<1
W3	-17.3736	4/11/07	1157				1.34	42	26.7	374	0.22	3.1	366	10279	1.38	42.74	24.4	341	0.22	21.7	7.882	25.955	3.71		<1	<1
W3	-17.3736	5/3/07	1010				1.37	42	26.0	364	0.24	3.4	357	10027	1.45	44.91	25.1	351	0.27	21.6	7.892	26.015	3.67		<1	<1
W3	-17.3736	6/19/07	945				1.42	44	25.6	358	0.28	1.4	368	10335	1.5	46.2	21.6	303	0.16	21.6	7.919	25.953	3.89		<1	<1

NELHA Water Quality Laboratory

Well 3 Data Table

June 1989 - December 2014

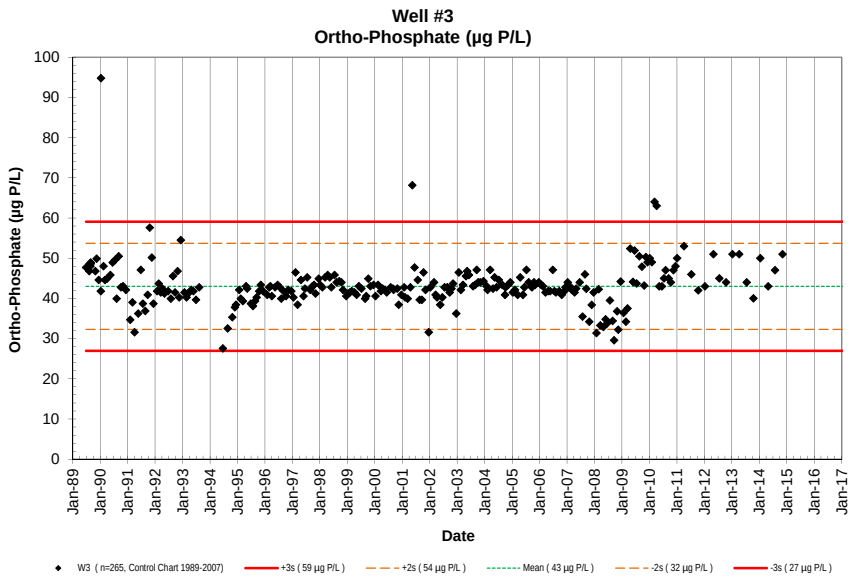
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W3	-17.3736	7/26/07	1115	-5.82	0.37	Flood	1.15	36	27.7	388	0.04	0.5	352	9899	1.5	45.9	30.9	432		20.7	7.77	25.80	3.56			
W3	-17.3736	8/28/07	1038	-5.39	0.00	Low	1.49	46	28.7	401	0.04	0.5	409	11479	1.6	50.7	30.8	431		20.8	7.73	25.72	3.54			
W3	-17.3736	9/13/07	1248	-5.26	0.15	Low	1.37	42	24.6	344	2.98	41.8	371	10412	1.6	49.7	33.6	470		21.0	7.85	25.86	3.51			
W3	-17.3736	10/24/07	1215	-5.26	0.30	Flood	1.10	34	28.5	399	1.40	19.5	347	9745	1.4	43.0	31.6	443		21.2	7.88	25.85	3.38			
W3	-17.3736	11/26/07	1504	-4.52	0.09	Flood	1.24	38	27.4	384	0.08	1.1	348	9767	1.1	33.9	31.5	442		21.0	7.82	25.94	3.40			
W3	-17.3736	12/20/07	1141	-5.46	0.23	High	1.34	42	28.3	396	0.70	9.8	345	9694						20.7	7.88	25.48	3.50			
W3	-17.3736	1/28/08	1517	-6.10	0.06	Low	1.01	31	15.5	217	0.06	0.8	244	6862						21.2	7.73	25.95	3.33			
W3	-17.3736	2/27/08	1256	-4.83	0.06	Low	1.37	42	27.1	380	0.21	3.0	335	9406						20.8	7.70	25.86	3.65			
W3	-17.3736	3/20/08	1238	-5.51	0.12	Flood	1.08	33	26.3	369	0.06	0.8	309	8686						21.2	7.76	25.95	3.29			
W3	-17.3736	4/28/08	1211	-5.59	0.18	High	1.06	33	27.3	382	0.19	2.6	331	9287						21.3	7.75	25.84	3.72			
W3	-17.3736	5/29/08	1036		0.30	Flood	1.12	35	27.2	382	0.12	1.7	341	9564						21.5	7.78	25.86	3.58			
W3	-17.3736	6/19/08	1115	-5.64	0.21	Ebb	1.09	34	25.7	360	0.61	8.5	331	9286						21.6	7.66	26.04	3.35	1.21		
W3	-17.3736	7/24/08	1035	-5.56	0.46	Ebb	1.28	40	29.2	408	0.79	11.1	323	9071						20.6	7.68	25.81	3.89			
W3	-17.3736	8/30/08	1105		0.06	Flood	1.11	34	24.7	346	0.26	3.7	331	9290						20.9	7.78	25.99	3.59			
W3	-17.3736	9/18/08	958	-5.52	0.34	Ebb	0.96	30	18.6	261	0.42	5.9	203	5700						21.7	7.65	26.06	3.81	0.39		
W3	-17.3736	10/28/08	849	-5.74	0.24	Ebb	1.19	37	25.8	362	0.34	4.7	325	9140						22.7	7.47	25.73	3.41	5.01		
W3	-17.3736	11/13/08	1003	-5.73	0.15	Ebb	1.04	32	24.9	348	0.31	4.4	313	8794						23.2	7.73	25.67	3.59	5.06		
W3	-17.3736	12/15/08	1050	-5.63	0.37	Ebb	1.43	44	29.0	406	0.11	1.5	337	9458						22.1	7.99	25.32	3.94			
W3	-17.3736	1/21/09	1000	-5.89	0.12	Low	1.18	36	28.5	399	0.06	0.9	326	9160						22.9	8.01	25.69	3.67	0.62		
W3	-17.3736	2/23/09	1539	-5.76	0.37	High	1.10	34	30.1	421	0.90	12.6	354	9946						21.9	7.76	24.92	3.86	0.68		
W3	-17.3736	3/16/09	843	-5.85	0.18	High	1.21	38	25.5	357	0.13	1.8	333	9360						22.4	7.82	25.27	3.70	0.28		
W3	-17.3736	4/20/09	1423	-5.75	0.40	High	1.69	52	29.1	408	0.73	10.2	296	8310						24.1	7.71	25.90	3.64	2.09		
W3	-17.3736	5/27/09	734	-5.83	0.15	High	1.42	44	26.6	373	0.33	4.6	362	10177						20.7	8.10	25.89	3.28	0.15		
W3	-17.3736	6/18/09	1043	-5.78	0.40	Flood	1.68	52	27.3	382	0.49	6.9	147	4116						20.9	7.81	25.74	3.66	0.24		
W3	-17.3736	7/14/09	850	-5.77	0.37	Flood	1.41	44	24.2	340	0.27	3.8	168	4708						20.6	7.21	25.86	3.54	0.07		
W3	-17.3736	8/19/09	910	-5.93	0.03	Low	1.63	51	26.8	376	0.55	7.7	325	9133						20.9	7.19	25.95	3.76	0.56		
W3	-17.3736	9/22/09	932	-5.55	0.46	Ebb	1.55	48	23.5	329	0.46	6.5	210	5903						20.9	8.27	25.81	3.63	0.09		
W3	-17.3736	10/22/09	1410	-5.88	0.18	Ebb	1.39	43	19.4	271	0.87	12.2	137	3859						20.9	7.89	26.10	3.81	0.13		
W3	-17.3736	11/16/09	1503	-5.87	0.21	High	1.62	50	25.7	360	0.87	12.2	299	8406						20.8	7.86	26.20	3.50	0.07		
W3	-17.3736	12/7/09	1355	-5.92	0.09	Ebb	1.58	49	22.6	317	0.61	8.6	306	8582						21.6	7.80	25.75	3.70	0.11		
W3	-17.3736	1/5/10	1123	-5.65	0.21	Ebb	1.61	50	28.1	393	2.00	28.0	343	9647						21.5	7.83	25.58	4.06	0.70		
W3	-17.3736	2/1/10	1151	-5.87	-0.09	Low	1.58	49	31.0	434	0.86	12.0	302	8493						21.4	7.89	25.65	3.72	0.43		
W3	-17.3736	3/9/10	1146	-5.90	0.15	High	2.07	64	38.0	532	0.29	4.0	430	12073						21.3	7.88	22.20	3.43	0.16		
W3	-17.3736	4/6/10	1100	-5.92	0.15	High	2.03	63	29.0	406	0.29	4.0	353	9928						22.0	7.86	25.70	3.78	0.56		
W3	-17.3736	5/11/10	1127	-5.90	0.21	Flood	1.39	43	25.6	359	1.36	19.0	327	9171						22.9	7.93	25.13	3.97	0.07		
W3	-17.3736	6/15/10	1216	-6.03	0.06	Low	1.39	43	25.5	357	0.57	8.0	346	9715						20.3	7.90	25.61	4.73	0.09		
W3	-17.3736	7/13/10	1128	-5.97	0.00	Low	1.45	45	28.8	403	0.64	9.0	389	10913						20.6	7.88	24.81	3.88	0.13		
W3	-17.3736	8/3/10	1110	-5.52	0.55	High	1.52	47	28.1	394	0.21	3.0	379	10635						22.0	7.91	25.36	3.60	0.46		
W3	-17.3736	9/14/10	1110	-5.48	0.52	Ebb	1.45	45	29.8	417	0.33	4.6	406	11398						20.4	7.87	24.90	4.00	0.32		
W3	-17.3736	10/12/10	1120	-5.52	0.46	Ebb	1.42	44	27.8	389	0.16	2.3	391	10977						20.4	7.88	25.36	3.75	0.13		
W3	-17.3736	11/16/10	1035	-5.66	0.34	Flood	1.52	47	29.8	417	0.17	2.4	400	11244						20.5	7.89	24.98	3.75	0.07		
W3	-17.3736	12/14/10	1116	-5.63	0.34	Ebb	1.55	48	31.1	435	0.34	4.7	409	11474						20.6	7.87	24.04	3.95	0.03		
W3	-17.3736	1/4/11	1105	-5.83	0.03	Low	1.61	50	30.8	431	0.26	3.7	405	11372						20.5	7.82	24.89	3.74	0.10		
W3	-17.3736	4/5/11	1132	-5.97	-0.03	Low	1.71	53	28.6	400	0.03	0.4	379	10640						20.5	7.89	24.77	3.40	0.15		
W3	-17.3736	7/12/11	1118	-5.90	0.30	Flood	1.49	46	27.4	384	0.09	1.3	374	10500						20.5	7.82	25.57	3.71	0.03		
W3	-17.3736	10/11/11	1119	-5.90	0.15	Flood	1.36	42	25.3	355	0.19	2.6	354	9929						20.6	7.82	26.11	3.81	0.12		
W3	-17.3736	1/10/12	1118	-5.91	0.03	Ebb	1.39	43	27.3	383	0.19	2.6	375	10540						20.6	7.83	25.64	3.76	0.16		
W3	-17.3736	5/1/12	1136	-5.67	0.34	Flood	1.65	51	27.3	383	0.13	1.8	381	10707						20.6	7.84	25.83	3.72	0.07		
W3	-17.3736	7/18/12	1030	-5.99	0.03	Flood	1.45	45	27.4	384	0.31	4.4	369	10372						20.7	7.93	26.09	3.75	0.31		
W3	-17.3736	10/16/12	1116	-5.88	0.09	Low	1.42	44	27.5	385	0.14	1.9	367	10321						20.8	7.79	26.10	3.60	0.24		
W3	-17.3736	1/8/13	1139	-5.81	0.18	Flood	1.65	51	29.5	413	0.31	4.4	415	11661						20.8	7.78	25.83	3.71	0.25		
W3	-17.3736	4/9/13	1123	-5.98	0.00	Flood	1.65	51	26.0	364	0.36	5.1	362	10158						21.1	7.85	26.11	3.59	0.64		
W3	-17.3736	7/17/13	1237	-5.61	0.61	High	1.42	44	24.6	345	0.15	2.1	363	10202						21.0	7.75	26.11	3.84	0.10		
W3	-17.3736	10/15/13	1100	-5.71	0.37	Flood	1.29	40	27.8	389	0.25	3.5	352	9882						21.0	7.82	26.33	3.78	0.46		
W3	-17.3736	1/15/14	1102	-5.87	0.03	Low	1.61	50	27.8	389	0.34	4.8	354	9941						20.9	7.90	26.20	3.80	0.28		
W3	-17.3736	4/29/14	1201	-6.01	0.12	Flood	1.39	43	26.1	366	0.31	4.4	341	9571						21.0	7.81	26.21	3.96	0.36		

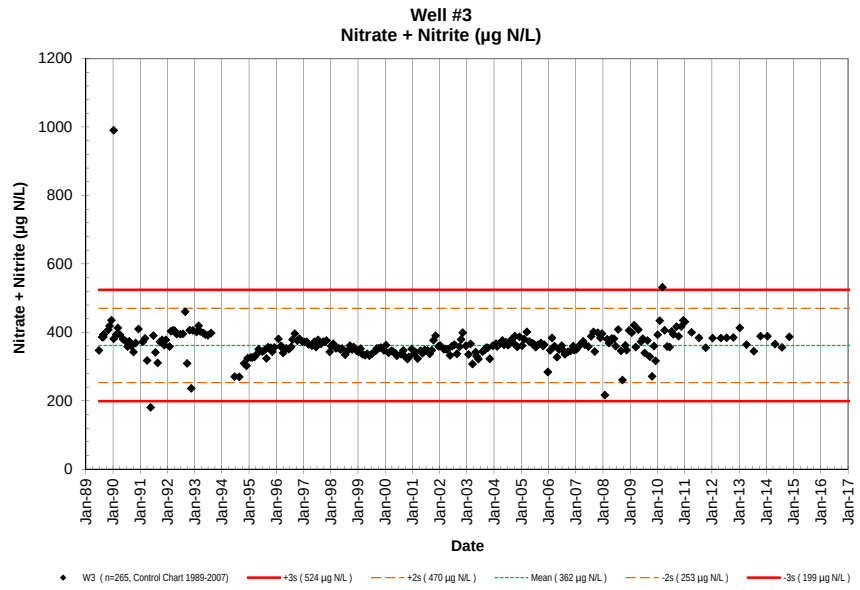
NELHA Water Quality Laboratory

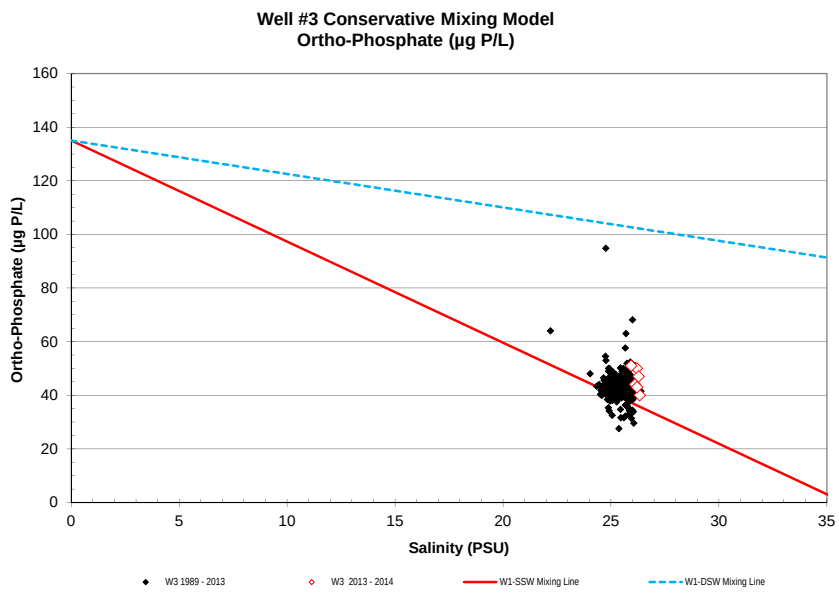
Well 3 Data Table

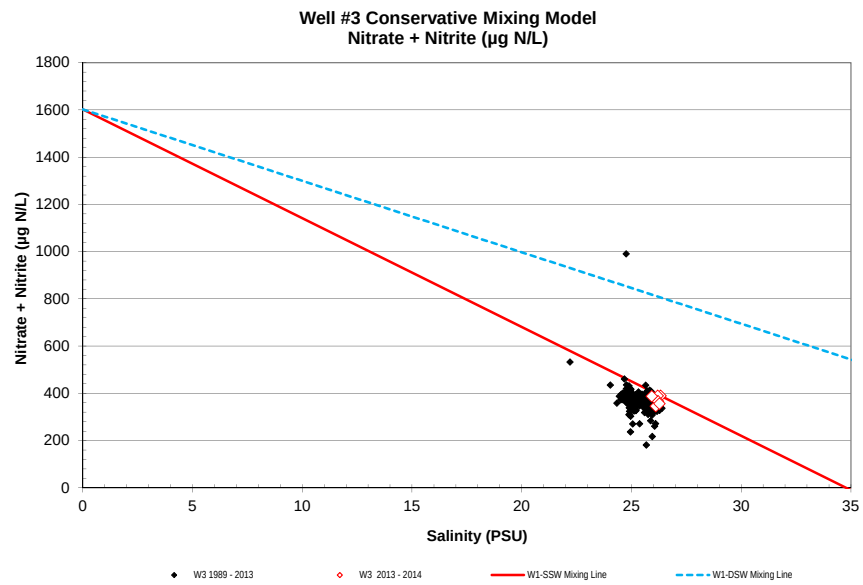
June 1989 - December 2014

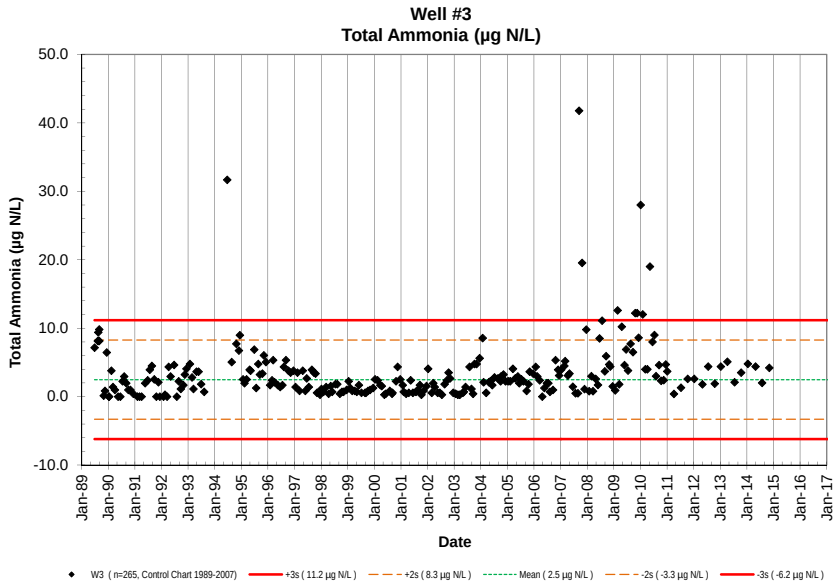
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W3	-17.3736	7/29/14	1141	-5.91	0.12	Low	1.52	47	25.4	356	0.14	2.0	355	9973						20.8	7.78	26.28	3.99	0.18		
W3	-17.3736	11/5/14	1135	-5.74	0.17	Flood	1.65	51	27.6	387	0.30	4.2	340	9547						21.1	7.85	25.93	3.91	0.24		
W3	-17.3736	1/1/15																								
W3	-17.3736	4/1/15																								

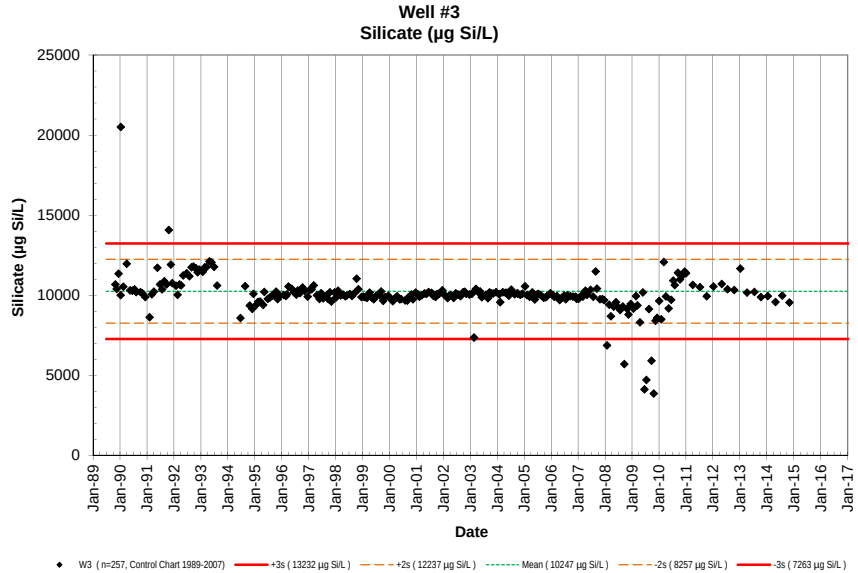

Well #3
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W3 (n=265, Control Chart 1989-2007)
+3s (59 µg P/L)
+2s (54 µg P/L)
Mean (43 µg P/L)
-2s (32 µg P/L)
-3s (27 µg P/L)

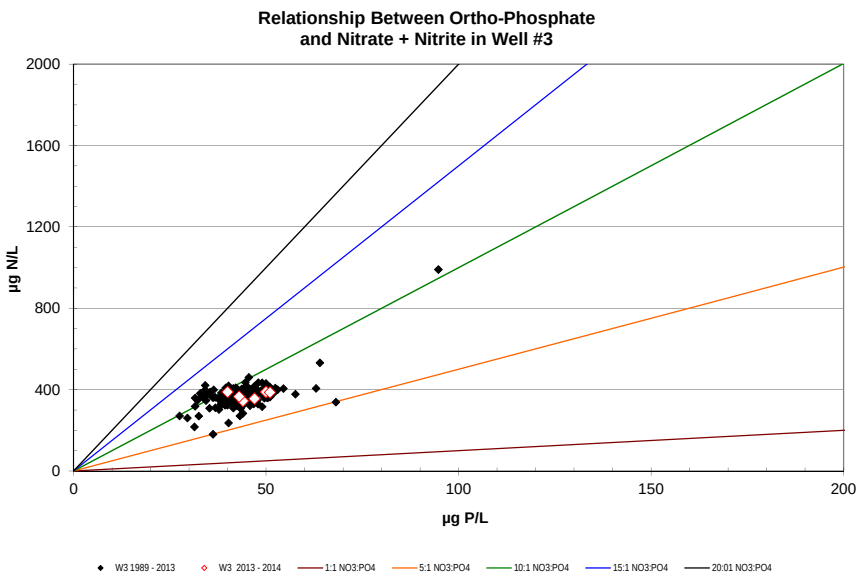

Well #3
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W3 (n=265, Control Chart 1989-2007)
+3s (524 µg N/L)
+2s (470 µg N/L)
Mean (362 µg N/L)
-2s (253 µg N/L)
-3s (199 µg N/L)

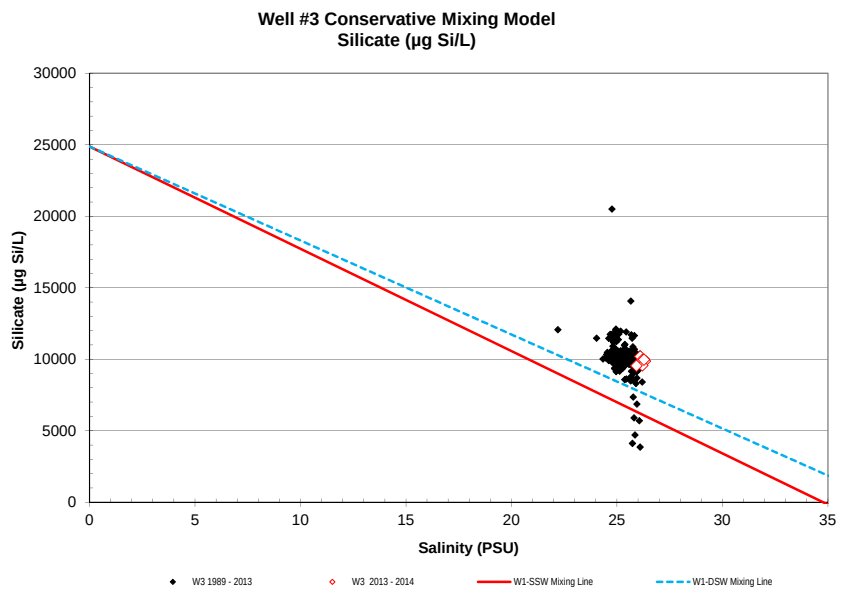

Well #3 Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W3 1989 - 2013
W3 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

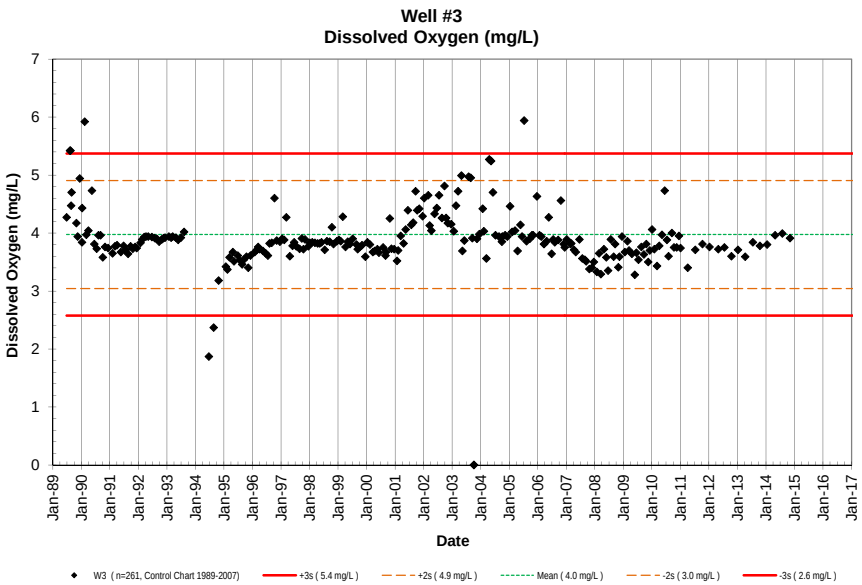

Well #3 Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W3 1989 - 2013
W3 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

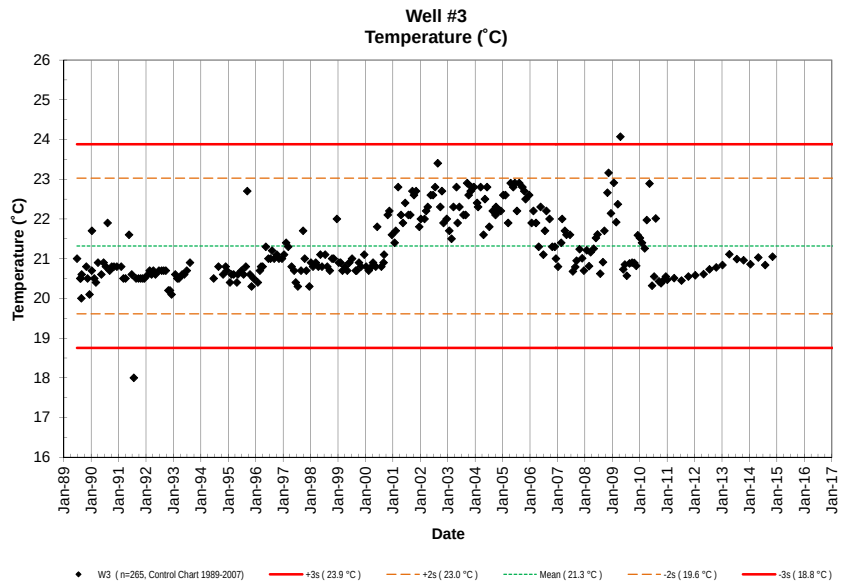

Well #3
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W3 (n=265, Control Chart 1989-2007)
+3s (11.2 µg N/L)
+2s (8.3 µg N/L)
Mean (2.5 µg N/L)
-2s (-3.3 µg N/L)
-3s (-6.2 µg N/L)

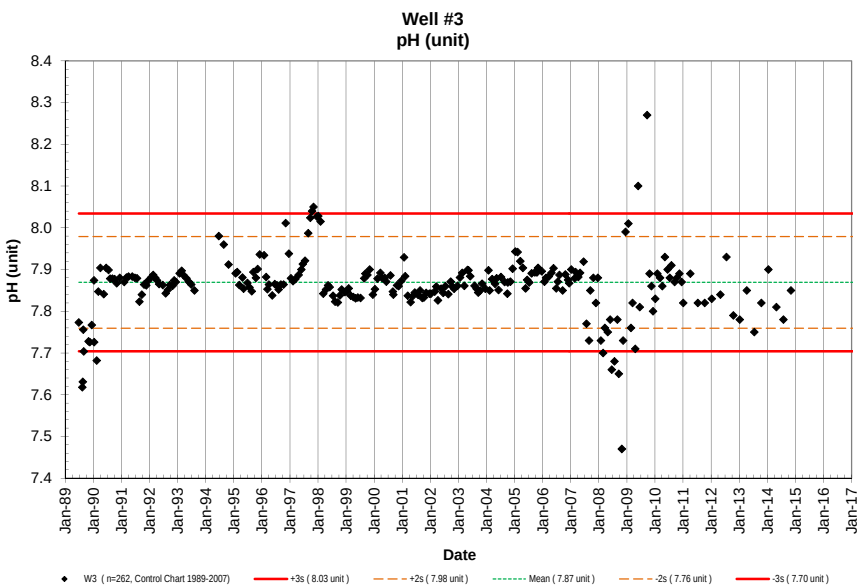

Well #3
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W3 (n=257, Control Chart 1989-2007)
+3s (13232 µg Si/L)
+2s (12237 µg Si/L)
Mean (10247 µg Si/L)
-2s (8257 µg Si/L)
-3s (7263 µg Si/L)

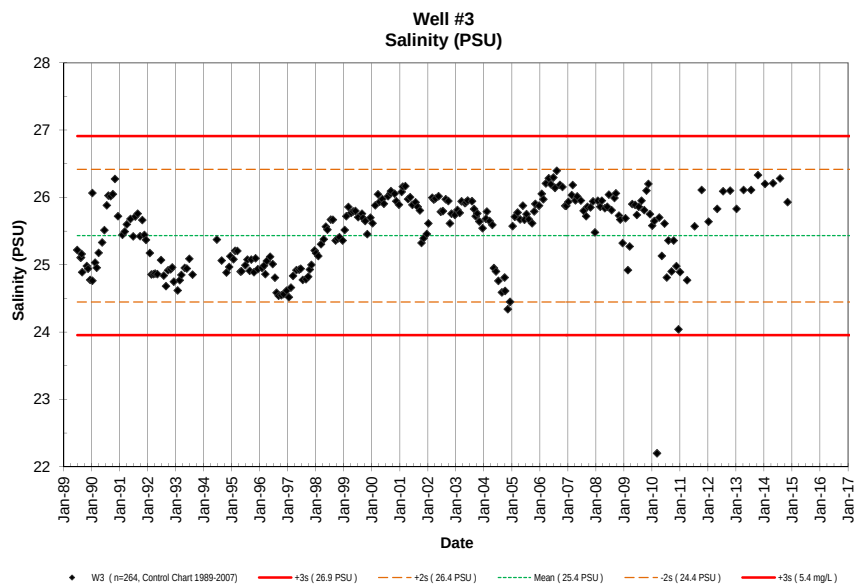

Relationship Between Ortho-Phosphate
and Nitrate + Nitrite in Well #3
µg N/L
µg P/L
W3 1989 - 2013
W3 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

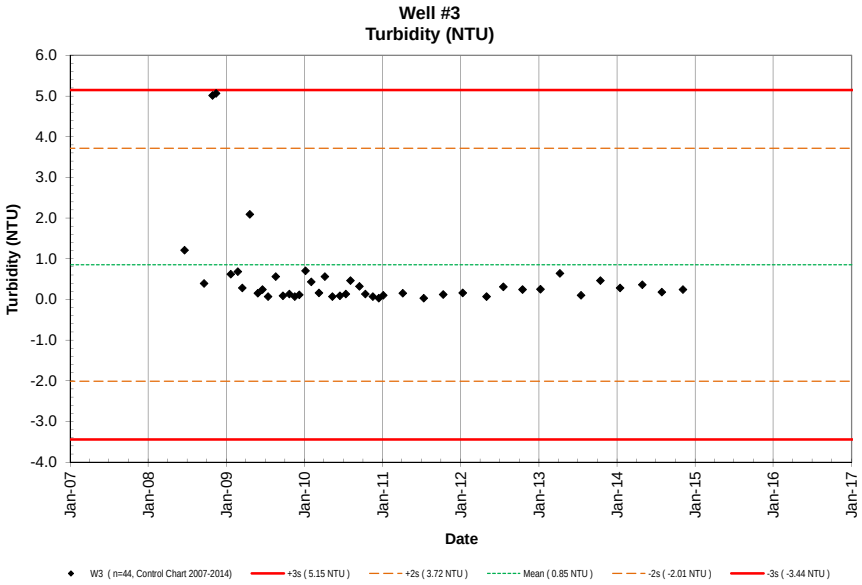

Well #3 Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W3 1989 - 2013
W3 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

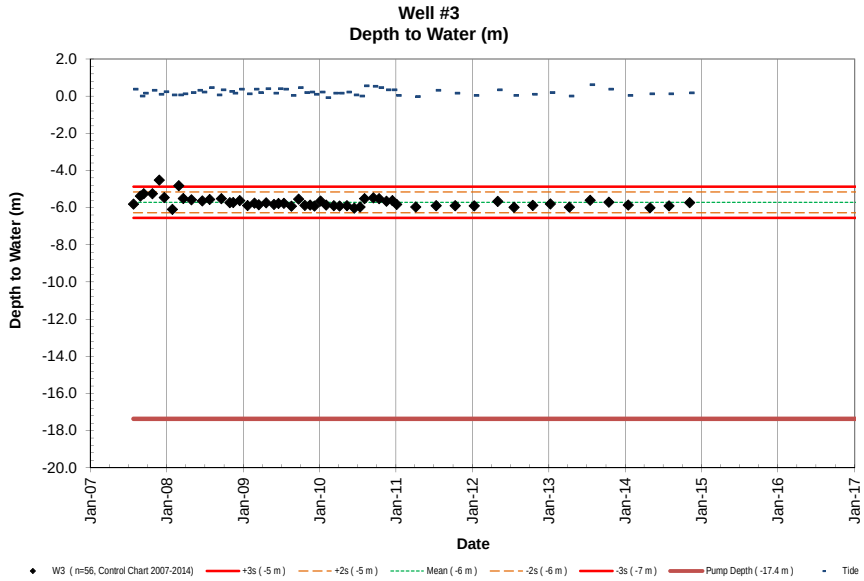

Well #3
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W3 (n=261, Control Chart 1989-2007)
+3s (5.4 mg/L)
+2s (4.9 mg/L)
Mean (4.0 mg/L)
-2s (3.0 mg/L)
-3s (2.6 mg/L)


Well #3
Temperature (˚C)
Temperature (˚C)
Date
W3 (n=265, Control Chart 1989-2007)
+3s (23.9 °C)
+2s (23.0 °C)
Mean (21.3 °C)
-2s (19.6 °C)
-3s (18.8 °C)


Well #3
pH (unit)
pH (unit)
Date
W3 (n=262, Control Chart 1989-2007)
+3s (8.03 unit)
+2s (7.98 unit)
Mean (7.87 unit)
-2s (7.76 unit)
-3s (7.70 unit)


Well #3
Salinity (PSU)
Salinity (PSU)
Date
W3 (n=264, Control Chart 1989-2007)
+3s (26.9 PSU)
+2s (26.4 PSU)
Mean (25.4 PSU)
-2s (24.4 PSU)
+3s (5.4 mg/L)


Well #3
Turbidity (NTU)
Turbidity (NTU)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W3 (n=44, Control Chart 2007-2014)
+3s (5.15 NTU)
+2s (3.72 NTU)
Mean (0.85 NTU)
-2s (-2.01 NTU)
-3s (-3.44 NTU)


Well #3
Depth to Water (m)
Depth to Water (m)
2.0
0.0
-2.0
-4.0
-6.0
-8.0
-10.0
-12.0
-14.0
-16.0
-18.0
-20.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W3 (n=56, Control Chart 2007-2014)
+3s (-5 m)
+2s (-5 m)
Mean (-6 m)
-2s (-6 m)
-3s (-7 m)
Pump Depth (-17.4 m)
Tide

NELHA Water Quality Laboratory

Well 3A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W3A	-8.53	6/27/89					3.14	97	63.0	882	0.19	2.7								22.1	7.793	11.870	6.93		NA	NA
W3A	-8.53	8/10/89	1337				2.94	91	71.4	1000	0.58	8.1								21.8	7.796	9.202	8.17		<1	NA
W3A	-8.53	8/16/89	1430				2.81	87	63.8	894	0.77	10.8								21.1	7.772	10.838	7.67		14	NA
W3A	-8.53	8/24/89	1118				2.91	90	62.2	871	0.48	6.7								22.1	7.891	10.477	7.73		<1	NA
W3A	-8.53	8/29/89	1032				3.26	101	71.9	1007	0.38	5.3								21.7	7.842	9.896	7.33		<1	NA
W3A	-8.53	8/29/89	1032				3.23	100	71.9	1007	0.38	5.3													NA	NA
W3A	-8.53	10/30/89	1045				3.22	100	73.5	1029	0.01	0.1	645	18115	3.27	101.28	86.2	1207	0.40	22.1	7.782	9.443	6.29		<1	NA
W3A	-8.53	11/16/89	1009				3.35	104	69.0	966	0.06	0.8	669	18789	3.58	110.89	76.0	1065	0.48	22.0	7.908	10.806	8.09		1	NA
W3A	-8.53	12/12/89	1021				3.35	104	77.6	1087	0.15	2.1	702	19716	3.45	106.86	78.6	1101	0.38	21.7	7.877	9.345	7.66		<1	NA
W3A	-8.53	1/11/90	1058				2.60	81	70.1	982	0.01	0.1	719	20193	2.76	85.49	73.4	1028	0.35	22.0	7.835	9.797	7.85		<1	NA
W3A	-8.53	2/14/90	1405				3.06	95	66.9	937	0.03	0.4	666	18705	3.43	106.24	57.0	798	0.35	21.9	7.839	10.504	7.65		<1	NA
W3A	-8.53	3/7/90	1352				2.86	89	72.9	1021	0.00	0.0	661		3.19	98.81	73.8	1034	0.38	21.8	7.972	9.928	7.65		<1	NA
W3A	-8.53	4/2/90	1417				2.94	91	69.7	976	0.52	7.3	649	18227	3.04	94.16	71.8	1006	0.36	21.8	7.994	9.799	7.37		<1	NA
W3A	-8.53	5/17/90	1010				3.01	93	69.2	969	0.00	0.0	629	17666	3.09	95.71	74.6	1045	0.25	22.3	7.940	9.954	7.40		<1	NA
W3A	-8.53	6/16/90	926				3.13	97	61.4	860	0.24	3.4	611	17160	3.19	98.81	64.5	903	0.38	22.9	7.993	12.476	6.59		<1	NA
W3A	-8.53	7/31/90	1002				2.75	85	44.9	629	0.01	0.1	551	15475	3.17	98.19	52.1	730	0.24	21.8	7.940	16.675	5.49		3	NA
W3A	-8.53	8/30/90	935				2.56	79	52.9	741	0.37	5.2	571	16037	2.76	85.49	53.8	754	0.40	22.4	7.921	16.416	5.75		<1	NA
W3A	-8.53	9/6/90	1008				2.99	93	63.7	893	0.00	0.0			2.81	87.04	65.1	912	0.33	21.9	7.969	12.994	5.75		<1	NA
W3A	-8.53	10/25/90	1008				2.80	87	58.3	816	0.00	0.0	661	18565	3.37	104.38	58.9	825	0.90	22.1	7.962	13.063	6.25		<1	NA
W3A	-8.53	11/14/90	1025				2.63	81	57.1	800	0.11	1.5	616	17301	2.94	91.06	58.0	812	0.43	22.2	7.944	14.241	5.82		<1	NA
W3A	-8.53	12/19/90	1009				2.23	69	51.8	726	0.10	1.4	547	15363	2.67	82.70	52.9	741	0.30	21.7	7.928	17.745	5.19		<1	NA
W3A	-8.53	1/24/91	820				2.64	82	60.9	853	0.01	0.1	582	16346	2.92	90.44	62.4	874	0.41	21.7	7.948	13.964	6.30		<1	NA
W3A	-8.53	2/7/91	838				2.84	88	62.3	873	0.25	3.5	597	16767	3.04	94.16	66.3	929	0.54	21.9	8.010	10.985	6.84		<1	NA
W3A	-8.53	3/12/91	902				2.76	85	68.7	962	0.03	0.4	612	17188	2.87	88.89	70.0	981	0.62	21.9	8.017	9.461	7.36		<1	NA
W3A	-8.53	4/4/91	831				2.65	82	62.9	880	0.01	0.1	626	17582	2.70	83.63	63.7	892	0.80	22.0	8.019	10.828	7.31		<1	NA
W3A	-8.53	5/22/91	912				2.57	80	31.4	440	0.00	0.0	632	17750	2.68	83.01	32.4	454	0.47	22.1	7.987	11.872	6.96		<1	NA
W3A	-8.53	6/26/91	918				2.90	90	76.1	1066	0.00	0.0	656	18424	3.10	96.02	75.4	1056	0.43	21.9	8.014	9.692	7.52		<1	<1
W3A	-8.53	7/24/91	950				2.41	75	63.6	891	0.08	1.1	608	17076	2.65	82.08	65.3	915	0.57	19.4	7.977	12.312	6.83		<1	<1
W3A	-8.53	8/23/91	911				2.58	80	66.4	930	0.09	1.3	628	17638	2.64	81.77	68.4	958	0.42	21.7	7.924	12.770	6.54		<1	<1
W3A	-8.53	9/24/91	837				2.76	85	67.7	948	0.00	0.0	629	17666	2.82	87.35	72.2	1011	0.39	21.8	7.951	11.167	6.98		<1	<1
W3A	-8.53	10/23/91	847				2.87	89	66.4	930	0.00	0.0	875	24575	3.00	92.92	68.8	964	0.38	21.9	7.969	12.113	6.82		<1	<1
W3A	-8.53	11/20/91	846				3.24	100	61.7	864	0.00	0.0	704	19772	3.40	105.31	64.1	898	0.39	21.8	7.947	12.446	6.57		<1	<1
W3A	-8.53	12/11/91	928				2.55	79	62.3	873	0.00	0.0	602	16907	2.58	79.91	64.8	908	0.51	21.9	7.942	13.513	6.25		<1	<1
W3A	-8.53	1/29/92	919				2.76	85	67.3	943	0.00	0.0	627	17610	2.83	87.66	68.6	961	0.97	22.0	7.976	11.705	6.88		<1	<1
W3A	-8.53	2/19/92	949				2.81	87	69.4	972	0.00	0.0	592	16627	2.80	86.73	75.2	1053	0.42	22.1	7.993	10.893	7.11		<1	<1
W3A	-8.53	3/17/92	900				2.83	88	70.4	986	0.00	0.0	662	18593	2.92	90.44	73.9	1035	1.00	21.9	7.997	10.493	7.30		<1	<1
W3A	-8.53	4/8/92	849				2.80	87	66.1	926	0.04	0.6	613	17216	2.91	90.13	70.0	980	0.61	22.0	7.965	11.812	7.79		<1	<1
W3A	-8.53	5/6/92	901				2.77	86	66.5	931	0.00	0.0	661	18565	2.88	89.20	69.1	968	0.72	21.9	7.959	11.682	6.97		<1	<1
W3A	-8.53	6/23/92	901				2.66	82	62.0	868	0.12	1.7	646	18143	2.66	82.39	64.4	902	0.99	21.8	7.933	13.270	6.60		<1	<1
W3A	-8.53	7/29/92	847				2.75	85	67.3	943	ND	0.0	674	18930	2.81	87.04	69.2	970	0.77	21.9	7.959	10.665	7.24		<1	<1
W3A	-8.53	8/26/92	835				3.16	98	83.6	1171	0.00	0.0	704	19772	3.18	98.50	86.1	1206	0.70	22.0	7.983	9.796	7.40		<1	<1
W3A	-8.53	9/22/92	832				2.77	86	68.0	952	0.00	0.0	675	18958	2.85	88.28	69.6	974	0.47	21.9	7.961	11.938	6.75		<1	<1
W3A	-8.53	10/27/92	855				2.83	88	62.7	879	0.00	0.0	644	18087	2.91	90.13	64.8	908	0.66	21.9	7.938	13.749	6.33		<1	<1
W3A	-8.53	11/17/92	910				2.61	81	64.4	901	0.08	1.1	633	17778	2.72	84.25	69.4	972	0.61	21.9	7.945	13.698	6.33		<1	<1
W3A	-8.53	12/8/92	853				2.88	89	72.5	1015	0.05	0.7	675	18958	2.88	89.20	74.1	1038	0.67	22.0	7.979	11.114	7.03		<1	<1
W3A	-8.53	1/26/93	908				2.69	83	67.4	944	0.16	2.2	662	18604	2.80	86.73	74.7	1046	0.46	22.0	7.987	11.772	6.82		<1	<1
W3A	-8.53	2/23/93	840				2.80	87	70.5	988	0.00	0.0	671	18854	2.84	87.97	77.4	1083	0.88	21.8	7.987	12.087	6.77		<1	<1
W3A	-8.53	3/16/93	840				2.81	87	68.7	962	0.07	1.0	675	18955	2.82	87.35	72.9	1021	0.66	21.8	7.979	12.026	6.78		<1	<1
W3A	-8.53	4/27/93	844				2.74	85	67.6	947	0.13	1.8	670	18826	2.81	87.04	70.8	991	0.44	21.9	7.957	12.768	6.61		<1	<1
W3A	-8.53	5/25/93	836				2.75	85	68.1	954	0.00	0.0	674	18930	2.74	84.87	74.0	1037	0.39	21.9	7.956	12.352	6.67		<1	<1
W3A	-8.53	6/28/93	915				2.65	82	65.3	915	0.02	0.3	653	18340	2.84	87.97	68.8	964	0.46	21.9	7.939	13.252	6.45		<1	<1
W3A	-8.53	8/9/93	825				2.76	85	69.4	973	0.00	0.0	611	17160	2.78	86.11	71.8	1005	0.61	21.9	7.977	12.030	6.80		<1	<1
W3A	-8.53	WELL SET RELOCATED																								
W3A	-8.53	6/21/94	835				3.67	114	84.5	1184	0.27	3.8	675	18957	3.68	113.98	103	1446	0.60	21.9	7.987	8.374	7.79		<1	<1

NELHA Water Quality Laboratory

Well 3A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W3A	-8.53	8/23/94	902				3.56	110	86.5	1212	0.31	4.3	950	26677	3.57	110.58	95.0	1331	0.50	22.1	7.986	8.498	7.76		<1	<1
W3A	-8.53	10/25/94	923				3.57	111	81.9	1147	0.26	3.6	665	18671	3.58	110.89	85.3	1194	0.43	21.8	8.006	8.403	7.69		<1	<1
W3A	-8.53	11/28/94	1310				3.50	108	83.5	1169	0.23	3.2	663	18630	3.52	109.03		0		22.3		8.777			<1	<1
W3A	-8.53	12/13/94	939				3.46	107	85.4	1196	0.00	0.0	711	19963	3.49	108.10		0		22.2		8.390				
W3A	-8.53	1/24/95	918				3.49	108	83.4	1167	0.23	3.2	660	18522	3.55	109.96	87.6	1226	0.41	22.0	8.027	8.773	7.57		<1	<1
W3A	-8.53	2/14/95	901				3.38	105	83.1	1165	0.16	2.2	665	18680	3.42	105.93	84.6	1185	0.45	22.1	8.023	8.899	7.56		<1	<1
W3A	-8.53	3/14/95	949				3.44	107	83.0	1163	0.08	1.1	668	18750	3.46	107.17	85.0	1191	0.60	22.0	8.014	8.267	7.87		<1	<1
W3A	-8.53	4/25/95	1018				3.41	106	84.0	1177	0.27	3.8	702	19716	3.46	107.17	86.8	1216	0.41	21.8	8.034	8.115	7.76		<1	<1
W3A	-8.53	5/9/95	907				3.28	102	84.3	1180	0.12	1.7	704	19767	3.37	104.38	88.9	1246	0.46	21.9	8.003	7.917	7.83		<1	<1
W3A	-8.53	6/27/95	920				3.39	105	84.4	1183	0.40	5.6	674	18918	3.54	109.65	86.8	1216	0.47	22.0	8.017	8.126	7.87		1	<1
W3A	-8.53	7/25/95	935				3.25	101	84.4	1182	0.01	0.1	688	19334	3.45	106.86	87.8	1230	0.51	22.1	7.999	8.153	6.85		<1	<1
W3A	-8.53	8/22/95	1024				3.29	102	82.4	1155	0.32	4.5	682	19140	3.45	106.86	85.5	1198	0.51	22.3	7.994	8.310	7.62		<1	1
W3A	-8.53	9/12/95	805				3.46	107	83.6	1172	0.36	5.0	679	19059	3.49	108.10	86.6	1213	0.47	22.2	8.046	8.408	7.60		<1	<1
W3A	-8.53	10/17/95	938				3.45	107	81.3	1138	0.14	2.0	685	19233	3.46	107.17	83.6	1170	0.61	22.3	8.033	8.571	7.49		<1	<1
W3A	-8.53	11/7/95	900				3.40	105	83.6	1171	0.22	3.1	669	18802	3.45	106.86	87.4	1224	0.60	22.2	8.051	8.562	7.56		<1	<1
W3A	-8.53	12/6/95	910				3.36	104	83.1	1164	0.11	1.5	675	18958	3.39	105.00	85.3	1194	0.63	22.4	8.068	8.546	7.53		<1	<1
W3A	-8.53	6/17/96	944				3.31	103	85.3	1195	0.04	0.6	682	19149	3.33	103.14	87.6	1226	0.54	22.2	8.085	8.527	7.57		<1	<1
W3A	-8.53	2/27/96	954				3.30	102	81.9	1148	0.10	1.4	676	18989	3.31	102.52	84.7	1187	0.46	22.4	8.043	8.167	7.69		<1	<1
W3A	-8.53	3/13/96	1025				3.15	98	78.2	1095	0.15	2.1	656	18431	3.26	100.97	81.8	1145	0.54	22.6	8.022	7.649	7.81		<1	<1
W3A	-8.53	4/2/96	838				3.26	101	80.3	1125	0.09	1.3	659	18519	3.35	103.76	86.3	1209	0.52	22.4	8.028	8.037	7.70		<1	<1
W3A	-8.53	5/15/96	952				3.35	104	82.7	1159	0.13	1.8	663	18626	3.39	105.00	86.6	1213	0.57	22.9	7.986	8.319	7.59		<1	<1
W3A	-8.53	6/18/96	936				3.34	103	83.7	1172	0.07	1.0	703	19744	3.40	105.31	87.6	1226	0.53	22.4	8.018	8.439	7.57		<1	<1
W3A	-8.53	7/17/96	1008				3.36	104	86.0	1205	0.17	2.4	709	19916	3.38	104.69	89.2	1249	0.61	22.6	8.031	8.156	7.70		<1	<1
W3A	-8.53	8/6/96	1019				3.31	103	86.6	1214	0.17	2.4	674	18920	3.34	103.45	91.1	1276	0.60	22.6	8.013	8.308	7.70		2	<1
W3A	-8.53	9/4/96	1013				3.37	104	88.0	1232	0.22	3.1	702	19722	3.41	105.62	91.0	1275	0.56	22.9	8.017	8.248	7.71		<1	1
W3A	-8.53	10/9/96	1017				3.35	104	90.4	1266	0.21	2.9	671	18852	3.42	105.93	93.4	1308	0.56	22.9	8.031	7.602	8.04		<1	<1
W3A	-8.53	11/6/96	1005				3.35	104	90.0	1261	0.20	2.8	694	19489	3.52	109.03	96.9	1357	0.71	23.0	7.994	7.808	7.84		<1	<1
W3A	-8.53	12/17/96	1002				3.23	100	85	1186	0.22	3.1	657	18451	3.30	102.21	89.9	1260	0.43	22.8	8.008	8.359	7.64		<1	1
W3A	-8.53	1/14/97	1018				2.84	88	75	1052	0.06	0.8	630	17691	2.96	91.68	78.7	1102	0.59	23.0	8.042	6.982	7.76		<1	<1
W3A	-8.53	2/10/97	1117				3.10	96	79	1105	0.20	2.8	645	18121	3.17	98.19	80.4	1126	0.55	23.2	8.020	7.124	7.81		<1	<1
W3A	-8.53	3/10/97	1143				3.06	95	83	1162	0.11	1.5	675	18958	3.18	98.50	84.1	1178	0.54	23.1	8.032	7.357	7.79		<1	<1
W3A	-8.53	4/23/97	1006				3.31	103	81	1138	0.22	3.1	558	15663	3.35	103.76	95.3	1335	0.62	22.5	8.037	7.461	7.44		<1	<1
W3A	-8.53	5/28/97	846				3.33	103	90	1263	0.05	0.7	587	16486	3.48	107.79	100	1402	0.62	22.1	8.049	7.514	7.62		<1	<1
W3A	-8.53	6/17/97	945				3.25	101	84	1175	0.19	2.7	619	17393	3.32	102.83	87.5	1226	0.62	21.8	8.047	7.480	7.65		<1	<1
W3A	-8.53	7/15/97	936				3.39	105	94	1311	0.08	1.1	665	18680	3.45	106.86	99.7	1396	0.54	22.0	8.038	7.279	7.70		<1	<1
W3A	-8.53	8/26/97	950				3.24	100	91	1270	0.29	4.1	680	19095	3.26	100.97	93.6	1311	0.53	22.1	8.098	7.511	7.61		<1	<1
W3A	-8.53	9/23/97	1212				3.29	102	89	1240	0.23	3.2	662	18587	3.33	103.14	90.2	1263	0.52	23.7	8.123	7.937	7.49		<1	<1
W3A	-8.53	10/15/97	913				3.26	101	91.2	1277	0.02	0.3	660	18536	3.38	104.69	100	1406	0.55	22.6	8.140	7.254	7.63		<1	<1
W3A	-8.53	11/4/97	1030				3.24	100	92.8	1300	0.07	1.0	662	18595	3.39	105.00	111	1548	0.50	22.6	8.147	7.873	7.50		<1	<1
W3A	-8.53	12/16/97	946				3.30	102	84.8	1188	0.05	0.7	658	18489	3.46	107.17	94.3	1321	0.48	22.5	8.132	8.296	7.54		<1	<1
W3A	-8.53	1/5/98	1225				3.34	103	86.4	1211	0.18	2.5	661	18554	3.37	104.38	89.9	1259	0.50	22.6	8.152	8.106	7.63		<1	<1
W3A	-8.53	2/3/98	1043				3.25	101	83.5	1170	0.04	0.6	673	18902	3.42	105.93	88.7	1242	0.52	22.5	8.132	8.198	7.59		<1	<1
W3A	-8.53	3/10/98	1059				3.45	107	85	1188	0.06	0.8	663	18618	3.54	109.65	89.2	1249	0.56	22.5	7.996	8.252	7.66		<1	<1
W3A	-8.53	4/14/98	925				3.43	106	84	1170	0.02	0.3	672	18859	3.52	109.03	86.3	1209	0.54	22.2	8.011	8.177	7.70		<1	<1
W3A	-8.53	5/12/98	1050				3.47	107	85.3	1195	0.25	3.5	668	18764	3.53	109.34	89.1	1248	0.55	22.3	8.010	8.458	7.64		<1	<1
W3A	-8.53	6/2/98	1043				3.39	105	83	1167	0.04	0.6	660	18549	3.56	110.27	86	1203	0.66	22.1	8.007	8.847	7.64		<1	<1
W3A	-8.53	7/14/98	1053				3.42	106	80.7	1130	0.16	2.2	666	18694	3.55	109.96	82.2	1151	0.56	22.2	7.993	8.717	7.48		<1	1
W3A	-8.53	8/11/98	1112				3.48	108	85.1	1192	0.07	1.0	674	18916	3.66	113.36	89	1248	0.52	22.1	7.986	8.477	7.84		<1	<1
W3A	-8.53	9/15/98	1146				3.42	106	82.3	1152	0.15	2.1	666	18713	3.60	111.51	84	1181	0.52	22.1	7.974	8.897	7.70		<1	<1
W3A	-8.53	10/13/98	1020				3.38	105	84.7	1186	0.02	0.3	726	20390	3.49	108.10	92.3	1293	0.44	22.5	7.989	8.521	8.28		<1	<1
W3A	-8.53	11/4/98	1053				3.35	104	84.1	1178	0.06	0.8	715	20076	3.46	107.17	89.7	1256	0.48	22.4	8.002	8.299	7.68		<1	<1
W3A	-8.53	12/16/98	1033				3.38	105	82	1151	0.15	2.1	672	18865	3.47	107.48	87	1217	0.45	22.4	7.993	8.779	7.56		<1	<1
W3A	-8.53	1/12/99	1108				3.34	103	81	1137	0.13	1.8	668	18770	3.49	108.10	86	1202	0.46	22.5	7.992	8.790	7.69		<1	<1
W3A	-8.53	2/3/99	1056				3.26	101	82.3	1152	0.17	2.4	669	18792	3.37	104.38	88.2	1235	0.45	22.3	7.985	9.102	7.65		<1	<1
W3A	-8.53	3/2/99	1104				3.33	103	77.6	1087	0.16	2.2	661	18559	3.41	105.62	80.6	1129	0.43	22.2	7.982	9.188	8.34		<1	<1
W3A	-8.53	4/6/99	1054				3.26	101	82.5	1156	0.08	1.1	677	19000	3.37	104.38	86.7	1214	0.59	22.2	7.999	8.570	7.88		<1	<1
W3A	-8.53	5/4/99	1059				3.15	98	76.2	1067	0.28	3.9	662	18598	3.40	105.31	78.3	1097	0.55	22.1	7.985	8.956	7.65		<1	<1
W3A	-8.53	6/2/99	1043				3.30	102	83.0	1163	0.70	9.8	728	20446	3.48	107.79	90.7	1270	0.51	22.1	7.995	8.570	7.83		<1	<1

NELHA Water Quality Laboratory

Well 3A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W3A	-8.53	7/7/99	1116				3.33	103	77.5	1086	0.09	1.3	677	19014	3.44	106.55	81.6	1143	0.47	22.4	7.980	8.918	7.67		<1	<1
W3A	-8.53	8/25/99	1049				3.27	101	84.6	1185	0.09	1.3	682	19157	3.38	104.69	91.3	1279	0.50	22.5	8.039	8.401	7.86		<1	<1
W3A	-8.53	9/8/99	1052				3.24	100	85.2	1193	0.07	1.0	687	19292	3.41	105.62	96.2	1347	0.49	22.2	8.063	8.486	7.78		<1	<1
W3A	-8.53	10/6/99	1057				3.41	106	83.5	1169	0.23	3.2	650	18247	3.51	108.72	87.3	1223	0.49	22.4	8.044	8.313	7.73		<1	<1
W3A	-8.53	11/3/99	1111				3.27	101	80.1	1122	1.39	19.5	676	18975	3.32	102.83	86.2	1207	0.54	22.5	8.046	8.832	7.51		<1	<1
W3A	-8.53	12/15/99	1128				3.32	103	80.1	1122	1.03	14.4	680	19084	3.43	106.24	85.3	1195	0.53	22.5	8.001	8.513	7.46		<1	<1
W3A	-8.53	1/11/00	1103				3.25	101	82.6	1157	0.65	9.1	669	18795	3.27	101.28	91.3	1279	0.56	22.4	7.998	9.086	7.43		<1	<1
W3A	-8.53	2/14/00	1120				3.30	102	81.7	1144	0.84	11.8	650	18242	3.32	102.83	91.3	1279	0.55	22.3	8.024	8.972	7.52		<1	<1
W3A	-8.53	3/22/00	1130				3.16	98	81.7	1144	0.83	11.6	675	18961	3.05	94.47	87.7	1228	0.57	22.1	8.035	8.844	7.56		<1	<1
W3A	-8.53	4/12/00	1113				3.36	104	82.7	1158	0.28	3.9	672	18873	3.27	101.28	89.1	1248	0.62	22.2	8.030	9.017	7.49		<1	<1
W3A	-8.53	5/17/00	1050				3.31	103	83.4	1168	0.89	12.5	675	18961	3.35	103.76	87.1	1220	0.59	22.2	8.035	8.630	7.75		1	<1
W3A	-8.53	6/6/00	1128				3.26	101	82.3	1153	0.26	3.6	673	18887	3.34	103.45	91.4	1280	0.61	22.1	8.028	8.879	7.68		<1	<1
W3A	-8.53	7/31/00	1117				3.26	101	77.0	1079	0.44	6.2	665	18688	3.26	100.97	82.5	1156	0.53	22.2	8.033	9.159	7.63		<1	<1
W3A	-8.53	8/30/00	1122				3.24	100	81.3	1139	0.57	8.0	670	18814	3.40	105.31	85.2	1193	0.87	22.4	8.006	8.776	7.77		<1	1
W3A	-8.53	9/6/00	1101				3.23	100	78.0	1093	1.05	14.7	661	18559	3.32	102.83	84.5	1184	0.66	22.5	7.988	9.513	7.81		<1	<1
W3A	-8.53	10/25/00	1038				3.33	103	82.1	1150	0.81	11.3	702	19716	3.39	105.00	85.3	1195	0.52	22.7	7.998	8.501	7.34		<1	36
W3A	-8.53	11/14/00	1052				3.04	94	76.4	1070	1.26	17.6	655	18390	3.19	98.81	83.2	1165	0.52	22.7	8.020	7.952	7.35		<1	5
W3A	-8.53	12/19/00	1043				3.18	98	78.5	1100	**1.72**	24.1	670	18820	3.32	102.83	85.4	1196	0.64	22.6	8.007	8.697	7.17		<1	1
W3A	-8.53	1/24/01	1037				3.14	97	82.1	1150	0.27	3.8	672	18882	3.52	109.03	84.3	1181	0.61	22.6	7.999	8.639	7.81		<1	<1
W3A	-8.53	2/7/01	1106				3.28	102	80.6	1129	0.07	1.0	676	18980	3.46	107.17	**82.6**	1157	0.73	22.5	8.013	8.775	7.15		<1	1
W3A	-8.53	3/12/01	1051				3.23	100	77.8	1090	0.62	8.7	664	18660	3.44	106.55	**83.4**	1169	0.48	22.6	7.971	8.920	7.11		<1	1
W3A	-8.53	4/18/01	1043				3.31	103	82.4	1154	0.49	6.9	679	19070	3.39	105.00	86.4	1210	0.53	22.5	7.970	8.726	7.67		<1	<1
W3A	-8.53	5/14/01	928				4.82	149	82.3	1152	0.75	10.5	685	19250	4.94	153.01	84.5	1183	0.52	22.4	7.984	8.803	7.72		<1	<1
W3A	-8.53	6/13/01	1100				3.58	111	82.9	1161	2.94	41.2	680	19090	3.56	110.27	85.7	1200	0.47	22.2	7.986	8.907	7.71		<1	<1
W3A	-8.53	7/25/01	1031				3.36	104	85.8	1202	0.03	0.4	677	19014	3.26	100.97	88.2	1236	0.53	22.2	7.982	8.795	7.69		<1	1
W3A	-8.53	8/20/01	1014				3.22	100	84.0	1176	0.42	5.9	687	19295	3.25	100.66	87.8	1230	0.61	22.5	7.997	8.670	7.62		<1	<1
W3A	-8.53	9/18/01	1052				3.34	103	87.8	1230	0.29	4.1	674	18930	3.30	102.21	90.0	1261	0.55	22.7	7.988	8.404	7.78		<1	<1
W3A	-8.53	10/9/01	1052				3.54	110	86.0	1205	0.38	5.3	737	20685	3.58	110.89	92.9	1301	0.55	22.7	7.974	9.159	7.51		<1	<1
W3A	-8.53	11/6/01	1010				3.24	100	90.4	1267	0.08	1.1	669	18795	3.37	104.38	103	1443	0.53	22.7	7.969	9.317	7.43		<1	<1
W3A	-8.53	12/18/01	1005				2.75	85	82.5	1156	0.06	0.8	668	18767	2.83	87.66	98.1	1374	0.49	22.8	7.976	8.754	7.52		<1	<1
W3A	-8.53	1/8/02	1019				3.20	99	84.3	1180	0.45	6.3	659	18517	3.31	102.52	86.7	1214	0.51	22.6	7.991	8.529	7.320		<1	<1
W3A	-8.53	2/27/02	1018				3.30	102	89.2	1250	0.08	1.1	684	19208	3.38	104.69	96.6	1353	0.47	22.5	7.997	8.676	7.240		<1	<1
W3A	-8.53	3/19/02	1025				3.20	99	82.3	1153	0.07	1.0	669	18786	3.28	101.59	83.7	1172	0.46	22.3	8.000	8.615	7.260		<1	<1
W3A	-8.53	4/9/02	1017				3.26	101	82.4	1155	0.05	0.7	665	18680	3.44	106.55	95.1	1332	0.52	22.4	7.980	7.994	7.350		<1	<1
W3A	-8.53	5/21/02	1020				3.20	99	82.6	1157	0.02	0.3	665	18677	3.30	102.21	85.1	1192	0.53	22.4	7.996	8.314	7.71		<1	<1
W3A	-8.53	6/18/02	1033				3.25	101	86.8	1215	0.13	1.8	665	18674	3.37	104.38	89.5	1254	0.50	22.6	7.989	8.830	7.57		<1	<1
W3A	-8.53	7/17/02	1011				3.30	102	89.3	1251	0.08	1.1	663	18623	3.36	104.07	80.9	1134	0.68	22.7	8.002	8.877	7.55		<1	1
W3A	-8.53	8/22/02	1035				3.34	103	84.5	1183	0.13	1.8	682	19154	3.52	109.03	84.3	1181	0.58	22.4	7.997	8.659	7.65		<1	5
W3A	-8.53	9/24/02	1049				3.22	100	97.4	1365	0.20	2.8	682	19143	3.42	105.93	81.4	1141	0.54	22.9	8.033	8.476	7.76		<1	2
W3A	-8.53	10/16/02	1044				3.19	99	94.9	1329	0.12	1.7	669	18789	3.15	97.57	77.6	1087	0.48	23.0	8.014	8.091	7.74		<1	<1
W3A	-8.53	11/6/02	1029				3.18	98	94.0	1317	1.02	14.3	664	18646	3.31	102.52	78.4	1099	0.65	22.7	7.988	8.360	7.71		<1	<1
W3A	-8.53	12/19/02	1117				3.25	101	89.8	1258	0.08	1.1	669	18795	3.31	102.52	80.2	1124	0.57	22.9	8.005	8.556	7.66		<1	1
W3A	-8.53	1/22/03	1107				3.18	98	80.5	1128	0.33	4.6	657	18438	3.30	102.21	87.2	1221	0.61	22.6	7.987	9.507	8.77		<1	<1
W3A	-8.53	2/20/03	1034				3.06	95	85.8	1202	0.04	0.6	665	18671	3.24	100.35	88.0	1233	0.49	22.6	8.008	8.902	7.68		<1	<1
W3A	-8.53	3/18/03	1020				3.26	101	87.5	1226	0.06	0.8	663	18623	3.33	103.14	98.7	1382	1.06	22.7	8.020	8.773	7.77		<1	<1
W3A	-8.53	4/29/03	1015				3.34	103	90.8	1271	0.54	7.6	681	19115	3.44	106.55	95.4	1336	0.42	22.6	8.048	8.325	7.84		<1	<1
W3A	-8.53	5/13/03	1042				3.33	103	85.9	1203	0.44	6.2	674	18935	3.49	108.10	88.3	1237	0.44	22.4	8.061	8.242	7.89		<1	<1
W3A	-8.53	6/5/03	1010				3.39	105	87.9	1231	0.36	5.0	666	18697	3.46	107.17	99.6	1394	0.45	22.7	8.065	8.482	7.80		<1	<1

NELHA Water Quality Laboratory

Well 3A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W3A	-8.53	7/31/03	1030				3.24	100	99.2	1389	0.45	6.3	672	18873	3.35	103.76	101	1419		22.4	8.020	8.650	8.01		<1	<1
W3A	-8.53	8/27/03	1059				3.30	102	94.3	1321	0.14	2.0	671	18857	3.50	108.41	112	1565		22.6	8.027	8.520	7.95		<1	<1
W3A	-8.53	9/17/03	1025				3.26	101	89.2	1249	0.49	6.9	652	18298	3.66	113.36	96.1	1346		NA	7.982	9.524	7.66		<1	<1
W3A	-8.53	10/7/03	1016				3.34	103	102	1423	0.99	13.9	673	18913	3.46	107.17	110	1539		23.1	8.009	8.252	NA		<1	<1
W3A	-8.53	11/4/03	957				3.30	102	99.5	1394	0.10	1.4	686	19278	3.40	105.31	102	1426		22.9	8.037	8.395			<1	<1
W3A	-8.53	11/14/03	1132																	23.0			7.57			
W3A	-8.53	12/16/03	954				3.19	99	89.6	1255	0.50	7.0	664	18646	3.28	101.59	92.2	1291		22.8	7.987	9.476	7.43		<1	<1
W3A	-8.53	1/27/04	1015				3.14	97	90.6	1270	**1.22**	17.1	654	18368	3.27	101.28	89.3	1251		22.9	8.038	8.421	7.50		<1	<1
W3A	-8.53	2/10/04	1012				3.08	95	86.8	1216	0.45	6.3	624	17514	3.08	95.40	90.1	1262		22.9	7.988	8.656	7.61		<1	<1
W3A	-8.53	3/15/04	1026				2.89	90	79.4	1112	0.09	1.3	632	17753	3.09	95.71	81.4	1140		22.7	8.063	6.741	7.31		<1	1
W3A	-8.53	4/21/04	927				3.06	95	89.8	1258	0.72	10.1	658	18475	3.07	95.09	92.3	1293		22.5	8.025	7.785	7.79		<1	<1
W3A	-8.53	5/12/04	922				3.00	93	91.8	1286	0.07	1.0	655	18382	3.14	97.26	94.9	1330		22.7	8.042	7.78	8.03		<1	<1
W3A	-8.53	6/7/04	957				3.18	98	87.2	1221	0.29	4.1	644	18098	3.34	103.45	103	1448		22.6	8.038	7.75	7.86		<1	<1
W3A	-8.53	7/8/04	1027				3.06	95	91.0	1275	0.20	2.8	663	18629	3.26	100.97	99.8	1397	0.41	22.8	8.096	8.13	7.67		<1	<1
W3A	-8.53	8/24/04	1010				3.06	95	93.2	1306	0.08	1.1	646	18146	3.08	95.40	96.9	1358		22.3	8.022	8.23	7.53		<1	<1
W3A	-8.53	9/28/04	1020				3.12	97	**104**	1461	0.20	2.8	668	18764	3.21	99.43	**112**	1563		22.8	8.016	7.84	7.69		<1	<1
W3A	-8.53	10/5/04	1109				3.10	96	99.8	1398	0.15	2.1	653	18351	3.18	98.50	**106**	1483		22.8	8.018	8.50	7.50		<1	<1
W3A	-8.53	11/8/04	951				3.16	98	91.9	1287	0.22	3.1	664	18635	3.36	104.07	99.4	1392		23.0	8.041	8.03	7.69		<1	<1
W3A	-8.53	12/7/04	1002				3.12	97	99.2	1389	0.24	3.4	662	18604	3.18	98.50	**114**	1602		22.9	8.065	7.97	7.58		<1	1
W3A	-8.53	1/11/05	950				3.02	94	87.3	1223	0.07	1.0	675	18963	3.08	95.40	90.0	1261		23.1	8.099	8.068	7.56		<1	<1
W3A	-8.53	2/8/05	1000				2.92	90	91.3	1278	0.09	1.3	642	18034	3.02	93.54	99.4	1392		22.9	8.101	7.239	7.73		<1	<1
W3A	-8.53	3/16/05	1040				3.02	94	99.5	1394	0.16	2.2	636	17860	3.22	99.74	**108**	1513	0.44	22.8	8.075	7.490	7.75		<1	<1
W3A	-8.53	4/18/05	1049				3.20	99	95.7	1340	0.16	2.2	671	18840	3.46	107.17	**102**	1434		23.0	8.075	7.696	7.22		<1	<1
W3A	-8.53	5/24/05	958				3.18	98	**105**	1471	0.21	2.9	665	18680	3.28	101.59	**109**	1523		23.0	8.011	8.105	7.66		<1	<1
W3A	-8.53	6/13/05	1019				3.20	99	92.5	1295	0.35	4.9	663	18621	3.46	107.17	97.8	1370		23.0	8.033	8.219	7.74		<1	<1
W3A	-8.53	7/11/05	1020				3.38	105	88.1	1234	0.17	2.4	665	18666	3.50	108.41	90.0	1260		22.6	8.038	7.833	7.74		<1	<1
W3A	-8.53	8/10/05	935				3.26	101	86.1	1206	0.18	2.5	662	18590	3.28	101.59	89.7	1257		23.1	8.045	8.094	7.60		<1	<1
W3A	-8.53	9/21/05	938				3.26	101	95.3	1335	0.07	1.0	662	18590	3.40	105.31	**107**	1504	0.43	23.0	8.039	8.392	7.61		<1	<1
W3A	-8.53	10/18/05	956				3.42	106	96.9	1357	0.18	2.5	659	18514	3.54	109.65	**113**	1582		23.1	8.027	8.219	7.58		<1	<1
W3A	-8.53	11/3/05	945				3.32	103	95.6	1340	0.16	2.2	674	18921	3.52	109.03	97.5	1366		22.9	8.035	8.622	7.48		<1	<1
W3A	-8.53	12/21/05	1035				3.14	97	81.5	1142	0.11	1.5	657	18444	3.26	100.97	89.6	1255	0.52	22.7	8.036	9.422	8.15		<1	<1
W3A	-8.53	1/24/06	932				3.28	102	94.4	1323	0.15	2.1	676	18994	3.44	106.55	95.7	1341		22.7	8.028	8.528	7.66		<1	<1
W3A	-8.53	2/15/06	941				3.25	101	91.5	1282	0.13	1.8	658	18483	3.36	104.07	94.1	1319	0.47	22.7	8.024	9.242	7.47		<1	<1
W3A	-8.53	3/21/06	923				3.25	101	93.4	1308	0.11	1.5	671	18845	3.46	107.17	95.9	1343	0.38	22.5	8.036	8.657	7.67		<1	<1
W3A	-8.53	4/26/06	938				3.45	107	90.9	1273	<0.05	0.0	660	18536	3.84	118.94	79.6	1116	0.45	22.2	8.03	8.441	7.65		<1	<1
W3A	-8.53	5/23/06	1016				3.04	94	89.6	1255	<0.05	0.0	668	18761	3.06	94.78	75.2	1054	0.55	22.4	8.025	8.753	7.66		<1	<1
W3A	-8.53	6/27/06	1020				3.39	105	92.6	1297	0.19	2.7	675	18958	3.78	117.08	89.4	1252	0.72	22.4	8.013	8.857	7.71		<1	<1
W3A	-8.53	7/18/06	1015				3.17	98	85.5	1198	0.16	2.2	655	18396	3.30	102.21	72.2	1011	0.57	22.8	7.998	9.158	7.99		<1	<1
W3A	-8.53	8/8/06	944				3.26	101	92.5	1296	0.15	2.1	662	18593	3.52	109.03	75.0	1051	0.40	22.5	7.995	8.596	7.99		<1	<1
W3A	-8.53	9/19/06	1041				3.27	101	89.5	1254	0.26	3.6	669	18789	3.42	105.93	83.1	1164	0.46	22.8	7.983	8.551	7.84		<1	<1
W3A	-8.53	10/24/06	1020				3.07	95	85.9	1203	0.33	4.6	662	18593	3.17	98.19	84.1	1179	0.56	22.7	8.029	8.877	7.94		<1	<1
W3A	-8.53	11/28/06	959				3.20	99	86.6	1213	0.20	2.8	649	18227	3.34	103.45	76.1	1066	0.43	22.7	8.000	8.093	7.67		<1	<1
W3A	-8.53	12/12/06	951				3.12	97	85.9	1203	0.15	2.1	649	18227	3.32	102.83	77.1	1080	0.46	22.8	7.989	9.120	7.69		<1	<1
W3A	-8.53	1/9/07	1019				3.23	100	86.4	1210	0.37	5.2	655	18396	3.34	103.45	91.8	1286	0.47	22.6	8.013	9.111	7.73		<1	<1
W3A	-8.53	2/22/07	1005				3.13	97	92.7	1298	0.33	4.6	669	18789	3.23	100.05	93.7	1313	0.45	22.8	7.994	8.994	7.77		<1	<1
W3A	-8.53	3/6/07	1030				3.12	97	93.3	1307	0.19	2.7	661	18565	3.24	100.35	92.9	1301	0.46	22.9	8.029	8.682	7.84		<1	<1
W3A	-8.53	4/11/07	1152				3.30	102	87.9	1231	0.13	1.8	664	18649	3.38	104.69	80.7	1131	0.40	23.0	8.032	8.629	7.57		<1	<1
W3A	-8.53	5/3/07	1005				3.28	102	92.4	1294	0.23	3.2	678	19042	3.44	106.55	85.6	1199	0.46	22.7	8.048	8.567	7.60		<1	<1
W3A	-8.53	6/19/07	940				3.22	100	91.6	1283	0.16	2.2	663	18621	3.41	105.62	72.9	1021	0.33	22.8	8.053	8.846	8.06		<1	<1

NELHA Water Quality Laboratory

Well 3A Data Table

June 1989 - December 2014

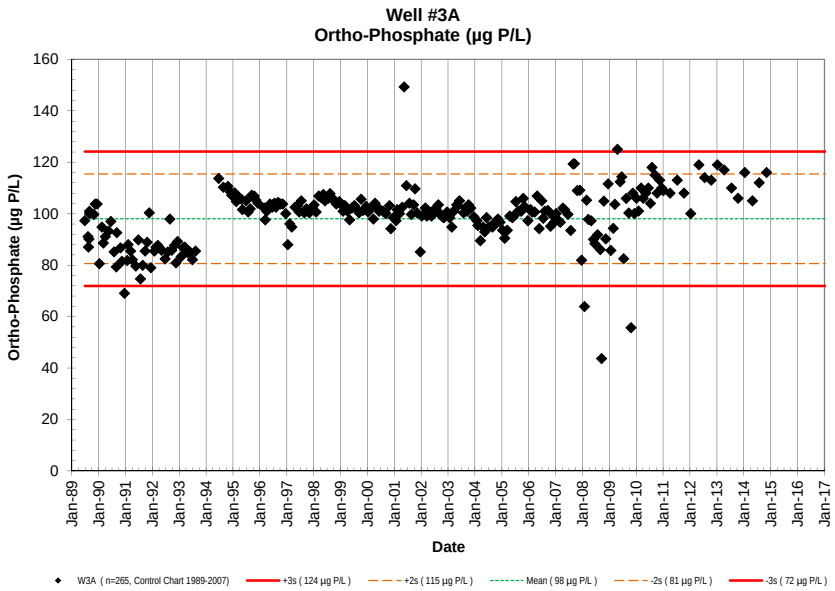
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W3A	-8.53	7/26/07	1050	-5.89	0.37	Flood	3.02	94	98.7	1382	0.04	0.5	653	18340	3.31	102.4	94.6	1325		22.5	7.95	8.51	7.34			
W3A	-8.53	8/28/07	1031	-5.97	0.00	Low	3.85	119	107.3	1503	0.71	9.9	935	26257	3.71	114.8	103.8	1454		22.6	7.90	8.16	7.45			
W3A	-8.53	9/13/07	1228	-6.10	0.15	Low	3.86	119	100.5	1408	1.54	21.6	738	20736	4.17	129.3	95.9	1344		22.9	8.00	8.39	7.23			
W3A	-8.53	10/24/07	1152	-3.79	0.30	Flood	3.52	109	107.0	1499	0.56	7.9	655	18399	3.73	115.5	105.1	1472		23.1	7.98	8.26	7.04			
W3A	-8.53	11/26/07	1458	-3.91	0.09	Flood	3.52	109	100.0	1401	1.29	18.1	705	19808	3.58	111.0	105.6	1479		22.8	7.98	8.63	7.00			
W3A	-8.53	12/20/07	1129	-5.94	0.23	High	2.64	82	82.2	1152	0.56	7.8	463	13012						22.5	8.08	6.75	7.36			
W3A	-8.53	1/28/08	1455	-5.41	0.06	Low	2.06	64	46.7	654	1.46	20.4	330	9264						23.0	7.89	8.15	6.55			
W3A	-8.53	2/27/08	1221	-5.33	0.06	Low	3.40	105	97.8	1369	0.84	11.7	633	17778						22.8	7.89	8.32	7.45			
W3A	-8.53	3/20/08	1231	-6.02	0.12	Flood	3.16	98	100.6	1410	0.84	11.8	480	13482						22.8	7.96	8.26	6.93			
W3A	-8.53	4/28/08	1203	-5.92	0.18	High	3.14	97	101.6	1424	0.19	2.6	644	18096						22.7	7.95	8.22	6.74			
W3A	-8.53	5/29/08	1023		0.30	Flood	2.91	90	102.0	1429	0.16	2.3	640	17981						23.1	7.96	8.19	7.18			
W3A	-8.53	6/19/08	1101	-5.31	0.21	Ebb	2.85	88	98.9	1386	0.68	9.5	656	18413						23.0	7.85	8.35	6.96	5.19		
W3A	-8.53	7/24/08	1022	-5.61	0.46	Ebb	2.96	92	124.2	1740	0.56	7.8	654	18356						22.8	7.88	8.14	7.45			
W3A	-8.53	8/30/08	1059		0.06	Flood	2.78	86	98.3	1377	0.42	5.9	620	17425						22.7	7.97	8.45	7.36			
W3A	-8.53	9/18/08	949	-5.53	0.34	Ebb	1.41	44	39.9	560	1.11	15.6	444	12459						23.4	7.89	8.23	6.76	3.34		
W3A	-8.53	10/18/08	910	-5.79	0.24	Ebb	3.39	105	104.2	1459	0.99	13.8	632	17744						24.1	7.72	8.06	7.25	11.7		
W3A	-8.53	11/13/08	952	-5.76	0.15	Ebb	2.91	90	97.7	1368	0.20	2.8	536	15063						24.8	7.97	8.13	7.57	8.41		
W3A	-8.53	12/15/08	1037	-5.66	0.37	Ebb	3.60	112	105.5	1478	0.11	1.5	628	17644						24.4	8.13	8.03	7.63			
W3A	-8.53	1/21/09	946	-5.93	0.12	Low	2.77	86	99.3	1390	0.30	4.2	591	16588						23.8	8.15	7.79	7.43	8.27		
W3A	-8.53	2/23/09	1528	-5.80	0.37	High	3.04	94	96.4	1351	1.25	17.5	613	17209						24.6	7.94	8.40	7.44	0.88		
W3A	-8.53	3/16/09	823	-5.88	0.18	High	3.34	104	86.6	1213	0.19	2.6	515	14478						23.6	7.97	8.75	7.44	3.14		
W3A	-8.53	4/20/09	1459	-5.75	0.40	Ebb	4.04	125	93.6	1311	0.89	12.5	513	14412						24.3	7.87	8.54	7.84	20.20		
W3A	-8.53	5/27/09	744	-5.86	0.15	High	3.63	112	92.8	1301	0.41	5.8	674	18919						22.4	8.05	8.69	6.84	0.49		
W3A	-8.53	6/18/09	1029	-5.79	0.37	Flood	3.69	114	95.3	1335	0.64	8.9	471	13221						22.6	8.05	8.10	8.23	0.21		
W3A	-8.53	7/14/09	836	-5.79	0.37	Flood	2.66	83	70.0	981	0.21	2.9	361	10147						22.5	8.11	8.65	7.29	0.10		
W3A	-8.53	8/19/09	857	-5.96	0.03	Low	3.42	106	101.3	1420	0.27	3.8	535	15040						22.9	7.94	7.97	7.53	0.34		
W3A	-8.53	9/22/09	912	-5.60	0.46	Ebb	3.24	100	98.5	1379	0.30	4.2	262	7366						23.3	8.27	8.59	7.75	0.12		
W3A	-8.53	10/22/09	1338	-5.94	0.18	Ebb	1.80	56	45.6	639	0.16	2.3	288	8096						23.3	8.09	8.64	7.74	0.24		
W3A	-8.53	11/16/09	1443	-5.93	0.21	High	3.49	108	99.3	1391	0.80	11.2	621	17441						23.3	8.05	8.81	7.19	0.08		
W3A	-8.53	12/7/09	1415	-5.97	0.09	Ebb	3.23	100	100.5	1407	0.30	4.2	614	17238						23.7	7.99	8.90	7.24	0.21		
W3A	-8.53	1/5/10	1132	-5.71	0.21	Ebb	3.42	106	92.6	1297	0.93	13.0	539	15146						23.4	8.05	9.00	7.82	0.50		
W3A	-8.53	2/1/10	1207	-5.89	-0.09	Low	3.26	101	102.4	1434	0.57	8.0	482	13541						23.4	8.08	8.63	7.41	0.92		
W3A	-8.53	3/9/10	1152	-5.94	0.15	High	3.55	110	95.3	1335	0.21	3.0	596	16740						22.7	8.04	8.75	7.49	0.60		
W3A	-8.53	4/6/10	1057	-5.95	0.15	High	3.42	106	94.2	1319	0.07	1.0	615	17270						22.4	8.04	8.95	8.03	0.32		
W3A	-8.53	5/11/10	1117	-5.93	0.21	Flood	3.49	108	83.2	1165	2.50	35.0	518	14562						22.9	8.06	8.15	8.06	0.35		
W3A	-8.53	6/15/10	1206	-6.08	0.06	Low	3.55	110	91.0	1275	0.43	6.0	630	17692						22.6	8.10	8.46	7.83	0.10		
W3A	-8.53	7/13/10	1118	-6.01	0.00	Low	3.36	104	93.5	1309	0.93	13.0	680	19110						22.6	8.04	8.66	7.59	0.32		
W3A	-8.53	8/3/10	1128	-5.54	0.55	High	3.81	118	98.7	1383	0.50	7.0	683	19188						22.7	8.10	8.10	7.64	0.25		
W3A	-8.53	9/14/10	1120	-5.52	0.52	Ebb	3.71	115	97.5	1366	0.44	6.2	718	20169						22.6	8.05	8.32	7.81	0.29		
W3A	-8.53	10/12/10	1132	-5.55	0.46	Ebb	3.49	108	95.5	1337	0.23	3.2	722	20287						22.8	8.06	8.46	8.06	17.70		
W3A	-8.53	11/16/10	1044	-5.69	0.34	Flood	3.65	113	103.3	1447	1.14	15.9	723	20300						22.8	8.03	8.03	7.97	0.11		
W3A	-8.53	12/14/10	1124	-5.67	0.34	Ebb	3.55	110	100.6	1409	0.36	5.0	686	19275						22.8	8.05	8.15	7.58	0.98		
W3A	-8.53	1/4/11	1113	-5.87	0.03	Low	3.52	109	97.0	1359	0.32	4.5	681	19134						22.8	8.00	8.12	7.6	0.16		
W3A	-8.53	4/5/11	1138	-6.01	-0.03	Low	3.49	108	92.0	1289	0.30	4.2	675	18961						22.8	8.04	7.98	6.71	0.82		
W3A	-8.53	7/12/11	1110	-5.93	0.30	Flood	3.65	113	95.0	1330	0.29	4.1	679	19074						22.7	8.02	8.59	7.36	0.13		
W3A	-8.53	10/11/11	1129	-5.88	0.15	Flood	3.49	108	93.7	1313	0.29	4.0	661	18572						23.0	7.97	8.19	7.84	0.20		
W3A	-8.53	1/10/12	1127	-5.95	0.03	Ebb	3.23	100	91.2	1278	0.51	7.2	641	18012						23.0	8.02	8.80	6.86	0.19		
W3A	-8.53	5/1/12	1142	-5.74	0.34	Flood	3.84	119	99.0	1387	0.24	3.4	721	20247						22.5	7.98	8.19	7.8	0.35		
W3A	-8.53	7/18/12	1038	-6.02	0.03	Flood	3.68	114	101.6	1423	0.62	8.7	657	18459						22.7	8.05	8.46	7.93	0.10		
W3A	-8.53	10/16/12	1122	-5.90	0.09	Low	3.65	113	98.9	1385	0.54	7.6	666	18706						22.8	7.95	8.53	7.54	4.41		
W3A	-8.53	1/8/13	1146	-6.03	0.18	Flood	3.84	119	101.5	1422	0.46	6.4	707	19861						23.0	7.93	8.50	7.41	0.19		
W3A	-8.53	4/9/13	1141	-6.03	0.00	Flood	3.78	117	92.2	1292	0.83	11.6	693	19469						22.5	8.02	8.91	6.46	8.80		
W3A	-8.53	7/17/13	1231	-5.68	0.61	High	3.55	110	97.5	1366	0.49	6.9	640	17983						22.9	7.92	8.52	6.65	0.06		
W3A	-8.53	10/15/13	1118	-5.80	0.37	Flood	3.42	106	96.9	1357	0.71	9.9	628	17645						23.5	7.95	8.57	7.65	2.45		
W3A	-8.53	1/15/14	1110	-5.92	0.03	Low	3.75	116	93.3	1307	0.49	6.9	628	17650						23.4	8.02	8.43	8.07	0.13		
W3A	-8.53	4/29/14	1210	-6.07	0.12	Flood	3.39	105	92.4	1294	0.56	7.8	646	18135						23.4	7.93	8.38	7.76	0.64		

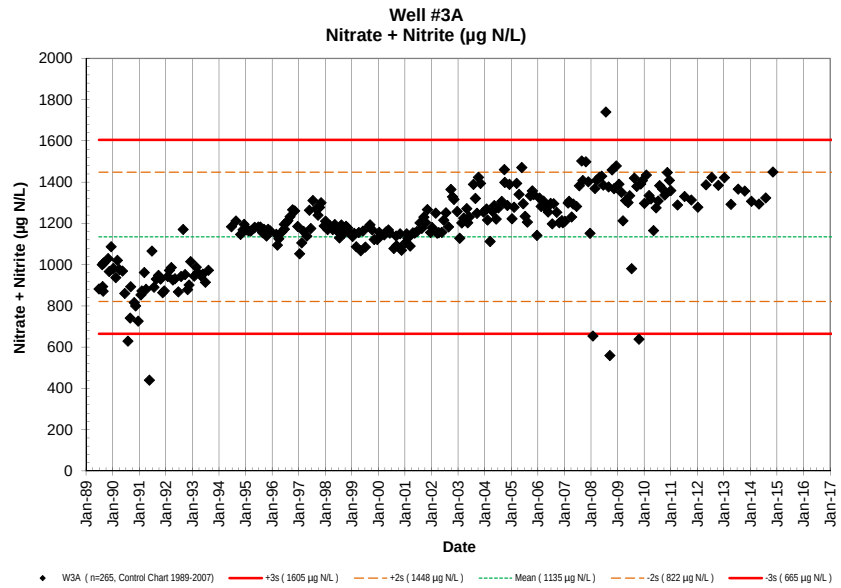
NELHA Water Quality Laboratory

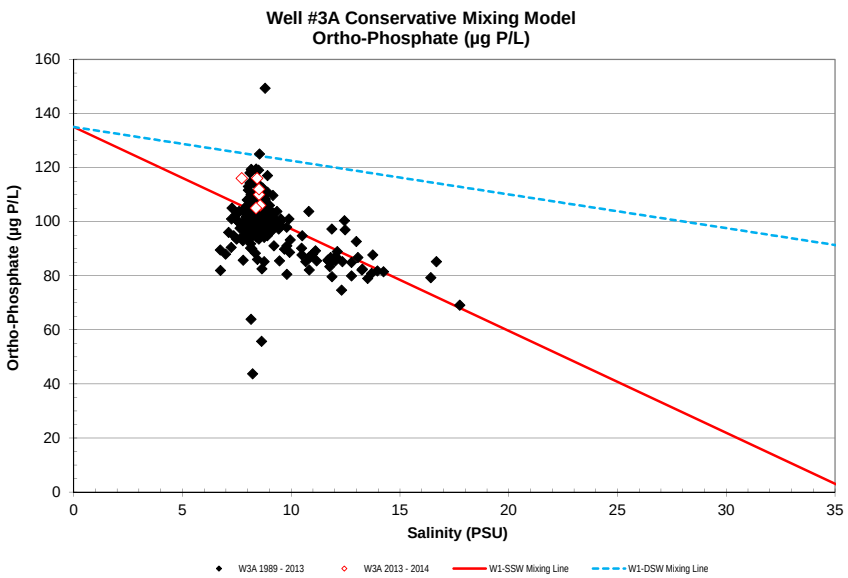
Well 3A Data Table

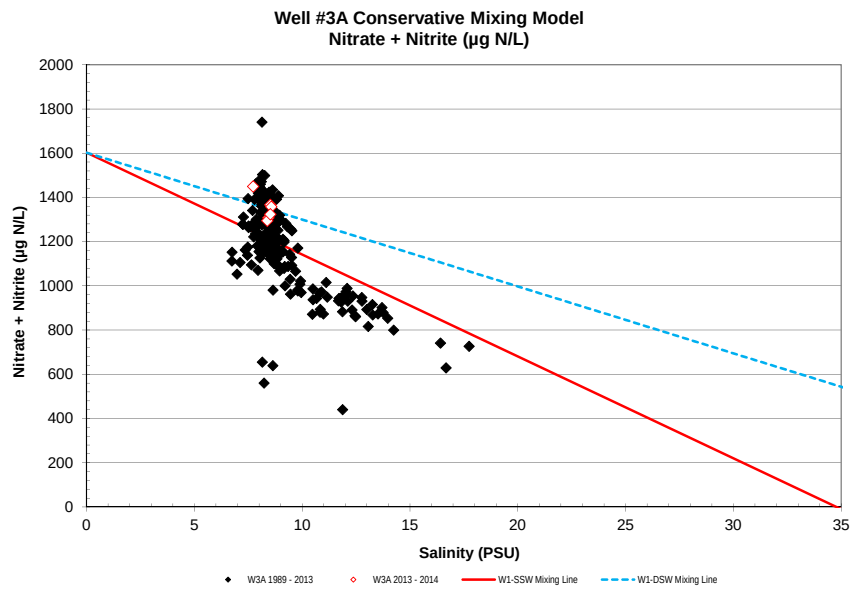
June 1989 - December 2014

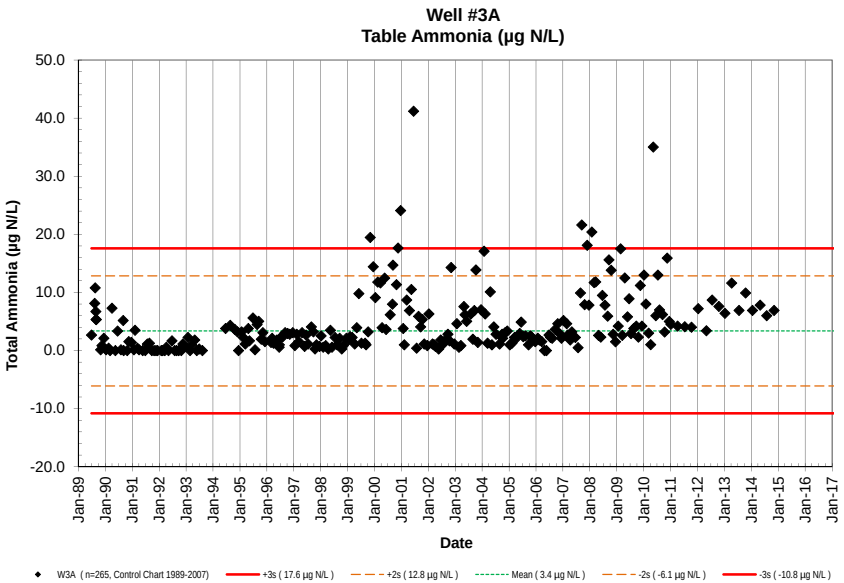
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W3A	-8.53	7/29/14	1150	-5.95	0.12	Low	3.62	112	94.5	1323	0.43	6.0	663	18610						23.2	7.90	8.52	7.76	9.48		
W3A	-8.53	11/5/14	1143	-5.77	0.17	Flood	3.75	116	103.5	1449	0.49	6.9	655	18398						23.6	8.03	7.73	8.20	0.15		
W3A	-8.53	1/1/15																								
W3A	-8.53	4/1/15																								

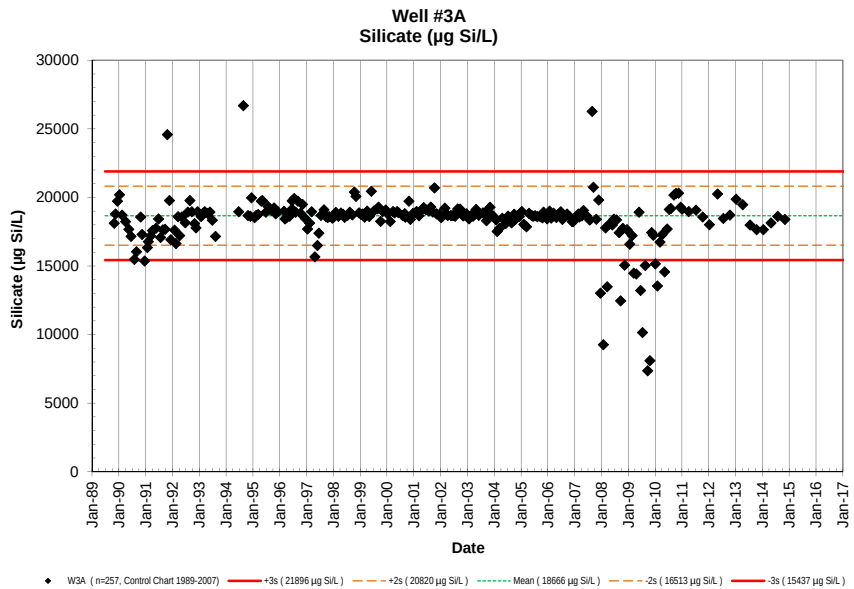

Well #3A
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W3A (n=265, Control Chart 1989-2007)
+3s (124 µg P/L)
+2s (115 µg P/L)
Mean (98 µg P/L)
-2s (81 µg P/L)
-3s (72 µg P/L)

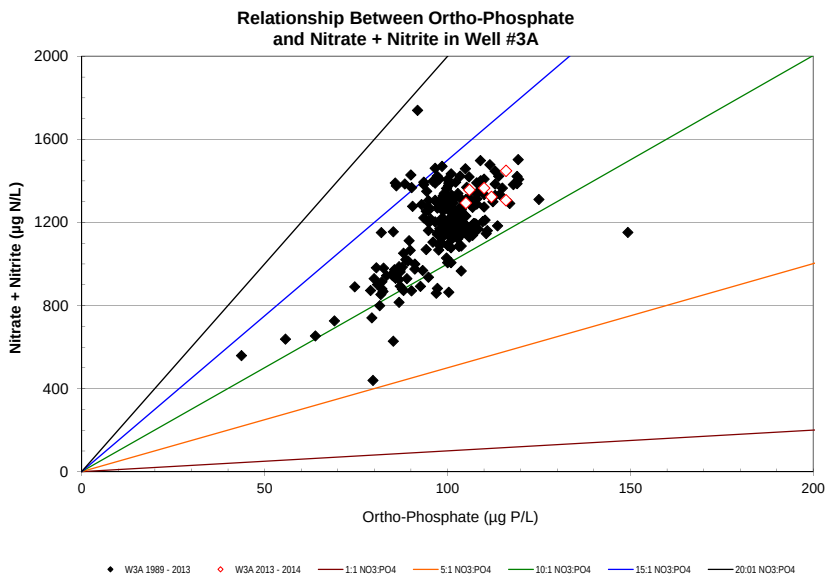

Well #3A
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W3A (n=265, Control Chart 1989-2007)
+3s (1605 µg N/L)
+2s (1448 µg N/L)
Mean (1135 µg N/L)
-2s (822 µg N/L)
-3s (665 µg N/L)

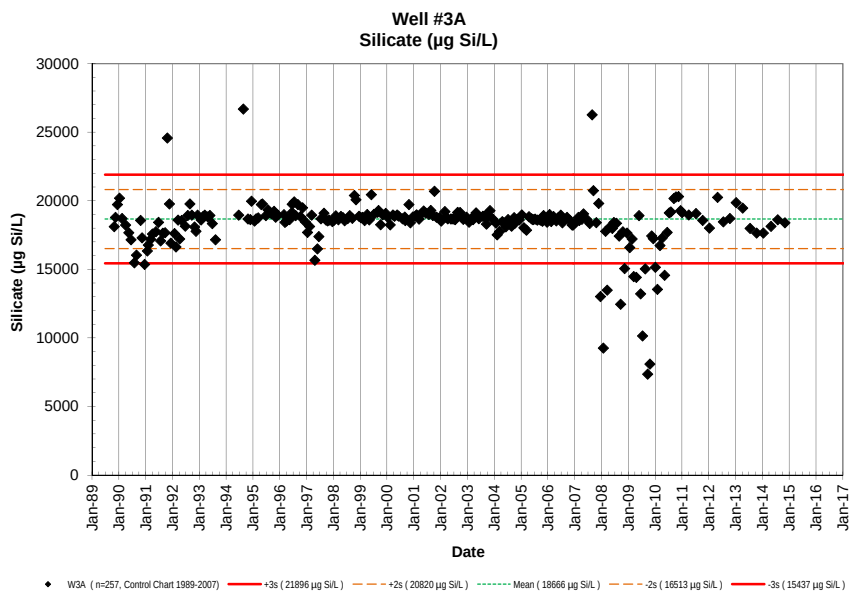

Well #3A Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W3A 1989 - 2013
W3A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

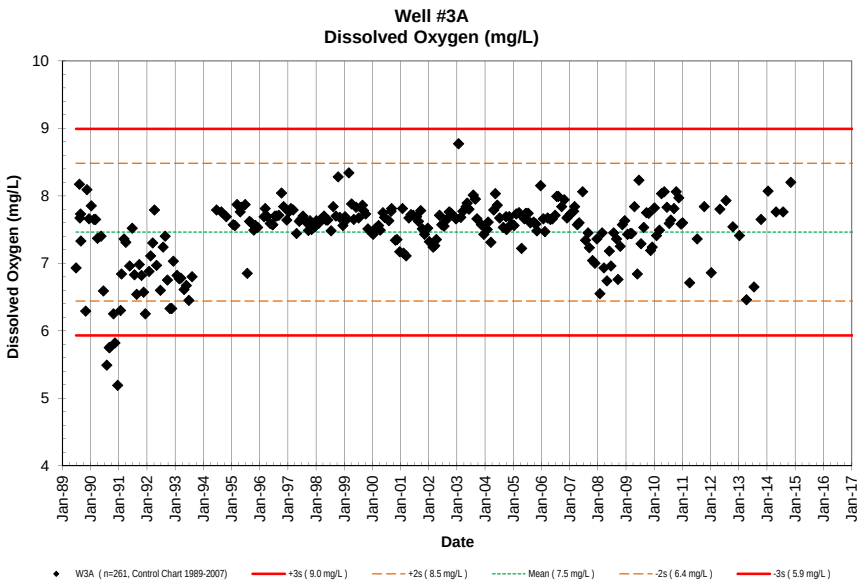

Well #3A Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W3A 1989 - 2013
W3A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

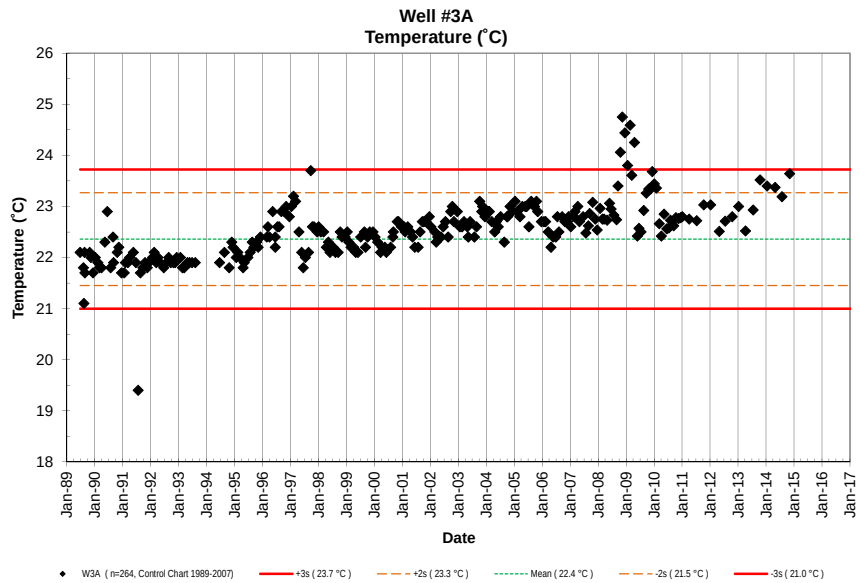

Well #3A
Table Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W3A (n=265, Control Chart 1989-2007)
+3s (17.6 µg N/L)
+2s (12.8 µg N/L)
Mean (3.4 µg N/L)
-2s (-6.1 µg N/L)
-3s (-10.8 µg N/L)

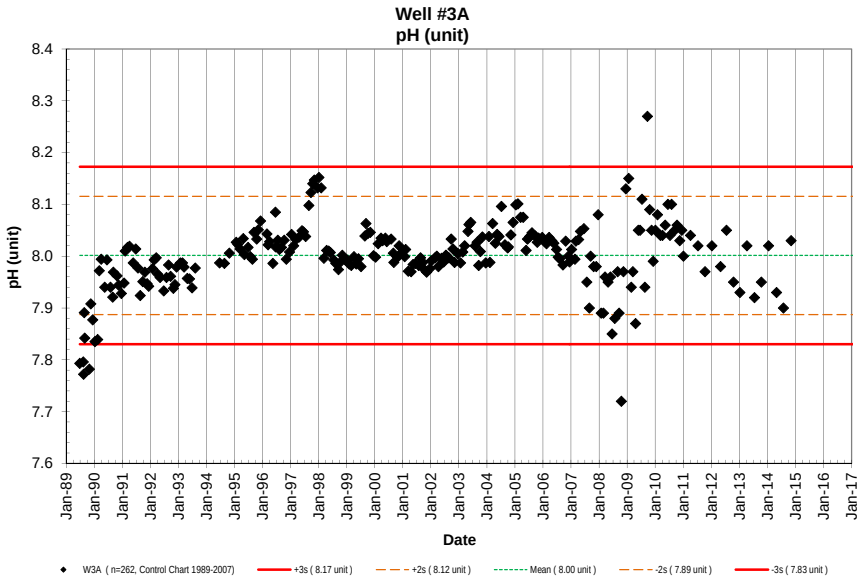

Well #3A
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W3A (n=257, Control Chart 1989-2007)
+3s (21896 µg Si/L)
+2s (20820 µg Si/L)
Mean (18666 µg Si/L)
-2s (16513 µg Si/L)
-3s (15437 µg Si/L)

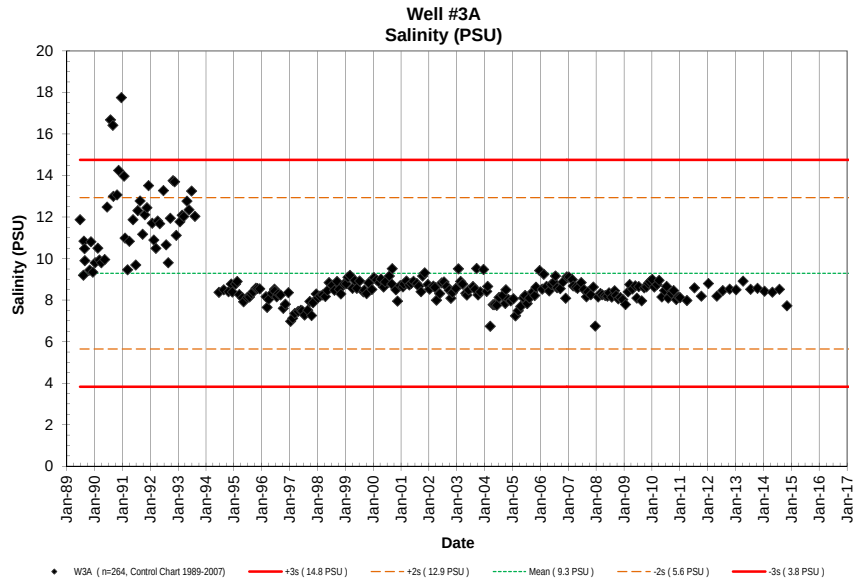

Relationship Between Ortho-Phosphate
and Nitrate + Nitrite in Well #3A
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W3A 1989 - 2013
W3A 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

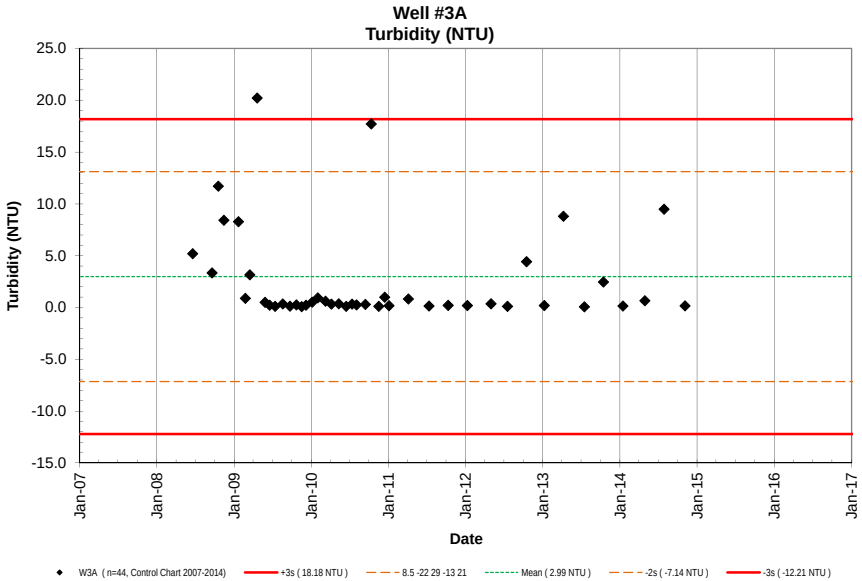

Well #3A
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W3A (n=257, Control Chart 1989-2007)
+3s (21896 µg Si/L)
+2s (20820 µg Si/L)
Mean (18666 µg Si/L)
-2s (16513 µg Si/L)
-3s (15437 µg Si/L)

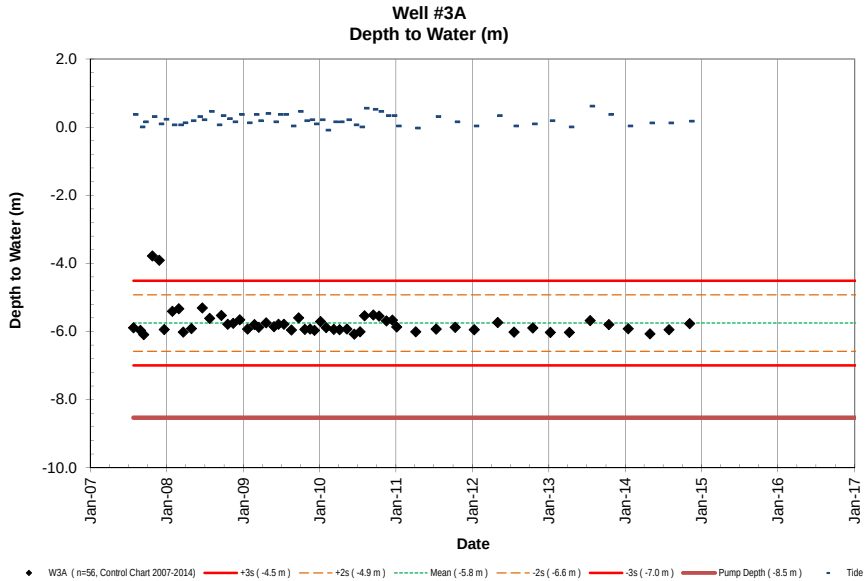

Well #3A
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W3A (n=261, Control Chart 1989-2007)
+3s (9.0 mg/L)
+2s (8.5 mg/L)
Mean (7.5 mg/L)
-2s (6.4 mg/L)
-3s (5.9 mg/L)


Well #3A
Temperature (˚C)
Temperature (˚C)
Date
W3A (n=264, Control Chart 1989-2007)
+3s (23.7 °C)
+2s (23.3 °C)
Mean (22.4 °C)
-2s (21.5 °C)
-3s (21.0 °C)


Well #3A
pH (unit)
pH (unit)
Date
W3A (n=262, Control Chart 1989-2007)
+3s (8.17 unit)
+2s (8.12 unit)
Mean (8.00 unit)
-2s (7.89 unit)
-3s (7.83 unit)


Well #3A
Salinity (PSU)
Salinity (PSU)
Date
W3A (n=264, Control Chart 1989-2007)
+3s (14.8 PSU)
+2s (12.9 PSU)
Mean (9.3 PSU)
-2s (5.6 PSU)
-3s (3.8 PSU)


Well #3A
Turbidity (NTU)
Turbidity (NTU)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W3A (n=44, Control Chart 2007-2014)
+3s (18.18 NTU)
8.5 -22 29 -13 21
Mean (2.99 NTU)
-2s (-7.14 NTU)
-3s (-12.21 NTU)


Well #3A
Depth to Water (m)
Depth to Water (m)
2.0
0.0
-2.0
-4.0
-6.0
-8.0
-10.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W3A (n=56, Control Chart 2007-2014)
+3s (-4.5 m)
+2s (-4.9 m)
Mean (-5.8 m)
-2s (-6.6 m)
-3s (-7.0 m)
Pump Depth (-8.5 m)
Tide

NELHA Water Quality Laboratory

Well 3B Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W3B	-7.32	6/27/89					3.35	104	70.9	993	0.13	2								22.9	7.845	8.049	7.95		NA	NA
W3B	-7.32	8/10/89	1405				3.40	105	77.8	1090	0.38	5								22.4	7.821	8.016	7.33		<1	NA
W3B	-7.32	8/16/89	1455				2.97	92	64.0	896	0.58	8								22.8	7.827	7.849	7.47		48	NA
W3B	-7.32	8/24/89	1140				3.33	103	72.2	1011	0.38	5								22.7	7.957	7.691	7.47		1	NA
W3B	-7.32	8/29/89	1055				3.44	107	88.3	1237	0.38	5									7.912		7.73		<1	NA
W3B	-7.32	8/29/89	1055				3.49	108	89.8	1258	0.38	5														NA
W3B	-7.32	10/30/89	1110				3.33	103	78.6	1101	0.01	0	674	18930	3.44	106.55	90.3	1265	0.37	22.6	7.820	7.998	7.37		<1	NA
W3B	-7.32	11/16/89	1025				3.46	107	78.2	1095	0.06	1	718	20165	3.81	118.01	85.1	1192	0.30	22.4	7.981	7.980	8.93		<1	NA
W3B	-7.32	12/12/89	1053				3.44	107	85.2	1193	0.01	0.1	737	20699	3.58	110.89	86.7	1214	1.18	22.4	7.943	8.522	7.95		<1	NA
W3B	-7.32	1/11/90	1119				2.67	83	71.7	1004	0.00	0.0	744	20896	2.83	87.66	74.5	1043	6.05	22.6	7.963	8.670	7.87		<1	NA
W3B	-7.32	2/14/90	1420				3.19	99	72.0	1008	0.00	0.0	701	19688	3.43	106.24	69.2	969	1.19	22.6	7.890	8.072	8.02		<1	NA
W3B	-7.32	3/7/90	1420				2.83	88	76.5	1072	0.03	0.4	645		3.04	94.16	77.5	1086	1.17	22.4	8.027	6.987	7.65		<1	NA
W3B	-7.32	4/2/90	1440				2.92	90	70.9	993	0.59	8.3	687	19295	3.00	92.92	73.4	1028	1.29	22.8	8.043	7.711	7.53		<1	NA
W3B	-7.32	5/17/90	1045				3.20	99	69.6	975	0.10	1.4	662	18593	3.17	98.19	79.0	1107	1.00	22.6	7.980	8.261	7.53		<1	NA
W3B	-7.32	6/16/90	953				3.47	107	72.8	1020	0.00	0.0	670	18817	3.47	107.48	76.4	1070	1.10	23.0	8.067	8.384	7.68		<1	NA
W3B	-7.32	7/31/90	1026				3.63	112	73.7	1032	0.01	0.1	684	19210	3.83	118.63	78.8	1104	1.22	23.8	8.075	8.277	7.77		<1	NA
W3B	-7.32	8/30/90	902				3.24	100	74.7	1046	0.19	2.7	681	19126	3.48	107.79	75.6	1059	0.98	22.9	8.050	8.556	7.49		<1	NA
W3B	-7.32	9/6/90	1031				3.35	104	75.5	1057	0.04	0.5			3.35	103.76	77.1	1079	0.34	23.2	8.053	8.570	7.49		<1	NA
W3B	-7.32	10/25/90	1027				3.40	105	73.6	1031	0.03	0.4	705	19800	3.89	120.49	73.7	1032	0.89	23.2	8.043	8.345	7.56		<1	NA
W3B	-7.32	11/14/90	1044				3.23	100	76.2	1067	0.08	1.1	765	21485	3.69	114.29	78.0	1093	0.14	23.1	8.047	8.306	7.61		<1	NA
W3B	-7.32	12/19/90	1030				3.13	97	76.3	1069	0.13	1.8	635	17834	3.54	109.65	77.1	1080	0.34	23.1	8.065	8.275	7.61		<1	NA
W3B	-7.32	1/24/91	835				3.10	96	75.8	1061	0.10	1.4	656	18424	3.16	97.88	76.9	1076	0.94	22.2	8.051	7.821	7.66		<1	NA
W3B	-7.32	2/7/91	855				2.92	90	62.0	868	0.57	8.0	574	16121	3.11	96.33	71.4	1000	0.61	22.8	8.157	6.661	7.61		<1	NA
W3B	-7.32	3/12/91	917				2.93	91	72.1	1010	0.06	0.8	631	17722	3.08	95.40	73.0	1022	0.75	22.2	8.047	8.152	7.73		<1	NA
W3B	-7.32	4/4/91	848				2.88	89	68.6	961	0.13	1.8	647	18171	2.92	90.44	69.9	979	0.72	22.1	8.061	8.390	7.58		<1	NA
W3B	-7.32	5/22/91	923				2.91	90	36.0	504	0.00	0.0	770	21626	3.06	94.78	37.6	527	0.51	22.3	8.053	8.322	7.57		<1	NA
W3B	-7.32	6/26/91	932				3.06	95	79.6	1115	0.00	0.0	683	19182	3.20	99.12	82.1	1150	0.50	22.4	8.036	8.679	7.68		<1	<1
W3B	-7.32	7/24/91	1002				2.59	80	56.1	786	0.00	0.0	670	18817	2.88	89.20	59.4	832	0.41	19.7	8.052	8.381	7.81		<1	<1
W3B	-7.32	8/23/91	857				3.02	94	83.3	1167	0.00	0.0	703	19744	3.04	94.16	88.3	1237	0.53	22.6	8.012	8.362	7.84		<1	<1
W3B	-7.32	9/24/91	851				3.07	95	77.3	1083	0.00	0.0	671	18845	3.13	96.95	80.5	1128	0.43	22.5	8.003	8.618	7.72		<1	<1
W3B	-7.32	10/23/91	857				3.04	94	77.4	1084	0.00	0.0	949	26653	3.13	96.95	80.0	1121	0.40	22.7	8.047	8.434	7.75		1	<1
W3B	-7.32	11/20/91	833				3.67	114	73.3	1027	0.00	0.0	792	22244	3.84	118.94	76.8	1076	0.42	22.8	8.042	8.311	7.89		<1	<1
W3B	-7.32	12/11/91	915				3.09	96	78.3	1097	0.00	0.0	684	19210	3.13	96.95	82.1	1150	0.59	22.8	8.048	8.317	7.85		<1	<1
W3B	-7.32	1/29/92	905				3.11	96	77.0	1079	0.00	0.0	671	18845	3.24	100.35	78.8	1104	0.90	22.7	8.049	8.544	7.85		<1	<1
W3B	-7.32	2/19/92	934				3.10	96	76.5	1072	0.00	0.0	630	17694	3.11	96.33	80.3	1125	0.40	22.7	8.059	8.482	7.93		<1	<1
W3B	-7.32	3/17/92	846				3.03	94	76.9	1077	0.00	0.0	686	19267	3.14	97.26	83.8	1174	0.52	22.4	8.060	8.380	8.06		<1	<1
W3B	-7.32	4/8/92	834				3.15	98	76.4	1070	0.00	0.0	669	18789	3.20	99.12	79.0	1107	0.46	22.5	8.049	8.327	8.04		<1	<1
W3B	-7.32	5/6/92	847				3.11	96	75.8	1062	0.00	0.0	724	20334	3.17	98.19	78.4	1098	0.63	22.4	8.037	8.448	7.97		<1	<1
W3B	-7.32	6/23/92	846				3.13	97	76.0	1065	0.07	1.0	731	20531	3.13	96.95	77.5	1086	0.85	22.5	8.034	8.538	8.09		<1	<1
W3B	-7.32	7/29/92	833				2.96	92	73.7	1033	ND	0.0	710	19941	3.03	93.85	73.6	1030	0.68	22.2	8.015	8.562	7.96		<1	<1
W3B	-7.32	8/26/92	821				3.31	103	87.8	1230	0.00	0.0	725	20362	3.31	102.52	90.9	1274	0.63	22.5	8.019	8.661	7.77		<1	<1
W3B	-7.32	9/22/92	818				3.17	98	79.5	1114	0.00	0.0	731	20531	3.19	98.81	84.3	1181	0.55	22.6	8.040	8.538	7.83		<1	<1
W3B	-7.32	10/27/92	841				3.40	105	80.2	1123	0.00	0.0	730	20502	3.43	106.24	83.9	1175	0.70	22.8	8.054	8.203	7.97		<1	<1
W3B	-7.32	11/17/92	858				3.16	98	81.9	1147	0.04	0.6	727	20418	3.29	101.90	87.9	1231	0.68	22.8	8.062	8.169	7.94		<1	<1
W3B	-7.32	12/8/92	840				3.17	98	81.1	1136	0.02	0.3	729	20474	3.45	106.86	84.1	1178	0.61	22.7	8.047	8.392	7.87		<1	<1
W3B	-7.32	1/26/93	855				3.06	95	76.1	1066	0.11	1.5	710	19927	3.07	95.09	83.6	1171	0.49	22.6	8.059	8.546	7.76		<1	<1
W3B	-7.32	2/23/93	827				3.01	93	80.9	1133	0.04	0.6	728	20455	3.03	93.85	88.1	1234	0.69	22.4	8.062	8.701	7.78		<1	<1
W3B	-7.32	3/16/93	827				3.13	97	78.8	1104	0.00	0.0	726	20390	3.13	96.95	81.4	1141	0.53	22.3	8.056	8.745	7.83		<1	<1
W3B	-7.32	4/27/93	832				3.14	97	82.6	1157	0.07	1.0	736	20671	3.23	100.05	86.4	1209	0.63	22.1	8.051	8.369	7.99		<1	<1
W3B	-7.32	5/25/93	823				3.16	98	81.7	1144	0.32	4.5	737	20699	3.14	97.26	88.8	1244	0.39	22.4	8.042	8.468	7.89		<1	<1
W3B	-7.32	6/28/93	902				3.11	96	81.6	1143	0.00	0.0	729	20474	3.29	101.90	86.7	1214	0.51	22.5	8.044	8.435	7.92		<1	<1
W3B	-7.32	8/9/93	845				3.20	99	80.8	1132	0.00	0.0	668	18770	3.20	99.12	83.5	1169	0.66	22.5	8.020	8.717	7.84		<1	<1
W3B	-7.32	WELL SET RELOCATED																								
W3B	-7.32	6/21/94	817				3.45	107	84.8	1187	0.17	2.4	688	19323	3.50	108.41	103	1437	0.52	22.3	8.026	8.137	7.97		<1	<1

NELHA Water Quality Laboratory

Well 3B Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W3B	-7.32	8/23/94	849				3.46	107	89.5	1253	0.28	3.9	953	26764	3.49	108.10	98.2	1376	0.65	22.6	8.028	7.873	8.01		<1	<1
W3B	-7.32	10/25/94	908				3.41	106	83.2	1165	0.30	4.2	683	19185	3.53	109.34		0	0.46	22.1	8.038	8.032	7.94		<1	<1
W3B	-7.32	11/28/94	1236				3.48	108	86.2	1208	0.23	3.2	680	19087	3.50	108.41	87.1	1219		22.9		8.048				
W3B	-7.32	12/13/94	928				3.38	105	86.7	1215	0.00	0.0	726	20379	3.41	105.62	88.5	1240		22.7		8.106				
W3B	-7.32	1/24/95	905				3.43	106	84.1	1178	0.22	3.1	670	18820	3.43	106.24	88.5	1240	0.52	22.5	8.056	8.429	7.86		<1	<1
W3B	-7.32	2/14/95	848				3.38	105	84.3	1181	0.20	2.8	677	19008	3.38	104.69	85.6	1199	0.51	22.6	8.057	8.526	7.82		<1	<1
W3B	-7.32	3/14/95	937				3.38	105	84.1	1177	0.10	1.4	674	18927	3.38	104.69	86.2	1207	0.53	22.6	8.040	7.977	7.99		<1	<1
W3B	-7.32	4/25/95	1004				3.42	106	84.9	1188	0.17	2.4	713	20022	3.51	108.72	85.5	1198	0.44	22.1	8.055	7.916	8.02		<1	<1
W3B	-7.32	5/9/95	850				3.40	105	84.6	1185	0.08	1.1	714	20039	3.40	105.31	87.8	1229	0.45	22.4	8.020	7.663	7.95		<1	<1
W3B	-7.32	6/27/95	907				3.33	103	85.0	1190	0.28	3.9	681	19121	3.50	108.41	88.6	1241	0.47	22.6	8.036	7.905	8.10		<1	<1
W3B	-7.32	7/25/95	922				3.28	102	85.1	1192	0.22	3.1	691	19413	3.48	107.79	88.2	1235	0.44	22.7	8.015	7.960	7.82		<1	<1
W3B	-7.32	8/22/95	1010				3.26	101	84.2	1179	0.27	3.8	694	19477	3.43	106.24	87.6	1227	0.55	22.8	8.020	7.997	7.78		<1	<1
W3B	-7.32	9/12/95	752				3.38	105	85.4	1196	0.09	1.3	691	19399	3.38	104.69	88.8	1244	0.44	20.5	8.072	7.990	7.81		<1	<1
W3B	-7.32	10/17/95	926				3.41	106	83.0	1163	0.19	2.7	695	19522	3.46	107.17	84.9	1189	0.53	22.9	8.051	8.191	7.78		<1	<1
W3B	-7.32	11/7/95	846				3.53	109	86.0	1205	0.17	2.4	688	19331	3.58	110.89	90.0	1260	0.49	22.8	8.081	7.990	7.83		<1	<1
W3B	-7.32	12/6/95	855				3.32	103	84.4	1182	0.16	2.2	689	19337	3.39	105.00	85.3	1194	0.51	23.0	8.085	8.249	7.75		<1	<1
W3B	-7.32	6/17/96	931				3.23	100	85.0	1191	0.02	0.3	690	19385	3.32	102.83	87.2	1221	0.54	22.7	8.104	8.152	7.79		<1	<1
W3B	-7.32	2/27/96	941				3.25	101	82.0	1148	0.07	1.0	686	19255	3.31	102.52	85.4	1196	0.50	23.1	8.054	7.975	7.81		<1	<1
W3B	-7.32	3/13/96	1011				3.13	97	79.0	1107	0.15	2.1	661	18569	3.23	100.05	81.7	1145	0.51	23.2	8.030	7.358	7.92		<1	<1
W3B	-7.32	4/2/96	826				3.25	101	80.3	1125	0.06	0.8	665	18679	3.34	103.45	87.5	1225	0.53	22.7	8.003	7.811	7.89		<1	<1
W3B	-7.32	5/15/96	939				3.37	104	83.4	1167	0.20	2.8	672	18875	3.41	105.62	88.0	1232	0.51	23.8	8.002	8.154	7.73		<1	<1
W3B	-7.32	6/18/96	905				3.34	103	84.7	1187	0.11	1.5	717	20150	3.45	106.86	89.8	1258	0.51	23.0	8.034	8.202	7.81		<1	<1
W3B	-7.32	7/17/96	938				3.33	103	87.3	1223	0.14	2.0	729	20486	3.40	105.31	90.3	1264	0.64	23.2	8.046	7.916	7.90		<1	<1
W3B	-7.32	8/6/96	947				3.29	102	87.8	1230	0.15	2.1	684	19218	3.41	105.62	92.3	1292	0.58	23.4	8.034	8.023	7.82		<1	<1
W3B	-7.32	9/4/96	1000				3.39	105	89.8	1258	0.17	2.4	711	19976	3.43	106.24	93.2	1305	0.51	23.5	8.039	7.837	7.84		<1	<1
W3B	-7.32	10/9/96	948				3.37	104	91.5	1281	0.17	2.4	681	19113	3.42	105.93	95.4	1336	0.61	23.4	8.045	7.375	8.43		<1	1
W3B	-7.32	11/6/96	934				3.34	103	92.0	1289	0.14	2.0	699	19627	3.46	107.17	97.5	1365	0.61	23.4	7.827	7.489	8.01		<1	<1
W3B	-7.32	12/17/96	1002				3.24	100	86	1200	0.20	2.8	666	18702	3.35	103.76	92.8	1299	0.48	22.8	8.008	7.864	7.94		<1	<1
W3B	-7.32	1/14/97	1025				2.82	87	75	1057	0.03	0.4	629	17671	2.93	90.75	78.7	1103	0.45	23.7	8.039	6.519	7.94		<1	<1
W3B	-7.32	2/10/97	1105				3.00	93	79	1112	0.13	1.8	651	18278	3.0*	0.00	80.2	1123	0.46	24.1	8.020	6.812	7.91		<1	<1
W3B	-7.32	3/10/97	1112				3.04	94	84	1178	0.03	0.4	682	19154	3.09	95.71	86.7	1214	0.51	23.5	8.035	7.200	7.97		<1	<1
W3B	-7.32	4/23/97	933				3.20	99	85	1196	0.13	1.8	570	16009	3.25	100.66	98.7	1382	0.55	23.0	8.041	7.284	7.59		<1	<1
W3B	-7.32	5/28/97	841				3.27	101	91	1270	0.04	0.6	599	16822	3.48	107.79	102	1422	0.45	23.1	8.055	7.390	7.88		<1	<1
W3B	-7.32	6/17/97	940				3.23	100	84	1178	0.15	2.1	624	17520	3.30	102.21	91.3	1279	0.48	22.4	8.053	7.245	7.83		<1	<1
W3B	-7.32	7/15/97	931				3.38	105	94	1314	0.05	0.7	692	19435	3.43	106.24	99.5	1394	0.44	23.1	8.045	7.097	7.89		<1	<1
W3B	-7.32	8/26/97	945				3.25	101	93	1307	0.19	2.7	687	19284	3.28	101.59	102	1426	0.49	23.3	8.112	7.209	7.85		<1	<1
W3B	-7.32	9/23/97	1140				3.26	101	90	1259	0.26	3.6	673	18910	3.28	101.59	92.2	1291	0.48	23.8	8.138	7.710	7.61		<1	<1
W3B	-7.32	10/15/97	908				3.21	99	98.8	1384	0.03	0.4	670	18817	3.29	101.90	100	1402	0.55	23.3	8.147	6.770	7.86		<1	<1
W3B	-7.32	11/4/97	1025				3.30	102	94.0	1317	0.04	0.6	669	18792	3.36	104.07	113	1580	0.52	23.3	8.158	7.590	7.57		<1	<1
W3B	-7.32	12/16/97	942				3.31	103	86.9	1217	0.01	0.1	675	18949	3.50	108.41	91.8	1286	0.48	23.1	8.154	7.676	7.87		<1	<1
W3B	-7.32	1/5/98	1221				3.31	103	88.5	1240	0.06	0.8	671	18844	3.41	105.62	91.1	1276	0.53	23.1	8.167	7.734	7.86		<1	<1
W3B	-7.32	2/3/98	1038				3.26	101	84.9	1189	0.05	0.7	684	19208	3.47	107.48	91.6	1283	0.52	22.9	8.145	7.915	7.88		<1	<1
W3B	-7.32	3/10/98	1054				3.43	106	86	1201	0.05	0.7	676	18985	3.51	108.72	90.0	1261	0.53	22.8	8.017	8.102	7.90		<1	<1
W3B	-7.32	4/14/98	920				3.46	107	87	1214	0.03	0.4	681	19129	3.57	110.58	88.5	1240	0.53	22.6	8.035	8.024	7.93		<1	<1
W3B	-7.32	5/12/98	1045				3.44	107	85.6	1199	0.09	1.3	672	18885	3.53	109.34	90.1	1262	0.52	22.9	8.029	8.416	7.84		<1	<1
W3B	-7.32	6/2/98	1038				3.41	106	85	1184	0.05	0.7	668	18770	3.54	109.65	88	1232	0.47	22.6	8.024	8.743	7.81		<1	<1
W3B	-7.32	7/14/98	1048				3.41	106	81.6	1142	0.09	1.3	677	19022	3.58	110.89	84.1	1178	0.79	22.8	8.021	8.423	7.77		<1	<1
W3B	-7.32	8/11/98	1107				3.48	108	85.7	1200	0.07	1.0	682	19143	3.66	113.36	89	1249	0.40	22.7	8.007	8.335	7.69		<1	<1
W3B	-7.32	9/15/98	1141				3.48	108	87.1	1220	0.07	1.0	684	19208	3.68	113.98	88	1234	0.49	22.9	8.008	8.047	8.05		<1	<1
W3B	-7.32	10/13/98	1015				3.46	107	88.8	1244	0.04	0.6	695	19517	3.54	109.65	92.0	1289	0.43	23.0	8.025	7.793	8.62		1	<1
W3B	-7.32	11/4/98	1048				3.40	105	86.9	1217	0.11	1.5	722	20269	3.43	106.24	91.9	1287	0.48	23.1	8.022	8.078	7.88		<1	<1
W3B	-7.32	12/16/98	1028				3.41	106	84	1171	0.08	1.1	679	19056	3.45	106.86	89	1251	0.44	23.1	8.013	8.628	7.79		<1	<1
W3B	-7.32	1/12/99	1103				3.29	102	82	1154	0.04	0.6	680	19107	3.44	106.55	86	1209	0.44	23.2	8.015	8.610	7.89		1	<1
W3B	-7.32	2/3/99	1051				2.80	87	82.7	1158	0.12	1.7	669	18784	2.90	89.82	89.9	1259	0.45	23.0	8.002	9.005	7.81		<1	<1
W3B	-7.32	3/2/99	1059				3.34	103	78.8	1104	0.14	2.0	664	18654	3.43	106.24	81.3	1139	0.41	22.7	8.004	9.055	8.54		<1	<1
W3B	-7.32	4/6/99	1049				3.26	101	83.5	1170	0.06	0.8	686	19269	3.35	103.89	86.9	1217	0.52	22.8	8.026	8.279	8.03		<1	<1
W3B	-7.32	5/4/99	1054				3.27	101	77.5	1086	0.11	1.5	664	18635	3.33	103.14	79.6	1115	0.50	22.6	8.001	8.883	7.81		<1	<1
W3B	-7.32	6/2/99	1038				3.37	104	83.5	1170	0.06	0.8	731	20531	3.48	107.79	90.8	1272	0.54	23.0	8.021	8.325	7.89		<1	<1

NELHA Water Quality Laboratory

Well 3B Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W3B	-7.32	7/7/99	1111				3.37	104	79.2	1109	0.04	0.6	685	19244	3.40	105.31	82.0	1149	0.52	23.1	8.005	8.723	7.84		<1	<1
W3B	-7.32	8/25/99	1044				3.37	104	84.9	1189	0.09	1.3	688	19328	3.40	105.31	91.9	1287	0.49	23.0	8.063	8.269	8.01		<1	<1
W3B	-7.32	9/8/99	1047				3.40	105	88.4	1238	0.07	1.0	699	19618	3.55	109.96	96.8	1356	0.49	23.0	8.088	8.207	7.97		<1	<1
W3B	-7.32	10/6/99	1052				3.47	107	84.3	1180	0.06	0.8	656	18413	3.52	109.03	87.6	1227	0.47	23.0	8.062	8.182	7.94		<1	<1
W3B	-7.32	11/3/99	1106				3.31	103	81.2	1137	0.02	0.3	677	19011	3.31	102.52	85.6	1199	0.47	23.3	8.071	8.394	7.89		<1	<1
W3B	-7.32	12/15/99	1123				3.37	104	83.8	1174	0.09	1.3	692	19432	3.45	106.86	86.4	1210	0.52	23.0	8.039	7.988	7.61		<1	<1
W3B	-7.32	1/11/00	1058				3.30	102	85.4	1196	0.07	1.0	679	19078	3.37	104.38	94.0	1317	0.48	23.0	8.016	8.885	7.62		<1	<1
W3B	-7.32	2/14/00	1115				3.35	104	81.8	1146	0.09	1.3	641	17992	3.33	103.14	88.6	1241	0.50	22.7	8.053	8.799	7.70		<1	<1
W3B	-7.32	3/22/00	1125				3.11	96	82.0	1149	0.16	2.2	686	19267	3.05	94.47	89.9	1259	0.63	22.5	8.062	8.742	7.78		<1	<1
W3B	-7.32	4/12/00	1108				3.39	105	81.9	1147	0.07	1.0	678	19048	3.27	101.28	89.7	1256	0.71	22.8	8.052	8.907	7.74		<1	1
W3B	-7.32	5/17/00	1045				3.30	102	82.5	1156	0.16	2.2	680	19101	3.32	102.83	90.1	1262	0.55	22.6	8.061	8.576	7.85		1	<1
W3B	-7.32	6/6/00	1123				3.28	102	85.4	1196	0.15	2.1	680	19101	3.31	102.52	92.8	1300	0.58	22.8	8.051	8.540	7.85		1	<1
W3B	-7.32	7/31/00	1112				3.28	102	79.8	1118	0.10	1.4	652	18312	3.32	102.83	83.1	1164	0.42	22.9	8.049	9.098	7.63		<1	<1
W3B	-7.32	8/30/00	1117				3.32	103	83.3	1167	0.26	3.6	685	19241	3.35	103.76	86.0	1205	0.45	22.8	8.029	8.482	7.77		<1	<1
W3B	-7.32	9/6/00	1056				3.30	102	83.0	1163	0.12	1.7	689	19357	3.46	107.17	87.8	1230	0.47	23.2	8.034	8.275	7.81		<1	<1
W3B	-7.32	10/25/00	1033				3.34	103	81.6	1143	0.35	4.9	706	19831	3.56	110.27	86.6	1214	0.45	23.3	8.029	8.334	7.49		<1	<1
W3B	-7.32	11/14/00	1047				2.90	90	74.7	1046	0.15	2.1	640	17978	3.16	97.88	84.7	1186	0.43	23.5	8.033	7.347	7.54		<1	1
W3B	-7.32	12/19/00	1038				3.18	98	80.7	1130	0.23	3.2	677	19000	3.29	101.90	83.3	1167	0.49	23.1	8.028	8.360	7.46		<1	<1
W3B	-7.32	1/24/01	1032				3.38	105	83.5	1170	0.06	0.8	688	19334	3.42	105.93	88.1	1234	0.56	23.2	8.025	8.298	7.41		<1	<1
W3B	-7.32	2/7/01	1101				3.18	98	81.5	1142	0.07	1.0	683	19168	3.20	99.12	82.2	1151	0.52	23.0	8.035	8.631	7.26		<1	<1
W3B	-7.32	3/12/01	1046				3.28	102	74.5	1043	0.06	0.8	666	18716	3.39	105.00	83.6	1171	0.52	23.1	7.995	8.654	7.26		<1	<1
W3B	-7.32	4/18/01	1038				3.30	102	82.8	1160	0.01	0.1	682	19143	3.36	104.07	83.2	1165	0.48	23.0	7.991	8.594	7.92		<1	<1
W3B	-7.32	5/14/01	914				4.91	152	84.7	1186	0.07	1.0	693	19472	5.24	162.30	89.4	1252	0.50	22.9	8.003	8.713	7.86		<1	<1
W3B	-7.32	6/13/01	1055				3.54	110	84.7	1187	0.06	0.8	692	19441	3.56	110.27	86.0	1204	0.51	22.8	8.020	8.413	8.00		<1	<1
W3B	-7.32	7/25/01	1015				3.57	111	87.3	1222	0.08	1.1	677	19014	3.56	110.27	92.7	1298	0.55	22.9	8.004	8.543	7.89		1	<1
W3B	-7.32	8/20/01	1009				3.30	102	86.6	1213	0.10	1.4	684	19219	3.31	102.52	88.4	1238	0.51	23.5	8.017	8.462	7.79		<1	<1
W3B	-7.32	9/18/01	1047				3.36	104	88.2	1235	0.11	1.5	683	19174	3.44	106.55	91.5	1282	0.60	23.4	8.014	8.098	7.83		<1	<1
W3B	-7.32	10/9/01	1038				3.55	110	89.5	1254	0.05	0.7	685	19244	3.52	109.03	98.1	1374	0.55	23.4	8.009	8.076	7.92		<1	<1
W3B	-7.32	11/6/01	1005				3.32	103	92.7	1298	0.17	2.4	693	19469	3.45	106.86	106	1486	0.53	23.2	8.020	8.142	7.92		<1	1
W3B	-7.32	12/18/01	1000				2.81	87	86.5	1212	0.09	1.3	674	18938	2.83	87.66	98.1	1374	0.57	23.5	7.999	8.234	7.78		<1	<1
W3B	-7.32	1/8/02	1014				3.24	100	86.2	1207	0.11	1.5	673	18913	3.35	103.76	89.1	1248	0.46	23.2	8.010	8.231	7.50		<1	<1
W3B	-7.32	2/27/02	1013				3.34	103	89.0	1246	0.10	1.4	694	19497	3.40	105.31	97.9	1371	0.46	23.0	8.597	8.402	7.43		<1	<1
W3B	-7.32	3/19/02	1020				2.90	90	78.4	1099	0.09	1.3	629	17671	2.94	91.06	81.1	1136	0.40	22.7	8.040	7.287	7.49		2	2
W3B	-7.32	4/9/02	1012				3.34	103	85.5	1198	0.07	1.0	664	18638	3.50	108.41	86.3	1209	0.45	22.9	7.987	7.825	7.43		<1	<1
W3B	-7.32	5/21/02	1015				3.20	99	85.0	1190	0.08	1.1	670	18826	3.30	102.21	86.5	1211	0.54	23.1	8.011	8.202	7.94		<1	<1
W3B	-7.32	6/18/02	1028				3.33	103	89.7	1257	0.26	3.6	681	19135	3.35	103.76	90.0	1260	0.49	22.8	8.010	8.475	8.84		<1	<1
W3B	-7.32	7/17/02	1006				3.18	98	89.2	1249	0.09	1.3	668	18764	3.38	104.69	79.1	1108	0.66	23.0	8.015	8.770	7.70		<1	<1
W3B	-7.32	8/22/02	1024				3.38	105	87.4	1224	0.13	1.8	682	19154	3.48	107.79	89.1	1248	0.68	23.0	8.019	8.297	7.85		<1	<1
W3B	-7.32	9/24/02	1059				3.30	102	91.3	1279	0.11	1.5	691	19404	3.44	106.55	81.7	1145	0.49	23.4	8.047	8.324	7.92		<1	<1
W3B	-7.32	10/16/02	1039				3.13	97	92.7	1299	0.13	1.8	666	18705	3.23	100.05	77.4	1085	0.41	23.4	8.024	7.664	7.93		<1	7
W3B	-7.32	11/6/02	1024				3.26	101	93.5	1309	0.12	1.7	664	18657	3.29	101.90	81.2	1138	0.56	23.6	8.007	7.792	7.88		<1	<1
W3B	-7.32	12/19/02	1112				3.28	102	89.1	1248	0.08	1.1	674	18927	3.33	103.14	80.4	1127	0.54	23.5	8.017	8.370	7.81		<1	<1
W3B	-7.32	1/22/03	1102				3.32	103	85.1	1192	0.28	3.9	668	18758	3.33	103.14	87.8	1230	0.72	23.1	8.023	8.559	7.91		<1	<1
W3B	-7.32	2/20/03	1015				3.10	96	87.0	1218	0.16	2.2	665	18680	3.18	98.50	89.1	1247	0.46	23.5	8.019	8.627	7.81		<1	<1
W3B	-7.32	3/18/03	954				3.30	102	85.8	1202	0.06	0.8	674	18930	3.33	103.14	101	1410	0.45	23.1	8.029	8.573	7.82		<1	<1
W3B	-7.32	4/29/03	1010				3.47	107	90.7	1271	0.42	5.9	675	18961	3.52	109.03	97.7	1368	0.28	23.2	8.051	8.183	7.94		<1	<1
W3B	-7.32	5/13/03	1037				3.48	108	87.7	1228	0.62	8.7	680	19084	3.50	108.41	90.0	1261	0.50	23.0	8.064	7.972	8.02		<1	<1
W3B	-7.32	6/5/03	1005				3.39	105	85.2	1193	0.38	5.3	670	18814	3.46	107.17	100	1404	0.45	23.0	8.060	8.337	7.97		<1	1

NELHA Water Quality Laboratory

Well 3B Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W3B	-7.32	7/31/03	1025				3.27	101	94.4	1322	0.27	3.8	674	18927	3.34	103.45	98.3	1377		23.5	8.026	8.537	7.31		<1	<1
W3B	-7.32	8/27/03	1043				3.38	105	95.6	1339	0.70	9.8	680	19101	3.92	121.42	115	1614		23.3	8.029	8.132	8.14		<1	<1
W3B	-7.32	9/17/03	1010				3.46	107	96.6	1352	0.35	4.9	690	19368	4.12	127.61	102	1433		23.4	8.036	7.900	8.22		<1	<1
W3B	-7.32	10/7/03	1011				3.38	105	96.7	1355	1.11	15.5	687	19286	3.50	108.41	110	1541		23.5	8.027	8.098	NA		<1	<1
W3B	-7.32	11/4/03	952				3.32	103	90.3	1265	0.44	6.2	688	19314	3.32	102.83	104	1450		23.3	8.051	8.179			<1	<1
W3B	-7.32	11/14/03	1127																	23.7			8.02			
W3B	-7.32	12/16/03	949				3.28	102	94.5	1324	0.40	5.6	701	19677	3.39	105.00	99.2	1389		23.5	8.025	8.489	7.90		<1	<1
W3B	-7.32	1/27/04	1010				3.10	96	89.3	1251	0.12	1.7	660	18525	3.19	98.81	91.0	1275		23.2	8.040	8.147	7.53		<1	<1
W3B	-7.32	2/10/04	1007				3.14	97	88.6	1241	0.15	2.1	630	17697	3.08	95.40	89.2	1249		23.7	8.006	8.172	7.83		<1	<1
W3B	-7.32	3/15/04	1011				2.88	89	78.9	1106	0.07	1.0	617	17320	3.05	94.47	80.9	1133		23.4	8.059	6.319	7.60		<1	<1
W3B	-7.32	4/21/04	922				3.14	97	91.6	1283	0.02	0.3	663	18623	3.09	95.71	94.4	1323		22.9	8.034	7.700	7.88		<1	<1
W3B	-7.32	5/12/04	917				3.14	97	94.3	1321	0.09	1.3	663	18626	3.08	95.40	97.0	1359		23.3	8.051	7.58	8.09		<1	<1
W3B	-7.32	6/7/04	952				3.20	99	95.5	1338	0.18	2.5	653	18337	3.30	102.21	97.5	1365		23.0	8.043	7.49	7.99		1	<1
W3B	-7.32	7/8/04	1022				3.16	98	90.5	1267	0.08	1.1	676	18977	3.22	99.74	99.0	1387	0.39	23.1	8.097	7.90	7.73		<1	<1
W3B	-7.32	8/24/04	950				3.14	97	94.7	1327	0.10	1.4	653	18351	3.08	95.40	101	1420		23.6	8.048	7.32	7.86		<1	<1
W3B	-7.32	9/28/04	1005				3.42	106	106	1483	0.20	2.8	719	20179	3.30	102.21	115	1607		23.5	8.023	7.57	7.86		<1	<1
W3B	-7.32	10/5/04	1055				3.16	98	101	1419	0.13	1.8	676	18972	3.28	101.59	116	1625		23.6	8.046	7.74	7.82		<1	<1
W3B	-7.32	11/8/04	946				3.34	103	94.5	1323	0.19	2.7	679	19064	3.42	105.93	104	1452		23.6	8.054	7.79	7.86		<1	<1
W3B	-7.32	12/7/04	957				3.20	99	101	1420	0.16	2.2	673	18899	3.24	100.35	118	1646		23.7	8.086	7.34	7.89		<1	<1
W3B	-7.32	1/11/05	945				2.94	91	86.4	1210	0.08	1.1	662	18579	3.00	92.92	88.2	1236		23.7	8.115	7.144	7.83		1	<1
W3B	-7.32	2/8/05	945				2.78	86	83.7	1172	0.20	2.8	626	17582	2.86	88.58	93.3	1307		23.5	8.112	6.373	7.89		<1	<1
W3B	-7.32	3/16/05	1028				3.01	93	99.4	1392	0.20	2.8	640	17974	3.17	98.19	110	1537	0.42	23.3	8.079	7.300	7.83		<1	<1
W3B	-7.32	4/18/05	1036				3.26	101	91.3	1279	0.11	1.5	675	18963	3.32	102.83	98.1	1373		23.4	8.083	7.553	7.91		<1	1
W3B	-7.32	5/24/05	953				3.18	98	99.5	1394	0.18	2.5	672	18876	3.22	99.74	110	1534		23.3	8.012	8.068	7.80		<1	<1
W3B	-7.32	6/13/05	1014				3.26	101	95.9	1344	0.18	2.5	677	19020	3.24	100.35	100	1405		23.3	8.045	8.080	7.78		<1	<1
W3B	-7.32	7/11/05	1015				3.47	107	91.4	1280	0.16	2.2	673	18890	3.58	110.89	98.0	1372		23.1	8.049	7.541	10.60		<1	<1
W3B	-7.32	8/10/05	930				3.32	103	89.0	1246	0.16	2.2	670	18809	3.46	107.17	89.6	1255		23.3	8.053	7.869	7.81		<1	<1
W3B	-7.32	9/21/05	923				3.30	102	96.1	1347	0.12	1.7	665	18668	3.44	106.55	111	1549	0.43	23.5	8.054	8.058	7.81		<1	<1
W3B	-7.32	10/18/05	948				3.36	104	94.0	1316	0.14	2.0	668	18770	3.50	108.41	102	1424		23.4	8.038	8.112	7.77		<1	<1
W3B	-7.32	11/3/05	908				3.38	105	97.7	1369	0.18	2.5	685	19241	3.58	110.89	99.8	1398		23.3	8.052	8.239	7.58		<1	2
W3B	-7.32	12/21/05	1020				3.34	103	91.4	1281	0.14	2.0	674	18938	3.44	106.55	99.6	1396	0.50	23.4	8.076	8.277	7.83		<1	<1
W3B	-7.32	1/24/06	927				3.42	106	94.2	1319	0.14	2.0	679	19076	3.58	110.89	97.9	1371		22.9	8.042	8.431	7.79		<1	<1
W3B	-7.32	2/15/06	925				3.37	104	93.0	1302	0.16	2.2	667	18741	3.42	105.93	97.0	1358	0.34	23.0	8.046	8.651	7.76		<1	<1
W3B	-7.32	3/21/06	918				3.26	101	94.0	1317	0.10	1.4	674	18930	3.29	101.90	94.7	1326	0.39	22.7	8.065	8.566	7.77		<1	1
W3B	-7.32	4/26/06	933				3.30	102	91.2	1278	<0.05	0.0	663	18621	3.42	105.93	80.0	1121	0.42	22.6	8.046	8.31	7.76		<1	<1
W3B	-7.32	5/23/06	1003				2.99	93	90.0	1261	<0.05	0.0	660	18536	3.16	97.88	77.8	1090	0.54	22.8	8.035	8.686	7.61		<1	<1
W3B	-7.32	6/27/06	1000				3.33	103	94.1	1318	0.21	2.9	670	18817	3.53	109.34	64.2	899	0.38	22.9	8.027	8.661	7.73		<1	<1
W3B	-7.32	7/18/06	959				3.25	101	87.1	1220	0.11	1.5	661	18565	3.33	103.14	69.4	971	0.49	23	8.014	9.001	8.16		<1	<1
W3B	-7.32	8/8/06	939				3.16	98	93.0	1303	<0.05	0.0	671	18845	3.30	102.21	75.9	1063	0.40	22.9	8.031	8.304	8.11		<1	<1
W3B	-7.32	9/19/06	1036				3.25	101	90.5	1268	0.07	1.0	668	18761	3.42	105.93	83.8	1174	0.41	23.6	8.023	8.347	8.06		<1	<1
W3B	-7.32	10/24/06	1015				3.12	97	84.3	1181	0.23	3.2	639	17947	3.26	100.97	81.1	1136	0.42	23.2	8.057	7.175	8.05		<1	<1
W3B	-7.32	11/28/06	954				3.40	105	87.3	1223	0.27	3.8	651	18284	3.45	106.86	82.8	1160	0.46	23.5	8.027	8.092	7.97		<1	<1
W3B	-7.32	12/12/06	946				3.15	98	86.4	1210	0.16	2.2	648	18199	3.32	102.83	80.6	1129	0.54	23.4	8.021	8.369	7.89		<1	<1
W3B	-7.32	1/9/07	1014				3.22	100	88.1	1234	0.26	3.6	651	18284	3.29	101.90	91.8	1286	0.43	23	8.034	8.730	7.84		<1	<1
W3B	-7.32	2/22/07	1000				3.15	98	91.6	1283	0.19	2.7	657	18452	3.24	100.35	93.4	1308	0.42	23.2	8.009	8.887	7.84		<1	<1
W3B	-7.32	3/6/07	1025				3.18	98	93.4	1308	0.21	2.9	666	18705	3.33	103.14	95.2	1334	0.49	23.1	8.049	8.549	8.01		<1	<1
W3B	-7.32	4/11/07	1147				3.23	100	87.3	1223	0.19	2.7	671	18845	3.37	104.38	82.2	1152	0.41	23.4	8.048	8.520	7.67		<1	<1
W3B	-7.32	5/3/07	1000				3.35	104	93.7	1312	0.24	3.4	686	19267	3.53	109.34	87.7	1229	0.50	23.5	8.067	8.471	7.65		<1	<1
W3B	-7.32	6/19/07	935				3.13	97	90.8	1272	0.17	2.4	649	18227	3.24	100.35	76.6	1073	0.35	23.3	8.066	8.664	8.13		<1	<1

NELHA Water Quality Laboratory

Well 3B Data Table

June 1989 - December 2014

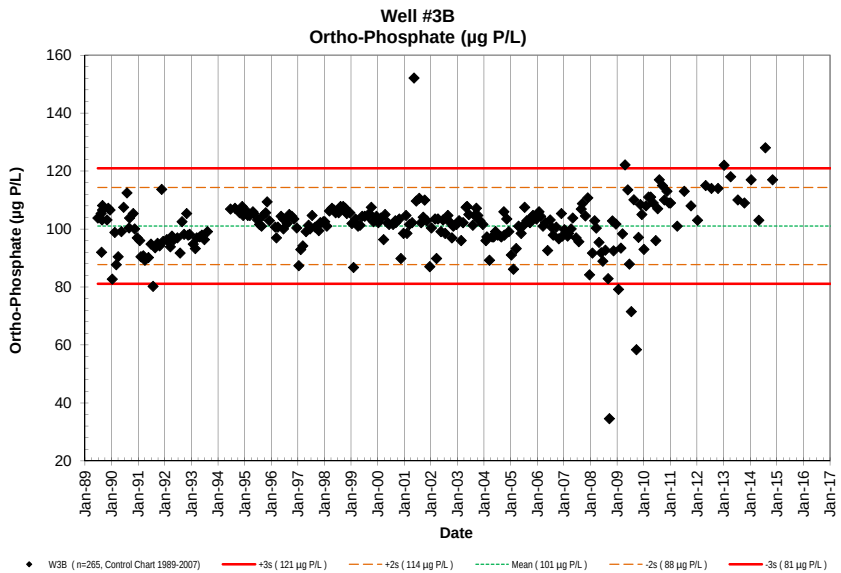
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W3B	-7.32	7/26/07	1040	-6.00	0.37	Flood	3.09	96	99.6	1395	0.04	0.5	661	18576	3.30	102.3	95.9	1343.1		23.5	7.97	8.19	7.27			
W3B	-7.32	8/28/07	1023	-6.02	0.00	Low	3.45	107	102.0	1429	0.51	7.2	929	26085	3.45	106.8	101.7	1424.2		24.2	7.90	8.14	7.24			
W3B	-7.32	9/13/07	1215	-5.94	0.15	Low	3.51	109	103.0	1443	0.74	10.4	751	21104	3.51	108.7	97.5	1366.0		24.0	8.02	8.29	6.82			
W3B	-7.32	10/24/07	1126	-5.94	0.30	Flood	3.37	105	108.3	1517	0.01	0.2	658	18466	3.33	103.2	103.2	1445.9		23.5	8.04	8.12	7.16			
W3B	-7.32	11/26/07	1437	-5.26	0.09	Flood	3.58	111	101.0	1414	0.60	8.5	739	20751	3.32	102.7	107.1	1500.7		23.3	8.10	8.52	7.29			
W3B	-7.32	12/20/07	1114	-5.82	0.23	High	2.72	84	81.8	1146	0.55	7.7	525	14748						23.5	8.06	6.26	7.26			
W3B	-7.32	1/28/08	1419	-6.02	0.06	Low	2.96	92	79.6	1115	0.31	4.3	398	11178						23.2	7.91	8.23	6.92			
W3B	-7.32	2/27/08	1153	-5.79	0.06	Low	3.32	103	98.1	1374	0.63	8.8	630	17693						23.2	7.90	8.31	7.42			
W3B	-7.32	3/20/08	1211	-6.04	0.12	Flood	3.24	100	108.7	1522	0.07	1	618	17363						23.0	7.98	8.25	7.07			
W3B	-7.32	4/28/08	1155	-6.00	0.18	High	3.08	95	102.2	1432	0.19	2.6	643	18057						23.1	7.96	8.22	6.83			
W3B	-7.32	5/29/08	1007		0.30	Flood	2.96	92	102.7	1438	0.12	1.7	640	17969						23.7	7.98	8.17	7.25			
W3B	-7.32	6/19/08	1049	-6.22	0.21	Ebb	2.87	89	99.0	1387	0.18	2.5	641	18014						25.3	7.86	8.35	6.55	0.21		
W3B	-7.32	7/24/08	1009	-5.74	0.46	Ebb	2.99	93	125.3	1756	0.72	10.1	650	18246						23.1	7.89	8.10	7.21			
W3B	-7.32	8/30/08	1033		0.06	Flood	2.68	83	96.8	1356	0.29	4.0	529	14866						23.2	7.98	8.44	7.27			
W3B	-7.32	9/18/08	920	-5.58	0.34	Ebb	1.12	35	37.0	519	1.29	18.0	345	9698						23.1	7.85	8.16	7.20	0.13		
W3B	-7.32	10/28/08	922	-5.83	0.24	Ebb	3.32	103	102.3	1433	0.47	6.6	623	17510						24.4	7.72	8.01	7.35	0.7		
W3B	-7.32	11/13/08	942	-5.80	0.15	Ebb	2.99	93	98.0	1372	0.06	0.9	537	15082						24.9	7.84	7.93	7.19	0.37		
W3B	-7.32	12/15/08	1025	-5.67	0.37	Ebb	3.28	102	106.9	1497	0.33	4.6	596	16735						24.5	8.16	7.83	7.51			
W3B	-7.32	1/21/09	934	-5.99	0.12	Low	2.56	79	100.0	1400	0.14	1.9	574	16135						24.3	8.16	7.08	7.54	0.12		
W3B	-7.32	2/23/09	1515	-5.83	0.37	High	3.02	93	104.6	1466	1.04	14.6	637	17898						23.8	7.99	8.39	7.56	0.33		
W3B	-7.32	3/16/09	809	-5.94	0.18	High	3.17	98	81.6	1143	0.54	7.6	540	15162						25.9	7.91	8.56	7.13	0.09		
W3B	-7.32	4/20/09	1512	-5.81	0.43	High	3.94	122	92.0	1289	0.46	6.4	418	11753						24.3	7.91	8.55	7.93	1.30		
W3B	-7.32	5/27/09	755	-5.91	0.15	Ebb	3.66	114	92.0	1288	0.21	3.0	669	18798						22.5	7.83	8.64	6.88	0.11		
W3B	-7.32	6/18/09	1016	-5.80	0.34	Flood	2.84	88	65.5	917	0.49	6.8	269	7546						22.7	8.11	8.11	8.12	0.11		
W3B	-7.32	7/14/09	825	-5.82	0.37	Flood	2.31	72	48.3	677	0.23	3.2	366	10281						22.5	8.17	8.63	7.71	0.04		
W3B	-7.32	8/19/09	848	-6.01	0.03	Low	3.55	110	103.4	1449	0.51	7.2	491	13782						23.0	7.98	7.93	7.39	0.05		
W3B	-7.32	9/22/09	859	-5.63	0.46	Ebb	1.89	58	44.4	622	0.12	1.7	254	7144						23.2	8.05	8.57	7.63	0.05		
W3B	-7.32	10/22/09	1324	-5.95	0.18	Ebb	3.13	97	89.9	1259	0.27	3.8	254	7140						23.5	8.07	8.63	7.78	0.04		
W3B	-7.32	11/16/09	1429	-5.98	0.21	High	3.50	108	96.7	1355	0.81	11.3	632	17762						23.4	8.04	8.79	7.03	0.03		
W3B	-7.32	12/7/09	1404	-6.02	0.09	Ebb	3.39	105	100.9	1413	0.29	4.0	543	15240						23.8	8.00	8.88	6.40	0.02		
W3B	-7.32	1/5/10	1138	-5.78	0.21	Ebb	3.00	93	93.0	1302	0.64	9.0	584	16396						23.8	8.05	8.87	7.82	0.39		
W3B	-7.32	2/1/10	1159	-5.92	-0.09	Low	3.49	108	103.5	1450	1.36	19.0	596	16748						22.9	8.08	8.60	7.21	0.06		
W3B	-7.32	3/9/10	1202	-5.98	0.15	High	3.58	111	93.6	1311	0.14	2.0	587	16483						22.8	8.04	8.88	7.46	1.04		
W3B	-7.32	4/6/10	1048	-6.00	0.15	High	3.58	111	93.8	1314	0.36	5.0	642	18025						22.6	8.06	8.92	8.02	0.25		
W3B	-7.32	5/11/10	1110	-5.98	0.21	Flood	3.52	109	83.8	1174	2.21	31.0	564	15834						22.7	8.08	8.12	7.99	0.15		
W3B	-7.32	6/15/10	1158	-6.15	0.06	Low	3.10	96	80.7	1130	0.36	5.0	546	15327						22.6	8.10	8.43	7.79	0.21		
W3B	-7.32	7/13/10	1110	-6.05	0.00	Low	3.45	107	95.2	1333	1.14	16.0	687	19308						22.6	8.06	8.64	7.64	0.09		
W3B	-7.32	8/3/10	1116	-5.58	0.55	High	3.78	117	99.0	1387	0.40	5.6	687	19293						22.8	8.09	8.13	7.79	0.22		
W3B	-7.32	9/14/10	1127	-5.54	0.52	Ebb	3.71	115	97.5	1365	0.49	6.9	712	20001						22.7	8.06	8.33	7.86	0.12		
W3B	-7.32	10/12/10	1139	-5.59	0.46	Ebb	3.55	110	99.0	1386	0.25	3.5	735	20649						22.9	8.06	8.44	7.59	0.09		
W3B	-7.32	11/16/10	1054	-5.73	0.34	Flood	3.65	113	103.0	1443	0.36	5.1	723	20298						22.8	8.05	8.01	7.90	0.08		
W3B	-7.32	12/14/10	1132	-5.69	0.34	Ebb	3.52	109	100.6	1409	0.33	4.6	685	19235						22.8	8.06	8.07	7.75	0.05		
W3B	-7.32	1/4/11	1119	-5.92	0.03	Low	3.52	109	96.5	1352	0.33	4.6	675	18965						22.9	8.00	8.10	7.28	0.06		
W3B	-7.32	4/5/11	1143	-6.05	-0.03	Low	3.26	101	87.6	1227	0.43	6.0	676	18975						22.8	8.03	7.96	6.75	0.16		
W3B	-7.32	7/12/11	1104	-5.98	0.30	Flood	3.65	113	94.6	1325	0.23	3.2	678	19047						22.8	8.01	8.58	7.60	0.02		
W3B	-7.32	10/11/11	1137	-5.92	0.15	Flood	3.49	108	93.2	1305	0.11	1.6	659	18516						23.0	8.02	8.19	7.84	0.20		
W3B	-7.32	1/10/12	1134	-6.00	0.03	Ebb	3.33	103	91.5	1282	0.53	7.4	650	18252						23.1	8.04	8.79	6.90	0.08		
W3B	-7.32	5/1/12	1149	-5.78	0.34	Flood	3.71	115	96.0	1345	0.30	4.2	689	19359						22.8	8.10	8.21	7.91	0.02		
W3B	-7.32	7/18/12	1043	-6.07	0.09	Flood	3.68	114	100.7	1410	0.62	8.7	657	18463						23.1	8.04	8.47	8.10	0.05		
W3B	-7.32	10/16/12	1131	-5.96	0.09	Low	3.68	114	99.9	1399	0.44	6.1	669	18793						23.0	8.00	8.44	7.78	0.15		
W3B	-7.32	1/8/13	1150	-5.98	0.18	Flood	3.94	122	103.7	1452	0.44	6.2	722	20272						23.1	7.98	8.46	7.40	0.02		
W3B	-7.32	4/9/13	1152	-6.07	0.00	Flood	3.81	118	92.5	1296	0.49	6.8	705	19805						22.8	8.03	8.60	6.57	0.15		
W3B	-7.32	7/17/13	1246	-5.70	0.61	High	3.55	110	94.5	1324	0.69	9.7	684	19203						23.1	7.90	8.55	7.52	0.05		
W3B	-7.32	10/15/13	1110	-5.76	0.37	Flood	3.52	109	98.3	1377	0.86	12.0	673	18915						23.6	7.97	8.58	7.51	0.07		
W3B	-7.32	1/15/14	1116	-5.96	0.03	Low	3.78	117	93.9	1315	0.56	7.8	642	18026						23.7	8.04	8.42	7.30	0.03		
W3B	-7.32	4/29/14	1217	-6.11	0.12	Flood	3.33	103	89.9	1259	0.57	8.0	616	17297						23.5	7.98	8.36	7.78	0.15		

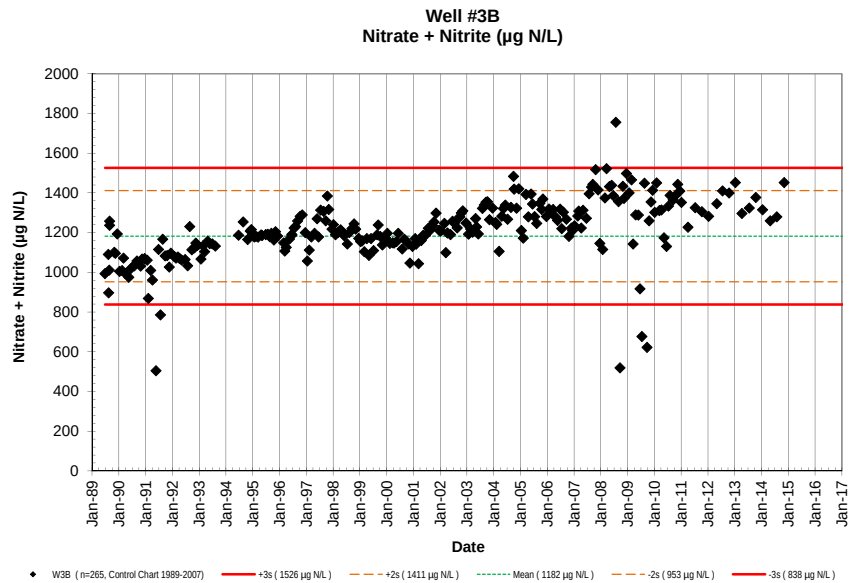
NELHA Water Quality Laboratory

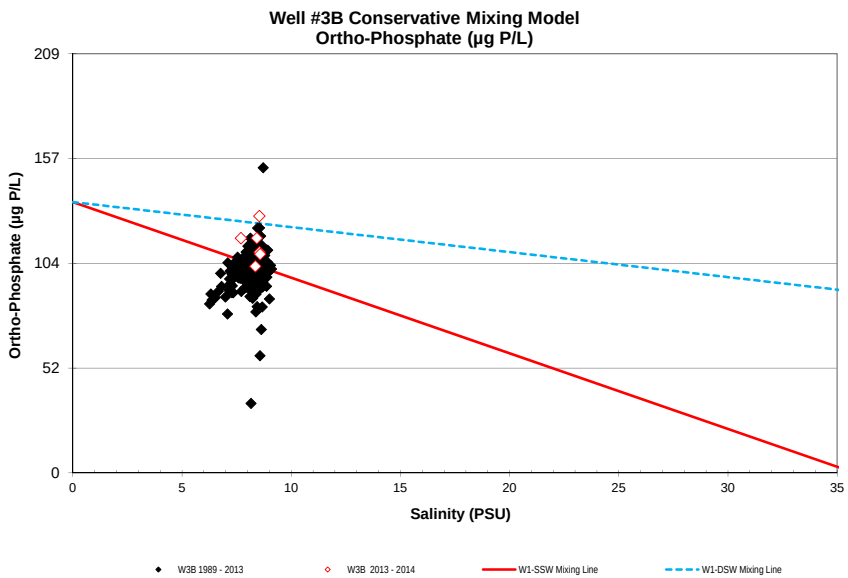
Well 3B Data Table

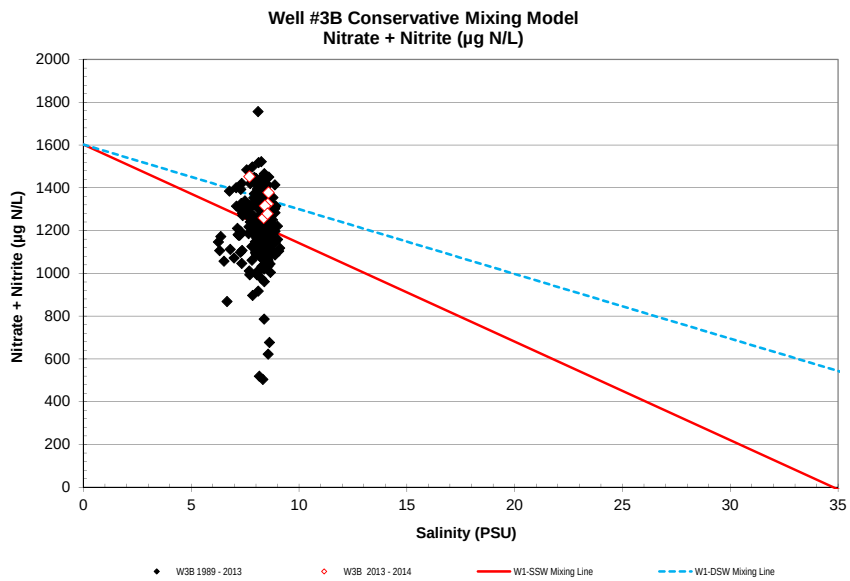
June 1989 - December 2014

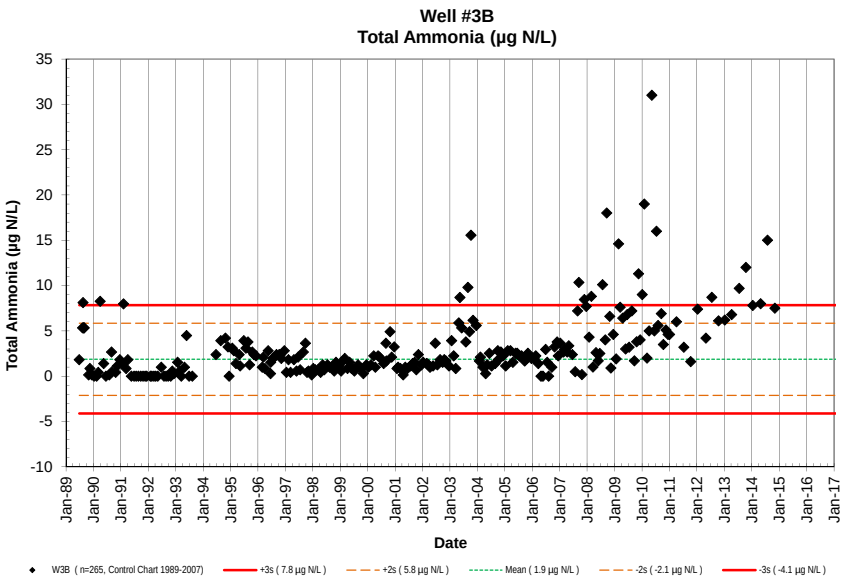
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W3B	-7.32	7/29/14	1156	-5.99	0.12	Low	4.13	128	91.3	1279	1.07	15.0	640	17985						23.4	7.97	8.54	7.32	0.28		
W3B	-7.32	11/5/14	1149	-5.82	0.17	Flood	3.78	117	103.7	1452	0.54	7.5	651	18296						24.0	8.01	7.70	8.22	0.14		
W3B	-7.32	1/1/15																								
W3B	-7.32	4/1/15																								

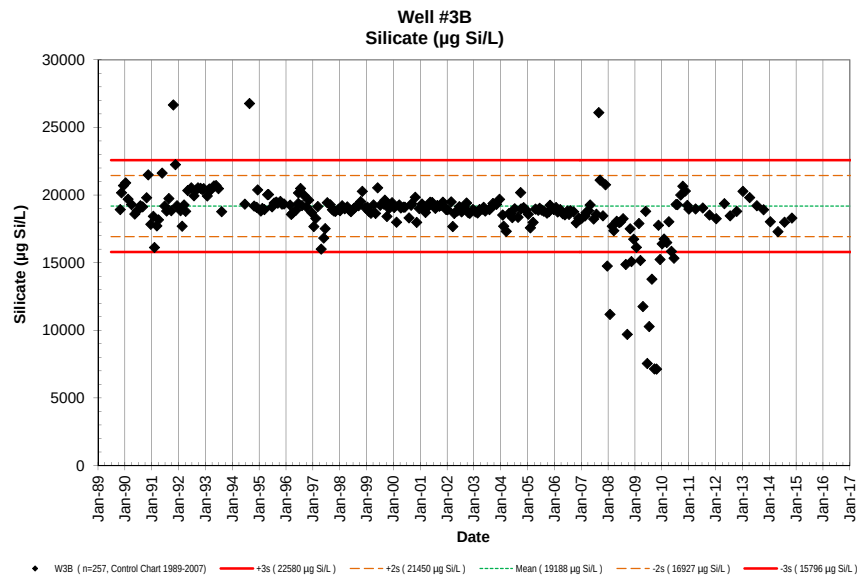

Well #3B
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W3B (n=265, Control Chart 1989-2007)
+3s (121 µg P/L)
+2s (114 µg P/L)
Mean (101 µg P/L)
-2s (88 µg P/L)
-3s (81 µg P/L)

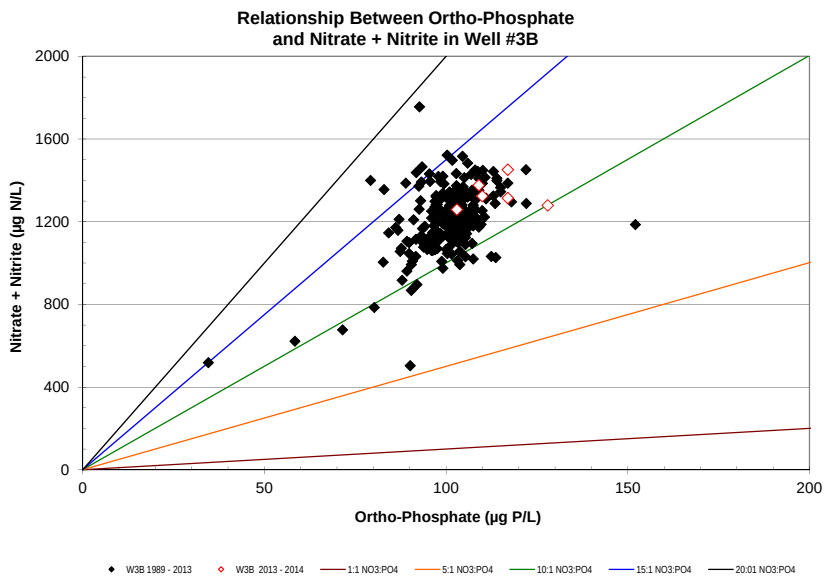

Well #3B
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W3B (n=265, Control Chart 1989-2007)
+3s (1526 µg N/L)
+2s (1411 µg N/L)
Mean (1182 µg N/L)
-2s (953 µg N/L)
-3s (838 µg N/L)

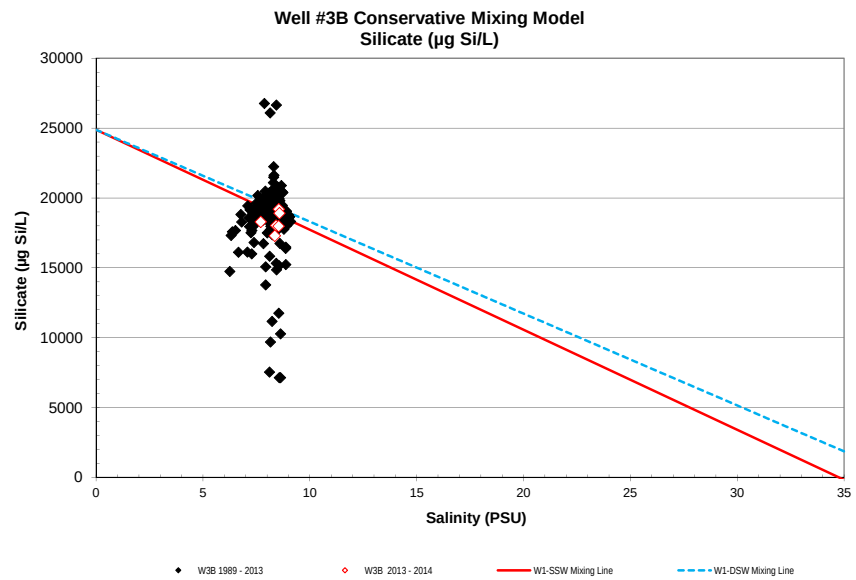

Well #3B Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W3B 1989 - 2013
W3B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

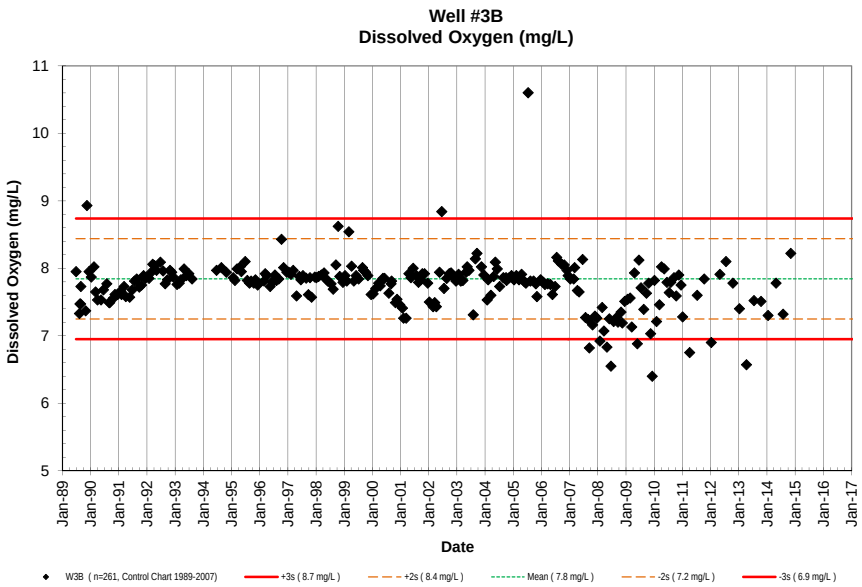

Well #3B Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W3B 1989 - 2013
W3B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

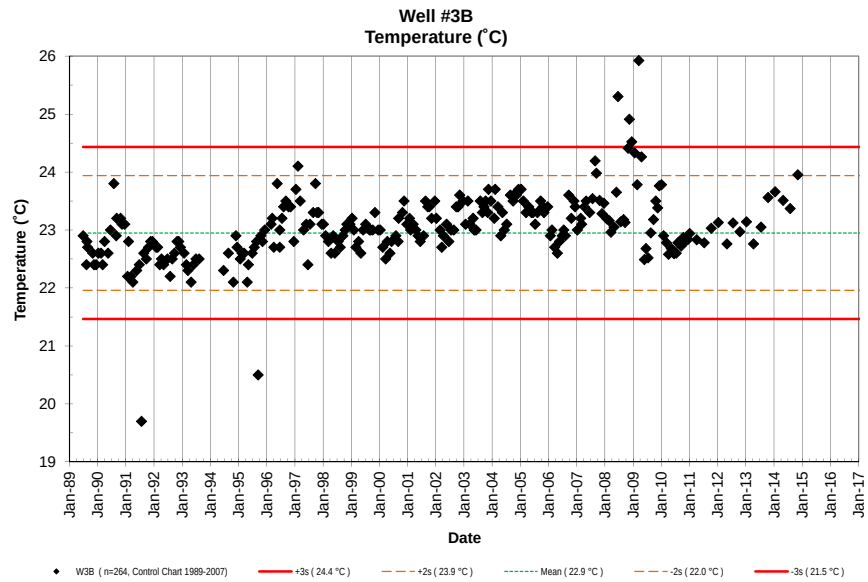

Well #3B
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W3B (n=265, Control Chart 1989-2007)
+3s (7.8 µg N/L)
+2s (5.8 µg N/L)
Mean (1.9 µg N/L)
-2s (-2.1 µg N/L)
-3s (-4.1 µg N/L)

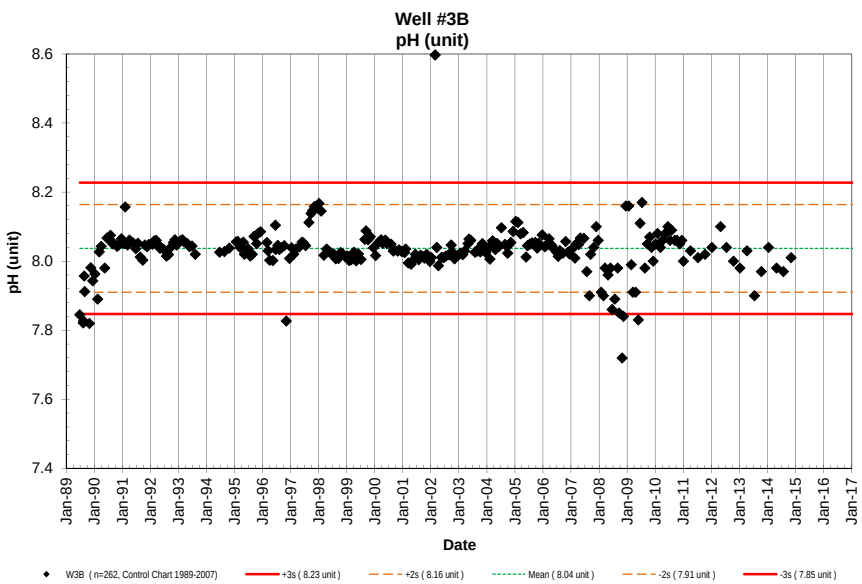

Well #3B
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W3B (n=257, Control Chart 1989-2007)
+3s (22580 µg Si/L)
+2s (21450 µg Si/L)
Mean (19188 µg Si/L)
-2s (16927 µg Si/L)
-3s (15796 µg Si/L)

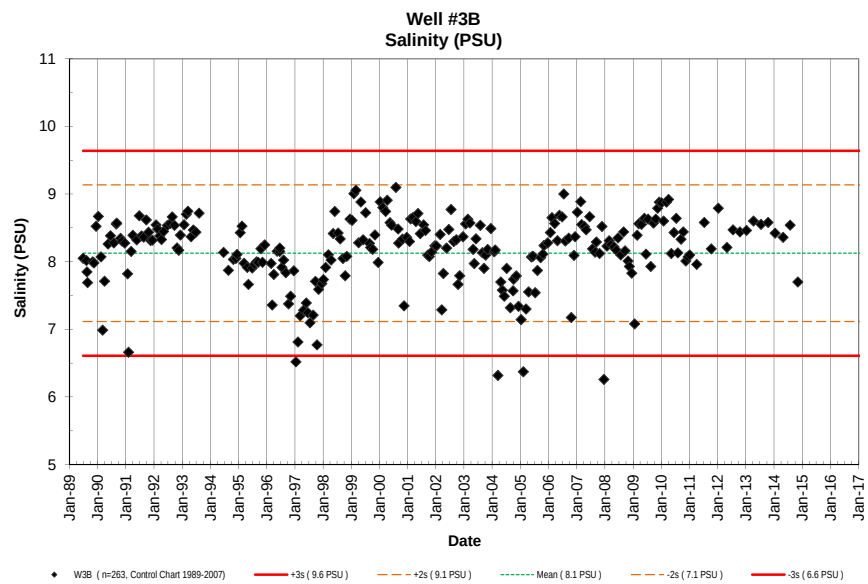

Relationship Between Ortho-Phosphate
and Nitrate + Nitrite in Well #3B
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W3B 1989 - 2013
W3B 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

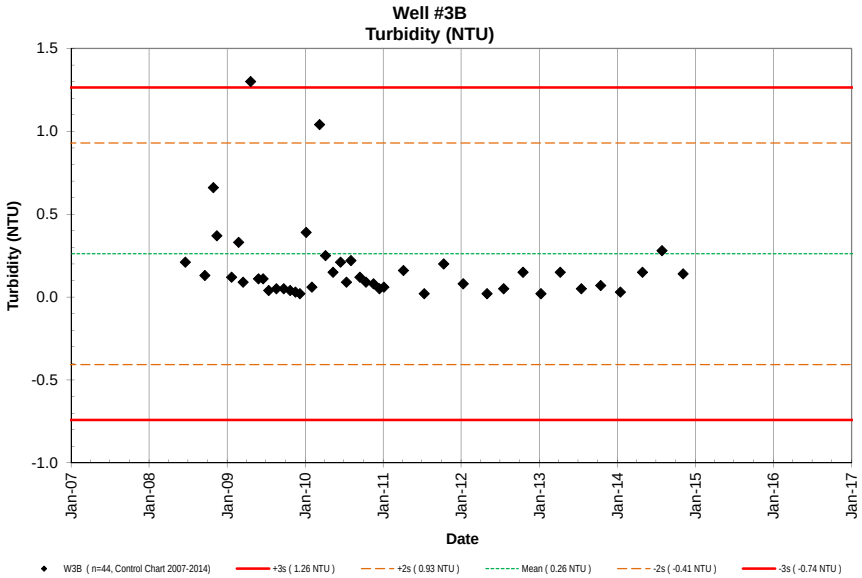

Well #3B Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W3B 1989 - 2013
W3B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

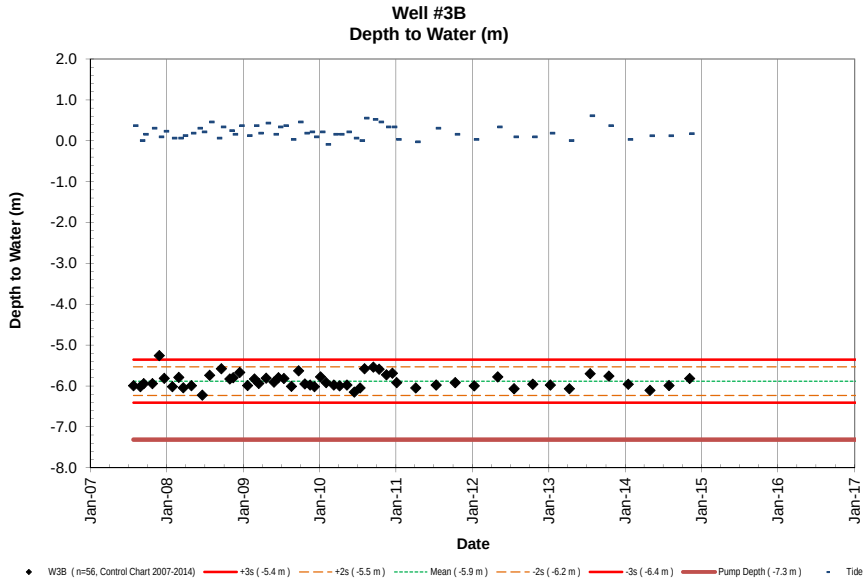

Well #3B
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W3B (n=261, Control Chart 1989-2007)
+3s (8.7 mg/L)
+2s (8.4 mg/L)
Mean (7.8 mg/L)
-2s (7.2 mg/L)
-3s (6.9 mg/L)


Well #3B
Temperature (˚C)
Temperature (˚C)
Date
W3B (n=264, Control Chart 1989-2007)
+3s (24.4 °C)
+2s (23.9 °C)
Mean (22.9 °C)
-2s (22.0 °C)
-3s (21.5 °C)


Well #3B
pH (unit)
pH (unit)
Date
W3B (n=262, Control Chart 1989-2007)
+3s (8.23 unit)
+2s (8.16 unit)
Mean (8.04 unit)
-2s (7.91 unit)
-3s (7.85 unit)


Well #3B
Salinity (PSU)
Salinity (PSU)
Date
W3B (n=263, Control Chart 1989-2007)
+3s (9.6 PSU)
+2s (9.1 PSU)
Mean (8.1 PSU)
-2s (7.1 PSU)
-3s (6.6 PSU)


Well #3B
Turbidity (NTU)
Turbidity (NTU)
1.5
1.0
0.5
0.0
-0.5
-1.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W3B (n=44, Control Chart 2007-2014)
+3s (1.26 NTU)
+2s (0.93 NTU)
Mean (0.26 NTU)
-2s (-0.41 NTU)
-3s (-0.74 NTU)


Well #3B
Depth to Water (m)
Depth to Water (m)
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
-6.0
-7.0
-8.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W3B (n=56, Control Chart 2007-2014)
+3s (-5.4 m)
+2s (-5.5 m)
Mean (-5.9 m)
-2s (-6.2 m)
-3s (-6.4 m)
Pump Depth (-7.3 m)
Tide

NELHA Water Quality Laboratory

Well 4 Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W4	-15.24	6/27/89					2.47	77	57.6	807	0.51	7.1								22.4	7.796	18.972	4.87		NA	NA
W4	-15.24	8/10/89	947				2.32	72	88.0	1233	0.48	6.7								21.2	7.648	18.626	5.40		<1	NA
W4	-15.24	8/15/89	1430				2.09	65	75.0	1051	0.67	9.4								21.1	7.696	19.164	5.19		<1	NA
W4	-15.24	8/22/89	1410				2.35	73	87.5	1226	0.54	7.6								20.8	7.771	18.827	6.24		<1	NA
W4	-15.24	8/30/89	1410				2.34	72	87.0	1219	0.58	8.1								21.4	7.719	18.791	5.47		<1	NA
W4	-15.24	8/30/89	1410				2.34	72	88.0	1233	0.54	7.6													NA	NA
W4	-15.24	10/31/89	1110				2.40	74	46.8	656	0.10	1.4	539	15138	2.65	82	48.1	674	0.28	20.9	7.750	18.537	5.24		<1	NA
W4	-15.24	11/16/89	1108				2.15	67	40.9	573	0.06	0.8	526	14773	2.65	82	44.4	622	7.02	22.4	7.755	18.917	5.84		<1	NA
W4	-15.24	12/12/89	1115				6.50	201	71.9	1007	0.93	13.0	456	12807	7.15	221	74.0	1036	125	20.8	8.385	18.554	5.20		<1	NA
W4	-15.24	1/11/90	912				2.96	92	48.1	674	1.17	16.4	512	14380	3.19	99	49.5	693	0.56	21.2	8.095	18.857	4.84		<1	NA
W4	-15.24	2/14/90	1130				2.93	91	51.4	720	0.27	3.8	459	12891	3.23	100	53.7	752	1.87	21.6	8.038	18.373	5.12		<1	NA
W4	-15.24	3/7/90	1110				2.46	76	50.1	702	0.44	6.2	514		2.86	89	50.9	713	0.54	21.1	7.965	18.298	4.94		<1	NA
W4	-15.24	4/4/90	1310				2.64	82	45.8	642	1.12	15.7	500	14043	2.83	88	46.9	657	0.50	21.4	7.916	19.193	4.43		<1	NA
W4	-15.24	5/17/90	1136				2.34	72	44.6	624	0.07	1.0	490	13762	2.42	75	46.4	649	0.43	21.3	7.865	18.944	4.59		<1	NA
W4	-15.24	6/16/90	1043				2.53	78	43.9	615	0.00	0.0	496	13930	2.62	81	46.4	649	0.73	21.3	7.935	19.144	4.84		<1	NA
W4	-15.24	7/17/90	1122				2.57	80	41.5	581	0.00	0.0	493	13846	2.97	92	44.5	623	0.44	21.4	7.923	19.677	4.70		<1	NA
W4	-15.24	8/8/90	1115				1.99	62	51.8	726	0.29	4.1	496	13930	2.64	82	44.0	616	0.34	21.4	7.901	19.841	4.74		<1	NA
W4	-15.24	9/5/90	1119				2.39	74	42.8	600	0.00	0.0			2.39	74	43.3	606	0.29	21.4	7.898	17.356	4.74		<1	NA
W4	-15.24	10/4/90	1128				2.24	69	40.5	567	0.00	0.0	496	13930	2.87	89	40.7	570	0.84	21.2	7.893	19.640	4.80		<1	NA
W4	-15.24	11/1/90	1143				2.16	67	42.6	597	0.04	0.6	494	13874	2.61	81	43.8	613	0.28	21.3	7.886	19.799	4.47		<1	NA
W4	-15.24	12/10/90	1120				2.26	70	44.2	619	0.13	1.8	537	15082	2.70	84	45.3	635	0.35	21.3	7.898	19.239	4.82		<1	NA
W4	-15.24	1/10/91	900				2.23	69	45.7	640	0.03	0.4	484	13593	2.30	71	46.8	656	0.39	21.4	7.896	19.390	4.67		<1	NA
W4	-15.24	2/5/91	1117				2.27	70	40.6	569	0.33	4.6	442	12414	2.27	70	42.0	588	0.68	21.3	7.897	19.163	4.79		<1	NA
W4	-15.24	3/7/91	745				2.04	63	43.5	609	0.06	0.8	477	13397	2.11	65	45.3	634	3.00	21.0	7.901	19.098	4.92		<1	NA
W4	-15.24	4/3/91	828				1.90	59	52.2	731	0.00	0.0	473	13284	2.00	62	53.3	747	0.54	21.0	7.912	19.304	4.77		<1	NA
W4	-15.24	5/22/91	804				1.96	61	21.3	298	0.00	0.0	555	15587	2.17	67	22.2	311	0.35	21.2	7.890	19.625	4.68		<1	NA
W4	-15.24	6/26/91	810				2.28	71	45.7	640	0.03	0.4	511	14352	2.43	75	47.1	660	0.43	21.2	7.906	19.209	4.74		<1	<1
W4	-15.24	7/24/91	845				2.07	64	41.7	584	0.15	2.1	498	13987	2.36	73	43.6	611	0.39	18.7	7.887	19.580	4.71		<1	<1
W4	-15.24	8/23/91	829				2.24	69	43.7	612	0.21	2.9	516	14492	2.34	72	46.2	647	0.42	21.1	7.847	19.429	4.68		<1	<1
W4	-15.24	9/24/91	751				2.11	65	43.2	605	0.30	4.2	504	14155	2.24	69	45.6	639	0.35	21.2	7.855	19.182	4.84		<1	<1
W4	-15.24	10/23/91	720				2.58	80	46.1	646	0.00	0.0	739	20755	2.68	83	48.5	679	0.44	21.1	7.943	19.450	4.62		<1	<1
W4	-15.24	11/20/91	813				2.87	89	42.7	598	0.00	0.0	561	15756	2.96	92	45.3	635	0.31	21.1	7.898	19.452	4.65		<1	<1
W4	-15.24	12/11/91	840				2.97	92	44.5	623	0.00	0.0	488	13706	3.07	95	47.1	660	0.52	21.5	7.947	19.590	4.43		<1	<1
W4	-15.24	1/29/92	836				2.63	81	45.4	636	0.00	0.0	490	13762	2.79	86	46.8	656	0.95	21.1	7.952	19.091	4.78		<1	<1
W4	-15.24	2/19/92	911				2.73	85	44.9	629	0.00	0.0	464	13032	2.76	85	51.8	726	0.35	21.7	7.923	19.331	4.72		<1	<1
W4	-15.24	3/17/92	824				2.24	69	44.8	628	0.00	0.0	496	13930	2.34	72	50.8	712	0.44	21.2	7.896	19.066	4.89		<1	<1
W4	-15.24	4/8/92	811				2.31	72	45.6	639	0.14	2.0	496	13930	2.40	74	47.3	663	0.56	21.2	7.886	18.840	4.96		<1	<1
W4	-15.24	5/6/92	821				2.16	67	43.3	606	0.05	0.7	530	14885	2.29	71	47.1	660	0.80	21.2	7.869	19.222	4.94		<1	<1
W4	-15.24	6/23/92	822				2.31	72	44.2	619	0.28	3.9	537	15082	2.57	80	46.0	644	0.44	21.3	7.878	19.191	5.01		<1	<1
W4	-15.24	7/29/92	811				2.06	64	43.3	606	ND	0.0	514	14436	2.14	66	45.4	635	0.53	21.8	7.857	19.274	4.92		<1	<1
W4	-15.24	8/26/92	755				2.29	71	51.4	720	0.14	2.0	543	15250	2.33	72	27.7	388	0.49	21.2	7.861	19.058	4.90		<1	<1
W4	-15.24	9/22/92	757				2.22	69	41.9	587	0.00	0.0	553	15531	2.31	72	41.9	587	0.39	21.2	7.890	19.012	4.92		<1	<1
W4	-15.24	10/27/92	813				2.95	91	44.3	621	0.14	2.0	527	14801	3.00	93	48.4	678	0.40	21.2	7.901	19.924	4.60		<1	<1
W4	-15.24	11/17/92	835				2.34	72	45.6	639	0.19	2.7	522	14661	2.48	77	48.8	684	0.36	21.1	7.903	19.469	4.81		<1	<1
W4	-15.24	12/8/92	820				2.19	68	46.4	650	0.21	2.9	539	15138	2.39	74	48.6	681	0.32	21.2	7.888	19.004	4.94		<1	<1
W4	-15.24	1/26/93	832				2.11	65	48.5	679	0.19	2.7	587	16486	2.27	70	50.3	705	0.41	21.2	7.905	18.679	5.03		<1	<1
W4	-15.24	2/23/93	803				2.15	67	46.9	657	0.05	0.7	554	15565	2.25	70	49.8	698	0.43	21.1	7.906	18.944	4.99		<1	<1
W4	-15.24	3/16/93	804				2.11	65	46.1	646	0.10	1.4	556	15616	2.16	67	47.8	670	0.48	21.1	7.894	18.999	5.01		<1	<1
W4	-15.24	4/27/93	808				2.07	64	45.0	630	0.21	2.9	552	15509	2.14	66	47.1	660	0.36	21.2	7.878	19.387	4.93		<1	<1
W4	-15.24	5/25/93	800				2.07	64	44.3	621	0.21	2.9	557	15635	2.10	65	49.6	695	0.29	21.3	7.867	19.382	4.90		<1	<1
W4	-15.24	6/28/93	839				2.00	62	44.6	625	0.16	2.2	532	14941	2.25	70	47.0	658	0.35	21.3	7.871	19.402	4.92		<1	<1
W4	-15.24	8/31/93	836				2.15	67	45.0	630	0.00	0.0	552	15503	2.15	67	52.9	741	0.47	21.3	7.864	19.087	5.05		<1	<1
W4	-15.24	10/26/93	808				2.16	67	46.2	648	0.32	4.5	526	14773	2.10	65	47.6	666	0.39	21.2	7.877	18.883	5.08		<1	<1
W4	-15.24	3/1/94	754				2.25	70	46.0	644	0.19	2.7	480	13481	2.27	70	58.9	825	0.58	21.1	7.860	19.322	4.78		<1	<1
W4	-15.24	6/21/94	744				2.34	72	49.8	697	0.21	2.9	727	20408	2.46	76	60.1	841	0.47	21.2	8.917	19.546	4.87		<1	<1

NELHA Water Quality Laboratory

Well 4 Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W4	-15.24	8/23/94	824				3.95	122	60.2	843	0.18	2.5	528	14840	4.04	125	68.0	953	0.56	21.3	8.019	19.850	5.47		<1	<1
W4	-15.24	10/25/94	840				2.45	76	45.4	636	0.40	5.6	464	13040	2.48	77	48.1	674	0.35	21.2	7.906	19.670	4.82		<1	<1
W4	-15.24	11/28/94	1215				2.42	75	44.3	620	0.43	6.0	468	13148	2.52	78	48.6	681		21.3		19.276	4.87			
W4	-15.24	12/13/94	905				2.36	73	45.2	633	0.00	0.0	184	5162	2.42	75		0		21.2		19.443				
W4	-15.24	1/24/95	838				2.31	72	45.1	631	0.14	2.0	473	13277	2.39	74	46.8	656	0.41	21.1	7.891	19.320	4.92		<1	<1
W4	-15.24	2/14/95	819				2.25	70	45.2	634	0.27	3.8	479	13442	2.36	73	45.9	642	0.45	21.2	7.904	19.380	4.92		<1	<1
W4	-15.24	3/14/95	913				2.25	70	45.4	636	0.07	1.0	471	13237	2.26	70	46.2	648	0.38	21.3	7.859	19.288	5.01		<1	<1
W4	-15.24	4/25/95	938				2.22	69	43.4	608	0.25	3.5	476	13369	2.26	70	45.0	631	0.32	21.1	7.871	19.668	4.86		<1	<1
W4	-15.24	5/9/95	828				2.19	68	46.0	644	0.25	3.5	510	14332	2.27	70	47.1	660	0.28	21.4	7.852	19.134	4.97		<1	<1
W4	-15.24	6/27/95	846				2.17	67	44.0	617	0.45	6.3	480	13470	2.31	72	46.0	645	0.29	21.4	7.859	19.312	5.01		<1	<1
W4	-15.24	7/25/95	900				2.06	64	44.5	623	0.15	2.1	482	13546	2.24	69	46.6	653	0.29	21.3	7.849	19.272	4.91		1	<1
W4	-15.24	8/22/95	947				2.01	62	43.1	603	0.31	4.3	481	13506	2.25	70	45.4	636	0.39	21.4	7.852	19.353	4.79		<1	<1
W4	-15.24	9/12/95	657				2.18	68	42.7	598	0.14	2.0	477	13386	2.19	68	45.0	631	0.44	21.3	7.899	19.685	6.36		<1	<1
W4	-15.24	10/17/95	856				2.14	66	43.7	613	0.16	2.2	488	13700	2.16	67	45.6	638	0.37	21.5	7.880	19.250	4.86		<1	<1
W4	-15.24	11/7/95	809				2.14	66	43.1	604	0.43	6.0	473	13296	2.20	68	45.5	637	0.43	21.3	7.910	19.628	4.78		<1	<1
W4	-15.24	12/6/95	823				2.10	65	44.4	621	0.29	4.1	483	13551	2.18	68	46.0	645	0.51	21.4	7.923	19.239	4.92		<1	<1
W4	-15.24	1/30/96	858				2.09	65	44.3	621	0.14	2.0	482	13532	2.18	68	45.2	633	0.43	21.0	7.939	19.651	4.82		<1	<1
W4	-15.24	2/27/96	905				2.10	65	43.9	615	0.15	2.1	489	13720	2.20	68	45.2	634	0.45	21.5	7.889	19.333	5.02		<1	<1
W4	-15.24	3/13/96	939				2.14	66	43.9	615	0.31	4.3	481	13509	2.21	68	46.6	653	0.62	21.5	7.868	19.166	4.96		<1	<1
W4	-15.24	4/2/96	924				2.14	66	40.4	565	0.18	2.5	494	13875	2.29	71	47.1	659	0.39	21.9	7.851	19.365	4.84		<1	<1
W4	-15.24	5/15/96	910				2.21	68	46.7	655	0.24	3.4	496	13925	2.24	69	50.0	700	0.47	21.7	7.840	19.008	4.98		<1	<1
W4	-15.24	6/18/96	831				2.17	67	43.1	603	0.15	2.1	493	13837	2.26	70	45.7	640	0.40	21.7	7.867	19.782	6.44		<1	<1
W4	-15.24	7/17/96	906				2.21	68	45.2	633	0.21	2.9	487	13678	2.24	69	46.8	656	0.41	21.7	7.895	19.496	0.99		<1	<1
W4	-15.24	8/6/96	915				2.09	65	47.2	661	0.38	5.3	477	13409	2.20	68	49.5	693	0.33	22.2	7.881	19.423	4.89		<1	<1
W4	-15.24	9/4/96	915				2.26	70	65.3	914	0.36	5.0	482	13542	2.30	71	70.0	980	0.41	21.7	7.886	19.041	4.97		<1	<1
W4	-15.24	10/9/96	918				2.54	79	62.8	880	0.35	4.9	495	13893	2.60	81	67.4	944	0.32	21.7	7.943	18.427	5.81		<1	<1
W4	-15.24	11/6/96	906				2.26	70	51	712	0.27	3.8	489	13737	2.40	74	55.5	777	0.47	21.7	7.869	18.471	5.11		<1	<1
W4	-15.24	12/17/96	905				2.31	72	50	702	0.21	2.9	458	12871	2.43	75	54.9	769	0.34	21.8	7.896	19.257	5.12		<1	<1
W4	-15.24	1/14/97	930				2.36	73	88	1233	0.18	2.5	451	12658	3.13	97	88.8	1244	0.56	21.8	7.940	19.517	5.51		<1	<1
W4	-15.24	2/10/97	1038				2.40	74	70	980	0.34	4.8	451	12669	2.5*	0	71.8	1006	0.46	21.7	7.903	20.106	5.38		<1	1
W4	-15.24	3/10/97	1041				3.02	94	72	1013	0.06	0.8	462	12976	3.2*	0	75.1	1051	0.46	21.9	7.908	20.165	5.38		<1	3
W4	-15.24	4/23/97	903				2.27	70	64	891	0.46	6.4	463	12992	2.39	74	70.6	989	0.49	21.7	7.931	20.317	4.98		<1	<1
W4	-15.24	5/28/97	922				2.58	80	45	627	0.06	0.8	418	11726	2.59	80	48.8	684	0.34	21.1	7.924	20.833	4.52		<1	<1
W4	-15.24	6/17/97	920				2.11	65	52	727	0.39	5.5	440	12366	2.16	67	54.0	756	0.38	21.1	7.947	19.934	4.64		<1	<1
W4	-15.24	7/15/97	912				2.45	76	67	944	0.05	0.7	435	12228	2.56	79	71.8	1006	0.49	21.2	7.994	19.865	4.47		<1	1
W4	-15.24	8/26/97	915				2.15	67	43	601	0.30	4.2	440	12346	2.22	69	44.3	620	0.39	21.0	8.079	20.537	4.48		<1	<1
W4	-15.24	9/23/97	1109				2.06	64	44.4	622	0.23	3.2	431	12116	2.11	65	45.6	639	0.37	21.7	8.092	20.512	4.48		<1	<1
W4	-15.24	10/15/97	851				2.16	67	43.6	611	0.06	0.8	466	13085	2.29	71	46.5	651	0.32	21.5	8.104	20.147	4.58		<1	<1
W4	-15.24	11/4/97	1007				2.16	67	44.9	629	0.18	2.5	455	12765	2.34	72	51.2	717	0.36	21.5	8.107	20.044	4.67		<1	<1
W4	-15.24	12/16/97	910				2.04	63	39.0	546	0.05	0.7	451	12678	2.22	69	42.0	588	0.37	21.5	8.060	20.977	4.60		<1	<1
W4	-15.24	1/5/98	1204				2.13	66	41.9	586	0.20	2.8	455	12775	2.27	70	43.9	615	0.43	21.5	8.074	20.199	4.69		<1	<1
W4	-15.24	2/3/98	1021				2.09	65	42	590	0.01	0.1	474	13310	2.24	69	45.2	633	0.36	21.5	8.050	19.990	4.76		<1	<1
W4	-15.24	3/10/98	1034				2.15	67	43	606	0.11	1.5	473	13290	2.25	70	45.4	636	0.39	21.4	7.879	20.029	4.79		<1	<1
W4	-15.24	4/14/98	858				5.71	177	676	9467	0.02	0.3	355	9979	6.19	192	731	10240	3.44	21.5	8.757	19.912	4.28		<1	<1
W4	-15.24	5/12/98	1028				2.71	84	75	1053	0.14	2.0	453	12711	2.81	87	81	1135	0.54	21.5	8.090	19.721	4.64		<1	<1
W4	-15.24	6/2/98	1023				2.44	76	50.7	710	0.14	2.0	455	12789	2.53	78	53.1	744	0.30	21.5	7.975	19.993	4.77		<1	<1
W4	-15.24	7/14/98	1033				18.01	558	288	4040	7.36	103.1	279	7830	19.3	599	340	4762	2.59	21.7	8.654	20.649	5.43		<1	<1
W4	-15.24	8/11/98	1048				7.68	238	74.3	1041	0.23	3.2	376	10546	8.07	250	80	1115	0.62	21.6	8.360	20.797	4.01		<1	<1
W4	-15.24	9/15/98	1122				3.39	105	51.3	719	0.09	1.3	412	11568	3.78	117	62.5	876	0.41	21.5	8.063	21.673	4.20		<1	<1
W4	-15.24	10/13/98	959				3.07	95	41.0	574	0.02	0.3	425	11928	3.26	101	43.3	606	0.34	21.8	8.007	21.676	4.61		<1	<1
W4	-15.24	11/4/98	1032				3.04	94	49	682	0.06	0.8	463	13006	3.12	97	51	720	0.47	21.9	8.029	20.424	4.50		<1	<1
W4	-15.24	12/16/98	1013				2.70	84	58	809	0.09	1.3	459	12891	2.82	87	63	875	0.53	21.7	7.975	19.612	4.69		<1	<1
W4	-15.24	1/12/99	1048				2.48	77	47.9	670	0.05	0.7	458	12855	2.65	82	50.5	707	0.41	21.7	7.946	19.884	4.74		<1	<1
W4	-15.24	2/3/99	1037				3.28	102	74.7	1046	0.09	1.3	434	12183	3.36	104	81.5	1142	0.61	21.5	7.987	20.493	4.29		<1	<1
W4	-15.24	3/2/99	1039				2.48	77	55.2	773	0.02	0.3	436	12240	2.61	81	58.4	818	0.41	21.6	7.981	20.695	4.82		<1	<1
W4	-15.24	4/6/99	1032				2.38	74	48.4	678	0.11	1.5	432	12139	2.49	77	50.9	713	0.45	21.6	7.969	21.382	4.39		<1	1
W4	-15.24	5/4/99	1037				2.53	78	47.9	671	0.10	1.4	440	12369	2.67	83	50.1	702	0.50	21.5	7.959	20.424	4.55		<1	<1
W4	-15.24	6/2/99	1020				2.44	76	40.1	562	0.19	2.7	425	11936	2.56	79	42.1	590	0.36	21.6	7.928	21.129	4.50		<1	<1

NELHA Water Quality Laboratory

Well 4 Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W4	-15.24	7/7/99	1055				2.66	82	40.3	564	0.01	0.1	446	12518	2.74	85	42.2	591	0.36	21.9	7.926	20.751	4.59		1	<1
W4	-15.24	8/25/99	1021				2.48	77	42.1	590	0.07	1.0	452	12689	2.59	80	44.1	618	0.33	22.1	7.970	20.644	5.03		<1	<1
W4	-15.24	9/8/99	1031				2.36	73	39.1	548	0.06	0.8	444	12464	2.48	77	41.8	585	0.34	21.5	7.957	21.654	4.49		<1	<1
W4	-15.24	10/6/99	1038				2.40	74	40.2	562	0.07	1.0	427	11993	2.53	78	41.9	587	0.33	21.6	7.956	20.874	4.67		<1	<1
W4	-15.24	11/3/99	1052				3.41	106	194	2714	0.13	1.8	377	10585	3.60	112	195	2731	1.08	21.7	8.362	20.529	4.92		<1	<1
W4	-15.24	12/15/99	1108				2.66	82	58.8	824	0.10	1.4	427	12001	2.76	85	59.8	838	0.42	21.7	8.026	21.058	4.05		<1	<1
W4	-15.24	1/11/00	1044				2.31	72	48.2	675	0.14	2.0	448	12582	2.40	74	52.7	738	0.38	21.5	7.952	20.298	4.61		<1	<1
W4	-15.24	2/14/00	1101				2.31	72	45.3	635	0.05	0.7	445	12504	2.36	73	47.6	667	0.39	21.8	7.970	20.339	4.78		<1	<1
W4	-15.24	3/22/00	1110				2.20	68	42.2	591	0.06	0.8	449	12610	2.20	68	51.4	720	0.43	21.5	7.954	21.111	4.44		<1	<1
W4	-15.24	4/12/00	1053				2.25	70	40.2	563	0.03	0.4	465	13051	2.25	70	43.1	604	0.45	21.6	7.941	21.119	4.45		<1	<1
W4	-15.24	5/17/00	1030				2.05	63	38.0	532	0.11	1.5	433	12155	2.07	64	39.2	549	0.46	21.6	7.924	21.777	7.65		<1	<1
W4	-15.24	6/6/00	1106				1.94	60	35.2	493	0.03	0.4	427	11987	2.06	64	37.8	529	0.35	21.6	7.917	22.335	7.52		<1	<1
W4	-15.24	7/31/00	1055				2.08	64	38.2	535	0.09	1.3	436	12231	2.19	68	40.1	562	0.61	21.4	7.931	21.244	4.52		<1	<1
W4	-15.24	8/30/00	1101				2.01	62	35.7	500	0.05	0.7	429	12051	2.11	65	36.7	514	0.65	21.6	7.881	22.266	4.32		<1	<1
W4	-15.24	9/6/00	1042				2.00	62	35.0	490	0.01	0.1	435	12217	2.19	68	36.3	508	1.55	21.9	7.878	22.183	4.27		<1	<1
W4	-15.24	10/25/00	1008				2.01	62	38.3	536	0.24	3.4	452	12683	2.22	69	40.1	562	0.61	21.6	7.886	21.825	4.25		<1	<1
W4	-15.24	11/14/00	1122				2.10	65	43.5	609	0.17	2.4	437	12265	2.18	68	44.0	616	0.57	21.6	7.918	21.515	4.20		<1	<1
W4	-15.24	12/19/00	1024				1.88	58	40.0	560	0.13	1.8	454	12759	2.10	65	41.0	575	0.46	21.5	7.905	21.299	4.31		<1	<1
W4	-15.24	1/24/01	1016				2.08	64	38.3	537	0.17	2.4	529	14852	2.20	68	41.9	587	0.49	21.5	7.894	21.525	4.24		<1	<1
W4	-15.24	2/7/01	1045				2.13	66	39.9	559	0.14	2.0	462	12984	2.20	68	42.2	591	0.50	21.6	7.925	20.931	4.37		<1	2
W4	-15.24	3/12/01	1030				2.03	63	37.2	521	0.03	0.4	441	12386	2.40	74	38.3	536	0.40	21.8	7.871	21.373	4.50		<1	<1
W4	-15.24	4/18/01	1020				2.14	66	40.7	570	0.04	0.6	368	10341	2.16	67	42.6	597	0.36	21.6	7.862	20.888	4.76		<1	<1
W4	-15.24	5/14/01	857				3.12	97	39.0	547	0.16	2.2	454	12751	3.44	107	43.1	604	0.37	21.5	7.871	21.287	4.65		<1	<1
W4	-15.24	6/13/01	1038				2.20	68	43.7	612	0.04	0.6	427	11986	2.50	77	46.2	648	0.53	21.6	8.002	21.522	4.71		<1	<1
W4	-15.24	7/25/01	957				2.22	69	41.7	584	0.09	1.3	445	12501	2.26	70	42.9	600	0.41	21.9	7.934	21.015	4.70		<1	<1
W4	-15.24	8/20/01	939				12.3	381	74.9	1049	0.15	2.1	213	5985	12.3	382	81.8	1146	0.67	21.7	7.907	21.177	4.83		<1	<1
W4	-15.24	9/18/01	930				2.14	66	42.5	595	0.19	2.7	457	12824	2.18	68	44.7	626	0.39	22.1	7.899	20.880	4.88		<1	1
W4	-15.24	10/9/01	1022				2.04	63	39.0	547	0.07	1.0	443	12442	2.16	67	41.6	583	0.40	21.8	7.878	21.316	4.79		<1	<1
W4	-15.24	11/6/01	930				1.94	60	39.8	558	0.05	0.7	455	12776	2.13	66	45.2	633	0.38	22.1	7.879	21.318	4.80		<1	<1
W4	-15.24	12/18/01	938				1.65	51	38.5	539	0.18	2.5	368	10335	1.82	56	40.8	571	0.42	21.6	7.870	21.195	4.69		<1	1
W4	-15.24	1/8/02	954				2.00	62	37.7	528	0.19	2.7	450	12647	2.11	65	39.1	548	0.43	21.5	7.865	21.662	4.27		<1	<1
W4	-15.24	2/27/02	952				2.08	64	40.8	572	0.06	0.8	461	12939	2.16	67	46.3	648	0.37	21.4	7.878	21.514	4.51		<1	<1
W4	-15.24	3/19/02	1004				1.96	61	37.3	522	0.11	1.5	443	12431	2.20	68	38.8	544	0.43	21.5	7.904	21.651	4.34		<1	<1
W4	-15.24	4/9/02	953				2.00	62	37.5	526	0.03	0.4	441	12386	2.14	66	39.4	552	0.44	21.3	7.863	21.613	4.35		<1	<1
W4	-15.24	5/21/02	950				1.80	56	37.1	520	0.03	0.4	441	12372	2.06	64	37.6	527	0.30	21.7	7.879	21.416	4.72		<1	<1
W4	-15.24	6/18/02	1010				2.01	62	38.1	533	0.13	1.8	445	12484	2.07	64	39.9	559	0.27	21.5	7.868	21.690	4.59		<1	<1
W4	-15.24	7/17/02	949				2.04	63	40.2	563	0.11	1.5	457	12841	2.10	65	38.0	532	0.46	21.9	7.887	21.184	4.81		<1	<1
W4	-15.24	8/22/02	955				2.00	62	35.4	495	0.13	1.8	434	12181	2.04	63	34.9	488	0.43	21.5	7.914	22.370	4.25		<1	<1
W4	-15.24	9/24/02	950				2.06	64	42.9	601	0.27	3.8	457	12829	2.19	68	36.7	514	0.41	21.8	7.917	21.441	4.69		<1	<1
W4	-15.24	10/16/02	1014				2.00	62	36.4	509	0.23	3.2	445	12504	2.02	63	36.3	508	0.33	21.6	7.890	21.825	4.43		<1	<1
W4	-15.24	11/6/02	1005				2.02	63	39.4	552	0.18	2.5	359	10077	2.25	70	37.1	520	0.54	21.9	7.879	21.380	4.70		<1	<1
W4	-15.24	12/19/02	1037				1.99	62	37.6	526	0.10	1.4	445	12484	2.02	63	35.7	501	0.52	21.5	7.876	21.567	4.52		<1	<1
W4	-15.24	1/22/03	1024				1.88	58	29.6	415	0.06	0.8	427	12001	2.20	68	39.4	552	0.41	21.4	7.881	23.002	4.25		<1	<1
W4	-15.24	2/20/03	951				1.92	59	39.2	550	0.26	3.6	447	12540	2.06	64	45.0	631	0.46	21.8	7.885	21.642	4.54		<1	<1
W4	-15.24	3/18/03	930				1.96	61	39.8	557	0.11	1.5	463	13006	2.16	67	44.9	629	0.32	22.3	7.884	21.092	4.67		<1	<1
W4	-15.24	4/29/03	941				2.23	69	43.1	603	0.21	2.9	479	13461	2.35	73	50.9	713	0.28	21.8	7.906	20.117	4.92		<1	<1
W4	-15.24	5/13/03	1017				2.12	66	39.6	555	0.27	3.8	461	12933	2.21	68	41.2	577	0.25	21.9	7.906	20.883	5.43		<1	1
W4	-15.24	6/5/03	940				2.14	66	44.3	620	0.20	2.8	457	12846	2.21	68	49.0	687	0.33	22.0	7.912	20.769	4.74		<1	2

NELHA Water Quality Laboratory

Well 4 Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W4	-15.24	7/31/03	1003				2.09	65	41.1	576	0.08	1.1	461	12954	2.17	67	44.7	626		21.5	7.883	20.883	4.71		<1	TNTC
W4	-15.24	8/27/03	1008				2.16	67	40.0	560	0.40	5.6	457	12827	3.4	107	49.6	695		21.7	7.905	21.100	4.71		<1	226
W4	-15.24	9/17/03	947				2.58	80	37.6	526	18.9	264.7	441	12394	2.98	92	61.8	866		22.3	7.830	21.970	4.26		5	TNTC
W4	-15.24	10/7/03	942				2.26	70	46.7	654	0.67	9.4	470	13200	2.42	75	52.0	728		22.3	7.873	20.557	NA		<1	8
W4	-15.24	11/4/03	935				2.18	68	43.0	603	0.48	6.7	462	12984	2.32	72	49.9	699		22.1	7.883	20.547			<1	<1
W4	-15.24	11/14/03	1119																	22.4			4.61			
W4	-15.24	12/16/03	930				2.11	65	39.7	557	1.00	14.0	453	12714	2.17	67	44.3	620		22.0	7.885	21.325	4.59		<1	<1
W4	-15.24	1/27/04	949				2.04	63	43.4	607	0.31	4.3	461	12933	2.18	68	49.8	698		21.8	7.880	20.828	4.81		<1	<1
W4	-15.24	2/10/04	940				2.26	70	41.1	576	0.21	2.9	435	12203	2.40	74	42.3	592		21.9	7.870	21.002	4.56		103	<1
W4	-15.24	3/15/04	949				2.44	76	46.6	652	0.11	1.5	465	13049	2.57	80	49.9	698		22.2	7.896	20.671	4.59		<1	37
W4	-15.24	4/21/04	900				2.18	68	41.6	583	0.04	0.6	464	13026	2.15	67	42.7	598		21.2	7.879	21.324	4.52		<1	1
W4	-15.24	5/12/04	855				2.06	64	37.3	522	0.24	3.4	448	12585	2.10	65	39.5	553		21.9	7.892	21.37	4.67		<1	1
W4	-15.24	6/7/04	849				2.06	64	33.9	475	5.21	73.0	427	11993	2.24	69	42.9	600		22.0	7.834	22.27	4.64		688	752
W4	-15.24	7/8/04	956				2.10	65	37.4	523	0.07	1.0	441	12394	2.26	70	42.3	593	0.30	22.2	7.903	21.85	4.42		2200	2216
W4	-15.24	8/24/04	925				2.28	71	36.3	508	4.7	65.4	427	11978	2.36	73	43.5	609		22.2	7.847	21.66	4.39		<1	2672
W4	-15.24	9/28/04	947				2.30	71	39.9	559	5.0	69.3	439	12327	2.38	74	47.6	667		22.3	7.829	21.77	4.49		<1	307
W4	-15.24	10/5/04	1034				1.84	57	35.9	503	0.30	4.2	420	11802	2.00	62	38.2	536		22.2	7.876	22.45	4.36		<1	4192
W4	-15.24	11/8/04	925				2.06	64	40.3	565	0.27	3.8	461	12933	2.22	69	45.9	642		22.0	7.868	20.11	4.95		<1	4608
W4	-15.24	12/7/04	938				1.94	60	36.7	514	0.19	2.7	429	12046	1.96	61	41.1	575		22.0	7.883	21.86	4.39		<1	1204
W4	-15.24	1/11/05	928				2.06	64	44.5	623	0.10	1.4	489	13734	2.20	68	46.4	650		22.2	7.941	20.796	4.85		<1	69
W4	-15.24	2/8/05	932				2.10	65	48.5	679	0.19	2.7	469	13178	2.18	68	51.0	714		22.3	7.944	20.212	4.94		<1	5
W4	-15.24	3/16/05	1004				2.33	72	42.7	598	5.1	70.9	462	12984	2.57	80	45.1	632	0.27	22.2	7.883	20.667	5.10		<1	324
W4	-15.24	4/18/05	1019				2.08	64	45.4	636	0.9	12.6	462	12973	2.20	68	48.6	681		22.6	7.934	20.609	5.48		<1	3
W4	-15.24	5/24/05	929				2.26	70	47.2	661	0.20	2.8	466	13074	2.50	77	49.0	687		22.6	7.879	20.120	4.58		<1	<1
W4	-15.24	6/13/05	950				2.15	67	43.9	615	5.6	78.3	463	12995	2.28	71	54.0	756		22.8	7.860	20.718	4.45		<1	4960
W4	-15.24	7/11/05	945				2.34	72	39.3	551	3.2	44.1	454	12756	2.44	76	42.0	589		22.6	7.844	21.385	4.52		1	688
W4	-15.24	8/10/05	910				2.48	77	41.8	586	0.11	1.5	459	12883	2.58	80	41.8	585		22.6	7.898	20.776	6.07		13	91
W4	-15.24	9/21/05	905				3.90	121	43.3	607	1.32	18.5	458	12858	4.10	127	52.4	734	0.36	22.3	7.886	20.745	4.41		3	>5,000
W4	-15.24	10/18/05	931				2.51	78	44.6	624	0.19	2.7	448	12588	2.60	81	45.6	638		22.3	8.383	20.689	4.57		3	105
W4	-15.24	11/3/05	850				2.20	68	47.2	661	0.43	6.0	450	12647	2.58	80	51.2	717		22.1	7.926	21.177	4.47		1	38
W4	-15.24	12/21/05	1001				3.72	115	40.5	568	26.8	375.4	439	12338	4.16	129	73.9	1035	0.67	23.6	7.840	21.978	3.13		633	>5,000
W4	-15.24	1/24/06	910				3.12	97	44.6	625	17.5	245.1	470	13197	3.26	101	62.0	868		22.4	7.867	20.581	4.35		1	824
W4	-15.24	2/15/06	903				2.43	75	44.4	622	6.15	86.1	451	12675	2.52	78	54.6	765	0.27	22.0	7.879	21.126	4.44		<1	100
W4	-15.24	3/21/06	850				2.38	74	41.8	585	7.70	107.9	464	13032	2.45	76	47.7	668	0.25	22.2	7.892	20.973	7.86		1	78
W4	-15.24	4/19/06	957				2.52	78	42.2	591	8.0	112.1	458	12863	-	0	45.2	633	0.33	22.1	7.869	21.156	6.89		<1	136
W4	-15.24	4/26/06	905				2.54	79	41.8	585	8.9	124.7	451	12667	2.72	84	46.9	656	0.30	21.5	7.874	21.271	5.94		<1	6
W4	-15.24	5/3/06					2.55	79	43.9	615	10	140.1	447	12554		0	47.6	666	0.32	21.6	7.872	21.406	4.63		<1	6
W4	-15.24	5/10/06					2.38	74	42.3	592	6.3	88.2	466	13088		0	36.4	510	0.25	21.9	7.877	21.074	4.59		<1	3
W4	-15.24	5/16/06					2.25	70	42.1	590	4.1	57.4	457	12835		0	38.6	540	0.29	22.0	7.898	21.198	6.07		<1	1
W4	-15.24	5/23/06	937				2.34	72	43.7	612	9.8	137.3	447	12554	2.60	81	49.2	689	0.37	21.8	7.856	21.077	4.64		<1	1
W4	-15.24	6/27/06	942				2.76	85	46.3	649	8.1	113.5	440	12358	2.88	89	39.6	555	0.25	21.8	7.825	21.842	4.43		<1	7
W4	-15.24	7/18/06	937				2.31	72	41.4	580	4.3	60.2	443	12442	2.40	74	42.6	597	0.39	22.3	7.874	21.300	4.71		<1	26
W4	-15.24	8/8/06	915				2.47	77	43.5	609	5.8	81.2	454	12751	2.60	81	42.3	592	0.26	21.7	7.852	21.378	4.63		<1	2
W4	-15.24	9/19/06	1015				2.04	63	39.9	559	0.58	8.1	448	12582	2.19	68	38.9	545	0.27	22.0	7.856	21.296	4.58		<1	<1
W4	-15.24	10/24/06	953				2.02	63	40.3	564	0.37	5.2	454	12751	2.13	66	37.5	525	0.28	22.5	7.888	21.174	4.63		1	<1
W4	-15.24	11/28/06	934				2.02	63	38.8	543	0.52	7.3	445	12498	2.06	64	34.8	487	0.25	22.0	7.875	21.173	4.67		93	99
W4	-15.24	12/12/06	929				1.88	58	37.4	524	0.21	2.9	438	12301	1.97	61	35.9	502	0.42	22.0	7.88	21.422	4.55		1	1
W4	-15.24	1/9/07	955				2.02	63	42.4	594	0.28	3.9	441	12386	2.13	66	42.2	591	0.51	22.0	7.891	21.074	4.64		<1	<1
W4	-15.24	2/22/07	936				1.92	59	40.7	570	0.31	4.3	454	12751	1.99	62	44.1	617	0.28	21.9	7.871	21.020	4.80		<1	1
W4	-15.24	3/6/07	953				2.02	63	42.1	590	0.35	4.9	465	13060	2.16	67	44.7	626	0.33	22.3	7.894	20.725	4.90		<1	1
W4	-15.24	4/11/07	1106				2.02	63	40.9	573	0.19	2.7	471	13228	2.15	67	37.7	528	0.28	22.3	7.925	20.516	4.76		<1	<1
W4	-15.24	5/3/07	939				2.14	66	38.8	543	0.23	3.2	472	13256	2.26	70	40.4	566	0.34	21.9	7.911	20.637	4.52		<1	<1
W4	-15.24	6/19/07	906				2.00	62	41.3	579	0.22	3.1	450	12638	2.16	67	33.1	463	0.22	22.2	7.909	21.267	4.74		<1	<1

NELHA Water Quality Laboratory

Well 4 Data Table

June 1989 - December 2014

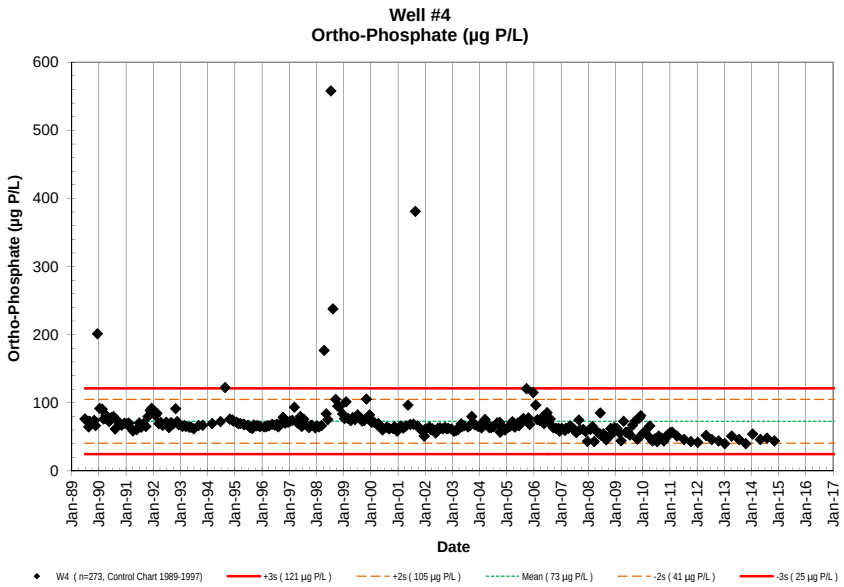
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W4	-15.24	7/25/07	1445	-5	0.6	High	1.81	56	41.3	578	5.70	80	468	13143	2.04	63	40.7	570.7		21.6	7.81	21.69	4.32			
W4	-15.24	8/28/07	950	-7	0.0	Low	2.41	75	47.5	665	0.04	0.5	594	16676	2.38	74	48.3	675.9		21.6	7.78	21.03	4.33			
W4	-15.24	9/13/07	1240	-7	0.2	Flood	1.97	61	41.3	578	1.33	19	491	13789	2.08	65	49.2	688.7		22.5	7.84	21.28	4.29			
W4	-15.24	10/24/07	1006	-7	0.1	Low	1.96	61	44.7	627	0.17	2.4	437	12276	2.11	65	42.5	594.6		21.9	7.82	21.08	4.07			
W4	-15.24	11/26/07	1329	-8	0.1	Low	1.87	58	44.2	619	0.44	6.1	482	13537	1.73	53	49.9	698.8		21.9	7.85	21.18	4.06			
W4	-15.24	12/20/07	1019	-7	0.2	Low	1.40	43	17.3	243	0.74	10	443	12439						21.5	7.87	20.47	4.28			
W4	-15.24	1/29/08	954	-7	0.2	Ebb	1.97	61	45.3	635	0.04	0.5	341	9580						21.6	7.74	20.38	4.42			
W4	-15.24	2/27/08	1420	-7	0.1	Low	2.11	65	46.0	644	0.49	6.8	453	12719						22.0	7.76	20.15	4.55			
W4	-15.24	3/20/08	1432	-7	0.3	Flood	1.39	43	66.7	934	0.26	3.6	197	5534						21.8	7.79	21.19	4.15			
W4	-15.24	4/29/08	1048	-7	0.2	Flood	1.84	57	42.6	597	0.09	1.2	428	12031						22.2	7.80	20.91	4.73			
W4	-15.24	5/29/08	1137		0.4	Flood	1.77	55	45.4	636	0.12	1.7	458	12871						22.5	7.83	20.56	4.58			
W4	-15.24	6/10/08	1038	-7	0.3	Flood	2.75	85	41.6	583	2.31	32	506	14211						22.3	7.78	21.02	5.20			
W4	-15.24	6/19/08	1241	-7	0.1	Flood	1.69	52	42.6	597	0.72	10	444	12459						22.3	7.70	21.07	4.65	0.31		
W4	-15.24	7/24/08	1129	-7	0.4	Ebb	1.75	54	45.4	635	0.20	2.8	407	11424						21.6	7.75	21.68	4.57			
W4	-15.24	8/29/08	1702		0.7	Ebb	1.47	46	36.5	511	0.24	3.3	388	10902						21.6	7.72	21.94	2.90			
W4	-15.24	9/19/08	1102	-7	0.4	Ebb	1.59	49	37.4	523	0.41	5.8	295	8281						24.7	7.67	21.28	4.28	0.17		
W4	-15.24	10/28/08	958	-7.14	0.2	Ebb	2.01	62	43.6	611	0.31	4.4	421	11827						23.4	7.55	21.08	4.22	0.14		
W4	-15.24	11/13/08	1045	-7.2	0.1	Ebb	1.76	54	43.6	611	0.22	3.1	398	11166						24.9	7.94	21.04	4.14	0.10		
W4	-15.24	12/15/08	1129	-6.94	0.2	Ebb	2.06	64	47.9	671	0.15	2.1	403	11330						23.3	7.98	20.71	4.46			
W4	-15.24	1/22/09	943	-7.22	0.1	Low	2.01	62	51.1	715	1.44	20	426	11952						23.3	7.92	19.92	4.59	0.22		
W4	-15.24	2/24/09	857	-7.16	0.1	Ebb	1.80	56	47.7	668	0.69	9.7	455	12781						22.2	7.65	20.24	4.62	8.10		
W4	-15.24	3/16/09	941	-7.19	0.1	Ebb	1.43	44	36.7	515	0.13	1.8	292	8188						23.1	7.64	20.24	4.47	0.45		
W4	-15.24	4/20/09	1628	-7.07	0.2	Ebb	2.35	73	43.1	604	0.43	6.0	349	9801						23.4	7.72	20.70	4.65	1.98		
W4	-15.24	5/21/09	1534	-6.79	0.6	Ebb	1.83	57	36.6	513	0.21	3.0	444	12468						21.5	7.86	22.49	4.26	0.08		
W4	-15.24	6/18/09	1306	-6.83	0.6	High	1.83	57	33.0	463	0.34	4.8	242	6790						21.6	7.86	23.50	4.19	0.04		
W4	-15.24	7/14/09	757	-7.18	0.4	Flood	1.70	53	32.7	458	0.16	2.2	174	4895						21.4	7.97	21.44	4.39	0.05		
W4	-15.24	8/19/09	1021	-7.24	0.1	Flood	2.17	67	41.7	584	0.86	12.1	411	11536						21.7	7.81	21.74	3.98	0.06		
W4	-15.24	9/24/09	844	-6.9	0.6	High	2.37	73	40.9	573	0.50	7.0	217	6104						21.6	8.23	21.47	4.28	0.04		
W4	-15.24	10/22/09	1452	-7.21	0.4	Ebb	1.50	47	23.8	334	0.49	6.8	104	2928						21.9	7.86	21.29	4.04	0.05		
W4	-15.24	11/16/09	1535	-7.16	0.2	High	2.51	78	41.8	586	0.89	12.4	428	12017						21.8	7.88	21.48	4.06	0.03		
W4	-15.24	12/7/09	1545	-7.36	0.1	Low	2.62	81	56.0	784	0.74	10.4	443	12445						23.0	7.87	20.96	4.28	0.02		
W4	-15.24	1/5/10	1345	-7.29	0.0	Ebb	1.78	55	33.1	463	1.50	21.0	338	9488						22.0	7.86	24.74	3.98	0.20		
W4	-15.24	2/1/10	1330	-7.23	0.0	Ebb	1.87	58	36.4	510	0.86	12.0	318	8922						22.0	7.97	24.66	3.80	0.23		
W4	-15.24	3/9/10	1433	-7.22	0.2	High	1.68	52	31.1	435	0.29	4.0	381	10713						22.8	7.86	24.53	3.72	0.14		
W4	-15.24	4/6/10	1304	-7.25	0.2	High	2.13	66	31.7	444	0.50	7.0	365	10244						22.9	7.89	24.80	3.76	0.30		
W4	-15.24	5/11/10	1335	-6.94	0.5	Flood	1.42	44	27.1	379	1.50	21.0	360	10102						22.9	7.93	25.13	3.97	0.07		
W4	-15.24	6/15/10	1419	-6.86	0.2	Flood	1.52	47	27.3	383	0.57	8.0	358	10051						21.0	7.96	25.38	3.75	0.13		
W4	-15.24	7/13/10	1319	-7.22	0.2	Flood	1.39	43	28.9	405	0.57	8.0	386	10836						21.0	7.89	25.33	3.71	0.04		
W4	-15.24	8/3/10	1311	-6.85	0.5	Ebb	1.65	51	29.9	419	0.29	4.0	386	10852						21.2	7.93	24.75	3.70	0.08		
W4	-15.24	9/14/10	1326	-7.07	0.4	Ebb	1.55	48	31.7	444	0.46	6.4	412	11567						21.0	7.87	24.75	4.03	0.07		
W4	-15.24	10/12/10	1406	-7.03	0.3	Ebb	1.42	44	28.7	402	0.06	0.9	397	11140						21.0	7.91	25.20	3.92	0.07		
W4	-15.24	11/16/10	1253	-6.91	0.4	High	1.65	51	31.8	446	0.13	1.8	405	11368						21.0	7.89	24.42	3.92	0.10		
W4	-15.24	12/14/10	1324	-6.99	0.2	Ebb	1.71	53	35.5	497	0.24	3.3	430	12078						21.1	7.93	23.34	4.04	0.05		
W4	-15.24	1/4/11	1309	-7.28	0.1	Flood	1.81	56	35.1	492	0.29	4.0	412	11560						21.1	7.87	23.57	3.89	0.12		
W4	-15.24	2/1/11	1020	-7.17	0.0	Low	1.84	57	35.1	491	0.14	2.0	417	11703						21.2	7.84	23.68	4.02	0.16		
W4	-15.24	4/5/11	1331	-7.19	0.1	Flood	1.65	51	30.3	425	0.18	2.5	370	10387						21.3	7.82	23.99	3.42	0.08		
W4	-15.24	7/12/11	1324	-6.92	0.6	Flood	1.49	46	28.3	396	0.10	1.4	375	10541						21.0	7.84	25.49	3.50	0.02		
W4	-15.24	10/10/11	1503	-6.87	0.5	High	1.39	43	26.3	369	0.09	1.3	355	9976						20.9	7.86	26.07	3.65	0.05		
W4	-15.24	1/10/12	1358	-7.33	0.0	Flood	1.36	42	28.3	397	0.22	3.1	369	10366						21.2	7.86	25.02	3.84	0.21		
W4	-15.24	5/1/12	1403	-6.85	0.4	Ebb	1.68	52	28.2	395	0.12	1.7	392	11013						21.6	7.79	25.63	3.51	0.04		
W4	-15.24	7/18/12	1330	-6.89	0.5	Flood	1.49	46	28.0	392	0.26	3.7	376	10553						21.3	7.90	25.91	3.70	0.68		
W4	-15.24	10/16/12	1318	-7.15	0.2	Flood	1.42	44	28.8	403	0.34	4.7	373	10483						21.0	7.83	25.87	3.65	0.07		
W4	-15.24	1/8/13	1409	-7.04	0.2	High	1.29	40	31.5	441	0.42	5.9	427	11991						21.0	7.78	24.99	3.74	0.05		
W4	-15.24	4/9/13	1345	-7.04	0.3	Flood	1.65	51	27.6	386	0.30	4.2	361	10152						20.8	7.84	25.86	3.16	0.02		
W4	-15.24	7/17/13	1502	-6.88	0.52	Ebb	1.49	46	26.4	370	0.37	5.2	380	10676						21.8	7.74	25.66	3.61	0.02		
W4	-15.24	10/15/13	1346	-6.81	0.55	High	1.29	40	28.0	392	0.31	4.3	356	9989						21.2	7.80	26.18	3.73	0.17		
W4	-15.24	1/15/14	1332	-7.21	0.12	Flood	1.74	54	29.6	415	0.34	4.7	370	10378						21.4	7.87	25.54	4.20	0.02		
W4	-15.24	4/29/14	1502	-6.97	0.49	Flood	1.49	46	28.7	402	0.40	5.6	364	10218						21.2	7.82	25.39	4.03	0.06		

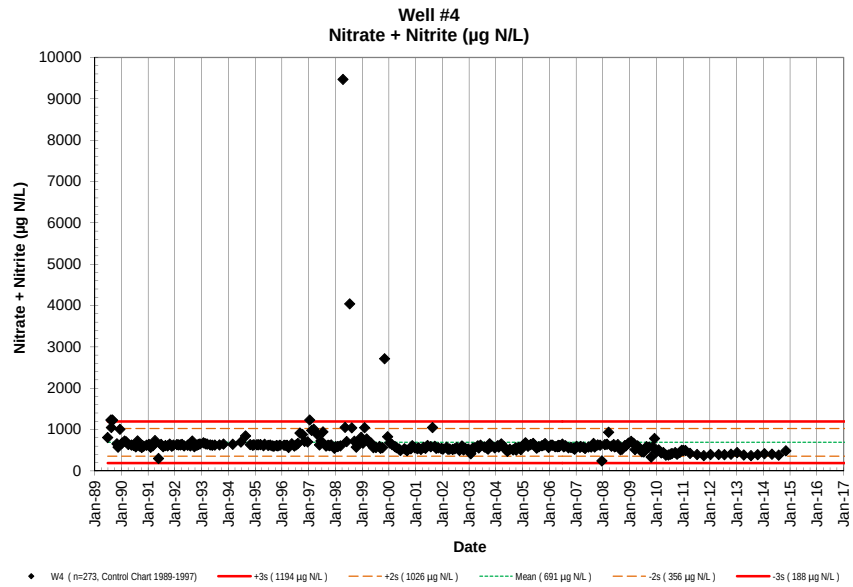
NELHA Water Quality Laboratory

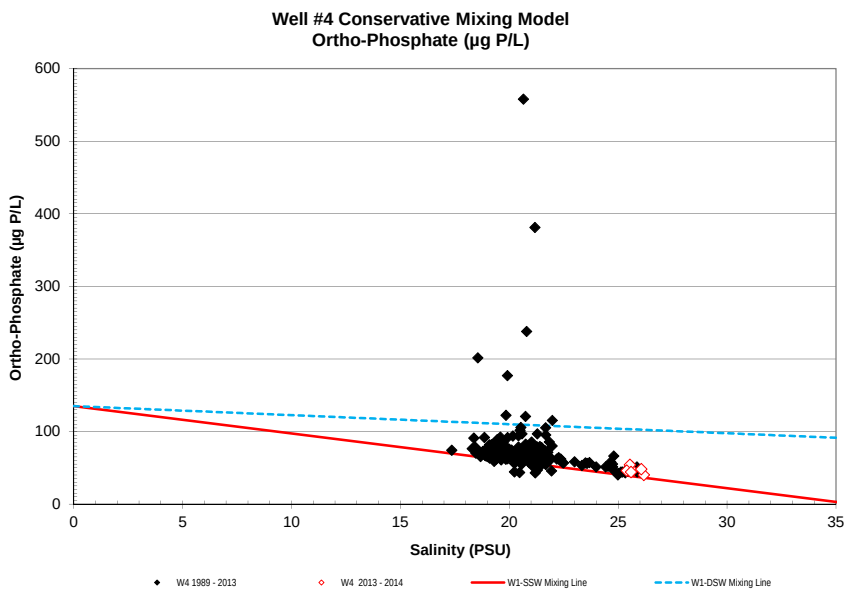
Well 4 Data Table

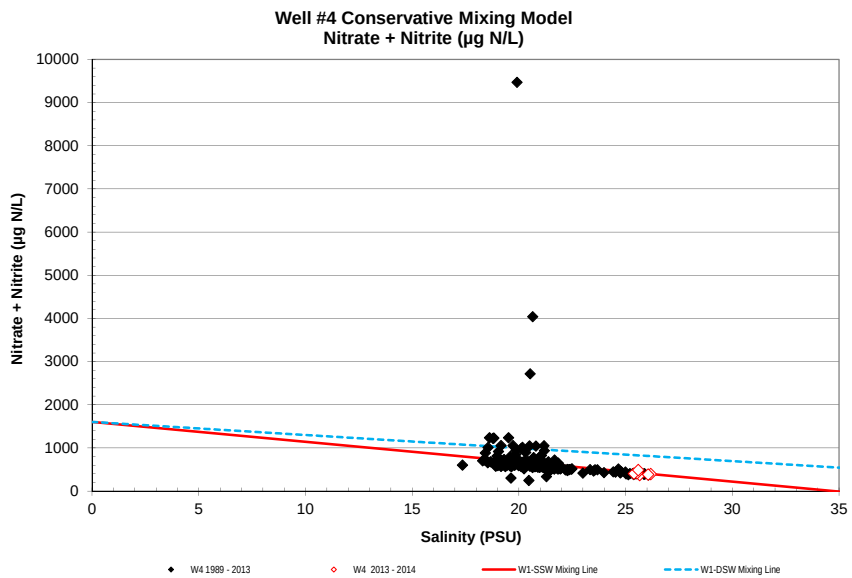
June 1989 - December 2014

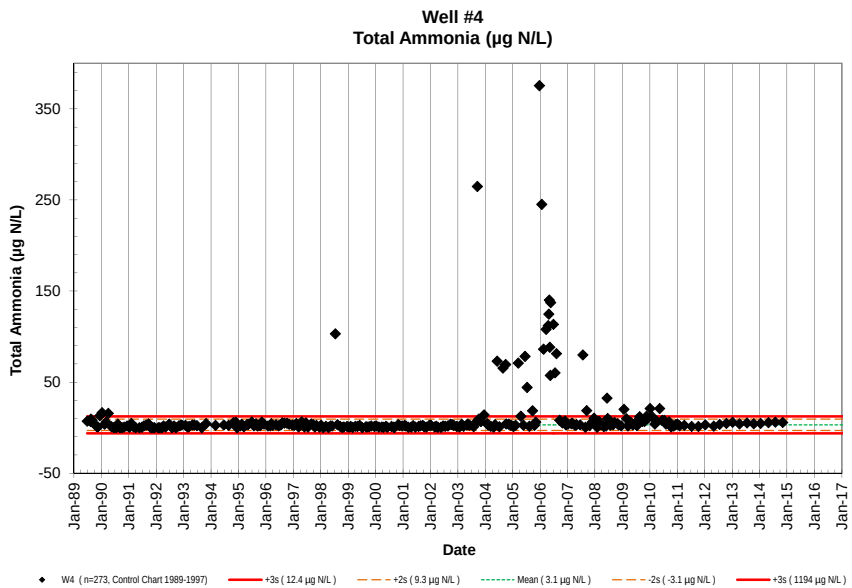
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W4	-15.24	7/29/14	1430	-7.09	0.3	Flood	1.55	48	27.3	382	0.43	6.0	363	10207						21.7	7.85	26.06	3.97	0.08		
W4	-15.24	11/5/14	1417	-6.91	0.38	Flood	1.42	44	34.6	485	0.41	5.8	345	9700						21.7	7.81	25.59	3.98	0.14		
W4	-15.24	1/1/15																								
W4	-15.24	4/1/15																								

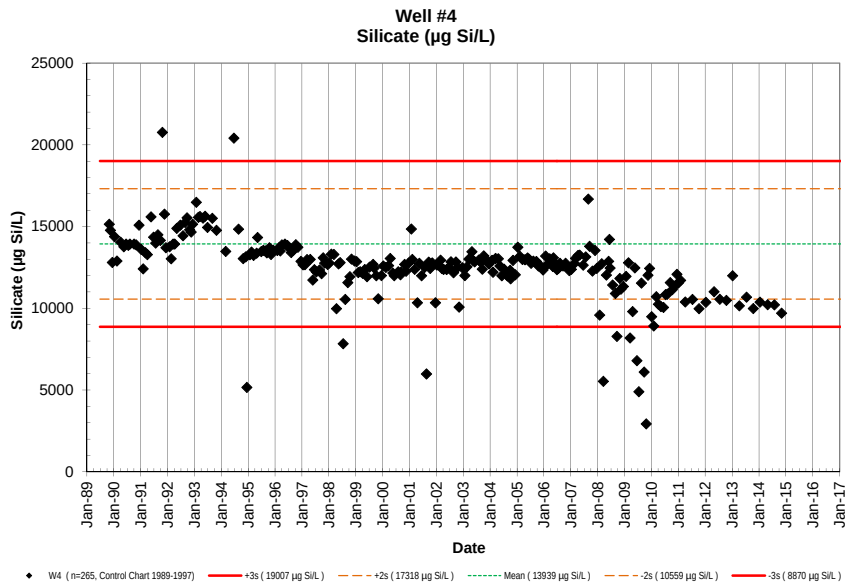

Well #4
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W4 (n=273, Control Chart 1989-1997)
+3s (121 µg P/L)
+2s (105 µg P/L)
Mean (73 µg P/L)
-2s (41 µg P/L)
-3s (25 µg P/L)

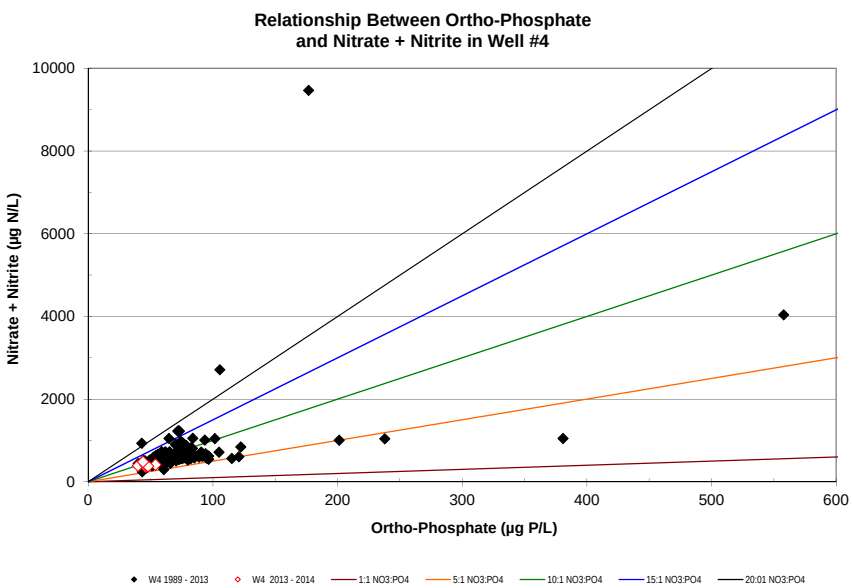

Well #4
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W4 (n=273, Control Chart 1989-1997)
+3s (1194 µg N/L)
+2s (1026 µg N/L)
Mean (691 µg N/L)
-2s (356 µg N/L)
-3s (188 µg N/L)

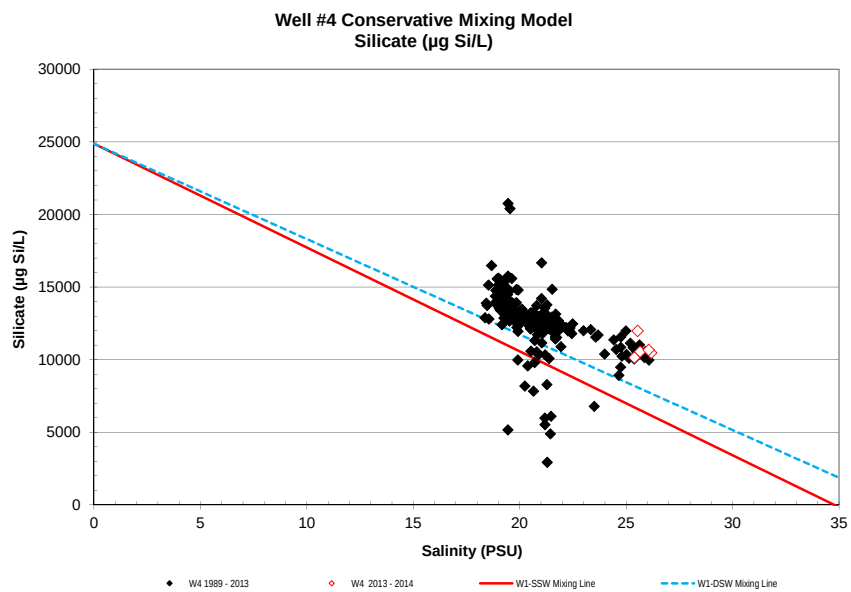

Well #4 Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W4 1989 - 2013
W4 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

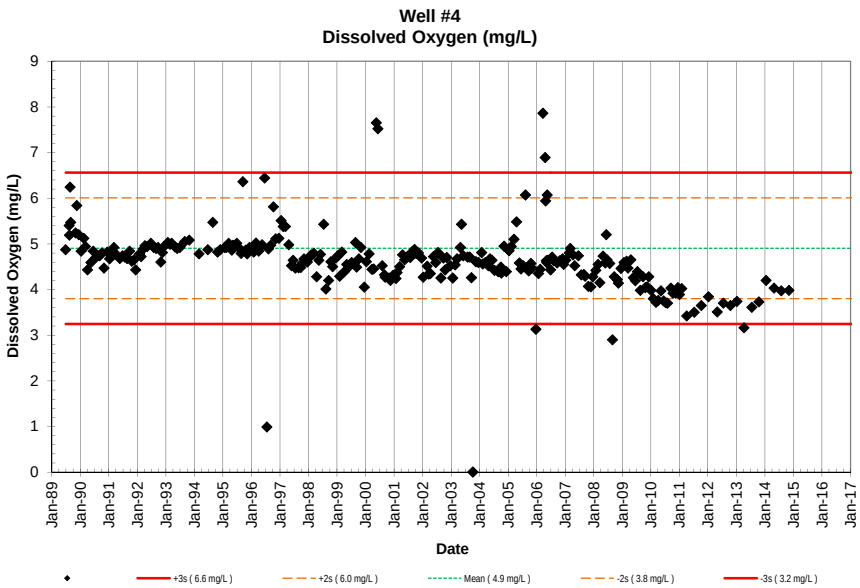

Well #4 Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W4 1989 - 2013
W4 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

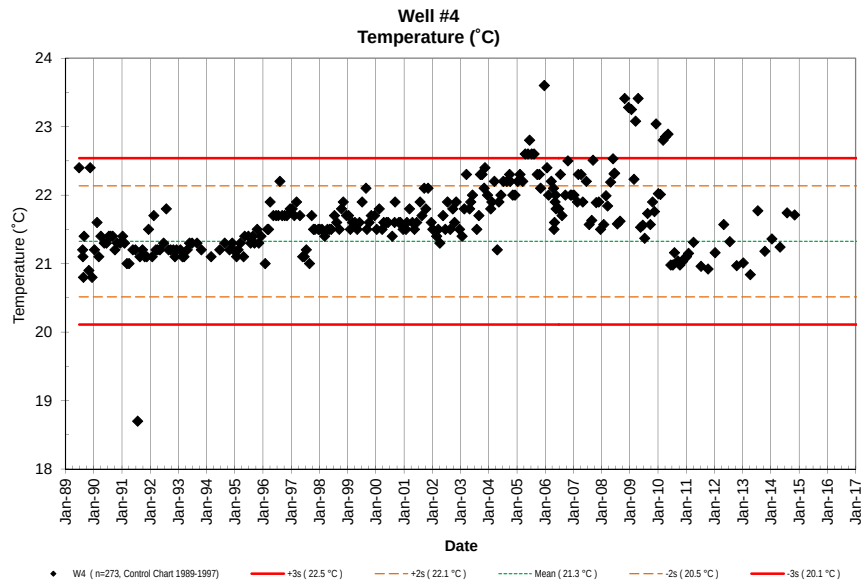

Well #4
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W4 (n=273, Control Chart 1989-1997)
+3s (12.4 µg N/L)
+2s (9.3 µg N/L)
Mean (3.1 µg N/L)
-2s (-3.1 µg N/L)
+3s (1194 µg N/L)

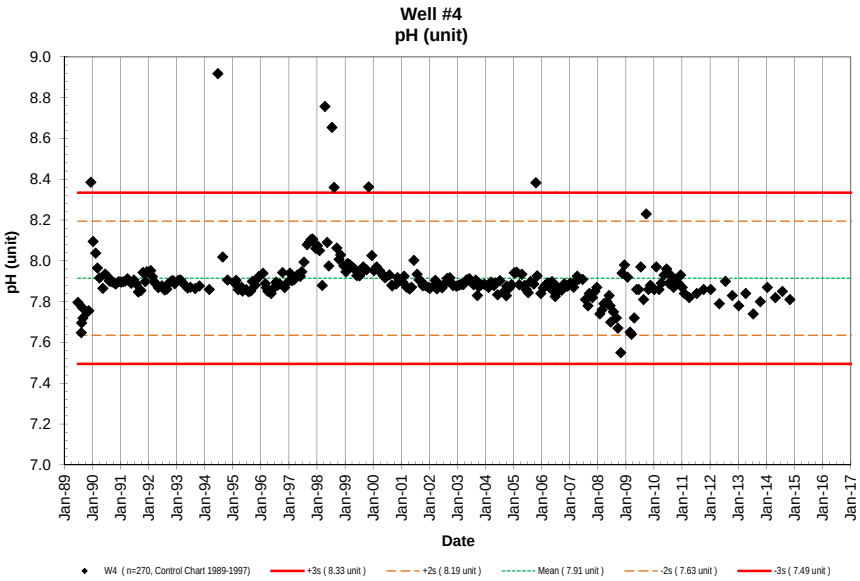

Well #4
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W4 (n=265, Control Chart 1989-1997)
+3s (19007 µg Si/L)
+2s (17318 µg Si/L)
Mean (13939 µg Si/L)
-2s (10559 µg Si/L)
-3s (8870 µg Si/L)

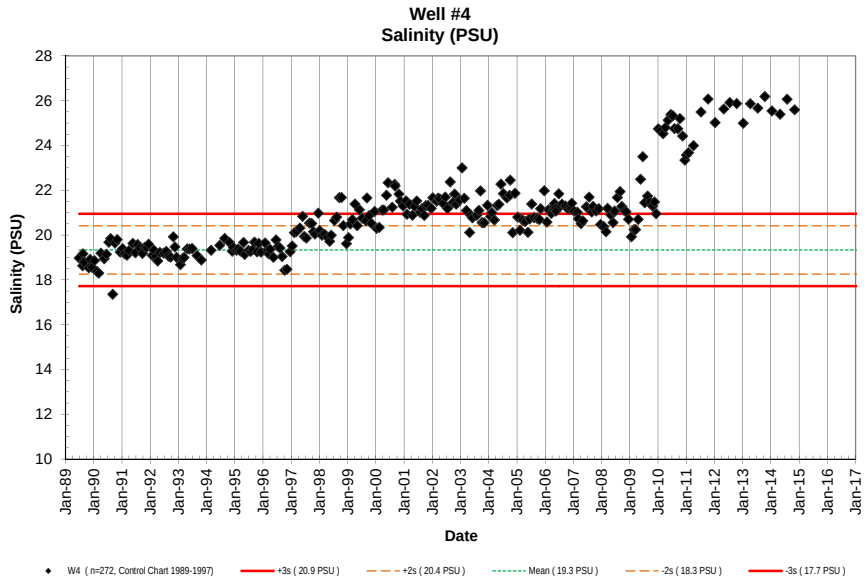

Relationship Between Ortho-Phosphate
and Nitrate + Nitrite in Well #4
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W4 1989 - 2013
W4 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

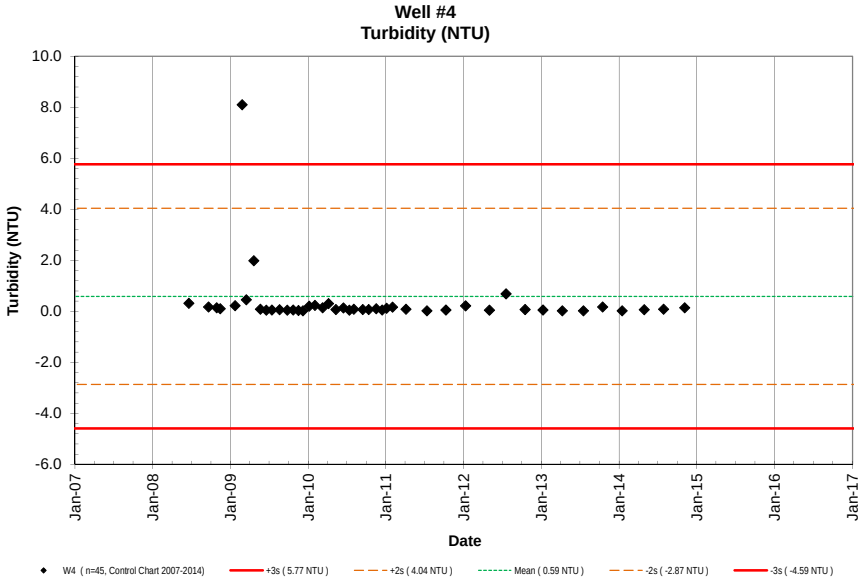

Well #4 Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W4 1989 - 2013
W4 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

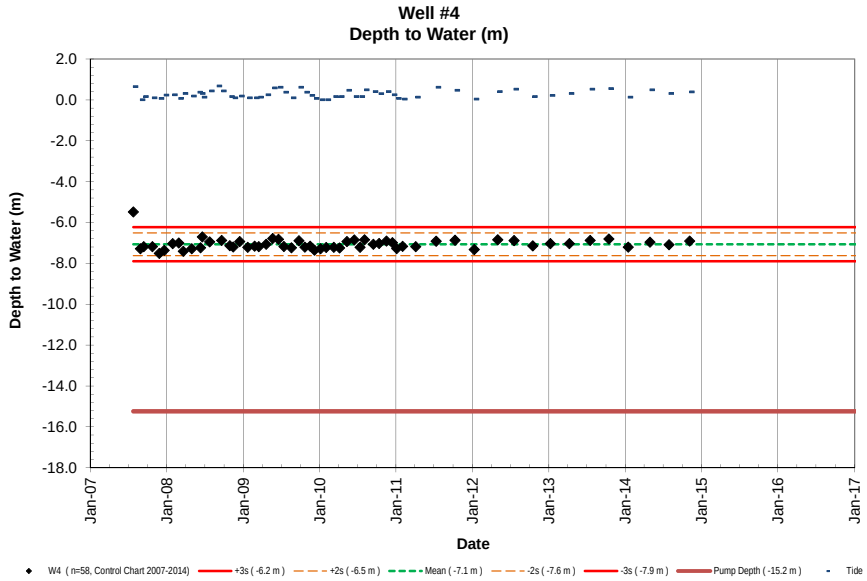

Well #4
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
+3s (6.6 mg/L)
+2s (6.0 mg/L)
Mean (4.9 mg/L)
-2s (3.8 mg/L)
-3s (3.2 mg/L)


Well #4
Temperature (˚C)
Temperature (˚C)
Date
W4 (n=273, Control Chart 1989-1997)
+3s (22.5 °C)
+2s (22.1 °C)
Mean (21.3 °C)
-2s (20.5 °C)
-3s (20.1 °C)


Well #4
pH (unit)
pH (unit)
Date
W4 (n=270, Control Chart 1989-1997)
+3s (8.33 unit)
+2s (8.19 unit)
Mean (7.91 unit)
-2s (7.63 unit)
-3s (7.49 unit)


Well #4
Salinity (PSU)
Salinity (PSU)
Date
W4 (n=272, Control Chart 1989-1997)
+3s (20.9 PSU)
+2s (20.4 PSU)
Mean (19.3 PSU)
-2s (18.3 PSU)
-3s (17.7 PSU)


Well #4
Turbidity (NTU)
Turbidity (NTU)
10.0
8.0
6.0
4.0
2.0
0.0
-2.0
-4.0
-6.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W4 (n=45, Control Chart 2007-2014)
+3s (5.77 NTU)
+2s (4.04 NTU)
Mean (0.59 NTU)
-2s (-2.87 NTU)
-3s (-4.59 NTU)


Well #4
Depth to Water (m)
Depth to Water (m)
2.0
0.0
-2.0
-4.0
-6.0
-8.0
-10.0
-12.0
-14.0
-16.0
-18.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W4 (n=58, Control Chart 2007-2014)
+3s (-6.2 m)
+2s (-6.5 m)
Mean (-7.1 m)
-2s (-7.6 m)
-3s (-7.9 m)
Pump Depth (-15.2 m)
Tide

NELHA Water Quality Laboratory

Well 4A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W4A	-10.67	6/27/89					8.96	278			99.3	1390.9								22.3	8.060	15.233	4.03		NA	NA
W4A	-10.67	8/10/89	1011				7.21	223			36.6	512.6								21.6	8.028	14.210	1.04		<1	NA
W4A	-10.67	8/15/89	1508				6.05	187			27.9	390.8								21.5	8.027	15.722	1.71		<1	NA
W4A	-10.67	8/22/89	1435				6.93	215			37.5	525.3								21.3	8.050	15.511	1.59		<1	NA
W4A	-10.67	8/30/89	1435				8.34	258			24.4	341.8								21.6	8.095	14.095	1.34		<1	NA
W4A	-10.67	8/30/89	1435				8.35	259			24.2	339.0													NA	NA
W4A	-10.67	10/31/89	1134				7.92	245	12	162	26.9	376.8	567	15924	8.50	263	44.4	622	1.09	21.5	7.879	14.719	0.10		<1	NA
W4A	-10.67	11/16/89	1130				7.85	243	5	64	72.5	1015.5	555	15587	9.12	282	45.3	635	1.98	21.6	7.864	14.560	0.44		<1	NA
W4A	-10.67	12/12/89	1135				23.2	719	857	12004	60.9	853.0	181	5083	25.4	787	1000	14007	0.78	21.5	8.861	11.875	NA		<1	NA
W4A	-10.67	1/11/90	950				14.8	458	652	9132	51.8	725.5	197	5533	16.3	505	761	10659	119	21.7	8.632	14.328	NA		<1	NA
W4A	-10.67	2/14/90	1155				1.31	41	116	1625	4.72	66.1	121	3398	10.2	315	146	2045	32.4	21.7	8.320	14.360	4.76		<1	NA
W4A	-10.67	3/7/90	1137				10.1	313	80	1118	6.67	93.4	291		10.7	331	100	1401	5.28	21.5	8.594	10.881	2.69		<1	NA
W4A	-10.67	4/4/90	1342				13.6	421	11	158	1.37	19.2	257	7218	14.2	440	67.5	945	24.2	21.9	8.420	14.011	NA		<1	NA
W4A	-10.67	5/17/90	1202				8.80	273	18	251	4.44	62.2	250	7021	9.50	294	44.8	628	32.1	21.8	8.281	15.696	1.21		<1	NA
W4A	-10.67	6/16/90	1105				7.60	235	22	314	8.78	123.0	319	8959	7.90	245	38.6	541	1.70	21.8	8.327	17.240	1.69		<1	NA
W4A	-10.67	7/17/90	1146				7.09	220	26	366	4.93	69.1	342	9605	7.33	227	35.6	499	7.70	21.8	8.294	17.853	2.58		<1	NA
W4A	-10.67	8/8/90	1137				6.99	217	19	269	4.76	66.7	334	9381	6.41	199	30.8	431	1.81	21.8	8.278	18.042	1.93		<1	NA
W4A	-10.67	9/5/90	1143				7.47	231	20	280	2.40	33.6	ND	ND	7.47	231	28.7	402	0.43	21.8	8.272	17.356	1.93		<1	NA
W4A	-10.67	10/4/90	1151				9.40	291	22	313	3.87	54.2	374	10504	10.9	338	29.3	410	0.86	21.8	8.226	17.570	1.91		<1	NA
W4A	-10.67	11/1/90	1205				5.85	181	26	359	2.84	39.8	405	11375	6.49	201	30.9	433	8.62	21.7	8.180	17.960	2.02		<1	NA
W4A	-10.67	12/10/90	1142				8.32	258	23	321	6.99	97.9	435	12217	8.91	276	26.9	377	0.66	21.8	8.230	16.632	2.07		<1	NA
W4A	-10.67	1/10/91	1000				7.46	231	8	112	4.52	63.3	324	9100	2.30	71	16.4	229	0.70	22.1	8.211	15.925	0.41		<1	NA
W4A	-10.67	2/5/91	1137				8.62	267	54	759	2.44	34.2	274	7695	9.49	294	59.9	839	3.11	21.8	8.555	12.097	1.07		<1	NA
W4A	-10.67	3/7/91	803				8.67	269	40	562	0.37	5.2	289	8117	9.31	288	44.6	625	20.7	21.5	8.369	14.018	0.81		<1	NA
W4A	-10.67	4/3/91	844				8.20	254	15	207	2.46	34.5	273	7667	8.67	269	63.6	891	62.1	21.4	8.798	15.974	0.69		<1	NA
W4A	-10.67	5/22/91	819				4.30	133	8	113	2.57	36.0	371	10420	6.75	209	11.6	162	5.73	21.6	8.294	16.709	0.46		<1	NA
W4A	-10.67	6/26/91	824				4.83	150	25	345	1.50	21.0	357	10027	4.95	153	30.4	426	0.51	21.6	8.290	13.749	0.72		<1	<1
W4A	-10.67	7/24/91	858				2.85	88	9	122	0.75	10.5	340	9549	3.28	102	15.6	219	1.03	19.1	8.228	15.924	0.41		<1	<1
W4A	-10.67	8/23/91	810				4.41	137	20	282	0.15	2.1	365	10251	4.73	147	27.6	387	0.83	21.5	8.191	15.994	0.54		<1	<1
W4A	-10.67	9/24/91	733				5.53	171	31	427	0.30	4.2	416	11684	5.93	184	35.9	503	0.53	21.5	8.128	14.603	1.67		<1	<1
W4A	-10.67	10/23/91	733				7.12	221	62	873	0.32	4.5	508	14267	8.81	273	70.9	993	6.56	21.5	8.230	15.647	0.38		<1	<1
W4A	-10.67	11/20/91	756				8.20	254	18	255	1.15	16.1	424	11908	8.74	271	24.0	336	1.05	21.5	8.160	15.552	0.29		<1	<1
W4A	-10.67	12/11/91	857				11.7	362	74	1032	4.19	58.7	347	9746	60.7	1880	112	1567	46.7	21.0	8.803	14.071	0.58		<1	6
W4A	-10.67	1/29/92	817				7.68	238	19	266	0.54	7.6	416	11684	8.00	248	25.1	352	18.4	21.6	8.144	14.235	0.55		<1	<1
W4A	-10.67	2/19/92	853				7.63	236	28	389	0.11	1.5	402	11290	7.91	245	40.5	567	0.49	21.6	8.136	14.048	0.81		<1	8
W4A	-10.67	3/17/92	805				5.47	169	17	231	0.69	9.7	371	10420	7.00	217	25.2	353	0.73	21.7	8.101	14.311	0.70		<1	<1
W4A	-10.67	4/8/92	751				5.70	177	17	235	0.53	7.4	421	11824	5.90	183	22.0	308	0.54	21.7	8.074	14.708	0.73		<1	<1
W4A	-10.67	5/6/92	802				5.94	184	12	164	0.91	12.7	440	12358	6.77	210	18.4	258	1.02	21.6	8.056	15.035	0.41		<1	<1
W4A	-10.67	6/23/92	803				6.75	209	11	150	1.32	18.5	447	12554	6.41	199	18.9	264	0.73	21.7	8.036	15.686	0.50		<1	<1
W4A	-10.67	7/29/92	752				5.43	168	18	256	ND	0.0	453	12723	5.74	178	22.2	311	0.90	21.7	8.023	14.764	0.59		<1	<1
W4A	-10.67	8/26/92	736				6.72	208	30	419	0.21	2.9	487	13678	6.82	211	33.3	467	0.68	21.6	8.039	13.892	0.92		<1	<1
W4A	-10.67	9/22/92	740				5.98	185	7	93	0.68	9.5	539	15138	6.16	191	7.67	107	0.52	21.6	8.029	15.481	0.44		<1	<1
W4A	-10.67	10/27/92	755				6.34	196	22	313	0.50	7.0	488	13706	6.38	198	26.8	375	0.51	21.6	7.999	16.486	1.15		<1	<1
W4A	-10.67	11/17/92	817				6.02	186	21	295	0.54	7.6	470	13200	6.55	203	24.6	345	0.59	21.5	8.025	15.369	0.72		<1	<1
W4A	-10.67	12/8/92	802				6.17	191	32	444	0.64	9.0	499	14015	6.29	195	35.2	493	0.54	21.6	8.027	14.277	1.30		<1	<1
W4A	-10.67	1/26/93	814				5.92	183	24	340	0.33	4.6	515	14458	6.03	187	28.1	393	0.61	21.6	8.064	14.303	1.05		<1	<1
W4A	-10.67	2/23/93	745				6.00	186	20	276	0.25	3.5	516	14498	6.00	186	22.8	319	0.48	21.5	8.040	14.952	0.76		<1	<1
W4A	-10.67	3/16/93	745				6.36	197	14	199	0.42	5.9	513	14402	6.44	199	17.4	244	0.58	21.6	8.008	15.652	0.48		<1	<1
W4A	-10.67	4/27/93	749				5.18	160	26	370	0.39	5.5	551	15475	5.30	164	28.4	398	0.55	21.7	7.989	15.744	0.99		<1	<1
W4A	-10.67	5/25/93	743				4.86	151	29	400	0.43	6.0	544	15279	4.96	154	32.4	454	0.47	21.7	7.981	15.064	1.11		<1	<1
W4A	-10.67	6/28/93	822				4.93	153	25	353	0.19	2.7	527	14801	5.10	158	27.8	389	0.44	21.7	7.952	16.114	1.09		<1	<1
W4A	-10.67	8/31/93	819				5.08	157	26	367	0.08	1.1	552	15503	5.08	157	45.4	636	0.69	21.7	7.925	14.735	0.63		<1	<1
W4A	-10.67	10/26/93	751				5.09	158	42	587	0.42	5.9	529	14857	5.09	158	44.6	625	0.56	21.6	7.944	14.270	1.32		<1	<1
W4A	-10.67	3/1/94	737				25.2	781	1780	24932	53.2	745.3	184	5168	26.6	823	1840	25772	113	21.6	8.941	13.342	NA		<1	<1
W4A	-10.67	6/21/94	726				10.5	326	601	8420	25.7	359.7	51.6	1449	14.8	458	797	11165	62.4	21.7	8.002	15.474	6.08		<1	<1

NELHA Water Quality Laboratory

Well 4A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W4A	-10.67	8/23/94	807				21.8	676	1660	23251	34.9	489.0	76.3	2143	30.2	937	1900	26613	140	21.7	9.100	16.098	5.75		<1	8
W4A	-10.67	10/25/94	823				34.0	1053	695	9733	33.1	464.2	86.6	2432	34.4	1065	750	10502	4.43	21.7	8.770	15.321	NA		<1	<1
W4A	-10.67	11/28/94	1200				28.0	869	540	7557	19.4	272.2	109	3075	28.7	889				21.8		15.321				
W4A	-10.67	12/13/94	849				23.1	716	272	3806	9.39	131.5	184	5162	24.1	745				21.7		15.321				
W4A	-10.67	1/24/95	821				24.5	758	341	4780	8.70	121.9	150	4209	24.5	758			1.39	21.6	8.582	15.321	1.83		<1	<1
W4A	-10.67	2/14/95	802				19.9	616	202	2831	1.61	22.6	184	5168	20.2	625	204	2853	1.18	21.7	8.514	15.321	0.79		<1	<1
W4A	-10.67	3/14/95	856				19.2	595	718	10058	71.0	993.8	88.9	2496	21.9	678			12.1	21.7	8.917	15.321	4.59		<1	3
W4A	-10.67	4/25/95	921				16.8	520	242	3384	5.38	75.4	147	4131	17.5	543	454	6355	1.33	21.6	8.556	15.321	1.45		<1	<1
W4A	-10.67	5/9/95	811				14.9	462	131	1835	2.02	28.3	181	5089	15.6	483	141	1978	0.75	21.8	8.537	15.321	2.51		<1	<1
W4A	-10.67	6/27/95	829				14.4	446	183	2567	0.40	5.6	205	5746	15.8	489	194	2719	1.00	21.7	8.422	15.321	0.80		<1	<1
W4A	-10.67	7/25/95	843				13.3	412	119	1669	0.15	2.1	217	6106	14.3	444	129	1801	0.73	21.8	8.430	14.709	1.10		<1	<1
W4A	-10.67	8/22/95	928				14.1	438	110	1538	0.47	6.6	220	6173	14.4	446			0.96	21.8	8.392	15.922	0.78		<1	<1
W4A	-10.67	9/12/95	710				13.8	428	87	1225	0.08	1.1	226	6359	13.8	428	91.3	1278	0.89	21.7	8.449	16.579	1.72		<1	<1
W4A	-10.67	10/17/95	911				13.2	408	76	1059	0.14	2.0	251	7055	13.6	421			0.71	21.9	8.506	14.373	2.53		<1	<1
W4A	-10.67	11/7/95	823				12.9	398	76	1066	0.29	4.1	238	6676	13.1	406	83.8	1174	0.64	21.8	8.468	16.340	1.15		<1	<1
W4A	-10.67	12/6/95	837				12.7	394	71	992	0.26	3.6	262	7367	13.1	405			0.58	21.8	8.529	14.653	2.62		<1	<1
W4A	-10.67	1/30/96	912				11.0	340	77	1074	0.12	1.7	261	7328	12.3	380	78.0	1093	0.49	21.6	8.534	14.984	2.52		<1	<1
W4A	-10.67	2/27/96	921				11.0	340	72	1006	0.15	2.1	281	7895	11.4	354	74.9	1049	0.50	21.9	8.448	15.680	2.20		<1	1
W4A	-10.67	3/13/96	953				12.8	397	126	1761	0.29	4.1	241	6755	13.3	411	133	1870	0.65	22.0	8.542	14.340	2.28		<1	<1
W4A	-10.67	4/2/96	925				21.5	667	2220	31095	1.10	15.4	119	3338	26.6	824			13.8	22.2	9.277	11.412	4.67		<1	5
W4A	-10.67	5/15/96	922				25.5	789	2270	31795	191	2675.3	92.5	2597	28.8	893			19.4	23.6	9.422	12.390	1.63		<1	10
W4A	-10.67	6/18/96	845				21.9	679	2550	35717	134	1878.3	86.5	2429	24.4	755	2770	38799	14.4	22.1	9.133	15.226	1.56		<1	<1
W4A	-10.67	7/17/96	920				55.1	1705	5480	76757	46.4	649.2	66.9	1880	56.2	1740	5700	79838	30.7	22.1	9.639	13.011	0.99		<1	12
W4A	-10.67	8/6/96	929				67.1	2078	8690	121718	22.5	315.2	51.4	1444	73.0	2260	8660	121298	41.0	22.5	9.868	11.803	1.73		<1	15
W4A	-10.67	9/4/96	927				59.6	1846	6280	87962	66.7	933.8	83.6	2347	60.4	1869	6760	94685	28.6	22.2	9.620	12.358	3.29		1	3
W4A	-10.67	10/9/96	931				34.1	1057	3390	47483	112	1564.5	44.6	1253	34.3	1061	3380	47343	16.4	22.0	9.410	13.168	3.42		<1	<1
W4A	-10.67	11/6/96	918				34.1	1057	4220	59108	76.0	1064.5	95.2	2674	36.0	1115	4090	57287	15.8	22.1	9.233	13.063	4.75		<1	4
W4A	-10.67	12/17/96	922				34.9	1081	5490	76897	87.9	1231.3	34.2	962	36.9	1143	5850	81939	21.7	22.3	9.512	12.796	1.89		<1	<1
W4A	-10.67	1/14/97	942				18.5	572	1420	19890	15.5	217.1	40.7	1144	20.8	645	2170	30395	2.15	22.3	9.158	11.882	0.71		<1	1
W4A	-10.67	2/10/97	1050				20.0	618	2070	28994	44.4	621.9	88.9	2497	21.5	665	2090	29274	2.61	22.5	9.150	11.355	2.30		<1	<1
W4A	-10.67	3/10/97	1054				30.2	934	2650	37118	11.3	158.3	47.0	1320	40.0	1239	3900	54625	12.7	22.4	9.352	11.109	3.99		<1	133
W4A	-10.67	4/23/97	916				12.9	400	1420	19890	24.1	337.6	103	2898	13.5	418	1670	23391	7.29	22.2	9.185	12.486	4.23		<1	3
W4A	-10.67	5/28/97	917				15.9	493	904	12663	18.5	259.1	140	3943	16.9	522	1210	16948	2.86	21.4	8.952	11.715	4.96		<1	2
W4A	-10.67	6/17/97	915				10.1	314	270	3778	1.82	25.5	208	5842	12.6	390	318	4447	1.07	21.5	8.782	11.766	3.78		2	1
W4A	-10.67	7/15/97	907				12.2	377	219	3067	0.78	10.9	207	5811	15.6	482	253	3542	1.07	21.7	8.716	11.466	4.35		<1	7
W4A	-10.67	8/26/97	924				19.1	590	482	6744	10.8	150.9	153	4300	20.1	623	523	7323	1.23	21.5	8.713	12.843	1.76		<1	2
W4A	-10.67	9/23/97	1121				15.1	468	223	3125	0.66	9.2	166	4657	16.4	508	250	3499	0.83	22.4	8.700	11.422	2.77		<1	<1
W4A	-10.67	10/15/97	846				18.6	575	440	6163	3.33	46.6	180	5044	20.6	638	489	6848	3.20	22.1	8.758	12.429	2.31		1	4
W4A	-10.67	11/4/97	1002				16.2	501	343	4803	6.22	87.1	155	4356	17.3	536	496	6940	1.58	22.2	8.736	12.735	1.37		<1	9
W4A	-10.67	12/16/97	905				15.5	480	293	4100	2.48	34.7	186	5230	16.9	523	303	4244	1.17	22.1	8.633	14.763	0.88		<1	3
W4A	-10.67	1/5/98	1159				13.0	403	183	2565	0.39	5.5	185	5198	14.6	451	213	2976	0.78	22.3	8.664	12.989	2.42		<1	<1
W4A	-10.67	2/3/98	1016				13.8	429	168	2354	0.49	6.9	198	5572	16.3	504	189	2642	0.73	22.2	8.644	12.699	2.07		<1	<1
W4A	-10.67	3/10/98	1029				15.0	466	138	1927	0.27	3.8	229	6418	16.4	508	144	2014	0.70	22.0	8.494	12.244	3.72		<1	1
W4A	-10.67	4/14/98	853				57.6	1784	1460	20450	4.10	57.4	80.8	2269	64.4	1995	4440	62190	23.2	22.1	9.591	12.301	6.51		<1	1
W4A	-10.67	5/12/98	1023				16.4	508	295	4137	16.3	228.7	133	3735	19.5	604	323	4524	1.26	22.2	8.830	11.953	2.86		<1	<1
W4A	-10.67	6/2/98	1018				32.8	1017	636	8905	51.3	718.5	123	3452	33.9	1050	708	9918	2.22	22.3	8.731	12.631	2.43		<1	<1
W4A	-10.67	7/14/98	1028				40.8	1263	1220	17088	89.1	1248.0	54.4	1528	42.2	1307	1360	19049	12.6	22.4	9.049	13.985	11.10		<1	1
W4A	-10.67	8/11/98	1043				36.6	1133	863	12086	64.8	907.5	72.7	2041	38.7	1200	943	13213	6.88	22.1	8.865	13.675	4.20		<1	1
W4A	-10.67	9/15/98	1117				39.7	1229	852	11927	42.4	593.9	74.0	2078	40.4	1251	908	12715	6.40	22.1	8.675	16.214	4.02		<1	1
W4A	-10.67	10/13/98	954				32.4	1002	671	9398	24.8	347.5	84.1	2363	34.2	1059	740	10365	4.38	22.5	8.594	16.349	3.31		<1	<1
W4A	-10.67	11/4/98	1027				24.3	754	351	4915	7.40	103.6	111	3126	26.4	819	388	5435	2.11	21.4	8.589	14.069	0.82		<1	<1
W4A	-10.67	12/16/98	1008				22.9	709	171	2390	0.10	1.4	152	4275	24.8	769	189	2647	1.09	22.5	8.562	12.610	2.89		<1	<1
W4A	-10.67	1/12/99	1043				22.2	689	166	2331	1.20	16.8	148	4151	23.7	734	180	2527	1.10	22.3	8.517	13.298	2.23		<1	<1
W4A	-10.67	2/3/99	1032				24.1	748	163	2281	0.76	10.6	147	4137	26.1	809	182	2545	1.13	22.2	8.489	13.742	0.96		<1	<1
W4A	-10.67	3/2/99	1034				21.0	651	147	2053	0.33	4.6	185	5187	22.8	706	160	2247	1.08	22.2	8.485	13.464	2.61		<1	<1
W4A	-10.67	4/6/99	1027				22.6	699	186	2602	1.41	19.7	154	4311	24.9	770	188	2633	1.18	22.1	8.410	16.417	0.43		<1	<1
W4A	-10.67	5/4/99	1032				20.1	623	133	1856	0.24	3.4	186	5230	21.6	668	160	2235	0.76	22.3	8.481	13.090	3.74		<1	116
W4A	-10.67	6/2/99	1015				21.7	672	138	1927	0.17	2.4	169	4746	22.8	706	149	2087	0.90	22.3	8.394	15.953	0.44		<1	<1

NELHA Water Quality Laboratory

Well 4A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W4A	-10.67	7/7/99	1050				23.5	728	102	1430	0.05	0.7	165	4637	24.9	771	113	1579	0.75	22.4	8.424	14.622	1.44		<1	<1
W4A	-10.67	8/25/99	1016				19.8	612	115	1611	0.12	1.7	177	4968	21.3	659	118	1655	0.66	22.6	8.423	15.649	0.96		1	1
W4A	-10.67	9/8/99	1026				22.6	700	110	1538	0.18	2.5	181	5069	23.7	734	121	1695	0.70	22.1	8.419	17.130	0.57		<1	<1
W4A	-10.67	10/6/99	1033				16.8	520	104	1450	0.13	1.8	179	5036	20.4	632	107	1499	0.67	22.0	8.430	15.593	1.28		<1	<1
W4A	-10.67	11/3/99	1047				18.9	587	126	1765	0.05	0.7	182	5106	20.1	622	132	1849	0.84	22.1	8.476	14.857	1.21		<1	<1
W4A	-10.67	12/15/99	1103				16.9	523	161	2255	0.19	2.7	170	4763	19.5	604	177	2479	0.88	22.2	8.414	17.030	0.59		<1	<1
W4A	-10.67	1/11/00	1039				17.3	537	111	1555	0.10	1.4	178	4996	19.7	610	127	1776	0.66	22.1	8.493	13.748	3.49		<1	<1
W4A	-10.67	2/14/00	1055				19.3	596	165	2310	0.30	4.2	185	5193	20.7	640	174	2437	0.93	22.2	8.451	14.869	0.42		<1	<1
W4A	-10.67	3/22/00	1105				17.4	539	148	2077	0.03	0.4	189	5311	18.8	582	164	2303	0.78	22.1	8.419	15.798	0.95		<1	<1
W4A	-10.67	4/12/00	1048				16.6	514	133	1863	0.05	0.7	185	5204	18.1	561	148	2066	0.74	22.3	8.442	15.157	1.53		<1	<1
W4A	-10.67	5/17/00	1025				16.7	517	100	1399	0.05	0.7	193	5426	17.8	551	105	1467	0.64	22.1	8.390	17.298	0.99		<1	1
W4A	-10.67	6/6/00	1101				15.7	485	91	1269	0.13	1.8	198	5567	16.3	504	90.6	1269	0.59	22.0	8.399	18.052	1.18		<1	<1
W4A	-10.67	7/31/00	1050				16.3	505	591	8278	2.00	28.0	175	4907	19.1	591	643	9006	5.67	22.1	8.667	15.429	4.89		<1	<1
W4A	-10.67	8/30/00	1056				14.8	459	82	1154	0.08	1.1	196	5505	16.1	499	84.9	1189	0.88	22.2	8.389	18.343	1.65		<1	<1
W4A	-10.67	9/6/00	1037				15.4	477	74	1035	0.07	1.0	181	5089	16.4	509	77.3	1083	0.70	22.7	8.376	19.021	1.62		<1	<1
W4A	-10.67	10/25/00	1003				14.2	440	68	949	0.13	1.8	221	6196	14.5	449	72.8	1020	0.69	22.3	8.388	18.033	1.52		<1	6
W4A	-10.67	11/14/00	1117				14.2	440	691	9672	0.19	2.7	135	3792	15.5	480	735	10296	6.33	22.5	8.607	15.792	4.94		<1	1
W4A	-10.67	12/19/00	1019				13.4	415	255	3572	0.75	10.5	153	4297	14.0	434	254	3553	2.20	22.0	8.466	16.494	0.48		<1	<1
W4A	-10.67	1/24/01	1011				12.6	392	132	1847	0.17	2.4	181	5092	13.2	408	139	1946	0.94	22.0	8.395	18.163	1.07		<1	3
W4A	-10.67	2/7/01	1040				12.4	385	116	1621	0.21	2.9	177	4980	12.9	400	120	1674	0.83	22.2	8.432	17.336	1.49		<1	<1
W4A	-10.67	3/12/01	1025				12.8	396	100	1398	0.04	0.6	185	5207	13.6	422	108	1519	0.69	22.4	8.377	16.187	1.12		<1	<1
W4A	-10.67	4/18/01	1015				12.8	397	91	1268	0.21	2.9	184	5165	13.0	404	92.5	1296	0.60	22.1	8.381	16.488	1.94		<1	<1
W4A	-10.67	5/14/01	852				12.6	390	87	1223	0.27	3.8	193	5418	13.1	406	89.3	1251	0.65	22.1	8.388	17.479	1.93		<1	1
W4A	-10.67	6/13/01	1033				13.4	416	85	1188	0.06	0.8	197	5544	14.9	460	87.0	1219	0.84	22.3	8.371	18.040	1.03		<1	1
W4A	-10.67	7/25/01	952				12.2	377	70	986	1.07	15.0	201	5648	12.4	383	73.4	1028	0.56	22.4	8.364	16.826	1.53		<1	tntc
W4A	-10.67	8/20/01	934				12.0	371	75	1053	0.19	2.7	208	5836	12.5	388	79.1	1107	0.62	22.2	8.396	17.335	1.46		<1	1
W4A	-10.67	9/18/01	925				12.3	382	73	1026	0.16	2.2	211	5915	12.5	388	78.2	1095	0.53	22.3	8.365	17.724	1.71		<1	<1
W4A	-10.67	10/9/01	1017				12.2	378	70	978	0.07	1.0	204	5718	12.6	389	74.1	1038		22.3	8.371	18.194	2.25		<1	<1
W4A	-10.67	11/6/01	925				11.2	345	64	891	0.06	0.8	230	6448	12.5	387	73.9	1035		22.4	8.374	18.185	2.82		<1	<1
W4A	-10.67	12/18/01	932				12.0	372	70	979	0.26	3.6	218	6123	12.9	401	81.2	1137	0.55	22.3	8.409	16.414	2.76		<1	<1
W4A	-10.67	1/8/02	949				11.8	365	68	952	0.05	0.7	214	6005	12.5	387	72.6	1017	0.57	22.1	8.382	17.534	1.80		<1	41
W4A	-10.67	2/27/02	947				13.3	412	113	1584	10.1	141.5	130	3648	13.9	430	142	1989	1.89	22.1	8.597	17.124	0.68		<1	<1
W4A	-10.67	3/19/02	959				20.3	629	829	11614	844	11826	129	3615	31.5	976	959	13425	18.4	22.7	8.040	15.008	7.15		<1	168
W4A	-10.67	4/9/02	948				11.4	353	15	216	25.4	355.8	100	2809	12.5	387	71.0	994	5.79	22.1	8.631	16.421	0.17		<1	<1
W4A	-10.67	5/21/02	945				10.7	331	37	521	3.56	49.9	143	4013	11.1	344	52.6	737	1.78	22.2	8.468	17.068	0.58		<1	<1
W4A	-10.67	6/18/02	1005				10.5	326	50	702	0.50	7.0	161	4522	11.3	350	59.2	829	1.07	22.2	8.434	17.050	0.73		<1	1
W4A	-10.67	7/17/02	944				10.8	333	78	1096	0.09	1.3	168	4727	10.8	335	75.3	1055	0.98	23.0	8.015	15.934	1.45		<1	1
W4A	-10.67	8/22/02	1009				10.1	313	70	975	4.98	69.8	111	3103	11.0	339	102	1423	4.08	22.1	8.578	17.929	0.60		<1	<1
W4A	-10.67	9/24/02	1003				9.38	291	56	784	0.98	13.7	141	3960	9.80	304	64.1	898	1.39	22.3	8.517	17.064	0.92		<1	1
W4A	-10.67	10/16/02	1016				9.34	289	69	969	0.28	3.9	143	4022	9.65	299	73.1	1023	1.03	22.6	8.491	16.140	1.00		1	6
W4A	-10.67	11/6/02	1000				9.20	285	106	1479	0.35	4.9	140	3932	9.30	288	106	1484	1.99	22.6	8.465	17.147	0.61		<1	1
W4A	-10.67	12/19/02	1032				7.41	230	67	937	0.06	0.8	217	6092	7.61	236	66.4	930	0.80	22.0	8.448	17.196	1.09		<1	<1
W4A	-10.67	1/22/03	1019				8.36	259	51	718	0.03	0.4	222	6229	8.64	268	54.1	757	0.71	21.9	8.405	19.296	2.52		<1	<1
W4A	-10.67	2/20/03	946				8.60	266	72	1003	0.10	1.4	189	5317	9.40	291	80.0	1121	0.77	22.3	8.459	15.959	2.42		<1	<1
W4A	-10.67	3/18/03	925				9.12	282	71	992	0.18	2.5	211	5923	9.60	297	83.4	1168	0.56	22.5	8.463	15.572	2.44		<1	49
W4A	-10.67	4/29/03	936				9.22	286	78	1090	0.21	2.9	226	6347	10.7	333	97.3	1363	0.50	22.1	8.499	14.688	3.64		<1	38
W4A	-10.67	5/13/03	1012				9.51	295	70	979	0.31	4.3	211	5937	9.69	300	72.4	1014	0.51	22.3	8.463	16.139	2.07		<1	3
W4A	-10.67	6/5/03	935				9.54	295	70	986	0.27	3.8	194	5454	9.76	302	85.0	1190	0.65	22.2	8.442	16.578	1.62		<1	3

NELHA Water Quality Laboratory

Well 4A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W4A	-10.67	7/31/03	958				9.29	288	78	1095	0.35	4.9	223	6252	9.55	296	82.4	1154		22.0	8.412	16.552	1.87		<1	<1
W4A	-10.67	8/27/03	1013				8.82	273	64	901	0.75	10.5	254	7134	9.15	283	76.5	1071		22.2	8.359	18.582	2.10		<1	407
W4A	-10.67	9/17/03	942				9.92	307	59	824	0.30	4.2	199	5575	11.3	351	61.4	860		22.7	8.370	19.061	1.92		<1	324
W4A	-10.67	10/7/03	937				9.68	300	73	1026	0.77	10.8	214	6005	10.0	310	84.0	1177		22.7	8.398	16.856	NA		<1	140
W4A	-10.67	11/4/03	930				9.60	297	65	908	0.89	12.5	205	5758	10.1	314	77.5	1086		22.6	8.425	16.525			<1	31
W4A	-10.67	11/14/03	1104																	23.9			0.35			
W4A	-10.67	12/16/03	925				9.45	293	31	440	4.50	63.0	224	6294	9.91	307	42.4	594		22.5	8.353	17.399	0.51		1	3
W4A	-10.67	1/27/04	944				9.98	309	89	1248	1.84	25.8	230	6460	10.3	320	98.0	1373		22.2	8.404	15.999	0.57		<1	<1
W4A	-10.67	2/10/04	935				9.80	304	74	1035	0.45	6.3	223	6257	10.0	308	77.2	1082		22.3	8.378	16.869	0.79		<1	TNTC
W4A	-10.67	3/15/04	944				9.98	309	74	1038	0.19	2.7	235	6589	10.2	316	78.5	1100		22.6	8.415	16.191	0.96		<1	<1
W4A	-10.67	4/21/04	855				10.11	313	74	1036	0.38	5.3	226	6342	10.8	334	78.0	1093		22.3	8.377	17.280	1.03		<1	<1
W4A	-10.67	5/12/04	850				9.62	298	66	918	0.16	2.2	227	6364	9.78	303	68.9	965		22.9	8.406	17.88	1.72		<1	1
W4A	-10.67	6/7/04	844				9.62	298	58	813	0.15	2.1	233	6533	10.0	309	61.8	866		22.3	8.391	18.35	2.08		<1	<1
W4A	-10.67	7/8/04	951				9.52	295	59	821	0.09	1.3	244	6861	9.87	306	66.9	938	0.46	22.4	8.436	17.51	2.35		<1	2
W4A	-10.67	8/24/04	920				8.44	261	55	764	0.26	3.6	267	7485	8.74	271	58.3	816		22.3	8.391	18.47	2.92		<1	2
W4A	-10.67	9/28/04	942				9.18	284	131	1828	0.32	4.5	252	7083	9.44	292	147	2059		22.6	8.385	17.76	2.20		<1	70
W4A	-10.67	10/5/04	1029				8.60	266	89	1252	0.24	3.4	249	6982	8.96	278	96.8	1356		22.5	8.400	18.80	2.86		<1	37
W4A	-10.67	11/8/04	920				8.72	270	109	1530	0.210	2.9	255	7165	9.04	280	123	1717		22.4	8.419	16.33	2.19		<1	1
W4A	-10.67	12/7/04	933				8.44	261	291	4082	20	280.1	198	5547	8.80	273	327	4584		22.3	8.486	17.54	2.45		3	>5,000
W4A	-10.67	1/11/05	923				7.86	243	149	2090	4.5	62.5	217	6106	8.18	253	155	2171		22.4	8.485	16.889	0.69		<1	536
W4A	-10.67	2/8/05	927				7.90	245	133	1868	0.21	2.9	235	6600	8.40	260	149	2087		22.4	8.502	15.429	1.18		<1	108
W4A	-10.67	3/16/05	959				7.97	247	108	1513	0.16	2.2	224	6302	8.37	259	121	1696	0.64	22.2	8.446	16.765	0.68		<1	56
W4A	-10.67	4/18/05	1014				9.90	307	121	1700	66	924.4	207	5814	11.1	344	217	3037		22.6	8.418	16.754	1.07		<1	196
W4A	-10.67	5/24/05	924				8.08	250	81	1137	8.3	116.4	238	6676	8.42	261	98.7	1382		22.8	8.364	15.491	0.49		<1	14
W4A	-10.67	6/13/05	945				8.40	260	53	748	0.12	1.7	234	6583	8.74	271	60.1	842		22.7	8.367	16.165	0.30		<1	364
W4A	-10.67	7/11/05	940				8.18	253	61	861	0.25	3.5	246	6906	8.50	263	70.6	989		22.9	8.369	17.679	1.63		<1	>5,000
W4A	-10.67	8/10/05	905				8.04	249	61	861	4.37	61.2	250	7027	8.30	257	68.3	956		22.5	8.412	17.088	0.60		<1	1340
W4A	-10.67	9/21/05	900				8.74	271	205	2867	0.13	1.8	243	6836	8.96	278	214	2997	0.95	22.6	8.393	16.730	0.63		<1	5
W4A	-10.67	10/18/05	926				8.62	267	148	2076	0.17	2.4	248	6965	8.85	274	150	2104		22.4	7.913	16.384	0.70		<1	<1
W4A	-10.67	11/3/05	845				8.14	252	567	7947	8.7	121.9	213	5988	8.74	271	597	8366		22.5	8.468	16.548	4.87		<1	1
W4A	-10.67	12/21/05	956				7.42	230	129	1800	0.22	3.1	225	6314	7.72	239	133	1867	0.90	23.0	8.416	18.320	0.98		<1	<1
W4A	-10.67	1/24/06	905				7.36	228	106	1478	0.27	3.8	231	6477	7.58	235	113	1576		22.3	8.419	16.176	2.45		<1	1
W4A	-10.67	2/15/06	858				7.75	240	100	1405	0.23	3.2	227	6367	7.94	246	123	1723	0.61	22.3	8.405	17.256	0.91		<1	<1
W4A	-10.67	3/21/06	845				7.73	239	88	1237	0.16	2.2	242	6797	7.97	247	90.3	1265	1.95	22.4	8.392	17.275	1.17		<1	<1
W4A	-10.67	4/19/06	952				8.47	262	83	1158	0.30	4.2	239	6712	-	0	78.1	1095	0.47	22.4	8.433	17.105	1.39		<1	<1
W4A	-10.67	4/26/06	900				7.80	242	80	1119	0.20	2.8	243	6825	8.12	252	75.9	1064	0.52	22	8.417	17.387	1.8		<1	<1
W4A	-10.67	5/3/06					8.13	252	79	1102	0.86	12.0	240	6741		0	67.1	939	0.54	22.1	8.419	18.149	2.1		<1	<1
W4A	-10.67	5/10/06					7.89	244	78	1097	<0.05	0.0	246	6909		0	66.5	931	0.48	22.1	8.402	17.256	1.48		<1	<1
W4A	-10.67	5/16/06					8.02	248	79	1101	0.16	2.2	247	6937		0	70.8	991	0.47	22	8.436	16.938	2.12		<1	<1
W4A	-10.67	5/23/06	932				7.30	226	78	1098	0.09	1.3	240	6741	7.65	237	71.8	1005	0.53	22.5	8.429	16.358	1.97		<1	<1
W4A	-10.67	6/27/06	937				7.94	246	66	922	0.34	4.8	251	7049	8.31	257	49.7	696	0.77	22.4	8.382	18.833	2.05		<1	1
W4A	-10.67	7/18/06	932				7.81	242	65	906	0.84	11.8	250	7021	7.99	247	59.9	838	0.54	22.5	8.414	17.616	2.62		>5,000	>5,000
W4A	-10.67	8/8/06	910				7.88	244	66	930	<0.05	0.0	256	7190	8.09	251	56.6	793	0.42	22.2	8.402	18.056	2.15		204	198
W4A	-10.67	9/19/06	1010				7.73	239	64	902	0.24	3.4	251	7049	8.15	252	60.4	845	0.47	22.6	8.377	18.074	2.05		<1	6
W4A	-10.67	10/24/06	948				7.74	240	61	847	0.44	6.2	270	7583	8.16	253	55.5	777	0.47	22.6	8.375	18.890	2.18		1	153
W4A	-10.67	11/28/06	929				7.19	223	56	784	0.26	3.6	281	7892	7.71	239	51.4	720	0.52	22.2	8.372	18.680	2.82		<1	5
W4A	-10.67	12/12/06	924				7.42	230	55	765	0.31	4.3	286	8032	7.88	244	51.3	718	0.46	22.1	8.364	18.872	2.66		<1	1
W4A	-10.67	1/9/07	950				7.77	241	56	790	0.24	3.4	270	7583	8.01	248	59.5	833	0.37	22.1	8.391	18.726	3.07		<1	<1
W4A	-10.67	2/22/07	931				7.61	236	66	922	0.30	4.2	294	8257	7.80	242	72.1	1009	0.47	22.1	8.409	16.421	3.39		1	206
W4A	-10.67	3/6/07	948				7.65	237	63	884	0.25	3.5	290	8145	7.87	244	68.1	954	0.44	22	8.417	16.983	2.46		<1	13
W4A	-10.67	4/11/07	1101				7.86	243	66	930	0.20	2.8	301	8454	8.19	254	63.6	891	0.43	22.5	8.449	15.289	3.26		<1	1
W4A	-10.67	5/3/07	934				7.77	241	64	889	0.20	2.8	276	7752	8.10	251	64.4	901	0.52	22.6	8.438	16.645	2.24		<1	<1
W4A	-10.67	6/19/07	901				7.77	241	64	898	0.25	3.5	296	8313	8.15	252	46.1	645	0.46	22.6	8.418	18.300	2.77		<1	<1

NELHA Water Quality Laboratory

Well 4A Data Table

June 1989 - December 2014

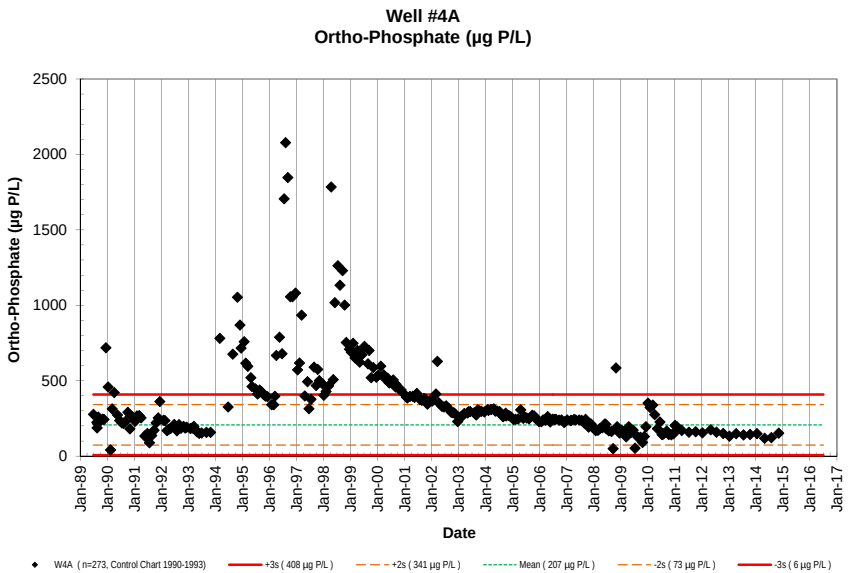
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W4A	-10.67	7/25/07	1423	-6.91	0.64	High	7.64	237	59	824	0.44	6.2	342	9614	7.62	236	58.9	824.3		22.9	8.30	19.11	3.43			
W4A	-10.67	8/28/07	930	-7.32	0.00	Low	7.06	219	70	983	0.55	7.7	404	11354	6.82	211	72.7	1018.7		22.9	8.20	16.48	2.48			
W4A	-10.67	9/13/07	1220	-7.01	0.15	Flood	7.88	244	64	894	0.71	9.9	372	10449	8.24	255	66.2	926.6		22.9	8.32	17.41	3.04			
W4A	-10.67	10/24/07	948	-7.01	0.09	Low	6.21	192	78	1088	5.14	72.0	413	11590	6.41	198	82.3	1153.3		22.7	8.16	15.21	4.11			
W4A	-10.67	11/26/07	1319	-6.99	0.06	Low	6.85	212	87	1213	1.45	20.4	470	13190	6.44	200	93.5	1310.1		22.7	8.26	14.33	4.26			
W4A	-10.67	12/20/07	1009	-7.16	0.23	Low	6.31	195	90	1257	0.98	13.7	386	10833						22.4	8.36	12.63	4.94			
W4A	-10.67	1/29/08	936	-7.06	0.24	Ebb	5.47	169	83	1167	0.59	8.2	364	10213						22.5	8.15	11.97	4.62			
W4A	-10.67	2/27/08	1357	-6.71	0.06	Low	5.51	171	87	1216	1.04	14.6	483	13565						22.8	8.14	11.58	4.77			
W4A	-10.67	3/20/08	1423	-7.29	0.30	Flood	5.82	180	67	936	0.28	3.9	349	9795						22.5	8.11	15.43	3.95			
W4A	-10.67	4/29/08	1038	-7.29	0.18	Flood	6.07	188	77	1082	0.09	1.2	412	11575						22.8	8.18	14.00	4.43			
W4A	-10.67	5/29/08	1120		0.37	Flood	6.84	212	523	7319	0.22	3.1	427	11982						23.3	8.26	13.04	3.28			
W4A	-10.67	6/10/08	1023	-7.21	0.30	Flood	6.81	211	283	3969	0.35	4.9	709	19913						23.0	8.14	14.90	2.25			
W4A	-10.67	6/19/08	1023	-6.71	0.12	Flood	5.86	181	245	3432	3.90	55	573	16106						23.1	8.04	14.98	2.13	17.5		
W4A	-10.67	7/24/08	1121	-6.91	0.43	Ebb	5.41	168	94	1311	0.20	2.8	339	9515						22.5	8.10	17.50	3.84			
W4A	-10.67	8/29/08	1657		0.67	Ebb	5.25	163	74	1030	0.92	13	343	9646						22.4	8.05	17.36	2.30			
W4A	-10.67	9/19/08	1119	-6.87	0.43	Ebb	1.59	49	37	523	0.41	5.8	295	8281						26.0	8.52	9.03		10.1		
W4A	-10.67	10/28/08	1016	-7.08	0.15	Ebb	18.89	585	555	7779	1.49	21	414	11632						25.7	8.49	12.60	3.51	3.8		
W4A	-10.67	11/13/08	1030	-7.03	0.09	Ebb	6.28	195	199	2788	0.57	8.0	472	13245						25.2	8.31	9.85	5.13	2.7		
W4A	-10.67	12/15/08	1115	-6.94	0.18	Ebb	4.96	154	156	2189	0.10	1.4	494	13888						25.0	8.23	10.09	5.71			
W4A	-10.67	1/22/09	931	-7.14	0.09	Low	5.41	168	105	1466	0.96	13.4	355	9982						24.3	8.17	15.64	4.04	4.9		
W4A	-10.67	2/24/09	902	-7.06	0.09	Ebb	5.31	165	50	699	0.49	6.9	384	10798						23.0	8.01	15.34	3.52	0.18		
W4A	-10.67	3/16/09	921	-7.11	0.12	Ebb	4.14	128	53	738	0.13	1.8	304	8550						23.8	7.84	15.83	3.82	7.0		
W4A	-10.67	4/20/09	1649	-6.97	0.24	Ebb	6.29	195	75	1054	0.81	11.4	370	10403						23.9	8.04	17.17	3.87	15.7		
W4A	-10.67	5/21/09	1522	-6.73	0.58	Ebb	5.07	157	56	782	0.26	3.6	400	11227						22.3	8.02	19.07	3.91	3.7		
W4A	-10.67	6/18/09	1244	-6.86	0.61	High	5.58	173	47	657	0.31	4.3	225	6321						22.3	8.07	20.09	4.13	1.84		
W4A	-10.67	7/14/09	744	-7.08	0.37	Flood	1.70	53	33	458	0.16	2.2	174	4895						22.0	8.20	19.78	3.90	4.36		
W4A	-10.67	8/19/09	958	-7.19	0.09	Flood	4.09	127	50	695	3.93	55.0	356	10005						22.2	7.99	20.43	3.57	3.97		
W4A	-10.67	9/24/09	820	-6.84	0.61	High	4.03	125	52	731	0.54	7.5	230	6455						22.0	8.27	19.58	3.94	0.55		
W4A	-10.67	10/22/09	1431	-7.13	0.37	Ebb	2.94	91	31	435	0.43	6.0	146	4106						22.4	8.04	19.19	3.23	0.70		
W4A	-10.67	11/16/09	1558	-7.12	0.21	High	4.18	129	49	681	0.86	12.1	448	12576						22.1	8.05	19.26	2.82	0.36		
W4A	-10.67	12/7/09	1532	-7.23	0.06	Low	6.30	195	377	5280	0.67	9.4	441	12386						22.8	8.07	16.26	3.05	0.82		
W4A	-10.67	1/5/10	1405	-7.21	0.00	Ebb	11.36	352	595	8340	36.41	510	277	7780						22.7	8.43	17.76	1.41	10.90		
W4A	-10.67	2/1/10	1348	-7.17	0.00	Ebb	10.43	323	419	5864	13.21	185	267	7491						22.6	8.42	17.34	0.70	3.21		
W4A	-10.67	3/9/10	1423	-7.20	0.15	High	10.94	339	147	2053	2.37	33	368	10339						22.0	8.33	15.19	1.38	3.70		
W4A	-10.67	4/6/10	1317	-7.14	0.15	High	8.90	276	134	1874	0.71	10	327	9195						21.9	8.30	16.72	1.95	1.61		
W4A	-10.67	5/11/10	1324	-6.88	0.46	Flood	5.88	182	77	1072	1.64	23.0	396	11117						22.1	8.22	19.66	2.95	0.24		
W4A	-10.67	6/15/10	1419	-6.97	0.15	Flood	7.30	226	116	1621	0.36	5.0	242	6807						22.1	8.16	20.13	2.87	1.17		
W4A	-10.67	7/13/10	1331	-7.16	0.15	Flood	4.62	143	63	883	0.79	11.0	390	10951						21.9	8.12	20.05	3.22	0.30		
W4A	-10.67	8/3/10	1328	-6.76	0.49	Ebb	4.75	147	51	717	0.36	5.0	405	11369						22.0	8.11	20.76	3.64	0.26		
W4A	-10.67	9/14/10	1337	-6.86	0.40	Ebb	5.36	166	56	785	0.43	6.0	406	11403						22.0	8.07	20.36	3.51	3.42		
W4A	-10.67	10/12/10	1416	-6.98	0.30	Ebb	4.65	144	51	715	0.49	6.9	419	11757						21.8	8.08	20.44	3.75	1.72		
W4A	-10.67	11/16/10	1305	-6.86	0.40	High	4.58	142	56	778	0.46	6.5	420	11794						21.8	8.08	21.81	3.39	1.48		
W4A	-10.67	12/14/10	1335	-6.95	0.24	Ebb	4.78	148	63	882	0.26	3.7	426	11971						21.7	8.11	18.72	3.76	3.57		
W4A	-10.67	1/4/11	1317	-7.12	0.06	Flood	6.55	203	171	2396	0.22	3.1	360	10118						21.8	8.14	17.08	2.47	2.11		
W4A	-10.67	2/1/11	1038	-7.10	0.03	Low	6.26	194	120	1679	0.30	4.2	439	12320						22.0	8.10	15.47	3.79	2.30		
W4A	-10.67	4/5/11	1344	-7.11	0.12	Flood	5.49	170	88	1226	0.96	13.4	385	10802						21.2	8.16	15.51	3.00	4.23		
W4A	-10.67	7/12/11	1337	-6.84	0.61	Flood	5.13	159	66	920	0.24	3.3	425	11949						22.0	8.17	18.93	3.59	3.63		
W4A	-10.67	10/11/11	1513	-6.82	0.46	High	5.23	162	59	830	0.42	5.9	443	12439						20.1	8.08	18.09	3.68	0.67		
W4A	-10.67	1/10/12	1410	-7.19	0.03	Flood	4.97	154	79	1100	0.39	5.5	470	13210						22.7	8.07	12.54	5.32	6.34		
W4A	-10.67	5/1/12	1415	-6.80	0.40	Ebb	5.62	174	62	870	0.25	3.5	499	14020						22.6	8.05	17.55	4.60	0.49		
W4A	-10.67	7/18/12	1340	-6.88	0.52	Flood	5.10	158	72	1012	0.55	7.7	521	14646						22.4	8.00	16.61	5.26	1.16		
W4A	-10.67	10/16/12	1312	-7.10	0.15	Flood	4.84	150	70	983	0.35	4.9	493	13853						22.3	8.05	16.33	7.93	0.48		
W4A	-10.67	1/8/13	1422	-6.97	0.21	High	4.26	132	86	1206	0.54	7.5	590	16559						22.4	7.88	13.06	5.41	0.64		
W4A	-10.67	4/9/13	1355	-6.98	0.30	Flood	4.81	149	77	1084	0.47	6.6	547	15353						22.5	8.02	13.64	4.72	0.98		
W4A	-10.67	7/17/13	1516	-6.77	0.52	Ebb	4.52	140	61	859	0.51	7.2	471	13220						23.0	7.92	16.46	4.54	0.45		
W4A	-10.67	10/15/13	1356	-6.74	0.55	High	4.65	144	78	1099	0.82	11.5	514	14449						22.5	7.96	14.72	5.47	1.12		
W4A	-10.67	1/15/14	1343	-7.13	0.12	Flood	4.81	149	78	1091	0.69	9.6	485	13635						22.6	8.02	13.25	5.97	1.87		
W4A	-10.67	4/29/14	1453	-6.88	0.488	Flood	3.81	118	55	768	0.71	10.0	447	12543						22.4	7.95	17.23	5.18	0.49		

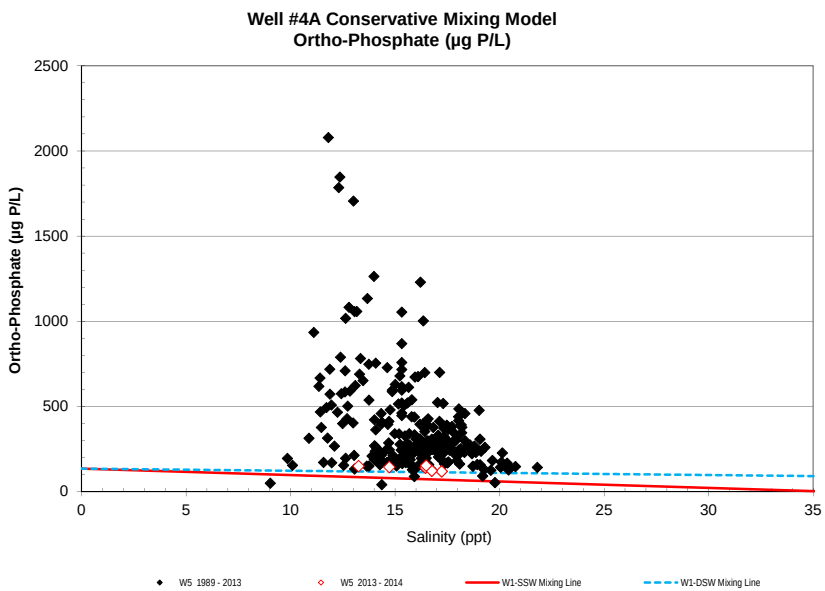
NELHA Water Quality Laboratory

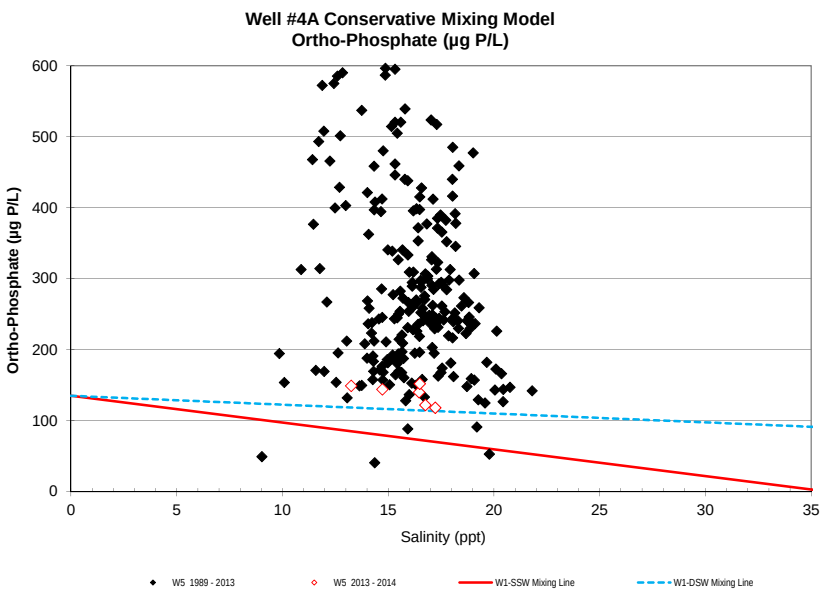
Well 4A Data Table

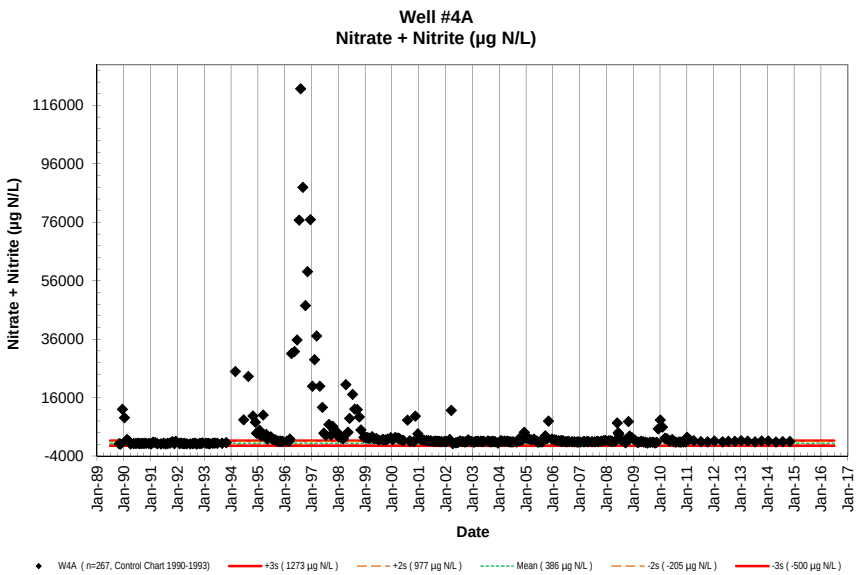
June 1989 - December 2014

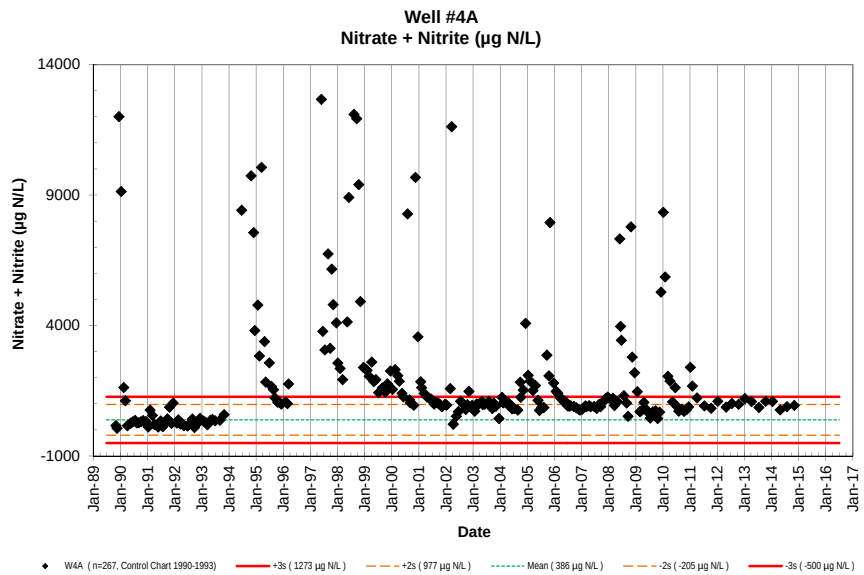
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W4A	-10.67	7/29/14	1421	-7.01	0.305	Flood	3.94	122	63	888	1.50	21.0	507	14245						22.8	7.88	16.76	4.73	0.12		
W4A	-10.67	11/5/14	1409	-6.84	0.38	Flood	4.91	152	67	940	0.46	6.4	460	12907						22.8	7.97	16.49	4.72	0.72		
W4A	-10.67	1/1/15																								
W4A	-10.67	4/1/15																								

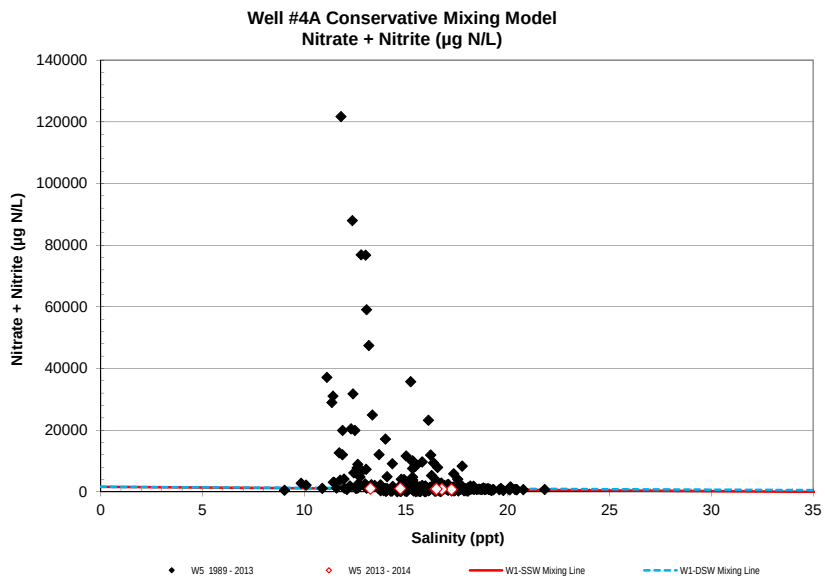

Well #4A
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
2500
2000
1500
1000
500
0
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W4A (n=273, Control Chart 1990-1993)
+3s (408 µg P/L)
+2s (341 µg P/L)
Mean (207 µg P/L)
-2s (73 µg P/L)
-3s (6 µg P/L)

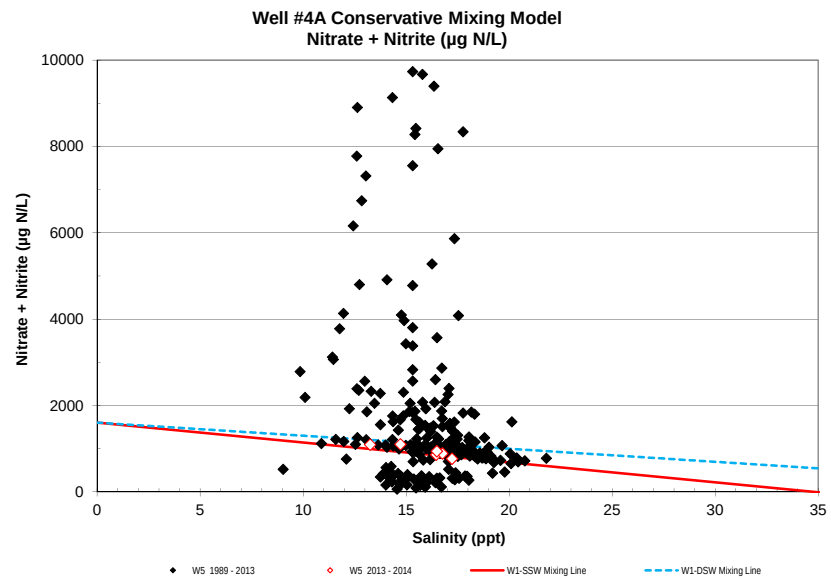

Well #4A Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
2500
2000
1500
1000
500
0
0
5
10
15
20
25
30
35
Salinity (ppt)
W5 1989 - 2013
W5 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

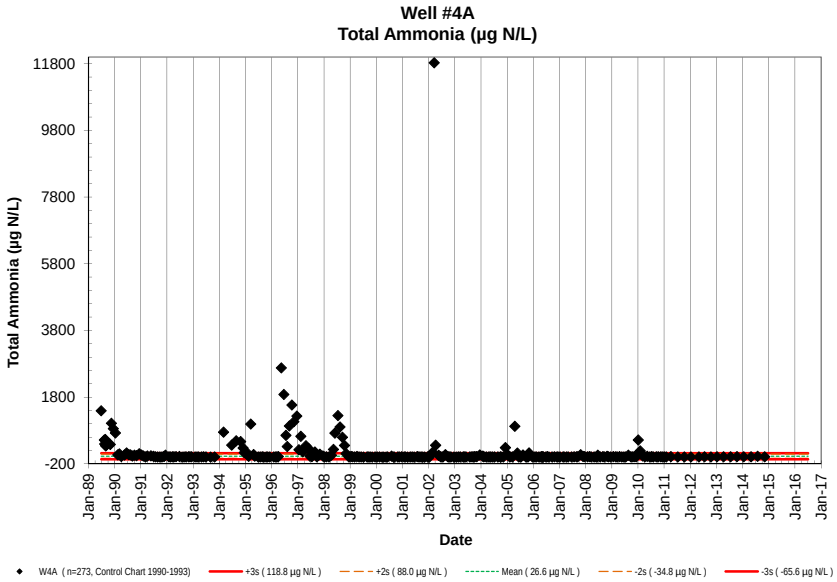

Well #4A Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
600
500
400
300
200
100
0
0
5
10
15
20
25
30
35
Salinity (ppt)
W5 1989 - 2013
W5 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

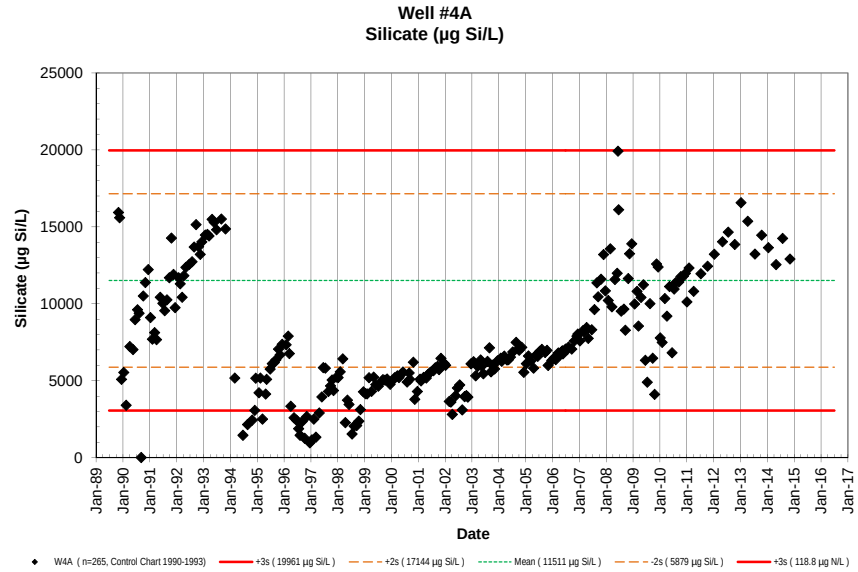

Well #4A
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
116000
96000
76000
56000
36000
16000
-4000
Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17
Date
W4A (n=267, Control Chart 1990-1993)
+3s (1273 µg N/L)
+2s (977 µg N/L)
Mean (386 µg N/L)
-2s (-205 µg N/L)
-3s (-500 µg N/L)

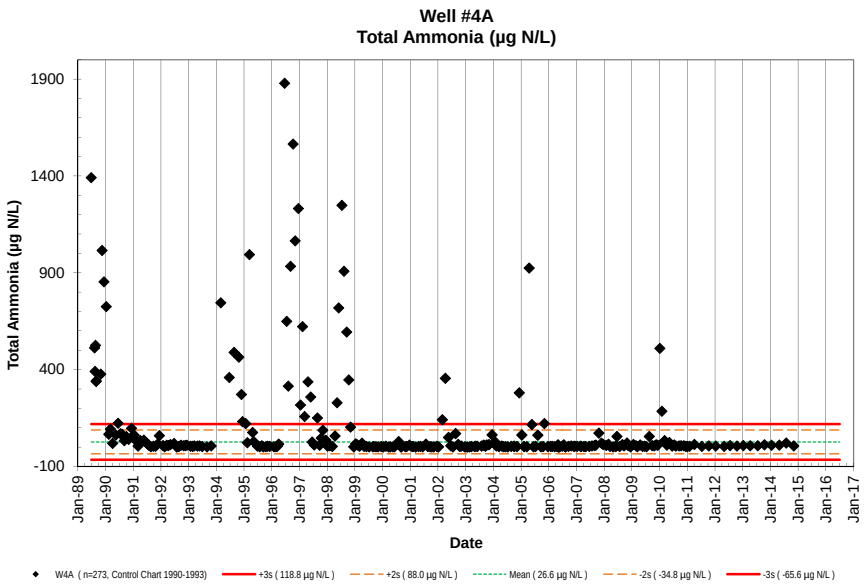

Well #4A
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
14000
9000
4000
-1000
Jan-89 Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17
Date
W4A (n=267, Control Chart 1990-1993)
+3s (1273 µg N/L)
+2s (977 µg N/L)
Mean (386 µg N/L)
-2s (-205 µg N/L)
-3s (-500 µg N/L)

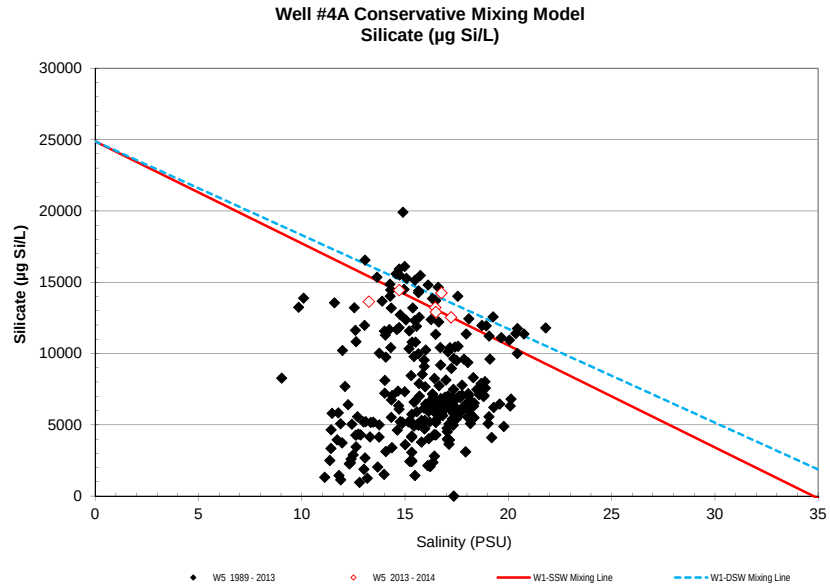

Well #4A Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
140000
120000
100000
80000
60000
40000
20000
0
0 5 10 15 20 25 30 35
Salinity (ppt)
W5 1989 - 2013
W5 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

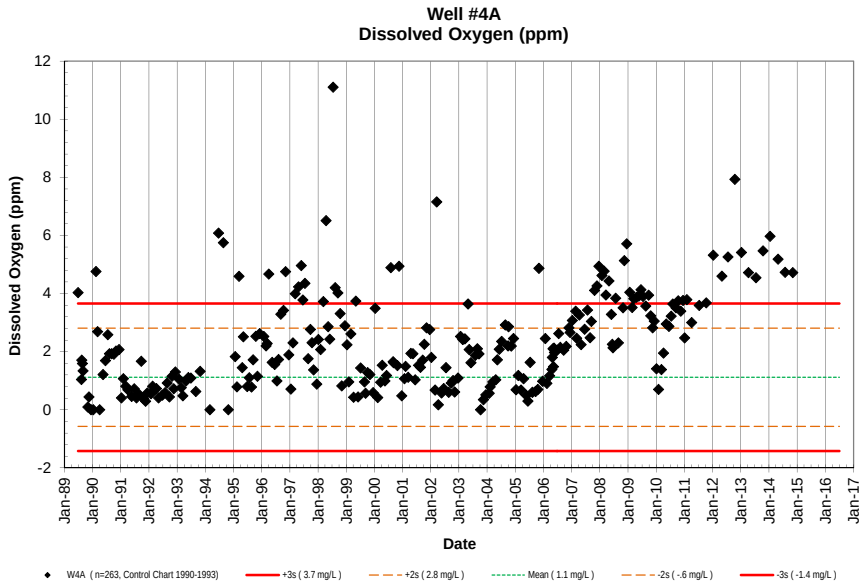

Well #4A Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
10000
8000
6000
4000
2000
0
0 5 10 15 20 25 30 35
Salinity (ppt)
W5 1989 - 2013
W5 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

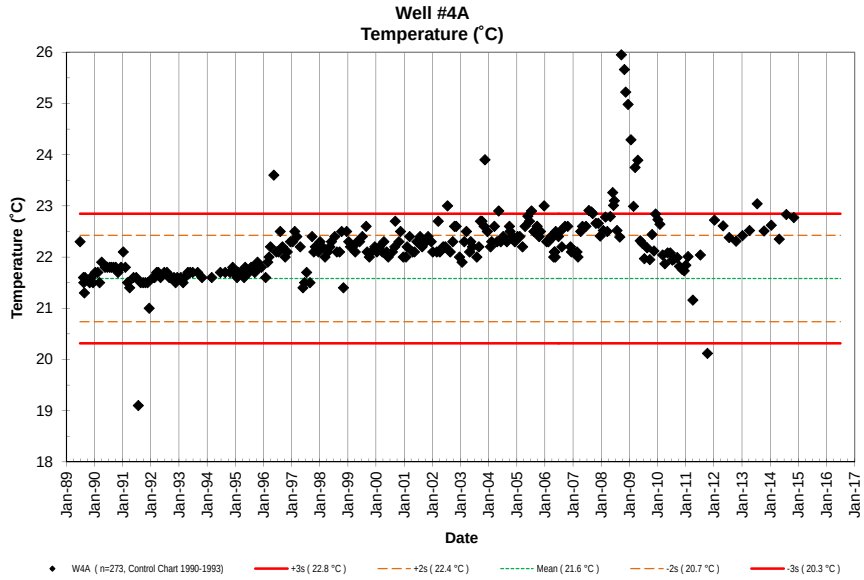

Well #4A
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W4A (n=273, Control Chart 1990-1993)
+3s (118.8 µg N/L)
+2s (88.0 µg N/L)
Mean (26.6 µg N/L)
-2s (-34.8 µg N/L)
-3s (-65.6 µg N/L)

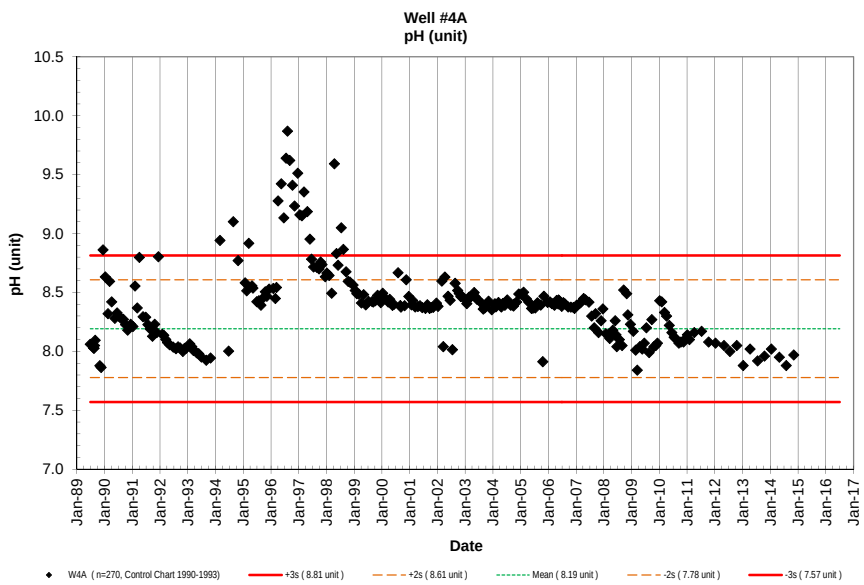

Well #4A
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W4A (n=265, Control Chart 1990-1993)
+3s (19961 µg Si/L)
+2s (17144 µg Si/L)
Mean (11511 µg Si/L)
-2s (5879 µg Si/L)
+3s (118.8 µg N/L)

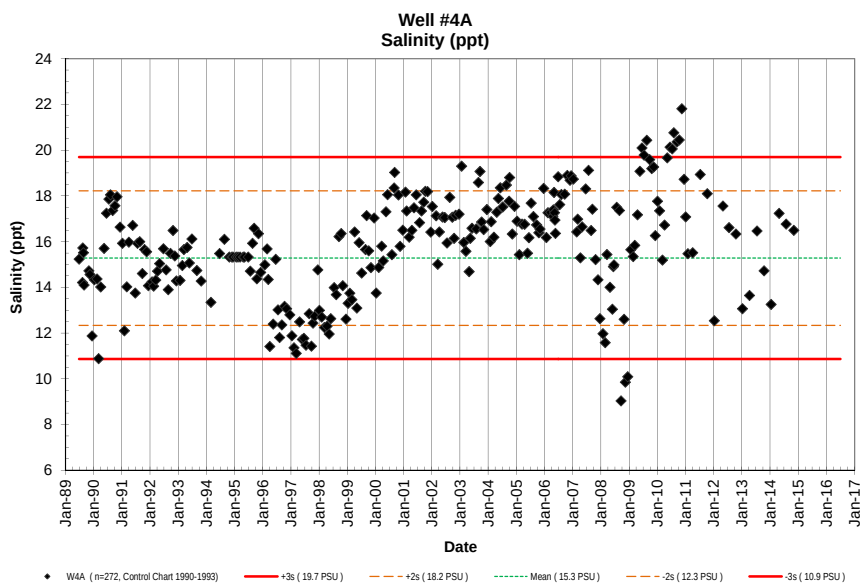

Well #4A
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W4A (n=273, Control Chart 1990-1993)
+3s (118.8 µg N/L)
+2s (88.0 µg N/L)
Mean (26.6 µg N/L)
-2s (-34.8 µg N/L)
-3s (-65.6 µg N/L)

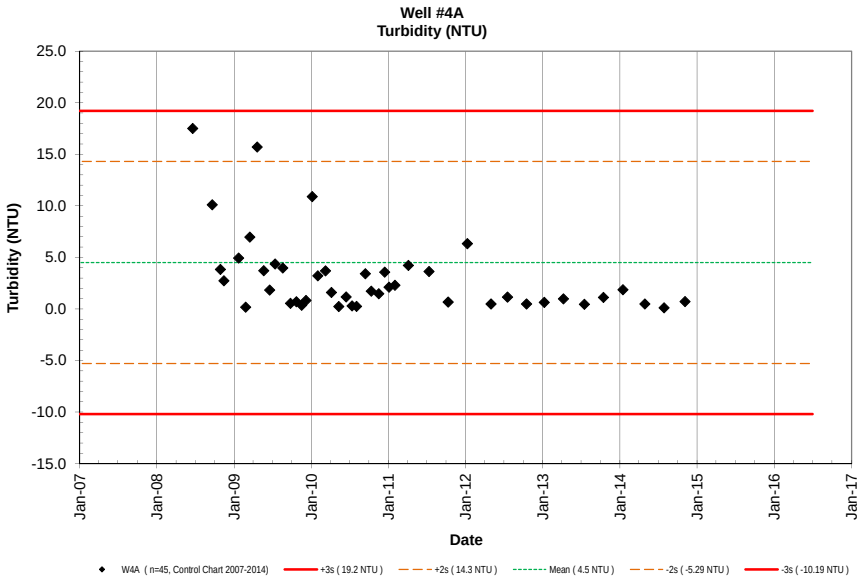

Well #4A Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W5 1989 - 2013
W5 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

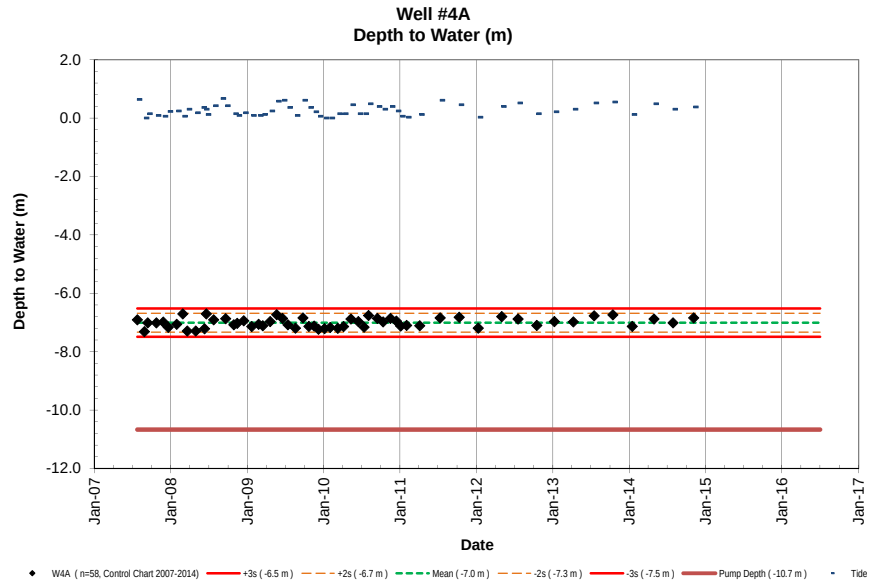

Well #4A
Dissolved Oxygen (ppm)
Dissolved Oxygen (ppm)
Date
W4A (n=263, Control Chart 1990-1993)
+3s (3.7 mg/L)
+2s (2.8 mg/L)
Mean (1.1 mg/L)
-2s (-.6 mg/L)
-3s (-1.4 mg/L)

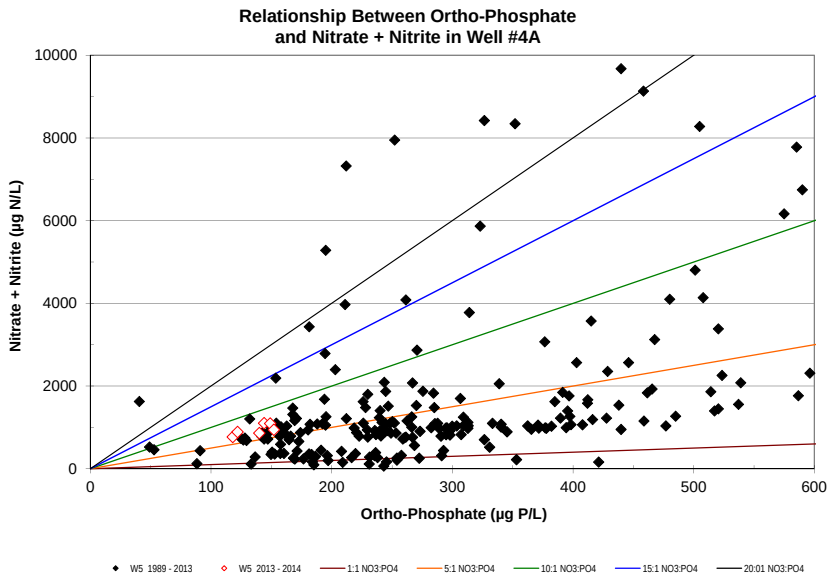

Well #4A
Temperature (˚C)
Temperature (˚C)
Date
W4A (n=273, Control Chart 1990-1993)
+3s (22.8 °C)
+2s (22.4 °C)
Mean (21.6 °C)
-2s (20.7 °C)
-3s (20.3 °C)


Well #4A
pH (unit)
pH (unit)
Date
W4A (n=270, Control Chart 1990-1993)
+3s (8.81 unit)
+2s (8.61 unit)
Mean (8.19 unit)
-2s (7.78 unit)
-3s (7.57 unit)


Well #4A
Salinity (ppt)
Salinity (ppt)
Date
W4A (n=272, Control Chart 1990-1993)
+3s (19.7 PSU)
+2s (18.2 PSU)
Mean (15.3 PSU)
-2s (12.3 PSU)
-3s (10.9 PSU)


Well #4A
Turbidity (NTU)
Turbidity (NTU)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W4A (n=45, Control Chart 2007-2014)
+3s (19.2 NTU)
+2s (14.3 NTU)
Mean (4.5 NTU)
-2s (-5.29 NTU)
-3s (-10.19 NTU)


Well #4A
Depth to Water (m)
Depth to Water (m)
2.0
0.0
-2.0
-4.0
-6.0
-8.0
-10.0
-12.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W4A (n=58, Control Chart 2007-2014)
+3s (-6.5 m)
+2s (-6.7 m)
Mean (-7.0 m)
-2s (-7.3 m)
-3s (-7.5 m)
Pump Depth (-10.7 m)
Tide


Relationship Between Ortho-Phosphate
and Nitrate + Nitrite in Well #4A
Nitrate + Nitrite (µg N/L)
10000
8000
6000
4000
2000
0
0
100
200
300
400
500
600
Ortho-Phosphate (µg P/L)
W5 1989 - 2013
W5 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

NELHA Water Quality Laboratory

Well 5 Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W5	-4.88	6/23/89					4.64	144	41.6	583	0.64	9.0								20.7	7.607	23.348	6.50		NA	NA
W5	-4.88	8/9/89	1051				4.71	146	41.8	585	0.52	7.3								17.2	7.504	24.491	5.82		<1	NA
W5	-4.88	8/15/89	905				4.77	148	45.0	630	0.60	8.4								19.7	7.520	23.217	5.59		<1	NA
W5	-4.88	8/22/89	855				4.80	149	45.2	633	0.60	8.4								19.5	7.575	24.175	5.03		<1	NA
W5	-4.88	8/28/89	1008				4.87	151	46.0	644	0.43	6.0								19.8	7.537	24.121	5.37		<1	NA
W5	-4.88	8/28/89	1008				4.88	151	45.8	642	0.34	4.8										24.121			NA	NA
W5	-4.88	10/27/89	905				4.64	144	78.5	1100	0.03	0.4	353	9914	4.80	148.67	82.0	1149	0.35	20.1	7.510	24.323	4.33		<1	NA
W5	-4.88	11/15/89	655				4.57	142	82.5	1156	0.10	1.4	336	9437	4.80	148.67	90.4	1266	0.84	20.1	7.431	25.380	5.00		<1	NA
W5	-4.88	12/8/89	1020				4.50	139	79.6	1115	0.10	1.4	320	8987	4.96	153.63	80.0	1121		19.8	7.394	26.086	5.57		<1	NA
W5	-4.88	1/10/90	805				3.62	112	87.8	1230	0.00	0.0	285	8004	3.77	116.77	92.0	1289	0.87	19.8	7.656	25.552	6.56		<1	NA
W5	-4.88	2/13/90	930				4.80	149	100.6	1409	0.28	3.9	325	9128	5.10	157.97	104.0	1457	1.31	19.5	7.572	24.690	7.07		<1	NA
W5	-4.88	3/5/90	1042				4.62	143	117.0	1639	0.17	2.4	346		5.10	157.97	126.0	1765	0.98	19.3	7.662	21.633	5.92		<1	NA
W5	-4.88	4/2/90	946				4.98	154	111.0	1555	0.16	2.2	354	9942	5.06	156.73	114.0	1597	4.46	18.9	7.671	24.539	5.37		<1	NA
W5	-4.88	5/16/90	910				5.14	159	101.0	1415	0.00	0.0	318	8931	5.08	157.35	109.0	1527	0.80	18.7	7.586	24.629	5.89		<1	NA
W5	-4.88	6/17/90	1046				6.09	189	105.0	1471	0.00	0.0	313	8791	6.25	193.59	108.0	1513	2.33	18.7	7.596	25.244	5.00		<1	NA
W5	-4.88	7/12/90	953				6.80	211	120.8	1692	0.00	0.0	324	9100	6.83	211.55	127.1	1780	0.83	18.9	7.568	25.438	5.23		<1	NA
W5	-4.88	8/7/90	932				0.57	18	121.7	1705	0.19	2.7	336	9437	6.29	194.82	119.4	1672	1.27	18.9	7.559	25.056	5.64		<1	NA
W5	-4.88	9/5/90	952				8.99	278	134.2	1880	2.45	34.3			8.99	278.45	137.0	1919	0.68	19.2	7.546	24.904	5.64		<1	NA
W5	-4.88	10/4/90	1010				9.49	294	91.4	1280	0.03	0.4	345	9689	10.90	337.61	97.7	1368	0.93	19.0	7.568	24.702	5.90		<1	NA
W5	-4.88	10/31/90	925				7.21	223	105.2	1474	0.05	0.7	327	9184	7.54	233.54	110.3	1545	0.68	19.3	7.536	25.155	5.84		<1	NA
W5	-4.88	12/7/90	920				7.08	219	104.8	1467	0.16	2.2	356	9998	7.16	221.77	106.6	1493	0.68	19.0	7.538	24.815	6.06		<1	NA
W5	-4.88	1/9/91	700				6.54	203	102.4	1434	0.02	0.3	296	8313	6.55	202.88	103.5	1450	0.88	18.6	7.555	25.996	6.00		<1	NA
W5	-4.88	2/5/91	751				6.32	196	80.3	1125	0.55	7.7	282	7920	6.33	196.06	80.4	1126	1.04	18.5	7.583	24.686	6.39		<1	NA
W5	-4.88	3/6/91	809				5.32	165	90.6	1269	0.03	0.4	268	7527	5.38	166.64	91.4	1280	4.86	16.2	7.480	25.901	6.25		<1	NA
W5	-4.88	4/2/91	813				5.25	163	90.1	1262	0.35	4.9	278	7808	5.30	164.16	92.0	1289	0.96	17.7	7.598	24.745	6.49		1	NA
W5	-4.88	5/21/91	835				5.60	173	52.0	728	0.07	1.0	117	3286	5.62	174.07	54.3	761	0.81	17.5	7.564	25.285	6.77		<1	NA
W5	-4.88	6/25/91	821				4.39	136	76.8	1076	0.16	2.2	334	9381	4.55	140.93	80.0	1121	0.66	17.8	7.620	24.744	7.30		<1	<1
W5	-4.88	7/23/91	915				5.51	171	82.9	1161	0.28	3.9	326	9156	5.99	185.53	83.3	1167	0.66	17.8	7.598	24.611	6.74		<1	<1
W5	-4.88	8/22/91	828				5.21	161	69.5	973	0.15	2.1	350	9830	5.49	170.05	75.6	1059	0.68	18.1	7.574	24.205	6.80		<1	<1
W5	-4.88	9/23/91	835				5.53	171	79.2	1109	0.18	2.5	323	9072	5.58	172.83	83.4	1168	0.70	18.5	7.548	24.486	6.42		<1	<1
W5	-4.88	10/22/91	748				4.88	151	78.0	1093	0.00	0.0	427	11993	5.47	169.43	81.9	1147	0.58	18.7	7.537	24.917	5.14		<1	<1
W5	-4.88	11/19/91	955				5.33	165	86.4	1210	0.28	3.9	360	10111	5.37	166.33	88.6	1241	0.57	18.7	7.546	25.443	5.75		<1	2
W5	-4.88	12/10/91	825				5.24	162	85.0	1191	0.45	6.3	314	8819	5.25	162.61	87.0	1219	0.70	18.4	7.546	26.422	5.89		<1	<1
W5	-4.88	1/28/92	812				5.26	163	71.3	999	0.05	0.7	266	7471	5.37	166.33	86.1	1206	0.96	17.5	7.537	28.175	6.24		<1	15
W5	-4.88	2/18/92	735				4.96	154	74.4	1042	0.00	0.0	267	7499	5.17	160.13	79.9	1119	0.81	17.8	7.509	26.646	6.12		<1	3
W5	-4.88	3/16/92	832				4.96	154	80.0	1121	0.85	11.9	289	8117	5.16	159.82	81.2	1137	0.81	17.6	7.558	26.500	6.22		<1	<1
W5	-4.88	4/7/92	800				4.83	150	74.9	1049	0.65	9.1	326	9156	4.98	154.25	75.3	1055	0.78	17.5	7.586	25.994	6.57		<1	1
W5	-4.88	5/5/92	808				5.17	160	69.4	972	0.21	2.9	307	8622	5.21	161.37	73.0	1022	1.14	17.6	7.573	25.692	6.84		<1	<1
W5	-4.88	6/22/92	755				4.91	152	70.3	985	0.49	6.9	322	9044	5.03	155.80	73.0	1022	0.90	18.0	7.580	25.559	7.10		<1	<1
W5	-4.88	7/28/92	710				5.12	159	73.1	1024	1.32	18.5	289	8117	5.13	158.90	75.5	1057	0.88	18.0	7.571	25.261	7.13		<1	<1
W5	-4.88	8/25/92	734				5.07	157	63.3	887	0.21	2.9	341	9577	5.23	161.99	71.3	999	0.79	18.2	7.595	25.071	7.04		<1	<1
W5	-4.88	9/21/92	752				4.74	147	67.3	943	0.15	2.1	297	8341	4.84	149.91	71.0	995	0.85	18.4	7.626	26.033	6.78		<1	<1
W5	-4.88	10/26/92	759				4.62	143	71.4	1000	0.53	7.4	347	9746	4.68	144.96	75.2	1053	0.76	19.0	7.524	25.603	6.55		<1	<1
W5	-4.88	11/16/92	824				4.60	142	67.3	942	0.49	6.9	313	8791	5.14	159.21	72.8	1020	0.70	18.7	7.632	26.714	6.48		<1	<1
W5	-4.88	12/7/92	822				4.33	134	66.7	934	0.22	3.1	318	8931	4.44	137.52	70.1	982	0.72	18.8	7.630	26.052	6.56		<1	<1
W5	-4.88	1/25/93	808				4.35	135	73.4	1028	0.66	9.2	317	8906	4.42	136.90	79.3	1111	0.80	18.5	7.658	25.739	6.60		<1	<1
W5	-4.88	2/22/93	749				4.45	138	72.5	1016	0.41	5.7	300	8417	4.48	138.76	80.6	1130	0.70	17.6	7.687	26.748	6.48		<1	<1
W5	-4.88	3/15/93	744				4.62	143	71.6	1003	0.21	2.9	307	8622	4.63	143.41	74.0	1037	0.78	17.7	7.710	26.201	6.59		<1	<1
W5	-4.88	4/26/93	754				4.62	143	66.7	934	0.23	3.2	320	8987	4.79	148.36	69.7	976	0.78	17.7	7.707	25.326	6.49		<1	<1
W5	-4.88	5/24/93	810				4.61	143	68.8	963	0.32	4.5	338	9493	4.82	149.29	75.3	1055	0.63	17.8	7.674	24.239	6.50		<1	<1
W5	-4.88	6/21/93	809				4.62	143	62.9	881	0.22	3.1	618	17357	4.94	153.01	77.0	1078	0.56	18.0	7.618	23.863	5.75		<1	<1
W5	-4.88	8/30/93	912				5.12	159	75.3	1055	0.09	1.3	374	10504	5.16	159.82	87.5	1226	0.76	18.5	7.679	22.469	5.97		<1	<1
W5	-4.88	10/25/93	752				5.46	169	72.6	1017	0.22	3.1	353	9914	5.52	170.98	74.8	1047	0.74	18.9	7.691	23.237	4.54		<1	<1
W5	-4.88	2/7/94	952				6.12	190	58.6	821	0.38	5.3	341	9577	6.14	190.18	64.8	908	0.86	19.6	7.654	22.828	4.41		<1	<1
W5	-4.88	6/20/94	742				5.23	162	59.1	828	0.03	0.4	336	9448	5.26	162.92	71.5	1001	0.77	20.2	7.638	23.588	4.26		<1	<1

NELHA Water Quality Laboratory

Well 5 Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m) (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W5	-4.88	8/22/94	847			6.19	192	54.9	769	0.18	2.5	333	9339	6.27	194.21	65.0	910	0.79	20.8	7.633	24.528	4.23		<1	<1
W5	-4.88	10/24/94	808			4.78	148	65.5	918	0.09	1.3	332	9319	5.28	163.54	70.1	982	0.72	21.5	7.678	23.668	3.81		<1	<1
W5	-4.88	1/23/95	850			5.11	158	61.7	865	0.12	1.7	299	8389	5.20	161.06	64.5	904	0.70	21.2	7.630	24.922	3.89		<1	<1
W5	-4.88	2/13/95	847			5.24	162	71.2	997	0.29	4.1	317	8897	5.25	162.61	79.5	1114	0.73	20.9	7.671	24.311	4.45		<1	<1
W5	-4.88	3/13/95	925			5.25	163	85.8	1202	0.17	2.4	375	10529	5.25	162.61	87.8	1230	0.67	21.0	7.725	24.285	3.76		<1	<1
W5	-4.88	4/24/95	830			5.15	160	86.5	1211	0.18	2.5	309	8690	5.26	162.92	88.7	1242	0.72	21.0	7.704	24.443	4.36		<1	<1
W5	-4.88	5/8/95	828			5.15	160	95.7	1341	0.45	6.3	302	8479	5.17	160.13	98.2	1375	0.64	21.3	7.724	23.328	3.95		<1	<1
W5	-4.88	6/19/95	905			5.08	157	86.1	1206	0.30	4.2	311	8746	5.11	158.28	90.0	1261	0.60	21.1	7.683	23.584	4.04		<1	<1
W5	-4.88	7/24/95	833			5.02	155	83.3	1167	0.29	4.1	335	9417	5.11	158.28	87.9	1231	0.68	21.4	7.695	22.147	4.29		<1	<1
W5	-4.88	8/21/95	924			4.94	153	71.2	997	0.38	5.3	334	9375	5.00	154.87	77.4	1084	0.62	21.6	7.692	23.008	4.29		<1	<1
W5	-4.88	9/11/95	746			4.82	149	69.3	970	0.26	3.6	333	9347	4.87	150.84	72.5	1015	0.56	21.8	7.743	22.784	5.16		<1	<1
W5	-4.88	10/16/95	811			4.83	150	67.6	947	0.36	5.0	326	9161	4.87	150.84	70.8	992	0.87	22.1	7.751	23.322	4.40		<1	45
W5	-4.88	11/6/95	751			4.92	152	71.7	1005	0.22	3.1	325	9125	4.94	153.01	77.0	1078	0.75	21.9	7.764	23.264	4.18		<1	348
W5	-4.88	12/4/95	815			4.94	153	72.1	1010	0.14	2.0	329	9251	5.01	155.18	75.1	1052	0.63	21.9	7.756	23.240	4.36		<1	1
W5	-4.88	1/29/96	918			5.33	165	76.6	1073	0.07	1.0	323	9080	5.35	165.71	89.0	1246	0.74	21.8	7.759	23.558	5.36		1	<1
W5	-4.88	2/26/96	900			5.08	157	92.0	1288	0.30	4.2	332	9337	5.09	157.66	95.7	1340	0.68	22.0	7.752	23.631	4.95		<1	<1
W5	-4.88	3/5/96	825			5.26	163	100.0	1401	0.22	3.1	308	8652	5.29	163.85	105.3	1475	0.82	21.7	7.748	23.735	4.93		<1	<1
W5	-4.88	4/1/96	846			5.31	164	115.8	1623	0.41	5.7	323	9068	5.32	164.78	121.1	1697	0.94	22.2	7.790	22.863	4.44		<1	<1
W5	-4.88	5/8/96	845			5.85	181	144.3	2021	0.13	1.8	321	9001	5.89	182.44		0	0.80	22.3	7.827	22.329	4.14		<1	<1
W5	-4.88	6/17/96	823			5.88	182	126.7	1775	0.34	4.8	329	9226	5.91	183.05		0	0.86	22.8	7.831	23.473	4.53		<1	<1
W5	-4.88	7/16/96	832			6.18	191	253.5	3551	1370	19189	298	8366	6.03	186.77	1400.0	19609	0.83	23.4	8.251	23.525	3.82		<1	<1
W5	-4.88	8/5/96	927			6.34	196	255.1	3573	86	1205	302	8487	6.26	193.90	244.8	3428	0.90	22.9	7.735	23.653	2.10		<1	<1
W5	-4.88	9/3/96	916			5.94	184	143.8	2014	0.57	8.0	342	9607	5.96	184.60	146.5	2052	0.85	23.1	7.728	23.744	2.21		<1	<1
W5	-4.88	10/8/96	907			5.85	181	112.3	1572	0.20	2.8	330	9270	6.21	192.35	120.0	1681	0.91	22.7	7.725	24.750	4.20		<1	<1
W5	-4.88	11/4/96	908			5.94	184	100.4	1406	0.27	3.8	293	8235	6.03	186.77	105.6	1479	0.79	23.2	7.716	25.061	4.46		<1	<1
W5	-4.88	12/16/96	851			5.95	184	102.4	1434	0.32	4.5	305	8565	5.97	184.91	103.0	1442	0.74	22.8	7.831	25.008	4.78		<1	<1
W5	-4.88	1/13/97	922			6.02	186	145	2031	0.05	0.7	280	7853	6.32	195.75	147.0	2059	0.69	23.2	7.768	24.472	4.78		<1	<1
W5	-4.88	2/10/97	829			6.40	198	216	3030	0.20	2.8	266	7462	6.5*	0.00	218.0	3053	1.19	22.7	7.838	25.241	3.81		<1	<1
W5	-4.88	3/10/97	847			8.32	258	467	6537	0.03	0.4	285	8004	9.01	279.07	210.1	2943	1.33	23.4	8.016	23.878	2.70		<1	<1
W5	-4.88	4/22/97	927			8.02	248	644	9018	0.23	3.2	273	7679	8.27	256.15	850.1	11907	1.65	23.8	8.128	23.214	1.17		<1	<1
W5	-4.88	5/27/97	853			8.33	258	433	6062	0.14	2.0	270	7580	8.74	270.71	478.7	6705	1.11	22.7	8.060	24.551	2.74		<1	<1
W5	-4.88	6/16/97	900			8.99	278	290	4055	0.29	4.1	296	8310	8.99	278.45	323.4	4530	0.92	22.8	8.067	24.231	3.14		<1	<1
W5	-4.88	7/14/97	912			9.00	279	236	3303	0.34	4.8	266	7471	9.04	280.00	381.0	5337	1.52	23.3	8.021	24.222	3.21		<1	<1
W5	-4.88	8/25/97	857			8.56	265	195	2726	0.24	3.4	267	7504	8.56	265.14	212.9	2982	0.71	23.7	8.033	25.335	2.44		<1	<1
W5	-4.88	9/22/97	822			7.78	241	148	2073	0.12	1.7	276	7745	7.84	242.83	152.1	2130	0.70	23.9	8.010	24.735	1.84		<1	<1
W5	-4.88	10/14/97	859			7.54	234	143	2009	0.30	4.2	303	8507	7.61	235.71	166.8	2336	0.68	24.1	7.984	23.579	2.03		<1	<1
W5	-4.88	11/3/97	831			7.02	217	144.8	2028	0.16	2.2	279	7841	7.25	224.56	172.6	2418	0.78	24.0	7.976	25.150	2.39		<1	<1
W5	-4.88	12/15/97	923			7.70	238	115.6	1619	0.09	1.3	284	7976	7.82	242.21	137.4	1925	0.81	23.8	7.951	25.064	2.37		<1	<1
W5	-4.88	1/5/98	1018			7.25	225	111.1	1557	0.05	0.7	256	7181	7.33	227.04	120.1	1682	0.76	23.7	7.919	26.327	1.57		<1	<1
W5	-4.88	2/2/98	916			7.01	217	100.2	1403	0.06	0.8	244	6856	7.24	224.25	120.8	1692	0.82	22.6	7.902	27.027	2.04		<1	<1
W5	-4.88	3/9/98	926			8.49	263	98.6	1381	0.12	1.7	263	7378	8.59	266.06	100.7	1410	0.70	22.6	7.752	25.366	2.33		<1	<1
W5	-4.88	4/13/98	835			8.33	258	91	1280	0.13	1.8	259	7260	8.57	265.45	97.4	1365	0.74	22.1	7.763	26.507	3.05		<1	<1
W5	-4.88	5/11/98	901			8.02	248	111	1556	0.27	3.8	262	7350	8.17	253.06	119.2	1669	0.73	22.3	7.784	26.054	4.05		<1	<1
W5	-4.88	6/1/98	858			7.86	243	107.6	1506	0.11	1.5	254	7145	8.10	250.89	112.2	1572	0.74	22.2	7.762	25.931	4.50		<1	<1
W5	-4.88	7/13/98	908			7.47	231	96	1342	0.05	0.7	269	7552	7.82	242.21	99	1391	0.75	22.2	7.721	25.874	4.00		<1	<1
W5	-4.88	8/10/98	930			7.26	225	107.0	1499	0.17	2.4	270	7583	7.52	232.92	109.2	1530	0.67	22.5	7.705	26.539	4.27		<1	<1
W5	-4.88	9/14/98	914			7.01	217	97.1	1360	0.12	1.7	250	7024	7.28	225.49	100	1399	0.81	22.2	7.706	27.710	4.23		<1	<1
W5	-4.88	10/12/98	831			7.00	217	115.8	1622	0.03	0.4	249	6996	7.10	219.91	121	1693	0.80	22.4	7.690	27.672	4.43		<1	<1
W5	-4.88	11/2/98	852			6.88	213	100.5	1408	0.04	0.6	259	7285	6.99	216.51	112.0	1569	1.06	22.3	7.719	26.795	3.93		<1	<1
W5	-4.88	12/15/98	850			6.53	202	84.1	1178	0.09	1.3	266	7465	6.70	207.52	86.3	1209	0.92	22.8	7.696	26.545	3.51		<1	<1
W5	-4.88	1/11/99	908			6.08	188	91	1272	0.18	2.5	252	7080	6.27	194.21	94	1319	0.96	22.9	7.646	27.593	2.57		<1	<1
W5	-4.88	2/2/99	901			6.59	204	105	1474	0.25	3.5	261	7342	6.73	208.45	121	1691	0.93	23.1	7.664	26.634	3.54		<1	<1
W5	-4.88	3/1/99	903			6.58	204	102.6	1437	0.05	0.7	265	7451	6.77	209.69	105.8	1482	0.94	23.1	7.665	26.208	3.24		<1	<1
W5	-4.88	4/5/99	905			5.95	184	83.4	1168	0.06	0.8	254	7145	6.09	188.63	86.1	1206	1.15	23.0	7.664	27.353	3.49		<1	<1
W5	-4.88	5/3/99	903			6.04	187	111	1558	0.15	2.1	262	7367	6.20	192.04	124	1742	0.87	23.1	7.670	27.089	4.05		<1	<1
W5	-4.88	6/1/99	857			5.66	175	240	3362	140	1960.9	251	7049	5.90	182.75	336	4706	0.94	22.9	7.572	27.727	0.49		<1	<1

NELHA Water Quality Laboratory

Well 5 Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W5	-4.88	7/14/99	902				5.64	175	156	2185	0.02	0.3	269	7561	5.68	175.93	168	2355	0.90	23.3	7.615	26.400	2.10		<1	<1
W5	-4.88	8/23/99	925				6.02	186	99.3	1391	0.11	1.5	272	7639	6.19	191.73	115	1605	0.90	23.7	7.711	25.906	3.31		<1	<1
W5	-4.88	9/7/99	914				6.01	186	95.7	1340	0.07	1.0	256	7193	6.33	196.06	112	1572	0.85	23.2	7.673	26.489	3.42		<1	<1
W5	-4.88	10/5/99	908				5.16	160	187	2618	21.0	293.9	266	7457	5.09	157.66	221	3095	0.77	23.5	7.577	26.459	0.77		<1	<1
W5	-4.88	11/1/99	928				5.48	170	110	1542	0.08	1.1	254	7131	5.58	172.83	115	1611	0.70	23.2	7.667	26.605	3.64		<1	<1
W5	-4.88	12/14/99	919				5.68	176	94.6	1325	0.08	1.1	245	6873	5.83	180.58	98.2	1375	0.95	23.7	7.575	27.936	1.83		<1	<1
W5	-4.88	1/10/00	948				5.51	171	88.8	1244	0.22	3.1	250	7027	5.55	171.90	94.3	1321	0.89	23.7	7.609	27.338	2.55		<1	<1
W5	-4.88	2/7/00	946				5.59	173	165	2311	147	2059.0	246	6917	5.45	168.81	294	4118	0.86	23.6	7.601	26.125	0.64		<1	<1
W5	-4.88	3/21/00	948				5.61	174	94.0	1317	0.09	1.3	261	7333	5.40	167.26	98.0	1373	0.86	23.1	7.638	25.816	2.51		<1	<1
W5	-4.88	4/10/00	1012				5.70	177	86.6	1213	0.07	1.0	256	7179	5.44	168.50	91.5	1282	0.79	23.0	7.644	25.977	2.00		<1	1
W5	-4.88	5/15/00	925				5.67	176	80.6	1129	0.21	2.9	279	7839	5.69	176.24	85.2	1193	0.79	23.8	7.653	25.289	2.23		<1	<1
W5	-4.88	6/5/00	926				5.36	166	69.6	975	0.04	0.6	278	7802	5.38	166.64	76.9	1077	0.88	23.3	7.621	25.585	2.02		<1	<1
W5	-4.88	7/26/00	955				5.47	169	76.4	1070	0.12	1.7	290	8148	5.68	175.93	81.5	1142	0.77	23.9	7.622	25.187	2.12		<1	<1
W5	-4.88	8/29/00	853				5.43	168	85.2	1193	0.11	1.5	301	8457	5.50	170.36	87.3	1223	0.707	24.3	7.616	24.412	3.06		<1	<1
W5	-4.88	9/5/00	924				5.60	173	86.0	1205	0.08	1.1	282	7923	5.81	179.96	92.3	1293	0.75	24.0	7.621	25.765	1.96		<1	<1
W5	-4.88	10/24/00	928				5.52	171	91.2	1277	0.19	2.7	318	8940	5.74	177.79	95.6	1339	0.71	24.2	7.589	24.808	2.06		<1	<1
W5	-4.88	11/13/00	903				4.87	151	163	2279	0.27	3.8	328	9223	5.13	158.90	171	2398	1.00	24.3	7.595	22.769	2.45		<1	<1
W5	-4.88	12/18/00	912				5.39	167	120	1678	0.16	2.2	285	8007	5.40	167.26	123	1723	0.91	24.2	7.551	25.776	1.16		<1	<1
W5	-4.88	1/22/01	906				4.94	153	93.4	1308	0.04	0.6	254	7134	5.13	158.90	96.5	1352	0.81	24.1	7.544	27.913	1.14		<1	<1
W5	-4.88	2/5/01	931				4.90	152	90.6	1269	0.10	1.4	260	7288	5.02	155.49	95.2	1333	0.78	24.0	7.556	27.332	0.99		TNTC	5
W5	-4.88	3/5/01	923				4.82	149	91.2	1277	0.02	0.3	254	7120	4.96	153.63	94.0	1317	0.75	24.0	7.523	26.889	1.28		1	<1
W5	-4.88	4/17/01	915				5.04	156	103	1440	0.07	1.0	260	7308	5.11	158.28	105	1472	0.76	23.7	7.546	25.642	2.19		<1	<1
W5	-4.88	5/15/01	846				5.18	160	101	1413	0.14	2.0	285	8010	5.10	157.97	105	1474	0.66	24.0	7.601	24.688	2.68		<1	<1
W5	-4.88	6/12/01	859				5.24	162	96.6	1352	0.02	0.3	285	8002	5.09	157.66	99.3	1391	0.74	23.4	7.594	24.878	2.55		<1	<1
W5	-4.88	7/23/01	904				4.97	154	90.0	1261	0.03	0.4	278	7816	4.98	154.25	97.5	1366	0.72	23.5	7.566	25.725	2.54		<1	<1
W5	-4.88	8/8/01	858				5.01	155	86.6	1213	0.03	0.4	303	8496	5.04	156.11	89.8	1258	0.74	23.2	7.600	25.136	2.31		<1	<1
W5	-4.88	9/19/01	911				5.34	165	96.7	1354	0.05	0.7	320	8996	5.60	173.45	103	1438	0.83	23.9	7.583	25.306	2.16		<1	<1
W5	-4.88	10/24/01	844				5.06	157	93.2	1305	0.06	0.8	288	8089	5.44	168.50	101	1415	0.74	24.4	7.608	25.717	2.18		<1	<1
W5	-4.88	11/7/01	901				5.32	165	100	1403	0.03	0.4	270	7580	5.40	167.26	121	1689	0.75	23.9	7.576	26.307	2.46		<1	<1
W5	-4.88	12/19/01	920				5.16	160	112	1574	0.16	2.2	267	7496	5.06	156.73	149	2090	0.75	24.1	7.577	26.103	2.33		<1	<1
W5	-4.88	1/9/02	914				5.21	161	104	1458	0.20	2.8	248	6965	5.34	165.40	107	1499	0.73	22.9	7.600	27.819	1.75		<1	<1
W5	-4.88	2/19/02	1030				5.40	167	102	1427	0.05	0.7	264	7401	5.58	172.83	108	1514	0.67	23.5	7.649	25.159	2.14		<1	<1
W5	-4.88	3/20/02	928				5.32	165	99.7	1397	0.18	2.5	275	7712	5.54	171.59	104	1450	0.81	22.9	7.765	25.654	2.43		<1	<1
W5	-4.88	4/8/02	1018				5.38	167	102	1424	0.07	1.0	252	7066	5.58	172.83	105	1471	0.71	23.1	7.638	26.302	2.65		<1	<1
W5	-4.88	5/29/02	1006				6.34	196	109	1532	0.11	1.5	276	7757	6.50	201.33	114	1600	0.90	23.4	7.774	24.305	2.85		<1	<1
W5	-4.88	6/17/02	939				6.90	214	91.9	1288	0.01	0.1	259	7269	7.16	221.77	96.1	1345	0.74	23.0	7.790	25.298	2.07		<1	<1
W5	-4.88	7/15/02	935				7.06	219	87.2	1222	0.09	1.3	275	7735	7.32	226.73	95.3	1335	0.81	24.1	7.716	24.938	2.67		<1	<1
W5	-4.88	8/20/02	934				6.68	207	70.1	982	0.28	3.9	301	8454	6.94	214.96	67.1	939	0.75	24.3	7.740	24.551	2.83		<1	<1
W5	-4.88	9/23/02	951				6.26	194	68.4	959	0.21	2.9	287	8055	6.46	200.09	63.9	895	0.64	24.5	7.747	25.346	2.37		<1	5
W5	-4.88	10/14/02	914				5.86	182	88.5	1240	0.01	0.1	296	8308	6.16	190.80	84.3	1181	0.77	24.8	7.728	24.265	5.46		1	<1
W5	-4.88	11/4/02	924				5.62	174	99.1	1388	0.03	0.4	282	7920	5.92	183.36	97.1	1360	0.97	25.0	7.733	24.688	2.28		<1	<1
W5	-4.88	12/17/02	945				5.89	182	75.9	1063	0.10	1.4	228	6415	6.24	193.28	80.6	1130	0.79	24.3	7.867	28.210	3.33		<1	<1
W5	-4.88	1/21/03	1015				5.10	158	83.7	1172	0.05	0.7	194	5449	5.38	166.64	88.3	1237	0.99	24.1	7.733	30.049	3.39		<1	<1
W5	-4.88	2/12/03	940				6.02	186	91.5	1282	0.03	0.4	207	5808	6.26	193.90	108	1507	0.87	23.9	7.737	28.922	1.90		<1	<1
W5	-4.88	3/19/03	943				6.99	217	127	1775	0.06	0.8	227	6370	7.24	224.25	148	2066	0.79	23.6	7.731	27.047	2.54		<1	2
W5	-4.88	4/28/03	925				6.71	208	126	1761	0.04	0.6	245	6884	7.24	224.25	151	2121	1.05	23.7	7.786	26.153	3.69		<1	7
W5	-4.88	5/12/03	903				6.71	208	111	1559	0.05	0.7	248	6962	7.11	220.22	118	1647	0.92	23.7	7.808	26.489	3.87		2	1
W5	-4.88	6/3/03	918				6.71	208	105	1471	0.43	6.0	249	6982	6.86	212.48	116	1629	0.98	23.7	7.812	25.955	3.97		<1	<1

NELHA Water Quality Laboratory

Well 5 Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W5	-4.88	7/29/03	935				7.46	231	80.4	1126	0.55	7.7	256	7198	7.70	238.50	94.1	1318		24.6	7.768	25.494	3.83		<1	TNTC
W5	-4.88	8/26/03	937				9.00	279	91.2	1277	0.21	2.9	261	7336	9.39	290.84	105	1465		25.2	7.861	24.938	3.26		<1	42
W5	-4.88	9/15/03	921				8.83	273	87.2	1221	0.07	1.0	243	6830	9.54	295.49	97.2	1361		24.4	7.782	26.019	2.70		<1	<1
W5	-4.88	10/6/03	903				8.48	263	81.0	1134	0.46	6.4	252	7083	8.96	277.52	89.3	1250		23.9	7.768	25.964	NA		<1	5
W5	-4.88	10/28/03	947				7.90	245	80.0	1121	0.10	1.4	250	7021	8.56	265.14	89.3	1251		24.2	7.762	26.220			<1	153
W5	-4.88	11/14/03	1301																	25.2			3.66			
W5	-4.88	12/15/03	909				7.78	241	94.6	1324	0.46	6.4	231	6482	8.06	249.65	97.3	1363		23.9	7.737	27.229	2.86		<1	6
W5	-4.88	1/26/04	914				7.02	217	116	1628	0.10	1.4	208	5845	7.42	229.83	118	1656		23.0	7.733	27.723	3.00		<1	15
W5	-4.88	2/5/04	913				7.44	230	127	1780	0.22	3.1	229	6418	7.56	234.16	141	1968		23.6	7.764	26.524	3.65		<1	184
W5	-4.88	3/2/04	918				7.18	222	148	2072	0.41	5.7	223	6274	7.10	219.91	159	2224		23.2	7.803	25.035	4.07		<1	1
W5	-4.88	4/20/04	912				8.22	255	146	2046	0.18	2.5	228	6403	8.32	257.70	148	2079		22.7	7.771	25.061	2.85		<1	1
W5	-4.88	5/11/04	828				8.80	273	138	1939	0.32	4.5	240	6741	10.1	314.07	151	2116		23.6	7.767	23.99	2.87		<1	<1
W5	-4.88	6/2/04	847				8.70	269	133	1860	0.23	3.2	253	7092	8.94	276.91	140	1962		24.1	7.735	22.88	2.44		<1	<1
W5	-4.88	7/14/04	919				8.60	266	127	1782	0.23	3.2	268	7513	8.56	265.14	146	2041		23.7	7.720	23.72	2.75		<1	<1
W5	-4.88	8/23/04	911				8.50	263	125	1745	0.27	3.8	259	7280	8.44	261.42	130	1818		24.3	7.666	24.31	1.87		<1	<1
W5	-4.88	9/2/04	922				8.42	261	114	1590	0.15	2.1	267	7490	8.50	263.28	118	1658		24.3	7.715	24.08	2.36		<1	<1
W5	-4.88	10/4/04	850				8.68	269	111	1551	0.17	2.4	264	7415	9.16	283.72	117	1636		25.1	7.660	24.53	2.14		<1	<1
W5	-4.88	11/23/04	845				8.62	267	92.9	1301	0.09	1.3	277	7788	9.06	280.62	120	1681		24.3	7.664	24.05	1.69		<1	<1
W5	-4.88	12/8/04	845				8.56	265	94.6	1325	0.08	1.1	278	7799	8.84	273.81	125	1747		24.2	7.644	24.03	1.38		<1	<1
W5	-4.88	1/18/05	858				7.94	246	84.1	1178	0.09	1.3	237	6656	8.16	252.75	88.3	1236		23.7	7.616	27.212	0.89		<1	<1
W5	-4.88	2/10/05	845				8.18	253	102	1424	0.25	3.5	243	6814	8.50	263.28	138	1932		23.6	7.689	26.065	1.20		<1	1
W5	-4.88	3/22/05	852				10.1	312	124	1730	0.18	2.5	239	6707	10.38	321.51	142	1992	1.59	23.5	7.783	26.164	0.92		<1	260
W5	-4.88	4/20/05	843				9.36	290	94.5	1324	0.15	2.1	230	6454	9.56	296.11	96.2	1347		23.4	7.863	25.702	2.06		<1	<1
W5	-4.88	5/25/05	905				8.44	261	86.8	1216	0.15	2.1	244	6847	8.74	270.71	95.8	1342		21.9	7.866	24.832	3.44		<1	<1
W5	-4.88	6/14/05	903				7.56	234	74.4	1042	1.57	22.0	234	6578	7.84	242.83	84.8	1188		23.6	7.842	25.733	3.73		6	TNTC>5,000
W5	-4.88	7/19/05	858				6.86	212	83.8	1174	0.12	1.7	239	6698	7.18	222.39	88.0	1233	0.67	24.3	7.844	24.148	3.71		<1	2
W5	-4.88	8/3/05	928				6.90	214	85.2	1193	0.10	1.4	240	6732	7.30	226.11	89.2	1249	0.69	24.6	7.870	24.811	3.81		<1	2
W5	-4.88	9/22/05	851				6.28	195	64.1	897	0.12	1.7	216	6052	6.60	204.43	69.8	978	0.62	25.8	7.823	28.080	3.31		<1	<1
W5	-4.88	10/19/05	905				6.40	198	76.9	1077	0.14	2.0	213	5991	6.60	204.43	85.1	1192		26.2	7.738	28.205	2.79		<1	<1
W5	-4.88	11/8/05	850				6.70	208	75.1	1052	0.07	1.0	213	5974	6.94	214.96	84.0	1177		25.9	7.658	28.261	1.78		<1	2512
W5	-4.88	12/22/05	824				5.58	173	72.1	1010	0.33	4.6	168	4704	5.82	180.27	75.4	1056		25.2	7.575	30.395	1.45		53	2184
W5	-4.88	1/31/06	849				5.68	176	70.0	980	0.19	2.7	179	5036	5.92	183.36	74.8	1047		24.6	7.603	29.854	2.10		<1	<1
W5	-4.88	2/16/06	844				5.66	175	67.4	944	0.22	3.1	171	4797	6.26	193.90	70.5	987	0.61	24.7	7.577	30.050	1.93		<1	<1
W5	-4.88	3/22/06	835				5.52	171	72.3	1013	0.27	3.8	185	5196	5.72	177.17	76.6	1073	0.59	23.9	7.615	29.625	3.14		<1	<1
W5	-4.88	4/27/06	915				5.47	169	74.3	1041	0.08	1.1	184	5168	5.66	175.31	72.3	1012	0.57	24.1	7.649	28.803	4.00		<1	<1
W5	-4.88	5/24/06	937				5.11	158	67.8	950	0.06	0.8	181	5083	5.29	163.85	65.1	911	0.75	24.3	7.613	29.200	3.13		<1	<1
W5	-4.88	6/28/06	922				5.27	163	61.9	867	0.18	2.5	189	5308	5.59	173.14	60.1	841	0.55	24.2	7.664	29.044	2.21		<1	<1
W5	-4.88	7/19/06	900				5.17	160	61.4	860	0.25	3.5	188	5280	5.39	166.95	52.2	731	0.60	24.5	7.603	29.373	3.15		<1	2
W5	-4.88	8/9/06	922				5.20	161	56.8	796	0.12	1.7	197	5533	5.39	166.95	52.1	729	0.68	24.6	7.64	28.993	2.33		<1	<1
W5	-4.88	9/20/06	933				5.16	160	59.9	839	0.33	4.6	190	5336	5.42	167.88	56.0	784	0.65	25.4	7.66	29.446	1.21		<1	3
W5	-4.88	10/25/06	928				5.43	168	51.2	717	0.34	4.8	184	5168	5.59	173.14	48.7	682	0.72	25.4	7.593	29.720	1.24		1	38
W5	-4.88	11/29/06	925				5.43	168	53.3	747	0.23	3.2	173	4859	5.74	177.79	48.3	676	0.64	25.5	7.546	30.574	0.64		<1	<1
W5	-4.88	12/13/06	929				5.30	164	56.7	794	0.24	3.4	168	4718	5.49	170.05	53.1	744	0.65	25.5	7.548	30.708	1.00		<1	28
W5	-4.88	1/10/07	915				5.21	161	61.0	854	0.32	4.5	151	4241	5.45	168.81	63.4	888	0.60	25.1	7.653	31.159	1.29		<1	7
W5	-4.88	2/21/07	955				4.87	151	72.1	1010	0.43	6.0	150	4213	5.15	159.51	78.9	1105	0.67	24.3	7.555	30.244	2.58		<1	<1
W5	-4.88	3/7/07	946				4.87	151	75.8	1062	0.34	4.8	156	4381	5.05	156.42	78.9	1106	0.68	24.3	7.628	30.155	2.24		<1	1
W5	-4.88	4/19/07	925				5.12	159	77.0	1079	0.19	2.7	168	4718	5.22	161.68	72.4	1013	0.54	24.3	7.632	29.543	2.63		2	55
W5	-4.88	5/2/07	932				5.19	161	75.4	1056	0.28	3.9	174	4887	5.46	169.12	72.5	1015	0.54	23.4	7.585	29.395	2.79		1	1
W5	-4.88	6/20/07	936				5.20	161	76.9	1077	0.18	2.5	182	5112	5.57	172.52		0		24.2	7.651	28.923	3.28		<1	37

NELHA Water Quality Laboratory

Well 5 Data Table

June 1989 - December 2014

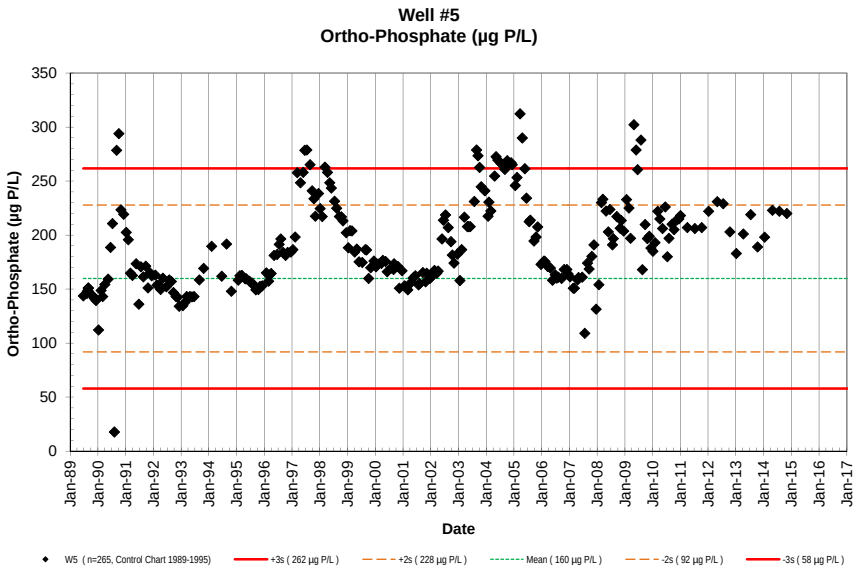
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W5	-4.88	7/23/07	1102	-2.74	0.52	Flood	3.52	109	41.8	585	0.04	0.5	148	4156	3.75	116.1	41.7	584.3		22.6	7.52	31.68	2.60			
W5	-4.88	8/27/07	1340	-3.22	0.52	Flood	5.62	174	76.4	1071	0.07	1.0	152	4268	5.22	161.6	76.3	1068.4		24.8	7.55	29.51	3.35			
W5	-4.88	9/18/07	1536	-3.30	0.24	Ebb	5.44	169	75.3	1055	0.50	7.0	176	4951	5.51	170.6	75.2	1053.8		25.0	7.50	29.34	2.33			
W5	-4.88	10/23/07	1352	-3.12	0.52	High	5.82	180	80.1	1121	0.02	0.3	173	4866	5.76	178.4	75.3	1054.2		24.4	7.47	27.85	0.72			
W5	-4.88	11/20/07	1432	-3.35	0.38	Ebb	6.16	191	85.0	1191	0.23	3.2	214	6002	5.60	173.5	90.5	1266.9		23.5	7.58	26.81	0.84			
W5	-4.88	12/19/07	1238	-3.35	0.30	High	4.24	131	70.1	981	0.75	11	206	5775						23.0	7.42	24.22	1.27			
W5	-4.88	1/25/08	958	-3.12	0.24	Ebb	4.98	154	57.5	806	0.28	3.9	146	4111						22.7	7.15	26.58	1.38			
W5	-4.88	2/26/08	1145	-3.58	0.03	Ebb	7.43	230	104.3	1461	0.74	10.4	210	5894						22.4	7.37	26.60	1.17			
W5	-4.88	3/17/08	1315	-3.35	0.21	Flood	7.53	233	97.3	1363	0.06	0.8	160	4500						22.5	7.45	26.51	1.41			
W5	-4.88	4/29/08	916	-3.53	0.09	Flood	7.17	222	90.2	1263	0.09	1.2	215	6042						21.6	7.31	26.35	1.35			
W5	-4.88	5/28/08	916	-3.40	0.18	Flood	6.55	203	97.6	1367	0.29	4.1	246	6921						22.2	7.40	25.44	2.10			
W5	-4.88	6/17/08	1024	-3.66	0.00	Flood	7.22	224	102.8	1440	0.81	11.4	228	6396						22.1	7.31	24.80	n/a	2.32		
W5	-4.88	7/22/08	918	-3.25	0.30	Ebb	6.17	191	86.5	1212	0.92	12.9	238	6682						22.1	7.35	25.42	1.35			
W5	-4.88	7/31/08	9.11	-3.81	-0.09	Low	6.35	197	81.1	1136	0.81	11.4	232	6507						24.8	7.34	24.89	3.13			
W5	-4.88	9/16/08	1012	-3.49	0.12	Ebb	7.01	217	98.9	1385	0.67	9.4	244	6854						23.0	7.26	25.16	1.85			
W5	-4.88	10/31/08	951	-3.37	0.30	Ebb	6.66	206	90.2	1264	0.39	5.4	244	6864						25.1	7.30	26.32	1.26			
W5	-4.88	11/14/08	1114	-3.54	0.12	Ebb	6.89	213	101.7	1425	0.16	2.3	219	6158						24.1	7.68	26.60	1.37	1.02		
W5	-4.88	12/16/08	937	-3.56	0.61	Ebb	6.58	204	117.3	1643	0.01	0.2	230	6458						23.8	7.51	27.11	1.49			
W5	-4.88	1/23/09	1411	-3.49	0.15	High	7.52	233	135.7	1901	0.94	13.1	186	5213						23.9	7.51	28.70	1.60	1.89		
W5	-4.88	2/24/09	1526	-3.32	0.30	Flood	7.26	225	90.0	1261	0.54	7.5	219	6144						23.7	7.42	27.84	2.60	4.80		
W5	-4.88	3/16/09	1520	-3.58	0.03	Low	6.36	197	167.3	2344	0.17	2.4	181	5078						23.7	7.43	27.65	3.03	2.30		
W5	-4.88	4/30/09	1450	-3.64	0.06	Flood	9.75	302	139.4	1952	0.68	9.5	130	3647						24.1	7.93	26.83	3.44			
W5	-4.88	5/29/09	924	-3.43	0.21	High	9.00	279	127.1	1780	0.10	1.4	229	6425						22.1	8.26	27.26	3.69	0.47		
W5	-4.88	6/18/09	1342	-3.05	0.61	High	8.41	261	120.5	1688	0.57	8.0	188	5279						22.3	7.53	27.64	4.23	0.78		
W5	-4.88	7/31/09	1048	-3.12	0.52	Flood	9.30	288	121.1	1696	0.23	3.2	142	3984						22.2	7.17	28.10	3.59	0.95		
W5	-4.88	8/19/09	1040	-3.47	0.09	Flood	5.42	168	84.2	1180	0.71	9.9	123	3460						22.6	7.56	27.94	3.56	0.26		
W5	-4.88	9/24/09	907	-3.15	0.61	High	6.77	210	107.1	1500	0.57	8	148	4168						22.4	8.40	27.34	2.79	0.26		
W5	-4.88	10/23/09	1330	-3.54	0.21	Ebb	6.35	197	94.2	1319	0.64	9	104	2921						22.8	7.51	26.92	2.84	0.29		
W5	-4.88	11/17/09	1002	-3.63	0.21	Ebb	6.42	199	88.8	1244	0.85	12	203	5699						22.7	7.45	27.19	2.56	0.14		
W5	-4.88	12/8/09	1004	-3.19	0.52	Ebb	6.07	188	91.4	1280	1.00	14	230	6462						22.6	7.48	27.94	1.49	0.15		
W5	-4.88	1/6/10	948	-3.27	0.40	Ebb	5.97	185	92.1	1290	1.93	27	197	5539						22.9	7.57	28.35	1.92	14.20		
W5	-4.88	2/2/10	915	-3.22	0.24	Ebb	6.23	193	116.7	1634	0.79	11	179	5033						22.4	7.59	28.83	2.09	0.53		
W5	-4.88	3/10/10	853	-3.69	0.09	Low	7.17	222	116.7	1634	0.29	4	217	6086						22.1	7.53	28.00	2.81	0.24		
W5	-4.88	4/6/10	1457	-3.55	0.09	Ebb	6.94	215	107.4	1504	0.64	9	220	6169						21.7	7.56	27.42	3.08	3.55		
W5	-4.88	5/12/10	834	-3.71	-0.06	Low	6.65	206	99.3	1391	1.07	15	196	5501						21.6	7.82	26.97	3.25	0.48		
W5	-4.88	6/16/10	1052	-3.58	0.09	Ebb	7.30	226	115.7	1621	0.36	5	242	6807						21.8	7.58	26.83	3.97	0.39		
W5	-4.88	7/14/10	857	-3.40	0.18	Ebb	5.81	180	115.5	1618	0.29	4	235	6607						21.6	7.55	27.05	4.18	0.08		
W5	-4.88	8/3/10	1714	-3.30	0.12	Ebb	6.36	197	109.1	1528	0.29	4	231	6492						21.7	7.65	27.24	3.28	0.86		
W5	-4.88	9/13/10	1447	-3.39	0.24	Ebb	6.78	210	108.6	1521	0.19	2.6	251	7051						22.0	7.52	26.99	3.83	0.24		
W5	-4.88	10/11/10	1010	-3.06	0.46	Ebb	6.62	205	106.9	1497	0.03	0.4	245	6878						22.0	7.63	27.34	3.93	0.41		
W5	-4.88	11/15/10	1122	-3.14	0.43	High	6.91	214	101.0	1415	0.11	1.5	239	6711						22.2	7.53	28.13	2.67	0.18		
W5	-4.88	12/13/10	917	-3.02	0.40	High	6.94	215	103.7	1453	0.09	1.3	240	6736						21.9	7.51	28.32	2.59	0.39		
W5	-4.88	1/3/11	1520	-3.43	0.21	High	7.04	218	120.1	1682	0.28	3.9	234	6567						22.0	7.56	28.07	2.91	0.12		
W5	-4.88	4/4/11	1413	-3.25	0.30	Flood	6.68	207	133.3	1867	0.09	1.2	194	5446						21.8	7.68	27.72	3.61	0.16		
W5	-4.88	7/11/11	1255	-3.12	0.67	Flood	6.65	206	135.3	1895	0.11	1.5	213	5974						22.8	7.59	27.63	5.12	3.22		
W5	-4.88	10/10/11	1211	-3.36	0.24	Flood	6.68	207	119.2	1670	0.24	3.4	217	6106						22.2	7.63	27.72	4.54	0.47		
W5	-4.88	1/9/12	1234	-3.63	0.03	Low	7.17	222	109.6	1535	0.16	2.3	213	5981						22.0	7.66	27.31	3.11	0.15		
W5	-4.88	4/30/12	1349	-3.26	0.30	High	7.46	231	116.1	1626	0.06	0.8	216	6067						21.5	7.54	27.79	3.58	0.06		
W5	-4.88	7/17/12	1557	-2.91	0.73	High	7.39	229	110.7	1550	0.21	3	213	5980						21.8	7.57	28.31	4.68	0.55		
W5	-4.88	10/15/12	1229	-3.48	0.12	Flood	6.55	203	107.4	1505	0.28	3.9	221	6197						21.4	7.58	28.20	3.90	0.11		
W5	-4.88	1/7/13	1315	-3.34	0.24	Ebb	5.91	183	139.6	1956	0.52	7.3	250	7014						21.1	7.56	28.55	3.88	0.16		
W5	-4.88	4/9/13	1125	-3.56	0.09	Flood	6.49	201	155.4	2177	0.30	4.2	202	5679						20.6	7.66	27.72	4.86	0.41		
W5	-4.88	7/16/13	1504	-3.31	0.37	Ebb	7.07	219	159.1	2228	0.24	3.4	238	6673						21.3	7.58	26.51	4.67	0.35		
W5	-4.88	10/14/13	1515	-3.21	0.43	Ebb	6.10	189	138.4	1938	0.26	3.6	232	6516						23.0	7.69	26.96	5.53	2.52		
W5	-4.88	1/14/14	1407	-3.40	0.21	Flood	6.39	198	160.4	2247	0.31	4.4	215	6026						22.5	7.77	27.55	3.89	0.08		
W5	-4.88	4/28/14	1625	-3.03	0.55	High	7.20	223	187.9	2632	0.33	4.6	202	5676						22.2	7.82	25.75	3.22	0.28		

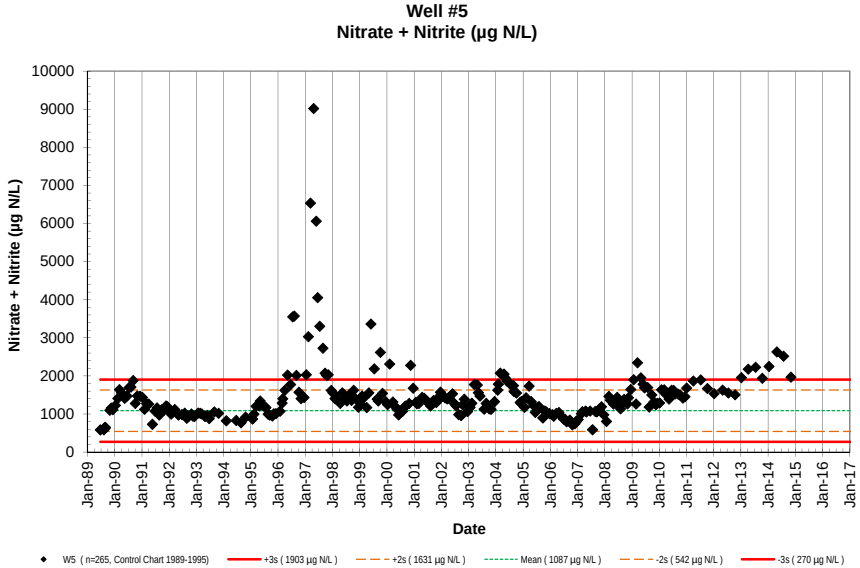
NELHA Water Quality Laboratory

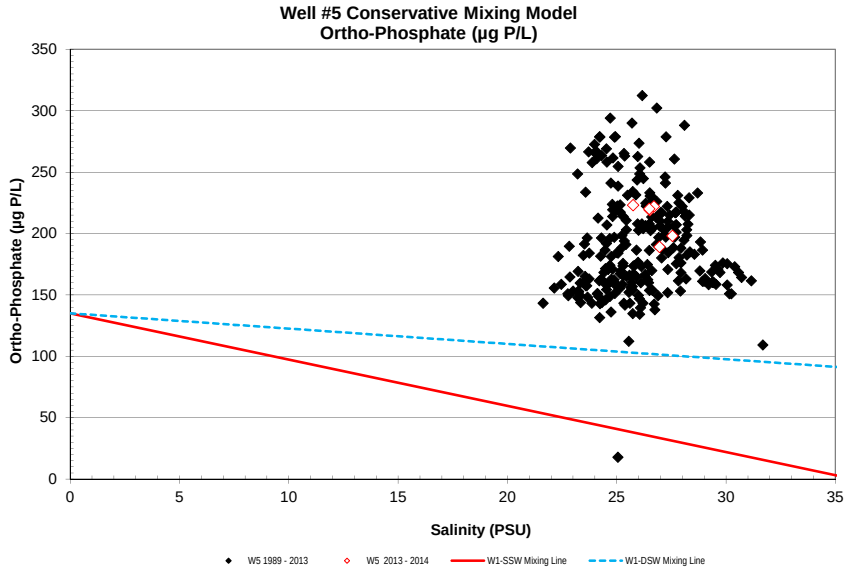
Well 5 Data Table

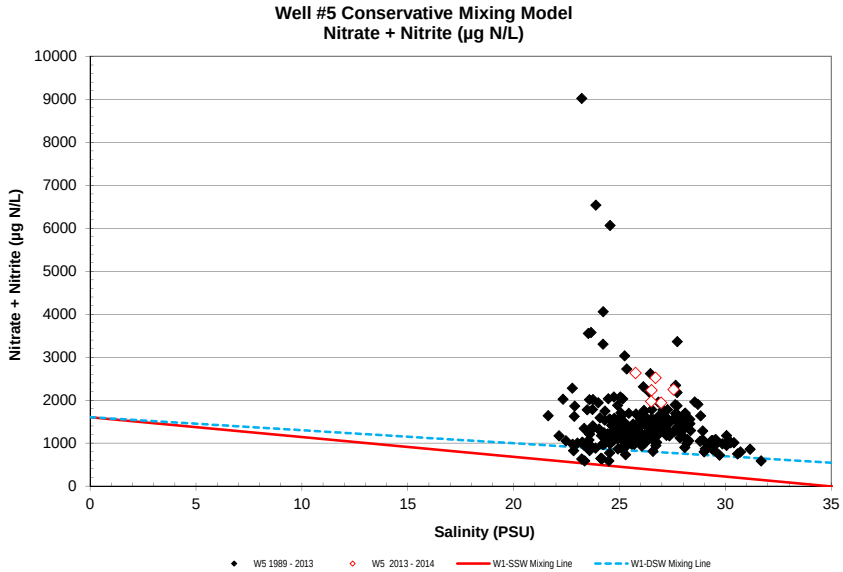
June 1989 - December 2014

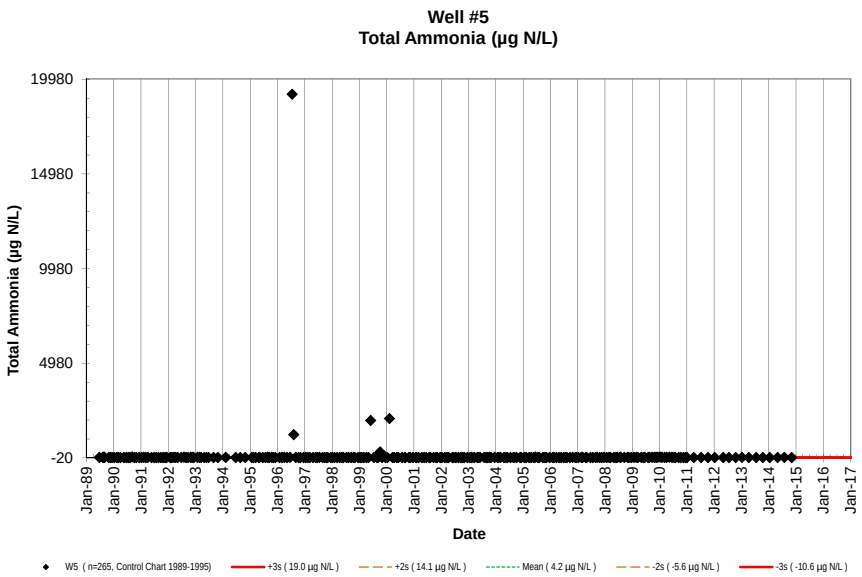
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W5	-4.88	7/28/14	1415	-3.24	0.38	Flood	7.17	222	179.8	2518	0.93	13	203	5703						22.6	7.77	26.7	4.56	0.26		
W5	-4.88	11/3/14	1050	-3.20	0.38	Flood	7.10	220	140.5	1968	0.15	2.1	200	5613						23.2	7.62	26.49	3.65	0.59		
W5	-4.88	1/1/15																								
W5	-4.88	4/1/15																								

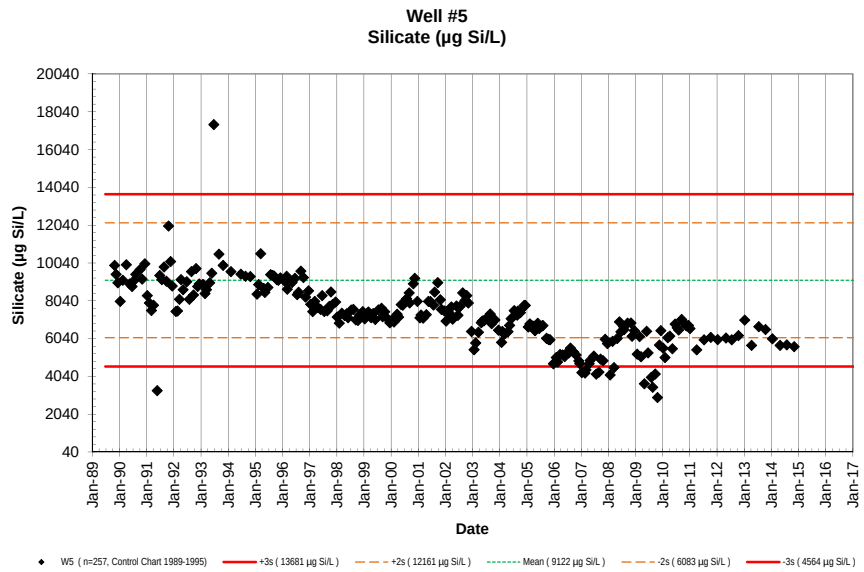

Well #5
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W5 (n=265, Control Chart 1989-1995)
+3s (262 µg P/L)
+2s (228 µg P/L)
Mean (160 µg P/L)
-2s (92 µg P/L)
-3s (58 µg P/L)

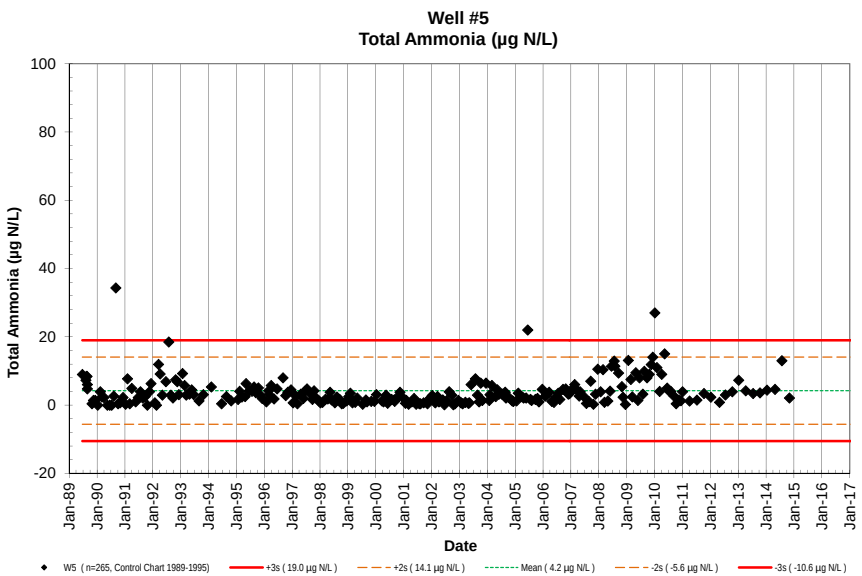

Well #5
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W5 (n=265, Control Chart 1989-1995)
+3s (1903 µg N/L)
+2s (1631 µg N/L)
Mean (1087 µg N/L)
-2s (542 µg N/L)
-3s (270 µg N/L)

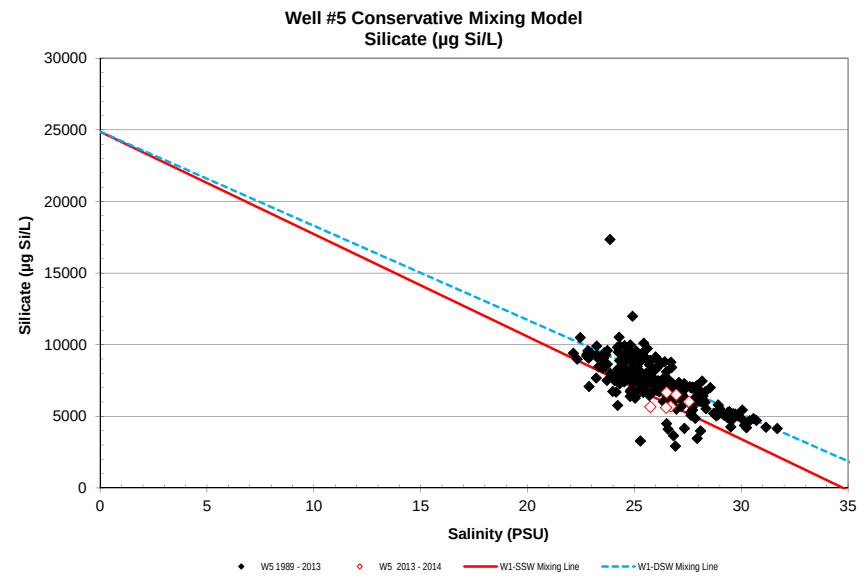

Well #5 Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W5 1989 - 2013
W5 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

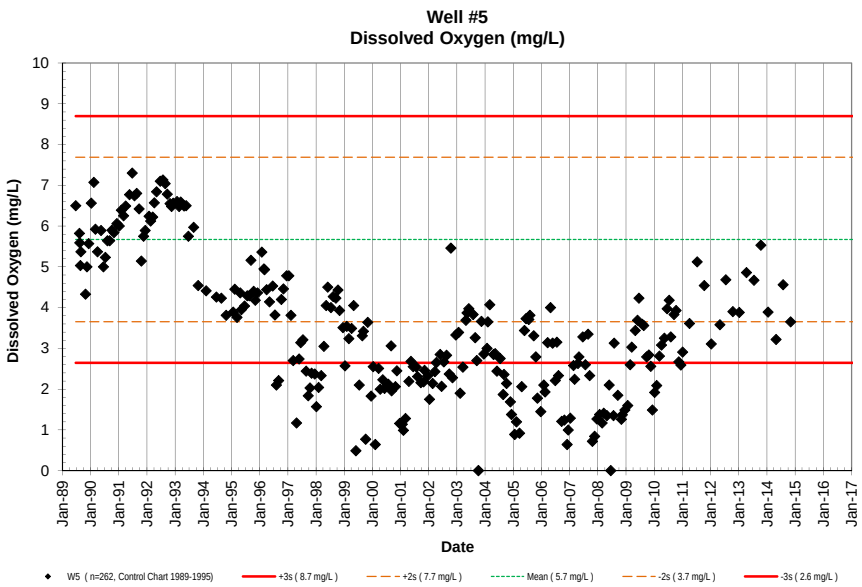

Well #5 Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W5 1989 - 2013
W5 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

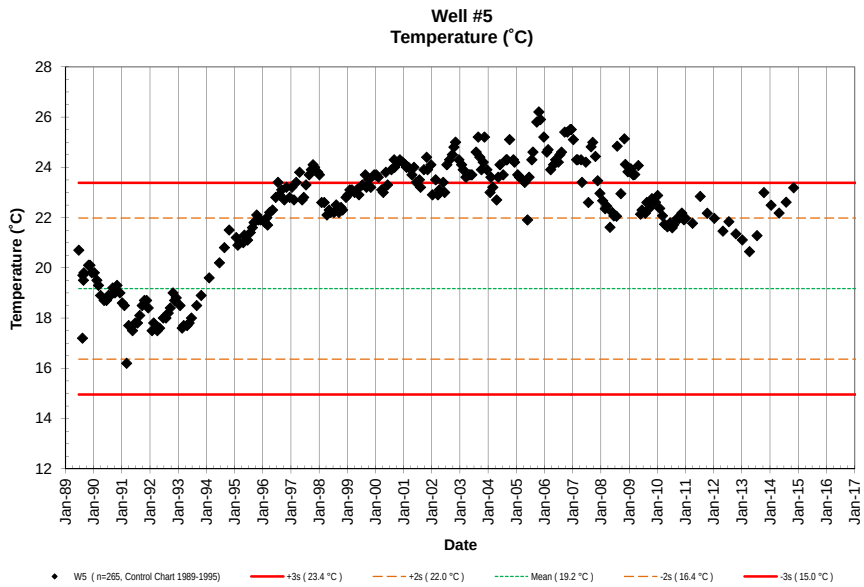

Well #5
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W5 (n=265, Control Chart 1989-1995)
+3s (19.0 µg N/L)
+2s (14.1 µg N/L)
Mean (4.2 µg N/L)
-2s (-5.6 µg N/L)
-3s (-10.6 µg N/L)

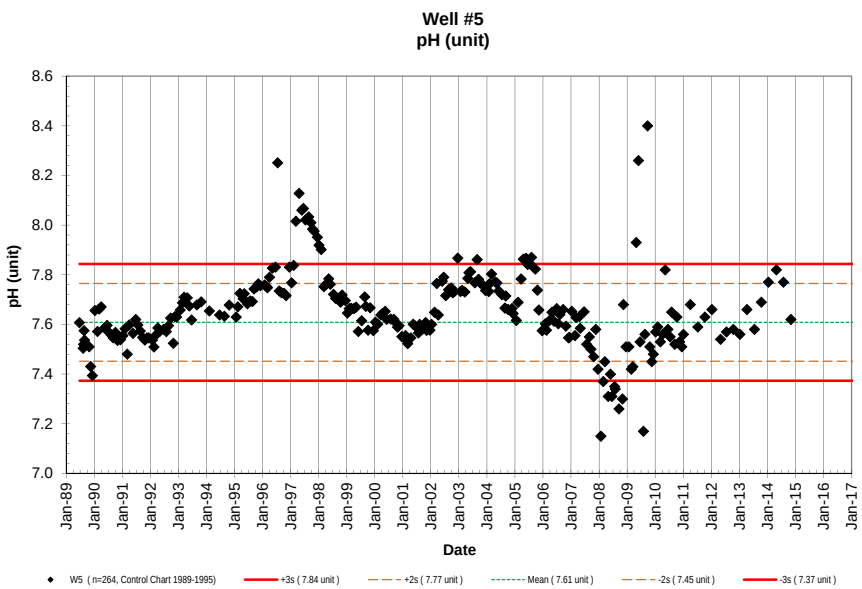

Well #5
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W5 (n=257, Control Chart 1989-1995)
+3s (13681 µg Si/L)
+2s (12161 µg Si/L)
Mean (9122 µg Si/L)
-2s (6083 µg Si/L)
-3s (4564 µg Si/L)

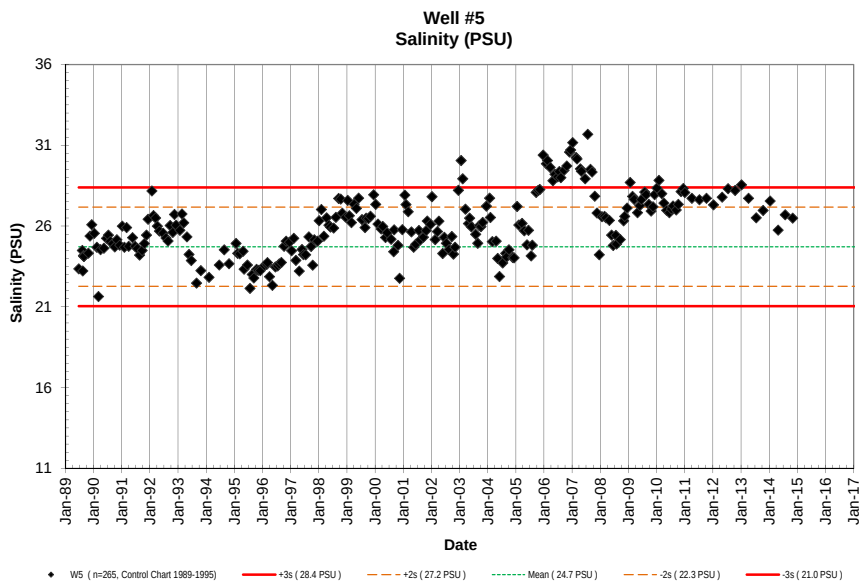

Well #5
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W5 (n=265, Control Chart 1989-1995)
+3s (19.0 µg N/L)
+2s (14.1 µg N/L)
Mean (4.2 µg N/L)
-2s (-5.6 µg N/L)
-3s (-10.6 µg N/L)

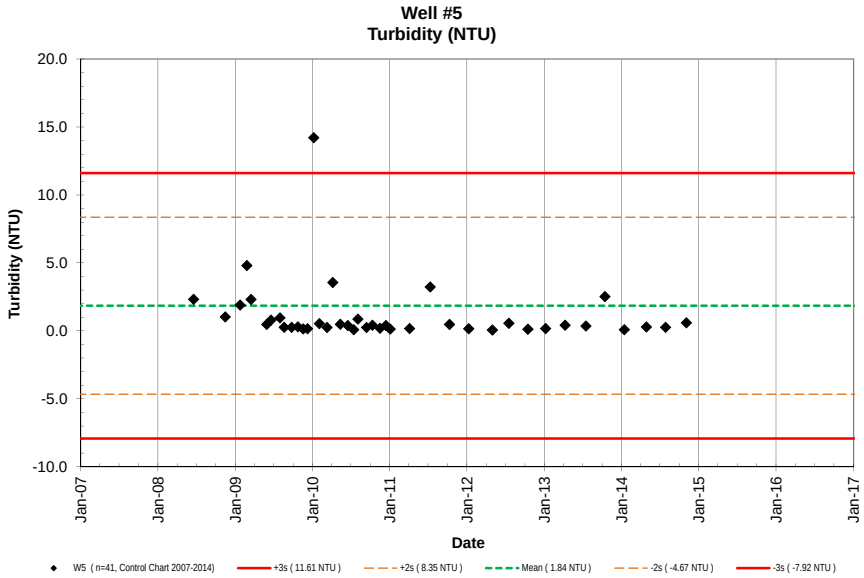

Well #5 Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W5 1989 - 2013
W5 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

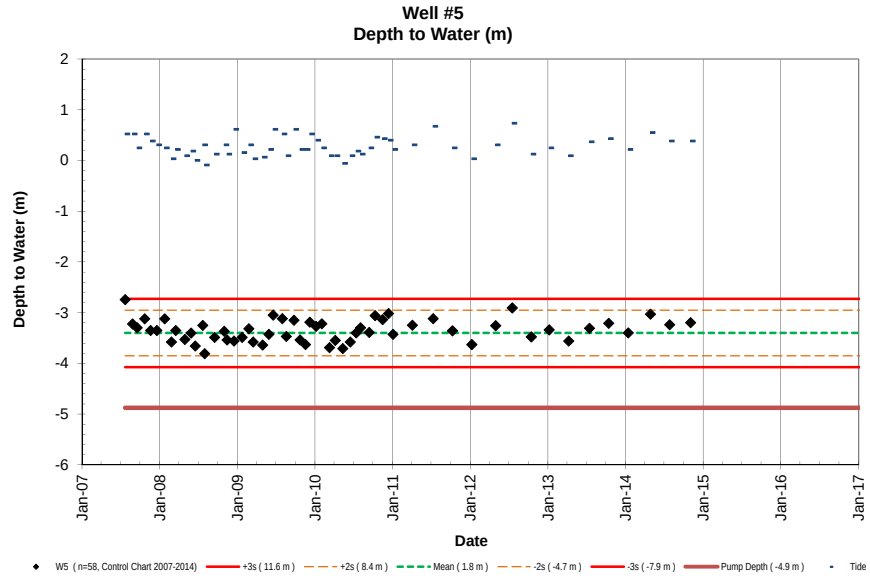

Well #5
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W5 (n=262, Control Chart 1989-1995)
+3s (8.7 mg/L)
+2s (7.7 mg/L)
Mean (5.7 mg/L)
-2s (3.7 mg/L)
-3s (2.6 mg/L)

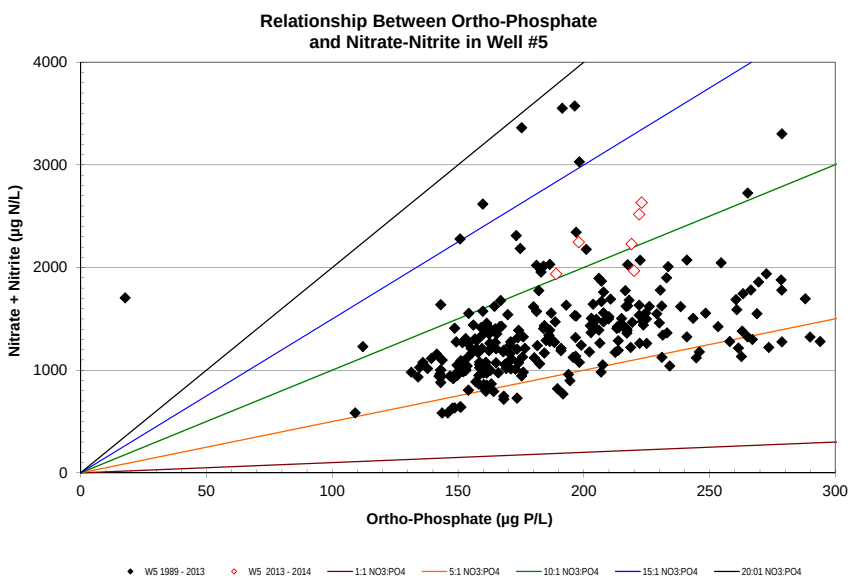

Well #5
Temperature (˚C)
Temperature (˚C)
Date
W5 (n=265, Control Chart 1989-1995)
+3s (23.4 °C)
+2s (22.0 °C)
Mean (19.2 °C)
-2s (16.4 °C)
-3s (15.0 °C)


Well #5
pH (unit)
pH (unit)
Date
W5 (n=264, Control Chart 1989-1995)
+3s (7.84 unit)
+2s (7.77 unit)
Mean (7.61 unit)
-2s (7.45 unit)
-3s (7.37 unit)


Well #5
Salinity (PSU)
Salinity (PSU)
Date
W5 (n=265, Control Chart 1989-1995)
+3s (28.4 PSU)
+2s (27.2 PSU)
Mean (24.7 PSU)
-2s (22.3 PSU)
-3s (21.0 PSU)


Well #5
Turbidity (NTU)
Turbidity (NTU)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W5 (n=41, Control Chart 2007-2014)
+3s (11.61 NTU)
+2s (8.35 NTU)
Mean (1.84 NTU)
-2s (-4.67 NTU)
-3s (-7.92 NTU)


Well #5
Depth to Water (m)
Depth to Water (m)
2
1
0
-1
-2
-3
-4
-5
-6
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W5 (n=58, Control Chart 2007-2014)
+3s (11.6 m)
+2s (8.4 m)
Mean (1.8 m)
-2s (-4.7 m)
-3s (-7.9 m)
Pump Depth (-4.9 m)
Tide


Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #5
Nitrate + Nitrite (µg N/L)
4000
3000
2000
1000
0
0
50
100
150
200
250
300
Ortho-Phosphate (µg P/L)
W5 1989 - 2013
W5 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

NELHA Water Quality Laboratory

Well 5A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W5A	-8.2296	6/23/89					5.71	177	70.0	980	0.64	9.0								18.0	7.50	28.56	4.67		NA	NA
W5A	-8.2296	8/9/89	1020				5.06	157	85.8	1202	0.86	12.0								19.5	7.40	28.85	4.70		<1	NA
W5A	-8.2296	8/15/89	940				4.98	154	85.8	1202	0.70	9.8								17.4	7.42	30.48	4.56		<1	NA
W5A	-8.2296	8/22/89	930				5.18	160	86.2	1207	0.70	9.8								17.8	7.46	28.88	4.29		<1	NA
W5A	-8.2296	8/28/89	1055				5.06	157	86.7	1214	0.70	9.8								17.1	7.45	28.62	4.37		<1	NA
W5A	-8.2296	8/28/89	1055				5.04	156	86.9	1217	0.86	12.0													NA	NA
W5A	-8.2296	10/27/89	937				5.04	156	77.7	1088	0.03	0.4	240	6741	5.28	163.5	78.1	1094	0.36	17.2	7.40	28.92	3.38		<1	NA
W5A	-8.2296	11/15/89	725				5.04	156	76.7	1074	0.06	0.8	231	6488	5.33	165.1	82.5	1156	0.70	17.5	7.41	28.02	4.42		<1	NA
W5A	-8.2296	12/8/89	1010				5.01	155	74.5	1043	0.10	1.4	240	6741	5.31	164.5	76.4	1070		17.2	7.11	28.92	4.84		<1	NA
W5A	-8.2296	1/10/90	826				4.15	129	76.6	1073	0.00	0.0	203	5701	4.38	135.7	79.3	1111	1.16	17.1	7.65	28.90	5.22		<1	NA
W5A	-8.2296	2/13/90	955				5.64	175	84.0	1177	0.08	1.1	196	5505	5.84	180.9	87.4	1224	0.86	16.9	7.46	28.93	5.14		<1	NA
W5A	-8.2296	3/5/90	1118				5.26	163	96.2	1347	0.10	1.4	232	6516	5.52	171.0	96.2	1347	0.80	16.6	7.57	28.19	4.82		<1	NA
W5A	-8.2296	4/2/90	1015				5.44	168	93.8	1314	0.03	0.4	278	7808	5.47	169.4	97.5	1366	15.07	16.2	7.55	28.70	4.89		<1	NA
W5A	-8.2296	5/16/90	1027				5.71	177	94.6	1325	0.00	0.0	221	6207	5.90	182.7	99.1	1388	4.77	16.3	7.48	28.69	5.40		<1	NA
W5A	-8.2296	6/17/90	1153				6.16	191	90.7	1270	0.00	0.0	223	6263	6.22	192.7	95.5	1338	1.55	16.4	7.53	28.78	4.64		<1	NA
W5A	-8.2296	7/12/90	1059				6.33	196	88.6	1241	0.00	0.0	222	6235	6.50	201.3	91.1	1276	0.67	16.4	7.51	29.40	4.19		<1	NA
W5A	-8.2296	8/7/90	1034				4.95	153	92.6	1297	0.04	0.6	219	6151	5.56	172.2	91.8	1285	2.35	16.4	7.47	29.25	4.58		<1	NA
W5A	-8.2296	9/5/90	1022				5.79	179	89.8	1258	0.00	0.0			5.79	179.3	91.5	1281	0.52	16.5	7.42	29.30	4.58		<1	NA
W5A	-8.2296	10/31/90	951				5.11	158	77.5	1085	0.03	0.4	211	5926	5.23	162.0	80.7	1131	1.98	18.8	7.53	29.76	5.25		<1	NA
W5A	-8.2296	12/7/90	947				3.62	112	63.5	889	0.00	0.0	251	7041	4.91	152.1	75.9	1063	0.57	17.0	7.45	29.11	5.06		<1	NA
W5A	-8.2296	1/9/91	755				5.67	176	81.9	1147	0.00	0.0	208	5842	5.69	176.2	89.3	1251	0.69	16.5	7.52	29.81	5.18		<1	NA
W5A	-8.2296	2/5/91	730				5.66	175	63.6	891	0.50	7.0	186	5224	5.67	175.6	66.3	929	0.86	15.1	7.54	29.35	5.28		<1	NA
W5A	-8.2296	3/6/91	754				5.11	158	73.2	1025	0.07	1.0	186	5224	5.14	159.2	75.9	1063	5.85	14.4	7.58	29.37	5.81		<1	NA
W5A	-8.2296	4/2/91	759				5.11	158	71.2	997	0.40	5.6	190	5336	5.21	161.4	75.4	1056	0.73	15.4	7.52	28.85	6.01		<1	NA
W5A	-8.2296	5/21/91	823				5.25	163	41.5	581	0.07	1.0	186	5224	5.39	166.9	43.4	608	0.71	15.3	7.51	29.20	6.16		<1	NA
W5A	-8.2296	6/25/91	802				4.19	130	57.6	807	0.40	5.6	222	6235	5.00	154.9	60.8	852	0.57	15.6	7.53	29.09	6.32		<1	<1
W5A	-8.2296	7/23/91	858				5.43	168	69.3	971	0.28	3.9	234	6572	6.05	187.4	73.6	1031	1.61	15.6	7.49	28.53	6.25		<1	<1
W5A	-8.2296	8/22/91	817				5.10	158	65.9	923	0.19	2.7	230	6460	5.35	165.7	77.8	1090	0.70	15.3	7.50	28.69	6.36		<1	<1
W5A	-8.2296	9/23/91	820				5.24	162	67.3	943	0.18	2.5	231	6488	5.31	164.5	71.2	997	0.73	16.2	7.50	28.17	5.82		1	<1
W5A	-8.2296	10/22/91	710				4.59	142	70.9	993	0.03	0.4	292	8201	4.60	142.5	74.7	1046	0.61	16.6	7.49	28.90	4.93		<1	74
W5A	-8.2296	11/19/91	943				5.18	160	68.9	965	0.02	0.3	244	6853	5.26	162.9	69.7	976	0.53	16.2	7.51	29.15	5.89		<1	1
W5A	-8.2296	12/10/91	840				4.91	152	71.2	997	0.08	1.1	218	6123	4.95	153.3	73.5	1029	0.69	16.1	7.53	29.26	5.70		<1	<1
W5A	-8.2296	1/28/92	829				4.93	153	67.7	948	0.05	0.7	202	5673	5.01	155.2	69.2	969	0.89	15.5	7.51	29.70	6.10		<1	4
W5A	-8.2296	2/18/92	820				4.77	148	66.0	924	0.00	0.0	196	5505	4.92	152.4	70.2	983	0.73	15.5	7.52	29.19	6.42		<1	<1
W5A	-8.2296	3/16/92	848				4.87	151	65.5	917	0.30	4.2	210	5898	5.02	155.5	66.1	926	0.86	15.3	7.53	29.16	6.75		<1	<1
W5A	-8.2296	4/7/92	820				4.26	132	62.6	877	0.23	3.2	220	6179	4.48	138.8	62.1	870	0.74	15.3	7.56	28.84	6.92		<1	<1
W5A	-8.2296	5/5/92	827				5.14	159	60.7	850	0.21	2.9	222	6235	5.21	161.4	64.3	901	0.89	15.2	7.56	28.84	7.21		<1	<1
W5A	-8.2296	6/22/92	816				4.09	127	62.0	868	0.41	5.7	206	5786	4.26	131.9	64.3	901	0.82	15.0	7.59	29.55	6.54		<1	<1
W5A	-8.2296	7/28/92	811				4.86	151	60.7	850	ND	0.0	203	5701	5.05	156.4	58.9	825	0.79	15.5	7.57	28.87	7.40		<1	<1
W5A	-8.2296	8/25/92	751				4.80	149	56.2	787	0.16	2.2	247	6937	4.96	153.6	61.7	864	0.71	15.7	7.60	28.73	7.14		<1	3
W5A	-8.2296	9/21/92	808				4.67	145	60.4	845	0.13	1.8	226	6347	4.75	147.1	62.5	875	0.75	16.0	7.62	28.74	6.77		<1	<1
W5A	-8.2296	10/26/92	815				4.64	144	61.3	859	0.42	5.9	252	7078	4.75	147.1	63.7	892	0.71	16.5	7.60	28.65	6.78		1	<1
W5A	-8.2296	11/16/92	838				4.65	144	59.7	836	0.36	5.0	248	6965	4.74	146.8	64.7	906	0.64	16.4	7.63	28.68	6.89		<1	<1
W5A	-8.2296	12/7/92	835				4.43	137	59.4	832	0.14	2.0	244	6853	4.54	140.6	62.5	875	0.66	16.4	7.64	28.58	6.88		<1	<1
W5A	-8.2296	1/25/93	821				4.24	131	60.7	850	0.29	4.1	244	6864	4.30	133.2	66.2	928	0.73	16.4	7.65	28.60	6.42		<1	<1
W5A	-8.2296	2/22/93	802				4.28	133	59.7	837	0.35	4.9	236	6614	4.28	132.6	65.9	923	0.66	15.9	7.68	28.80	6.27		<1	<1
W5A	-8.2296	3/15/93	758				4.46	138	60.1	842	0.22	3.1	243	6816	4.53	140.3	62.8	879	0.65	15.6	7.70	28.53	6.32		<1	<1
W5A	-8.2296	4/26/93	807				4.41	137	56.5	791	0.02	0.3	238	6684	4.60	142.5	60.4	846	0.73	15.9	7.71	28.48	6.00		<1	<1
W5A	-8.2296	5/24/93	824				4.48	139	56.5	792	0.32	4.5	250	7021	4.56	141.2	62.3	873	0.64	15.8	7.68	28.27	5.99		<1	<1
W5A	-8.2296	6/21/93	822				4.56	141	55.1	771	0.15	2.1	278	7808	4.74	146.8	59.9	839	0.60	15.9	7.69	28.00	5.64		<1	<1
W5A	-8.2296	8/30/93	926				4.79	148	62.1	869	0.09	1.3	270	7577	5.17	160.1	72.6	1016	0.75	16.7	7.67	26.97	4.33		<1	<1
W5A	-8.2296	10/25/93	806				4.91	152	57.1	800	0.22	3.1	261	7330	4.97	153.9	61.0	855	0.61	17.3	7.68	27.07	3.15		<1	<1
W5A	-8.2296	2/7/94	1007				4.99	155	45.7	640	0.19	2.7	233	6544	5.11	158.3	51.2	717	0.90	18.3	7.66	27.73	3.14		<1	1
W5A	-8.2296	6/20/94	756				4.37	135	44.0	616	0.06	0.8	215	6049	4.45	137.8	53.6	751	0.68	18.8	7.66	28.88	3.55		<1	<1

NELHA Water Quality Laboratory

Well 5A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W5A	-8.2296	8/22/94	906				4.56	141	43.9	614	0.10	1.4	215	6031	4.65	144.0	52.1	730	0.69	19.0	7.67	29.08	4.11		<1	<1
W5A	-8.2296	10/24/94	821				4.60	142	50.9	713	0.01	0.1	237	6651	4.75	147.1	55.2	774	0.56	19.5	7.67	27.33	3.40		<1	<1
W5A	-8.2296	1/23/95	904				4.30	133	52.5	735	0.02	0.3	227	6364	4.44	137.5	56.0	784	0.58	19.5	7.65	27.54	3.71		<1	<1
W5A	-8.2296	2/13/95	901				4.38	136	56.1	786	0.29	4.1	234	6561	4.42	136.9	61.7	864	0.58	19.4	7.68	27.55	3.73		<1	<1
W5A	-8.2296	3/13/95	939				4.45	138	62.6	876	0.14	2.0	285	7993	4.45	137.8	65.0	910	0.53	19.6	7.73	27.40	3.19		4	<1
W5A	-8.2296	4/24/95	843				4.50	139	64.4	902	0.17	2.4	226	6353	4.66	144.3	65.8	921	0.71	19.1	7.69	27.85	4.37		<1	<1
W5A	-8.2296	5/8/95	842				4.55	141	68.5	960	0.27	3.8	223	6269	4.57	141.6	72.3	1013	0.64	19.2	7.70	27.41	4.03		<1	<1
W5A	-8.2296	6/19/95	919				4.47	138	65.4	917	0.31	4.3	227	6375	4.52	140.0	68.1	954	0.63	19.2	7.67	27.31	4.56		<1	<1
W5A	-8.2296	7/24/95	847				4.40	136	60.5	847	0.21	2.9	236	6637	4.52	140.0	62.6	877	0.59	19.1	7.67	27.04	4.60		1	<1
W5A	-8.2296	8/21/95	937				4.43	137	54.0	756	0.41	5.7	171	4794	4.40	136.3	59.0	827	0.55	19.5	7.68	27.48	4.42		<1	<1
W5A	-8.2296	9/11/95	728				4.28	133	53.1	744	0.24	3.4	231	6491	4.31	133.5	55.9	783	0.58	19.3	7.73	27.37	4.35		<1	<1
W5A	-8.2296	10/16/95	826				4.16	129	50.0	701	0.34	4.8	228	6409	4.33	134.1	52.9	741	0.69	19.5	7.74	27.59	4.37		<1	<1
W5A	-8.2296	11/6/95	806				3.78	117	52.5	735	0.25	3.5	173	4850	3.80	117.7	54.8	768	0.66	19.6	7.79	29.59	5.22		<1	<1
W5A	-8.2296	12/4/95	815				4.25	132	52.6	737	0.11	1.5	223	6269	4.33	134.1	55.5	777	0.74	19.6	7.73	27.55	5.40		<1	<1
W5A	-8.2296	1/29/96	933				4.62	143	52.2	731	0.02	0.3	224	6286	4.66	144.3	63.4	887	0.65	19.8	7.73	27.91	4.74		<1	<1
W5A	-8.2296	2/26/96	941				4.53	140	61.1	856	0.30	4.2	251	7062	4.62	143.1	63.9	896	0.61	20.2	7.73	27.51	4.54		<1	25
W5A	-8.2296	3/5/96	840				4.64	144	65.6	919	0.28	3.9	226	6351	4.74	146.8	69.9	979	0.74	19.9	7.72	27.63	4.26		<1	<1
W5A	-8.2296	4/1/96	901				4.71	146	87.3	1223	0.55	7.7	236	6634	4.85	150.2	90.2	1263	0.58	20.2	7.69	27.05	4.77		<1	<1
W5A	-8.2296	5/8/96	859				5.26	163	105.0	1470	0.20	2.8	228	6394	5.37	166.3	111.8	1566	0.71	20.6	7.73	27.03	3.78		<1	<1
W5A	-8.2296	6/17/96	856				5.21	161	93.2	1305	0.13	1.8	231	6474	5.25	162.6	96.3	1348	0.69	21.0	7.75	23.02	3.88		<1	<1
W5A	-8.2296	7/16/96	846				5.89	182	121.7	1704	43.27	606.1	225	6307	5.40	167.3	140.6	1969	0.74	20.6	7.77	27.67	3.36		1	<1
W5A	-8.2296	8/5/96	959				5.33	165	95.4	1336	0.43	6.0	222	6235	5.39	166.9	101.3	1419	0.68	21.0	7.74	27.74	3.67		<1	<1
W5A	-8.2296	9/3/96	1355				5.40	167	87.2	1222	0.50	7.0	250	7007	5.45	168.8	88.8	1244	0.75	20.7	7.75	27.73	4.01		<1	<1
W5A	-8.2296	10/8/96	937				5.04	156	72.0	1008	0.26	3.6	238	6693	5.42	167.9	78.6	1101	0.78	20.8	7.74	28.31	4.31		<1	<1
W5A	-8.2296	11/4/96	941				5.09	158	69.4	972	0.25	3.5	210	5911	5.25	162.6	74.3	1040	0.87	21.3	7.74	28.27	4.70		1	<1
W5A	-8.2296	12/16/96	920				4.84	150	71.2	997	0.30	4.2	231	6475	4.87	150.8	73.4	1029	0.74	20.9	7.79	28.65	4.87		<1	<1
W5A	-8.2296	1/13/97	956				5.13	159	92.4	1294	0.08	1.1	212	5957	5.38	166.6	95.7	1341	0.67	21.1	7.78	27.80	4.32		<1	<1
W5A	-8.2296	2/10/97	903				5.40	167	146	2042	0.20	2.8	214	6022	5.5*	0.0	148.0	2073	0.77	21.0	7.80	27.81	4.11		<1	<1
W5A	-8.2296	3/10/97	907				6.37	197	256	3589	0.05	0.7	218	6123	6.53	202.3	308.4	4320	0.91	21.1	7.86	27.90	2.89		<1	<1
W5A	-8.2296	4/22/97	948				6.41	199	404	5659	0.31	4.3	210	5906	6.55	202.9	1290.0	18069	1.09	21.3	8.01	28.07	1.86		<1	<1
W5A	-8.2296	5/27/97	905				6.03	187	245	3430	0.16	2.2	209	5870	6.30	195.1	281.0	3936	0.80	20.2	7.99	28.53	2.96		<1	<1
W5A	-8.2296	6/16/97	918				6.41	199	169	2362	0.34	4.8	220	6168	6.44	199.5	189.0	2647	0.78	20.2	7.99	28.50	3.24		<1	<1
W5A	-8.2296	7/16/97	821				6.75	209	152	2123	0.07	1.0	190	5328	6.76	209.4	164.8	2308	0.70	20.5	7.96	28.50	3.26		<1	<1
W5A	-8.2296	8/25/97	912				6.70	208	137	1925	0.36	5.0	199	5583	6.70	207.5	149.9	2100	0.68	21.4	8.02	28.76	3.09		<1	<1
W5A	-8.2296	9/22/97	839				6.56	203	127	1780	0.28	3.9	194	5440	6.60	204.4	136.4	1911	0.66	21.6	8.02	28.76	3.02		<1	<1
W5A	-8.2296	10/14/97	904				6.93	215	137	1916	0.33	4.6	219	6139	6.95	215.3	140.6	1969	0.70	22.3	7.96	27.77	2.03		<1	<1
W5A	-8.2296	11/3/97	836				6.34	196	109	1532	0.21	2.9	197	5524	6.52	201.9	124.3	1741	0.73	21.7	7.96	28.69	2.91		<1	<1
W5A	-8.2296	12/15/97	928				6.89	213	97.2	1361	0.13	1.8	199	5581	7.02	217.4	108.0	1513	0.82	21.6	8.00	28.58	3.06		<1	<1
W5A	-8.2296	1/5/98	1023				6.42	199	97.6	1367	0.04	0.6	185	5207	6.48	200.7	100.3	1405	0.75	21.5	7.94	29.09	1.95		<1	<1
W5A	-8.2296	2/2/98	931				6.18	191	85.9	1203	0.06	0.8	190	5345	6.32	195.8	89.6	1255	0.73	20.7	7.88	29.22	1.95		<1	<1
W5A	-8.2296	3/9/98	931				7.21	223	87.3	1223	0.14	2.0	200	5611	7.27	225.2	92.8	1300	0.68	21.1	7.73	28.37	1.76		<1	<1
W5A	-8.2296	4/13/98	839				6.96	216	86.0	1205	0.15	2.1	202	5659	7.13	220.8	89.1	1248	0.65	20.8	7.70	28.85	2.85		<1	<1
W5A	-8.2296	5/11/98	907				6.89	213	106	1483	0.43	6.0	206	5783	7.01	217.1	109.9	1539	0.68	20.7	7.74	28.45	3.10		<1	<1
W5A	-8.2296	6/1/98	903				6.91	214	107	1500	0.05	0.7	199	5592	7.03	217.7	106.2	1487	0.88	21.0	7.74	28.59	3.36		<1	<1
W5A	-8.2296	7/13/98	913				6.46	200	91.6	1283	0.07	1.0	199	5597	6.78	210.0	96.1	1346	0.77	21.2	7.73	28.99	3.56		<1	<1
W5A	-8.2296	8/10/98	935				6.50	201	112	1573	0.14	2.0	204	5718	6.75	209.1	109	1531	0.76	21.6	7.70	29.38	3.14		<1	<1
W5A	-8.2296	9/14/98	919				6.41	199	92.0	1289	0.14	2.0	196	5494	6.60	204.4	94.7	1326	0.73	21.1	7.70	29.81	3.49		<1	<1
W5A	-8.2296	10/12/98	936				6.30	195	96.5	1352	0.03	0.4	194	5435	6.43	199.2	101	1410	0.75	21.0	7.70	29.88	3.94		1	<1
W5A	-8.2296	11/2/98	857				6.20	192	90.4	1266	0.01	0.1	196	5516	6.34	196.4	100	1401	0.90	21.0	7.72	29.69	3.31		<1	<1
W5A	-8.2296	12/15/98	855				6.04	187	79.6	1115	0.05	0.7	204	5729	6.13	189.9	82.0	1149	0.86	21.8	7.68	29.39	2.64		<1	<1
W5A	-8.2296	1/11/99	913				5.71	177	94.8	1328	0.22	3.1	202	5685	5.83	180.6	96.7	1354	1.04	21.8	7.65	29.97	1.55		<1	<1
W5A	-8.2296	2/2/99	906				6.03	187	110	1546	0.20	2.8	184	5171	6.13	189.9	121	1693	0.96	21.9	7.68	30.10	2.31		<1	<1
W5A	-8.2296	3/1/99	908				6.19	192	104	1461	0.04	0.6	188	5286	6.32	195.8	108	1510	0.88	22.2	7.66	29.71	1.93		<1	<1
W5A	-8.2296	4/5/99	910				5.74	178	85.2	1193	0.10	1.4	192	5381	5.91	183.1	88.7	1242	0.70	22.0	7.66	30.03	1.90		<1	<1
W5A	-8.2296	5/3/99	908				5.57	173	84.2	1179	0.14	2.0	191	5370	5.68	175.9	90.4	1267	0.79	21.8	7.66	30.15	2.24		<1	22
W5A	-8.2296	6/1/99	902				5.10	158	135	1891	20.0	280.1	193	5421	5.25	162.6	159	2227	0.82	22.0	7.61	30.13	0.55		<1	3

NELHA Water Quality Laboratory

Well 5A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W5A	-8.2296	7/14/99	907				5.13	159	139	1947	10.3	144.3	204	5724	5.16	159.8	159	2226	0.88	22.1	7.50	29.31	0.25		<1	<1
W5A	-8.2296	8/23/99	930				5.69	176	87.1	1220	0.11	1.5	201	5645	5.80	179.6	93.6	1311	0.87	22.8	7.67	29.28	2.58		<1	<1
W5A	-8.2296	9/7/99	919				5.63	174	82.0	1149	0.04	0.6	199	5583	5.84	180.9	93.7	1312	0.81	22.6	7.68	29.75	2.42		<1	<1
W5A	-8.2296	10/5/99	913				5.02	155	114	1601	5.25	73.5	194	5446	5.04	156.1	122	1709	0.71	22.4	7.61	29.64	0.39		<1	<1
W5A	-8.2296	11/1/99	933				5.31	164	73.2	1025	0.06	0.8	182	5123	5.37	166.3	77.0	1079	0.68	22.5	7.66	29.93	2.10		<1	<1
W5A	-8.2296	12/14/99	924				5.07	157	70.1	982	0.04	0.6	176	4937	5.21	161.4	74.0	1036	0.84	23.9	7.59	30.98	1.30		<1	<1
W5A	-8.2296	1/10/00	953				5.03	156	69.5	973	0.04	0.6	187	5252	5.08	157.3	74.4	1042	0.88	23.1	7.61	30.42	1.60		<1	<1
W5A	-8.2296	2/7/00	951				5.17	160	76.6	1073	0.21	2.9	185	5182	5.33	165.1	81.1	1136	0.85	23.0	7.61	30.04	1.92		<1	<1
W5A	-8.2296	3/21/00	953				5.06	157	75.3	1055	0.06	0.8	181	5072	4.95	153.3	76.3	1069	0.84	23.1	7.63	29.87	1.45		<1	<1
W5A	-8.2296	4/10/00	1017				5.08	157	72.2	1012	0.07	1.0	176	4943	4.89	151.5	78.2	1095	0.80	22.4	7.64	29.84	1.44		<1	<1
W5A	-8.2296	5/15/00	930				5.22	162	66.4	930	0.22	3.1	193	5432	5.30	164.2	70.3	985	0.79	22.5	7.62	29.68	1.16		<1	<1
W5A	-8.2296	6/5/00	931				5.14	159	62.7	878	0.05	0.7	202	5673	5.26	162.9	67.6	947	0.76	22.8	7.58	29.67	1.04		<1	<1
W5A	-8.2296	7/26/00	1000				5.19	161	70.3	985	0.05	0.7	192	5404	5.30	164.2	72.8	1020	0.73	23.0	7.62	29.98	1.29		<1	<1
W5A	-8.2296	8/29/00	858				5.20	161	78.0	1093	0.03	0.4	199	5589	5.25	162.6	80.1	1122	0.74	22.8	7.57	29.38	1.42		<1	<1
W5A	-8.2296	9/5/00	929				4.95	153	78.4	1098	0.13	1.8	188	5266	5.15	159.5	80.3	1125	0.72	22.8	7.57	30.20	1.34		<1	<1
W5A	-8.2296	10/24/00	930				4.88	151	80.2	1123	0.14	2.0	177	4968	5.09	157.7	84.2	1179	0.74	23.0	7.56	30.69	1.36		<1	2
W5A	-8.2296	11/13/00	908				4.58	142	84.4	1182	0.26	3.6	183	5126	4.82	149.3	89.3	1251	0.75	23.7	7.55	30.42	1.28		<1	<1
W5A	-8.2296	12/18/00	917				4.59	142	100	1406	0.20	2.8	168	4716	4.72	146.2	106	1488	0.94	23.3	7.55	30.57	0.59		<1	<1
W5A	-8.2296	1/22/01	911				4.35	135	86.3	1209	0.02	0.3	164	4606	4.48	138.8	88.3	1236	0.84	23.3	7.54	30.89	0.77		<1	1
W5A	-8.2296	2/5/01	936				4.23	131	87.5	1226	0.17	2.4	166	4673	4.35	134.7	91.0	1274	0.78	23.2	7.55	30.88	0.55		<1	<1
W5A	-8.2296	3/5/01	928				4.25	132	81.4	1140	0.02	0.3	159	4468	4.53	140.3	84.6	1185	0.82	23.1	7.50	30.50	0.70		<1	<1
W5A	-8.2296	4/17/01	915				4.48	139	90.0	1261	0.02	0.3	153	4297	4.58	141.9	94.6	1325	0.80	22.7	7.56	30.94	1.20		<1	<1
W5A	-8.2296	5/15/01	851				4.50	139	93.6	1311	0.17	2.4	155	4339	4.50	139.4	95.6	1339	0.70	22.4	7.59	30.74	1.41		3	1
W5A	-8.2296	6/12/01	904				4.70	146	86.7	1215	0.02	0.3	156	4390	4.55	140.9	90.8	1272	0.68	22.1	7.59	30.61	1.38		<1	<1
W5A	-8.2296	7/23/01	909				4.47	138	81.7	1145	0.04	0.6	159	4454	4.48	138.8	88.8	1244	0.81	22.2	7.59	30.88	1.64		<1	<1
W5A	-8.2296	8/8/01	912				4.44	138	84.1	1178	0.03	0.4	167	4687	4.44	137.5	87.8	1230	0.81	21.9	7.59	30.78	1.27		<1	<1
W5A	-8.2296	9/19/01	916				4.76	147	94.6	1325	0.04	0.6	160	4488	4.92	152.4	97.8	1370	0.78	22.3	7.61	30.73	1.55		<1	<1
W5A	-8.2296	10/24/01	849				4.78	148	95.3	1335	0.08	1.1	165	4643	5.06	156.7	103	1436	0.77	22.3	7.57	30.23	1.03		<1	<1
W5A	-8.2296	11/7/01	906				4.92	152	104	1451	0.06	0.8	167	4682	4.92	152.4	124	1735	0.75	22.4	7.58	30.29	1.29		<1	1
W5A	-8.2296	12/19/01	925				5.06	157	108	1518	0.16	2.2	163	4578	4.98	154.2	140	1967	0.72	22.4	7.59	30.15	2.11		<1	<1
W5A	-8.2296	1/9/02	919				5.31	164	104	1454	0.18	2.5	166	4673	5.23	162.0	108	1517	0.78	22.2	7.61	30.32	2.07		1	<1
W5A	-8.2296	2/19/02	1035				5.22	162	98.2	1375	0.05	0.7	157	4401	5.24	162.3	98.5	1380	0.71	22.0	7.62	30.56	1.80		<1	<1
W5A	-8.2296	3/20/02	933				4.96	154	98.1	1374	0.16	2.2	151	4238	5.12	158.6	101	1410	0.75	21.8	7.64	30.66	1.59		<1	<1
W5A	-8.2296	4/8/02	1023				5.00	155	96.7	1354	0.04	0.6	154	4317	5.18	160.4	99.6	1395	0.78	21.8	7.63	30.47	1.26		<1	<1
W5A	-8.2296	5/29/02	1011				5.86	182	91.6	1283	0.16	2.2	149	4174	6.18	191.4	93.7	1312	0.73	21.9	7.69	30.19	1.19		<1	<1
W5A	-8.2296	6/17/02	944				6.35	197	89.9	1259	0.01	0.1	152	4269	6.44	199.5	96.6	1353	0.68	21.9	7.69	30.08	1.21		<1	<1
W5A	-8.2296	7/15/02	940				6.08	188	77.4	1084	0.11	1.5	161	4530	6.28	194.5	84.4	1183	0.74	22.1	7.65	30.65	1.20		<1	<1
W5A	-8.2296	8/20/02	939				6.06	188	64.3	901	0.18	2.5	165	4628	6.14	190.2	61.8	866	0.69	22.4	7.64	30.36	1.45		<1	<1
W5A	-8.2296	9/23/02	942				5.54	172	68.3	957	0.24	3.4	167	4682	5.64	174.7	66.3	929	0.63	22.8	7.64	34.64	1.65		<1	<1
W5A	-8.2296	10/14/02	919				5.28	164	74.3	1041	0.02	0.3	177	4971	5.51	170.7	73.8	1033	0.71	23.0	7.67	29.97	2.30		<1	9
W5A	-8.2296	11/4/02	929				5.00	155	80.3	1125	0.02	0.3	153	4294	5.24	162.3	77.9	1091	0.82	23.4	7.69	30.68	2.29		2	8
W5A	-8.2296	12/17/02	950				5.43	168	79.8	1118	0.05	0.7	154	4320	5.63	174.4	77.5	1086	0.70	23.3	7.63	30.83	1.29		<1	<1
W5A	-8.2296	1/21/03	1010				4.92	152	80.7	1130	<0.02	0.0	147	4140	5.18	160.4	86.0	1205	1.23	23.1	7.67	31.68	1.70		<1	22
W5A	-8.2296	2/12/03	1001				5.92	183	78.6	1101	0.03	0.4	166	4665	6.06	187.7	90.7	1271	0.82	22.7	7.66	31.03	1.14		<1	<1
W5A	-8.2296	3/19/03	948				6.36	197	106	1478	0.04	0.6	150	4221	6.48	200.7	111	1548	0.74	23.1	7.70	30.93	1.40		<1	1
W5A	-8.2296	4/28/03	930				5.89	182	87.2	1221	0.46	6.4	146	4095	6.02	186.5	99.5	1394	0.65	23.0	7.74	30.93	2.99		<1	2
W5A	-8.2296	5/12/03	908				5.66	175	83.0	1163	0.10	1.4	152	4275	5.85	181.2	89.7	1256	0.68	22.8	7.76	30.81	2.42		<1	12
W5A	-8.2296	6/3/03	923				5.59	173	74.8	1048	0.29	4.1	145	4061	5.80	179.6	89.3	1251	0.95	22.9	7.78	30.96	2.50		4	565

NELHA Water Quality Laboratory

Well 5A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W5A	-8.2296	7/29/03	940				5.40	167	68.8	963	0.06	0.8	144	4036	5.53	171.3	77.7	1088		22.8	7.77	30.81	2.79		<1	11
W5A	-8.2296	8/26/03	945				6.41	199	76.1	1065	0.11	1.5	163	4575	6.49	201.0	84.6	1184		22.7	7.73	29.55	3.28		<1	10
W5A	-8.2296	9/15/03	926				6.00	186	73.2	1025	0.04	0.6	150	4199	6.22	192.7	96.6	1353		23.0	7.73	30.47	2.52		<1	1
W5A	-8.2296	10/6/03	908				6.10	189	69.1	968	0.10	1.4	158	4435	6.26	193.9	76.5	1071		22.8	7.73	30.25	NA		<1	<1
W5A	-8.2296	10/28/03	952				5.94	184	69.0	966	<0.10	0.0	152	4266	4.80	148.7	74.0	1036		23.2	7.72	30.40			<1	<1
W5A	-8.2296	11/14/03	1318																	23.1			2.46			
W5A	-8.2296	12/15/03	914				6.03	187	76.2	1068	0.20	2.8	160	4482	6.19	191.7	82.1	1151		22.7	7.70	30.30	2.21		<1	<1
W5A	-8.2296	1/26/04	919				5.97	185	83.6	1171	0.10	1.4	144	4030	6.18	191.4	90.6	1269		21.7	7.67	30.16	1.93		<1	<1
W5A	-8.2296	2/5/04	918				6.06	188	88.0	1232	0.21	2.9	146	4103	6.18	191.4	96.5	1352		21.6	7.69	30.11	2.95		<1	<1
W5A	-8.2296	3/2/04	923				6.18	191	94.8	1327	0.47	6.6	148	4151	6.18	191.4	104	1461		21.3	7.71	29.94	3.02		<1	<1
W5A	-8.2296	4/20/04	917				6.74	209	100	1402	0.01	0.1	159	4452	6.76	209.4	105	1471		21.6	7.69	29.42	2.02		<1	3
W5A	-8.2296	5/11/04	833				7.04	218	94.0	1317	0.30	4.2	162	4555	6.96	215.6	98.9	1385		21.2	7.70	28.93	2.10		<1	26
W5A	-8.2296	6/2/04	852				6.66	206	83.2	1165	0.14	2.0	152	4266	6.80	210.6	88.0	1233		24.7	7.70	29.29	2.57		<1	<1
W5A	-8.2296	7/14/04	924				5.92	183	89.2	1249	0.26	3.6	144	4039	5.88	182.1	105	1475		22.3	7.74	29.52	3.38		<1	<1
W5A	-8.2296	8/23/04	916				6.70	208	97.3	1362	0.29	4.1	161	4530	6.64	205.7	102	1429		22.7	7.68	28.86	1.86		<1	<1
W5A	-8.2296	9/2/04	927				6.43	199	94.3	1321	0.09	1.3	161	4519	6.50	201.3	98.8	1384		22.6	7.71	28.81	2.49		<1	<1
W5A	-8.2296	10/4/04	855				5.84	181	86.4	1209	0.16	2.2	145	4081	6.10	188.9	92.2	1291		20.6	7.70	29.52	3.12		<1	<1
W5A	-8.2296	11/23/04	850				6.04	187	72.0	1008	0.05	0.7	156	4379	6.24	193.3	104	1455		21.3	7.68	29.53	1.88		<1	<1
W5A	-8.2296	12/8/04	850				5.72	177	76.1	1066	0.09	1.3	150	4204	5.88	182.1	98.0	1372		22.8	7.71	29.69	2.87		<1	<1
W5A	-8.2296	1/18/05	903				5.98	185	68.2	955	0.06	0.8	152	4263	6.16	190.8	74.3	1041		22.8	7.67	30.41	1.36		<1	1
W5A	-8.2296	2/10/05	850				6.18	191	74.9	1049	0.25	3.5	155	4339	6.36	197.0	97.7	1369		22.7	7.69	30.24	1.58		<1	<1
W5A	-8.2296	3/22/05	857				7.18	222	97.8	1370	0.15	2.1	144	4030	7.40	229.2	104	1454	0.98	22.1	7.75	30.31	1.65		<1	2
W5A	-8.2296	4/20/05	848				6.30	195	87.4	1224	0.11	1.5	134	3752	6.40	198.2	89.4	1253		21.9	7.80	30.55	2.68		<1	11
W5A	-8.2296	5/25/05	910				6.02	186	75.7	1060	0.24	3.4	137	3853	6.46	200.1	89.0	1247		20.4	7.77	30.23	2.75		<1	6
W5A	-8.2296	6/14/05	908				5.76	178	66.5	931	0.63	8.8	138	3879	5.94	184.0	74.1	1038		21.9	7.78	30.32	3.16		2520	1244
W5A	-8.2296	7/19/05	903				5.42	168	71.2	997	0.07	1.0	145	4070	5.68	175.9	73.9	1035	0.72	22.8	7.82	29.84	3.36		<1	1
W5A	-8.2296	8/3/05	933				5.48	170	70.2	983	0.03	0.4	147	4117	5.66	175.3	71.7	1005	0.62	22.9	7.85	29.82	4.69		<1	1
W5A	-8.2296	9/22/05	856				5.10	158	56.9	797	0.07	1.0	145	4061	5.32	164.8	61.3	859	0.57	24.9	7.83	30.63	3.22		<1	920
W5A	-8.2296	10/19/05	910				4.80	149	72.0	1009	0.12	1.7	130	3654	4.98	154.2	78.5	1100		25.1	7.72	30.86	3.39		<1	<1
W5A	-8.2296	11/8/05	855				4.62	143	68.9	965	0.09	1.3	117	3297	4.84	149.9	75.6	1059		25.2	7.67	31.27	3.49		<1	<1
W5A	-8.2296	12/22/05	829				4.66	144	73.7	1032	0.32	4.5	133	3733	4.90	151.8	74.7	1046		24.7	7.56	31.28	1.66		<1	<1
W5A	-8.2296	1/31/06	854				4.72	146	67.8	950	0.19	2.7	136	3806	4.92	152.4	71.5	1001		23.8	7.55	31.07	2.03		<1	<1
W5A	-8.2296	2/16/06	849				4.82	149	66.4	930	0.22	3.1	136	3825	5.08	157.3	69.8	977	0.58	23.6	7.55	31.00	1.58		<1	<1
W5A	-8.2296	3/22/06	840				4.55	141	63.5	889	0.23	3.2	130	3651	4.69	145.3	68.6	961	0.63	23.5	7.54	31.38	2.91		<1	29
W5A	-8.2296	4/27/06	920				4.51	140	67.3	943	0.35	4.9	124	3483	4.73	146.5	63.3	886	0.67	23.6	7.61	31.35	3.00		<1	341
W5A	-8.2296	5/24/06	942				4.25	132	61.0	854	0.06	0.8	121	3398	4.52	140.0	59.0	826	0.77	24.0	7.54	31.30	2.38		<1	>5,000
W5A	-8.2296	6/28/06	927				4.18	129	57.6	807	0.29	4.1	123	3455	4.36	135.0	54.0	756	0.59	23.9	7.49	31.61	1.64		<1	9
W5A	-8.2296	7/19/06	905				4.42	137	55.6	779	0.32	4.5	128	3595	4.59	142.2	47.6	666	0.65	24.4	7.47	31.27	2.82		<1	1
W5A	-8.2296	8/9/06	927				4.12	128	53.8	754	0.20	2.8	122	3426	4.35	134.7	49.7	696	0.63	24.4	7.45	31.71	1.28		<1	<1
W5A	-8.2296	9/20/06	938				4.46	138	47.6	667	0.70	9.8	121	3398	4.78	148.1	46.8	655	0.71	25.1	7.46	31.77	0.86		1	>5000
W5A	-8.2296	10/25/06	933				4.74	147	44.3	620	0.31	4.3	130	3651	4.95	153.3	43.1	603	0.74	25.3	7.47	31.48	0.59		<1	499
W5A	-8.2296	11/29/06	930				5.00	155	48.9	685	0.26	3.6	130	3651	5.17	160.1	45.4	635	0.66	25.4	7.48	31.62	0.48		<1	5
W5A	-8.2296	12/13/06	934				4.84	150	54.3	761	0.24	3.4	122	3426	5.11	158.3	52.0	728	0.62	25.4	7.48	31.80	0.86		<1	1
W5A	-8.2296	1/10/07	920				4.67	145	55.5	777	0.29	4.1	121	3398	4.80	148.7	57.6	807	0.58	24.7	7.47	31.83	0.87		<1	14
W5A	-8.2296	2/21/07	1000				4.29	133	63.0	882	0.58	8.1	107	3005	4.61	142.8	69.9	979	0.67	23.9	7.51	31.52	1.92		<1	<1
W5A	-8.2296	3/7/07	951				4.39	136	70.0	980	0.32	4.5	118	3314	4.51	139.7	70.7	990	0.64	23.7	7.54	31.16	1.63		<1	<1
W5A	-8.2296	4/19/07	930				4.61	143	68.7	962	0.45	6.3	119	3342	4.89	151.5	61.4	859	0.55	23.5	7.59	31.04	1.96		<1	1
W5A	-8.2296	5/2/07	937				4.60	142	61.8	866	0.33	4.6	123	3455	4.87	150.8	61.0	854	0.57	23.0	7.58	31.16	2.09		<1	<1
W5A	-8.2296	6/20/07	941				4.61	143	62.6	876	0.23	3.2	127	3567	4.99	154.6				23.3	7.60	31.23	1.85		<1	1

NELHA Water Quality Laboratory

Well 5A Data Table

June 1989 - December 2014

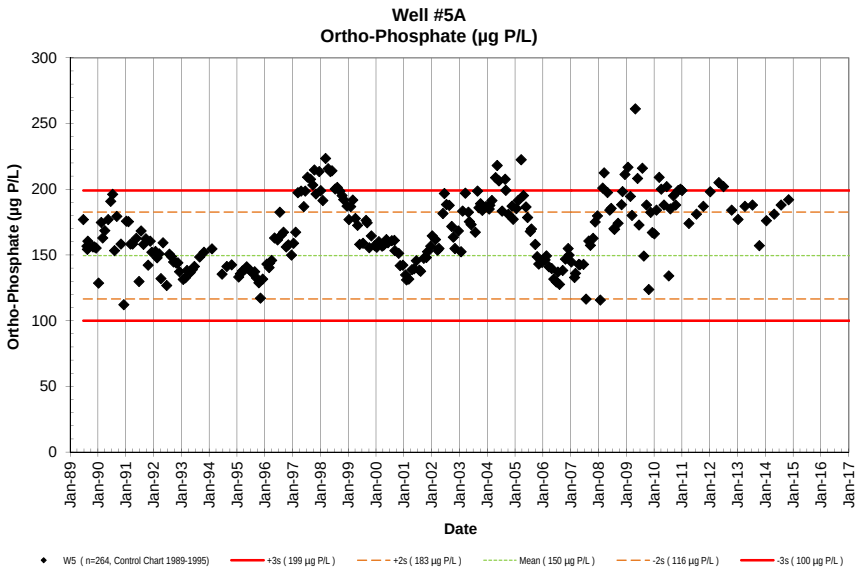
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W5A	-8.2296	7/23/07	1105	-3.05	0.52	Flood	3.76	116	34.5	484	0.04	0.5	66	1854	3.96	122.7	35.8	501		22.4	7.53	31.76	2.64			
W5A	-8.2296	8/27/07	1404	-3.15	0.52	Flood	5.19	161	71.7	1004	0.06	0.8	102	2868	4.80	148.7	71.9	1007		23.8	7.57	30.85	2.38			
W5A	-8.2296	9/18/07	1540	-3.12	0.24	Ebb	5.08	157	71.9	1007	0.15	2.1	124	3487	5.20	161.0	72.5	1016		23.0	7.54	30.92	1.81			
W5A	-8.2296	10/23/07	1412	-3.12	0.52	High	5.25	163	78.2	1095	0.35	5.0	122	3437	5.26	162.8	79.2	1110		22.2	7.52	30.44	1.54			
W5A	-8.2296	11/20/07	1412	-3.15	0.38	Ebb	5.65	175	79.2	1110	0.08	1.1	142	3982	5.06	156.7	85.0	1191		21.2	7.57	30.35	1.10			
W5A	-8.2296	12/19/07	1251	-3.25	0.30	High	5.80	180	94.2	1319	1.15	16	148	4161						21.3	7.38	29.14	0.48			
W5A	-8.2296	1/25/08	1020	-3.05	0.24	Ebb	3.74	116	32.1	450	0.53	7.4	86	2409						21.1	7.12	30.22	0.82			
W5A	-8.2296	2/26/08	1202	-3.40	0.03	Ebb	6.49	201	100.8	1412	0.65	9.1	133	3727						20.7	7.34	30.48	1.11			
W5A	-8.2296	3/17/08	1334	-3.28	0.21	Flood	6.86	212	87.6	1227	0.06	0.8	125	3521						20.4	7.38	29.95	0.59			
W5A	-8.2296	4/29/08	928	-3.43	0.09	Flood	6.37	197	81.7	1144	0.09	1.2	138	3882						20.1	7.34	30.23	1.24			
W5A	-8.2296	5/28/08	935	-3.45	0.18	Flood	5.94	184	79.4	1112	0.13	1.8	149	4185						20.4	7.40	30.04	0.84			
W5A	-8.2296	6/17/08	1045	-3.38	0.00	Flood	5.99	185	85.1	1192	0.89	12	141	3954						20.4	7.29	30.21	4.33	2.32		
W5A	-8.2296	7/22/08	939	-3.43	0.30	Ebb	5.49	170	77.0	1079	0.20	2.8	144	4045						20.6	7.42	30.20	0.74			
W5A	-8.2296	7/31/08	935	-3.73	-0.09	Low	5.47	170	78.0	1093	0.67	9.4	136	3818						24.1	7.36	30.11	1.56			
W5A	-8.2296	9/16/08	1023	-3.53	0.12	Ebb	5.62	174	78.8	1104	0.65	9.1	138	3881						21.3	7.32	30.42	2.73			
W5A	-8.2296	10/31/08	937	-3.35	0.30	Ebb	6.08	188	70.2	984	0.16	2.2	142	3979						23.1	7.34	30.43	0.79			
W5A	-8.2296	11/14/08	1129	-3.55	0.12	Ebb	6.40	198	86.4	1210	0.20	2.8	145	4069						22.7	7.58	30.10	0.66	1.02		
W5A	-8.2296	12/15/08	1519	-3.48	0.61	Ebb	6.82	211	100.7	1410	1.61	23	152	4281						23.9	7.58	30.25	0.81			
W5A	-8.2296	1/23/09	1424	-3.39	0.15	High	7.00	217	111.3	1559	0.78	11	131	3682						22.9	7.51	30.39	1.36	1.89		
W5A	-8.2296	2/24/09	1542	-3.33	0.30	Flood	6.28	195	55.2	773	1.10	15.4	137	3843						22.4	7.45	30.82	3.14	0.20		
W5A	-8.2296	3/16/09	1529	-3.61	0.03	Low	5.81	180	93.8	1315	0.13	1.8	124	3491						22.9	7.34	30.32	1.59	2.01		
W5A	-8.2296	4/30/09	1602	-3.64	0.09	Flood	8.43	261	108.1	1515	1.01	14.1	144	4042						22.4	7.74	29.87	1.32			
W5A	-8.2296	5/29/09	938	-3.42	0.21	High	6.72	208	94.4	1322	0.17	2.4	114	3202						20.9	7.78	30.55	1.56	0.38		
W5A	-8.2296	6/18/09	1355	-3.05	0.61	High	5.58	173	80.3	1125	0.34	4.7	114	3206						20.8	7.43	30.69	1.78	0.03		
W5A	-8.2296	7/31/09	1057	-3.14	0.52	Flood	6.97	216	90.8	1273	0.16	2.2	100	2813						21.0	7.50	30.59	1.94	0.06		
W5A	-8.2296	8/19/09	1055	-3.40	0.09	Flood	4.81	149	71.2	998	1.44	20.2	87	2452						21.2	7.46	30.68	1.54	0.11		
W5A	-8.2296	9/24/09	920	-3.15	0.61	High	6.07	188	85.3	1195	0.33	4.6	119	3349						21.0	8.17	30.23	1.12	0.04		
W5A	-8.2296	10/23/09	1343	-3.53	0.21	Ebb	3.99	124	49.1	688	0.56	7.8	71	1994						21.8	7.45	30.12	1.71	0.07		
W5A	-8.2296	11/17/09	1002	-3.56	0.21	Ebb	5.89	182	76.0	1064	0.86	12.1	169	4736						21.6	7.44	29.98	1.26	0.02		
W5A	-8.2296	12/8/09	1020	-3.20	0.52	Ebb	5.39	167	82.0	1148	0.99	13.9	177	4976						21.5	7.49	29.89	0.93	0.03		
W5A	-8.2296	1/6/10	954	-3.25	0.40	Ebb	5.36	166	84.1	1178	1.50	21.0	169	4749						22.2	7.49	29.68	1.69	0.18		
W5A	-8.2296	2/2/10	936	-3.22	0.24	Ebb	5.94	184	107.1	1500	0.79	11.0	152	4279						21.8	7.51	29.84	1.51	0.18		
W5A	-8.2296	3/10/10	910	-3.68	0.09	Low	6.75	209	105.6	1479	0.43	6.0	175	4928						21.3	7.56	29.51	1.21	0.44		
W5A	-8.2296	4/6/10	1508	-3.59	0.09	Ebb	6.46	200	96.8	1356	0.64	9.0	170	4781						20.8	7.47	29.77	1.33	0.25		
W5A	-8.2296	5/12/10	850	-3.73	-0.06	Low	6.07	188	87.5	1226	1.21	17.0	163	4582						20.8	7.60	29.75	1.27	0.06		
W5A	-8.2296	6/16/10	1102	-3.58	0.09	Ebb	6.52	202	100.7	1410	0.36	5.0	183	5128						20.7	7.50	29.74	1.78	0.33		
W5A	-8.2296	7/14/10	850	-3.40	0.18	Ebb	4.33	134	80.9	1133	0.21	3.0	144	4035						20.5	7.50	29.85	1.97	0.06		
W5A	-8.2296	8/3/10	1723	-3.31	0.12	Ebb	5.97	185	90.5	1267	0.20	2.8	171	4796						20.8	7.55	30.09	1.31	0.13		
W5A	-8.2296	9/13/10	1459	-3.41	0.24	Ebb	6.30	195	90.6	1269	0.15	2.1	184	5154						20.9	7.45	30.08	1.79	0.12		
W5A	-8.2296	10/11/10	1011	-3.01	0.46	Ebb	6.07	188	87.3	1223	0.07	1.0	176	4930						21.0	7.59	30.16	1.62	0.28		
W5A	-8.2296	11/15/10	1134	-3.18	0.43	High	6.42	199	84.7	1186	0.08	1.1	178	5002						21.3	7.50	30.41	1.08	0.10		
W5A	-8.2296	12/13/10	908	-3.16	0.00	High	6.46	200	86.6	1213	0.07	1.0	177	4983						21.2	7.44	30.23	0.96	0.11		
W5A	-8.2296	1/3/11	1529	-3.44	0.21	High	6.42	199	89.5	1254	0.14	2.0	174	4892						21.3	7.47	30.04	1.33	0.09		
W5A	-8.2296	4/4/11	1421	-3.28	0.30	Flood	5.62	174	97.2	1362	0.14	1.9	169	4756						20.9	7.71	29.99	2.10	0.07		
W5A	-8.2296	7/11/11	1307	-3.14	0.67	Flood	5.84	181	105.7	1481	0.11	1.6	157	4417						21.6	7.51	30.18	3.83	0.28		
W5A	-8.2296	10/10/11	1220	-3.42	0.30	Flood	6.04	187	88.7	1243	0.41	5.7	159	4452						21.5	7.44	30.51	2.75	0.10		
W5A	-8.2296	1/9/12	1249	-3.58	0.03	Low	6.39	198	85.9	1203	0.33	4.6	158	4445						21.4	7.43	29.54	1.42	0.09		
W5A	-8.2296	4/30/12	1412	-3.25	0.27	Ebb	6.62	205	98.9	1385	0.16	2.2	159	4471						20.7	7.45	30.20	1.69	0.03		
W5A	-8.2296	7/1/12	1605	-2.92	0.73	High	6.52	202	93.9	1315	0.17	2.4	158	4442						20.2	7.45	30.55	3.15	0.26		
W5A	-8.2296	10/15/12	1236	-3.47	0.12	Flood	5.94	184	88.2	1235	0.07	1.0	163	4584						20.3	7.49	30.37	2.45	0.02		
W5A	-8.2296	1/7/13	1324	-3.37	0.24	Ebb	5.71	177	113.1	1584	0.10	1.4	199	5602						19.6	7.53	30.46	3.04	0.02		
W5A	-8.2296	4/8/13	1132	-3.61	0.09	Flood	6.04	187	117.5	1646	0.24	3.3	155	4351						19.0	7.59	29.98	3.19	0.03		
W5A	-8.2296	7/16/13	1512	-3.30	0.37	Ebb	6.07	188	111.4	1561	0.14	1.9	164	4616						20.3	7.63	30.13	2.16	0.12		
W5A	-8.2296	10/14/13	1525	-3.15	0.43	Ebb	5.07	157	86.5	1212	0.38	5.3	144	4045						22.7	7.53	31.07	3.85	0.18		
W5A	-8.2296	1/14/14	1415	-3.39	0.21	Flood	5.68	176	103.6	1451	0.30	4.2	152	4267						20.4	7.55	31.99	3.74	0.13		
W5A	-8.2296	4/28/14	1633	-3.04	0.55	High	5.84	181	134	1880	0.57	8.0	145	4080						21.2	7.65	29.74	2.23	0.16		

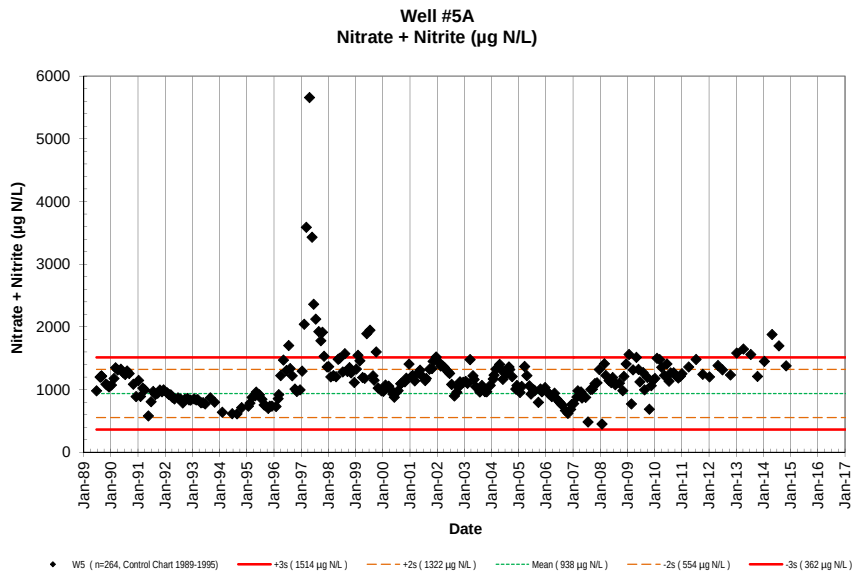
NELHA Water Quality Laboratory

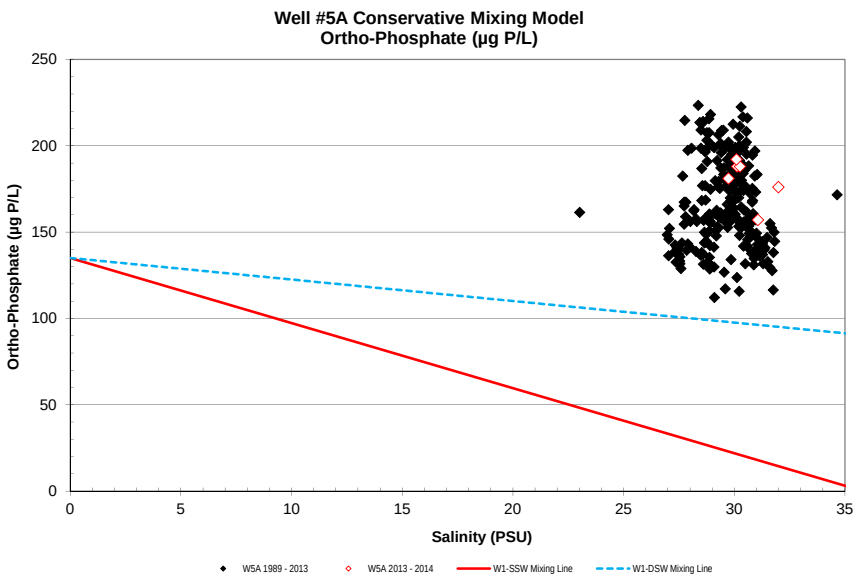
Well 5A Data Table

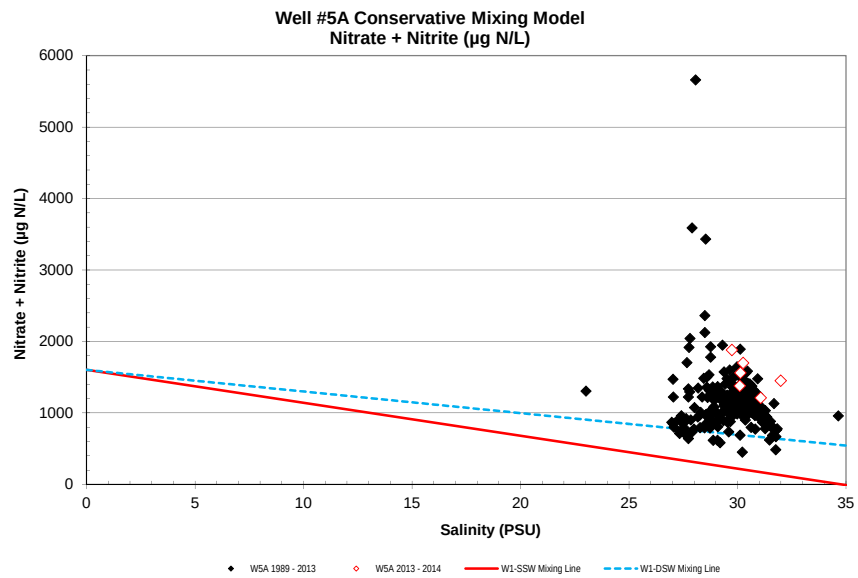
June 1989 - December 2014

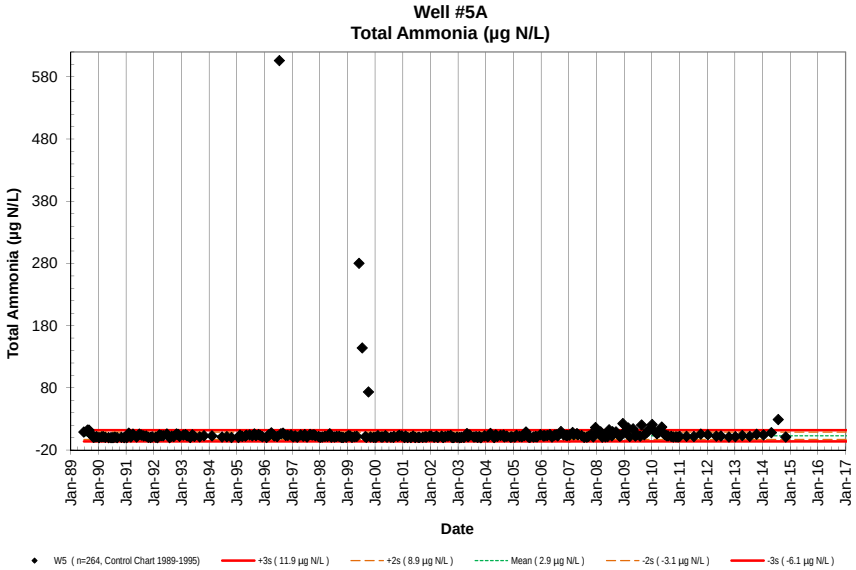
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W5A	-7.2296	7/28/14	1422	-3.39	0.38	Flood	6.07	188	121.2	1698	2.07	29.0	148	4166						21.4	7.61	30.26	2.76	0.09		
W5A	-6.2296	11/3/14	1059	-3.22	0.38	Flood	6.20	192	98.4	1378	0.07	1.0	146	4109						22.2	7.60	30.10	1.93	0.07		
W5A	-5.2296	1/1/15																								
W5A	-4.2296	4/1/15																								

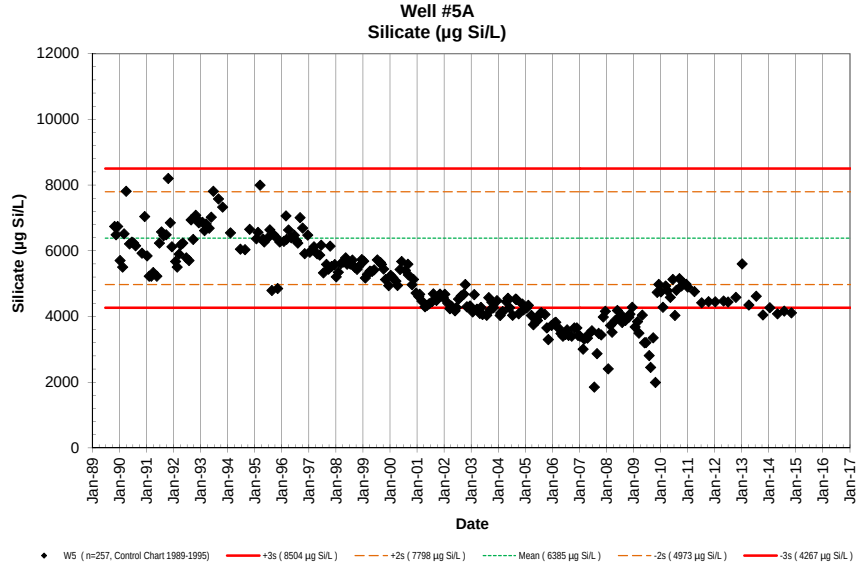

Well #5A
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W5 (n=264, Control Chart 1989-1995)
+3s (199 µg P/L)
+2s (183 µg P/L)
Mean (150 µg P/L)
-2s (116 µg P/L)
-3s (100 µg P/L)

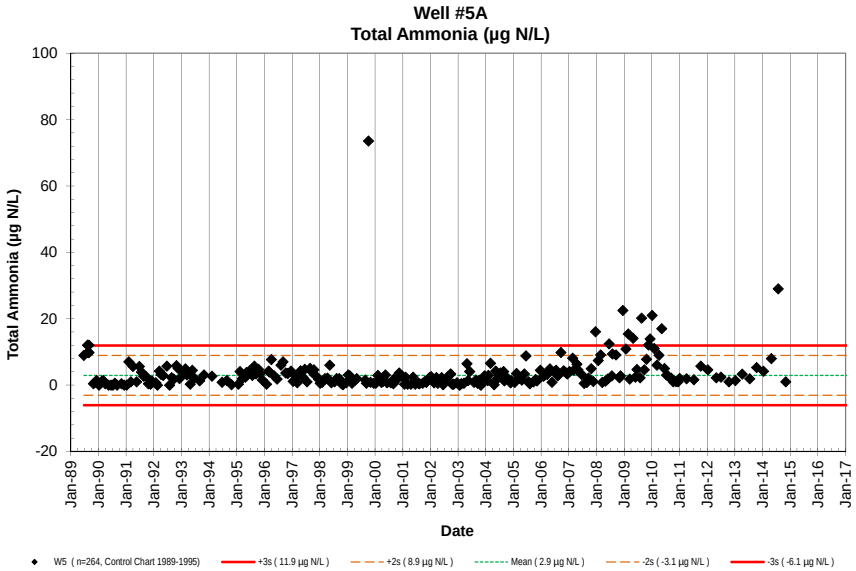

Well #5A
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W5 (n=264, Control Chart 1989-1995)
+3s (1514 µg N/L)
+2s (1322 µg N/L)
Mean (938 µg N/L)
-2s (554 µg N/L)
-3s (362 µg N/L)

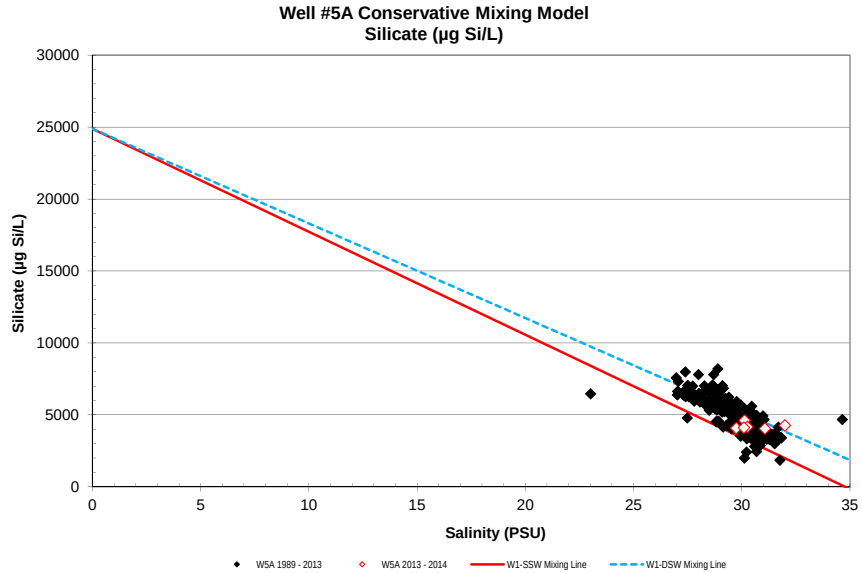

Well #5A Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W5A 1989 - 2013
W5A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

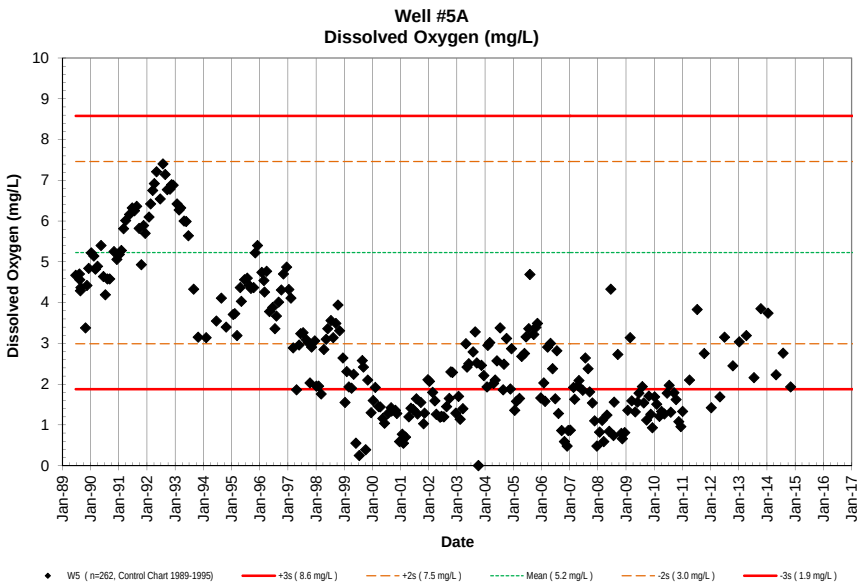

Well #5A Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W5A 1989 - 2013
W5A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

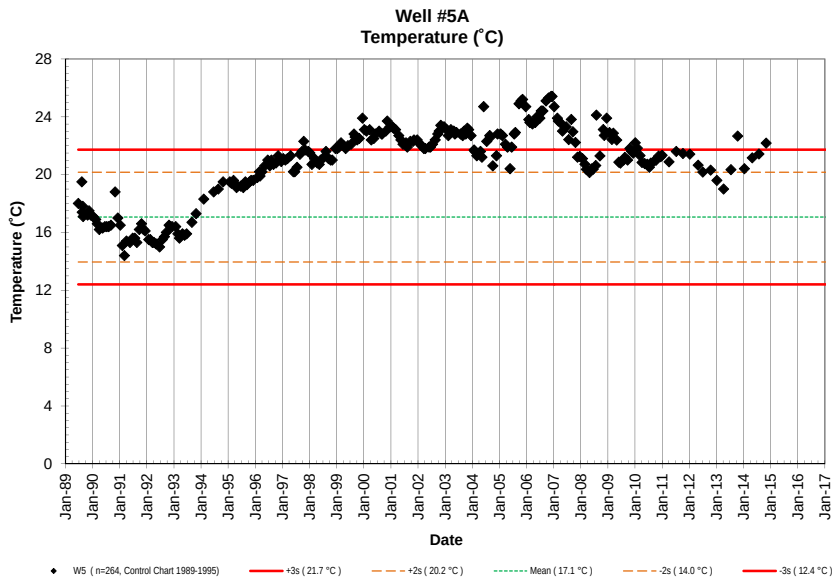

Well #5A
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W5 (n=264, Control Chart 1989-1995)
+3s (11.9 µg N/L)
+2s (8.9 µg N/L)
Mean (2.9 µg N/L)
-2s (-3.1 µg N/L)
-3s (-6.1 µg N/L)

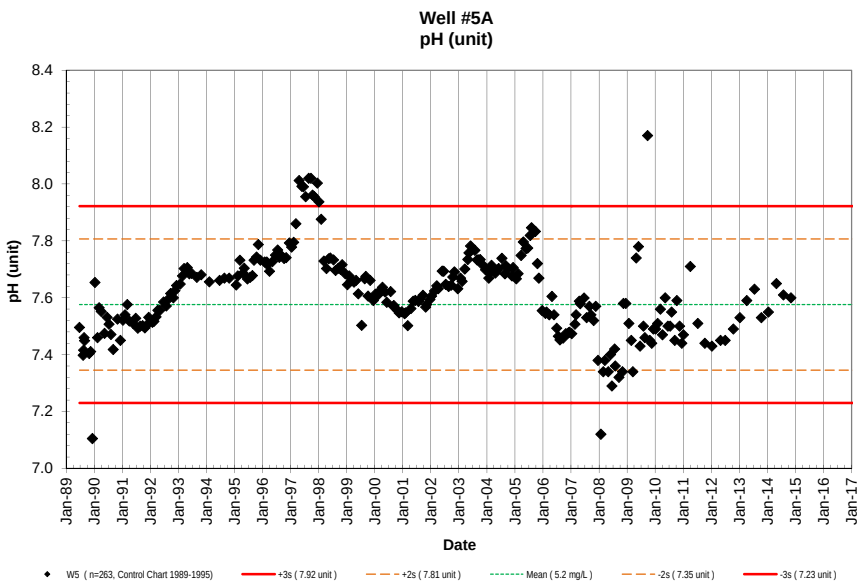

Well #5A
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W5 (n=257, Control Chart 1989-1995)
+3s (8504 µg Si/L)
+2s (7798 µg Si/L)
Mean (6385 µg Si/L)
-2s (4973 µg Si/L)
-3s (4267 µg Si/L)

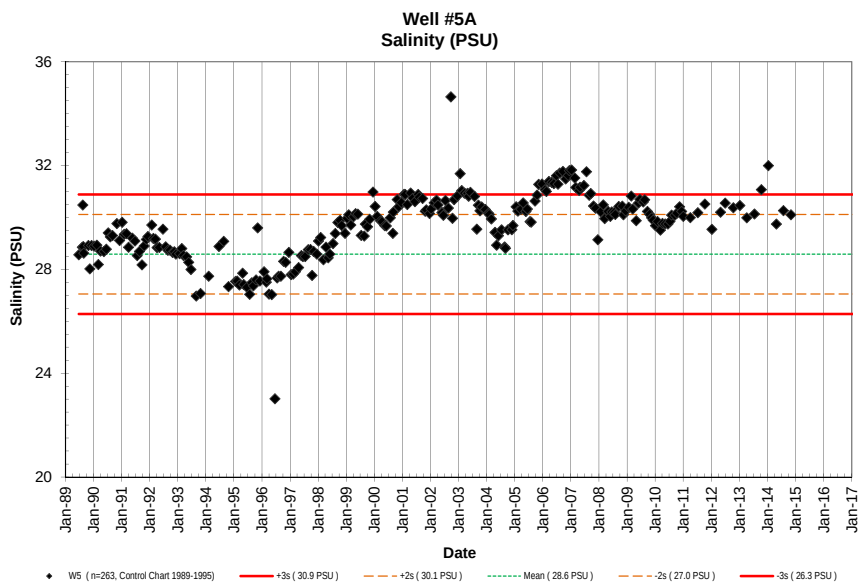

Well #5A
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W5 (n=264, Control Chart 1989-1995)
+3s (11.9 µg N/L)
+2s (8.9 µg N/L)
Mean (2.9 µg N/L)
-2s (-3.1 µg N/L)
-3s (-6.1 µg N/L)

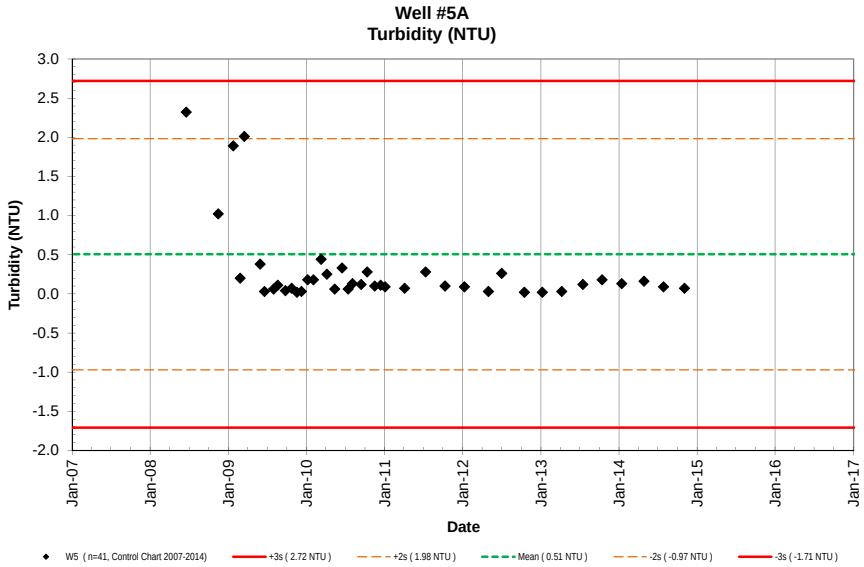

Well #5A Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W5A 1989 - 2013
W5A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

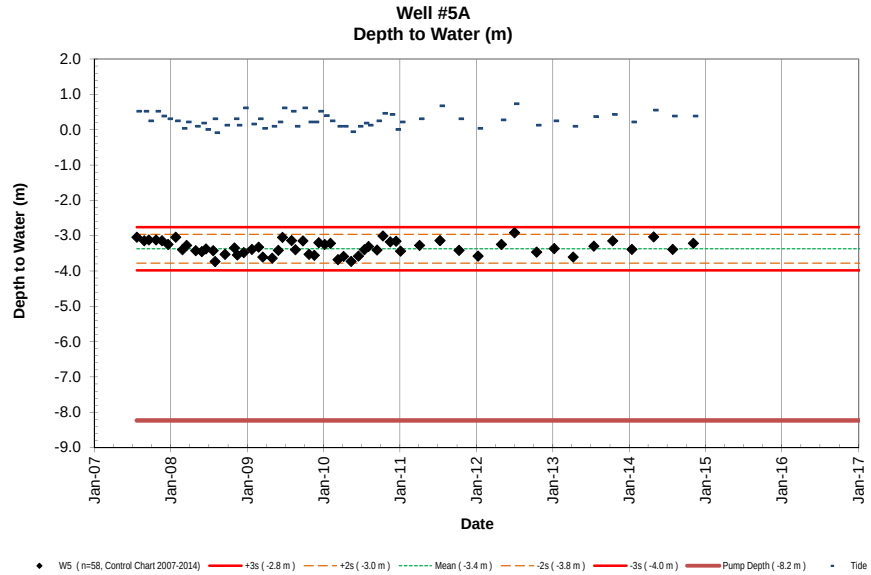

Well #5A
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W5 (n=262, Control Chart 1989-1995)
+3s (8.6 mg/L)
+2s (7.5 mg/L)
Mean (5.2 mg/L)
-2s (3.0 mg/L)
-3s (1.9 mg/L)

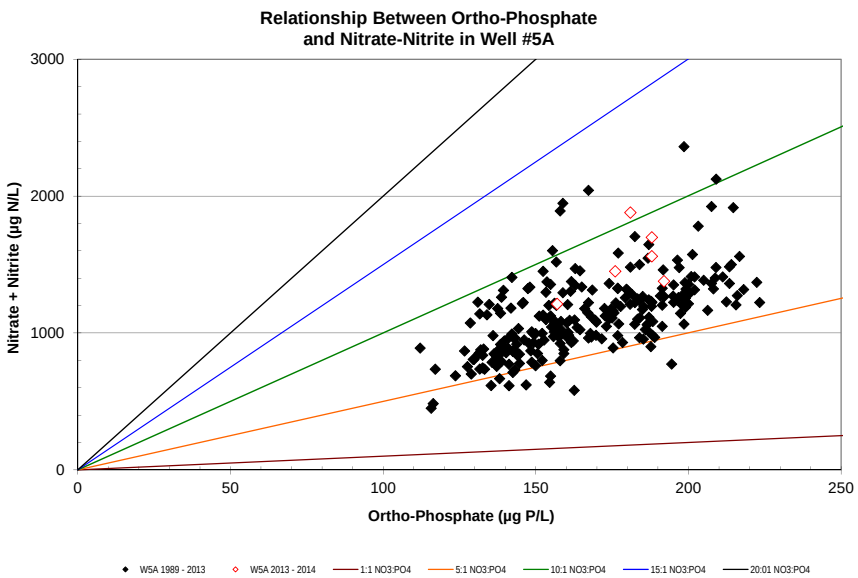

Well #5A
Temperature (˚C)
Temperature (˚C)
Date
W5 (n=264, Control Chart 1989-1995)
+3s (21.7 °C)
+2s (20.2 °C)
Mean (17.1 °C)
-2s (14.0 °C)
-3s (12.4 °C)


Well #5A
pH (unit)
pH (unit)
Date
W5 (n=263, Control Chart 1989-1995)
+3s (7.92 unit)
+2s (7.81 unit)
Mean (5.2 mg/L)
-2s (7.35 unit)
-3s (7.23 unit)


Well #5A
Salinity (PSU)
Salinity (PSU)
Date
W5 (n=263, Control Chart 1989-1995)
+3s (30.9 PSU)
+2s (30.1 PSU)
Mean (28.6 PSU)
-2s (27.0 PSU)
-3s (26.3 PSU)


Well #5A
Turbidity (NTU)
Turbidity (NTU)
Date
W5 (n=41, Control Chart 2007-2014)
+3s (2.72 NTU)
+2s (1.98 NTU)
Mean (0.51 NTU)
-2s (-0.97 NTU)
-3s (-1.71 NTU)


Well #5A
Depth to Water (m)
Depth to Water (m)
Date
W5 (n=58, Control Chart 2007-2014)
+3s (-2.8 m)
+2s (-3.0 m)
Mean (-3.4 m)
-2s (-3.8 m)
-3s (-4.0 m)
Pump Depth (-8.2 m)
Tide


Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #5A
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W5A 1989 - 2013
W5A 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

NELHA Water Quality Laboratory

Well 5B Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W5B	-15.5	6/23/89					2.06	64	45.2	633	0.51	7.1								17.3	7.79	30.42	1.40		na	na
W5B	-15.5	8/9/89	957				2.59	80	48.2	675	0.69	9.7								17.0	7.80	30.43	1.37		<1	na
W5B	-15.5	8/15/89	1020				2.94	91	50.7	710	1.30	18.2								17.2	7.85	28.66	1.21		<1	na
W5B	-15.5	8/22/89	1005				2.71	84	48.8	684	0.70	9.8								17.2	7.90	30.59	1.26		<1	na
W5B	-15.5	8/28/89	1125				2.82	87	49.4	692	1.03	14.4								17.3	7.88	30.62	0.97		<1	na
W5B	-15.5	8/28/89	1125				2.64	82	47.1	660	0.78	10.9														na
W5B	-15.5	10/27/89	1016				2.94	91	50.4	706	0.02	0.3	190	5336	3.28	101.6	50.8	712	0.31	17.7	7.87	30.84	1.31		<1	na
W5B	-15.5	11/15/89	759				2.90	90	41.3	578	0.06	0.8	185	5196	3.24	100.4	45.4	636	0.72	17.9	7.88	30.90	1.33		<1	na
W5B	-15.5	12/8/89	930				2.88	89	41.3	578	0.10	1.4	180	5055	3.15	97.6	41.8	585		18.0	7.90	30.84	1.13		<1	na
W5B	-15.5	1/10/90	905				2.32	72	46.0	644	0.00	0.0	171	4803	2.60	80.5	47.9	671	1.05	17.8	8.01	30.96	0.96		<1	na
W5B	-15.5	2/13/90	1030				2.65	82	54.1	758	0.00	0.0	181	5083	2.91	90.1	56.3	789	0.80	17.5	7.94	30.84	1.51		<1	na
W5B	-15.5	3/5/90	1148				2.49	77	59.3	831	0.02	0.3	223		2.76	85.5	59.8	838	0.91	18.5	8.06	31.07	0.86		<1	na
W5B	-15.5	4/2/90	1042				2.55	79	60.0	840	0.20	2.8	184	5168	2.82	87.3	61.0	854	1.14	17.5	8.04	30.71	2.46		<1	na
W5B	-15.5	5/16/90	956				2.66	82	77.9	1091	0.09	1.3	180	5055	2.83	87.7	81.9	1147	0.77	16.2	7.95	30.18	4.09		<1	na
W5B	-15.5	6/17/90	1130				3.35	104	75.2	1053	0.00	0.0	178	4999	3.54	109.6	79.1	1108	2.00	16.2	7.92	30.19	4.03		<1	na
W5B	-15.5	7/12/90	1031				3.97	123	79.2	1109	0.00	0.0	193	5421	4.13	127.9	82.2	1151	0.73	15.9	7.81	30.18	4.16		<1	na
W5B	-15.5	8/7/90	1010				3.70	115	86.7	1214	0.00	0.0	195	5477	4.02	124.5	86.3	1209	1.21	15.9	7.68	30.11	3.70		<1	na
W5B	-15.5	9/5/90	1055				4.15	129	82.1	1150	0.00	0.0			4.15	128.5	83.8	1174	0.57	16.0	7.61	30.14	3.70		<1	na
W5B	-15.5	10/4/90	1112				4.44	138	72.2	1011	0.08	1.1	203	5701	5.48	169.7	73.1	1024	0.97	16.7	7.59	30.57	4.68		<1	na
W5B	-15.5	10/31/90	1024				3.50	108	63.0	883	0.00	0.0	197	5533	4.23	131.0	75.9	1063	1.00	17.1	7.59	30.53	4.33		<1	na
W5B	-15.5	12/7/90	1020				3.56	110	71.2	997	0.00	0.0	205	5758	4.31	133.5	75.9	1063	0.56	15.9	7.50	30.28	4.01		<1	na
W5B	-15.5	1/9/91	740				4.56	141	78.5	1100	0.00	0.0	189	5308	4.60	142.5	84.6	1185	0.63	15.7	7.47	30.42	4.07		<1	na
W5B	-15.5	2/5/91	825				4.79	148	61.2	857	0.39	5.5	160	4494	4.85	150.2	62.1	870	0.82	15.4	7.51	30.40	4.88		<1	na
W5B	-15.5	3/6/91	734				4.21	130	76.7	1074	0.19	2.7	170	4775	4.25	131.6	79.3	1111	1.05	15.2	7.57	30.55	4.39		<1	na
W5B	-15.5	4/2/91	740				4.11	127	72.7	1018	0.00	0.0	63	1778	4.13	127.9	76.1	1066	0.83	15.3	7.57	30.17	4.87		<1	na
W5B	-15.5	5/21/91	808				4.30	133	39.1	548	0.07	1.0	210	5898	4.53	140.3	41.2	577	0.75	15.0	7.57	30.00	5.73		<1	na
W5B	-15.5	6/25/91	745				3.32	103	51.2	717	0.34	4.8	217	6095	3.78	117.1	57.6	807	0.68	15.1	7.56	30.24	5.43		<1	<1
W5B	-15.5	7/23/91	842				4.31	133	72.8	1020	0.35	4.9	192	5392	4.78	148.1	67.2	941	0.62	15.0	7.54	30.21	5.06		<1	<1
W5B	-15.5	8/22/91	803				4.25	132	58.6	821	0.27	3.8	194	5449	4.50	139.4	73.8	1034	0.70	15.1	7.54	30.08	5.27		<1	<1
W5B	-15.5	9/23/91	802				4.65	144	58.1	814	0.24	3.4	185	5196	4.75	147.1	62.6	877	1.75	15.4	7.50	30.01	4.74		<1	<1
W5B	-15.5	10/22/91	733				3.97	123	65.8	922	0.03	0.4	245	6881	3.99	123.6	69.3	971	0.54	13.5	7.55	30.10	4.08		<1	<1
W5B	-15.5	11/19/91	930				4.51	140	65.8	922	0.04	0.6	212	5954	4.62	143.1	67.3	943	0.56	15.6	7.53	30.00	5.41		<1	<1
W5B	-15.5	12/10/91	858				4.32	134	63.8	894	0.08	1.1	195	5477	4.40	136.3	66.4	930	0.70	15.4	7.55	29.96	5.41		<1	<1
W5B	-15.5	1/28/92	846				4.28	133	63.3	887	0.05	0.7	187	5252	4.38	135.7	64.5	903	0.88	14.9	7.61	30.45	5.52		<1	3
W5B	-15.5	2/18/92	803				4.08	126	63.3	887	0.00	0.0	173	4859	4.23	131.0	66.5	931	0.77	14.9	7.59	30.22	5.85		<1	<1
W5B	-15.5	3/16/92	908				4.17	129	63.0	882	0.05	0.7	187	5252	4.36	135.0	65.1	912	0.95	14.8	7.59	30.08	6.09		<1	<1
W5B	-15.5	4/7/92	841				4.98	154	65.2	913	0.20	2.8	248	6965	5.00	154.9	62.6	877	0.95	14.8	7.61	29.89	6.55		<1	<1
W5B	-15.5	5/5/92	848				4.46	138	61.1	856	0.24	3.4	205	5758	4.53	140.3	64.9	909	1.09	14.8	7.58	29.17	6.44		<1	<1
W5B	-15.5	6/22/92	848				4.71	146	60.4	846	0.33	4.6	236	6628	4.84	149.9	63.3	887	0.85	15.3	7.56	28.74	7.38		<1	<1
W5B	-15.5	7/28/92	735				4.50	139	61.7	865	0.07	1.0	180	5055	4.59	142.2	64.5	904	0.92	14.8	7.58	29.48	6.91		<1	<1
W5B	-15.5	8/25/92	810				4.52	140	55.5	777	0.16	2.2	223	6263	4.67	144.6	60.5	847	1.20	15.0	7.60	29.27	6.94		<1	<1
W5B	-15.5	9/21/92	826				4.37	135	57.7	808	0.15	2.1	193	5421	4.50	139.4	61.8	865	0.84	15.1	7.63	29.48	6.57		<1	<1
W5B	-15.5	10/26/92	834				4.43	137	58.0	812	0.37	5.2	219	6151	4.52	140.0	61.8	865	0.79	15.4	7.60	29.44	6.63		<1	<1
W5B	-15.5	11/16/92	856				4.43	137	57.5	805	0.31	4.3	210	5898	4.59	142.2	62.6	877	0.70	15.3	7.64	29.42	6.61		<1	<1
W5B	-15.5	12/7/92	853				4.36	135	57.1	800	0.18	2.5	209	5870	4.51	139.7	60.8	852	0.68	15.3	7.65	29.37	6.64		<1	<1
W5B	-15.5	1/25/93	839				4.25	132	56.0	784	0.36	5.0	210	5884	4.48	138.8	61.7	864	0.70	15.2	7.67	29.81	6.41		<1	<1
W5B	-15.5	2/22/93	820				4.15	129	56.0	784	0.36	5.0	205	5755	4.18	129.5	60.7	850	0.56	14.9	7.70	29.98	6.37		<1	<1
W5B	-15.5	3/15/93	816				4.13	128	56.7	794	0.19	2.7	211	5912	4.16	128.9	58.9	825	0.94	14.7	7.71	29.92	6.36		<1	<1
W5B	-15.5	4/26/93	827				4.10	127	53.7	753	0.09	1.3	209	5870	4.29	132.9	57.0	799	0.68	15.1	7.70	29.96	6.24		<1	<1
W5B	-15.5	5/24/93	842				4.29	133	42.4	593	0.33	4.6	210	5898	4.21	130.4	57.3	803	0.66	15.1	7.69	29.93	6.11		<1	<1
W5B	-15.5	6/21/93	840				4.13	128	51.1	716	0.30	4.2	220	6179	4.30	133.2	54.4	762	0.59	15.5	7.70	30.00	6.07		<1	<1
W5B	-15.5	8/30/93	944				3.87	120	48.0	672	0.13	1.8	205	5758	3.94	122.0	55.0	771	0.97	17.1	7.76	29.88	5.76		<1	<1
W5B	-15.5	10/25/93	824				3.55	110	52.0	728	0.18	2.5	176	4943	3.63	112.4	54.7	766	0.71	17.8	7.82	29.60	5.18		<1	<1
W5B	-15.5	2/7/94	1028				3.53	109	43.0	602	0.19	2.7	164	4606	3.56	110.3	47.9	671	0.93	17.7	7.80	30.07	5.65		<1	1
W5B	-15.5	6/20/94	814				3.73	116	40.6	568	0.05	0.7	175	4916	3.79	117.4	49.3	690	0.71	17.7	7.75	30.45	3.68		<1	<1

NELHA Water Quality Laboratory

Well 5B Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W5B	-15.5	8/22/94	924				3.64	113	44.0	617	0.04	0.6	172	4821	3.72	115.2	49.0	687	0.68	17.7	7.76	30.38	4.19		<1	<1
W5B	-15.5	10/24/94	839				3.63	112	43.7	612	0.00	0.0	182	5118	3.84	118.9	49.0	686	0.60	18.6	7.76	29.36	6.28		<1	<1
W5B	-15.5	1/23/95	927				3.72	115	47.6	667	0.00	0.0	166	4659	3.85	119.2	49.9	699	0.60	18.0	7.75	29.54	4.89		<1	<1
W5B	-15.5	2/13/95	919				3.71	115	43.8	614	0.22	3.1	169	4758	3.80	117.7	46.5	651	0.64	17.8	7.77	29.92	4.82		<1	<1
W5B	-15.5	3/13/95	956				3.72	115	48.2	675	0.18	2.5	210	5887	3.76	116.5	49.9	698	0.62	17.9	7.78	29.94	5.31		<1	<1
W5B	-15.5	4/24/95	900				3.62	112	53.9	755	0.18	2.5	169	4755	3.75	116.2	54.8	768	0.66	17.7	7.76	29.70	5.29		<1	<1
W5B	-15.5	5/8/95	901				3.36	104	53.4	747	0.33	4.6	159	4471	3.67	113.7	56.4	791	0.66	17.8	7.76	29.69	5.22		<1	<1
W5B	-15.5	6/19/95	936				3.63	112	54.0	756	0.33	4.6	168	4721	3.71	114.9	58.5	820	0.58	17.9	7.72	29.59	5.37		<1	<1
W5B	-15.5	7/24/95	904				3.55	110	54.7	766	0.19	2.7	167	4685	3.64	112.7	56.5	791	0.67	17.7	7.73	29.54	5.31		<1	<1
W5B	-15.5	8/21/95	954				3.62	112	50.1	701	0.44	6.2	224	6302	3.72	115.2	64.4	902	0.67	18.0	7.74	29.66	5.10		<1	<1
W5B	-15.5	9/11/95	715				3.64	113	51.7	724	0.18	2.5	170	4777	3.67	113.7	54.3	761	0.54	17.8	7.78	29.57	4.40		<1	<1
W5B	-15.5	10/16/95	841				3.69	114	52.1	729	0.31	4.3	171	4803	3.75	116.2	54.4	763	0.63	18.3	7.79	29.58	5.15		<1	<1
W5B	-15.5	11/6/95	825				4.16	129	49.7	696	0.22	3.1	228	6412	4.18	129.5	52.8	739	0.69	18.1	7.76	27.97	4.09		<1	<1
W5B	-15.5	12/4/95	834				3.71	115	51.3	718	0.12	1.7	172	4822	3.77	116.8	53.4	748	0.62	18.0	7.78	29.47	6.31		<1	<1
W5B	-15.5	1/29/96	905				3.79	117	47.3	662	0.10	1.4	170	4769	3.81	118.0	57.0	798	0.59	17.8	7.78	29.69	5.29		<1	<1
W5B	-15.5	2/26/96	1009				3.64	113	49.0	687	0.30	4.2	188	5271	3.75	116.2	57.6	807	0.58	19.0	7.77	29.70	5.32		<1	<1
W5B	-15.5	3/5/96	858				3.73	116	50.4	706	0.31	4.3	175	4913	3.80	117.7	52.9	741	0.67	18.0	7.76	29.65	3.77		<1	<1
W5B	-15.5	4/1/96	920				3.70	115	50.5	707	0.45	6.3	184	5173	3.88	120.2	52.6	737	0.58	18.5	7.72	29.59	5.34		<1	<1
W5B	-15.5	5/8/96	917				3.88	120	54.9	769	0.13	1.8	175	4927	4.04	125.1	60.4	845	0.51	18.5	7.73	29.51	5.39		<1	<1
W5B	-15.5	6/17/96	843				4.00	124	57.7	808	0.18	2.5	184	5154	4.00	123.9	59.7	836	0.61	18.8	7.74	29.35	5.26		<1	<1
W5B	-15.5	7/16/96	822				4.15	129	66.9	937	0.09	1.3	188	5272	4.37	135.4	68.0	952	0.73	19.1	7.75	29.15	5.04		<1	<1
W5B	-15.5	8/5/96	946				4.39	136	68.5	959	0.34	4.8	180	5053	4.41	136.6	72.1	1009	0.72	19.3	7.76	29.02	6.05		1	<1
W5B	-15.5	9/3/96	906				4.43	137	68.1	953	0.44	6.2	207	5823	4.46	138.1	69.9	979	0.83	19.2	7.76	28.98	4.95		<1	2
W5B	-15.5	10/8/96	925				4.28	133	60.2	843	0.26	3.6	200	5610	4.62	143.1	66.4	929	0.74	18.7	7.73	29.20	5.69		<1	<1
W5B	-15.5	11/4/96	926				4.31	133	59.1	828	0.29	4.1	176	4943	4.40	136.3	92.2	1291	0.65	19.3	7.72	29.25	5.34		<1	<1
W5B	-15.5	12/16/96	908				4.24	131	57.0	798	0.33	4.6	198	5572	4.37	135.4	59.9	839	0.80	18.5	7.75	29.58	5.21		<1	<1
W5B	-15.5	1/13/97	942				4.30	133	59	826	0.08	1.1	181	5095	4.60	142.5	65.0	910	0.45	19.3	7.76	29.58	5.22		<1	<1
W5B	-15.5	2/10/97	850				4.05	125	61	855	0.20	2.8	183	5142	4.10	127.0	63.7	892	0.47	18.9	7.78	29.68	5.29		<1	<1
W5B	-15.5	3/10/97	836				3.96	123	74	1033	0.05	0.7	187	5252	4.18	129.5	76.6	1073	0.73	19.0	7.79	29.77	5.29		<1	<1
W5B	-15.5	4/22/97	917				4.11	127	65	912	0.37	5.2	190	5325	4.18	129.5	116.8	1636	0.81	18.9	7.79	29.60	5.11		<1	<1
W5B	-15.5	5/27/97	910				4.08	126	72	1006	0.05	0.7	182	5117	4.44	137.5	80.0	1121	0.67	18.1	7.81	29.51	5.21		<1	<1
W5B	-15.5	6/16/97	910				4.62	143	94	1315	0.33	4.6	195	5488	4.67	144.6	102.6	1437	0.65	18.2	7.83	29.43	5.06		<1	<1
W5B	-15.5	7/14/97	826				4.59	142	80	1120	0.07	1.0	175	4923	4.73	146.5	87.5	1226	0.61	18.2	7.83	29.42	5.00		<1	<1
W5B	-15.5	8/25/97	907				4.87	151	86	1206	0.22	3.1	177	4974	4.96	153.6	89.3	1251	0.67	19.5	7.92	29.40	4.90		<1	<1
W5B	-15.5	9/22/97	856				5.03	156	94	1319	0.17	2.4	175	4908	5.06	156.7	96.0	1345	0.65	19.5	7.95	29.40	4.67		<1	<1
W5B	-15.5	10/14/97	909				5.00	155	102	1434	0.21	2.9	175	4904	5.06	156.7	104.1	1458	0.65	19.5	7.94	29.37	4.80		<1	<1
W5B	-15.5	11/3/97	1130				5.05	156	94.7	1326	0.21	2.9	174	4892	5.16	159.8	109.7	1537	0.68	19.2	7.91	29.34	4.89		<1	<1
W5B	-15.5	12/15/97	933				5.16	160	89.3	1251	0.14	2.0	175	4909	5.24	162.3	95.0	1331	0.67	18.7	7.93	29.39	5.22		<1	<1
W5B	-15.5	1/5/98	1035				4.98	154	88.1	1234	0.05	0.7	161	4523	5.09	157.7	94.9	1329	0.65	18.5	7.92	29.46	5.30		<1	<1
W5B	-15.5	2/2/98	925				4.78	148	74.6	1044	0.05	0.7	168	4716	4.86	150.5	76.4	1071	0.64	17.4	7.91	29.77	5.56		<1	<1
W5B	-15.5	3/9/98	937				5.11	158	82.9	1161	0.14	2.0	170	4769	5.22	161.7	85.2	1193	0.61	17.8	7.73	29.63	5.50		<1	<1
W5B	-15.5	4/13/98	845				5.27	163	83	1159	0.15	2.1	171	4801	5.36	166.0	85.3	1195	0.64	17.9	7.74	29.69	5.39		<1	<1
W5B	-15.5	5/11/98	914				5.28	164	86	1201	0.24	3.4	172	4834	5.40	167.3	89.2	1249	0.59	17.9	7.73	29.73	4.62		<1	<1
W5B	-15.5	6/1/98	912				5.31	164	82.8	1159	0.05	0.7	170	4769	5.43	168.2	85.3	1195	0.71	18.2	7.73	29.74	5.18		<1	<1
W5B	-15.5	7/13/98	918				5.33	165	79	1113	0.06	0.8	171	4794	5.56	172.2	83	1161	0.64	18.7	7.72	29.87	4.89		<1	<1
W5B	-15.5	8/10/98	941				5.70	177	89.6	1255	0.17	2.4	176	4943	5.88	182.1	95.5	1338	0.73	19.4	7.69	30.16	3.86		<1	<1
W5B	-15.5	9/14/98	926				5.69	176	78.9	1105	0.14	2.0	178	5008	5.85	181.2	81	1139	0.70	19.2	7.71	30.26	4.32		<1	<1
W5B	-15.5	10/12/98	941				5.67	176	78.1	1094	0.04	0.6	173	4870	5.78	179.0	82	1153	0.71	19.0	7.72	30.35	4.78		<1	<1
W5B	-15.5	11/2/98	902				5.63	174	79.0	1107	0.04	0.6	175	4907	5.79	179.3	83.6	1171	0.96	19.7	7.73	30.53	4.09		<1	<1
W5B	-15.5	12/15/98	900				5.51	171	71.9	1007	0.07	1.0	179	5019	5.55	171.9	73.9	1035	0.83	20.0	7.72	30.72	4.22		<1	<1
W5B	-15.5	1/11/99	918				5.14	159	68	945	0.22	3.1	174	4878	5.29	163.9	71	987	0.85	19.5	7.72	30.59	4.91		<1	<1
W5B	-15.5	2/2/99	911				5.30	164	83	1161	0.23	3.2	172	4836	5.41	167.6	89	1242	0.90	19.8	7.71	30.73	4.01		<1	<1
W5B	-15.5	3/1/99	913				5.21	161	65.1	912	0.03	0.4	167	4690	5.38	166.6	66.9	937	0.82	18.7	7.72	30.61	5.51		<1	<1
W5B	-15.5	4/5/99	915				5.24	162	77.8	1090	0.06	0.8	169	4758	5.38	166.6	81.3	1139	0.76	19.6	7.71	31.25	3.29		<1	<1
W5B	-15.5	5/3/99	913				5.12	159	73.7	1033	0.15	2.1	181	5092	5.23	162.0	79.3	1111	0.77	22.4	7.66	32.41	1.58		<1	<1
W5B	-15.5	6/1/99	907				5.03	156	71.3	999	0.21	2.9	187	5249	5.27	163.2	75.8	1062	0.85	22.9	7.67	32.66	1.70		<1	<1

NELHA Water Quality Laboratory

Well 5B Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W5B	-15.5	7/14/99	912				4.57	142	63.7	892	0.02	0.3	178	4996	4.69	145.3	71.6	1003	0.79	22.7	7.66	32.69	1.81		<1	<1
W5B	-15.5	8/23/99	935				4.43	137	63.0	882	0.22	3.1	160	4494	4.53	140.3	66.2	927	0.76	22.2	7.75	31.99	3.66		<1	<1
W5B	-15.5	9/7/99	924				4.44	138	64.1	898	0.09	1.3	152	4269	4.68	145.0	73.3	1027	0.76	21.8	7.76	31.93	3.51		<1	13
W5B	-15.5	10/5/99	918				4.30	133	67.8	949	0.06	0.8	151	4235	4.44	137.5	70.4	986	0.66	21.9	7.73	32.07	3.30		<1	<1
W5B	-15.5	11/1/99	938				4.31	133	62.6	877	0.04	0.6	156	4376	4.34	134.4	66.4	930	0.64	22.5	7.73	32.23	2.93		<1	<1
W5B	-15.5	12/14/99	929				4.20	130	62.5	875	0.03	0.4	157	4409	4.37	135.4	66.1	926	0.86	22.2	7.68	32.26	3.37		<1	<1
W5B	-15.5	1/10/00	958				4.15	129	58.6	821	0.16	2.2	163	4570	4.20	130.1	62.8	880	0.85	22.7	7.67	32.83	2.40		<1	<1
W5B	-15.5	2/7/00	956				4.23	131	56.0	784	0.17	2.4	174	4878	4.32	133.8	60.3	845	0.86	23.4	7.69	33.22	2.02		<1	<1
W5B	-15.5	3/21/00	958				4.05	125	56.1	786	0.06	0.8	168	4716	4.01	124.2	57.7	808	0.79	23.1	7.68	33.12	1.96		<1	<1
W5B	-15.5	4/10/00	1027				3.98	123	53.8	754	0.11	1.5	166	4662	3.90	120.8	58.1	814	0.78	23.2	7.69	33.15	2.30		<1	<1
W5B	-15.5	5/15/00	935				4.21	130	52.7	738	0.08	1.1	186	5230	4.31	133.5	56.6	793	0.77	24.0	7.68	33.51	2.27		<1	<1
W5B	-15.5	6/5/00	936				4.10	127	51.1	716	0.05	0.7	187	5249	4.16	128.9	54.2	759	0.79	24.0	7.66	33.48	2.14		<1	<1
W5B	-15.5	7/26/00	1005				4.31	133	52.8	740	0.02	0.3	192	5381	4.41	136.6	55.2	773	0.72	23.8	7.68	33.25	2.81		<1	<1
W5B	-15.5	8/29/00	903				4.12	128	60.9	853	0.03	0.4	164	4600	4.24	131.3	62.8	880	0.70	21.8	7.67	32.17	3.63		<1	<1
W5B	-15.5	9/5/00	934				4.09	127	67.7	948	0.08	1.1	163	4578	4.23	131.0	70.0	980	0.82	21.6	7.66	31.95	3.62		<1	<1
W5B	-15.5	10/24/00	935				3.95	122	67.0	938	0.21	2.9	150	4210	4.20	130.1	69.5	973	0.75	22.2	7.67	32.18	3.51		<1	<1
W5B	-15.5	11/13/00	913				3.69	114	75.5	1058	0.29	4.1	156	4384	3.90	120.8	79.6	1115	0.77	22.3	7.65	32.11	2.99		<1	<1
W5B	-15.5	12/18/00	922				3.95	122	96.3	1349	0.20	2.8	150	4204	4.02	124.5	98.0	1373	0.85	22.1	7.67	31.99	2.54		<1	<1
W5B	-15.5	1/22/01	916				3.85	119	85.9	1203	0.01	0.1	143	4019	3.93	121.7	86.9	1218	0.76	21.8	7.63	32.13	2.16		<1	<1
W5B	-15.5	2/5/01	941				3.68	114	84.2	1179	0.10	1.4	144	4047	3.83	118.6	91.8	1286	0.75	22.5	7.64	32.58	1.93		<1	<1
W5B	-15.5	3/5/01	933				3.81	118	78.9	1105	0.04	0.6	143	4022	3.92	121.4	79.9	1119	0.83	22.6	7.62	32.55	2.15		<1	<1
W5B	-15.5	4/17/01	920				3.80	118	74.7	1047	0.01	0.1	139	3898	3.98	123.3	81.2	1138	0.75	22.1	7.65	32.61	2.67		<1	<1
W5B	-15.5	5/15/01	905				3.83	119	77.5	1086	0.13	1.8	141	3957	3.85	119.2	80.1	1122	0.71	21.4	7.67	32.29	3.17		<1	<1
W5B	-15.5	6/12/01	918				3.86	120	73.4	1028	0.02	0.3	144	4039	3.73	115.5	75.9	1063	0.72	21.4	7.68	32.26	3.25		<1	<1
W5B	-15.5	7/23/01	923				3.79	117	74.4	1042	0.04	0.6	137	3851	3.78	117.1	79.1	1108	0.80	20.9	7.67	32.03	3.40		<1	<1
W5B	-15.5	8/8/01	908				3.84	119	74.1	1038	0.02	0.3	140	3938	3.86	119.6	77.2	1082	0.80	20.9	7.67	32.22	3.69		<1	<1
W5B	-15.5	9/19/01	921				4.06	126	83.0	1163	0.06	0.8	134	3755	4.20	130.1	87.8	1230	0.82	20.9	7.69	31.71	3.58		<1	<1
W5B	-15.5	10/24/01	854				4.06	126	82.5	1155	0.03	0.4	130	3643	4.35	134.7	88.5	1240	0.69	20.7	7.68	31.62	3.01		<1	<1
W5B	-15.5	11/7/01	911				4.24	131	91.6	1283	0.01	0.1	133	3727	4.28	132.6	104	1455	0.73	20.6	7.67	31.51	3.48		<1	<1
W5B	-15.5	12/19/01	930				4.26	132	96.5	1352	0.03	0.4	145	4070	4.24	131.3	126	1762	0.77	20.5	7.69	31.32	4.11		<1	<1
W5B	-15.5	1/9/02	924				4.23	131	92.0	1289	0.17	2.4	136	3831	4.40	136.3	96.4	1350	1.14	20.1	7.67	31.31	3.94		<1	<1
W5B	-15.5	2/19/02	1040				4.42	137	81.4	1140	0.05	0.7	144	4036	4.58	141.9	85.0	1191	0.73	20.8	7.69	31.91	3.77		<1	<1
W5B	-15.5	3/20/02	938				4.36	135	80.1	1122	0.22	3.1	138	3873	4.50	139.4	83.7	1172	0.72	21.0	7.72	31.87	3.63		<1	<1
W5B	-15.5	4/8/02	1028				4.38	136	82.6	1157	0.04	0.6	129	3615	4.60	142.5	84.3	1181	0.64	20.7	7.70	31.66	3.45		<1	<1
W5B	-15.5	5/29/02	1016				4.44	138	82.3	1152	0.16	2.2	135	3803	4.58	141.9	84.7	1186	0.76	20.9	7.71	31.47	4.83		<1	<1
W5B	-15.5	6/17/02	949				4.81	149	71.6	1003	0.08	1.1	126	3544	4.95	153.3	74.2	1040	0.64	21.0	7.71	31.68	3.82		<1	<1
W5B	-15.5	7/15/02	945				4.66	144	61.2	857	0.10	1.4	135	3786	4.82	149.3	65.8	922	0.69	21.8	7.72	32.05	4.10		<1	<1
W5B	-15.5	8/20/02	944				4.52	140	60.5	847	0.23	3.2	132	3719	4.66	144.3	59.4	832	0.65	21.7	7.72	31.87	4.16		<1	<1
W5B	-15.5	9/23/02	1008				4.36	135	57.8	810	0.24	3.4	130	3651	4.38	135.7	56.6	793	0.61	22.3	7.73	32.38	3.82		<1	<1
W5B	-15.5	10/14/02	924				4.33	134	70.5	987	0.04	0.6	133	3735	4.45	137.8	70.2	983	0.71	22.7	7.74	32.26	3.11		<1	<1
W5B	-15.5	11/4/02	934				4.29	133	76.6	1072	0.02	0.3	141	3949	4.48	138.8	74.2	1039	0.89	22.5	7.74	31.88	3.27		<1	<1
W5B	-15.5	12/17/02	955				4.33	134	70.6	988	0.03	0.4	129	3612	4.45	137.8	67.3	942	0.71	23.3	7.72	32.33	2.95		<1	<1
W5B	-15.5	1/21/03	1040				4.02	125	74.1	1038	0.02	0.3	135	3786	4.29	132.9	83.5	1170	1.25	22.2	7.74	32.20	3.63		<1	<1
W5B	-15.5	2/12/03	950				4.42	137	65.3	915	0.03	0.4	137	3851	4.64	143.7	76.4	1070	0.64	23.1	7.74	32.85	2.84		<1	<1
W5B	-15.5	3/19/03	953				4.68	145	75.9	1063	0.04	0.6	129	3623	4.76	147.4	100	1401	0.59	23.0	7.77	32.30	3.22		<1	<1
W5B	-15.5	4/28/03	935				4.70	146	72.9	1021	0.32	4.5	122	3421	4.88	151.2	83.0	1163	0.60	22.5	7.81	32.07	3.67		<1	<1
W5B	-15.5	5/12/03	913				4.58	142	71.8	1006	0.10	1.4	126	3536	4.75	147.1	77.6	1087	0.58	22.3	7.82	32.08	3.76		<1	<1
W5B	-15.5	6/3/03	928				4.67	145	72.3	1013	0.02	0.3	120	3362	4.80	148.7	81.1	1135	0.59	22.4	7.75	32.08	3.36		19	483

NELHA Water Quality Laboratory

Well 5B Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W5B	-15.5	7/29/03	954				4.11	127	59.9	838	0.06	0.8	142	3977	4.33	134.1	65.7	921		22.7	7.77	32.59	3.75		na	na
W5B	-15.5	8/26/03	949				4.52	140	66.6	933	0.06	0.8	129	3620	4.68	145.0	76.4	1070		21.3	7.74	31.63	3.77		<1	<1
W5B	-15.5	9/15/03	931				4.43	137	63.8	894	0.02	0.3	125	3516	4.54	140.6	75.0	1050		21.7	7.76	31.54	3.69		<1	<1
W5B	-15.5	10/6/03	913				4.66	144	67.1	940	0.07	1.0	126	3533	4.78	148.1	73.5	1030		21.1	7.74	31.67	NA		<1	4
W5B	-15.5	10/28/03	1007				4.70	146	63.1	884	0.10	1.4	126	3530	4.80	148.7	70.8	992		22.3	7.74	31.59	NA		<1	<1
W5B	-15.5	11/14/03	1316																	22.2			3.71			
W5B	-15.5	12/15/03	919				4.86	151	59.5	834	0.06	0.8	124	3469	5.03	155.8	63.2	886		21.8	7.74	31.72	3.41		<1	<1
W5B	-15.5	1/26/04	924				4.80	149	63.1	884	0.10	1.4	130	3640	5.00	154.9	65.5	917		21.5	7.76	31.45	3.52		<1	<1
W5B	-15.5	2/5/04	923				4.84	150	69.1	968	0.20	2.8	132	3716	5.02	155.5	73.2	1026		21.2	7.76	31.49	3.98		<1	<1
W5B	-15.5	3/2/04	928				4.82	149	63.7	892	0.30	4.2	125	3516	5.04	156.1	76.3	1069		21.6	7.78	31.59	3.63		<1	<1
W5B	-15.5	4/20/04	923				4.78	148	82.4	1155	0.05	0.7	120	3376	4.80	148.7	90.5	1268		21.2	7.78	31.29	4.35		<1	1
W5B	-15.5	5/11/04	838				4.70	146	74.9	1049	0.30	4.2	120	3381	4.70	145.6	79.6	1115		22.0	7.81	30.56	n/a		1	3
W5B	-15.5	5/12/04	1005																	21.4			4.36		na	na
W5B	-15.5	6/2/04	857				4.74	147	72.5	1015	0.18	2.5	121	3407	4.82	149.3	74.3	1040		21.5	7.76	30.50	4.29		<1	2
W5B	-15.5	7/14/04	929				4.38	136	80.5	1127	0.20	2.8	123	3466	4.40	136.3	89.0	1246		21.8	7.79	30.29	4.49		<1	<1
W5B	-15.5	8/23/04	940				4.46	138	81.9	1147	0.39	5.5	123	3460	4.50	139.4	86.0	1205		21.2	7.78	30.15	4.34		<1	1792
W5B	-15.5	9/2/04	946				4.44	138	80.7	1131	0.13	1.8	124	3494	4.46	138.1	84.1	1179		20.8	7.78	30.09	4.44		<1	2640
W5B	-15.5	10/4/04	900				4.42	137	79.4	1112	0.19	2.7	118	3314	4.70	145.6	83.3	1167		22.7	7.76	30.26	4.41		<1	232
W5B	-15.5	11/23/04	908				4.50	139	70.7	990	0.06	0.8	129	3620	4.72	146.2	105	1474		22.7	7.78	30.29	4.06		<1	342
W5B	-15.5	12/8/04	855				4.48	139	71.9	1008	0.10	1.4	127	3553	4.58	141.9	89.0	1246		21.6	7.79	30.36	4.33		<1	47
W5B	-15.5	1/18/05	908				4.42	137	71.0	994	0.08	1.1	136	3820	4.6	142.5	76.1	1066		21.8	7.85	31.52	4.11		<1	127
W5B	-15.5	2/10/05	855				4.44	138	72.4	1014	0.27	3.8	131	3682	4.58	141.9	101	1410		21.5	7.84	31.35	4.14		<1	95
W5B	-15.5	3/22/05	902				4.68	145	84.3	1181	0.14	2.0	131	3665	4.94	153.0	92.4	1294	0.72	21.0	7.84	31.28	4.30		<1	<1
W5B	-15.5	4/20/05	853				4.38	136	75.8	1061	0.11	1.5	128	3589	4.54	140.6	80.8	1132		20.9	7.85	31.32	4.44		<1	13
W5B	-15.5	5/25/05	915				4.22	131	79.6	1115	0.15	2.1	131	3682	4.64	143.7	91.5	1282		19.8	7.83	31.30	4.47		<1	343
W5B	-15.5	6/14/05	913				4.36	135	77.1	1080	0.12	1.7	128	3603	4.42	136.9	82.9	1161		20.9	7.82	31.21	4.52		205	460
W5B	-15.5	7/19/05	908				4.36	135	77.1	1080	0.10	1.4	124	3488	4.52	140.0	78.9	1105	0.55	21.0	7.81	31.17	4.53		<1	3
W5B	-15.5	8/3/05	938				4.48	139	73.1	1024	0.03	0.4	126	3528	4.64	143.7	76.0	1065	0.58	21.0	7.85	31.08	5.08		<1	1428
W5B	-15.5	9/22/05	901				4.34	134	64.4	902	0.13	1.8	124	3469	4.5	139.4	73.1	1023	0.53	21.9	7.84	31.40	4.85		<1	218
W5B	-15.5	10/19/05	915				4.22	131	74.1	1038	0.14	2.0	120	3356	4.42	136.9	79.3	1111		21.6	7.82	31.16	4.69		<1	1
W5B	-15.5	11/8/05	900				4.08	126	75.3	1055	0.08	1.1	108	3030	4.28	132.6	82.7	1158		22.4	7.78	31.42	3.96		<1	2
W5B	-15.5	12/22/05	834				3.80	118	70.3	985	0.29	4.1	123	3457	3.96	122.7	75.3	1055		22.6	7.70	31.71	3.59		<1	<1
W5B	-15.5	1/31/06	859				3.72	115	67.9	951	0.19	2.7	124	3483	3.84	118.9	71.9	1007		22.5	7.66	31.95	2.87		<1	1
W5B	-15.5	2/16/06	854				3.84	119	69.6	975	0.20	2.8	124	3477	4.12	127.6	67.2	941	0.60	21.9	7.71	31.66	3.44		<1	1
W5B	-15.5	3/22/06	845				3.63	112	63.7	892	0.27	3.8	120	3370	3.85	119.2	69.8	978	0.61	22.1	7.63	32.00	1.44		<1	<1
W5B	-15.5	4/27/06	925				3.61	112	69.7	976	0.10	1.4	108	3033	3.71	114.9	66.6	932	0.62	22.2	7.65	32.05	3.46		<1	<1
W5B	-15.5	5/24/06	948				3.27	101	63.2	885	<0.05	0.0	112	3146	3.56	110.3	61.9	867	0.64	22.9	7.65	32.11	3.28		<1	<1
W5B	-15.5	6/28/06	932				3.30	102	64.0	896	0.35	4.9	110	3089	3.41	105.6	61.8	865	0.59	22.7	7.61	32.33	2.46		<1	2
W5B	-15.5	7/19/06	910				3.25	101	67.1	940	0.25	3.5	101	2837	3.35	103.8	56.0	784	0.61	23.5	7.54	32.28	2.69		1	17
W5B	-15.5	8/9/06	932				3.15	98	64.2	899	0.14	2.0	109	3061	3.38	104.7	59.6	835	0.62	24.7	7.59	32.26	2.53		<1	1
W5B	-15.5	9/20/06	943				3.23	100	57.5	805	0.24	3.4	107	3005	3.50	108.4	54.2	759	0.63	23.5	7.56	32.40	2.07		<1	>5,000
W5B	-15.5	10/25/06	938				3.36	104	49.3	691	0.34	4.8	108	3033	3.55	110.0	46.4	650	0.74	25.1	7.51	32.78	3.15		<1	688
W5B	-15.5	11/29/06	935				3.58	111	54.4	762	0.29	4.1	104	2921	3.73	115.5	50.1	701	0.70	24.5	7.52	32.60	1.92		<1	3
W5B	-15.5	12/13/06	939				3.52	109	59.2	829	0.24	3.4	103	2893	3.71	114.9	52.7	738	0.60	24.7	7.53	32.61	1.76		<1	1
W5B	-15.5	1/10/07	925				3.87	120	59.6	835	0.26	3.6	106	2977	3.95	122.3	63.1	883	0.63	23.4	7.54	32.41	2.10		<1	<1
W5B	-15.5	2/21/07	1005				3.62	112	61.1	856	0.43	6.0	107	3005	3.82	118.3	65.4	916	0.60	23.3	7.58	32.16	2.69		<1	<1
W5B	-15.5	3/7/07	956				3.64	113	63.2	885	0.25	3.5	110	3089	3.77	116.8	65.6	918	0.64	22.8	7.61	32.00	2.76		<1	<1
W5B	-15.5	4/19/07	935				3.88	120	69.2	969	0.24	3.4	110	3089	4.06	125.8	59.8	837	0.52	23	7.66	31.79	2.72		<1	<1
W5B	-15.5	5/2/07	942				3.89	120	63.3	887	0.27	3.8	110	3089	4.17	129.2	61.2	857	0.54	22.2	7.64	31.84	2.87		<1	1
W5B	-15.5	6/20/07	946				3.90	121	60.5	848	0.19	2.7	107	3005	4.07	126.1	n/a	n/a		22.9	7.66	32.13	2.77		<1	15

NELHA Water Quality Laboratory

Well 5B Data Table

June 1989 - December 2014

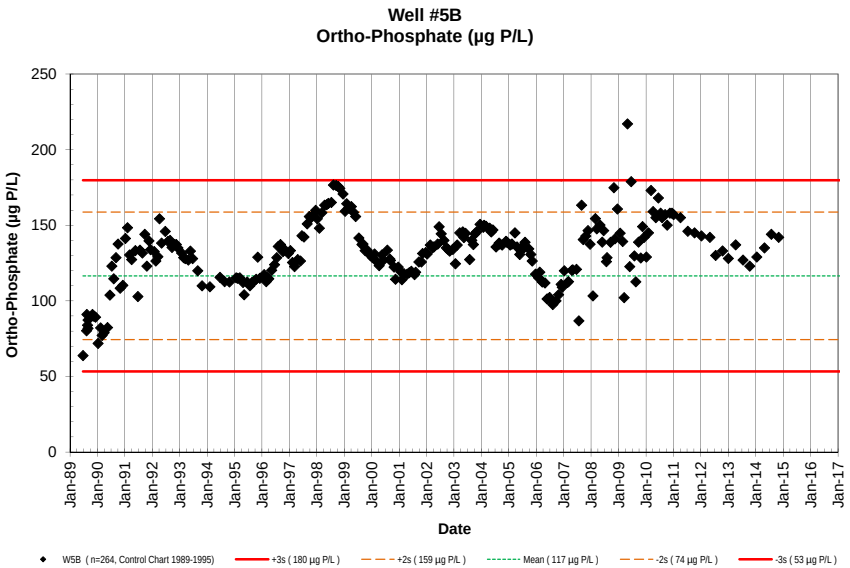
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W5B	-15.5	7/23/07	1143	-3.22	0.52	Flood	2.80	87	31.9	447	0.04	0.5	59	1663	3.09	95.7	33.6	471.0		24.3	7.49	31.34	2.54			
W5B	-15.5	8/27/07	1417	-2.82	0.52	Flood	5.27	163	80.2	1123	0.15	2.1	113	3164	4.79	148.5	79.6	1114.8		21.7	7.61	31.07	3.13			
W5B	-15.5	9/18/07	1552	-3.07	0.24	Ebb	4.54	141	73.2	1026	1.26	18	118	3313	4.69	145.3	75.2	1052.9		20.1	7.63	31.15	3.71			
W5B	-15.5	10/23/07	1430	-2.87	0.52	High	4.61	143	77.5	1086	0.29	4.1	115	3233	4.58	141.7	71.8	1006.0		19.8	7.67	30.92	4.04			
W5B	-15.5	11/20/07	1430	-3.10	0.38	Ebb	4.73	146	77.3	1082	0.06	0.8	121	3390	4.33	134.1	82.4	1154.2		19.4	7.73	30.93	3.85			
W5B	-15.5	12/19/07	1300	-3.22	0.30	High	4.44	137	87.7	1228	0.90	13	104	2924						19.7	7.58	30.65	2.75			
W5B	-15.5	1/25/08	1051	-3.05	0.24	Ebb	3.34	103	46.8	656	0.46	6.5	86	2423						20.0	7.28	30.94	2.63			
W5B	-15.5	2/26/08	1215	-3.43	0.03	Ebb	4.98	154	90.3	1265	2.27	32	117	3291						19.6	7.50	31.20	3.02			
W5B	-15.5	3/17/08	1343	-2.95	0.21	Flood	4.77	148	71.9	1007	0.06	0.8	98	2759						19.8	7.61	31.30	3.05			
W5B	-15.5	4/29/08	937	-3.35	0.09	Flood	4.85	150	79.5	1113	0.09	1.2	118	3312						19.4	7.53	31.05	3.67			
W5B	-15.5	5/28/08	1008	-3.10	0.18	Flood	4.48	139	74.0	1037	0.13	1.8	136	3833						19.9	7.66	31.42	3.35			
W5B	-15.5	6/17/08	1057	-3.28	0.00	Flood	4.73	146	76.9	1077	0.39	5.4	117	3273						19.8	7.48	31.11	4.95	0.12		
W5B	-15.5	7/22/08	1126	-3.25	0.30	Ebb	4.06	126	83.9	1175	0.42	5.9	118	3307						19.1	7.59	31.02	4.64			
W5B	-15.5	7/31/08	950	-3.58	-0.09	Low	4.15	129	81.4	1140	0.26	3.6	117	3286						21.4	7.51	30.69	2.45			
W5B	-15.5	9/16/08	1037	-2.94	0.12	Ebb	4.48	139	77.6	1087	1.08	15	120	3363						19.7	7.48	30.95	3.92			
W5B	-15.5	10/31/08	924	-3.22	0.30	Ebb	5.64	175	86.0	1205	0.25	3.5	119	3348						20.2	7.37	31.05	3.19			
W5B	-15.5	11/14/08	1149	-3.47	0.12	Ebb	4.55	141	88.4	1238	0.24	3.4	116	3254						20.7	7.70	31.01	2.94	0.35		
W5B	-15.5	12/16/08	1000	-3.15	0.61	Ebb	5.19	161	95.2	1334	0.11	1.5	127	3558						20.3	7.67	31.14	2.82			
W5B	-15.5	1/23/09	1438	-3.41	0.15	High	4.67	145	99.0	1386	0.82	12	109	3050						20.9	7.75	31.51	2.82	0.10		
W5B	-15.5	2/24/09	1554	-3.25	0.30	Flood	4.49	139	47.6	667	0.30	4.2	114	3197						20.3	7.62	31.51	2.84	0.08		
W5B	-15.5	3/16/09	1542	-3.52	0.03	Low	3.30	102	82.0	1148	0.13	1.8	94	2632						21.3	7.55	31.30	2.84	0.19		
W5B	-15.5	4/30/09	1540	-3.57	0.09	Flood	7.01	217	97.4	1364	0.58	8.1	121	3392						21.4	7.68	31.32	1.19			
W5B	-15.5	5/29/09	955	-3.33	0.21	High	3.96	123	95.8	1341	0.17	2.4	94	2638						18.6	7.76	31.59	2.30	0.04		
W5B	-15.5	6/18/09	1412	-2.99	0.61	High	5.77	179	77.1	1080	0.28	3.9	97	2737						18.6	7.72	31.30	3.18	0.03		
W5B	-15.5	7/31/09	1113	-3.07	0.52	Flood	4.19	130	94	1314	0.14	2.0	93	2601						18.8	7.69	31.44	2.82	0.07		
W5B	-15.5	8/19/09	1111	-3.49	0.09	Flood	3.64	113	80	1118	1.21	17.0	71	1997						18.9	7.61	31.45	2.26	0.08		
W5B	-15.5	9/24/09	941	-3.09	0.61	High	4.48	139	87	1215	0.23	3.2	109	3063						19.5	8.00	31.54	2.93	0.07		
W5B	-15.5	10/23/09	1411	-3.45	0.21	Ebb	4.15	128	63	884	0.88	12.3	93	2615						19.6	7.56	31.40	3.38	0.06		
W5B	-15.5	11/17/09	1026	-3.64	0.21	Ebb	4.81	149	76	1065	0.87	12.2	132	3711						19.4	7.55	31.24	3.06	0.03		
W5B	-15.5	12/8/09	1014	-3.13	0.52	Ebb	4.58	142	84	1173	1.12	15.7	147	4127						19.6	7.61	31.13	2.82	0.04		
W5B	-15.5	1/6/10	942	-3.13	0.40	Ebb	4.16	129	77	1082	1.14	16	138	3869						19.9	7.50	31.10	3.12	0.13		
W5B	-15.5	2/2/10	924	-3.47	0.24	Ebb	4.68	145	99	1382	0.71	10	126	3531						19.6	7.55	31.11	2.58	0.08		
W5B	-15.5	3/10/10	903	-3.60	0.09	Low	5.59	173	93	1303	0.43	6	146	4089						20.2	7.54	30.85	3.06	0.03		
W5B	-15.5	4/6/10	1515	-3.51	0.09	Ebb	5.13	159	86	1198	0.93	13	144	4048						20.6	7.54	31.02	3.07	0.10		
W5B	-15.5	5/12/10	844	-3.64	-0.06	Low	5.00	155	76	1060	1.00	14.0	130	3644						19.3	7.59	31.01	2.88	0.04		
W5B	-15.5	6/16/10	1109	-3.54	0.09	Ebb	5.42	168	88	1237	0.79	11.0	150	4225						20.2	7.53	31.05	2.71	0.49		
W5B	-15.5	7/14/10	842	-3.33	0.18	Ebb	5.10	158	95	1334	0.07	1.0	170	4762						18.6	7.58	31.11	3.10	0.10		
W5B	-15.5	8/3/10	1732	-3.24	0.12	Ebb	5.00	155	81	1131	0.51	7.1	144	4032						18.8	7.62	31.23	2.93	0.27		
W5B	-15.5	9/13/10	1519	-3.33	0.24	Ebb	5.07	157	77	1074	0.25	3.5	147	4129						19.5	7.51	31.41	3.16	0.12		
W5B	-15.5	10/11/10	1023	-3.11	0.46	Ebb	4.84	150	74	1034	0.06	0.9	146	4100						19.9	7.62	31.37	3.30	0.23		
W5B	-15.5	11/15/10	1145	-3.11	0.43	High	5.10	158	73	1021	0.12	1.7	143	4003						20.2	7.59	31.78	3.30	0.12		
W5B	-15.5	12/13/10	859	-3.10	0.40	High	5.10	158	78	1093	0.14	1.9	145	4071						20.2	7.61	31.54	2.79	0.12		
W5B	-15.5	1/3/11	1538	-3.45	0.21	High	5.07	157	80	1121	0.15	2.1	142	3994						20.2	7.53	31.38	2.53	0.09		
W5B	-15.5	4/4/11	1429	-3.20	0.30	Flood	5.00	155	91	1281	0.11	1.6	129	3636						19.2	7.61	31.02	3.25	0.06		
W5B	-15.5	7/11/11	1317	-3.02	0.67	Flood	4.71	146	79	1111	0.19	2.6	129	3616						19.7	7.55	31.53	4.20	0.05		
W5B	-15.5	10/10/11	1228	-3.35	0.30	Flood	4.68	145	60	842	0.05	0.7	125	3502						20.9	7.59	32.19	3.95	0.09		
W5B	-15.5	1/9/12	1303	-3.49	0.03	Low	4.62	143	76	1068	0.04	0.5	123	3453						19.5	7.60	31.38	3.56	0.07		
W5B	-15.5	4/30/12	1421	-3.17	0.27	Ebb	4.58	142	67	937	0.06	0.8	130	3645						19.9	7.56	31.89	3.27	0.02		
W5B	-15.5	7/17/12	1611	-2.87	0.73	High	4.20	130	69	965	0.16	2.3	134	3770						20.0	7.57	31.97	3.41	0.05		
W5B	-15.5	10/15/12	1243	-3.40	0.12	Flood	4.29	133	67	940	0.17	2.4	128	3601						20.3	7.64	32.05	3.41	0.05		
W5B	-15.5	1/1/13	1331	-3.29	0.24	Ebb	4.13	128	79	1106	0.23	3.2	170	4787						19.5	7.63	31.85	3.81	0.02		
W5B	-15.5	4/8/13	1140	-3.53	0.09	Flood	4.42	137	89	1245	0.24	3.4	129	3614						18.4	7.65	31.48	4.04	0.02		
W5B	-15.5	7/16/13	1525	-3.24	0.37	Ebb	4.10	127	71	993	0.14	1.9	130	3638						21.2	7.64	32.04	3.51	0.12		
W5B	-15.5	10/14/13	1532	-3.21	0.43	Ebb	3.97	123	61	855	0.44	6.2	124	3489						21.9	7.78	32.32	4.33	0.02		
W5B	-15.5	1/14/14	1422	-3.19	0.21	Flood	4.16	129	80.2	1123	0.18	2.5	127	3565						21.3	7.69	30.45	2.32	0.02		
W5B	-15.5	4/28/14	1640	-2.98	0.549	High	4.36	135	114	1594	0.50	7.0	119	3348						19.3	7.73	31.08	3.56	0.03		

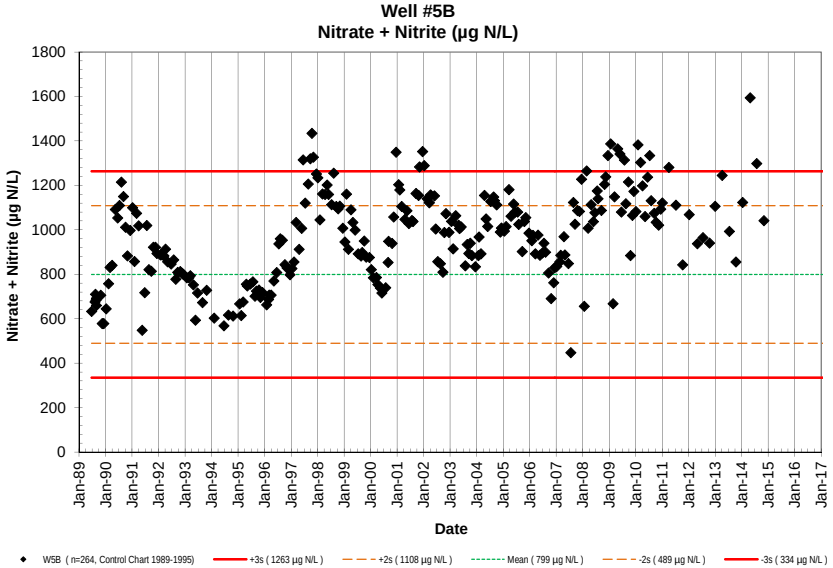
NELHA Water Quality Laboratory

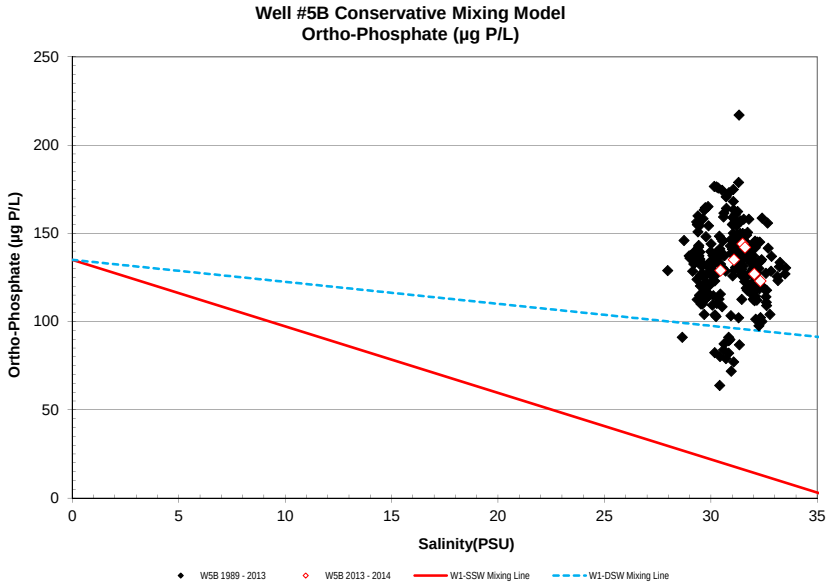
Well 5B Data Table

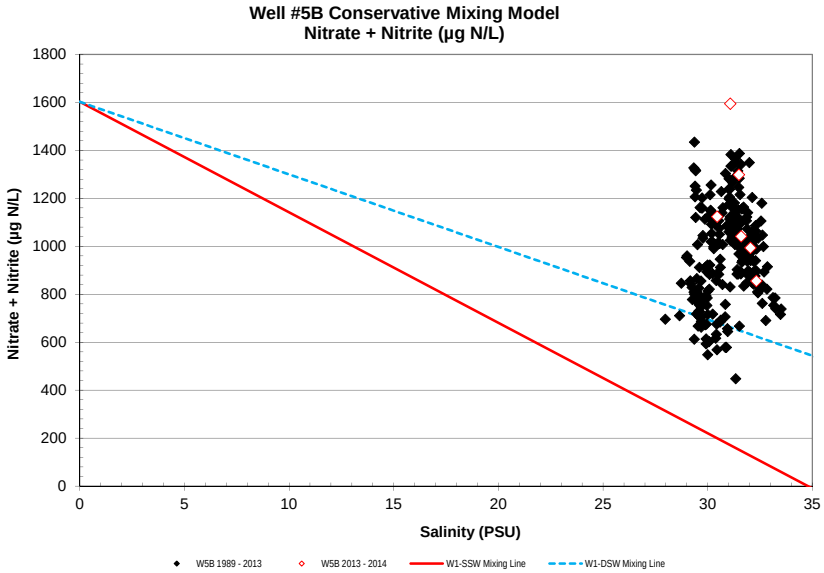
June 1989 - December 2014

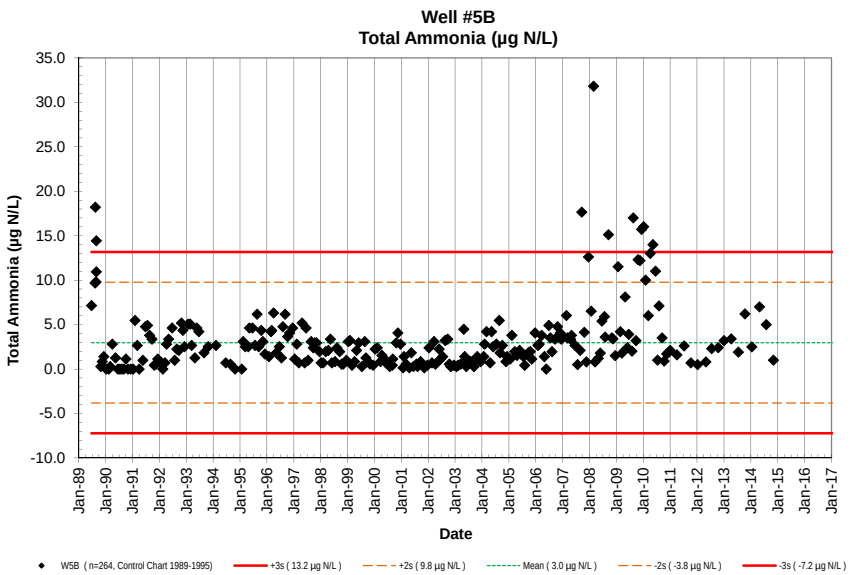
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W5B	-15.5	7/28/14	1429	-3.32	0.381	Flood	4.65	144	93	1298	0.36	5.0	121	3389						19.8	7.66	31.49	4.09	0.06		
W5B	-15.5	11/3/14	1109	-3.15	0.38	Flood	4.58	142	74	1041	0.07	1.0	116	3261						21.0	7.69	31.60	3.19	0.08		
W5B	-15.5	1/1/15																								
W5B	-15.5	4/1/15																								

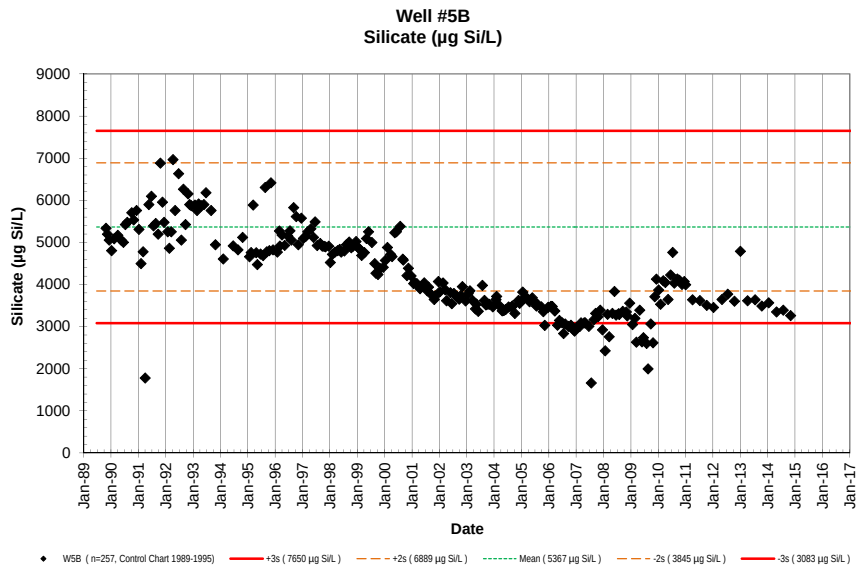

Well #5B
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W5B (n=264, Control Chart 1989-1995)
+3s (180 µg P/L)
+2s (159 µg P/L)
Mean (117 µg P/L)
-2s (74 µg P/L)
-3s (53 µg P/L)

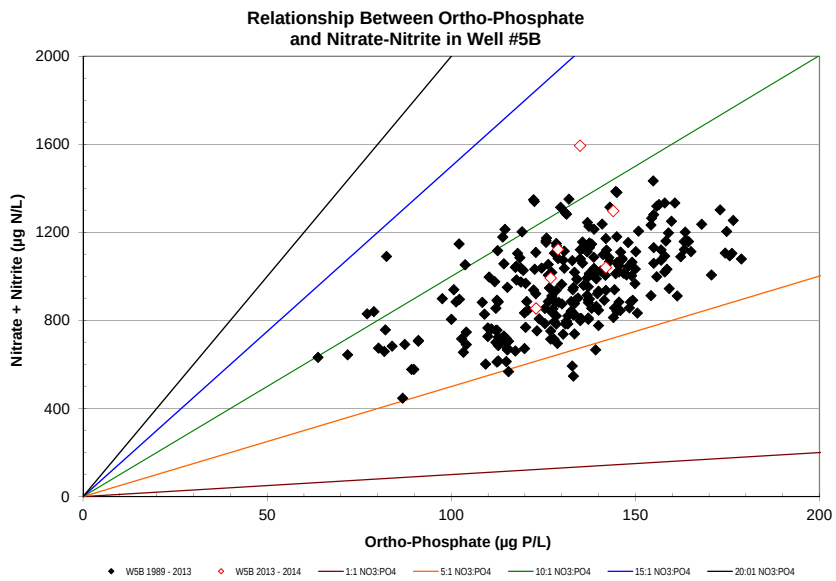

Well #5B
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W5B (n=264, Control Chart 1989-1995)
+3s (1263 µg N/L)
+2s (1108 µg N/L)
Mean (799 µg N/L)
-2s (489 µg N/L)
-3s (334 µg N/L)

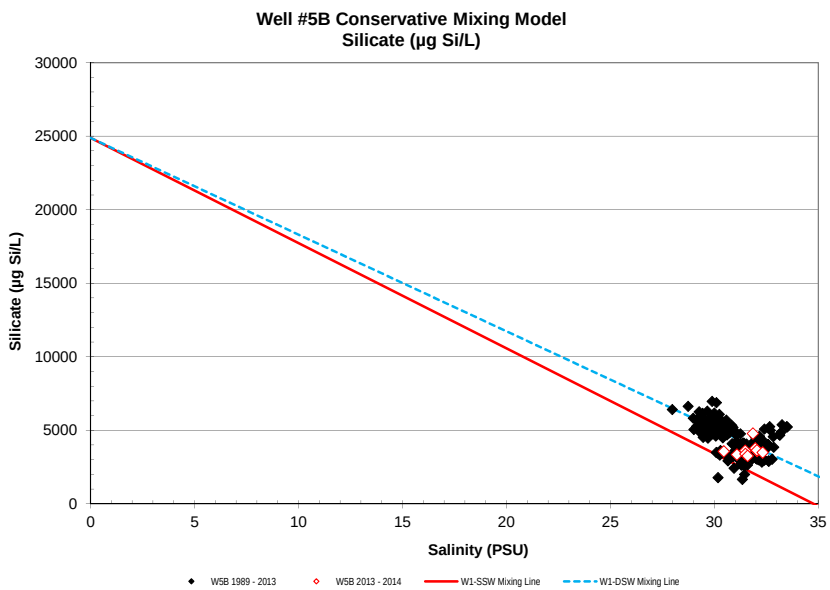

Well #5B Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity(PSU)
W5B 1989 - 2013
W5B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

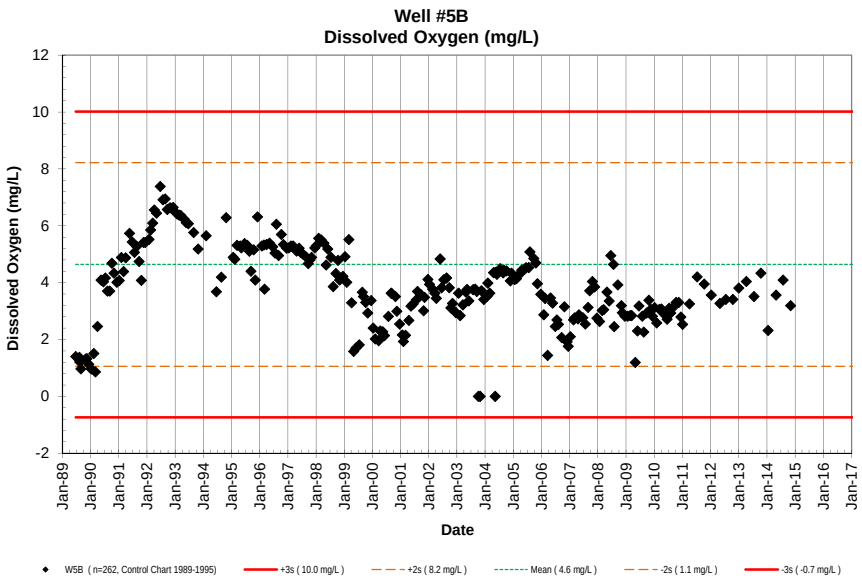

Well #5B Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W5B 1989 - 2013
W5B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

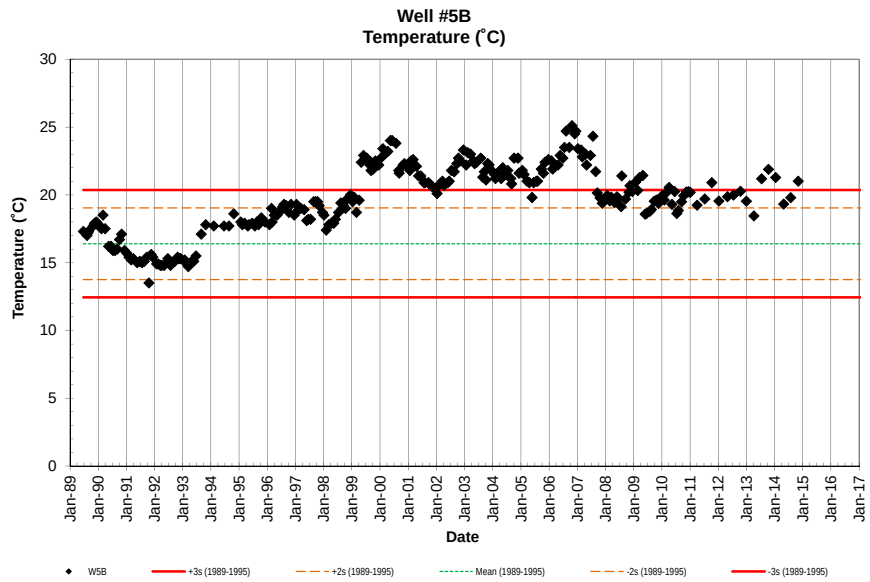

Well #5B
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W5B (n=264, Control Chart 1989-1995)
+3s (13.2 µg N/L)
+2s (9.8 µg N/L)
Mean (3.0 µg N/L)
-2s (-3.8 µg N/L)
-3s (-7.2 µg N/L)

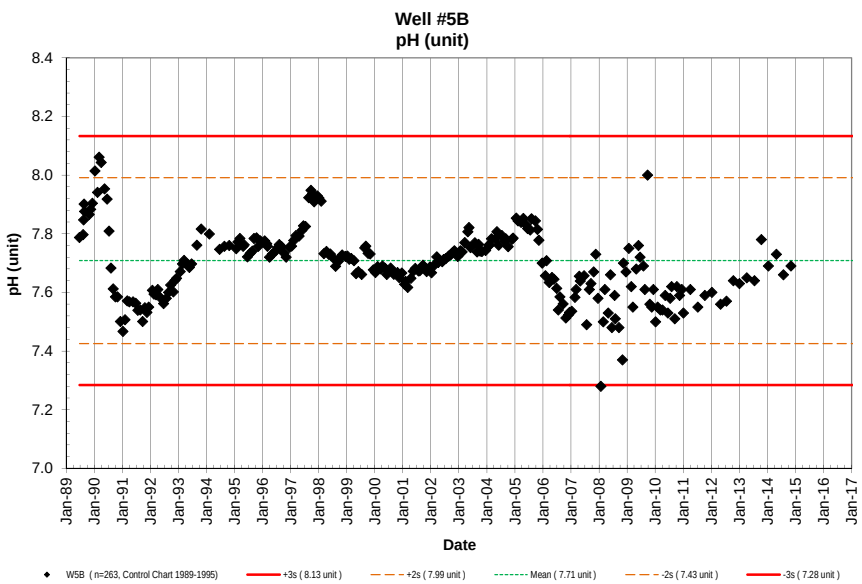

Well #5B
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W5B (n=257, Control Chart 1989-1995)
+3s (7650 µg Si/L)
+2s (6889 µg Si/L)
Mean (5367 µg Si/L)
-2s (3845 µg Si/L)
-3s (3083 µg Si/L)

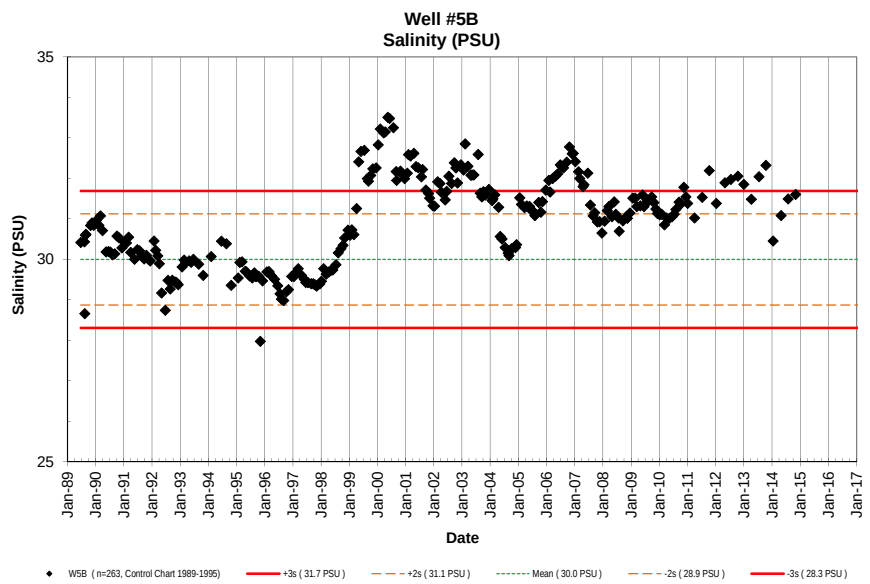

Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #5B
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W5B 1989 - 2013
W5B 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

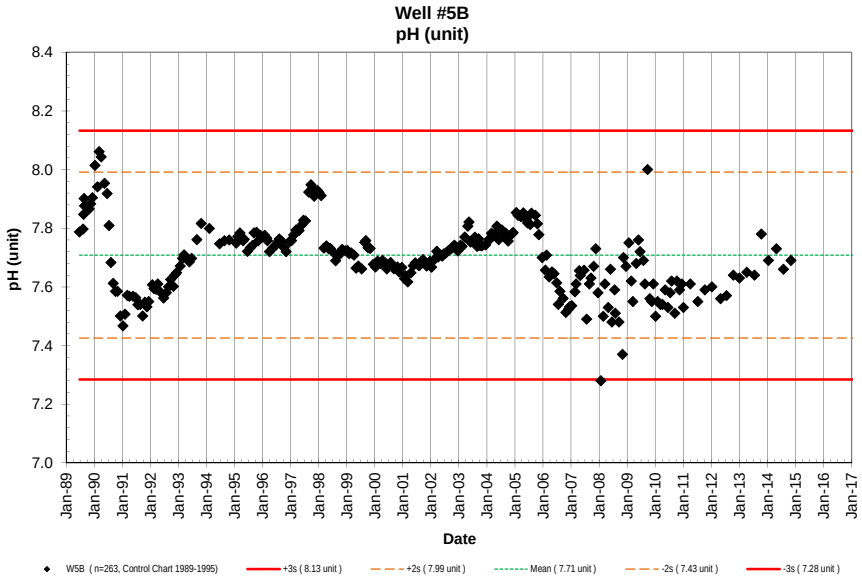

Well #5B Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W5B 1989 - 2013
W5B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

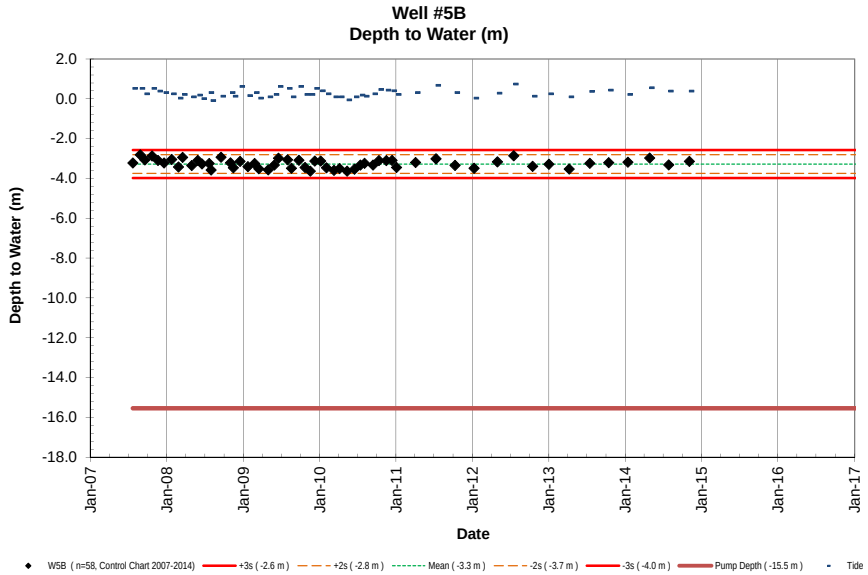

Well #5B
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W5B (n=262, Control Chart 1989-1995)
+3s (10.0 mg/L)
+2s (8.2 mg/L)
Mean (4.6 mg/L)
-2s (1.1 mg/L)
-3s (-0.7 mg/L)


Well #5B
Temperature (˚C)
Temperature (˚C)
Date
W5B
+3s (1989-1995)
+2s (1989-1995)
Mean (1989-1995)
-2s (1989-1995)
-3s (1989-1995)


Well #5B
pH (unit)
pH (unit)
Date
W5B (n=263, Control Chart 1989-1995)
+3s (8.13 unit)
+2s (7.99 unit)
Mean (7.71 unit)
-2s (7.43 unit)
-3s (7.28 unit)


Well #5B
Salinity (PSU)
Salinity (PSU)
Date
W5B (n=263, Control Chart 1989-1995)
+3s (31.7 PSU)
+2s (31.1 PSU)
Mean (30.0 PSU)
-2s (28.9 PSU)
-3s (28.3 PSU)


Well #5B
pH (unit)
pH (unit)
8.4
8.2
8.0
7.8
7.6
7.4
7.2
7.0
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W5B (n=263, Control Chart 1989-1995)
+3s (8.13 unit)
+2s (7.99 unit)
Mean (7.71 unit)
-2s (7.43 unit)
-3s (7.28 unit)


Well #5B
Depth to Water (m)
Depth to Water (m)
2.0
0.0
-2.0
-4.0
-6.0
-8.0
-10.0
-12.0
-14.0
-16.0
-18.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W5B (n=58, Control Chart 2007-2014)
+3s (-2.6 m)
+2s (-2.8 m)
Mean (-3.3 m)
-2s (-3.7 m)
-3s (-4.0 m)
Pump Depth (-15.5 m)
Tide

NELHA Water Quality Laboratory

Well 6 Data Table

June 1989 - October 2013

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6	-12.5	6/23/89					2.94	91	58.0	812	0.61	8.5								18.7	7.814	29.918	4.66		NA	NA
W6	-12.4968	8/9/89	1502				3.05	94	61.7	865	0.50	7.0								17.6	7.628	29.742	6.59		<1	NA
W6	-12.4968	8/15/89	1120				3.78	117	75.1	1052	0.67	9.4								17.3	7.529	29.041	4.97		<1	NA
W6	-12.4968	8/22/89	1100				3.42	106	72.3	1013	0.50	7.0								16.7	7.651	29.264	4.74		<1	NA
W6	-12.4968	8/28/89	1340				3.23	100	86.9	1216	0.33	4.6								16.5	7.496	28.792	3.99		<1	NA
W6	-12.4968	8/28/89	1340				4.15	129	86.9	1216	0.45	6.3													NA	NA
W6	-12.4968	10/27/89	1110				3.36	104	70.3	985	0.03	0.4	223	6263	3.61	111.8	70.3	985	0.30	18.2	7.742	30.281	4.83		<1	NA
W6	-12.4968	11/15/89	830				3.06	95	67.7	948	0.06	0.8	215	6038	3.31	102.5	73.5	1029	1.58	18.8	7.616	30.581	7.06		<1	NA
W6	-12.4968	12/8/89	1115				3.12	97	61.2	857	0.10	1.4	211	5926	3.23	100.0	70.4	986		18.6	7.836	30.535	4.94		<1	NA
W6	-12.4968	1/10/90	1012				2.15	67	77.7	1088	0.00	0.0	220	6179	2.34	72.5	78.7	1102	0.88	18.7	7.993	30.453	5.27		<1	NA
W6	-12.4968	2/13/90	1100				2.64	82	73.7	1032	0.00	0.0	196	5505	2.90	89.8	75.4	1056	1.32	18.7	7.931	30.339	5.42		<1	NA
W6	-12.4968	3/5/90	1328				2.16	67	87.3	1223	0.00	0.0	196		2.50	77.4	87.6	1227	1.09	18.4	8.040	30.157	5.52		<1	NA
W6	-12.4968	4/4/90	935				2.06	64	71.3	999	0.00	0.0	171	4803	2.21	68.5	72.5	1015	1.18	17.8	8.109	29.963	6.59		<1	NA
W6	-12.4968	5/16/90	1137				2.46	76	60.8	852	0.00	0.0	177	4971	2.60	80.5	63.3	887	0.74	16.3	7.955	29.269	7.47		<1	NA
W6	-12.4968	6/17/90	1500				3.85	119	68.3	957	0.00	0.0	199	5589	3.88	120.2	71.8	1006	1.46	16.6	7.791	29.028	6.46		<1	NA
W6	-12.4968	7/12/90	1157				5.00	155	80.5	1128	0.00	0.0	204	5729	5.17	160.1	83.1	1163	0.86	16.1	7.592	29.528	5.67		<1	NA
W6	-12.4968	8/7/90	1135				4.10	127	83.0	1163	0.56	7.8	204	5729	4.60	142.5	83.6	1171	1.00	15.8	7.585	29.212	5.92		<1	NA
W6	-12.4968	9/5/90	1326				4.79	148	84.7	1186	0.00	0.0			4.79	148.4	86.9	1217	0.48	15.7	7.443	28.690	5.92		<1	NA
W6	-12.4968	10/4/90	1412				5.04	156	82.7	1158	0.10	1.4	238	6684	5.92	183.4	83.9	1176	0.85	15.5	7.390	28.473	5.73		1	NA
W6	-12.4968	10/31/90	1117				4.01	124	72.6	1017	0.00	0.0	236	6628	5.31	164.5	93.1	1304	0.64	15.4	7.347	28.853	5.41		<1	NA
W6	-12.4968	12/7/90	1336				4.13	128	86.7	1215	0.00	0.0	211	5926	4.67	144.6	90.0	1260	0.56	15.5	7.450	29.000	5.65		<1	NA
W6	-12.4968	1/9/91	830				4.10	127	87.0	1219	0.00	0.0	199	5589	4.17	129.2	98.0	1372	0.67	14.8	7.515	29.261	5.45		<1	NA
W6	-12.4968	2/5/91	922				4.31	133	66.7	934	0.39	5.5	180	5055	4.41	136.6	67.6	947	0.78	15.1	7.540	29.117	6.16		<1	NA
W6	-12.4968	3/6/91	917				3.94	122	85.4	1196	0.13	1.8	211	5926	3.95	122.3	86.2	1207	0.80	14.4	7.576	29.135	6.14		<1	NA
W6	-12.4968	4/2/91	958				3.42	106	78.5	1100	0.50	7.0	196	5505	3.83	118.6	80.9	1133	0.81	14.4	7.556	28.962	5.87		<1	NA
W6	-12.4968	5/21/91	915				4.23	131	44.7	626	0.07	1.0	357	10027	4.43	137.2	46.5	651	0.70	14.3	7.546	29.130	5.41		<1	NA
W6	-12.4968	6/25/91	908				3.16	98	57.6	807	0.40	5.6	408	11459	3.54	109.6	59.2	829	0.64	14.3	7.587	29.191	6.03		<1	<1
W6	-12.4968	7/23/91	1011				4.24	131	66.5	931	0.35	4.9	213	5982	4.69	145.3	68.3	957	0.64	14.3	7.548	29.285	6.41		<1	<1
W6	-12.4968	8/22/91	938				4.17	129	71.8	1006	0.19	2.7	216	6066	4.41	136.6	73.8	1034	0.91	14.6	7.553	29.193	6.30		<1	<1
W6	-12.4968	9/23/91	942				4.56	141	63.4	888	0.37	5.2	216	6066	4.70	145.6	66.3	929	1.62	14.8	7.522	29.082	5.81		<1	<1
W6	-12.4968	10/22/91	1054				4.43	137	62.7	878	0.00	0.0	285	8004	4.48	138.8	65.9	923	0.65	15.0	7.513	28.950	6.85		<1	<1
W6	-12.4968	11/19/91	1041				4.76	147	60.6	849	0.06	0.8	244	6853	4.82	149.3	62.3	873	0.59	14.8	7.520	28.829	7.38		<1	<1
W6	-12.4968	12/10/91	1028				4.47	138	58.8	824	0.08	1.1	223	6263	4.53	140.3	61.2	857	0.67	14.9	7.550	29.050	6.89		<1	<1
W6	-12.4968	1/28/92	1006				4.54	141	60.2	843	0.00	0.0	217	6095	4.61	142.8	61.6	863	0.92	15.0	7.592	29.150	6.90		<1	<1
W6	-12.4968	2/18/92	939				4.17	129	58.4	818	0.00	0.0	201	5645	4.39	136.0	60.6	849	0.75	14.6	7.588	29.122	6.95		<1	<1
W6	-12.4968	3/16/92	1039				4.14	128	53.7	752	0.00	0.0	208	5842	4.33	134.1	55.1	772	0.97	15.3	7.659	28.965	7.56		<1	<1
W6	-12.4968	4/7/92	1010				4.16	129	52.4	734	0.23	3.2	241	6769	4.23	131.0	54.8	768	0.83	15.4	7.668	29.001	8.78		<1	<1
W6	-12.4968	5/5/92	1011				4.32	134	54.4	762	0.11	1.5	230	6460	4.43	137.2	57.6	807	0.99	15.8	7.668	28.824	7.25		<1	<1
W6	-12.4968	6/22/92	959				4.17	129	53.9	755	0.28	3.9	236	6628	4.30	133.2	59.1	828	1.36	14.8	7.650	28.786	6.93		<1	2
W6	-12.4968	7/28/92	938				4.12	128	59.6	834	0.07	1.0	206	5786	4.22	130.7	62.0	868	0.80	15.5	7.648	28.903	7.59		<1	<1
W6	-12.4968	8/25/92	913				4.16	129	57.5	806	0.18	2.5	247	6937	4.32	133.8	62.0	868	1.06	15.3	7.644	28.936	7.49		<1	<1
W6	-12.4968	9/21/92	936				4.06	126	58.0	812	0.13	1.8	220	6179	4.16	128.9	60.4	846	0.77	15.1	7.654	29.036	7.58		<1	9
W6	-12.4968	10/26/92	951				4.07	126	58.2	815	0.37	5.2	252	7078	4.10	127.0	62.7	879	0.66	15.1	7.607	28.897	7.70		<1	<1
W6	-12.4968	11/16/92	1009				3.92	121	58.6	820	0.32	4.5	242	6797	4.08	126.4	63.7	892	0.67	15.1	7.614	29.039	7.65		<1	<1
W6	-12.4968	12/7/92	959				4.05	125	59.9	839	0.20	2.8	236	6628	4.22	130.7	62.9	881	0.69	15.1	7.616	29.139	7.62		<1	<1
W6	-12.4968	1/25/93	956				4.03	125	59.0	827	0.32	4.5	396	11111	4.17	129.2	64.4	901	0.69	14.9	7.656	29.019	7.34		<1	<1
W6	-12.4968	2/22/93	926				4.13	128	57.3	803	0.31	4.3	236	6614	4.18	129.5	63.8	893	0.80	15.0	7.680	29.050	6.76		<1	<1
W6	-12.4968	3/15/93	922				4.13	128	54.8	767	0.18	2.5	243	6816	4.14	128.2	57.6	807	0.70	14.9	7.698	29.090	6.74		<1	<1
W6	-12.4968	4/26/93	928				4.03	125	50.9	713	0.13	1.8	238	6684	4.13	127.9	54.6	765	0.68	15.4	7.680	29.262	6.75		<1	<1
W6	-12.4968	5/24/93	943				4.08	126	51.4	719	0.32	4.5	237	6656	4.15	128.5	57.0	798	0.61	15.4	7.680	29.145	6.67		<1	<1
W6	-12.4968	6/21/93	944				3.93	122	52.0	728	0.20	2.8	156	4381	3.98	123.3	56.5	791	0.57	15.7	7.693	29.105	7.00		<1	<1
W6	-12.4968	8/30/93	1040				3.92	121	56.3	789	0.15	2.1	246	6906	3.97	123.0	42.9	601	0.70	16.3	7.676	28.527	6.86		<1	<1
W6	-12.4968	10/25/93	930				4.04	125	57.5	805	0.12	1.7	237	6656	4.10	127.0	60.7	850	0.61	16.9	7.671	28.309	6.45		<1	<1
W6	-12.4968	2/7/94	1131				4.16	129	51.5	721	0.16	2.2	354	9942	4.18	129.5	57.4	805	0.75	16.7	7.656	28.877	5.96		<1	<1
W6	-12.4968	6/20/94	912				4.31	133	52.1	729	0.04	0.6	209	5866	4.39	136.0	62.8	879	0.67	16.7	7.609	29.044	5.74		<1	<1

NELHA Water Quality Laboratory

Well 6 Data Table

June 1989 - October 2013

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6	-12.4968	8/22/94	1023				4.49	139	52.0	728	0.05	0.7	218	6131	4.57	141.6	59.7	836	0.63	16.6	7.641	29.030	6.25		<1	<1
W6	-12.4968	10/24/94	1004				4.62	143	60.3	844	0.00	0.0	220	6184	4.69	145.3	65.7	920	0.66	17.3	7.650	28.124	6.01		<1	<1
W6	-12.4968	1/23/95	1039				4.41	137	53.9	755	0.06	0.8	207	5817	4.52	140.0	56.2	786	0.50	16.4	7.619	28.298	6.22		<1	<1
W6	-12.4968	2/13/95	1027				4.32	134	52.1	730	0.27	3.8	217	6103	4.34	134.4	56.4	790	0.57	16.2	7.612	28.358	6.15		<1	<1
W6	-12.4968	3/13/95	1104				4.29	133	55.1	772	0.13	1.8	272	7628	4.28	132.6	56.9	796	0.52	16.3	7.619	28.318	6.11		<1	<1
W6	-12.4968	4/24/95	957				3.98	123	54.5	763	0.16	2.2	221	6215	4.12	127.6	55.3	775	0.58	16.4	7.592	28.410	5.81		<1	<1
W6	-12.4968	5/8/95	952				3.99	124	55.9	783	0.32	4.5	212	5954	4.04	125.1	59.6	835	0.56	16.5	7.605	28.406	5.99		<1	<1
W6	-12.4968	6/19/95	1032				4.04	125	58.6	820	0.36	5.0	302	8476	4.09	126.7	63.8	893	0.60	16.9	7.581	28.767	6.05		<1	<1
W6	-12.4968	7/24/95	1001				3.90	121	57.5	805	0.22	3.1	218	6131	4.00	123.9	59.9	839	0.65	17.3	7.608	28.338	6.41		<1	<1
W6	-12.4968	8/21/95	1051				4.02	125	54.5	764	0.39	5.5	314	8822	4.13	127.9	69.4	972	0.60	17.2	7.599	28.240	6.29		<1	<1
W6	-12.4968	9/11/95	859				4.17	129	54.3	760	0.23	3.2	217	6093	4.20	130.1	57.2	801	0.59	16.7	7.653	28.464	6.51		<1	<1
W6	-12.4968	10/16/95	9				4.51	140	54.2	759	0.28	3.9	218	6134	4.57	141.6	57.0	799	0.80	16.8	7.697	28.514	6.27		<1	<1
W6	-12.4968	11/6/95	918				4.90	152	56.2	787	0.25	3.5	218	6111	4.93	152.7	59.9	839	0.78	16.9	7.726	28.509	6.25		<1	<1
W6	-12.4968	12/4/95	937				6.48	201	59.1	828	0.14	2.0	321	9001	6.63	205.4	71.7	1004	0.87	16.9	7.655	28.469	6.47		<1	<1
W6	-12.4968	1/29/96	1006				5.31	164	58.0	812	0.02	0.3	213	5974	5.38	166.6	68.1	954	0.59	16.9	7.654	28.628	6.15		<1	<1
W6	-12.4968	2/26/96	1009				5.27	163	68.9	965	0.23	3.2	230	6461	5.40	167.3	71.2	998	0.83	17.1	7.668	28.483	6.20		<1	<1
W6	-12.4968	3/5/96	949				5.41	168	69.9	979	0.15	2.1	212	5945	5.49	170.0	73.7	1032	0.76	17.0	7.637	28.499	6.45		<1	1
W6	-12.4968	4/1/96	1005				5.82	180	96.6	1353	0.50	7.0	215	6050	5.99	185.5	99.6	1395	0.92	16.9	7.663	28.354	6.39		<1	<1
W6	-12.4968	5/8/96	1008				6.06	188	112.9	1581	0.17	2.4	204	5721	6.20	192.0	118.3	1657	0.78	17.2	7.698	28.393	6.27		<1	<1
W6	-12.4968	6/17/96	924				6.02	186	105.2	1473	0.18	2.5	215	6030	6.00	185.8	107.3	1503	0.70	19.2	7.710	28.530	4.42		<1	<1
W6	-12.4968	7/16/96	914				5.99	186	97.7	1369	0.23	3.2	214	6002	6.26	193.9	101.3	1419	0.83	17.9	7.727	28.536	6.29		<1	<1
W6	-12.4968	8/5/96	1027				6.01	186	84.4	1183	0.35	4.9	206	5783	6.11	189.2	89.2	1249	0.78	19.0	7.743	28.754	6.15		<1	<1
W6	-12.4968	9/3/96	1006				6.11	189	88.9	1245	0.22	3.1	229	6427	6.16	190.8	91.2	1277	0.74	18.7	7.725	28.680	6.20		<1	<1
W6	-12.4968	10/8/96	1023				6.05	187	83.9	1176	0.26	3.6	278	7804	6.37	197.3	90.8	1272	0.78	17.6	7.738	28.359	5.82		<1	<1
W6	-12.4968	11/4/96	1007				5.99	186	87.3	1223	0.30	4.2	197	5533	6.14	190.2	92.2	1291	0.61	18.2	7.727	28.436	6.33		<1	<1
W6	-12.4968	12/16/96	1004				6.13	190	87.0	1219	0.30	4.2	225	6316	6.28	194.5	88.5	1240	0.68	17.8	7.758	28.541	6.30		<1	<1
W6	-12.4968	1/13/97	1045				6.06	188	86	1203	0.11	1.5	203	5693	6.20	192.0	90.8	1272	0.78	17.8	7.752	28.525	6.35		<1	<1
W6	-12.4968	2/10/97	955				5.97	185	87	1225	0.17	2.4	205	5766	6.01	186.2	91.9	1287	0.55	17.0	7.758	28.537	6.22		<1	<1
W6	-12.4968	3/10/97	959				5.90	183	101	1408	0.10	1.4	205	5758	6.0*	0.0	104.0	1456	0.67	17.0	7.780	28.310	6.45		<1	<1
W6	-12.4968	4/22/97	1035				6.42	199	98	1368	0.30	4.2	211	5926	7.11	220.2	175.4	2457	0.74	17.1	7.801	28.054	6.05		<1	<1
W6	-12.4968	5/27/97	935				5.37	166	93	1308	0.09	1.3	202	5685	6.25	193.6	100.3	1405	0.74	16.0	7.804	28.277	7.32		<1	<1
W6	-12.4968	6/16/97	950				5.42	168	76	1064	0.30	4.2	223	6260	5.57	172.5	84.8	1188	0.76	16.7	7.829	28.562	6.22		<1	<1
W6	-12.4968	7/16/97	857				5.36	166	69	966	0.10	1.4	196	5502	5.60	173.5	76.3	1069	1.00	16.9	7.823	28.691	6.13		<1	<1
W6	-12.4968	8/25/97	942				5.39	167	69	968	0.29	4.1	197	5538	5.45	168.8	87.4	1224	0.71	18.2	7.914	28.998	6.31		<1	<1
W6	-12.4968	9/22/97	944				5.14	159	62	864	0.32	4.5	192	5387	5.24	162.3	64.5	903	0.69	18.9	7.960	29.132	6.27		<1	<1
W6	-12.4968	10/14/97	937				5.62	174	73	1020	0.10	1.4	193	5409	5.74	177.8	77.2	1081	0.69	18.1	7.928	28.834	6.40		<1	<1
W6	-12.4968	11/3/97	1055				5.78	179	63.7	892	0.16	2.2	191	5364	6.13	189.9	69.6	975	0.69	17.6	7.883	28.709	6.39		<1	<1
W6	-12.4968	12/15/97	1000				5.53	171	64.5	903	0.23	3.2	194	5446	5.76	178.4	67.5	945	0.69	17.0	7.895	28.899	6.52		<1	<1
W6	-12.4968	1/5/98	1104				5.53	171	63.6	891	0.06	0.8	181	5096	5.73	177.5	68.3	957	0.70	16.7	7.887	29.052	6.49		<1	<1
W6	-12.4968	2/2/98	1008				5.41	168	65.4	916	0.07	1.0	187	5255	5.63	174.4	70.2	983	0.65	16.3	7.902	29.091	6.72		<1	<1
W6	-12.4968	3/9/98	1005				6.42	199	70.5	987	0.19	2.7	193	5429	6.68	206.9	72.9	1021	0.77	16.7	7.703	29.021	6.05		<1	<1
W6	-12.4968	4/13/98	914				6.11	189	69	966	0.15	2.1	193	5412	6.72	208.1	71.3	999	0.78	16.4	7.696	29.196	5.80		<1	2
W6	-12.4968	5/11/98	946				6.03	187	70	981	0.19	2.7	193	5406	6.24	193.3	74.0	1036	0.74	16.8	7.727	29.135	5.88		<1	<1
W6	-12.4968	6/1/98	944				6.07	188	63.1	884	0.13	1.8	194	5452	6.26	193.9	65.4	916	0.65	16.7	7.723	28.974	5.74		<1	<1
W6	-12.4968	7/13/98	950				5.55	172	58	819	0.06	0.8	201	5634	5.80	179.6	60	842	0.72	16.8	7.668	29.148	6.23		<1	6
W6	-12.4968	8/10/98	1007				5.39	167	55.8	782	0.17	2.4	197	5538	5.60	173.5	61.1	856	0.71	16.7	7.697	29.423	5.96		<1	3
W6	-12.4968	9/14/98	958				4.61	143	62.1	870	0.18	2.5	252	7080	4.87	150.8	65	907	0.73	17.5	7.668	27.061	6.06		<1	1
W6	-12.4968	10/12/98	905				4.95	153	58.7	822	0.03	0.4	191	5353	5.25	162.6	63	878	0.71	n/a	7.669	29.677	6.39		<1	<1
W6	-12.4968	11/2/98	927				4.86	151	60.3	845	0.08	1.1	189	5300	5.07	157.0	63.7	892	0.81	17.6	7.673	29.611	6.22		<1	<1
W6	-12.4968	12/15/98	928				5.78	179	91.1	1276	0.16	2.2	186	5210	5.97	184.9	94.1	1317	1.30	16.8	7.707	29.394	5.95		<1	<1
W6	-12.4968	1/11/99	945				6.08	188	102	1423	0.14	2.0	183	5145	6.29	194.8	103	1448	1.26	16.4	7.773	29.598	5.07		<1	<1
W6	-12.4968	2/2/99	940				6.24	193	118	1651	0.20	2.8	179	5033	6.44	199.5	132	1853	1.20	16.3	7.790	29.595	5.17		<1	<1
W6	-12.4968	3/1/99	945				6.95	215	103.4	1448	0.04	0.6	175	4901	7.18	222.4	107.9	1511	1.08	16.5	7.831	29.671	5.66		<1	1
W6	-12.4968	4/5/99	943				6.96	216	83.1	1164	0.09	1.3	176	4929	7.23	223.9	86.3	1209	0.82	15.9	7.780	29.959	5.46		<1	<1
W6	-12.4968	5/3/99	943				6.31	195	67.7	948	0.15	2.1	172	4836	6.56	203.2	73.1	1024	0.79	16.5	7.744	30.191	7.08		1	1
W6	-12.4968	6/1/99	935				5.88	182	64.9	909	0.30	4.2	171	4803	6.08	188.3	67.8	950	0.75	16.3	7.725	30.057	5.86		<1	<1

NELHA Water Quality Laboratory

Well 6 Data Table

June 1989 - October 2013

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6	-12.4968	7/14/99	938				5.17	160	67.8	950	0.03	0.4	180	5044	5.26	162.9	69.1	968	0.71	17.0	7.684	30.167	5.81		<1	<1
W6	-12.4968	8/23/99	1004				5.15	160	61.6	863	0.24	3.4	105	2957	5.29	163.9	63.6	891	0.78	17.1	7.720	30.141	6.03		<1	1
W6	-12.4968	9/7/99	954				5.21	161	63.7	892	0.05	0.7	171	4805	5.50	170.4	72.3	1013	0.74	16.9	7.718	30.242	5.89		<1	TNTC
W6	-12.4968	10/5/99	943				4.83	150	60.7	850	0.07	1.0	176	4943	5.01	155.2	63.6	891	0.63	18.4	7.707	30.776	4.91		<1	1
W6	-12.4968	11/1/99	1010				4.86	151	59.8	838	0.08	1.1	163	4572	5.08	157.3	62.5	875	0.74	19.1	7.694	30.496	5.09		<1	<1
W6	-12.4968	12/14/99	1001				4.86	151	62.0	869	0.04	0.6	167	4685	5.03	155.8	64.1	898	0.94	18.3	7.640	30.845	4.66		<1	<1
W6	-12.4968	1/10/00	1027				5.22	162	65.0	910	0.15	2.1	167	4702	5.39	166.9	69.5	973	0.97	18.8	7.668	30.683	4.53		<1	<1
W6	-12.4968	2/7/00	1022				5.56	172	71.3	998	0.15	2.1	163	4567	5.74	177.8	75.5	1058	0.99	17.8	7.710	30.356	4.61		<1	<1
W6	-12.4968	3/21/00	1025				5.85	181	62.6	877	0.10	1.4	167	4687	5.87	181.8	65.0	910	0.82	16.9	7.706	30.133	5.22		<1	<1
W6	-12.4968	4/10/00	1054				5.82	180	64.0	896	0.09	1.3	164	4617	5.79	179.3	67.5	945	0.83	16.8	7.720	30.183	5.27		<1	<1
W6	-12.4968	5/15/00	1005				5.67	176	62.6	877	0.17	2.4	167	4685	5.76	178.4	66.9	937	0.79	17.1	7.714	30.384	5.57		<1	<1
W6	-12.4968	6/5/00	1006				5.59	173	60.3	845	0.09	1.3	186	5215	5.80	179.6	65.2	913	0.77	17.1	7.699	30.485	5.25		<1	<1
W6	-12.4968	7/26/00	1032				5.65	175	64.3	901	0.02	0.3	163	4581	5.89	182.4	69.4	972	1.10	18.2	7.720	30.437	5.39		<1	<1
W6	-12.4968	8/29/00	935				5.71	177	66.1	926	0.03	0.4	166	4651	5.81	180.0	68.1	954	0.90	17.7	7.647	30.529	5.36		<1	<1
W6	-12.4968	9/5/00	1001				5.63	174	69.3	971	0.07	1.0	166	4671	5.93	183.7	70.3	985	0.89	17.8	7.651	30.642	5.18		<1	<1
W6	-12.4968	10/24/00	1006				5.82	180	66.8	935	0.16	2.2	171	4803	6.06	187.7	69.9	979	n/a	18.8	7.689	30.802	5.12		<1	<1
W6	-12.4968	11/13/00	947				5.34	165	64.0	896	0.26	3.6	175	4904	5.62	174.1	70.9	993	0.88	19.0	7.657	30.915	5.01		<1	<1
W6	-12.4968	12/18/00	949				5.68	176	84.8	1188	0.18	2.5	167	4690	5.96	184.6	90.2	1263	0.89	18.7	7.656	30.686	4.95		<1	1
W6	-12.4968	1/22/01	953				5.60	173	81.3	1139	0.02	0.3	169	4755	5.75	178.1	83.8	1174	0.90	17.5	7.642	30.489	4.83		<1	<1
W6	-12.4968	2/5/01	1012				5.50	170	89.4	1251	0.20	2.8	169	4758	5.70	176.6	92.8	1300	0.86	17.5	7.661	30.388	4.78		<1	<1
W6	-12.4968	3/5/01	1003				5.48	170	73.3	1027	0.03	0.4	165	4620	5.76	178.4	77.2	1081	0.71	17.3	7.637	30.351	4.64		<1	<1
W6	-12.4968	4/17/01	947				5.40	167	77.2	1082	0.05	0.7	166	4662	5.55	171.9	85.2	1194	0.71	17.0	7.640	30.265	5.53		<1	<1
W6	-12.4968	5/15/01	931				5.25	163	79.3	1111	0.14	2.0	172	4819	5.38	166.6	83.1	1164	0.81	17.2	7.645	30.280	5.71		<1	<1
W6	-12.4968	6/12/01	1006				5.12	159	72.7	1019	0.02	0.3	165	4643	5.19	160.8	77.8	1090	0.77	17.6	7.653	30.212	5.83		<1	<1
W6	-12.4968	7/23/01	954				5.23	162	68.9	965	0.02	0.3	170	4777	5.40	167.3	76.3	1068	1.12	17.7	7.659	30.282	5.86		<1	<1
W6	-12.4968	8/8/01	945				5.20	161	67.5	945	0.05	0.7	168	4713	5.44	168.5	72.8	1019	0.70	16.6	7.666	30.275	5.92		<1	<1
W6	-12.4968	9/19/01	954				5.50	170	67.6	947	0.05	0.7	170	4783	5.68	175.9	71.7	1004	0.74	17.3	7.650	30.281	6.08		<1	<1
W6	-12.4968	10/24/01	927				5.02	155	61.8	866	0.01	0.1	168	4730	5.48	169.7	63.7	893	0.71	18.3	4.681	30.232	5.74		<1	<1
W6	-12.4968	11/7/01	945				5.50	170	65.7	921	0.07	1.0	170	4775	5.78	179.0	74.1	1038	0.71	18.4	7.675	30.290	5.53		<1	<1
W6	-12.4968	12/19/01	1004				5.26	163	67.7	949	0.12	1.7	176	4943	5.58	172.8	82.2	1151	0.75	18.4	7.671	30.298	5.85		<1	1
W6	-12.4968	1/9/02	954				5.31	164	66.3	929	0.18	2.5	186	5227	5.55	171.9	69.1	968	0.78	18.6	7.673	30.437	5.25		<1	<1
W6	-12.4968	2/19/02	1011				5.48	170	70.8	992	0.06	0.8	179	5027	5.66	175.3	74.5	1043	0.69	18.1	7.685	30.296	5.87		<1	<1
W6	-12.4968	3/20/02	1013				5.36	166	69.0	967	0.09	1.3	172	4825	5.64	174.7	73.4	1028	0.66	17.7	7.680	30.326	5.90		<1	<1
W6	-12.4968	4/8/02	1102				5.39	167	71.2	997	0.02	0.3	173	4867	5.66	175.3	77.7	1088	0.62	17.5	7.671	30.315	5.90		<1	<1
W6	-12.4968	5/29/02	1047				4.96	154	69.3	971	0.14	2.0	170	4777	5.12	158.6	74.4	1042	0.71	17.9	7.690	30.129	6.36		<1	<1
W6	-12.4968	6/17/02	1020				5.14	159	64.5	903	0.04	0.6	163	4586	5.35	165.7	69.6	975	0.64	18.1	7.680	30.200	6.14		<1	3
W6	-12.4968	7/15/02	1025				5.08	157	63.6	891	0.10	1.4	182	5098	5.30	164.2	68.2	955	0.68	17.9	7.678	30.233	6.01		<1	<1
W6	-12.4968	8/20/02	1017				4.96	154	67.0	938	0.21	2.9	170	4769	5.22	161.7	62.3	872	0.80	18.3	7.692	30.178	6.11		<1	4
W6	-12.4968	9/23/02	1034				4.86	151	70.4	986	0.21	2.9	170	4786	4.94	153.0	63.3	887	0.66	18.2	7.716	30.380	5.89		<1	<1
W6	-12.4968	10/14/02	953				4.69	145	62.2	871	0.09	1.3	171	4814	4.89	151.5	58.6	821	0.60	19.4	7.754	30.532	5.54		<1	127
W6	-12.4968	11/4/02	1003				5.08	157	86.9	1218	0.02	0.3	174	4881	5.33	165.1	68.1	954	0.87	18.9	7.723	30.236	5.24		<1	<1
W6	-12.4968	12/17/02	1031				5.30	164	80.1	1122	0.03	0.4	176	4940	5.59	173.1	83.2	1166	1.02	19.0	7.674	30.389	4.41		<1	<1
W6	-12.4968	1/21/03	1115				5.10	158	80.4	1126	0.03	0.4	167	4687	5.39	166.9	89.9	1259	0.76	17.8	7.689	30.741	4.69		<1	<1
W6	-12.4968	2/12/03	1041				5.18	160	68.1	954	0.04	0.6	174	4890	5.41	167.6	74.5	1043	0.80	17.8	7.705	30.368	4.86		<1	<1
W6	-12.4968	3/19/03	1027				5.81	180	74.6	1044	0.02	0.3	186	5235	5.98	185.2	83.5	1170	0.76	18.1	7.722	30.178	5.29		<1	<1
W6	-12.4968	4/28/03	1013				5.95	184	72.5	1015	0.07	1.0	167	4679	6.02	186.5	78.3	1097	0.57	18.0	7.745	30.024	6.19		<1	<1
W6	-12.4968	5/12/03	945				5.81	180	69.8	978	0.03	0.4	175	4915	6.08	188.3	87.1	1220	0.53	17.4	7.751	30.044	6.27		<1	<1
W6	-12.4968	6/3/03	1000				5.92	183	76.4	1070	0.29	4.1	165	4643	6.14	190.2	83.3	1167	0.55	17.6	7.789	29.998	6.38		<1	<1

NELHA Water Quality Laboratory

Well 6 Data Table

June 1989 - October 2013

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6	-12.4968	7/29/03	1030				5.17	160	65.6	919	0.10	1.4	169	4744	5.35	165.7	69.6	975	NA	18.1	7.779	30.281	6.01		<1	1
W6	-12.4968	8/26/03	1025				5.04	156	66.6	933	0.02	0.3	167	4685	5.21	161.4	72.3	1012	NA	19.0	7.771	30.373	5.78		<1	188
W6	-12.4968	9/15/03	1014				5.03	156	74.1	1038	0.02	0.3	165	4640	5.34	165.4	97.2	1361	NA	19.8	7.755	30.183	5.95		<1	<1
W6	-12.4968	10/6/03	1008				4.84	150	75.1	1052	0.05	0.7	167	4693	5.06	156.7	79.3	1110	NA	19.7	7.775	30.356	NA		<1	<1
W6	-12.4968	10/28/03	1040				5.22	162	79.6	1115	<0.10	0.0	161	4533	5.40	167.3	85.3	1195	NA	18.9	7.733	30.103	NA		<1	<1
W6	-12.4968	11/14/03	1345																	19.4			5.50			
W6	-12.4968	12/15/03	952																	23.3	7.776					
W6	-12.4968	12/17/03	857				4.55	141	64.0	897	0.07	1.0	177	4980	4.83	149.6	67.2	941	NA	20.3	7.771	30.440	5.04		<1	<1
W6	-12.4968	1/26/04	1001				5.04	156	64.8	908	0.10	1.4	174	4876	5.28	163.5	67.5	945	NA	18.8	7.722	30.094	5.55		<1	1
W6	-12.4968	2/5/04	1002				4.74	147	74.2	1040	0.19	2.7	173	4862	5.02	155.5	83.8	1173	NA	19.0	7.734	29.898	5.67		<1	<1
W6	-12.4968	3/2/04	1051				4.74	147	82.5	1155	0.26	3.6	176	4951	4.86	150.5	91.2	1277	NA	19.1	7.737	29.895	5.38		<1	11
W6	-12.4968	4/20/04	1007				4.80	149	118	1651	0.02	0.3	176	4954	5.06	156.7	121	1689	NA	17.6	7.705	29.672	6.06		<1	<1
W6	-12.4968	5/11/04	922				4.68	145	116	1622	0.30	4.2	171	4805	4.65	144.0	116	1623	NA	17.7	7.724	29.05	5.83		<1	<1
W6	-12.4968	6/2/04	1009				3.66	113	123	1719	0.13	1.8	172	4817	3.74	115.8	125	1747	NA	20.9	7.701	28.69	3.41		<1	<1
W6	-12.4968	7/14/04	1008				4.10	127	108	1509	0.24	3.4	174	4884	4.12	127.6	119	1665	NA	19.9	7.699	29.06	4.92		<1	<1
W6	-12.4968	8/23/04	1017				3.80	118	98.0	1372	0.36	5.0	178	4991	3.92	121.4	101	1416	NA	20.5	7.697	29.30	4.37		<1	3104
W6	-12.4968	9/2/04	1037				4.19	130	103	1445	0.13	1.8	177	4960	4.28	132.6	106	1483	NA	19.6	7.689	29.27	4.61		<1	419
W6	-12.4968	10/4/04	947				4.54	141	98.9	1385	0.16	2.2	173	4848	4.43	137.2	108	1517	NA	20.2	7.685	29.47	4.57		<1	>5,000
W6	-12.4968	11/9/04	916				4.70	146	93.1	1304	0.11	1.5	178	4991	4.98	154.2	102	1428	NA	20.1	7.661	29.28	4.93		<1	>5,000
W6	-12.4968	12/6/04	945				4.58	142	97.1	1360	0.10	1.4	176	4949	4.80	148.7	112	1562	NA	20.1	7.736	29.29	4.72		<1	153
W6	-12.4968	1/10/05	911				4.82	149	104.9	1469	0.06	0.8	180	5064	4.92	152.4	109	1525	NA	19.5	7.725	30.231	5.09		<1	1
W6	-12.4968	2/9/05	913				4.91	152	100	1401	0.05	0.7	179	5030	5.20	161.1	128	1789	NA	21.1	7.728	30.198	5.35		<1	<1
W6	-12.4968	3/15/05	942				4.78	148	105	1471	0.25	3.5	178	4994	5.00	154.9	124	1735	0.63	19.4	7.739	30.305	5.35		<1	<1
W6	-12.4968	4/19/05	858				4.84	150	117	1639	0.12	1.7	175	4915	4.96	153.6	122	1712	Na	19.1	7.739	30.240	5.64		<1	<1
W6	-12.4968	5/23/05	931				4.24	131	129	1800	0.21	2.9	173	4853	4.34	134.4	131	1836	NA	19.6	7.703	30.344	4.52		<1	<1
W6	-12.4968	6/15/05	1002				4.40	136	120	1685	0.15	2.1	168	4721	4.43	137.2	134	1870	NA	19.7	7.713	30.239	4.78		<1	<1
W6	-12.4968	7/18/05	859				4.50	139	112	1569	0.12	1.7	177	4963	4.66	144.3	114	1601	0.51	21.3	7.709	30.369	5.08		<1	<1
W6	-12.4968	8/9/05	920				4.40	136	104	1461	0.22	3.1	170	4775	4.80	148.7	108	1514	0.66	20.1	7.755	30.397	5.16		<1	>2,000
W6	-12.4968	9/20/05	915				4.52	140	91.4	1280	0.23	3.2	169	4732	4.76	147.4	93.1	1304	0.57	19.6	7.750	30.231	5.73		<1	1176
W6	-12.4968	10/17/05	911				4.38	136	97.4	1365	0.13	1.8	170	4760	4.64	143.7	100	1405	NA	20.4	7.756	30.377	5.20		<1	159
W6	-12.4968	11/7/05	845				4.08	126	114	1602	0.06	0.8	168	4730	4.44	137.5	120	1686	NA	21.1	7.778	30.331	4.67		<1	<1
W6	-12.4968	12/19/05	848				4.30	133	98.6	1381	0.52	7.3	166	4654	4.40	136.3	111	1558	0.64	19.2	7.751	29.976	5.78		<1	<1
W6	-12.4968	1/23/06	859				4.28	133	103	1448	0.47	6.6	170	4777	4.40	136.3	111	1555	NA	19.0	7.759	30.043	5.56		<1	<1
W6	-12.4968	2/14/06	907				4.35	135	108	1506	0.37	5.2	169	4738	4.60	142.5	111	1553	0.59	18.4	7.746	29.887	5.40		<1	<1
W6	-12.4968	3/20/06	903				4.20	130	103	1443	0.48	6.7	162	4550	4.40	136.3	107	1499	0.57	18.5	7.789	30.027	5.46		<1	<1
W6	-12.4968	4/25/06	935				4.14	128	95.4	1336	0.19	2.7	162	4550	4.36	135.0	91.9	1287	0.55	18.4	7.77	30.044	5.48		<1	<1
W6	-12.4968	5/22/06	923				3.96	123	86.6	1213	0.23	3.2	159	4466	4.41	136.6	83.1	1165	0.62	18.2	7.749	30.055	5.58		<1	<1
W6	-12.4968	6/26/06	927				3.83	119	84.2	1179	0.08	1.1	165	4634	3.97	123.0	80.4	1126	0.70	18.7	7.765	30.130	5.50		<1	<1
W6	-12.4968	7/20/06	945				3.45	107	74.9	1049	0.23	3.2	156	4381	3.78	117.1	68.3	956	0.57	20.4	7.771	30.358	5.56		<1	<1
W6	-12.4968	8/7/06	1002				3.65	113	77.4	1084	0.21	2.9	160	4494	4.03	124.8	67.4	944	0.62	19.3	7.777	30.374	5.70		<1	<1
W6	-12.4968	9/18/06	927				3.65	113	73.5	1029	0.22	3.1	160	4494	4.03	124.8	67.6	947	0.63	19.4	7.769	30.453	5.36		<1	<1
W6	-12.4968	10/23/06	930				3.70	115	72.8	1020	0.33	4.6	163	4578	3.95	122.3	67.7	948	0.57	19.7	7.762	30.55	5.47		<1	<1
W6	-12.4968	11/27/06	914				3.66	113	86.3	1209	0.27	3.8	164	4606	3.94	122.0	79.0	1107	0.68	20.2	7.785	30.464	5.30		<1	<1
W6	-12.4968	12/11/06	1015				3.76	116	88.2	1235	0.36	5.0	164	4606	3.98	123.3	79.9	1120	0.61	21.7	7.774	30.463	5.41		<1	<1
W6	-12.4968	1/8/07	1109				3.90	121	93.1	1304	0.21	2.9	159	4466	4.10	127.0	80.6	1130	0.55	19.4	7.758	30.30	5.87		<1	<1
W6	-12.4968	2/20/07	1006				3.79	117	76.1	1066	0.39	5.5	163	4578	4.02	124.5	85.6	1200	0.61	18.9	7.728	30.16	6.01		<1	<1
W6	-12.4968	3/5/07	941				3.81	118	84.9	1189	0.32	4.5	169	4746	4.00	123.9	88.5	1240	0.62	19.2	7.724	30.073	6.01		<1	<1
W6	-12.4968	4/18/07	1005				3.85	119	74.3	1041	0.18	2.5	170	4775	3.95	122.3	65.5	917	0.53	19.5	7.746	29.90	6.29		<1	<1
W6	-12.4968	5/1/07	957				3.90	121	76.4	1070	0.20	2.8	168	4718	4.05	125.4	68.0	952	0.55	19.0	7.738	29.842	6.32		<1	<1
W6	-12.4968	6/18/07	937				3.79	117	74.2	1039	0.2	2.8	170	4775	4.12	127.6	63.9	895	0.48	19.1	7.771	29.80	6.53		<1	<1

NELHA Water Quality Laboratory

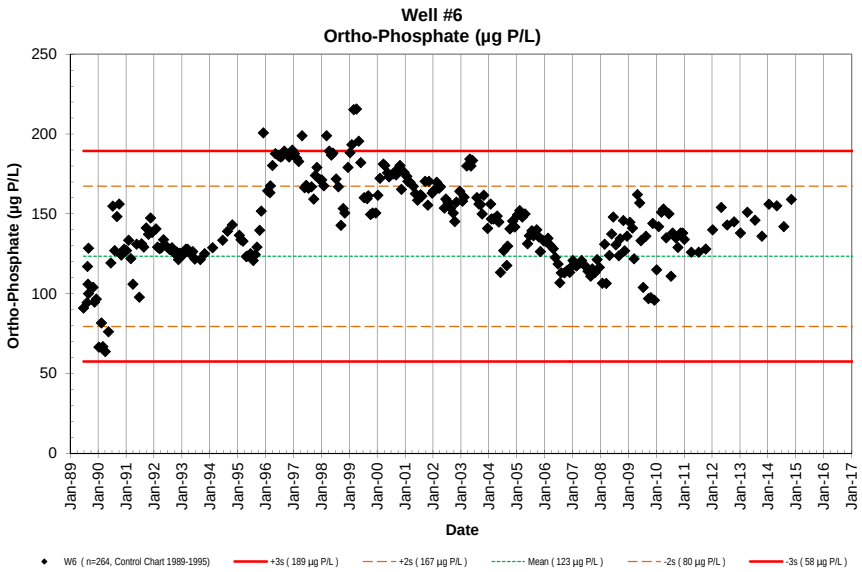
Well 6 Data Table

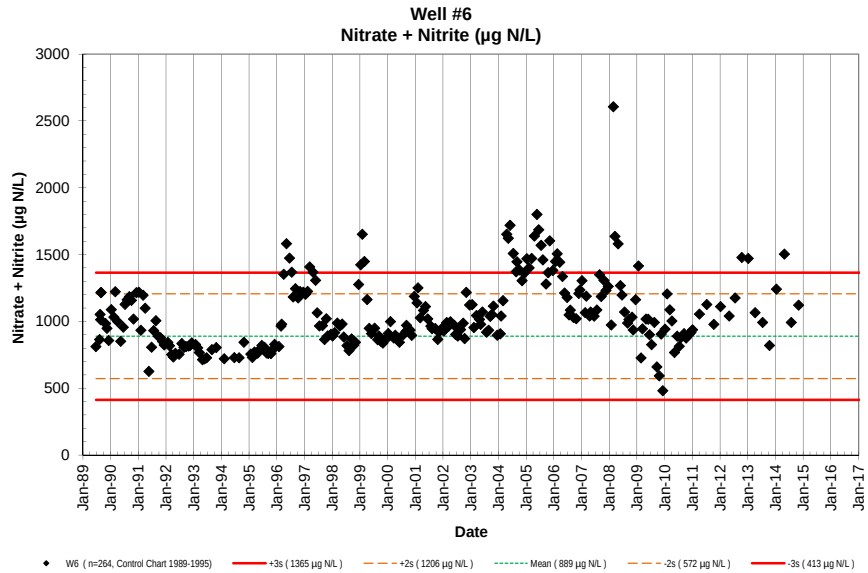
June 1989 - October 2013

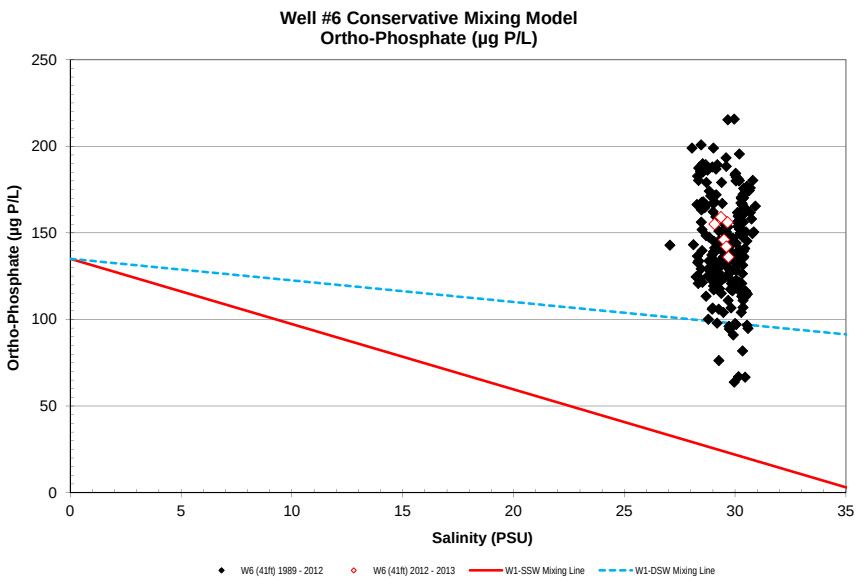
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6	-12.4968	7/23/07	1538	-1.98	0.46	Ebb	3.68	114	77.6	1086	0.11	1.6	165	4621	3.77	116.9	74.0	1037		19.9	7.47	30.33	5.21			
W6	-12.4968	8/27/07	1528	-1.80	0.70	Flood	3.58	111	96.4	1350	0.19	2.6	164	4594	3.68	113.9	97.8	1369		21.5	7.78	30.36	4.40			
W6	-12.4968	9/18/07	1635	-2.21	0.21	Ebb	3.73	116	84.7	1186	0.08	1.2	164	4615	3.86	119.6	84.4	1183		19.7	7.76	30.50	5.17			
W6	-12.4968	10/23/07	1551	-1.83	0.46	Ebb	3.66	113	93.3	1307	0.22	3.0	151	4236	3.66	113.3	86.7	1215		19.8	7.75	30.30	5.17			
W6	-12.4968	11/20/07	1335	-1.85	0.43	Ebb	3.92	121	87.9	1231	0.14	1.9	166	4658	3.42	105.9	93.5	1310		19.5	7.73	30.20	5.43			
W6	-12.4968	12/19/07	1348	-2.34	0.24	Ebb	3.76	117	90.1	1262	0.81	11	156	4393						19.1	7.71	29.88	5.73			
W6	-12.4968	1/28/08	954	-2.16	0.27	Ebb	3.44	107	69.5	974	0.51	7.2	160	4494						18.1	7.53	29.82	5.64			
W6	-12.4968	2/26/08	1424	-2.34	0.06	Flood	4.23	131	186.0	2606	0.24	3.4	156	4393						16.8	7.64	29.57	4.91			
W6	-12.4968	3/17/08	1448	-2.01	0.24	High	3.44	107	116.8	1636	0.49	6.9	130	3649						19.4	7.59	28.99	3.06			
W6	-12.4968	4/29/08	1153	-2.59	0.24	Flood	4.00	124	112.8	1581	0.09	1.2	156	4369						17.3	7.58	29.53	4.99			
W6	-12.4968	5/28/08	1132	-2.13	0.34	High	4.44	137	90.5	1268	0.13	1.8	180	5049						17.6	7.63	29.71	5.87			
W6	-12.4968	6/17/08	1204	-2.34	0.21	Flood	4.78	148	85.5	1197	0.74	10	156	4381						18.1	7.46	29.59	5.17	0.23		
W6	-12.4968	7/22/08	1153	-2.13	0.15	Ebb	4.22	131	76.4	1070	0.91	13	181	5072						16.9	7.63	29.64	5.76			
W6	-12.4968	8/30/08	1149		0.15	Flood	4.00	124	70.5	988	0.14	1.9	165	4622						17.9	7.63	29.74	0.35			
W6	-12.4968	9/16/08	1139	-2.49	0.09	Low	4.34	134	72.4	1014	0.18	2.5	156	4375						19.3	7.49	29.42	5.82			
W6	-12.4968	10/28/08	1041	-2.46	0.15	Low	4.71	146	73.7	1032	0.18	2.5	158	4426						18.8	7.65	29.64	6.35	0.09		
W6	-12.4968	11/13/08	1132	-2.48	0.09	Low	4.10	127	66.9	937	0.26	3.6	158	4429						18.0	7.80	29.77	6.84	0.20		
W6	-12.4968	12/15/08	1435	-2.55	0.00	Low	4.39	136	83.0	1162	0.11	1.5	158	4425						18.5	7.88	29.46	6.60			
W6	-12.4968	1/22/09	1121	-2.53	0.09	Flood	4.67	145	101.0	1415	0.65	9.1	154	4328						18.4	7.68	29.46	5.95	0.10		
W6	-12.4968	2/24/09	1053	-2.64	0.06	Low	4.56	141	51.9	727	0.56	7.9	176	4946						17.6	7.59	29.33	6.29	0.08		
W6	-12.4968	3/16/09	1132	-2.60	0.06	Ebb	3.94	122	67.5	945	0.13	1.8	126	3542						17.1	7.44	29.33	6.85	0.12		
W6	-12.4968	4/30/09	1645	-2.73	0.24	Flood	5.23	162	72.6	1018	0.59	8.3	136	3829						17.9	7.93	29.01	5.64			
W6	-12.4968	5/29/09	1019	-2.42	0.21	Ebb	5.06	157	72.6	1016	0.15	2.1	128	3598						14.4	7.74	29.55	7.46	0.20		
W6	-12.4968	6/16/09	1439	-2.29	0.40	Flood	4.30	133	64.3	900	0.32	4.5	139	3897						14.6	7.65	29.33	2.53	0.06		
W6	-12.4968	7/14/09	1326	-2.36	0.37	Ebb	3.36	104	59.0	826	0.31	4.3	111	3125						18.9	7.80	29.47	4.98	0.05		
W6	-12.4968	8/19/09	1426	-1.91	0.67	Flood	4.39	136	70.9	993	1.43	20	134	3777						16.1	7.64	29.98	5.87	0.04		
W6	-12.4968	9/21/09	1617	-2.31	0.30	Flood	3.13	97	47.1	660	0.53	7.4	94	2652						16.8	8.40	30.05	6.05	0.09		
W6	-12.4968	10/22/09	1644	-2.51	0.18	Flood	3.15	98	42.3	592	0.65	9.1	73	2052						17.7	7.67	30.00	6.02	0.01		
W6	-12.4968	11/17/09	919	-2.44	0.30	Ebb	4.65	144	64.6	905	0.83	11.6	183	5130						17.4	7.64	30.05	6.40	0.03		
W6	-12.4968	12/8/09	900	-2.18	0.55	High	3.10	96	34.4	482	0.58	8.1	188	5293						18.5	7.70	29.72	5.76	0.02		
W6	-12.4968	1/6/10	832	-2.16	0.43	High	3.71	115	67.3	942	1.29	18	186	5213						17.9	7.66	29.38	6.02	0.06		
W6	-12.4968	2/2/10	830	-2.06	0.37	Ebb	4.58	142	86.1	1206	0.64	9	163	4588						17.2	7.73	29.58	5.99	0.09		
W6	-12.4968	3/10/10	822	-2.62	0.09	Low	4.88	151	77.6	1087	0.43	6	193	5418						17.9	7.70	29.27	5.92	0.02		
W6	-12.4968	4/6/10	1426	-2.61	0.12	Ebb	4.94	153	71.6	1003	0.36	5	201	5640						17.7	7.66	29.58	6.57	0.09		
W6	-12.4968	5/11/10	1501	-2.11	0.55	High	4.36	135	54.8	768	1.14	16	184	5178						18.4	7.80	29.53	5.95	0.05		
W6	-12.4968	6/16/10	950	-2.24	0.15	Ebb	4.84	150	63.5	890	0.21	3	196	5496						15.7	7.49	29.58	6.59	0.24		
W6	-12.4968	7/13/10	1442	-2.24	0.40	Flood	3.58	111	58.1	814	0.36	5	187	5254						16.0	7.74	29.69	6.49	0.09		
W6	-12.4968	8/3/10	1443	-2.19	0.40	Ebb	4.46	138	62.8	879	0.36	5	196	5503						16.0	7.57	29.75	6.49	0.17		
W6	-12.4968	9/14/10	1504	-2.28	0.30	Ebb	4.36	135	64.9	909	0.25	3.5	200	5626						16.4	7.73	29.81	7.05	0.13		
W6	-12.4968	10/12/10	1524	-2.40	0.18	Low	4.16	129	62.5	875	0.46	6.4	198	5560						16.6	7.75	29.92	6.60	0.23		
W6	-12.4968	11/16/10	1406	-2.18	0.34	Ebb	4.46	138	64.5	903	0.09	1.2	195	5466						16.5	7.70	30.02	6.87	0.19		
W6	-12.4968	12/14/10	1436	-2.36	0.15	Ebb	4.46	138	65.5	917	0.19	2.7	194	5446						16.6	7.73	29.90	6.66	0.12		
W6	-12.4968	1/4/11	1418	-2.48	0.15	Flood	4.33	134	67.0	938	0.24	3.3	188	5282						16.8	7.67	29.71	6.53	0.08		
W6	-12.4968	4/5/11	1441	-2.29	0.34	Flood	4.07	126	75.3	1055	0.09	1.3	175	4913						14.8	7.65	29.18	6.50	0.14		
W6	-12.4968	7/11/11	1143	-2.31	0.49	Flood	4.07	126	80.4	1126	0.08	1.1	196	5502						15.8	7.68	28.97	7.04	0.13		
W6	-12.4968	10/11/11	1336	-2.32	0.00	Flood	4.13	128	69.8	978	0.30	4.2	185	5205						15.2	7.59	29.77	7.03	0.17		
W6	-12.4968	1/9/12	1429	-2.53	0.15	Flood	4.52	140	79.3	1111	0.09	1.2	183	5132						15.4	7.67	29.40	3.71	0.08		
W6	-12.4968	4/30/12	1511	-2.28	0.24	Ebb	4.97	154	74.3	1040	0.21	3	186	5231						14.2	7.59	29.59	6.40	0.03		
W6	-12.4968	7/17/12	1538	-1.82	0.73	Flood	4.62	143	84.0	1176	0.28	3.9	189	5309						14.9	7.53	29.82	5.64	0.09		
W6	-12.4968	10/15/12	1316	-2.39	0.24	Flood	4.68	145	105.5	1478	0.14	2	198	5547						15.2	7.52	29.82	4.29	0.09		
W6	-12.4968	1/7/13	1435	-2.39	0.18	Ebb	4.46	138	105.0	1471	0.44	6.1	237	6662						14.8	7.56	29.76	5.11	0.02		
W6	-12.4968	4/8/13	1331	-2.29	0.37	Flood	4.88	151	76.1	1066	0.26	3.6	192	5397						14.3	7.58	29.48	6.63	0.51		
W6	-12.4968	7/16/13	1605	-2.35	0.30	Ebb	4.71	146	70.9	993	0.31	4.3	200	5610						15.5	7.50	29.50	5.32	0.02		
W6	-12.4968	10/14/13	1648	-2.37	0.18	Ebb	4.39	136	58.5	820	0.24	3.3	203	5707						15.9	7.79	29.70	4.84	0.17		
W6	-12.4968	1/14/14	1600	-2.35	0.18	Ebb	5.04	156	88.6	1241	0.38	5.3	199	5598						15.4	7.55	29.66	5.92	0.04		
W6	-12.4968	4/28/14	1536	-2.02	0.52	Flood	5.00	155	107.3	1503	0.26	3.7	193	5432						15.5	7.64	29.07	5.56	0.02		

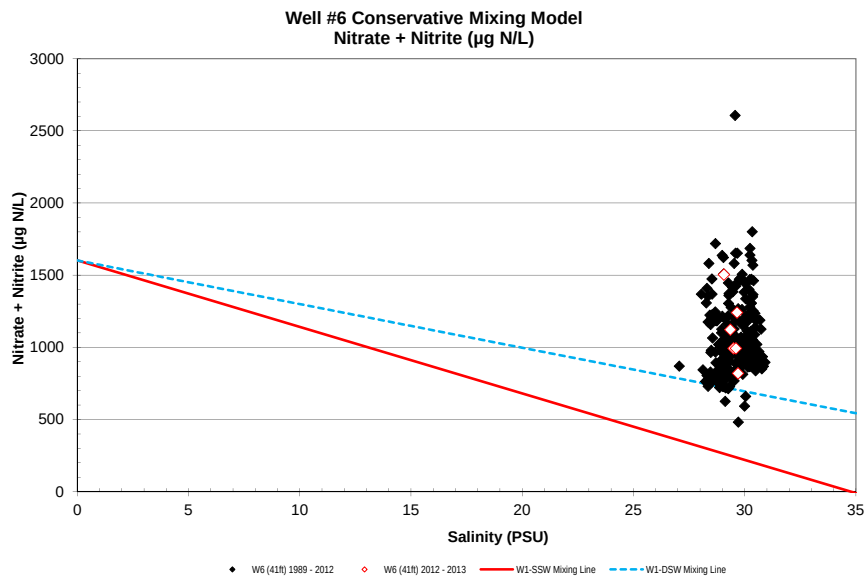
NELHA Water Quality Laboratory
Well 6 Data Table
June 1989 - October 2013

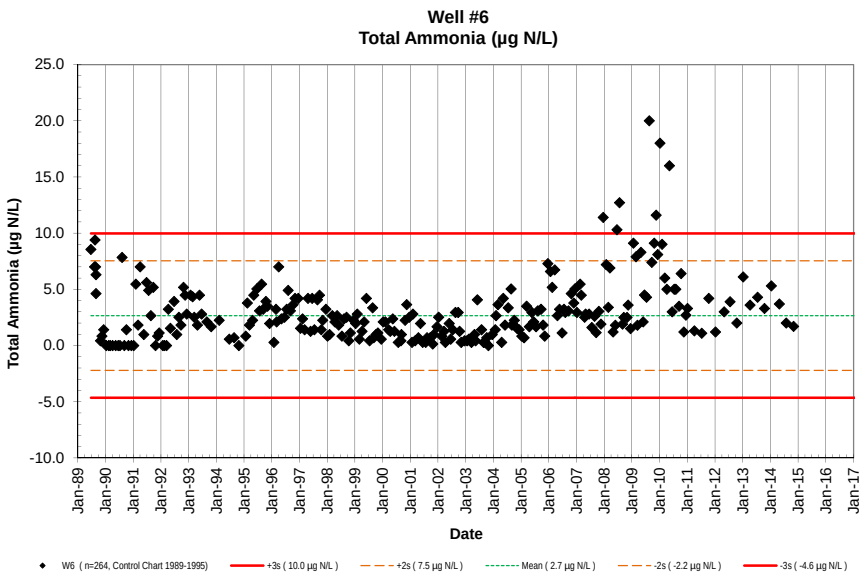
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6	-12.4968	7/28/14	1541	-2.07	0.49	Flood	4.58	142	70.8	992	0.14	2	192	5402						16.0	7.51	29.61	4.91	0.06		
W6	-12.4968	11/3/14	1307	-2.01	0.46	High	5.13	159	80.1	1122	0.12	1.7	187	5244						17.0	7.60	29.36	4.80	0.10		
W6	-12.4968	1/1/15																								
W6	-12.4968	4/1/15																								

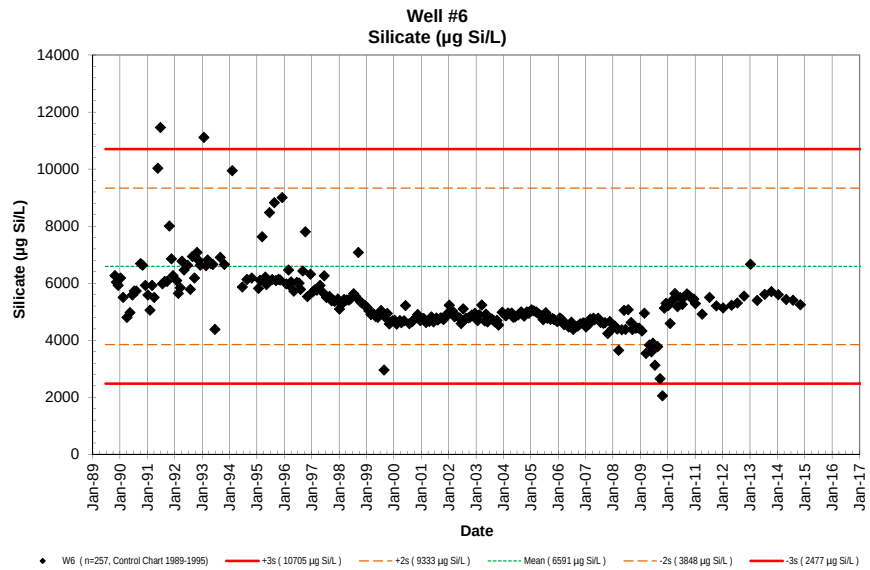

Well #6
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W6 (n=264, Control Chart 1989-1995)
+3s (189 µg P/L)
+2s (167 µg P/L)
Mean (123 µg P/L)
-2s (80 µg P/L)
-3s (58 µg P/L)

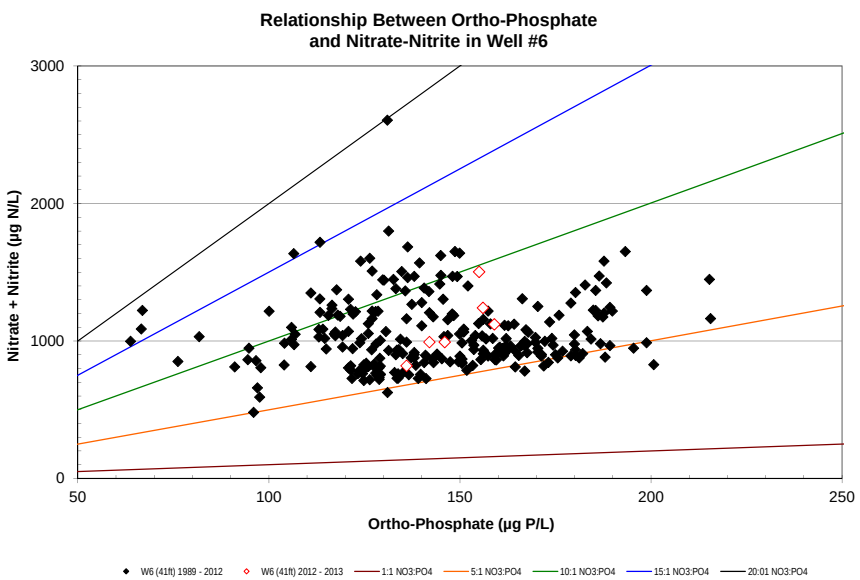

Well #6
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W6 (n=264, Control Chart 1989-1995)
+3s (1365 µg N/L)
+2s (1206 µg N/L)
Mean (889 µg N/L)
-2s (572 µg N/L)
-3s (413 µg N/L)

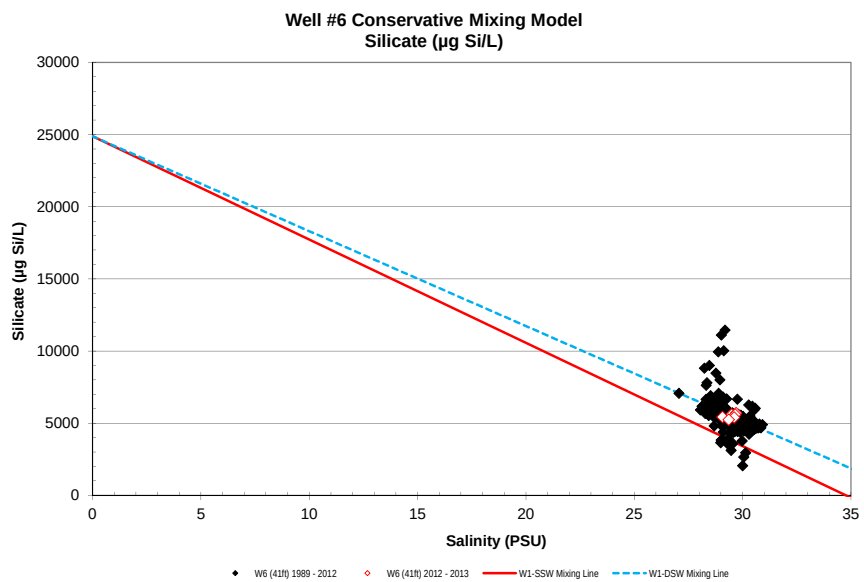

Well #6 Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W6 (41ft) 1989 - 2012
W6 (41ft) 2012 - 2013
W1-SSW Mixing Line
W1-DSW Mixing Line

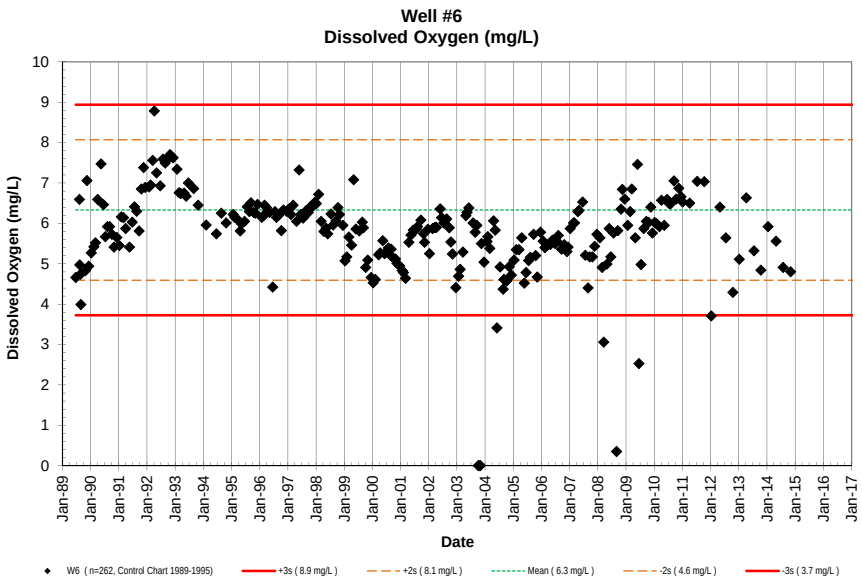

Well #6 Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W6 (41ft) 1989 - 2012
W6 (41ft) 2012 - 2013
W1-SSW Mixing Line
W1-DSW Mixing Line

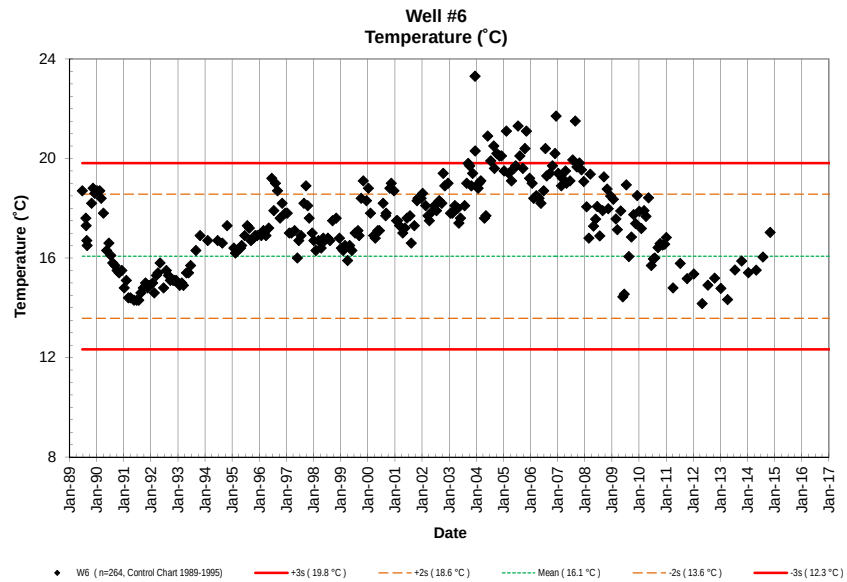

Well #6
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W6 (n=264, Control Chart 1989-1995)
+3s (10.0 µg N/L)
+2s (7.5 µg N/L)
Mean (2.7 µg N/L)
-2s (-2.2 µg N/L)
-3s (-4.6 µg N/L)

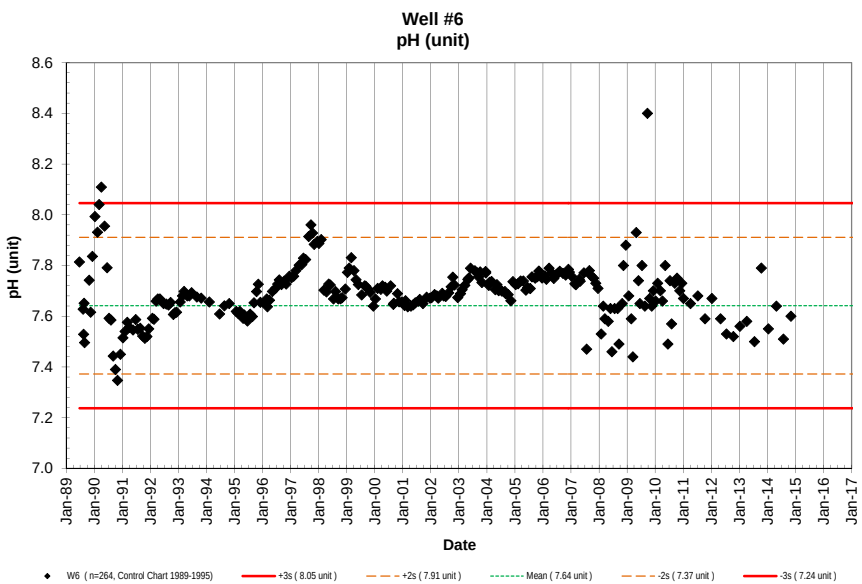

Well #6
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W6 (n=257, Control Chart 1989-1995)
+3s (10705 µg Si/L)
+2s (9333 µg Si/L)
Mean (6591 µg Si/L)
-2s (3848 µg Si/L)
-3s (2477 µg Si/L)

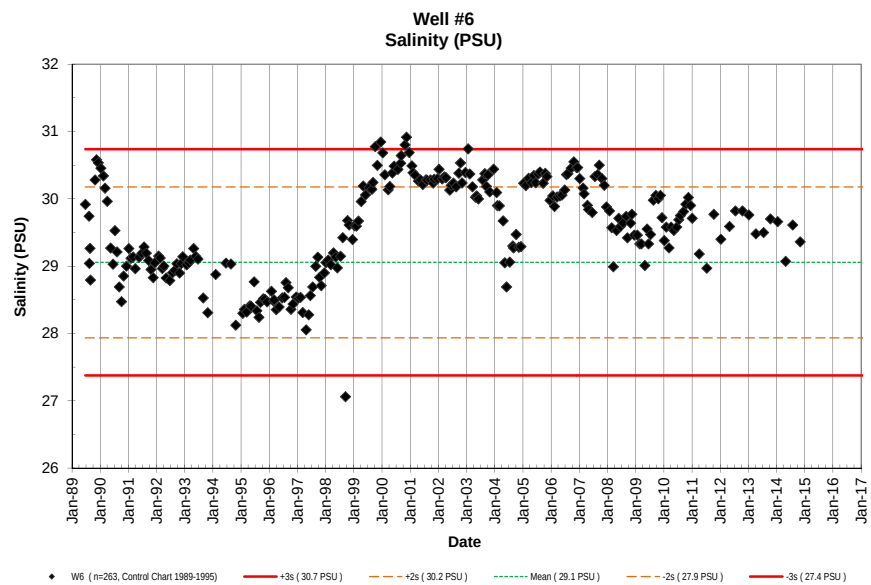

Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #6
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W6 (41ft) 1989 - 2012
W6 (41ft) 2012 - 2013
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

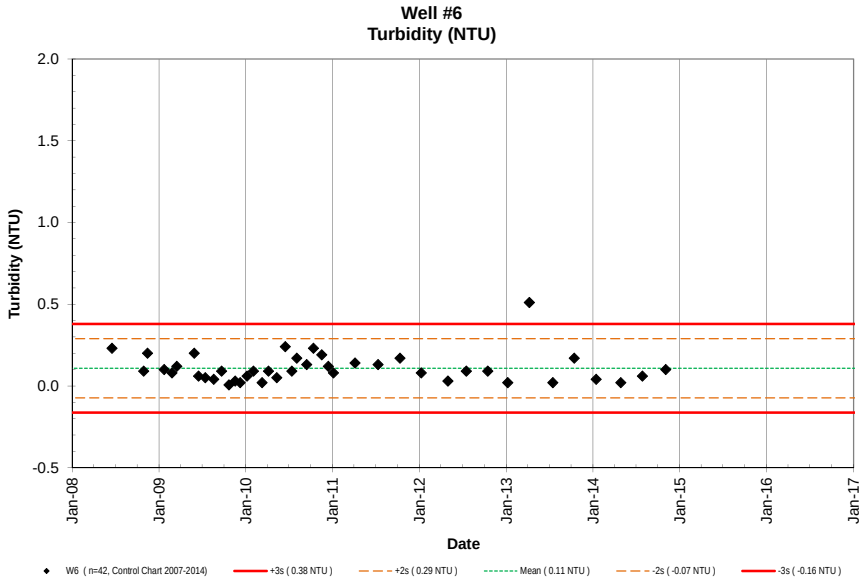

Well #6 Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W6 (41ft) 1989 - 2012
W6 (41ft) 2012 - 2013
W1-SSW Mixing Line
W1-DSW Mixing Line

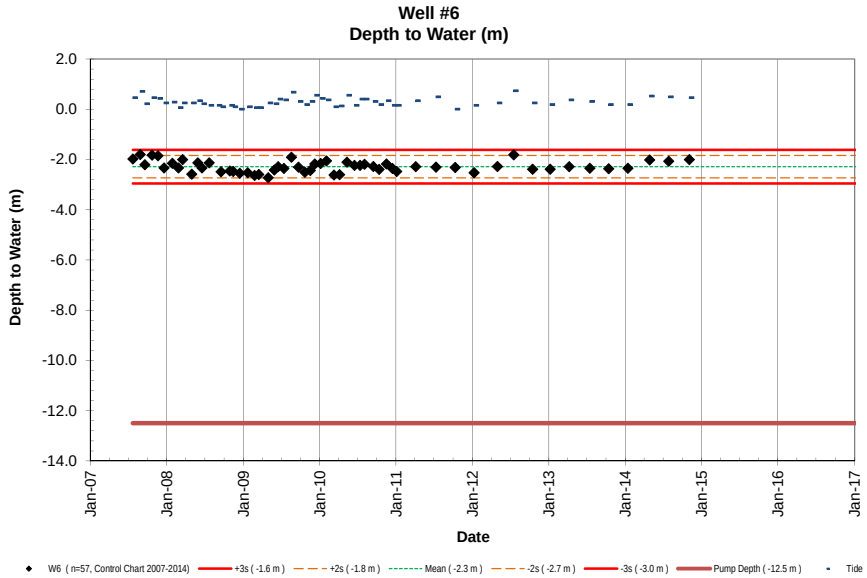

Well #6
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W6 (n=262, Control Chart 1989-1995)
+3s (8.9 mg/L)
+2s (8.1 mg/L)
Mean (6.3 mg/L)
-2s (4.6 mg/L)
-3s (3.7 mg/L)


Well #6
Temperature (˚C)
Temperature (˚C)
Date
W6 (n=264, Control Chart 1989-1995)
+3s (19.8 °C)
+2s (18.6 °C)
Mean (16.1 °C)
-2s (13.6 °C)
-3s (12.3 °C)


Well #6
pH (unit)
pH (unit)
Date
W6 (n=264, Control Chart 1989-1995)
+3s (8.05 unit)
+2s (7.91 unit)
Mean (7.64 unit)
-2s (7.37 unit)
-3s (7.24 unit)


Well #6
Salinity (PSU)
Salinity (PSU)
Date
W6 (n=263, Control Chart 1989-1995)
+3s (30.7 PSU)
+2s (30.2 PSU)
Mean (29.1 PSU)
-2s (27.9 PSU)
-3s (27.4 PSU)


Well #6
Turbidity (NTU)
Turbidity (NTU)
2.0
1.5
1.0
0.5
0.0
-0.5
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W6 (n=42, Control Chart 2007-2014)
+3s (0.38 NTU)
+2s (0.29 NTU)
Mean (0.11 NTU)
-2s (-0.07 NTU)
-3s (-0.16 NTU)


Well #6
Depth to Water (m)
Depth to Water (m)
2.0
0.0
-2.0
-4.0
-6.0
-8.0
-10.0
-12.0
-14.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W6 (n=57, Control Chart 2007-2014)
+3s (-1.6 m)
+2s (-1.8 m)
Mean (-2.3 m)
-2s (-2.7 m)
-3s (-3.0 m)
Pump Depth (-12.5 m)
Tide

NELHA Water Quality Laboratory

Well 6A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6A	-5.1816	6/23/89					2.47	77	66.5	931	0.38	5.3								20.6	7.793	21.032	6.66		NA	NA
W6A	-5.1816	8/9/89	1428				3.17	98	70.4	986	0.50	7.0								20.5	7.698	20.623	7.22		<1	NA
W6A	-5.1816	8/15/89	1147				2.93	91	63.9	894	0.42	5.9								20.6	7.720	20.108	6.56		<1	NA
W6A	-5.1816	8/22/89	1120				3.11	96	74.7	1046	0.50	7.0								20.0	7.771	20.637	6.96		<1	NA
W6A	-5.1816	8/28/89	1405				3.17	98	65.7	921	0.50	7.0								20.2	7.743	22.593	6.97		<1	NA
W6A	-5.1816	8/28/89	1405				3.17	98	65.7	921	0.50	7.0													NA	NA
W6A	-5.1816	10/27/89	1128				3.29	102	66.4	930	0.04	0.6	431	12105	3.48	107.8	67.2	941	0.32	20.9	7.839	19.747	6.27		<1	NA
W6A	-5.1816	11/15/89	908				3.17	98	67.6	947	0.00	0.0	398	11178	3.47	107.5	74.3	1041	0.95	20.1	7.617	21.706	7.49		<1	NA
W6A	-5.1816	12/8/89	1125				2.92	90	67.9	951	0.10	1.4	408	11459	3.50	108.4	69.2	969		20.9	7.810	20.615	7.26		<1	NA
W6A	-5.1816	1/10/90	1031				2.42	75	64.4	902	0.00	0.0	441	12386	2.68	83.0	66.8	936	0.86	21.1	7.998	20.315	6.59		<1	NA
W6A	-5.1816	2/13/90	1135				2.92	90	70.3	985	0.02	0.3	374	10504	3.15	97.6	74.3	1041	0.78	21.0	7.922	20.473	6.94		<1	NA
W6A	-5.1816	3/5/90	1346				2.65	82	89.9	1259	0.05	0.7	403		3.10	96.0	91.5	1282	0.79	20.7	7.966	18.133	6.44		<1	NA
W6A	-5.1816	4/4/90	1010				3.16	98	70.9	993	0.49	6.9	454	12751	3.31	102.5	73.8	1034	0.68	20.2	8.051	20.365	6.43		<1	NA
W6A	-5.1816	5/16/90	1215				2.94	91	65.0	910	0.00	0.0	381	10701	2.98	92.3	68.6	961	0.71	21.4	7.978	20.416	6.92		<1	NA
W6A	-5.1816	6/17/90	1442				3.32	103	58.9	825	0.25	3.5	339	9521	3.50	108.4	61.8	866	1.38	21.2	8.000	23.706	5.86		<1	NA
W6A	-5.1816	7/12/90	1227				3.33	103	62.7	878	0.00	0.0	384	10785	3.47	107.5	65.3	915	1.03	22.5	7.996	21.152	6.39		<1	NA
W6A	-5.1816	8/7/90	1202				3.50	108	70.8	992	0.13	1.8	391	10981	3.51	108.7	71.2	998	1.11	22.1	7.985	20.901	6.22		<1	NA
W6A	-5.1816	9/5/90	1353				4.27	132	68.0	952	0.00	0.0			4.27	132.3	70.3	985	0.69	22.4	7.920	21.716	6.22		1	NA
W6A	-5.1816	10/4/90	1505				4.33	134	69.4	972	0.11	1.5	404	11347	5.16	159.8	69.5	974	0.85	22.2	7.898	21.585	5.72		6	NA
W6A	-5.1816	10/31/90	1205				3.73	116	67.1	940	0.09	1.3	483	13565	4.67	144.6	81.6	1143	0.49	22.1	7.873	21.818	5.68		2	NA
W6A	-5.1816	12/7/90	1425				2.17	67	59.9	839	0.00	0.0	396	11122	3.74	115.8	68.9	965	0.51	22.3	7.882	20.070	6.47		<1	NA
W6A	-5.1816	1/9/91	855				3.79	117	73.4	1028	0.05	0.7	361	10139	3.79	117.4	81.8	1146	0.64	21.4	7.860	21.958	6.18		<1	NA
W6A	-5.1816	2/5/91	940				3.91	121	62.1	870	0.36	5.0	317	8903	4.00	123.9	63.8	894	0.80	20.9	7.899	20.546	6.54		<1	NA
W6A	-5.1816	3/6/91	937				4.19	130	83.6	1171	0.11	1.5	381	10701	4.22	130.7	87.9	1231	0.72	20.6	7.936	20.770	6.59		<1	NA
W6A	-5.1816	4/2/91	1036				3.92	121	72.7	1018	0.25	3.5	354	9942	3.93	121.7	74.5	1043	0.81	20.6	7.910	20.404	6.61		<1	NA
W6A	-5.1816	5/21/91	952				3.80	118	35.9	503	0.07	1.0	254	7134	4.00	123.9	37.3	522	0.83	20.7	7.886	22.873	6.62		<1	NA
W6A	-5.1816	6/25/91	936				2.65	82	62.4	874	0.22	3.1	279	7836	3.22	99.7	66.6	933	0.54	20.9	7.923	21.009	6.62		<1	<1
W6A	-5.1816	7/23/91	1037				3.70	115	63.8	894	0.22	3.1	366	10279	4.37	135.4	66.4	930	0.88	21.0	7.914	22.036	6.55		<1	<1
W6A	-5.1816	8/22/91	905				3.74	116	77.7	1088	0.09	1.3	386	10841	3.98	123.3	78.8	1104	0.54	21.4	7.899	21.749	6.56		<1	2
W6A	-5.1816	9/23/91	1010				3.97	123	62.0	868	0.12	1.7	381	10701	4.07	126.1	67.5	945	0.57	21.8	7.888	20.602	6.50		<1	<1
W6A	-5.1816	10/22/91	1011				5.00	155	69.5	973	0.07	1.0	497	13958	5.44	168.5	73.8	1034	0.66	21.9	7.854	21.661	6.46		<1	<1
W6A	-5.1816	11/19/91	1104				4.80	149	69.7	976	0.07	1.0	410	11515	4.87	150.8	71.1	996	0.47	21.7	7.835	22.677	6.35		3	46
W6A	-5.1816	12/10/91	957				4.40	136	65.1	912	0.08	1.1	359	10083	4.45	137.8	67.9	951	0.62	21.4	7.819	23.883	6.26		<1	<1
W6A	-5.1816	1/28/92	935				4.28	133	66.8	936	0.00	0.0	340	9549	4.41	136.6	67.1	940	0.82	20.7	7.828	24.322	6.58		<1	3
W6A	-5.1816	2/18/92	905				4.02	125	67.5	945	0.00	0.0	332	9324	4.23	131.0	71.7	1004	0.62	20.7	7.836	22.691	6.50		1	5
W6A	-5.1816	3/16/92	1003				3.98	123	68.9	965	0.00	0.0	584	16402	4.12	127.6	69.7	976	0.80	20.2	7.833	22.247	6.39		3	12
W6A	-5.1816	4/7/92	931				4.01	124	66.2	927	0.13	1.8	408	11459	4.12	127.6	67.5	945	1.04	20.8	7.824	22.673	6.40		<1	<1
W6A	-5.1816	5/5/92	936				4.29	133	67.7	948	0.21	2.9	387	10869	4.38	135.7	70.7	990	0.97	20.9	7.812	22.422	6.23		1	<1
W6A	-5.1816	6/22/92	925				4.26	132	69.0	966	0.22	3.1	389	10925	4.37	135.4	71.1	996	1.37	21.5	7.752	23.151	6.23		<1	2
W6A	-5.1816	7/28/92	901				4.29	133	78.5	1100	ND	0.0	352	9886	4.90	151.8	81.4	1140	1.08	21.8	7.735	22.710	6.00		7	2
W6A	-5.1816	8/25/92	840				5.06	157	74.5	1044	0.11	1.5	414	11627	5.13	158.9	80.2	1124	0.81	21.9	7.739	22.483	5.56		3	1
W6A	-5.1816	9/21/92	903				4.72	146	77.0	1078	0.13	1.8	327	9184	4.81	149.0	85.1	1191	0.86	22.8	7.771	24.600	5.20		1	4
W6A	-5.1816	10/26/92	916				4.68	145	71.9	1007	0.23	3.2	383	10757	4.70	145.6	74.9	1049	0.64	22.8	7.711	24.278	5.48		5	11
W6A	-5.1816	11/16/92	935				4.63	143	69.6	974	0.26	3.6	360	10111	4.88	151.2	75.5	1058	0.64	22.4	7.719	24.915	5.38		3	0
W6A	-5.1816	12/7/92	927				4.72	146	73.7	1032	0.15	2.1	381	10701	4.83	149.6	76.4	1070	0.63	22.3	7.731	23.241	5.63		190	33
W6A	-5.1816	1/25/93	924				4.32	134	71.2	997	0.24	3.4	239	6698	4.48	138.8	57.9	811	0.72	21.7	7.786	23.148	5.89		<1	<1
W6A	-5.1816	2/22/93	854				4.14	128	56.6	793	0.33	4.6	272	7645	4.18	129.5	62.8	880	0.69	21.1	7.805	23.964	5.85		4	12
W6A	-5.1816	3/15/93	851				4.13	128	63.2	885	0.20	2.8	381	10709	4.18	129.5	66.1	925	0.60	21.0	7.824	23.332	6.32		1	3
W6A	-5.1816	4/26/93	856				4.03	125	62.2	872	0.01	0.1	380	10672	4.12	127.6	66.8	936	0.65	21.4	7.785	23.681	5.72		<1	6
W6A	-5.1816	5/24/93	911				3.98	123	63.2	885	0.20	2.8	403	11318	4.05	125.4	69.7	977	0.52	21.6	7.796	22.518	5.91		<1	64
W6A	-5.1816	6/21/93	913				3.90	121	63.6	890	0.12	1.7	304	8538	3.98	123.3	67.6	947	0.57	21.9	7.804	22.468	5.89		<1	<1

NELHA Water Quality Laboratory

Well 6A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6A	-5.1816	8/30/93	1010				3.81	118	64.7	906	0.06	0.8	420	11787	3.82	118.3	75.0	1051	0.71	22.7	7.776	21.639	5.79		<1	<1
W6A	-5.1816	10/25/93	858				3.92	121	62.4	874	0.11	1.5	375	10532	3.92	121.4	65.0	910	0.69	23.1	7.784	22.943	5.38		<1	3
W6A	-5.1816	2/7/94	1131				3.85	119	55.6	779	0.14	2.0	213	5982	3.89	120.5	61.4	860	0.67	16.7	7.656	28.877	5.49		<1	<1
W6A	-5.1816	6/20/94	840				3.74	116	58.1	813	0.04	0.6	346	9721	3.81	118.0	68.4	958	0.56	22.6	7.807	22.821	5.36		<1	<1
W6A	-5.1816	8/22/94	953				3.53	109	56.0	784	0.04	0.6	369	10373	3.60	111.5	64.0	896	0.55	22.8	7.822	23.854	5.63		<1	<1
W6A	-5.1816	10/24/94	931				3.75	116	62.0	868	0.03	0.4	322	9043	3.81	118.0	59.3	830	0.52	23.4	7.814	23.918	5.31		1	<1
W6A	-5.1816	1/23/95	1006				3.66	113	53.4	748	0.05	0.7	224	6286	3.77	116.8	56.0	784	0.52	22.5	7.810	23.375	5.53		<1	<1
W6A	-5.1816	2/13/95	956				3.65	113	53.0	742	0.29	4.1	340	9535	3.67	113.7	58.5	819	0.50	22.1	7.813	23.024	5.55		<1	1
W6A	-5.1816	3/13/95	1033				3.56	110	56.1	786	0.05	0.7	410	11507	3.62	112.1	57.4	804	0.48	21.9	7.811	23.678	5.49		<1	<1
W6A	-5.1816	4/24/95	926				3.36	104	55.8	782	0.15	2.1	326	9142	3.45	106.9	56.5	791	0.55	21.9	7.817	24.094	5.64		<1	<1
W6A	-5.1816	5/8/95	923				3.39	105	62.7	878	0.30	4.2	317	8895	3.39	105.0	67.0	939	0.59	22.2	7.841	23.292	5.63		<1	<1
W6A	-5.1816	6/19/95	1001				3.38	105	54.6	765	0.30	4.2	306	8600	3.43	106.2	60.0	841	0.58	22.6	7.779	24.769	5.98		<1	<1
W6A	-5.1816	7/24/95	931				3.18	98	59.6	834	0.23	3.2	339	9513	3.24	100.4	62.1	869	0.48	23.0	7.851	22.865	5.93		<1	<1
W6A	-5.1816	8/21/95	1019				3.17	98	54.7	766	0.40	5.6	350	9838	3.26	101.0	70.7	990	0.59	23.4	7.820	24.384	5.59		<1	5
W6A	-5.1816	9/11/95	825				3.16	98	52.0	729	0.23	3.2	313	8802	3.16	97.9	55.1	772	0.55	23.5	7.882	24.450	5.95		<1	3
W6A	-5.1816	10/16/95	900				3.23	100	54.5	764	0.30	4.2	323	9066	3.33	103.1	57.6	807	0.66	23.5	7.893	23.806	5.78		<1	<1
W6A	-5.1816	11/6/95	845				5.54	172	68.5	959	0.43	6.0	332	9319	5.55	171.9	74.0	1036	0.67	23.6	7.870	23.631	5.61		<1	43
W6A	-5.1816	12/4/95	905				6.48	201	66.6	932	0.14	2.0	321	9001	6.63	205.4	71.7	1004	0.75	23.4	7.842	23.805	5.65		<1	10
W6A	-5.1816	1/29/96	1028				5.30	164	84.6	1185	0.04	0.6	320	8996	5.35	165.7	95.7	1340	0.72	22.1	7.843	23.663	5.86		<1	1
W6A	-5.1816	2/26/96	1030				5.47	169	91.6	1283	0.23	3.2	330	9273	5.54	171.6	94.8	1327	0.73	22.4	7.826	23.743	6.02		<1	<1
W6A	-5.1816	3/5/96	916				6.94	215	101.6	1423	0.37	5.2	308	8642	7.40	229.2	113.0	1583	0.77	22.2	7.817	23.712	6.09		1	6
W6A	-5.1816	4/1/96	935				7.31	226	129.3	1811	0.41	5.7	313	8784	7.59	235.1	134.2	1880	0.66	22.2	7.813	23.118	6.01		<1	<1
W6A	-5.1816	5/8/96	936				11.71	363	129.7	1817	0.20	2.8	315	8843	12.41	384.4	144.0	2017	0.59	22.6	7.809	23.260	5.53		<1	4
W6A	-5.1816	6/17/96	934				8.09	251	125.5	1758	0.24	3.4	322	9029	8.30	257.1	128.0	1793	0.75	22.3	7.801	24.313	5.57		1	<1
W6A	-5.1816	7/16/96	922				6.76	209	112.7	1578	0.27	3.8	308	8648	7.00	216.8	116.5	1632	0.86	23.0	7.824	24.465	5.82		<1	<1
W6A	-5.1816	8/5/96	1035				5.94	184	91.1	1276	0.35	4.9	277	7782	5.96	184.6	96.2	1348	0.71	23.0	7.837	25.670	5.92		<1	<1
W6A	-5.1816	9/3/96	934				5.48	170	98.7	1382	0.19	2.7	311	8721	5.49	170.0	101.0	1415	0.71	23.6	7.837	25.544	5.84		<1	<1
W6A	-5.1816	10/8/96	953				5.49	170	113.0	1583	0.26	3.6	314	8812	5.81	180.0	115.5	1618	0.91	23.5	7.844	24.707	4.66		<1	1
W6A	-5.1816	11/4/96	1017				5.01	155	112.1	1569	0.29	4.1	267	7511	5.09	157.7	116.9	1637	1.80	23.8	7.846	25.164	4.17		<1	<1
W6A	-5.1816	12/16/96	935				5.24	162	97.0	1358	0.30	4.2	286	8026	5.29	163.9	98.1	1373	0.86	23.3	7.880	25.764	5.91		<1	<1
W6A	-5.1816	1/13/97	1009				5.54	172	109	1532	0.13	1.8	272	7625	5.68	175.9	114.9	1609	0.78	23.1	7.869	24.419	6.09		<1	1
W6A	-5.1816	2/10/97	935				5.50	170	121	1689	0.16	2.2	266	7462	5.60	173.5	124.2	1740	0.72	22.5	7.902	24.988	6.11		<1	<1
W6A	-5.1816	3/10/97	924				5.19	161	132	1846	0.22	3.1	296	8313	5.20	161.1	135.4	1897	0.54	22.2	7.912	23.826	5.71		<1	<1
W6A	-5.1816	4/22/97	1003				4.82	149	107	1495	0.34	4.8	302	8476	5.32	164.8	203.9	2856	1.10	22.5	7.923	22.722	5.90		<1	<1
W6A	-5.1816	5/27/97	925				4.85	150	108	1516	0.07	1.0	263	7398	5.56	172.2	124.4	1742	0.74	21.2	7.880	25.256	5.74		<1	<1
W6A	-5.1816	6/16/97	940				4.50	139	87	1219	0.31	4.3	287	8046	4.62	143.1	98.1	1374	0.73	21.7	7.924	24.707	5.77		<1	<1
W6A	-5.1816	7/16/97	847				4.50	139	89	1242	0.10	1.4	282	7912	4.63	143.4	96.3	1349	0.59	22.0	7.921	24.554	5.58		<1	1
W6A	-5.1816	8/25/97	932				4.04	125	67	943	0.25	3.5	261	7336	4.05	125.4	71.1	995	0.66	23.7	8.016	26.925	5.65		<1	<1
W6A	-5.1816	9/22/97	914				4.67	145	68	947	0.23	3.2	255	7173	4.72	146.2	69.6	975	0.69	24.3	8.064	25.750	5.57		<1	1
W6A	-5.1816	10/14/97	927				6.74	209	115	1605	0.34	4.8	272	7645	6.79	210.3	126.0	1765	0.71	24.3	8.019	24.686	5.64		<1	1
W6A	-5.1816	11/3/97	1045				6.14	190	79.3	1111	0.29	4.1	262	7358	6.41	198.5	98.7	1382	0.80	24.2	7.984	25.487	5.82		<1	1
W6A	-5.1816	12/15/97	950				5.59	173	83.9	1175	0.11	1.5	257	7224	5.78	179.0	88.5	1240	0.75	23.7	7.980	25.981	4.95		<1	4
W6A	-5.1816	1/5/98	1053				5.53	171	77.5	1086	0.07	1.0	225	6330	5.75	178.1	82.5	1156	0.71	23.0	7.956	27.282	5.30		<1	<1
W6A	-5.1816	2/2/98	957				6.05	187	78.2	1096	0.21	2.9	243	6828	6.43	199.2	81.1	1136	0.69	21.7	7.926	26.834	4.99		<1	1
W6A	-5.1816	3/9/98	954				7.64	237	104.0	1457	0.29	4.1	269	7561	7.78	241.0	108.0	1513	0.72	21.5	7.734	25.069	4.92		1	3
W6A	-5.1816	4/13/98	904				6.05	187	86	1203	0.15	2.1	273	7656	6.16	190.8	89.5	1253	0.67	21.5	7.777	25.358	5.21		<1	1
W6A	-5.1816	5/11/98	934				6.16	191	93	1309	0.22	3.1	273	7676	6.32	195.8	98.9	1385	0.70	21.8	7.738	24.806	4.68		<1	2
W6A	-5.1816	6/1/98	932				6.11	189	78.8	1103	0.14	2.0	267	7493	6.23	193.0	81.1	1135	0.67	21.9	7.719	25.472	5.17		<1	1
W6A	-5.1816	7/13/98	940				5.42	168	66	929	0.11	1.5	263	7372	5.70	176.6	71	996	0.74	21.5	7.690	26.168	5.22		<1	<1
W6A	-5.1816	8/10/98	957				5.45	169	71.5	1001	0.17	2.4	273	7679	5.68	175.9	77.8	1090	0.75	21.9	7.607	25.944	4.85		<1	3
W6A	-5.1816	9/14/98	948				5.06	157	56.5	791	0.16	2.2	206	5777	5.30	164.2	60	838	0.84	22.4	7.729	29.696	5.05		<1	9
W6A	-5.1816	10/12/98	855				4.55	141	61.4	860	0.04	0.6	235	6603	4.73	146.5	66	922	0.73	22.9	7.715	28.082	5.63		<1	1
W6A	-5.1816	11/2/98	917				5.26	163	78.3	1097	0.08	1.1	263	7392	5.43	168.2	83.8	1174	0.81	23.0	7.700	26.178	6.74		<1	11
W6A	-5.1816	12/15/98	918				5.09	158	81.6	1143	0.12	1.7	226	6347	5.23	162.0	84.8	1188	0.84	23.0	7.730	25.021	5.25		<1	1
W6A	-5.1816	1/11/99	935				4.56	141	79	1108	0.18	2.5	251	7035	4.72	146.2	81	1133	0.76	22.6	7.729	26.028	5.41		<1	<1
W6A	-5.1816	2/2/99	930				5.06	157	95	1331	0.21	2.9	262	7344	5.19	160.8	104	1459	0.86	21.9	7.736	25.230	5.30		<1	<1
W6A	-5.1816	3/1/99	935				5.33	165	81.3	1139	0.03	0.4	281	7884	5.50	170.4	84.8	1188	0.79	21.5	7.650	24.558	5.29		<1	<1
W6A	-5.1816	4/5/99	933				5.02	155	70.1	982	0.14	2.0	261	7328	5.23	162.0	74.4	1042	0.64	21.1	7.667	26.196	5.15		<1	<1
W6A	-5.1816	5/3/99	933				5.14	159	70.6	989	0.15	2.1	284	7968	5.29	163.9	77.7	1088	0.64	21.0	7.614	24.767	4.64		<1	<1
W6A	-5.1816	6/1/99	925				4.73	147	67.7	948	0.34	4.8	277	7780	4.84	149.9	71.4	1000	0.68	21.3	7.605	25.670	4.92		<1	1

NELHA Water Quality Laboratory

Well 6A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6A	-5.1816	7/14/99	928				4.89	151	81.1	1136	0.05	0.7	287	8049	5.01	155.2	84.5	1184	0.79	21.9	7.589	25.520	4.95		<1	1
W6A	-5.1816	8/23/99	954				4.98	154	75.0	1051	0.24	3.4	271	7597	5.09	157.7	79.4	1112	0.75	22.5	7.647	26.337	4..88		<1	1
W6A	-5.1816	9/7/99	944				5.10	158	76.2	1067	0.06	0.8	267	7485	5.33	165.1	89.9	1259	0.73	22.4	7.640	27.362	4.90		<1	1
W6A	-5.1816	10/5/99	933				5.36	166	83.5	1170	0.02	0.3	265	7434	5.49	170.0	87.8	1230	0.75	22.3	7.581	26.739	4.58		<1	1
W6A	-5.1816	11/1/99	1000				5.12	159	81.2	1137	0.07	1.0	265	7437	5.15	159.5	86.2	1207	0.71	22.3	7.610	26.676	4.58		<1	<1
W6A	-5.1816	12/14/99	951				6.58	204	93.5	1310	0.09	1.3	231	6496	6.70	207.5	97.8	1370	0.96	21.9	7.624	27.990	3.45		<1	<1
W6A	-5.1816	1/10/00	1017				7.71	239	95.0	1331	0.14	2.0	259	7260	7.80	241.6	105	1471	0.88	21.8	7.567	25.842	4.07		<1	<1
W6A	-5.1816	2/7/00	1012				7.72	239	96.0	1345	0.21	2.9	265	7448	7.91	245.0	102	1429	0.91	21.5	7.595	25.296	4.00		<1	5
W6A	-5.1816	3/21/00	1015				6.85	212	83.0	1163	0.09	1.3	263	7375	6.61	204.7	89.2	1249	0.86	21.2	7.638	25.729	4.30		<1	<1
W6A	-5.1816	4/10/00	1044				7.95	246	95.3	1335	0.03	0.4	257	7226	7.62	236.0	103	1443	0.91	21.1	7.627	25.762	4.23		<1	<1
W6A	-5.1816	5/15/00	955				8.01	248	94.5	1324	0.17	2.4	253	7114	7.95	246.2	104	1461	0.84	21.2	7.614	26.657	3.90		<1	1
W6A	-5.1816	6/5/00	956				7.63	236	89.3	1251	0.03	0.4	252	7080	7.69	238.2	100	1405	0.89	21.1	7.584	26.941	4.50		<1	1
W6A	-5.1816	7/26/00	1022				8.44	261	97.0	1359	0.03	0.4	243	6819	8.59	266.1	102	1431	0.74	22.7	7.580	27.217	4.19		<1	109
W6A	-5.1816	8/29/00	925				9.07	281	105	1471	0.11	1.5	254	7120	9.11	282.2	108	1513	0.84	22.1	7.494	26.571	3.73		3	<1
W6A	-5.1816	9/5/00	951				8.73	270	96.9	1357	0.06	0.8	227	6361	8.99	278.5	104	1457	0.87	22.1	7.528	28.339	3.95		<1	<1
W6A	-5.1816	10/24/00	956				9.47	293	96.8	1355	0.16	2.2	264	7403	9.79	303.2	99.6	1396	0.77	22.6	7.518	27.810	3.94		<1	1
W6A	-5.1816	11/13/00	937				8.17	253	123	1720	0.28	3.9	245	6892	8.50	263.3	133	1860	0.91	22.7	7.504	26.531	3.85		5	5
W6A	-5.1816	12/18/00	939				8.40	260	191	2668	0.20	2.8	226	6356	8.70	269.5	193	2700	0.91	22.4	7.549	27.756	3.89		1	6
W6A	-5.1816	1/22/01	943				8.24	255	115	1615	0.02	0.3	245	6881	8.46	262.0	119	1670	0.99	21.6	7.495	27.274	3.94		<1	<1
W6A	-5.1816	2/5/01	1002				7.92	245	129	1810	0.20	2.8	251	7055	8.02	248.4	134	1871	0.86	21.4	7.510	27.218	3.96		<1	1
W6A	-5.1816	3/5/01	953				7.18	222	108	1513	0.04	0.6	242	6794	7.31	226.4	110	1546	0.88	21.2	7.503	26.576	3.58		<1	1
W6A	-5.1816	4/17/01	937				7.54	234	102	1422	0.05	0.7	245	6889	7.66	237.3	107	1497	0.84	21.0	7.485	26.697	3.90		<1	<1
W6A	-5.1816	5/15/01	935				7.46	231	94.0	1317	0.16	2.2	264	7412	7.37	228.3	99.3	1391	0.77	21.0	7.495	26.297	4.69		<1	18
W6A	-5.1816	6/12/01	934				6.94	215	96.9	1358	0.07	1.0	249	7002	6.61	204.7	101	1414	0.80	21.3	7.523	26.015	4.79		<1	<1
W6A	-5.1816	7/23/01	944				6.81	211	91.1	1276	0.06	0.8	256	7198	6.60	204.4	98.0	1372	0.81	21.7	7.490	27.133	4.67		<1	6
W6A	-5.1816	8/8/01	935				6.62	205	95.2	1334	0.08	1.1	255	7156	6.68	206.9	100	1406	0.75	21.6	7.500	26.950	4.49		<1	3
W6A	-5.1816	9/19/01	944				6.92	214	81.8	1145	0.08	1.1	281	7886	7.02	217.4	87.8	1230	0.83	22.2	7.453	27.500	3.84		<1	<1
W6A	-5.1816	10/24/01	917				6.36	197	75.6	1059	0.02	0.3	246	6909	6.80	210.6	81.5	1142	0.74	22.9	7.486	27.771	4.78		<1	1
W6A	-5.1816	11/7/01	935				6.80	211	79.4	1112	0.06	0.8	236	6639	6.92	214.3	93.0	1302	0.67	23.0	7.512	28.320	3.81		<1	<1
W6A	-5.1816	12/19/01	954				5.70	177	108	1516	0.21	2.9	235	6597	5.60	173.5	140	1964	0.75	22.8	7.568	27.939	4.61		<1	2
W6A	-5.1816	1/9/02	944				5.65	175	96.1	1346	0.20	2.8	241	6769	5.68	175.9	100	1402	0.86	22.5	7.593	27.792	5.61		1	<1
W6A	-5.1816	2/19/02	1001				5.54	172	84.4	1182	0.08	1.1	236	6637	5.68	175.9	98.0	1373	0.72	21.8	7.618	27.656	4.58		<1	<1
W6A	-5.1816	3/20/02	1003				5.36	166	86.1	1206	0.14	2.0	244	6858	5.58	172.8	89.9	1259	0.69	21.8	7.587	26.862	4.28		<1	<1
W6A	-5.1816	4/8/02	1052				5.70	177	81.0	1134	0.01	0.1	231	6488	5.90	182.7	85.2	1193	0.65	21.8	7.609	27.625	4.13		1	1
W6A	-5.1816	5/29/02	1037				5.94	184	112	1567	0.16	2.2	257	7207	6.26	193.9	119	1671	0.78	22.1	7.542	28.686	4.64		<1	<1
W6A	-5.1816	6/17/02	1010				5.64	175	92.4	1294	0.03	0.4	230	6468	5.82	180.3	101	1410	0.69	22.2	7.570	28.213	QNS		<1	<1
W6A	-5.1816	7/15/02	1005				6.14	190	102	1424	0.12	1.7	247	6923	6.42	198.9	111	1549	0.74	22.6	7.564	27.638	4.50		<1	2
W6A	-5.1816	8/20/02	1007				5.70	177	86.7	1214	0.20	2.8	254	7128	5.90	182.7	83.2	1166	0.78	23.3	7.578	27.551	4.43		<1	<1
W6A	-5.1816	9/23/02	1042				5.62	174	85.7	1201	0.23	3.2	252	7083	5.76	178.4	87.0	1219	0.97	23.2	7.548	27.719	4.24		<1	<1
W6A	-5.1816	10/14/02	943				5.41	168	80.4	1126	0.11	1.5	259	7285	5.78	179.0	77.6	1088	0.73	23.2	7.545	25.360	6.59		<1	2
W6A	-5.1816	11/4/02	953				5.24	162	79.4	1112	0.03	0.4	259	7263	5.49	170.0	76.4	1071	0.81	22.9	7.588	26.430	4.75		<1	<1
W6A	-5.1816	12/17/02	1021				5.78	179	74.4	1042	0.06	0.8	236	6634	6.07	188.0	75.9	1063	0.75	23.0	7.608	27.638	3.95		<1	<1
W6A	-5.1816	1/21/03	1105				5.22	162	79.1	1108	0.02	0.3	222	6241	5.53	171.3	84.5	1184	0.73	22.6	7.646	28.180	4.70		<1	<1
W6A	-5.1816	2/12/03	1031				4.88	151	73.1	1024	0.08	1.1	240	6735	5.08	157.3	90.1	1262	0.64	22.4	7.627	27.119	4.38		<1	<1
W6A	-5.1816	3/19/03	1016				4.82	149	72.0	1008	0.11	1.5	247	6940	4.93	152.7	83.5	1170	0.70	22.3	7.656	27.594	4.86		<1	1
W6A	-5.1816	4/28/03	1003				5.00	155	78.7	1102	0.18	2.5	232	6505	5.10	158.0	83.4	1168	0.51	22.5	7.739	27.459	5.07		<1	<1
W6A	-5.1816	5/12/03	935				4.72	146	71.4	1000	0.03	0.4	231	6474	4.88	151.2	89.5	1254	0.51	22.3	7.763	28.163	5.18		<1	7
W6A	-5.1816	6/3/03	950				4.85	150	81.0	1134	0.23	3.2	235	6609	4.91	152.1	90.7	1271	0.61	22.5	7.743	27.625	5.09		<1	<1

NELHA Water Quality Laboratory

Well 6A Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6A	-5.1816	7/29/03	1013				5.36	166	84.6	1184	0.02	0.3	238	6679	5.46	169.1	94.0	1316		22.7	7.637	27.525	4.91		<1	7
W6A	-5.1816	8/26/03	1015				4.70	146	79.5	1114	0.17	2.4	238	6682	4.95	153.3	88.0	1232		23.3	7.622	27.743	4.99		1	1
W6A	-5.1816	9/15/03	1004				4.56	141	74.0	1037	0.05	0.7	225	6316	4.82	149.3	92.4	1294		24.0	7.677	28.565	4.84		<1	1
W6A	-5.1816	10/6/03	958				4.98	154	85.3	1195	0.15	2.1	230	6471	5.16	159.8	96.9	1357		23.7	7.626	28.190	NA		<1	2
W6A	-5.1816	10/28/03	1030				5.24	162	77.9	1091	0.10	1.4	220	6190	5.36	166.0	87.0	1219		23.6	7.610	28.749			<1	3
W6A	-5.1816	11/14/03	1335																	23.6			4.98			
W6A	-5.1816	12/15/03	942																	20.7	7.610					
W6A	-5.1816	12/17/03	847				5.17	160	78.7	1102	0.54	7.6	229	6426	5.37	166.3	81.1	1136		23.1	7.611	28.071	4.35		<1	<1
W6A	-5.1816	1/26/04	951				4.56	141	95.9	1344	0.30	4.2	217	6081	4.78	148.1	108	1511		22.8	7.638	27.905	4.42		2	<1
W6A	-5.1816	2/5/04	952				4.68	145	118	1647	0.18	2.5	242	6783	4.74	146.8	134	1881		22.3	7.560	26.452	4.44		1	<1
W6A	-5.1816	3/2/04	1041				4.52	140	109	1527	0.52	7.3	224	6280	4.44	137.5	116	1626		22.8	7.643	25.172	4.14		<1	<1
W6A	-5.1816	4/20/04	957				4.76	147	156	2185	0.01	0.1	236	6620	4.60	142.5	158	2207		22.3	7.542	26.891	3.54		<1	<1
W6A	-5.1816	5/11/04	912				4.98	154	135	1895	0.26	3.6	230	6460	4.82	149.3	143	2002		22.7	7.536	26.29	4.25		<1	2
W6A	-5.1816	6/2/04	959				4.56	141	153	2144	0.14	2.0	237	6651	4.54	140.6	155	2164		22.5	7.461	26.34	3.55		<1	5
W6A	-5.1816	7/14/04	958				4.62	143	117	1632	0.22	3.1	243	6811	4.54	140.6	141	1979		22.7	7.487	27.04	2.68		<1	2
W6A	-5.1816	8/23/04	958				4.54	141	107	1495	0.37	5.2	227	6367	4.60	142.5	111	1551		23.6	7.508	27.58	3.68		<1	<1
W6A	-5.1816	9/2/04	1017				5.52	171	111	1551	0.13	1.8	246	6909	5.60	173.5	115	1607		23.8	7.444	26.86	2.66		<1	1
W6A	-5.1816	10/4/04	929				6.04	187	108	1509	0.25	3.5	223	6274	6.22	192.7	118	1658		24.1	7.497	27.91	3.44		<1	61
W6A	-5.1816	11/9/04	855				6.86	212	125	1747	0.16	2.2	242	6791	7.12	220.5	130	1821		24.1	7.464	26.65	2.58		<1	2032
W6A	-5.1816	12/6/04	935				6.20	192	113	1584	0.16	2.2	218	6109	6.48	200.7	133	1864		23.9	7.561	27.65	3.42		<1	<1
W6A	-5.1816	1/10/05	901				5.85	181	114	1598	0.20	2.8	243	6825	6.02	186.5	120	1675		23.1	7.470	24.973	3.08		1	<1
W6A	-5.1816	2/9/05	903				6.13	190	159	2227	0.36	5.0	241	6777	6.25	193.6	219	3060		22.4	7.502	25.940	2.57		<1	1
W6A	-5.1816	3/15/05	932				5.54	172	193	2705	0.27	3.8	223	6274	5.76	178.4	208	2913	0.63	22.1	7.561	27.556	2.04		<1	1
W6A	-5.1816	4/19/05	848				5.84	181	173	2418	0.12	1.7	233	6533	5.76	178.4	176	2464		22.0	7.529	27.415	2.60		<1	1
W6A	-5.1816	5/23/05	921				5.84	181	149	2081	0.30	4.2	262	7344	5.85	181.2	149	2080		22.2	7.427	26.137	2.76		1	1
W6A	-5.1816	6/15/05	952				5.05	156	117	1636	0.13	1.8	218	6120	5.36	166.0	129	1811		22.2	7.542	27.773	3.85		<1	<1
W6A	-5.1816	7/18/05	849				5.58	173	112	1565	0.11	1.5	239	6715	5.76	178.4	115	1605	0.62	22.4	7.514	26.216	4.03		2	16
W6A	-5.1816	8/9/05	910				5.60	173	108	1510	0.14	2.0	238	6687	5.94	184.0	116	1628	0.54	23.8	7.537	27.018	4.01		<1	1
W6A	-5.1816	9/20/05	905				5.54	172	96.9	1358	0.17	2.4	230	6465	5.76	178.4	102	1434	0.69	23.0	7.568	27.924	3.98		<1	1
W6A	-5.1816	10/17/05	901				5.34	165	150	2098	0.15	2.1	248	6962	5.42	167.9	150	2101		23.8	7.546	27.365	3.23		1	<1
W6A	-5.1816	11/7/05	835				4.80	149	186	2601	0.10	1.4	238	6693	4.92	152.4	198	2768		23.6	7.548	27.651	2.48		<1	5
W6A	-5.1816	12/19/05	838				4.20	130	121	1693	0.36	5.0	207	5825	4.24	131.3	139	1953	0.75	23.4	7.650	29.283	3.83		<1	<1
W6A	-5.1816	1/23/06	849				4.60	142	107	1497	0.37	5.2	231	6474	4.68	145.0	108	1518		23.0	7.640	28.182	3.90		<1	1
W6A	-5.1816	2/14/06	857				4.52	140	92.9	1302	0.29	4.1	221	6215	4.74	146.8	97.5	1366	0.68	22.8	7.671	28.109	3.63		<1	940
W6A	-5.1816	3/20/06	853				4.69	145	90.5	1268	0.38	5.3	233	6544	4.87	150.8	91.3	1279	0.64	22.7	7.695	27.25	4.53		4	220
W6A	-5.1816	4/25/06	925				4.66	144	107	1499	0.27	3.8	226	6347	4.66	144.3	95.1	1332	0.62	22.5	7.692	27.083	5.58		<1	161
W6A	-5.1816	5/22/06	913				4.42	137	91.5	1282	0.26	3.6	222	6235	5.02	155.5	81.6	1143	0.62	22.3	7.657	27.361	6.51		<1	1
W6A	-5.1816	6/26/06	917				4.42	137	89.7	1256	0.16	2.2	228	6403	4.53	140.3	85.6	1200	0.79	22.4	7.676	27.617	4.98		<1	1
W6A	-5.1816	7/20/06	919				4.53	140	84.7	1186	0.30	4.2	218	6123	4.90	151.8	78.9	1106	0.63	22.5	7.673	28.101	4.63		<1	5
W6A	-5.1816	8/7/06	943				4.59	142	81.1	1136	0.18	2.5	219	6151	4.97	153.9	73.3	1026	0.61	22.8	7.684	27.926	4.97		<1	1
W6A	-5.1816	9/18/06	917				4.72	146	82.5	1156	0.29	4.1	224	6291	5.15	159.5	73.5	1029	0.74	23.4	7.675	28.221	4.83		<1	2
W6A	-5.1816	10/23/06	920				4.47	138	76.5	1072	0.26	3.6	216	6066	4.66	144.3	70.8	991	0.69	23.6	7.685	27.490	4.55		1	1
W6A	-5.1816	11/27/06	904				4.05	125	123	1723	0.25	3.5	201	5645	4.18	129.5	112	1568	0.68	23.6	7.711	28.982	4.46		<1	<1
W6A	-5.1816	12/11/06	1005				4.39	136	125	1751	0.25	3.5	215	6038	4.44	137.5	113	1589	0.69	23.5	7.686	28.172	4.58		<1	<1
W6A	-5.1816	1/8/07	1059				4.39	136	101	1415	0.23	3.2	208	5842	4.58	141.9	92.7	1299	0.59	23.3	7.71	28.269	5.03		<1	<1
W6A	-5.1816	2/20/07	956				4.47	138	90.5	1268	0.52	7.3	224	6291	4.72	146.2	100	1407	0.67	23.0	7.694	27.164	5.62		<1	<1
W6A	-5.1816	3/5/07	931				4.37	135	121	1695	0.40	5.6	234	6572	4.61	142.8	127	1781	0.65	23.1	7.726	26.901	5.05		<1	<1
W6A	-5.1816	4/18/07	955				4.35	135	118	1653	0.22	3.1	261	7330	4.49	139.1	106	1479	0.59	23.6	7.711	25.632	5.92		<1	1
W6A	-5.1816	5/1/07	947				4.31	133	117	1639	0.96	13.4	252	7078	4.46	138.1	106	1483	0.58	23.0	7.689	26.016	6.41		<1	2
W6A	-5.1816	6/18/07	927				4.01	124	84.6	1185	0.18	2.5	244	6853	5.46	169.1	75.9	1063	1.13	23.0	7.595	26.529	4.64		2	6

NELHA Water Quality Laboratory

Well 6A Data Table

June 1989 - December 2014

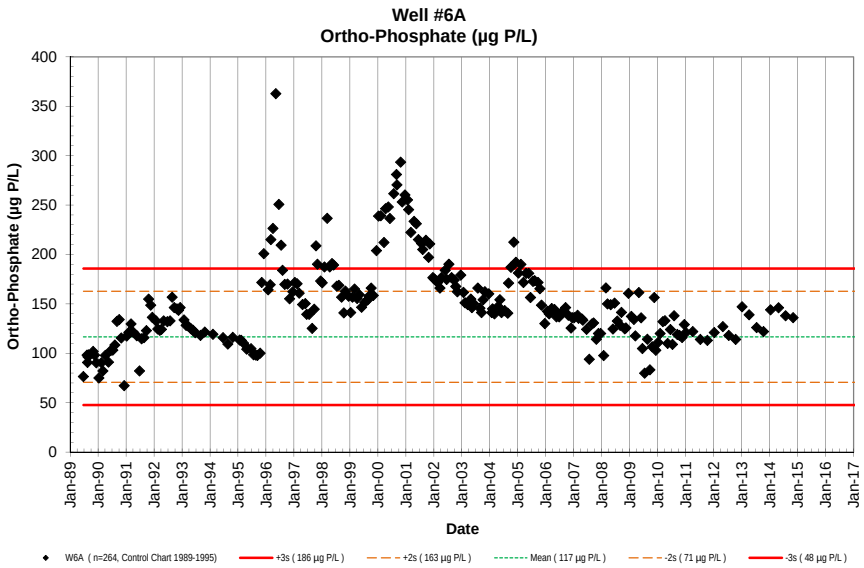
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6A	-5.1816	7/23/07	1454	-1.78	0.46	Ebb	3.03	94	53.0	742	0.06	0.8	126	3537	3.39	104.9	54.2	759		23.0	7.47	26.20	5.80			
W6A	-5.1816	8/27/07	1459	-2.08	0.70	Flood	4.19	130	135.8	1903	0.29	4.0	221	6211	4.02	124.4	130.6	1829		23.5	7.68	28.12	6.32			
W6A	-5.1816	9/18/07	1609	-1.96	0.21	Ebb	4.22	131	151.1	2117	0.36	5.0	254	7130	4.14	128.3	130.9	1834		23.5	7.49	27.76	5.69			
W6A	-5.1816	10/23/07	1516	-1.78	0.46	Ebb	3.68	114	151.3	2120	0.16	2.2	212	5967	3.40	105.3	140.2	1964		23.7	7.36	28.37	3.52			
W6A	-5.1816	11/20/07	1324	-2.18	0.43	Ebb	3.87	120	126.9	1778	0.19	2.6	232	6525	3.29	102.0	132.1	1851		23.8	7.54	27.66	3.72			
W6A	-5.1816	12/19/07	1331	-2.29	0.24	Ebb	3.87	120	183.1	2565	29.44	412	220	6166						23.3	7.45	24.62	3.25			
W6A	-5.1816	1/28/08	855	-2.44	0.27	Ebb	3.15	98	193.2	2706	0.71	10	232	6528						22.3	7.15	25.72	3.41			
W6A	-5.1816	2/26/08	1348	-2.44	0.06	Flood	5.36	166	219.1	3069	0.35	4.9	253	7117						22.0	7.31	25.05	4.18			
W6A	-5.1816	3/17/08	1443	-1.14	0.24	High	4.84	150	150.9	2114	0.06	0.8	221	6199						21.8	7.41	25.64	5.27			
W6A	-5.1816	4/29/08	1123	-1.04	0.24	Flood	4.81	149	149.8	2099	0.09	1.2	231	6498						21.6	7.35	26.20	1.75			
W6A	-5.1816	5/28/08	1105	-2.34	0.34	High	4.02	125	168.7	2363	0.27	3.8	238	6697						22.0	7.43	25.12	2.41			
W6A	-5.1816	6/17/08	1140	-2.13	0.21	Flood	4.87	151	128.1	1795	1.62	22.7	229	6432						22.3	7.23	26.55	1.19	10.10		
W6A	-5.1816	7/22/08	1114	-2.44	0.15	Ebb	4.28	133	125.2	1754	0.24	3.3	243	6816						22.4	7.44	25.84	3.04			
W6A	-5.1816	8/30/08	1132		0.15	Flood	4.14	128	113.7	1592	2.15	30	279	7829						22.7	7.45	23.96	NA			
W6A	-5.1816	9/16/08	1110	-2.52	0.09	Low	4.57	141	106.2	1487	0.26	3.6	301	8455						23.3	7.34	22.84	1.90			
W6A	-5.1816	10/28/08	1107	-2.49	0.15	Low	4.03	125	91.5	1282	0.15	2.1	183	5133						24.6	7.38	27.52	2.92	3.46		
W6A	-5.1816	11/13/08	1109	-2.49	0.09	Low	4.06	126	103.2	1446	0.20	2.8	217	6102						24.0	7.67	26.98	3.79	3.02		
W6A	-5.1816	12/15/08	1411	-2.55	0.00	Low	5.19	161	118.2	1656	0.11	1.5	216	6079						23.9	7.76	25.60	4.20			
W6A	-5.1816	1/22/09	1055	-2.53	0.09	Flood	4.44	137	153.1	2144	0.90	13	238	6690						22.8	7.53	26.24	0.56	0.31		
W6A	-5.1816	2/24/09	1025	-2.65	0.09	Ebb	4.34	134	133.1	1865	0.74	10	288	8081						21.8	7.42	25.70	3.01	2.74		
W6A	-5.1816	3/16/09	1106	-2.60	0.09	Ebb	3.80	118	137.5	1926	0.13	1.8	210	5912						22.6	7.38	24.83	3.62	0.32		
W6A	-5.1816	4/30/09	1633	-2.70	0.24	Flood	5.21	161	121.8	1707	0.64	9	205	5768						22.0	7.97	24.73	4.03			
W6A	-5.1816	5/29/09	1028	-2.44	0.21	Ebb	4.38	136	112.8	1581	0.18	2.5	261	7318						20.1	7.69	25.95	4.91	0.39		
W6A	-5.1816	6/16/09	1417	-2.27	0.40	Flood	3.38	105	75.6	1058	0.42	5.9	165	4646						20.9	7.82	27.56	4.77	0.13		
W6A	-5.1816	7/14/09	1315	-2.36	0.37	Ebb	2.58	80	66.9	937	0.30	4.2	105	2961						21.3	7.70	27.31	4.54	0.10		
W6A	-5.1816	8/19/09	1353	-1.92	0.67	Flood	3.69	114	80.6	1130	1.32	18.5	150	4206						21.5	7.63	29.30	4.41	0.31		
W6A	-5.1816	9/21/09	1541	-2.36	0.30	Flood	2.69	83	67.8	950	0.40	5.6	136	3833						22.3	8.15	28.25	4.59	0.07		
W6A	-5.1816	10/22/09	1614	-2.53	0.18	Flood	3.44	107	77.8	1090	0.54	7.5	93	2614						22.9	7.68	27.86	4.85	0.16		
W6A	-5.1816	11/17/09	840	-2.44	0.30	Ebb	5.05	157	82.0	1149	0.94	13.2	235	6589						22.7	7.66	27.87	5.23	0.05		
W6A	-5.1816	12/8/09	927	-2.18	0.55	High	3.33	103	83.7	1172	0.94	13.2	217	6093						22.9	7.66	27.88	5.14	0.25		
W6A	-5.1816	1/6/10	825	-2.18	0.43	High	3.58	111	81.6	1143	1.29	18	211	5935						22.2	7.67	27.44	4.44	0.18		
W6A	-5.1816	2/2/10	823	-2.08	0.37	Ebb	3.87	120	101.8	1426	0.64	9	205	5749						21.8	7.74	26.85	4.85	0.18		
W6A	-5.1816	3/10/10	809	-2.62	0.09	Low	4.26	132	107.9	1512	0.36	5	263	7399						21.6	7.70	25.13	5.20	0.07		
W6A	-5.1816	4/6/10	1433	-2.55	0.12	Ebb	4.29	133	90.8	1272	0.43	6	284	7979						18.9	7.73	28.41	5.74	0.09		
W6A	-5.1816	5/11/10	1438	-1.99	0.55	High	3.55	110	61.9	867	1.21	17	229	6421						21.3	7.80	27.75	5.23	0.04		
W6A	-5.1816	6/16/10	1007	-1.84	0.15	Ebb	4.00	124	85.0	1191	0.36	5	255	7169						21.4	7.75	27.40	5.23	0.31		
W6A	-5.1816	7/13/10	1452	-2.26	0.40	Flood	3.52	109	77.5	1086	0.57	8	226	6344						21.7	7.76	28.23	5.09	0.24		
W6A	-5.1816	8/3/10	1450	-2.19	0.40	Ebb	4.46	138	62.8	879	0.38	5.3	196	5503						22.0	7.75	28.12	4.99	0.13		
W6A	-5.1816	9/14/10	1516	-2.25	0.30	Ebb	3.84	119	88.7	1242	0.47	6.6	254	7126						22.2	7.72	27.57	5.39	0.19		
W6A	-5.1816	10/12/10	1539	-2.40	0.18	Low	3.81	118	95.3	1335	0.11	1.5	242	6809						22.2	7.73	27.89	5.05	0.22		
W6A	-5.1816	11/16/10	1415	-2.19	0.34	Ebb	3.75	116	98.5	1379	0.08	1.1	232	6513						22.3	7.73	28.43	4.83	0.12		
W6A	-5.1816	12/14/10	1445	-2.42	0.12	Ebb	4.16	129	134.6	1886	0.29	4	254	7141						22.3	7.76	26.30	4.75	0.11		
W6A	-5.1816	1/4/11	1425	-2.44	0.15	Flood	3.91	121	118.3	1657	0.35	4.9	238	6697						22.1	7.68	25.89	5.02	0.12		
W6A	-5.1816	4/5/11	1447	-2.29	0.34	Flood	3.94	122	88.7	1243	0.17	2.4	229	6420						21.1	7.60	25.67	4.42	0.18		
W6A	-5.1816	7/11/11	1204	-2.20	0.49	Flood	3.68	114	110.2	1544	0.14	2	245	6883						21.8	7.66	27.27	4.91	0.19		
W6A	-5.1816	10/11/11	1340	-2.30	0.34	Flood	3.65	113	96.4	1350	0.35	4.9	246	6919						22.1	7.62	27.55	4.83	0.16		
W6A	-5.1816	1/9/12	1438	-2.57	0.15	Flood	3.91	121	106.3	1489	0.19	2.7	273	7655						21.5	7.65	25.18	4.63	0.07		
W6A	-5.1816	4/30/12	1454	-2.38	0.24	Ebb	4.10	127	93.0	1303	0.16	2.2	251	7056						20.1	7.58	27.25	3.98	0.02		
W6A	-5.1816	7/17/12	1530	-1.91	0.73	Flood	3.81	118	100.2	1404	0.26	3.7	226	6349						20.3	7.48	28.68	3.78	0.10		
W6A	-5.1816	10/15/12	1324	-2.31	0.24	Flood	3.68	114	77.0	1078	0.14	2	253	7105						20.4	7.40	28.14	1.30	0.09		
W6A	-5.1816	1/7/13	1427	-2.38	0.18	Ebb	4.75	147	91.7	1284	0.19	2.6	347	9740						20.0	7.44	25.28	4.24	0.07		
W6A	-5.1816	4/8/13	1346	-2.26	0.37	Flood	4.49	139	61.3	859	0.34	4.7	267	7496						19.1	7.51	26.62	3.19	0.13		
W6A	-5.1816	7/16/13	1615	-2.34	0.30	Ebb	4.07	126	57.5	806	0.27	3.8	287	8063						20.1	7.43	26.75	3.13	0.05		
W6A	-5.1816	10/14/13	1654	-2.36	0.18	Ebb	3.94	122	58.1	814	0.38	5.3	279	7848						20.8	7.49	26.76	3.14	0.20		
W6A	-5.1816	1/14/14	1547	-2.35	0.18	Ebb	4.65	144	94.3	1321	0.36	5	273	7676						20.6	7.52	25.78	4.22	0.03		
W6A	-5.1816	4/28/14	1543	-2.01	0.52	Flood	4.71	146	100.0	1400	0.33	4.6	239	6719						20.4	7.57	27.29	3.32	0.02		

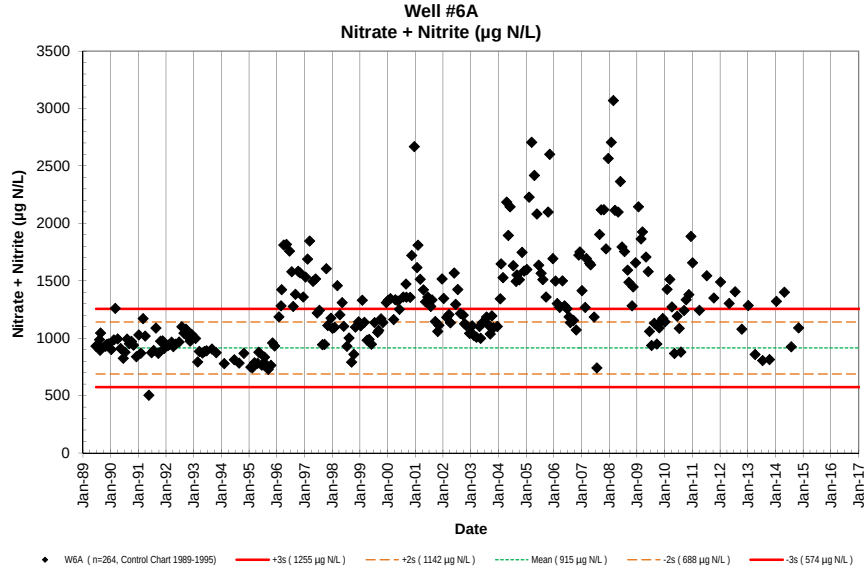
NELHA Water Quality Laboratory

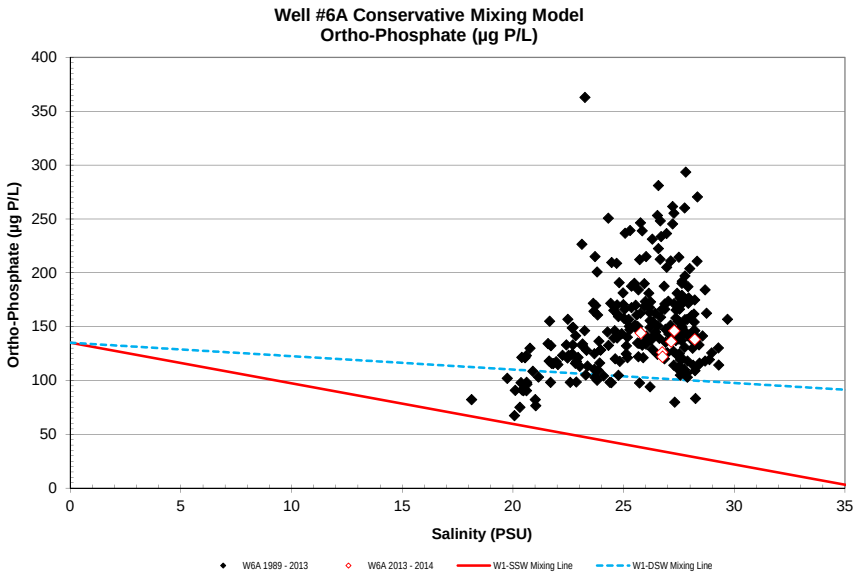
Well 6A Data Table

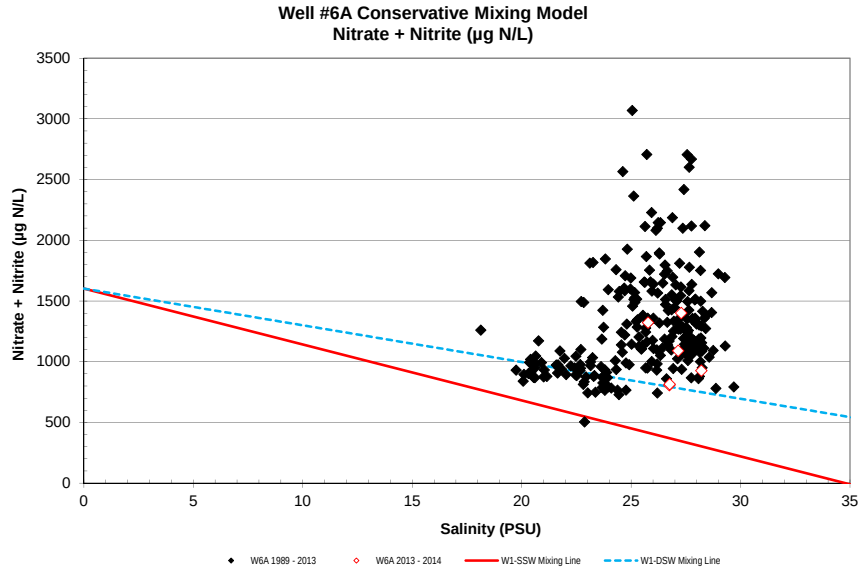
June 1989 - December 2014

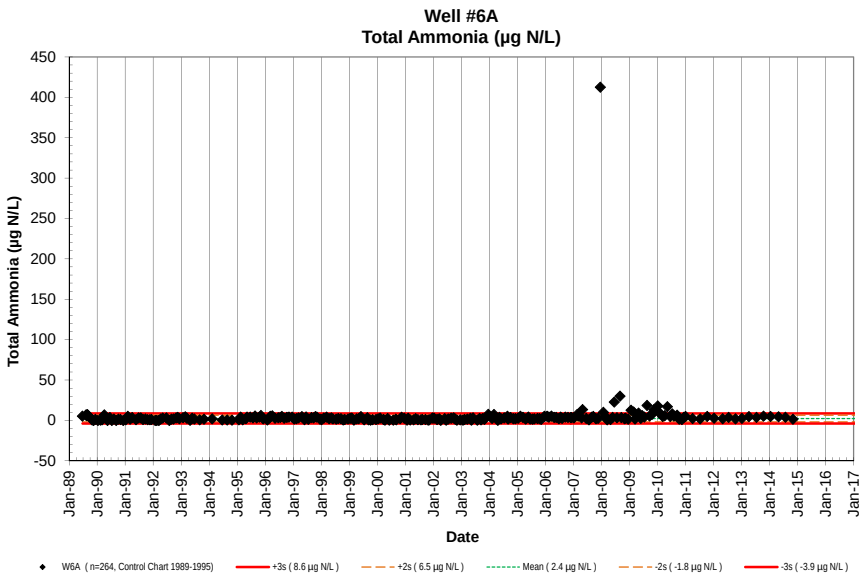
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6A	-5.1816	7/28/14	1554	-2.05	0.49	Flood	4.46	138	66.1	926	0.29	4	239	6701						20.7	7.47	28.21	3.56	0.06		
W6A	-5.1816	11/3/14	1322	-2.01	0.46	High	4.39	136	77.8	1090	0.11	1.5	243	6821						21.8	7.51	27.15	3.88	0.24		
W6A	-5.1816	1/1/15																								
W6A	-5.1816	4/1/15																								

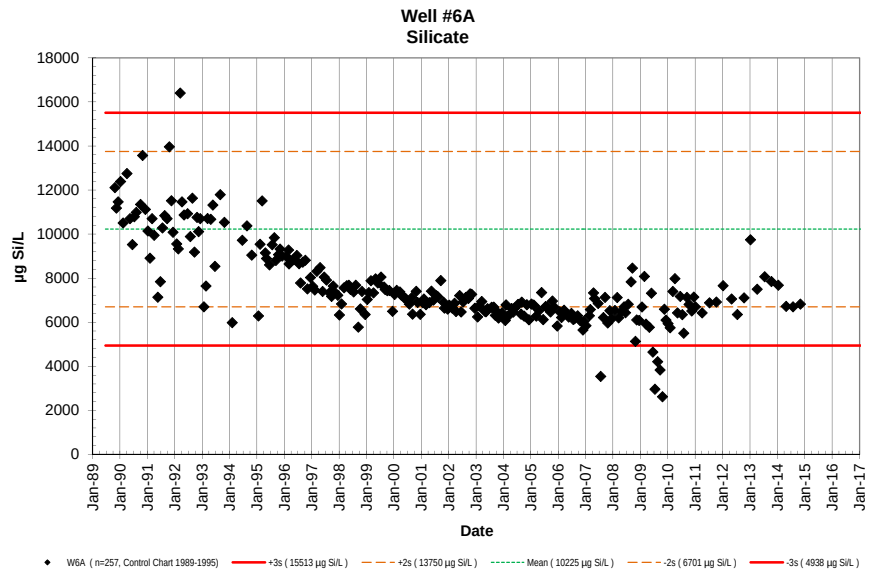

Well #6A
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W6A (n=264, Control Chart 1989-1995)
+3s (186 µg P/L)
+2s (163 µg P/L)
Mean (117 µg P/L)
-2s (71 µg P/L)
-3s (48 µg P/L)

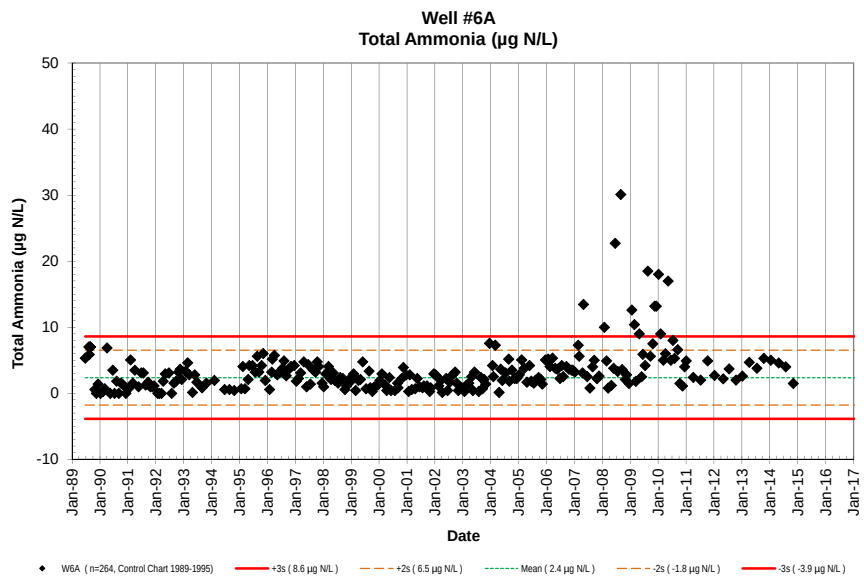

Well #6A
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W6A (n=264, Control Chart 1989-1995)
+3s (1255 µg N/L)
+2s (1142 µg N/L)
Mean (915 µg N/L)
-2s (688 µg N/L)
-3s (574 µg N/L)

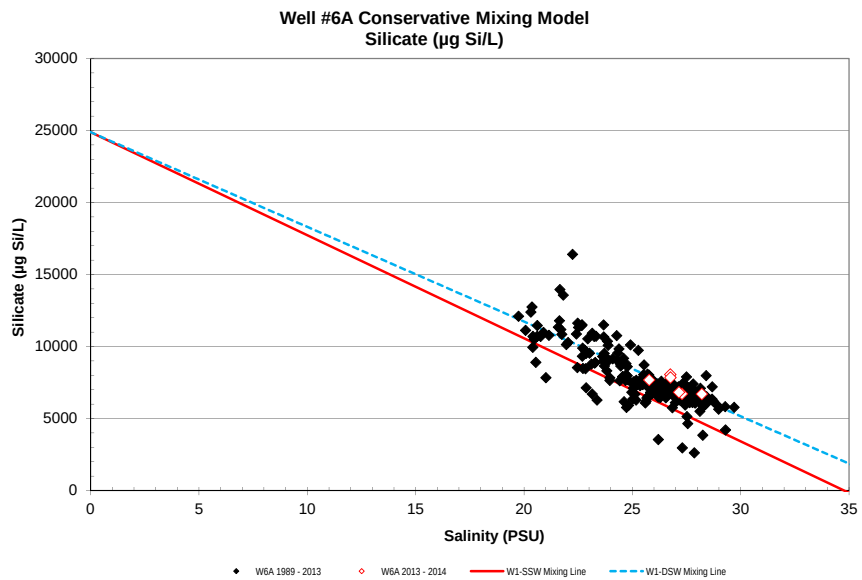

Well #6A Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W6A 1989 - 2013
W6A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

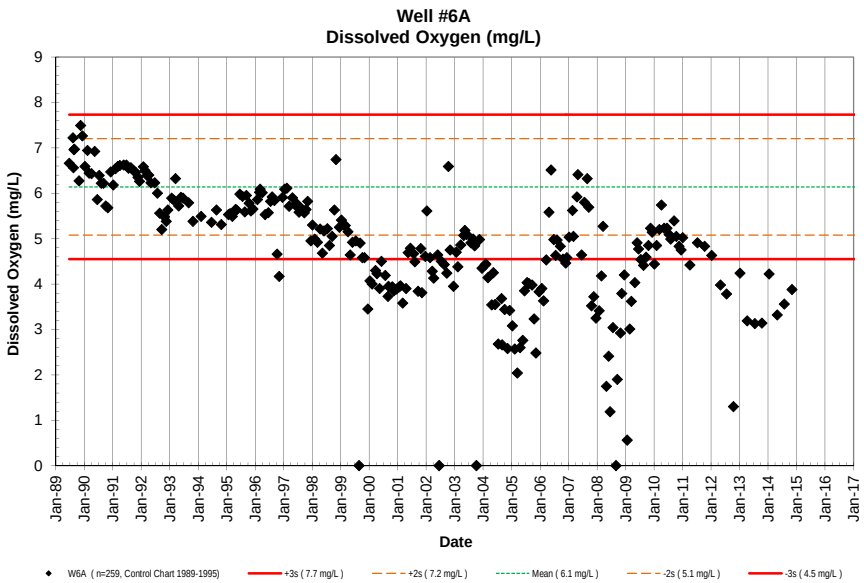

Well #6A Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W6A 1989 - 2013
W6A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

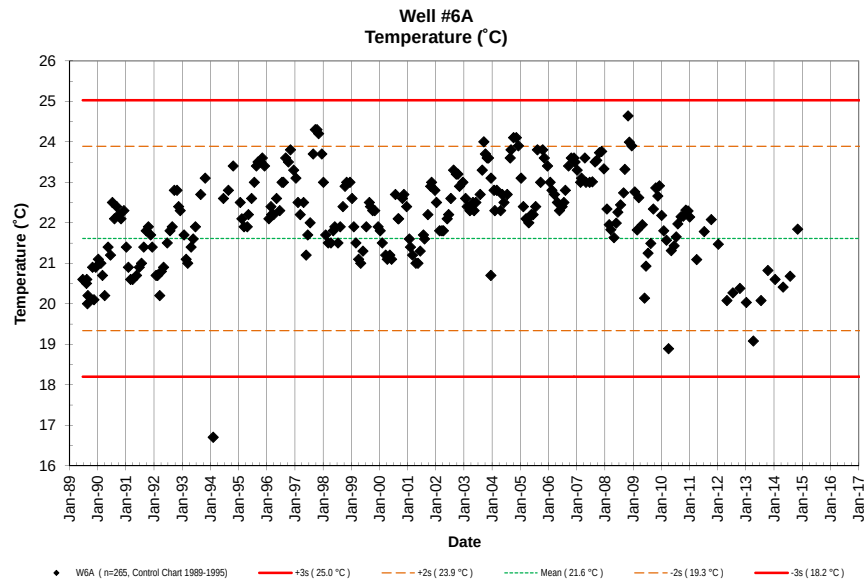

Well #6A
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W6A (n=264, Control Chart 1989-1995)
+3s (8.6 µg N/L)
+2s (6.5 µg N/L)
Mean (2.4 µg N/L)
-2s (-1.8 µg N/L)
-3s (-3.9 µg N/L)

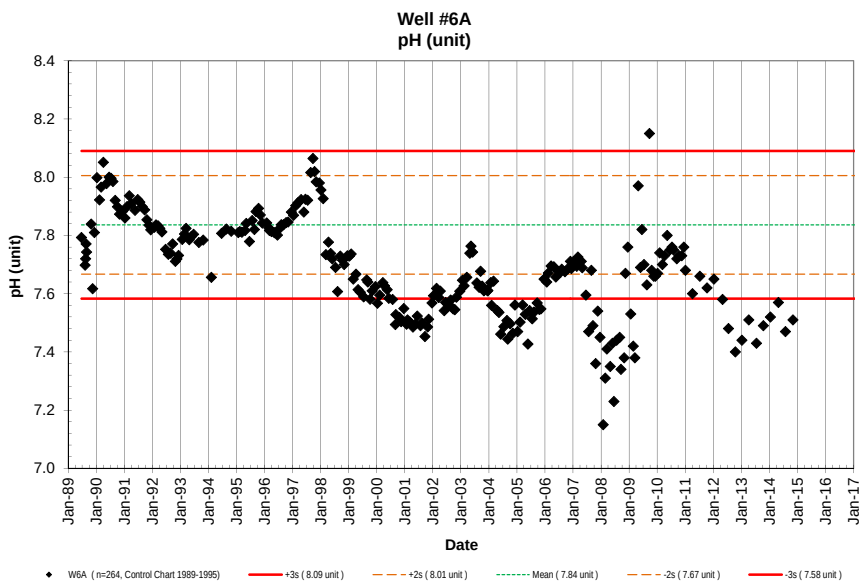

Well #6A
Silicate
µg Si/L
Date
W6A (n=257, Control Chart 1989-1995)
+3s (15513 µg Si/L)
+2s (13750 µg Si/L)
Mean (10225 µg Si/L)
-2s (6701 µg Si/L)
-3s (4938 µg Si/L)

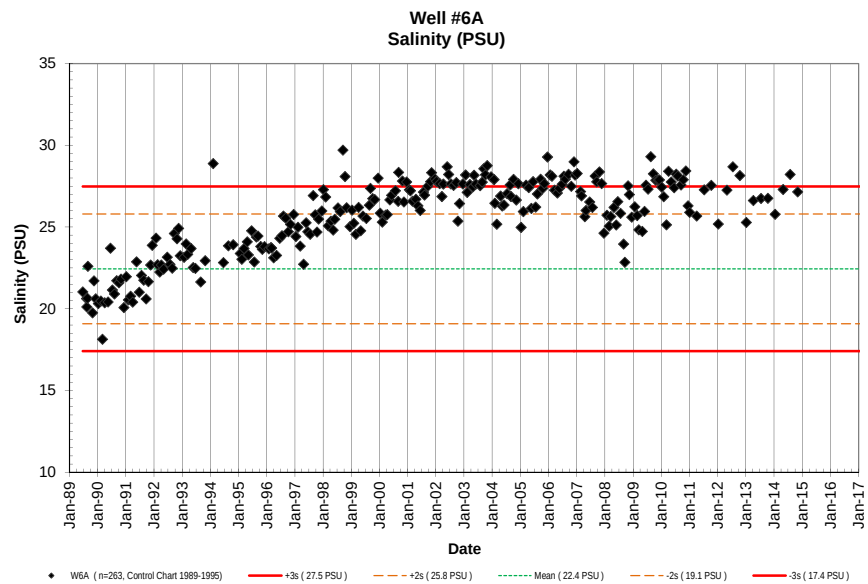

Well #6A
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W6A (n=264, Control Chart 1989-1995)
+3s (8.6 µg N/L)
+2s (6.5 µg N/L)
Mean (2.4 µg N/L)
-2s (-1.8 µg N/L)
-3s (-3.9 µg N/L)

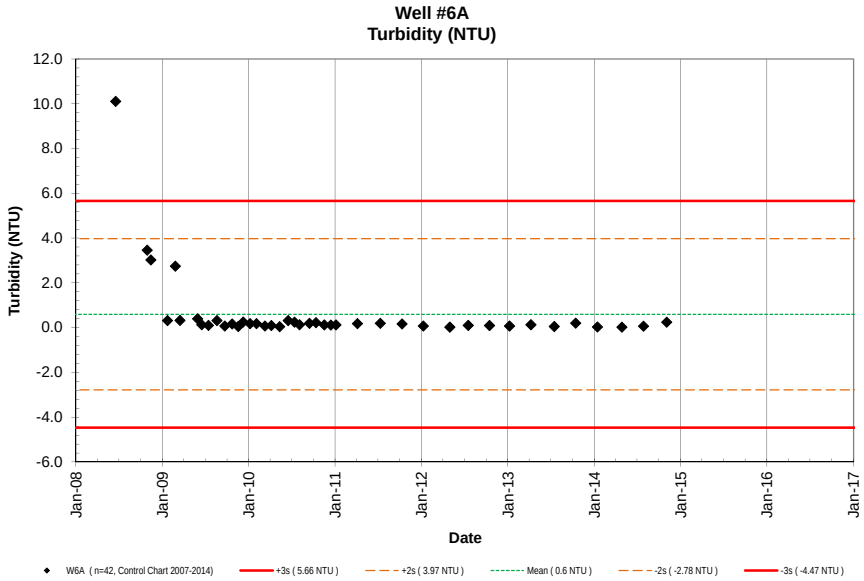

Well #6A Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W6A 1989 - 2013
W6A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

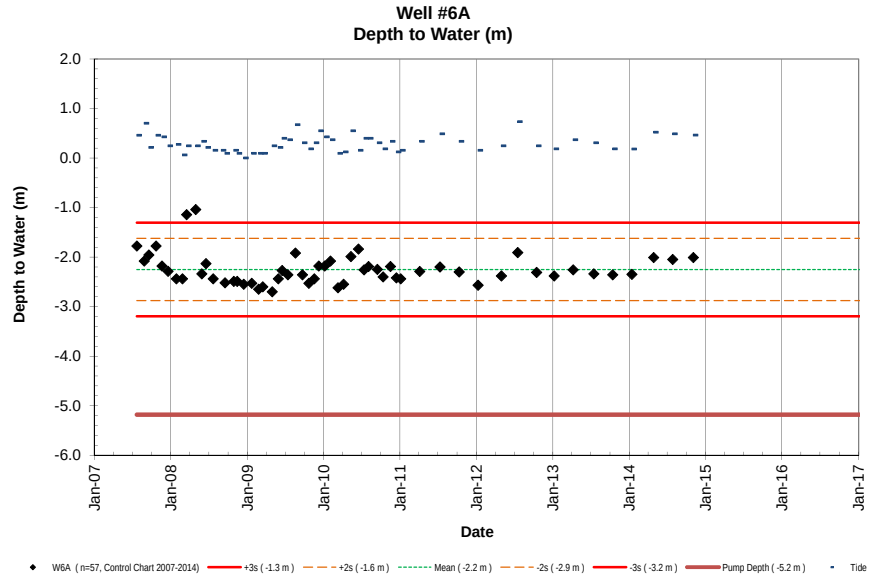

Well #6A
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W6A (n=259, Control Chart 1989-1995)
+3s (7.7 mg/L)
+2s (7.2 mg/L)
Mean (6.1 mg/L)
-2s (5.1 mg/L)
-3s (4.5 mg/L)

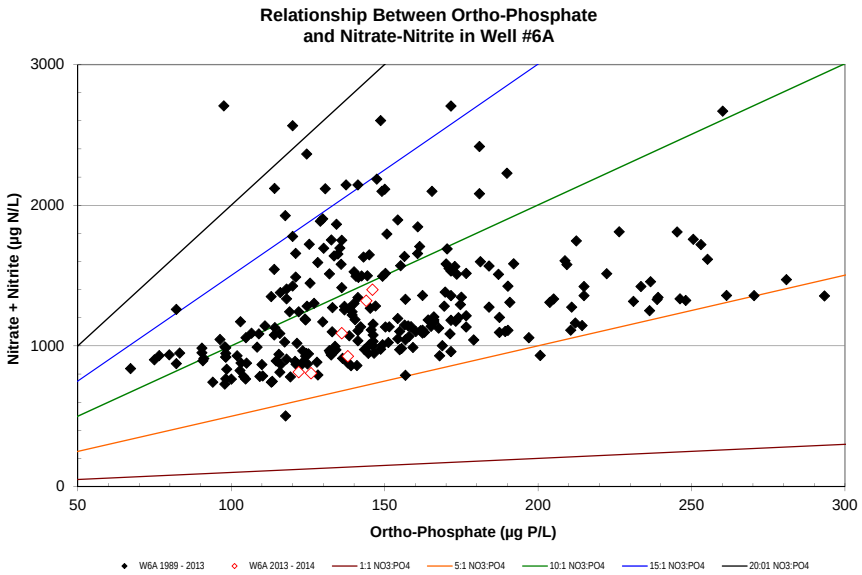

Well #6A
Temperature (˚C)
Temperature (˚C)
Date
W6A (n=265, Control Chart 1989-1995)
+3s (25.0 °C)
+2s (23.9 °C)
Mean (21.6 °C)
-2s (19.3 °C)
-3s (18.2 °C)


Well #6A
pH (unit)
pH (unit)
Date
W6A (n=264, Control Chart 1989-1995)
+3s (8.09 unit)
+2s (8.01 unit)
Mean (7.84 unit)
-2s (7.67 unit)
-3s (7.58 unit)


Well #6A
Salinity (PSU)
Salinity (PSU)
Date
W6A (n=263, Control Chart 1989-1995)
+3s (27.5 PSU)
+2s (25.8 PSU)
Mean (22.4 PSU)
-2s (19.1 PSU)
-3s (17.4 PSU)


Well #6A
Turbidity (NTU)
Turbidity (NTU)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
-2.0
-4.0
-6.0
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W6A (n=42, Control Chart 2007-2014)
+3s (5.66 NTU)
+2s (3.97 NTU)
Mean (0.6 NTU)
-2s (-2.78 NTU)
-3s (-4.47 NTU)


Well #6A
Depth to Water (m)
Depth to Water (m)
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
-6.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W6A (n=57, Control Chart 2007-2014)
+3s (-1.3 m)
+2s (-1.6 m)
Mean (-2.2 m)
-2s (-2.9 m)
-3s (-3.2 m)
Pump Depth (-5.2 m)
Tide


Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #6A
Nitrate + Nitrite (µg N/L)
3000
2000
1000
0
50
100
150
200
250
300
Ortho-Phosphate (µg P/L)
W6A 1989 - 2013
W6A 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

NELHA Water Quality Laboratory

Well 6B Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6B	-8.53	6/23/89					3.11	96	63.0	882	0.44	6.2								17.3	7.646	26.619	6.20		NA	NA
W6B	-8.53	8/9/89	1353				3.66	113	75.1	1052	0.50	7.0								16.8	7.538	26.193	6.57		<1	NA
W6B	-8.53	8/15/89	1213				3.72	115	72.8	1019	0.50	7.0								16.9	7.547	26.072	5.96		<1	NA
W6B	-8.53	8/22/89	1148				3.78	117	75.8	1062	0.50	7.0								16.5	7.625	26.005	5.96		<1	NA
W6B	-8.53	8/28/89	1433				4.09	127	82.7	1158	0.50	7.0								16.6	7.534	26.971	5.34		<1	NA
W6B	-8.53	8/28/89	1433				4.09	127	82.7	1158	0.50	7.0													NA	NA
W6B	-8.53	10/27/89	1141				3.86	120	82.0	1149	0.03	0.4	280	7864	4.08	126.4	32.6	457	0.29	17.3	7.638	26.852	6.80		<1	NA
W6B	-8.53	11/15/89	932				3.76	116	74.7	1046	0.14	1.9	274	7695	4.04	125.1	82.6	1157	1.12	17.6	7.671	27.053	7.32		<1	NA
W6B	-8.53	12/8/89	1151				3.92	121	81.6	1143	0.10	1.4	268	7527	4.27	132.3	82.6	1157		17.4	7.616	27.123	6.94		<1	NA
W6B	-8.53	1/10/90	1058				3.03	94	71.8	1006	0.00	0.0	294	8257	3.30	102.2	72.3	1013	0.97	17.7	7.814	26.551	6.63		<1	NA
W6B	-8.53	2/13/90	1157				3.61	112	76.0	1065	0.08	1.1	250	7021	3.77	116.8	80.6	1129	0.94	18.6	7.726	26.521	6.32		<1	NA
W6B	-8.53	3/5/90	1419				3.64	113	96.7	1354	0.35	4.9	270		3.91	121.1	97.4	1364	0.86	17.8	7.762	26.251	5.80		<1	NA
W6B	-8.53	4/4/90	1035				4.55	141	98.8	1384	0.10	1.4	294	8257	4.67	144.6	101.0	1415	1.04	17.5	7.768	27.229	5.74		<1	NA
W6B	-8.53	5/16/90	1254				3.94	122	70.8	992	0.00	0.0	252	7078	5.65	175.0	98.4	1378	0.83	17.3	7.739	26.948	6.87		<1	NA
W6B	-8.53	6/17/90	1420				4.83	150	75.2	1053	0.00	0.0	237	6656	4.86	150.5	79.1	1108	1.20	17.3	7.678	27.894	6.14		<1	NA
W6B	-8.53	7/12/90	1302				4.10	127	63.6	891	0.17	2.4	267	7499	4.40	136.3	66.5	931	0.84	17.8	7.764	26.947	6.39		<1	NA
W6B	-8.53	8/7/90	1230				3.66	113	68.2	955	0.00	0.0	261	7330	4.21	130.4	69.1	968	1.04	17.6	7.740	26.815	6.19		<1	NA
W6B	-8.53	9/5/90	1422				4.70	146	78.9	1105	0.00	0.0			4.67	144.6	80.8	1131	0.69	17.1	7.562	27.286	6.09		<1	NA
W6B	-8.53	10/4/90	1440				5.07	157	75.3	1055	0.00	0.0	282	7920	6.08	188.3	77.6	1087	1.01	16.9	7.454	26.965	5.80		<1	NA
W6B	-8.53	10/31/90	1144				3.83	119	58.9	826	0.07	1.0	280	7864	5.07	157.0	75.5	1057	1.06	17.2	7.525	26.683	6.13		<1	NA
W6B	-8.53	12/7/90	1403				3.46	107	52.7	738	0.00	0.0	325	9128	4.11	127.3	68.9	965	0.57	18.3	7.674	25.727	6.64		<1	NA
W6B	-8.53	1/9/91	905				3.96	123	58.0	813	0.06	0.8	259	7274	4.00	123.9	70.8	992	0.72	17.2	7.630	26.890	6.30		<1	NA
W6B	-8.53	2/5/91	1000				4.16	129	57.6	807	0.36	5.0	228	6403	4.27	132.3	61.2	857	0.85	17.2	7.674	26.216	7.06		<1	NA
W6B	-8.53	3/6/91	957				4.80	149	83.6	1171	0.14	2.0	324	9100	4.87	150.8	86.2	1207	0.74	16.1	7.671	26.609	6.86		<1	NA
W6B	-8.53	4/2/91	1023				4.28	133	64.0	896	0.35	4.9	247	6937	4.29	132.9	69.2	969	0.71	16.4	7.714	26.057	6.90		<1	NA
W6B	-8.53	5/21/91	935				4.26	132	36.1	506	0.09	1.3	147	4129	4.50	139.4	37.3	522	0.64	16.0	7.669	27.137	7.01		<1	NA
W6B	-8.53	6/25/91	923				2.90	90	53.1	744	0.28	3.9	279	7836	2.94	91.1	56.6	793	0.61	16.4	7.756	26.242	7.06		<1	<1
W6B	-8.53	7/23/91	1025				3.96	123	57.9	811	0.28	3.9	268	7527	4.58	141.9	60.7	850	1.00	16.7	7.740	26.710	7.37		<1	<1
W6B	-8.53	8/22/91	918				3.80	118	63.4	888	0.23	3.2	264	7415	4.03	124.8	65.2	913	0.56	17.0	7.748	26.938	7.33		<1	<1
W6B	-8.53	9/23/91	956				3.65	113	54.1	758	0.18	2.5	276	7752	4.09	126.7	58.9	825	0.52	17.4	7.755	25.982	7.10		<1	<1
W6B	-8.53	10/22/91	1030				4.57	142	59.9	839	0.00	0.0	362	10167	4.70	145.6	63.6	891	0.54	17.3	7.713	26.614	7.29		<1	<1
W6B	-8.53	11/19/91	1055				4.30	133	59.9	839	0.02	0.3	291	8173	4.37	135.4	61.0	854	0.51	16.7	7.709	27.169	7.35		<1	<1
W6B	-8.53	12/10/91	1010				4.12	128	58.6	821	0.08	1.1	266	7471	4.20	130.1	60.7	850	0.78	17.0	7.701	27.588	7.23		<1	<1
W6B	-8.53	1/28/92	948				4.15	129	60.2	843	0.00	0.0	256	7190	4.21	130.4	62.8	880	0.78	16.5	7.692	27.903	7.52		<1	<1
W6B	-8.53	2/18/92	919				3.94	122	59.9	839	0.00	0.0	246	6909	4.20	130.1	63.6	891	0.69	16.9	7.710	27.108	6.96		<1	<1
W6B	-8.53	3/16/92	1020				3.88	120	57.6	807	0.00	0.0	257	7218	4.04	125.1	60.1	842	1.04	16.8	7.739	27.347	6.96		<1	<1
W6B	-8.53	4/7/92	948				3.79	117	56.5	791	0.18	2.5	291	8173	3.91	121.1	60.0	840	0.92	17.0	7.747	27.134	7.10		<1	<1
W6B	-8.53	5/5/92	951				4.12	128	57.1	800	0.21	2.9	284	7976	4.22	130.7	34.7	486	1.03	17.4	7.729	26.927	6.60		<1	<1
W6B	-8.53	6/22/92	939				4.18	129	60.4	846	0.28	3.9	289	8117	4.33	134.1	63.0	882	1.27	17.7	7.685	27.079	7.22		<1	<1
W6B	-8.53	7/28/92	917				4.27	132	64.2	899	ND	0.0	253	7106	4.45	137.8	68.4	959	0.93	17.4	7.677	27.239	6.74		<1	<1
W6B	-8.53	8/25/92	854				4.40	136	60.3	844	0.11	1.5	297	8341	4.57	141.6	64.9	909	1.00	17.5	7.696	27.173	5.93		<1	1
W6B	-8.53	9/21/92	917				4.19	130	62.5	876	0.13	1.8	247	6937	4.29	132.9	67.9	950	0.86	18.3	7.727	27.777	6.77		1	5
W6B	-8.53	10/26/92	932				4.21	130	61.3	859	0.31	4.3	293	8229	4.32	133.8	68.3	956	0.64	17.7	7.652	27.598	6.58		<1	<1
W6B	-8.53	11/16/92	949				4.15	129	60.6	849	0.30	4.2	271	7611	4.64	143.7	65.8	922	0.65	17.1	7.664	28.201	6.85		<1	<1
W6B	-8.53	12/7/92	940				4.18	129	61.5	862	0.23	3.2	283	7948	4.34	134.4	64.6	904	0.66	17.6	7.680	27.661	6.33		<1	<1
W6B	-8.53	1/25/93	937				4.25	132	60.2	843	0.33	4.6	288	8089	4.29	132.9	68.7	963	0.75	17.6	7.705	26.995	5.97		<1	<1
W6B	-8.53	2/22/93	907				4.17	129	63.5	889	0.33	4.6	364	10220	4.23	131.0	70.4	986	0.63	17.6	7.733	27.585	5.80		<1	<1
W6B	-8.53	3/15/93	904				4.03	125	54.0	756	0.22	3.1	278	7802	4.11	127.3	57.7	809	0.64	17.7	7.758	27.585	5.87		<1	<1
W6B	-8.53	4/26/93	909				4.03	125	52.2	731	0.08	1.1	277	7780	4.24	131.3	55.2	773	0.61	17.9	7.735	27.738	5.63		<1	<1
W6B	-8.53	5/24/93	925				4.06	126	51.6	723	0.33	4.6	289	8117	4.15	128.5	57.8	810	0.60	18.0	7.741	27.225	5.50		<1	<1
W6B	-8.53	6/21/93	926				3.98	123	57.3	803	0.18	2.5	649	18227	4.09	126.7	55.8	782	0.56	18.6	7.753	27.240	5.47		<1	<1

NELHA Water Quality Laboratory

Well 6B Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6B	-8.53	8/30/93	1023				3.72	115	50.6	709	0.15	2.1	292	8201	3.76	116.5	59.6	834	0.70	20.0	7.744	26.840	5.30		<1	<1
W6B	-8.53	10/25/93	912				3.86	120	53.8	753	0.16	2.2	273	7667	3.88	120.2	56.4	790	0.57	20.5	7.754	26.987	5.06		<1	<1
W6B	-8.53	2/7/94	1114				4.09	127	47.8	669	0.14	2.0	245	6881	4.17	129.2	57.0	798	0.68	20.2	7.707	27.384	4.85		<1	<1
W6B	-8.53	6/20/94	854				4.42	137	48.0	672	0.03	0.4	247	6945	4.48	138.8	58.0	813	0.71	19.2	7.650	27.608	4.37		<1	<1
W6B	-8.53	8/22/94	1006				3.93	122	48.2	675	0.11	1.5	266	7467	4.03	124.8	56.9	797	0.57	19.6	7.714	27.782	5.15		<1	<1
W6B	-8.53	10/24/94	945				3.90	121	55.7	780	0.07	1.0	238	6692	3.99	123.6	59.3	830	0.49	20.5	7.737	27.483	5.16		<1	<1
W6B	-8.53	1/23/95	1019				3.92	121	49.8	697	0.14	2.0	250	7030	4.01	124.2	52.3	733	0.41	19.7	7.713	26.714	5.55		<1	<1
W6B	-8.53	2/13/95	1009				3.88	120	48.1	673	0.35	4.9	254	7120	3.91	121.1	57.9	811	0.53	19.3	7.719	26.689	5.47		<1	<1
W6B	-8.53	3/13/95	1046				3.80	118	53.5	750	0.05	0.7	315	8850	3.91	121.1	54.5	763	0.60	19.0	7.723	26.759	5.90		<1	<1
W6B	-8.53	4/24/95	940				3.52	109	49.8	698	0.18	2.5	242	6794	3.65	113.1	50.9	713	0.62	19.1	7.712	27.740	5.31		<1	<1
W6B	-8.53	5/8/95	936				3.52	109	57.6	806	0.33	4.6	240	6735	3.54	109.6	55.5	777	0.56	19.6	7.734	26.814	5.55		<1	<1
W6B	-8.53	6/19/95	1015				3.49	108	51.1	716	0.36	5.0	239	6707	3.58	110.9	55.4	775	0.54	20.1	7.700	27.611	5.87		<1	<1
W6B	-8.53	7/24/95	944				3.34	103	49.1	688	0.28	3.9	245	6889	3.44	106.5	51.8	725	0.55	20.2	7.751	26.975	5.86		<1	<1
W6B	-8.53	8/21/95	1032				3.48	108	52.2	730	0.48	6.7	234	6580	3.57	110.6	67.3	943	0.69	20.1	7.725	27.113	5.95		<1	4
W6B	-8.53	9/11/95	844				3.53	109	50.4	706	0.26	3.6	246	6898	3.54	109.6	53.8	754	0.64	20.1	7.782	27.293	6.04		<1	1
W6B	-8.53	10/16/95	912				3.67	114	51.7	723	0.31	4.3	249	6999	3.85	119.2	55.2	773	0.82	20.1	7.822	27.103	5.88		<1	1
W6B	-8.53	11/6/95	858				4.23	131	60.0	840	0.24	3.4	259	7260	4.31	133.5	64.7	907	0.69	20.2	7.809	26.801	6.10		<1	1
W6B	-8.53	12/4/95	918				4.32	134	59.2	829	0.11	1.5	246	6906	4.54	140.6	62.2	871	0.68	20.2	7.784		7.63		<1	<1
W6B	-8.53	1/29/96	1018				4.38	136	67.3	942	0.02	0.3	241	6766	4.44	137.5	75.1	1052	0.62	19.5	7.790	27.471	5.78		<1	1
W6B	-8.53	2/26/96	1022				5.04	156	78.2	1095	0.25	3.5	249	6999	5.14	159.2	81.2	1137	0.75	19.9	7.765	27.547	6.12		<1	1
W6B	-8.53	3/5/96	930				5.15	160	75.6	1058	0.34	4.8	232	6528	5.17	160.1	79.4	1112	0.59	20.2	7.775	27.430	6.05		<1	<1
W6B	-8.53	4/1/96	947				5.95	184	97.6	1367	0.43	6.0	239	6721	6.04	187.1	100.6	1409	0.61	19.9	7.762	26.975	6.28		<1	<1
W6B	-8.53	5/8/96	949				6.65	206	125.8	1761	0.21	2.9	237	6644	6.79	210.3	135.0	1891	0.76	21.3	7.789	26.703	5.96		<1	<1
W6B	-8.53	6/17/96	949				6.92	214	110.2	1544	0.26	3.6	246	6913	7.20	223.0	114.9	1609	0.63	19.6	7.795	27.220	5.78		<1	<1
W6B	-8.53	7/16/96	937				5.40	167	89.1	1248	0.25	3.5	237	6651	5.67	175.6	92.9	1301	0.82	19.8	7.816	27.528	5.98		<1	<1
W6B	-8.53	8/5/96	1048				5.49	170	71.1	995	0.38	5.3	217	6093	5.53	171.3	75.6	1058	0.67	20.9	7.821	28.445	5.84		<1	<1
W6B	-8.53	9/3/96	949				5.61	174	96.7	1355	0.43	6.0	249	7001	5.63	174.4	99.3	1390	0.73	21.5	7.816	27.951	6.06		<1	<1
W6B	-8.53	10/8/96	1006				5.80	180	98.7	1382	0.22	3.1	251	7035	5.98	185.2	115.4	1616	0.81	20.5	7.814	27.442	5.66		<1	<1
W6B	-8.53	11/4/96	1029				5.36	166	110.2	1544	0.28	3.9	209	5857	5.46	169.1	115.9	1623	0.74	21.0	7.808	27.792	6.17		<1	<1
W6B	-8.53	12/16/96	947				5.21	161	78.9	1105	0.30	4.2	242	6796	5.33	165.1	83.4	1168	0.71	20.2	7.912	28.038	6.00		<1	<1
W6B	-8.53	1/13/97	1021				5.50	170	92	1287	0.12	1.7	216	6058	5.61	173.8	97.5	1365	0.87	19.8	7.833	27.101	6.44		1	<1
W6B	-8.53	2/10/97	927				5.20	161	99	1389	0.23	3.2	218	6111	5.3*	0.0	103.9	1455	0.63	19.9	7.847	27.222	6.53		<1	<1
W6B	-8.53	3/10/97	938				5.33	165	126	1759	0.02	0.3	237	6656	5.35	165.7	131.1	1836	0.85	20.1	7.876	26.709	5.92		<1	<1
W6B	-8.53	4/22/97	1017				5.09	158	94	1311	0.31	4.3	240	6735	5.50	170.4	163.9	2296	0.90	19.8	7.870	26.359	6.13		<1	<1
W6B	-8.53	5/27/97	930				5.28	164	90	1258	0.05	0.7	209	5878	5.62	174.1	107.2	1502	0.73	18.4	7.867	27.653	6.08		<1	<1
W6B	-8.53	6/16/97	945				4.56	141	76	1058	0.34	4.8	229	6426	4.76	147.4	85.7	1200	0.75	18.9	7.899	28.055	5.87		<1	<1
W6B	-8.53	7/16/97	852				4.22	131	64	901	0.12	1.7	207	5802	4.41	136.6	69.2	969	0.67	19.7	7.909	28.328	5.72		<1	<1
W6B	-8.53	8/25/97	937				3.88	120	60	846	0.27	3.8	205	5746	3.95	122.3	64.1	898	0.63	21.6	8.018	29.073	5.78		<1	<1
W6B	-8.53	9/22/97	927				3.70	115	54	751	0.26	3.6	189	5317	3.79	117.4	54.1	758	0.69	22.7	8.075	29.162	5.66		<1	1
W6B	-8.53	10/14/97	932				5.37	166	81	1129	0.18	2.5	200	5611	5.49	170.0	94.5	1324	0.74	22.3	8.037	28.390	5.92		<1	1
W6B	-8.53	11/3/97	1050				5.17	160	67.6	947	0.16	2.2	197	5536	5.44	168.5	78.4	1098	0.67	22.2	7.995	28.252	6.12		<1	<1
W6B	-8.53	12/15/97	955				4.85	150	62.6	877	0.13	1.8	204	5729	5.04	156.1	66.8	936	0.71	21.3	8.003	28.491	5.66		<1	<1
W6B	-8.53	1/5/98	1058				5.27	163	63.7	892	0.06	0.8	189	5305	5.41	167.6	68.5	959	0.73	19.9	7.968	28.594	5.53		<1	<1
W6B	-8.53	2/2/98	1002				5.43	168	64.8	908	0.10	1.4	205	5760	5.58	172.8	71.5	1001	0.69	19.2	7.936	28.350	5.63		<1	<1
W6B	-8.53	3/9/98	959				6.69	207	79.7	1116	0.15	2.1	217	6089	6.87	212.8	83.4	1168	0.72	19.9	7.761	27.927	5.44		<1	<1
W6B	-8.53	4/13/98	909				5.36	166	68	956	0.13	1.8	211	5915	5.51	170.7	72.3	1013	0.69	19.6	7.802	28.287	5.61		<1	<1
W6B	-8.53	5/11/98	939				5.50	170	74	1036	0.30	4.2	220	6168	5.66	175.3	79.5	1113	0.71	19.7	7.780	27.759	5.59		<1	1
W6B	-8.53	6/1/98	937				5.58	173	66.6	933	0.17	2.4	217	6086	5.73	177.5	69.6	975	0.73	19.3	7.739	27.735	5.67		<1	<1

NELHA Water Quality Laboratory

Well 6B Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6B	-8.53	7/13/98	945				4.77	148	55	776	0.06	0.8	211	5932	5.03	155.8	59	833	0.72	19.0	7.723	28.493	5.79		<1	<1
W6B	-8.53	8/10/98	1002				4.60	142	59.1	828	0.17	2.4	213	5991	4.86	150.5	64.3	901	0.64	19.5	7.691	28.683	5.65		<1	3
W6B	-8.53	9/14/98	953				4.05	125	53.5	749	0.17	2.4	198	5547	4.26	131.9	57	801	0.67	20.3	7.792	29.647	5.96		<1	5
W6B	-8.53	10/12/98	900				3.96	123	55.5	777	0.03	0.4	188	5274	4.18	129.5	60	838	0.72	20.6	7.785	29.740	6.26		<1	<1
W6B	-8.53	11/2/98	922				4.09	127	57.4	804	0.05	0.7	193	5415	4.39	136.0	61.7	864	0.84	21.0	7.812	29.465	5.72		<1	<1
W6B	-8.53	12/15/98	923				4.29	133	77.1	1080	0.08	1.1	192	5390	4.46	138.1	80.4	1126	0.92	20.8	7.828	28.693	5.72		<1	<1
W6B	-8.53	1/11/99	940				4.68	145	88	1231	0.22	3.1	185	5193	4.86	150.5	90	1263	0.98	19.4	7.825	28.973	5.43		<1	1
W6B	-8.53	2/2/99	935				4.35	135	82	1151	0.25	3.5	187	5258	4.56	141.2	91	1268	0.92	19.5	7.843	28.801	5.61		<1	1
W6B	-8.53	3/1/99	940				4.90	152	72.5	1015	0.02	0.3	195	5479	5.10	158.0	76.3	1069	0.88	19.2	7.825	28.531	5.90		<1	<1
W6B	-8.53	4/5/99	938				5.33	165	72.7	1018	0.09	1.3	182	5123	5.50	170.4	76.2	1067	0.71	17.7	7.797	29.404	5.65		<1	<1
W6B	-8.53	5/3/99	938				4.56	141	62.3	873	0.18	2.5	194	5446	4.71	145.9	68.3	957	0.67	18.7	7.772	29.050	4.85		<1	<1
W6B	-8.53	6/1/99	930				4.31	133	58.7	822	0.38	5.3	182	5123	4.54	140.6	63.7	892	0.67	19.0	7.787	29.449	5.75		<1	1
W6B	-8.53	7/14/99	933				3.79	117	64.1	898	0.01	0.1	194	5435	3.84	118.9	66.7	934	0.69	20.5	7.770	29.353	5.64		<1	<1
W6B	-8.53	8/23/99	959				4.14	128	62.3	873	0.15	2.1	183	5137	4.25	131.6	65.5	917	0.71	20.2	7.816	29.650	5.73		<1	<1
W6B	-8.53	9/7/99	949				4.36	135	63.3	887	0.05	0.7	181	5078	4.59	142.2	75.3	1055	0.76	19.6	7.816	29.926	5.73		<1	<1
W6B	-8.53	10/5/99	938				4.25	132	65.6	919	0.01	0.1	185	5204	4.39	136.0	69.3	970	0.72	20.0	7.787	30.007	5.09		<1	<1
W6B	-8.53	11/1/99	1005				4.21	130	64.7	906	0.08	1.1	179	5019	4.31	133.5	69.6	975	0.71	20.3	7.799	29.712	5.26		<1	<1
W6B	-8.53	12/14/99	956				5.61	174	78.0	1093	0.06	0.8	178	5010	5.73	177.5	81.1	1136	0.94	19.8	7.710	29.858	4.66		<1	<1
W6B	-8.53	1/10/00	1022				6.08	188	78.5	1100	0.10	1.4	185	5204	6.14	190.2	85.5	1198	0.88	19.9	7.703	29.289	4.66		<1	<1
W6B	-8.53	2/7/00	1017				6.26	194	77.8	1090	0.20	2.8	194	5460	6.40	198.2	82.1	1150	0.84	19.5	7.744	28.599	5.07		<1	<1
W6B	-8.53	3/21/00	1020				5.80	180	69.9	979	0.07	1.0	189	5311	5.61	173.8	73.1	1024	0.89	18.9	7.738	29.090	5.11		<1	<1
W6B	-8.53	4/10/00	1049				6.14	190	77.2	1081	0.02	0.3	188	5269	5.79	179.3	82.9	1161	0.85	18.8	7.752	28.211	5.03		<1	<1
W6B	-8.53	5/15/00	1008				6.12	190	74.9	1049	0.18	2.5	177	4974	6.13	189.9	81.1	1136	0.82	18.9	7.746	29.714	5.03		<1	<1
W6B	-8.53	6/5/00	1001				6.01	186	73.7	1032	0.03	0.4	192	5378	6.09	188.6	80.7	1130	0.81	19.0	7.731	29.925	4.97		<1	<1
W6B	-8.53	7/26/00	1027				6.05	187	74.0	1036	0.03	0.4	172	4825	6.06	187.7	76.8	1076	0.75	20.3	7.783	30.088	4.95		<1	<1
W6B	-8.53	8/29/00	930				6.79	210	83.9	1175	0.07	1.0	175	4907	6.89	213.4	86.4	1210	0.71	20.2	7.664	29.911	4.72		8	<1
W6B	-8.53	9/5/00	956				6.25	194	78.5	1100	0.04	0.6	170	4775	6.49	201.0	77.5	1086	0.69	20.0	7.709	30.433	4.76		<1	<1
W6B	-8.53	10/24/00	1001				6.58	204	71.2	997	0.16	2.2	179	5027	6.81	210.9	76.2	1067	0.70	21.2	7.745	30.809	4.78		<1	1
W6B	-8.53	11/13/00	942				6.33	196	90.2	1263	0.29	4.1	189	5294	6.52	201.9	95.0	1331	0.72	21.4	7.685	29.752	4.65		<1	<1
W6B	-8.53	12/18/00	944				6.31	195	109	1525	0.21	2.9	177	4974	6.54	202.6	116	1626	0.80	20.1	7.695	29.722	4.70		<1	1
W6B	-8.53	1/22/01	948				6.50	201	88.8	1244	0.05	0.7	186	5215	6.90	213.7	94.1	1318	1.37	19.6	7.642	29.824	4.59		<1	<1
W6B	-8.53	2/5/01	1007				6.48	201	100	1401	0.12	1.7	185	5204	6.72	208.1	105	1471	0.72	19.7	7.651	29.823	4.75		<1	<1
W6B	-8.53	3/5/01	958				5.75	178	81.5	1142	0.03	0.4	176	4951	5.91	183.1	87.8	1230	0.73	19.8	7.660	29.425	4.56		<1	<1
W6B	-8.53	4/17/01	942				5.73	177	73.4	1028	0.02	0.3	179	5024	5.78	179.0	81.9	1147	0.77	19.6	7.671	29.623	4.93		<1	<1
W6B	-8.53	5/15/01	926				5.53	171	71.2	997	0.13	1.8	181	5081	5.53	171.3	75.2	1053	0.70	19.8	7.691	29.500	5.41		<1	<1
W6B	-8.53	6/12/01	939				5.56	172	70.0	981	0.05	0.7	177	4966	5.49	170.0	74.6	1044	0.69	19.5	7.693	29.663	5.37		<1	<1
W6B	-8.53	7/23/01	1000				5.37	166	70.8	991	0.06	0.8	181	5075	5.40	167.3	75.0	1050	0.70	19.9	7.685	29.969	5.35		2	<1
W6B	-8.53	8/8/01	952				5.26	163	70.1	981	0.07	1.0	180	5044	5.26	162.9	74.2	1039	0.69	20.2	7.718	30.007	5.18		<1	<1
W6B	-8.53	9/19/01	949				5.14	159	66.9	937	0.03	0.4	180	5043	5.14	159.2	72.8	1020	0.75	20.8	7.685	30.112	4.92		<1	<1
W6B	-8.53	10/24/01	922				4.84	150	57.0	799	0.02	0.3	176	4954	5.06	156.7	61.0	855	0.71	21.2	7.735	30.221	5.12		<1	<1
W6B	-8.53	11/7/01	940				5.62	174	58.7	822	0.06	0.8	178	5010	5.70	176.6	68.4	959	0.61	21.1	7.728	30.159	5.53		<1	<1
W6B	-8.53	12/19/01	959				4.54	141	77.1	1080	0.13	1.8	182	5112	4.56	141.2	92.9	1301	0.69	21.2	7.753	29.617	5.31		1	<1
W6B	-8.53	1/9/02	949				4.85	150	75.3	1055	0.18	2.5	188	5280	4.99	154.6	79.5	1114	0.67	20.7	7.731	29.803	5.22		<1	1
W6B	-8.53	2/19/02	1006				4.44	138	62.4	874	0.03	0.4	183	5151	4.62	143.1	74.9	1049	0.61	20.5	7.792	29.944	5.21		1	2
W6B	-8.53	3/20/02	1008				4.46	138	64.5	903	0.14	2.0	179	5019	4.58	141.9	67.5	945	0.59	20.5	7.777	29.716	5.39		<1	<1
W6B	-8.53	4/8/02	1057				4.60	142	65.8	921	0.13	1.8	174	4881	4.78	148.1	70.1	982	0.67	20.0	7.777	29.852	5.32		<1	<1
W6B	-8.53	5/29/02	1042				4.68	145	68.7	963	0.15	2.1	185	5196	4.48	138.8	72.6	1017	0.64	20.3	7.722	29.542	5.41		<1	3
W6B	-8.53	6/17/02	1015				4.67	145	65.6	919	0.09	1.3	173	4864	4.83	149.6	69.2	969	0.63	20.5	7.768	30.083	5.40		<1	<1

NELHA Water Quality Laboratory

Well 6B Data Table

June 1989 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6B	-8.53	7/15/02	1019				4.56	141	63.3	887	0.10	1.4	181	5095	4.76	147.4	69.4	972	0.79	21.7	7.772	30.112	5.08		<1	29
W6B	-8.53	8/20/02	1012				4.72	146	67.1	940	0.21	2.9	178	5010	4.98	154.2	66.0	924	0.63	20.9	7.740	30.035	5.24		<1	3
W6B	-8.53	9/23/02	1055				4.38	136	58.9	824	0.27	3.8	181	5092	4.56	141.2	61.5	861	0.75	21.7	7.771	30.484	4.98		<1	<1
W6B	-8.53	10/14/02	948				4.29	133	58.1	814	0.05	0.7	172	4819	4.39	136.0	55.9	783	0.62	22.3	7.832	30.217	6.72		<1	63
W6B	-8.53	11/4/02	958				4.40	136	63.9	895	0.02	0.3	182	5100	4.55	140.9	61.1	856	0.79	22.3	7.800	29.668	5.02		<1	<1
W6B	-8.53	12/17/02	1026				5.17	160	62.9	881	0.06	0.8	175	4918	5.27	163.2	66.3	929	0.77	21.7	7.786	30.035	4.94		<1	1
W6B	-8.53	1/21/03	1110				5.00	155	75.0	1050	0.05	0.7	172	4817	5.14	159.2	82.7	1159	0.71	20.6	7.759	30.266	4.70		<1	1
W6B	-8.53	2/12/03	1045				4.36	135	61.5	861	0.03	0.4	193	5412	4.48	138.8	72.7	1018	0.58	20.5	7.824	30.002	5.23		<1	<1
W6B	-8.53	3/19/03	1021				4.37	135	58.7	822	0.02	0.3	188	5272	4.51	139.7	69.0	966	0.64	21.1	7.823	29.655	5.27		<1	1
W6B	-8.53	4/28/03	1008				4.43	137	60.5	847	0.14	2.0	182	5100	4.40	136.3	67.7	948	0.56	21.0	7.863	29.759	5.67		<1	<1
W6B	-8.53	5/12/03	940				4.36	135	61.1	856	0.03	0.4	178	5002	4.47	138.5	77.5	1086	0.58	20.6	7.877	29.982	5.88		<1	<1
W6B	-8.53	6/3/03	955				4.53	140	65.7	921	0.29	4.1	180	5050	4.65	144.0	74.4	1042	0.60	22.4	7.683	29.716	5.56		<1	<1
W6B	-8.53	7/29/03	1018				4.81	149	62.7	878	0.03	0.4	180	5047	4.97	153.9	81.1	1136	NA	21.4	7.842	27.947	5.34		<1	<1
W6B	-8.53	8/26/03	1020				4.00	124	59.2	829	0.02	0.3	176	4937	4.15	128.5	67.2	941	NA	22.2	7.848	30.142	5.24		<1	<1
W6B	-8.53	9/15/03	1009				4.08	126	62.8	880	0.33	4.6	178	4988	4.28	132.6	80.8	1132	NA	22.7	7.815	30.119	5.51		<1	<1
W6B	-8.53	10/6/03	1003				4.18	129	67.8	949	0.46	6.4	176	4937	4.30	133.2	72.0	1009	NA	22.1	7.816	30.211	NA		<1	TNTC
W6B	-8.53	10/28/03	1035				4.76	147	66.6	932	<0.10	0.0	181	5069	4.92	152.4	71.9	1007	NA	22.6	7.806	30.063	NA		<1	48
W6B	-8.53	11/14/03	1340																	22.6			4.79			
W6B	-8.53	12/15/03	947																	22.3	7.813					
W6B	-8.53	12/17/03	852				3.92	121	55.6	779	0.36	5.0	167	4676	4.05	125.4	59.2	829	NA	22.3	7.834	30.482	4.68		<1	<1
W6B	-8.53	1/26/04	956				4.24	131	88.7	1242	0.20	2.8	178	4994	4.40	136.3	93.3	1307	NA	21.8	7.743	29.211	5.11		<1	<1
W6B	-8.53	2/5/04	957				4.06	126	97.1	1361	0.17	2.4	183	5145	4.16	128.9	110	1544	NA	21.5	7.731	29.152	4.77		<1	<1
W6B	-8.53	3/2/04	1046				3.86	120	87.6	1227	0.40	5.6	171	4791	3.86	119.6	94.5	1324	NA	21.2	7.772	29.740	3.98		<1	<1
W6B	-8.53	4/20/04	1002				3.96	123	127	1776	0.02	0.3	176	4935	3.80	117.7	129	1808	NA	20.8	7.726	29.347	4.39		<1	<1
W6B	-8.53	5/11/04	917				3.77	117	112	1565	0.24	3.4	171	4805	3.70	114.6	116	1628	NA	20.8	7.765	28.85	5.70		<1	<1
W6B	-8.53	6/2/04	1004				4.62	143	108	1509	0.17	2.4	173	4859	4.64	143.7	109	1525	NA	17.6	7.681	28.90	5.50		<1	<1
W6B	-8.53	7/14/04	1003				3.32	103	100	1402	0.22	3.1	173	4870	3.26	101.0	112	1570	NA	21.8	7.747	29.20	4.02		<1	<1
W6B	-8.53	8/23/04	1003				3.46	107	91.8	1286	0.33	4.6	175	4923	3.58	110.9	94.6	1326	NA	22.3	7.712	29.22	4.17		<1	<1
W6B	-8.53	9/2/04	1022				3.86	120	92.5	1296	0.11	1.5	183	5126	3.87	119.9	96.2	1347	NA	22.4	7.697	29.15	4.05		<1	<1
W6B	-8.53	10/4/04	936				3.88	120	86.9	1216	0.36	5.0	169	4741	4.02	124.5	95.4	1336	NA	22.7	7.745	29.72	4.20		18	>5,000
W6B	-8.53	11/9/04	900				5.02	155	102	1422	0.38	5.3	181	5069	5.38	166.6	113	1577	NA	22.5	7.683	29.90	4.04		<1	1
W6B	-8.53	12/6/04	940				4.46	138	93.3	1307	0.18	2.5	167	4693	4.66	144.3	108	1514	NA	22.4	7.797	29.47	4.38		<1	7
W6B	-8.53	1/10/05	906				5.08	157	109	1527	0.06	0.8	185	5207	5.24	162.3	113	1581	NA	22.1	7.699	29.133	3.86		<1	<1
W6B	-8.53	2/9/05	908				5.17	160	125	1744	0.05	0.7	185	5201	5.36	166.0	165	2317	NA	18.9	7.690	28.950	4.25		<1	<1
W6B	-8.53	3/15/05	937				4.68	145	149	2083	0.26	3.6	178	4988	4.84	149.9	162	2262	0.59	20.7	7.743	29.561	3.37		<1	18
W6B	-8.53	4/19/05	853				4.74	147	137	1922	0.13	1.8	179	5013	4.78	148.1	144	2017	NA	20.5	7.735	29.531	4.07		<1	1
W6B	-8.53	5/23/05	926				4.50	139	125	1747	0.29	4.1	188	5291	4.47	138.5	124	1742	NA	20.8	7.669	28.954	4.26		<1	1
W6B	-8.53	6/15/05	957				4.15	129	103	1437	0.14	2.0	172	4834	4.24	131.3	112	1570	NA	20.8	7.713	29.631	4.55		<1	<1
W6B	-8.53	7/18/05	854				4.16	129	96.4	1350	0.09	1.3	179	5030	4.28	132.6	97.3	1363	0.56	19.7	7.715	29.866	4.54		1	2
W6B	-8.53	8/9/05	915				4.10	127	92.1	1290	0.23	3.2	172	4828	4.32	133.8	98.4	1379	0.62	21.7	7.752	29.867	4.46		<1	<1
W6B	-8.53	9/20/05	910				4.20	130	89.7	1257	0.20	2.8	178	4996	4.36	135.0	92.4	1294	0.70	21.9	7.769	29.824	4.81		<1	2
W6B	-8.53	10/17/05	906				4.00	124	125	1756	0.15	2.1	186	5224	4.10	127.0	128	1790	NA	22.7	7.774	29.913	6.77		<1	1
W6B	-8.53	11/7/05	840				3.68	114	137	1925	3.79	53.1	170	4769	3.90	120.8	153	2149	NA	22.6	7.778	30.156	3.58		<1	170
W6B	-8.53	12/19/05	843				3.62	112	109	1531	0.18	2.5	173	4856	3.68	114.0	125	1752	0.68	22.4	7.781	30.1	4.28		<1	<1
W6B	-8.53	1/23/06	854				3.68	114	99.9	1399	0.27	3.8	179	5036	3.78	117.1	106	1483	NA	21.8	7.778	30.049	4.40		<1	1
W6B	-8.53	2/14/06	902				3.65	113	90.7	1271	0.28	3.9	177	4968	3.88	120.2	92.1	1289	0.55	21.6	7.770	29.762	4.53		<1	1
W6B	-8.53	3/20/06	858				3.67	114	80.2	1123	0.26	3.6	170	4775	3.69	114.3	81.3	1139	0.57	21.4	7.815	29.867	4.81		<1	<1
W6B	-8.53	4/25/06	930				3.56	110	92.9	1301	0.22	3.1	166	4662	3.60	111.5	79.1	1108	0.57	21.2	7.826	29.706	4.97		<1	<1
W6B	-8.53	5/22/06	918				3.44	107	86.2	1207	0.21	2.9	164	4606	3.93	121.7	77.6	1087	0.62	20.9	7.792	29.729	4.59		<1	<1
W6B	-8.53	6/26/06	922				3.31	103	78.4	1098	0.20	2.8	168	4718	3.50	108.4	75.3	1055	0.96	21.7	7.797	29.904	5.07		<1	<1

NELHA Water Quality Laboratory

Well 6B Data Table

June 1989 - December 2014

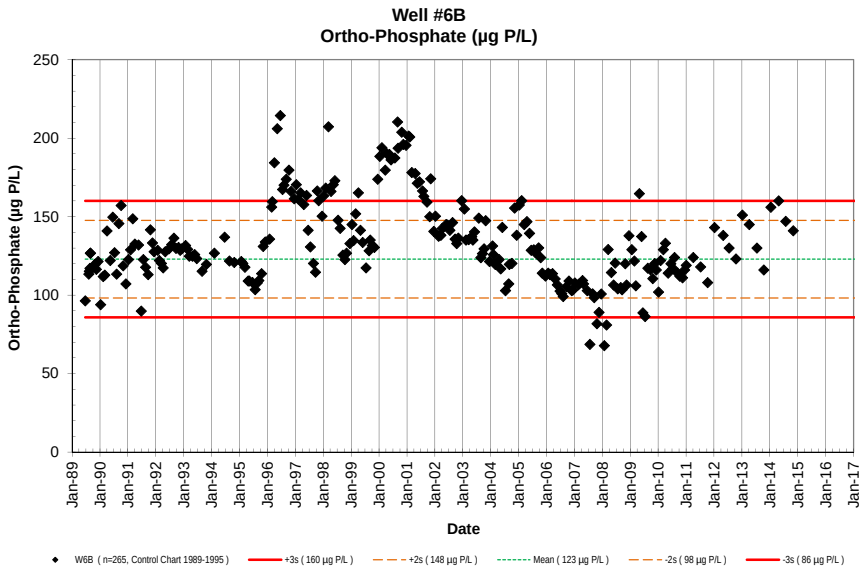
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6B	-8.53	7/20/06	924				3.26	101	73.5	1029	0.28	3.9	159	4466	3.62	112.1	66.2	927	0.65	22.5	7.803	30.056	4.91		<1	<1
W6B	-8.53	8/7/06	948				3.20	99	71.5	1001	0.21	2.9	163	4578	3.44	106.5	63.1	884	0.57	21.9	7.822	30.321	4.88		<1	<1
W6B	-8.53	9/18/06	922				3.40	105	70.3	985	0.32	4.5	160	4494	3.66	113.4	63.9	895	0.65	21.9	7.817	30.621	4.77		<1	<1
W6B	-8.53	10/23/06	925				3.52	109	70.5	987	0.25	3.5	177	4971	3.72	115.2	67.4	943	0.66	22.5	7.787	30.225	4.81		1	<1
W6B	-8.53	11/27/06	909				3.32	103	105	1471	0.28	3.9	163	4578	3.50	108.4	96.4	1350	0.63	22.6	7.839	30.399	4.69		<1	<1
W6B	-8.53	12/11/06	1010				3.33	103	102	1429	0.34	4.8	160	4494	3.51	108.7	92.2	1292	0.61	22.4	7.837	30.594	4.72		<1	<1
W6B	-8.53	1/8/07	1104				3.48	108	92.6	1297	0.29	4.1	159	4466	3.64	112.7	85.0	1191	0.54	22.2	7.822	30.356	5.40		<1	<1
W6B	-8.53	2/20/07	1001				3.44	107	75.5	1058	0.48	6.7	166	4662	3.68	114.0	83.8	1174	0.68	22.1	7.826	29.880	5.93		<1	<1
W6B	-8.53	3/5/07	936				3.46	107	88.9	1245	0.41	5.7	172	4831	3.66	113.4	94.3	1321	0.59	22.2	7.803	29.607	5.10		<1	<1
W6B	-8.53	4/18/07	1000				3.53	109	86.5	1212	0.21	2.9	174	4887	3.69	114.3	73.9	1034	0.52	21.7	7.825	29.104	5.50		<1	<1
W6B	-8.53	5/1/07	952				3.46	107	77.7	1088	0.31	4.3	173	4859	3.63	112.4	73.1	1024	0.57	21.2	7.833	29.393	5.36		<1	<1
W6B	-8.53	6/18/07	932				3.32	103	76.5	1071	0.20	2.8	173	4859	3.49	108.1	71.2	997	0.49	21.6	7.854	29.616	5.74		<1	2
W6B	-8.53	7/23/07	1512	-2.11	0.52	Flood	2.21	69	42.5	595	0.00	0.0	101	2824	2.69	83.3	43.2	605		22.5	7.71	30.58	4.60			
W6B	-8.53	8/27/07	1510	-1.98	0.52	Flood	3.25	101	98.3	1376	0.11	1.6	156	4392	3.27	101.3	99.2	1389		22.7	7.78	30.27	4.90			
W6B	-8.53	9/18/07	1624	-2.26	0.24	Ebb	3.18	98	96.8	1356	0.05	0.7	164	4609	3.31	102.6	94.4	1323		22.6	7.75	30.52	4.45			
W6B	-8.53	10/23/07	1537	-2.06	0.52	High	2.64	82	101.5	1422	0.10	1.4	144	4052	2.69	83.4	96.3	1349		22.6	7.70	30.25	5.37			
W6B	-8.53	11/20/07	1324	-2.21	0.38	Ebb	2.87	89	91.4	1280	0.07	1.0	164	4620	2.54	78.7	96.7	1355		22.4	7.71	29.89	4.70			
W6B	-8.53	12/19/07	1340	-2.39	0.30	High	3.25	101	107.4	1504	1.57	22	161	4511						21.3	7.65	28.63	5.39			
W6B	-8.53	1/28/08	924	-2.31	0.24	Ebb	2.19	68	120.2	1683	0.14	1.9	133	3745						19.7	7.44	28.92	1.82			
W6B	-8.53	2/26/08	1401	-2.44	0.03	Ebb	2.62	81	130.3	1825	0.59	8.3	147	4121						19.4	7.54	28.76	3.42			
W6B	-8.53	3/17/08	1507	-2.44	0.21	Flood	4.17	129	129.9	1819	0.06	0.8	157	4397						16.6	7.71	29.53	4.21			
W6B	-8.53	4/29/08	1138	-2.24	0.09	Flood	3.69	114	118.4	1658	0.09	1.2	154	4319						19.9	7.54	29.49	4.60			
W6B	-8.53	5/28/08	1120	-2.18	0.18	Flood	3.44	106	96.4	1350	0.21	3.0	177	4958						20.5	7.64	29.37	3.88			
W6B	-8.53	6/17/08	1153	-2.44	0.00	Flood	3.89	120	88.2	1236	0.75	10.5	158	4424						20.9	7.43	29.17	2.61	0.13		
W6B	-8.53	7/22/08	1140	-2.46	0.30	Ebb	3.36	104	80.8	1132	0.35	4.9	161	4532						22.9	7.58	29.43	3.63			
W6B	-8.53	8/30/08	1142		-0.09	Low	3.38	105	78.5	1099	0.14	1.9	170	4763						21.1	7.62	29.33	4.25			
W6B	-8.53	9/16/08	1123	-2.54	0.12	Ebb	3.34	103	80.2	1124	0.22	3.1	168	4725						21.7	7.47	29.06	5.65			
W6B	-8.53	10/28/08	1056	-2.51	0.30	Ebb	3.87	120	86.6	1214	0.18	2.5	168	4714						20.8	7.22	31.81	3.49	0.3		
W6B	-8.53	11/13/08	1121	-2.51	0.12	Ebb	3.44	106	75.5	1057	0.16	2.2	163	4585						21.7	7.70	29.38	3.99	0.48		
W6B	-8.53	12/15/08	1423	-2.56	0.61	Ebb	4.45	138	94.3	1321	0.11	1.5	173	4857						22.0	7.80	28.77	4.72			
W6B	-8.53	1/22/09	1107	-2.54	0.15	High	4.16	129	100.0	1401	0.59	8.3	176	4956						20.2	7.61	28.67	3.39	0.16		
W6B	-8.53	2/24/09	1038	-2.66	0.06	Low	3.93	122	155.9	2183	0.49	6.9	220	6172						20.0	7.48	27.57	3.06	0.11		
W6B	-8.53	3/16/09	1117	-2.61	0.09	Ebb	3.42	106	91.7	1285	0.29	4.0	161	4526						20.2	7.39	27.68	4.32	0.12		
W6B	-8.53	4/30/09	1622	-2.72	0.24	Flood	5.31	165	85.4	1196	0.43	6.0	139	3902						19.4	7.92	28.16	4.87			
W6B	-8.53	5/29/09	1039	-2.40	0.21	Ebb	4.43	137	81.8	1146	0.21	2.9	213	5996						18.2	7.68	28.43	5.06	0.11		
W6B	-8.53	6/16/09	1427	-2.27	0.40	Flood	2.86	89	49.1	688	0.28	3.9	113	3163						18.0	8.21	28.86	5.55	0.24		
W6B	-8.53	7/14/09	1354	-2.40	0.37	Ebb	2.79	86	53.6	751	0.33	4.6	103	2895						19.4	7.74	29.08	4.65	0.24		
W6B	-8.53	8/19/09	1407	-1.93	0.67	Flood	3.78	117	73.2	1026	1.34	18.7	157	4412						19.4	7.13	29.82	4.97	0.22		
W6B	-8.53	9/21/09	1551	-2.37	0.30	Flood	3.75	116	77.7	1088	0.36	5	137	3860						20.6	8.19	29.77	4.67	0.33		
W6B	-8.53	10/22/09	1624	-2.53	0.18	Flood	3.57	111	70.4	987	0.56	7.9	92	2583						20.8	7.71	29.43	4.86	0.57		
W6B	-8.53	11/17/09	858	-2.46	0.30	Ebb	3.88	120	65.2	913	0.87	12.2	230	6474						20.8	7.70	29.33	4.92	0.07		
W6B	-8.53	12/8/09	919	-2.17	0.55	High	3.75	116	72.0	1009	1.00	14	201	5657						20.7	7.71	29.14	5.22	0.08		
W6B	-8.53	1/6/10	842	-2.20	0.43	High	3.29	102	69.8	977	1.36	19	182	5112						20.2	7.67	28.85	5.09	0.63		
W6B	-8.53	2/2/10	843	-1.98	0.37	Ebb	3.94	122	89.8	1258	0.71	10	172	4827						20.2	7.77	28.77	5.15	0.61		
W6B	-8.53	3/10/10	817	-2.64	0.09	Low	4.16	129	82.3	1153	0.43	6	204	5720						19.6	7.74	28.08	5.16	0.37		
W6B	-8.53	4/6/10	1421	-2.60	0.12	Ebb	4.29	133	71.6	1003	0.79	11	198	5562						21.4	7.75	25.94	5.70	0.12		
W6B	-8.53	5/11/10	1447	-2.04	0.55	High	3.68	114	55.4	776	1.21	17	192	5405						18.6	7.79	28.95	5.79	0.60		
W6B	-8.53	6/16/10	1014	-2.38	0.15	Ebb	3.87	120	67.2	941	1.14	16	211	5933						18.8	7.82	28.98	5.12	0.17		

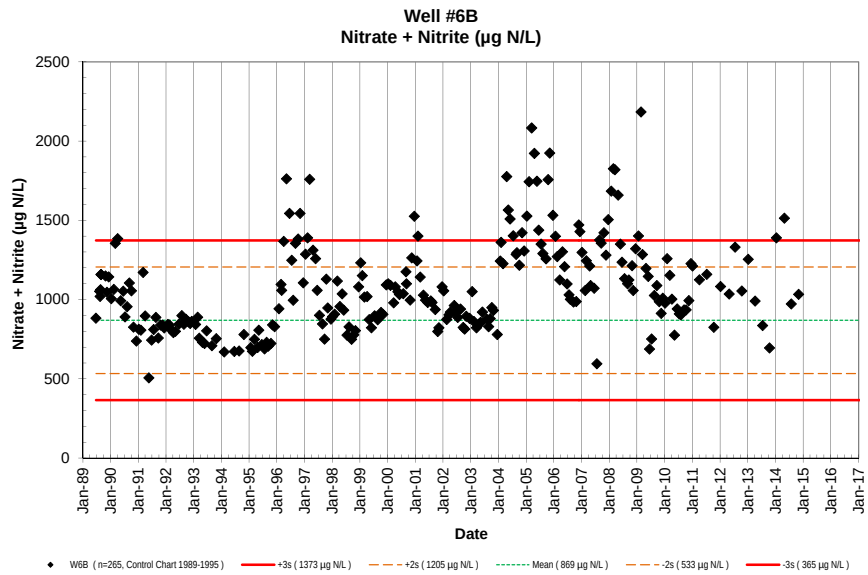
NELHA Water Quality Laboratory

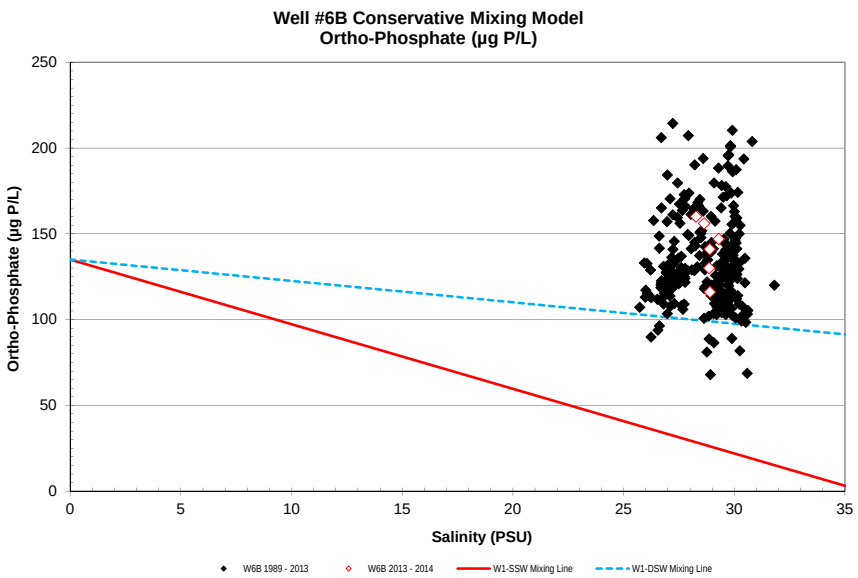
Well 6B Data Table

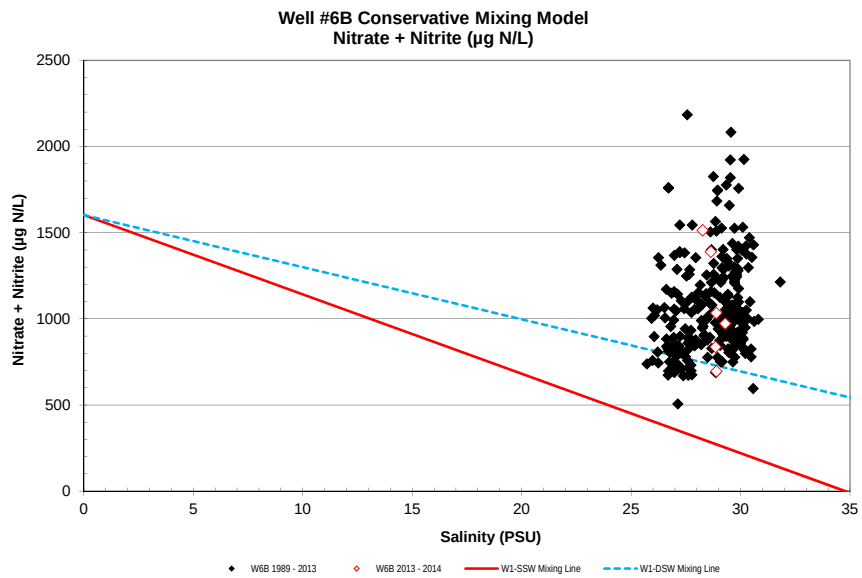
June 1989 - December 2014

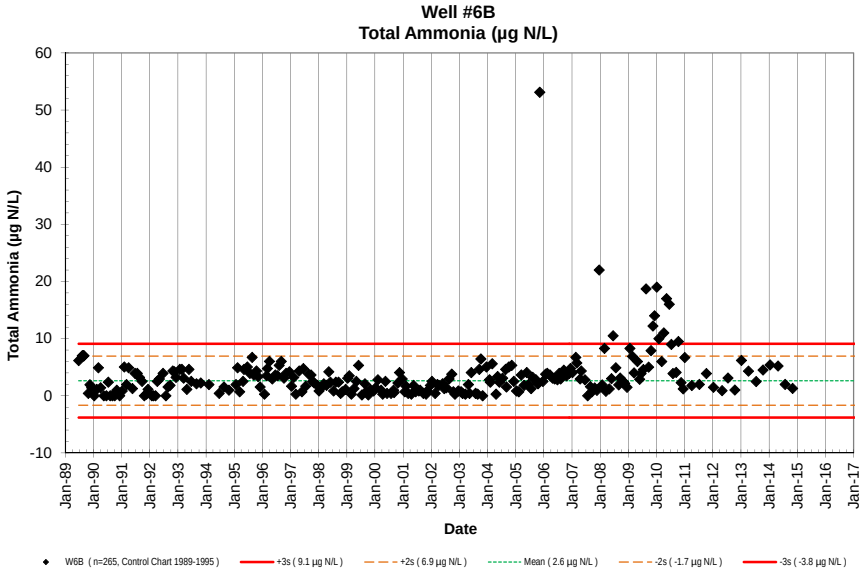
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W6B	-8.53	7/13/10	1458	-2.27	0.40	Flood	3.78	117	65.0	910	0.64	9	220	6192						19.4	7.76	29.19	5.44	0.36		
W6B	-8.53	8/3/10	1459	-2.19	0.40	Ebb	4.00	124	64.5	904	0.28	3.9	206	5780						19.5	7.78	29.39	5.62	0.30		
W6B	-8.53	9/14/10	1510	-2.34	0.30	Ebb	3.68	114	66.8	935	0.29	4.1	207	5821						19.9	7.75	29.42	5.42	0.66		
W6B	-8.53	10/12/10	1533	-2.41	0.18	Low	3.62	112	66.8	935	0.68	9.5	201	5637						19.9	7.75	29.35	5.21	0.19		
W6B	-8.53	11/16/10	1423	-2.18	0.34	Ebb	3.58	111	70.9	993	0.16	2.3	199	5597						19.9	7.75	29.74	5.42	0.28		
W6B	-8.53	12/14/10	1450	-2.45	0.12	Ebb	3.75	116	87.6	1227	0.09	1.2	175	4902						19.7	7.77	29.17	5.45	0.16		
W6B	-8.53	1/4/11	1433	-2.45	0.15	Flood	3.84	119	86.5	1211	0.48	6.7	192	5396						19.3	7.71	28.67	5.65	0.37		
W6B	-8.53	4/5/11	1452	-2.31	0.34	Flood	4.00	124	80.3	1125	0.13	1.8	192	5396						17.0	7.72	27.77	5.57	0.20		
W6B	-8.53	7/11/11	1152	-2.22	0.49	Flood	3.81	118	82.7	1159	0.14	2.0	214	5997						18.6	7.70	28.65	5.69	0.27		
W6B	-8.53	10/11/11	1336	-2.32	0.34	Flood	3.49	108	58.9	825	0.28	3.9	201	5653						19.5	7.67	29.43	4.03	0.29		
W6B	-8.53	1/9/12	1445	-2.67	0.15	Flood	4.62	143	77.2	1082	0.11	1.5	198	5569						18.9	7.70	28.24	3.32	0.11		
W6B	-8.53	4/30/12	1503	-2.36	0.24	ebb	4.46	138	73.9	1035	0.06	0.9	214	6023						17.0	7.60	28.70	4.95	0.21		
W6B	-8.53	7/17/12	1522	-1.92	0.73	Flood	4.20	130	95.0	1331	0.22	3.1	210	5890						17.6	7.47	29.40	3.58	0.51		
W6B	-8.53	10/15/12	1332	-2.37	0.24	Flood	3.97	123	75.2	1054	0.07	1.0	219	6153						17.8	7.44	29.31	2.16	0.24		
W6B	-8.53	1/7/13	1418	-2.39	0.18	Ebb	4.88	151	89.5	1254	0.44	6.2	264	7426						17.6	7.49	28.45	4.75	0.08		
W6B	-8.53	4/8/13	1339	-2.25	0.37	Flood	4.68	145	70.7	990	0.31	4.3	221	6210						16.5	7.51	28.21	4.22	0.18		
W6B	-8.53	7/16/13	1622	-2.37	0.30	Ebb	4.20	130	59.7	836	0.18	2.5	230	6449						17.7	7.44	28.86	2.84	0.30		
W6B	-8.53	10/14/13	1701	-2.37	0.18	Ebb	3.75	116	49.6	695	0.32	4.5	219	6144						18.4	7.50	28.90	3.28	0.18		
W6B	-8.53	1/14/14	1554	-2.31	0.18	Ebb	5.04	156	99.2	1389	0.39	5.4	220	6170						18.0	7.56	28.64	4.38	0.93		
W6B	-8.53	4/28/14	1551	-2.01	0.52	Flood	5.17	160	108.0	1513	0.37	5.2	206	5782						18.3	7.68	28.27	3.55	0.10		
W6B	-8.53	7/28/14	15.49	-2.07	0.49	Flood	4.75	147	69.4	972	0.14	2	207	5827						18.3	7.53	29.30	3.95	0.12		
W6B	-8.53	11/3/14	13.15	-2.04	0.46	High	4.55	141	73.8	1033	0.09	1.3	196	5512						18.9	7.55	28.89	4.57	0.21		
W6B	-8.53	1/1/15																								
W6B	-8.53	4/1/15																								

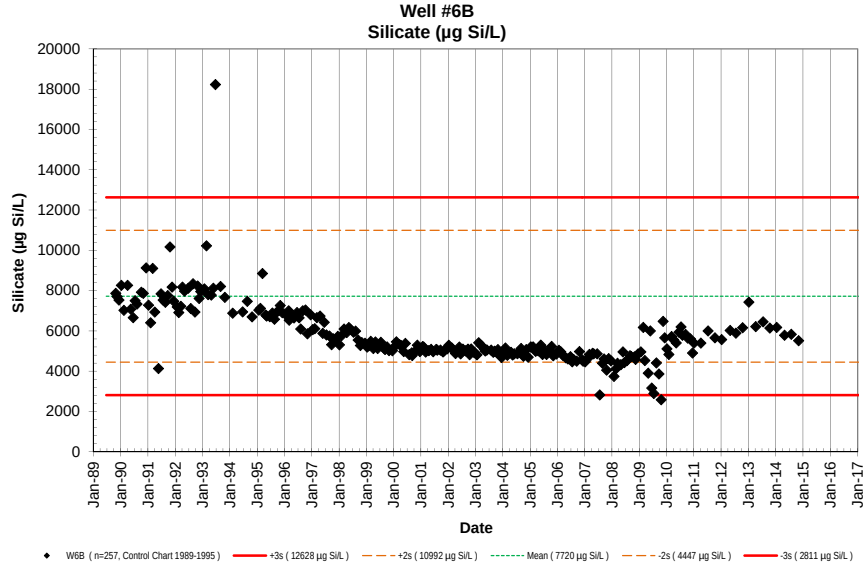

Well #6B
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W6B (n=265, Control Chart 1989-1995)
+3s (160 µg P/L)
+2s (148 µg P/L)
Mean (123 µg P/L)
-2s (98 µg P/L)
-3s (86 µg P/L)

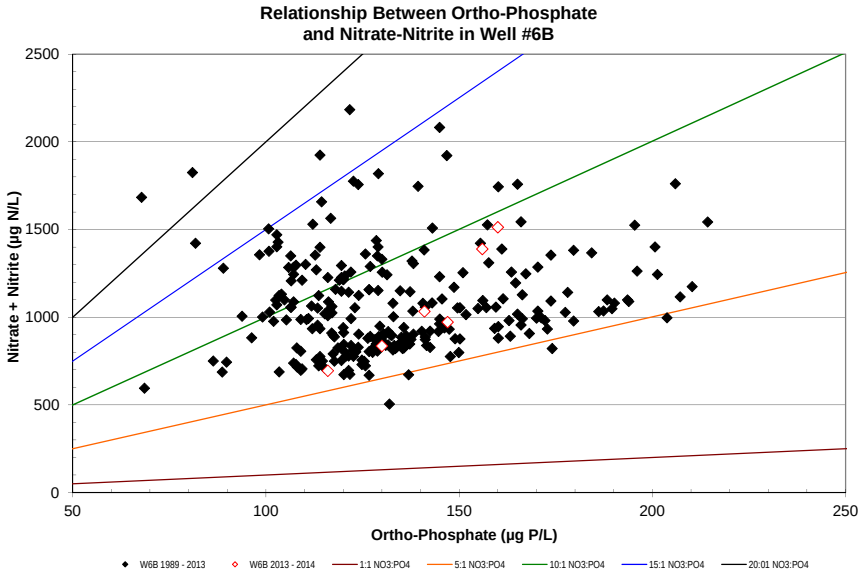

Well #6B
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W6B (n=265, Control Chart 1989-1995)
+3s (1373 µg N/L)
+2s (1205 µg N/L)
Mean (869 µg N/L)
-2s (533 µg N/L)
-3s (365 µg N/L)

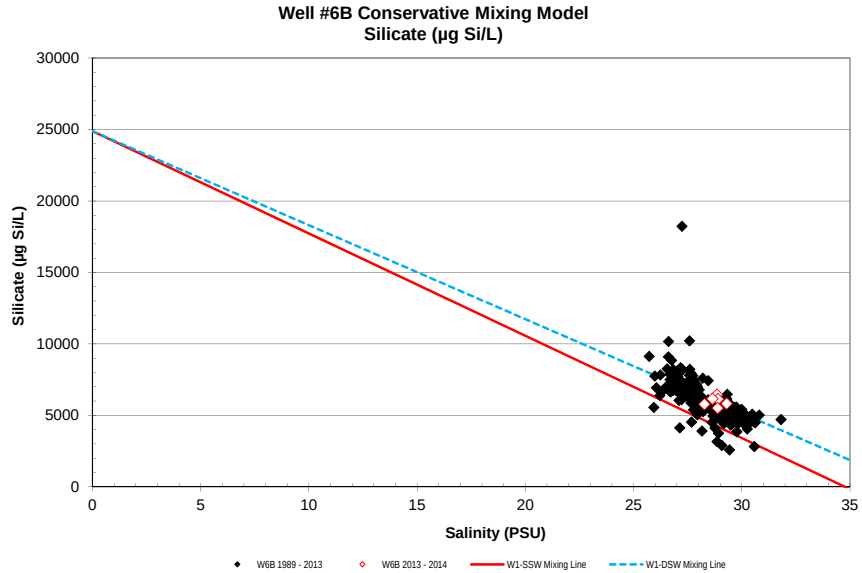

Well #6B Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W6B 1989 - 2013
W6B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

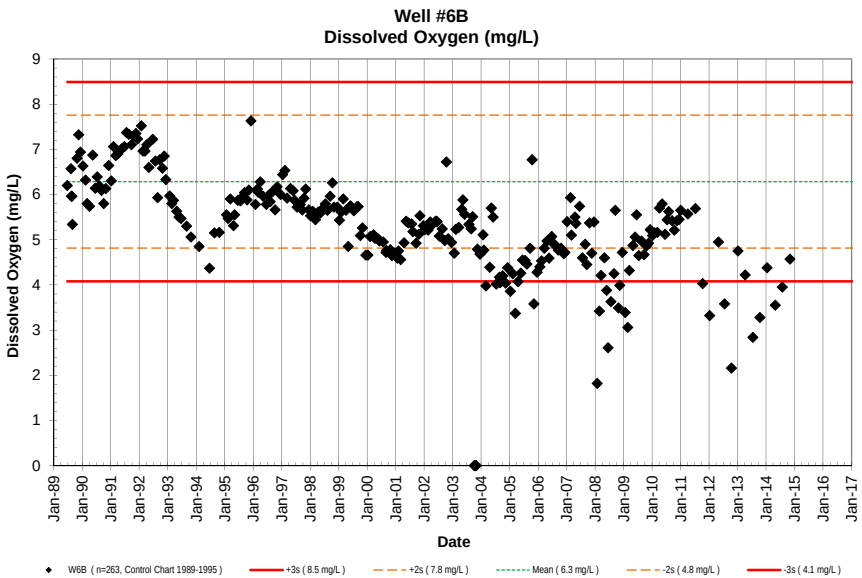

Well #6B Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W6B 1989 - 2013
W6B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

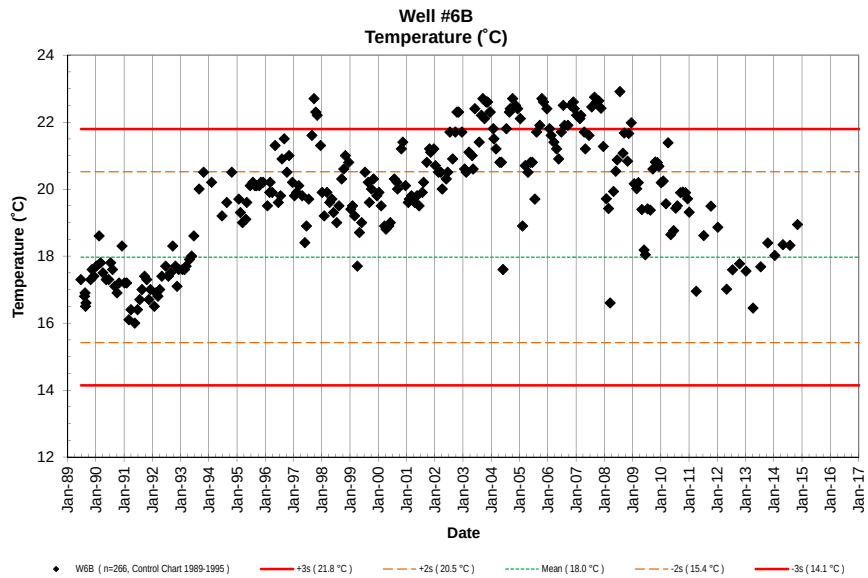

Well #6B
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W6B (n=265, Control Chart 1989-1995)
+3s (9.1 µg N/L)
+2s (6.9 µg N/L)
Mean (2.6 µg N/L)
-2s (-1.7 µg N/L)
-3s (-3.8 µg N/L)

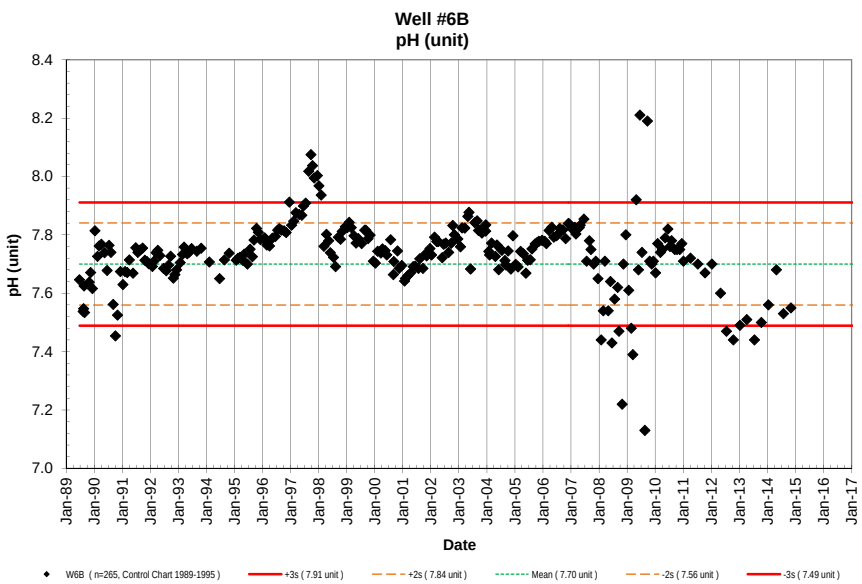

Well #6B
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W6B (n=257, Control Chart 1989-1995)
+3s (12628 µg Si/L)
+2s (10992 µg Si/L)
Mean (7720 µg Si/L)
-2s (4447 µg Si/L)
-3s (2811 µg Si/L)

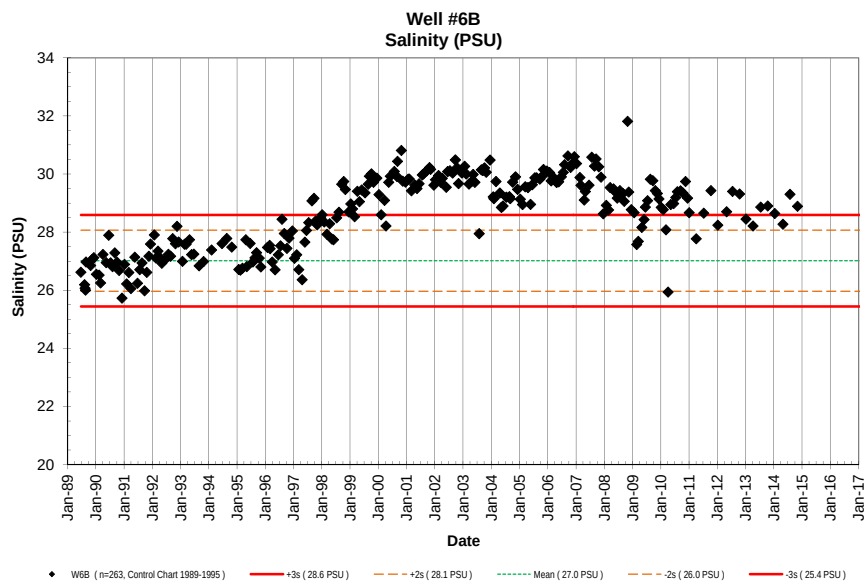

Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #6B
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W6B 1989 - 2013
W6B 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

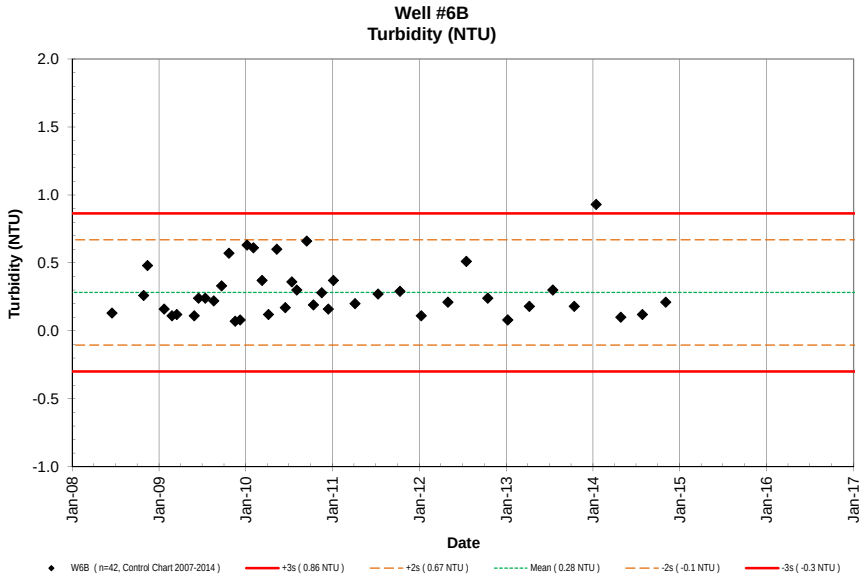

Well #6B Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W6B 1989 - 2013
W6B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

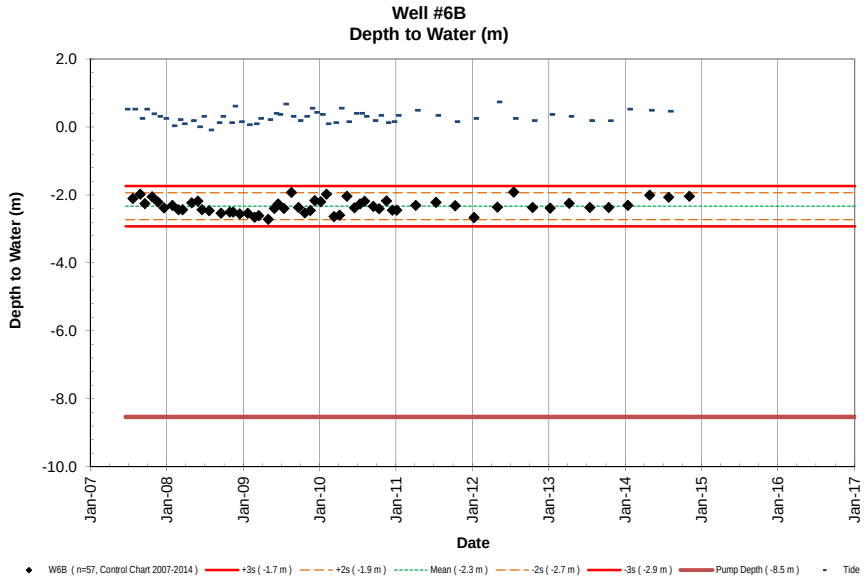

Well #6B
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W6B (n=263, Control Chart 1989-1995)
+3s (8.5 mg/L)
+2s (7.8 mg/L)
Mean (6.3 mg/L)
-2s (4.8 mg/L)
-3s (4.1 mg/L)


Well #6B
Temperature (˚C)
Temperature (˚C)
Date
W6B (n=266, Control Chart 1989-1995)
+3s (21.8 °C)
+2s (20.5 °C)
Mean (18.0 °C)
-2s (15.4 °C)
-3s (14.1 °C)


Well #6B
pH (unit)
pH (unit)
Date
W6B (n=265, Control Chart 1989-1995)
+3s (7.91 unit)
+2s (7.84 unit)
Mean (7.70 unit)
-2s (7.56 unit)
-3s (7.49 unit)


Well #6B
Salinity (PSU)
Salinity (PSU)
Date
W6B (n=263, Control Chart 1989-1995)
+3s (28.6 PSU)
+2s (28.1 PSU)
Mean (27.0 PSU)
-2s (26.0 PSU)
-3s (25.4 PSU)


Well #6B
Turbidity (NTU)
Turbidity (NTU)
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W6B (n=42, Control Chart 2007-2014)
+3s (0.86 NTU)
+2s (0.67 NTU)
Mean (0.28 NTU)
-2s (-0.1 NTU)
-3s (-0.3 NTU)


Well #6B
Depth to Water (m)
Depth to Water (m)
2.0
0.0
-2.0
-4.0
-6.0
-8.0
-10.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W6B (n=57, Control Chart 2007-2014)
+3s (-1.7 m)
+2s (-1.9 m)
Mean (-2.3 m)
-2s (-2.7 m)
-3s (-2.9 m)
Pump Depth (-8.5 m)
Tide

NELHA Water Quality Laboratory

Well 7 Data Table

May 1992 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W7	-17.68	5/20/92	834				0.80	25	54.7	766	1.34	18.8	161	4522	0.90	27.9	55.7	780	0.74	16.6	7.877	30.780	9.30		<1	<1
W7	-17.6784	6/24/92	839				1.70	53	50.5	707	1.22	17.1	129	3623	1.87	57.9	54.4	762	1.16	16.6	7.785	30.960	8.81		<1	<1
W7	-17.6784	7/30/92	803				2.52	78	35.7	500	1.56	21.9	154	4325	2.61	80.8	38.8	544	0.93	18.5	7.711	31.458	5.74		<1	<1
W7	-17.6784	8/26/92	1006				3.14	97	57.8	810	0.21	2.9	161	4522	3.19	98.8	61.6	862	0.84	18.6	7.719	31.471	5.48		<1	<1
W7	-17.6784	9/23/92	827				2.83	88	44.0	616	0.39	5.5	164	4606	2.88	89.2	55.3	774	0.69	17.9	7.788	31.091	5.45		<1	<1
W7	-17.6784	10/28/92	902				2.80	87	56.0	784	0.28	3.9	155	4353	2.98	92.3	58.5	819	0.75	17.2	7.818	30.660	5.32		<1	<1
W7	-17.6784	11/18/92	852				2.75	85	55.5	777	0.25	3.5	152	4269	2.96	91.7	60.9	853	0.89	16.9	7.803	30.512	5.14		<1	<1
W7	-17.6784	12/9/92	843				2.70	84	57.5	805	0.24	3.4	187	5252	2.91	90.1	55.1	772	0.87	17.0	7.806	30.441	5.13		<1	<1
W7	-17.6784	1/27/93	822				2.59	80	30.9	433	0.24	3.4	161	4513	2.68	83.0	34.0	476	0.64	20.7	7.944	32.034	5.86		<1	<1
W7	-17.6784	2/24/93	807				1.98	61	14.2	199	0.36	5.0	147	4129	2.01	62.3	17.6	247	0.67	21.9	8.071	32.956	5.63		<1	<1
W7	-17.6784	3/17/93	816				2.15	67	20.1	282	0.38	5.3	142	3999	2.18	67.5	23.6	331	0.63	21.7	8.051	32.633	4.62		<1	<1
W7	-17.6784	4/28/93	808				2.28	71	31.7	444	0.32	4.5	131	3679	2.31	71.5	35.2	493	0.56	18.7	8.007	31.256	3.71		<1	<1
W7	-17.6784	5/26/93	810				2.02	63	29.4	412	0.43	6.0	260	7302	2.14	66.3	32.9	461	0.63	17.9	7.984	31.237	3.07		<1	<1
W7	-17.6784	6/29/93	823				2.18	68	28.6	400	0.24	3.4	112	3146	2.28	70.6	31.5	441	0.54	18.5	7.945	31.478	3.70		<1	<1
W7	-17.6784	9/1/93	823				2.16	67	31.3	438	0.24	3.4	153	4283	2.21	68.5	36.1	506	0.72	19.1	7.929	31.072	2.87		<1	<1
W7	-17.6784	10/27/93	816				2.15	67	30.1	421	0.18	2.5	140	3932	2.16	66.9	32.8	460	0.68	19.4	7.943	30.978	2.14		<1	<1
W7	-17.6784	3/1/94	1035				2.52	78	19.1	268	0.34	4.8	132	3707	2.48	76.8	23.6	330	0.78	21.2	7.929	31.763	3.68		<1	<1
W7	-17.6784	6/22/94	754				2.30	71	31.0	435	0.29	4.1	126	3552	2.31	71.5	35.3	495	0.59	19.0	7.918	31.095	1.97		<1	<1
W7	-17.6784	8/24/94	816				2.09	65	32.0	448	0.00	0.0	121	3387	2.14	66.3	39.0	546	0.54	19.2	7.949	30.888	2.34		<1	<1
W7	-17.6784	11/28/94	1010				2.19	68	29.5	414	0.59	8.3	120	3374	2.24	69.4	34.3	480	0.53	19.9	7.820	31.019	2.11		<1	<1
W7	-17.6784	1/25/95	851				2.20	68	29.7	416	0.00	0.0	115	3216	2.25	69.7	31.5	441	0.51	19.3	7.966	30.843	2.71		<1	<1
W7	-17.6784	2/15/94	905				2.05	63	16.8	235	0.00	0.0	121	3393	2.11	65.4	18.6	260	0.58	22.2	8.034	32.241	4.68		1	<1
W7	-17.6784	3/29/95	846				2.01	62	31.1	436	0.27	3.8	118	3300	2.06	63.8	33.1	463	0.51	20.0	8.030	30.937	1.98		<1	<1
W7	-17.6784	4/26/95	839				1.93	60	32.9	461	0.12	1.7	111	3109	1.96	60.7	33.9	475	0.55	19.4	8.003	30.836	1.74		<1	<1
W7	-17.6784	5/9/95	1023				1.96	61	34.4	482	0.29	4.1	116	3266	1.97	61.0	36.0	505	0.62	19.4	7.961	30.787	1.60		<1	<1
W7	-17.6784	6/28/95	837				2.04	63	34.0	476	0.49	6.9	121	3401	2.08	64.4	36.6	512	0.60	19.6	7.937	30.988	1.67		<1	<1
W7	-17.6784	7/26/95	1017				2.15	67	34.0	476	0.22	3.1	121	3387	2.18	67.5	36.3	508	0.55	19.7	7.973	31.382	1.59		<1	<1
W7	-17.6784	8/23/95	934				2.10	65	27.9	390	0.50	7.0	121	3396	2.14	66.3	29.5	413	0.53	20.1	7.957	30.946	2.10		<1	<1
W7	-17.6784	9/12/95	925				2.16	67	27.2	381	0.13	1.8	129	3620	2.18	67.5	29.8	418	0.51	20.2	7.970	31.292	1.61		<1	<1
W7	-17.6784	10/17/95	1108				2.07	64	25.2	353	0.21	2.9	132	3699	2.09	64.7	26.7	374	0.91	19.9	7.975	31.567	1.54		<1	<1
W7	-17.6784	11/7/95	951				2.04	63	26.6	372	0.44	6.2	128	3592	2.10	65.0	28.1	393	0.79	23.1	8.002	31.486	1.50		<1	<1
W7	-17.6784	12/6/95	1038				1.86	58	25.8	362	0.37	5.2	121	3398	2.04	63.2	28.2	394	0.90	20.2	8.018	31.478	1.78		<1	<1
W7	-17.6784	1/30/96	1130				1.65	51	16.4	230	0.13	1.8	118	3311	1.82	56.4	16.9	237	0.64	23.1	8.133	32.561	3.85		<1	<1
W7	-17.6784	2/27/96	1240				1.66	51	15.8	221	0.29	4.1	121	3396	1.79	55.4	18.7	262	0.71	23.8	8.089	32.679	4.13		<1	12
W7	-17.6784	3/13/96	1154				1.58	49	18.4	258	0.46	6.4	109	3073	1.72	53.3	20.3	284	0.72	23.4	8.049	32.184	4.92		<1	<1
W7	-17.6784	4/2/96	1038				1.55	48	20.3	284	0.22	3.1	127	3567	1.68	52.0	22.8	320	0.76	23.4	8.041	31.959	5.47		<1	<1
W7	-17.6784	5/15/96	1206				1.70	53	36.0	504	0.05	0.7	120	3380	1.73	53.6	38.5	539	0.51	22.6	8.056	31.501	2.49		<1	<1
W7	-17.6784	6/18/96	1141				1.59	49	47.6	666	0.12	1.7	106	2981	1.62	50.2	50.6	708	0.57	20.6	8.059	30.850	2.95		<1	<1
W7	-17.6784	7/17/96	1200				1.53	47	47.5	665	0.22	3.1	102	2857	1.61	49.9	54.9	769	0.63	20.3	8.055	30.570	3.13		<1	<1
W7	-17.6784	8/6/96	1216				1.39	43	49.7	696	0.58	8.1	103	2880	1.47	45.5	52.5	736	0.65	20.4	8.032	30.425	3.23		<1	<1
W7	-17.6784	9/4/96	1202				1.51	47	55.9	783	0.48	6.7	106	2989	1.53	47.4	58.4	818	0.69	20.2	8.003	30.355	2.69		<1	1
W7	-17.6784	10/9/96	1256				1.79	55	45.3	635	0.49	6.9	125	3508	1.92	59.5	47.9	671	0.68	20.9	7.957	30.756	2.60		<1	<1
W7	-17.6784	11/6/96	1201				1.96	61	34.9	489	0.19	2.7	120	3378	2.06	63.8	39.6	554	0.69	21.3	7.908	31.067	1.87		<1	<1
W7	-17.6784	12/17/96	1243				1.89	59	22.4	313	0.29	4.1	126	3535	1.99	61.6	26.7	374	0.93	24.2	8.076	31.910	5.63		<1	<1
W7	-17.6784	1/14/97	1215				2.00	62	30.0	420	0.69	9.7	136	3820	2.06	63.8	33.8	473	0.80	23.5	7.973	31.491	4.06		<1	1
W7	-17.6784	2/11/97	1050				1.65	51	40.5	567	0.24	3.4	126	3550	1.74	53.9	42.8	600	0.88	23.9	8.037	31.752	5.39		<1	<1
W7	-17.6784	3/11/97	928				1.76	55	37.8	529	0.44	6.2	131	3690	2.01	62.3	39.8	557	0.75	23.5	8.067	31.957	4.40		<1	<1
W7	-17.6784	4/23/97	1209				1.95	60	94.2	1320	0.46	6.4	115	3219	1.98	61.3	117.8	1650	0.72	21.3	8.031	30.787	2.25		<1	<1
W7	-17.6784	5/28/97	1040				2.36	73	94.8	1328	0.13	1.8	128	3595	2.65	82.1	108.1	1514	0.68	20.4	8.013	30.900	1.79		<1	<1
W7	-17.6784	6/17/97	1121				2.27	70	72.1	1010	0.29	4.1	119	3351	2.36	73.1	78.5	1100	0.71	20.1	8.024	30.878	1.77		<1	<1

NELHA Water Quality Laboratory

Well 7 Data Table

May 1992 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W7	-17.6784	7/15/97	1115				2.56	79	83.7	1172	0.06	0.8	114	3210	2.70	83.6	92.1	1289	0.60	19.7	8.037	30.686	1.87		<1	<1
W7	-17.6784	8/26/97	1147				2.50	77	89.2	1249	0.35	4.9	127	3561	2.50	77.4	93.3	1306	0.64	21.4	8.102	30.724	1.01		<1	<1
W7	-17.6784	9/23/97	1015				2.55	79	147.5	2066	0.25	3.5	123	3449	2.55	79.0	157.8	2210	0.64	21.1	8.121	30.792	0.47		<1	<1
W7	-17.6784	10/14/97	1050				2.68	83	186.4	2611	0.21	2.9	120	3370	2.68	83.0	203	2842	0.52	21.0	8.130	30.728	0.69		<1	<1
W7	-17.6784	11/4/97	919				2.58	80	195.5	2738	0.10	1.4	125	3513	2.64	81.8	248	3471	0.64	20.1	8.146	30.896	0.90		<1	<1
W7	-17.6784	12/16/97	1120				2.64	82	71.5	1001	0.15	2.1	132	3699	2.74	84.9	76.4	1070	0.58	21.3	8.105	31.156	1.62		<1	<1
W7	-17.6784	1/5/98	942				2.73	85	56.2	787	0.03	0.4	124	3469	2.83	87.7	62.0	868	0.66	21.7	8.091	31.466	2.63		<1	<1
W7	-17.6784	2/3/98	911				2.15	67	22.4	314	0.08	1.1	118	3306	2.38	73.7	25.5	358	0.72	23.7	8.202	32.728	5.38		<1	<1
W7	-17.6784	3/10/98	942				2.50	77	25.5	357	0.27	3.8	128	3598	2.64	81.8	28.0	392	0.59	23.6	8.006	32.592	4.94		<1	<1
W7	-17.6784	4/14/98	1113				2.55	79	32.2	451	0.01	0.1	126	3536	2.61	80.8	33.7	472	0.52	23.5	8.010	32.481	4.71		<1	<1
W7	-17.6784	5/12/98	942				2.39	74	51.7	725	0.09	1.3	123	3440	2.54	78.7	54.9	769	0.57	23.4	8.031	32.514	3.39		<1	<1
W7	-17.6784	6/2/98	943				2.39	74	93.0	1303	0.09	1.3	119	3332	2.48	76.8	95.7	1340	0.67	22.5	8.036	31.925	1.02		<1	<1
W7	-17.6784	7/14/98	935				2.31	72	96.2	1348	0.23	3.2	120	3373	2.45	75.9	98.1	1374	0.69	21.4	7.974	31.463	0.11		<1	<1
W7	-17.6784	8/11/98	958				2.62	81	103.1	1444	0.05	0.7	118	3323	2.72	84.2	111.0	1555	0.63	21.1	7.924	31.501	0.16		<1	<1
W7	-17.6784	9/15/98	949				2.71	84	73.5	1030	0.01	0.1	123	3463	2.79	86.4	73.1	1024	0.66	21.1	7.888	31.555	1.70		<1	<1
W7	-17.6784	10/13/98	849				2.87	89	67.7	948	0.05	0.7	128	3601	2.92	90.4	70.3	985	0.71	21.3	7.887	31.487	1.75		<1	<1
W7	-17.6784	11/4/98	942				2.92	90	69.3	970	0.07	1.0	128	3603	3.07	95.1	73.7	1032	0.81	21.2	7.886	31.461	1.21		3	21
W7	-17.6784	12/16/98	932				3.05	94	104.4	1462	0.09	1.3	131	3674	3.19	98.8	108.9	1525	0.93	21.5	7.866	31.575	0.30		<1	<1
W7	-17.6784	1/12/99	1003				2.85	88	78.6	1101	0.08	1.1	133	3724	2.94	91.1	80.0	1120	0.79	21.7	7.854	31.853	1.88		<1	<1
W7	-17.6784	2/3/99	955				2.74	85	89.8	1258	0.17	2.4	131	3665	2.90	89.8	96.3	1348	0.76	21.3	7.847	30.075	0.62		<1	<1
W7	-17.6784	3/2/99	952				3.03	94	85.8	1202	0.06	0.8	132	3710	3.17	98.2	89.9	1259	0.78	21.3	7.857	31.700	0.46		<1	<1
W7	-17.6784	4/6/99	939				3.04	94	79.7	1116	0.01	0.1	132	3710	3.16	97.9	82.4	1154	0.80	21.0	7.858	31.731	0.22		<1	<1
W7	-17.6784	5/4/99	948				3.03	94	74.4	1042	0.06	0.8	126	3525	3.15	97.6	78.3	1097	0.65	20.6	7.868	31.819	0.67		<1	<1
W7	-17.6784	6/2/99	938				2.86	89	46.9	657	0.09	1.3	130	3651	3.04	94.2	47.4	664	0.66	20.3	7.873	31.843	3.86		<1	<1
W7	-17.6784	7/7/99	1016				3.08	95	43.9	615	0.09	1.3	129	3629	3.16	97.9	46.0	644	0.59	19.8	7.897	31.628	3.78		<1	<1
W7	-17.6784	8/25/99	940				3.00	93	47.1	660	0.06	0.8	128	3592	3.22	99.7	50.2	703	0.62	20.3	7.940	31.624	3.23		<1	<1
W7	-17.6784	9/8/99	951				3.03	94	47.9	671	0.02	0.3	129	3623	3.24	100.4	53.2	745	0.59	19.9	7.938	31.611	3.29		<1	<1
W7	-17.6784	10/6/99	957				2.98	92	78.3	1097	0.04	0.6	134	3752	3.05	94.5	80.9	1133	0.66	20.7	7.888	31.955	1.12		<1	<1
W7	-17.6784	11/3/99	1012				2.26	70	46.9	657	0.13	1.8	143	4025	2.53	78.4	49.8	698	0.59	22.4	7.846	32.588	3.11		<1	<1
W7	-17.6784	12/15/99	1031				2.85	88	41.1	576	0.04	0.6	140	3929	2.98	92.3	43.8	613	0.66	21.5	7.834	32.074	3.53		<1	<1
W7	-17.6784	1/11/00	1007				2.60	81	45.4	635	0.18	2.5	132	3710	2.75	85.2	49.2	689	0.71	20.8	7.855	32.002	3.40		<1	<1
W7	-17.6784	2/14/00	1006				2.81	87	44.4	622	0.03	0.4	130	3662	2.95	91.4	49.0	686	0.61	20.5	7.875	31.978	3.63		<1	<1
W7	-17.6784	3/22/00	1023				2.88	89	67.1	940	0.07	1.0	130	3654	2.75	85.2	69.2	969	0.71	20.4	7.878	31.762	2.75		<1	<1
W7	-17.6784	4/12/00																								
W7	-17.6784	5/17/00																								
W7	-17.6784	6/6/00	1015				2.79	86	67.3	943	0.03	0.4	231	6496	2.82	87.3	71.9	1007	0.76	22.4	7.818	32.493	0.33		<1	<1
W7	-17.6784	7/31/00	959				3.22	100	37.7	528	0.10	1.4	148	4159	3.36	104.1	39.6	555	0.76	23.8	7.769	33.704	0.20		<1	<1
W7	-17.6784	8/30/00	1010				3.34	103	47.4	664	0.02	0.3	150	4202	3.44	106.5	49.3	691	0.71	23.9	7.727	33.648	0.41		<1	<1
W7	-17.6784	9/6/00	942				3.31	103	48.2	675	0.01	0.1	150	4213	3.47	107.5	51.1	716	0.84	23.9	7.727	33.584	0.23		<1	<1
W7	-17.6784	10/25/00	1129				3.51	109	42.3	592	0.16	2.2	168	4718	3.67	113.7	48.0	672	0.69	24.4	7.727	33.645	1.45		<1	<1
W7	-17.6784	11/14/00	1011				3.42	106	49.2	689	0.24	3.4	163	4570	3.60	111.5	53.1	744	0.64	24.0	7.728	33.341	0.63		<1	1
W7	-17.6784	12/19/00	945				3.58	111	79.7	1116	0.15	2.1	163	4564	3.83	118.6	81.8	1146	0.67	23.4	7.747	32.645	0.82		<1	<1
W7	-17.6784	1/24/01	935				3.10	96	64.4	902	0.14	2.0	162	4536	3.32	102.8	68.8	964	0.66	23.0	7.750	32.597	2.16		<1	<1
W7	-17.6784	2/7/01	953				3.33	103	91.8	1286	0.07	1.0	151	4230	3.40	105.3	95.0	1331	0.66	22.6	7.814	32.435	0.92		<1	<1
W7	-17.6784	3/12/01	942				3.29	102	106	1486	0.01	0.1	150	4218	3.44	106.5	107	1499	0.76	22.2	7.752	32.494	0.53		<1	<1
W7	-17.6784	4/18/01	931				3.10	96	92.1	1290	0.03	0.4	153	4306	3.23	100.0	95.1	1332	0.76	22.1	7.715	32.708	0.15		<1	<1
W7	-17.6784	5/14/01	1048				3.16	98	79.4	1112	0.19	2.7	159	4474	3.16	97.9	80.6	1129	0.61	22.9	7.695	33.002	0.17		<1	<1
W7	-17.6784	6/13/01	955				3.10	96	73.3	1027	0.02	0.3	165	4631	3.08	95.4	75.1	1051	0.62	23.0	7.672	33.264	0.15		<1	<1
W7	-17.6784	7/24/01	958				3.06	95	55.1	771	0.04	0.6	173	4848	3.17	98.2	57.9	811	0.75	24.0	7.646	33.793	0.23		<1	<1
W7	-17.6784	8/22/01	958				3.38	105	44.7	627	0.01	0.1	173	4848	3.60	111.5	47.1	660	0.74	24.6	7.625	34.020	0.15		<1	<1
W7	-17.6784	9/17/01	1049				3.42	106	46.7	654	0.05	0.7	175	4901	3.60	111.5	49.2	689	0.74	24.8	7.655	33.958	0.20		<1	<1
W7	-17.6784	10/22/01	1028				3.34	103	43.9	615	0.03	0.4	170	4786	3.58	110.9	47.0	659	0.70	24.6	7.676	33.638	1.27		<1	<1
W7	-17.6784	11/5/01	1100				3.44	107	46.0	644	0.04	0.6	172	4831	3.54	109.6	50.5	707	0.66	24.0	7.675	33.651	1.03		<1	<1
W7	-17.6784	12/12/01	1053				3.36	104	58.9	825	0.05	0.7	179	5036	3.47	107.5	93.1	1303	0.60	23.9	7.700	33.382	0.17		<1	<1
W7	-17.6784	1/7/02	1043				3.48	108	95.4	1336	0.21	2.9	168	4721	3.67	113.7	114	1597	0.57	23.5	7.711	32.505	0.90		<1	<1
W7	-17.6784	2/25/02	1003				3.50	108	107	1499	0.04	0.6	168	4707	3.60	111.5	115	1608	0.56	22.9	7.731	32.668	0.51		<1	732
W7	-17.6784	3/18/02	1028				3.54	110	87.4	1225	0.30	4.2	171	4797	3.70	114.6	85.7	1200	0.56	22.9	7.740	32.749	0.54		<1	1
W7	-17.6784	4/10/02	1034				3.34	103	104	1450	0.05	0.7	165	4645	3.48	107.8	108	1506	0.56	22.8	7.724	32.625	0.66		<1	<1
W7	-17.6784	5/22/02	1042				3.26	101	106	1488	0.16	2.2	167	4676	3.33	103.1	107	1495	0.55	22.5	7.749	32.490	0.82		<1	<1
W7	-17.6784	6/19/02	1127				3.32	103	100	1406	0.10	1.4	162	4550	3.42	105.9	108	1511	0.63	22.3	7.764	32.167	1.13		<1	<1

NELHA Water Quality Laboratory

Well 7 Data Table

May 1992 - December 2014

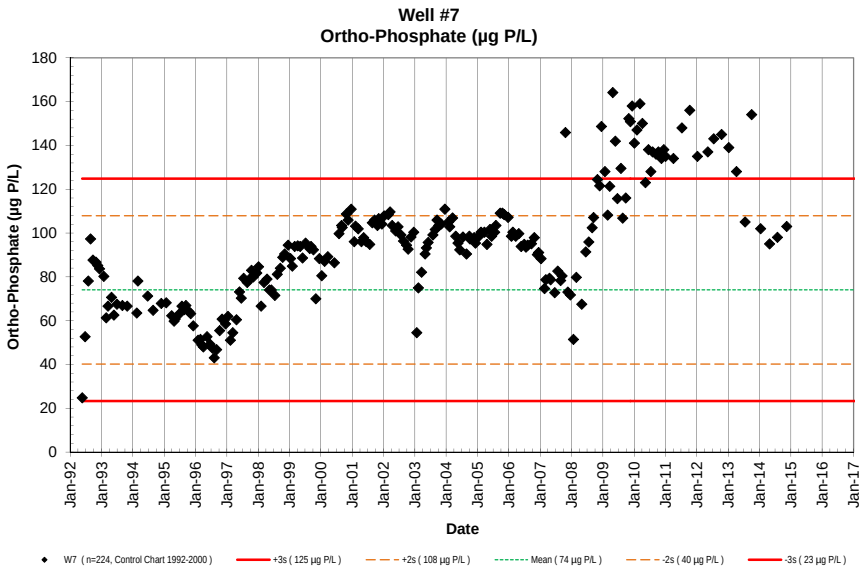
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W7	-17.6784	7/22/02	1110				3.20	99	106	1479	0.06	0.8	155	4353	3.36	104.1	111	1559	0.69	21.6	7.799	31.956	0.85		<1	<1
W7	-17.6784	8/21/02	1150				3.11	96	111	1553	0.21	2.9	153	4300	3.26	101.0	118	1651	0.64	21.2	7.781	31.872	0.56		<1	<1
W7	-17.6784	9/25/02	1017				3.05	94	109	1527	0.28	3.9	160	4494	3.18	98.5	107	1492	0.56	21.4	7.794	31.894	0.65		<1	<1
W7	-17.6784	10/15/02	1055				2.99	93	103	1444	0.15	2.1	156	4387	3.19	98.8	98.5	1380	0.54	21.8	7.763	32.034	0.57		<1	1
W7	-17.6784	11/17/02	1031				3.17	98	100	1401	0.36	5.0	158	4449	3.29	101.9	94.3	1321	0.64	21.9	7.742	31.978	0.65		<1	<1
W7	-17.6784	12/18/02	1057				3.24	100	57.7	809	0.03	0.4	161	4527	3.34	103.5	51.7	724	0.55	23.6	7.742	32.468	2.58		<1	22
W7	-17.6784	1/23/03	1040				1.76	55	12.6	176	0.04	0.6	94.6	2657	2.00	61.9	21.1	296	0.70	24.4	8.039	34.175	5.84		<1	<1
W7	-17.6784	2/11/03	1100				2.42	75	28.1	394	0.07	1.0	117	3286	3.44	106.5	35.9	503	0.57	24.3	7.984	33.406	4.42		<1	<1
W7	-17.6784	3/20/03	1141				2.65	82	87.7	1228	0.06	0.8	137	3839	2.87	88.9	109	1525	0.63	23.2	7.937	32.699	0.02		<1	<1
W7	-17.6784	4/30/03	1028				2.92	90	90.1	1262	0.12	1.7	144	4036	3.06	94.8	110	1539	0.65	23.2	7.859	34.827	0.12		<1	<1
W7	-17.6784	5/14/03	932				3.01	93	87.2	1221	0.08	1.1	146	4109	3.04	94.2	86.7	1214	0.59	22.8	7.821	32.883	0.15		<1	<1
W7	-17.6784	6/4/03	1020				3.09	96	83.6	1171	0.05	0.7	147	4131	3.25	100.7	89.4	1252	0.62	23.2	7.780	34.957	0.12		<1	<1
W7	-17.6784	7/30/03	951				3.20	99	94.7	1326	0.03	0.4	154	4336	3.35	103.8	109	1527	NA	23.2	7.836	32.851	0.42		<1	<1
W7	-17.6784	8/28/03	945				3.28	102	99.9	1400	0.02	0.3	152	4277	3.42	105.9	136	1906	NA	23.8	7.769	32.710	0.02		<1	<1
W7	-17.6784	9/16/03	1006				3.42	106	93.9	1316	0.15	2.1	155	4348	3.48	107.8	127	1777	NA	23.1	7.771	32.477	0.32		<1	<1
W7	-17.6784	10/8/03	938				3.34	103	105	1476	0.10	1.4	155	4339	3.56	110.3	129	1801	NA	22.9	7.780	32.383	NA		<1	<1
W7	-17.6784	11/5/03	1007				3.36	104	101	1415	0.39	5.5	154	4328	3.56	110.3	104	1457	NA	22.7	7.771	32.234	NA		<1	<1
W7	-17.6784	11/14/03	1015																	23.0			0.12			
W7	-17.6784	12/17/03	1036				3.58	111	75.3	1055	0.16	2.2	169	4732	3.72	115.2	78.2	1095	NA	23.6	7.821	32.528	2.13		<1	<1
W7	-17.6784	1/28/04	1100				3.39	105	42.8	600	0.78	10.9	139	3893	3.56	110.3	41.3	578	0.69	23.7	7.873	32.470	4.02		<1	<1
W7	-17.6784	2/11/04	938				3.32	103	70.5	987	0.40	5.6	141	3954	3.56	110.3	75.6	1059	0.91	22.9	7.832	32.310	2.53		<1	<1
W7	-17.6784	3/16/04	1025				3.45	107	41.7	584	0.14	2.0	135	3777	3.84	118.9	48.2	675	NA	24.5	7.917	34.865			<1	<1
W7	-17.6784	3/30/04	936																	23.5			1.40			
W7	-17.6784	4/22/04	1011				3.18	98	105	1471	0.22	3.1	138	3867	3.38	104.7	113	1584	NA	22.5	7.893	31.863	0.40		<1	<1
W7	-17.6784	5/18/04	1006				3.08	95	102	1424	0.20	2.8	132	3704	3.18	98.5	107	1503	NA	22.0	7.856	30.91	0.41		<1	<1
W7	-17.6784	6/8/04	1043				2.98	92	99.3	1391	0.11	1.5	131	3679	3.12	96.6	105	1464	NA	22.3	7.587	30.75	0.18		<1	<1
W7	-17.6784	7/15/04	1005				3.17	98	95.1	1333	0.20	2.8	137	3851	3.12	96.6	113	1584	NA	21.8	7.792	30.70	0.53		<1	<1
W7	-17.6784	8/25/04	1046				2.92	90	98.2	1375	0.13	1.8	143	4016	3.06	94.8	101	1408	NA	21.7	7.778	30.55	0.79		<1	<1
W7	-17.6784	9/27/04	1157				3.18	98	97.9	1371	0.15	2.1	152	4275	3.26	101.0	100	1401	NA	21.5	7.765	30.52	2.55		<1	<1
W7	-17.6784	10/4/04	1116				3.14	97	98.0	1373	0.20	2.8	142	3991	3.40	105.3	105	1465	NA	21.6	7.779	30.51	1.04		<1	<1
W7	-17.6784	11/23/04	1123				3.16	98	112	1570	0.10	1.4	151	4238	3.38	104.7	159	2221	NA	21.8	7.797	30.37	1.11		<1	<1
W7	-17.6784	12/8/04	947				3.08	95	105	1470	0.07	1.0	150	4207	3.20	99.1	137	1915	NA	22.6	7.794	30.42	1.06		<1	<1
W7	-17.6784	1/18/05	946				3.18	98	19.9	279	0.09	1.3	126	3550	3.38	104.7	25.2	354	NA	23.9	7.883	33.227	5.49		<1	<1
W7	-17.6784	2/10/05	930				3.24	100	53.7	752	0.27	3.8	139	3910	3.32	102.8	79.8	1118	NA	23.9	7.908	32.486	3.03		<1	<1
W7	-17.6784	3/22/05	935				3.24	100	106	1478	0.12	1.7	144	4039	3.50	108.4	116	1625	0.85	22.8	7.879	31.763	0.63		<1	<1
W7	-17.6784	4/20/05	929				3.06	95	111	1560	0.14	2.0	141	3966	3.08	95.4	112	1567	NA	22.3	7.869	31.606	0.47		<1	<1
W7	-17.6784	5/25/05	947				3.28	102	115	1605	0.12	1.7	144	4056	3.30	102.2	124	1741	NA	20.9	7.841	31.523	0.25		<1	<1
W7	-17.6784	6/14/05	948				3.18	98	109	1526	0.12	1.7	142	3980	3.18	98.5	117	1636	NA	22.2	7.839	31.438	0.28		<1	<1
W7	-17.6784	7/19/05	939				3.24	100	107	1493	0.11	1.5	141	3963	3.46	107.2	112	1563	0.51	21.7	7.836	31.390	0.31		<1	<1
W7	-17.6784	8/3/05	1009				3.34	103	96.5	1352	0.06	0.8	141	3960	3.46	107.2	100	1402	0.47	22.0	7.876	31.382	0.43		<1	<1
W7	-17.6784	9/22/05	931				3.52	109	122	1705	0.14	2.0	144	4039	3.68	114.0	123	1720	0.54	22.1	7.848	31.353	0.37		<1	<1
W7	-17.6784	10/19/05	943				3.52	109	114	1593	0.06	0.8	144	4033	3.72	115.2	122	1710	NA	22.9	7.847	31.374	0.37		<1	<1
W7	-17.6784	11/8/05	929				3.50	108	114	1590	0.09	1.3	142	3994	3.66	113.4	122	1713	NA	22.5	7.841	31.394	0.37		<1	1
W7	-17.6784	12/22/05	901				3.46	107	67.2	941	0.32	4.5	143	4013	3.64	112.7	69.3	970	NA	23.3	7.805	32.011	2.48		<1	<1
W7	-17.6784	1/31/06	928				3.18	98	93.4	1308	0.33	4.6	139	3907	3.30	102.2	94.3	1321	NA	23.2	7.841	31.665	0.93		<1	<1
W7	-17.6784	2/16/06	925				3.24	100	95.4	1336	0.27	3.8	142	3977	3.82	118.3	99.5	1394	0.60	22.5	7.851	31.353	0.53		<1	<1
W7	-17.6784	3/22/06	916				3.18	98	97.7	1368	0.31	4.3	144	4044	3.28	101.6	103	1443	0.53	22.2	7.799	31.580	0.52		<1	<1
W7	-17.6784	4/27/06	1009				3.22	100	97.5	1366	0.23	3.2	141	3960	3.39	105.0	91.8	1286	0.58	21.9	7.802	31.677	0.74		<1	<1
W7	-17.6784	5/24/06	1022				3.03	94	95.5	1338	<0.05	0.0	149	4185	3.22	99.7	90.0	1261	0.64	21.9	7.798	31.622	1.12		<1	<1
W7	-17.6784	6/28/06	1022				3.06	95	103	1443	0.29	4.1	139	3904	3.28	101.6	99.3	1391	0.50	21.9	7.797	31.531	0.82		<1	<1
W7	-17.6784	7/19/06	944				3.02	94	101	1415	0.21	2.9	142	3988	3.11	96.3	87.6	1227	0.51	21.8	7.788	31.456	1.20		1	<1
W7	-17.6784	8/9/06	1050				3.05	94	101	1415	0.15	2.1	145	4072	3.16	97.9	93.4	1309	0.51	21.4	7.797	31.436	1.40		<1	<1
W7	-17.6784	9/20/06	1055				3.07	95	79.6	1115	0.15	2.1	150	4213	3.26	101.0	73.3	1026	0.53	23.2	7.768	32.067	0.89		<1	<1
W7	-17.6784	10/25/06	1014				3.16	98	87.7	1228	0.28	3.9	150	4213	3.20	99.1	85.2	1194	0.69	21.9	7.773	31.898	0.73		<1	<1
W7	-17.6784	11/29/06	1102				2.91	90	89.0	1247	0.21	2.9	151	4241	2.97	92.0	76.1	1066	0.50	22.9	7.722	32.017	0.80		<1	<1
W7	-17.6784	12/13/06	1052				2.94	91	85.7	1200	0.19	2.7	149	4185	3.09	95.7	79.6	1115	0.47	22.5	7.727	31.913	0.82		<1	<1
W7	-17.6784	1/10/07	1045				2.85	88	70.6	989	0.22	3.1	148	4157	3.00	92.9	71.5	1001	0.56	23.3	7.682	32.363	0.74		<1	<1
W7	-17.6784	2/21/07	1110				2.41	75	45.6	639	0.39	5.5	147	4129	2.53	78.4	51.4	720	0.58	24.5	7.654	32.869	1.38		<1	<1
W7	-17.6784	3/7/07	1104				2.54	79	44.6	625	0.30	4.2	150	4213	2.68	83.0	45.0	630	0.62	24.7	7.495	32.863	2.48		<1	<1
W7	-17.6784	4/19/07	1102				2.56	79	60.6	849	0.29	4.1	141	3960	2.62	81.2	52.4	733	0.52	23.7	7.743	32.019	0.32		<1	<1
W7	-17.6784	5/2/07	1051				2.54	79	65.4	916	0.32	4.5	141	3960	2.75	85.2	63.6	890	0.54	23.2	7.717	31.988	0.65		<1	<1
W7	-17.6784	6/20/07	1055				2.35	73	53.3	746	0.23	3.2	139	3904	2.56	79.3				22.9	7.700	32.164	0.16		<1	<1

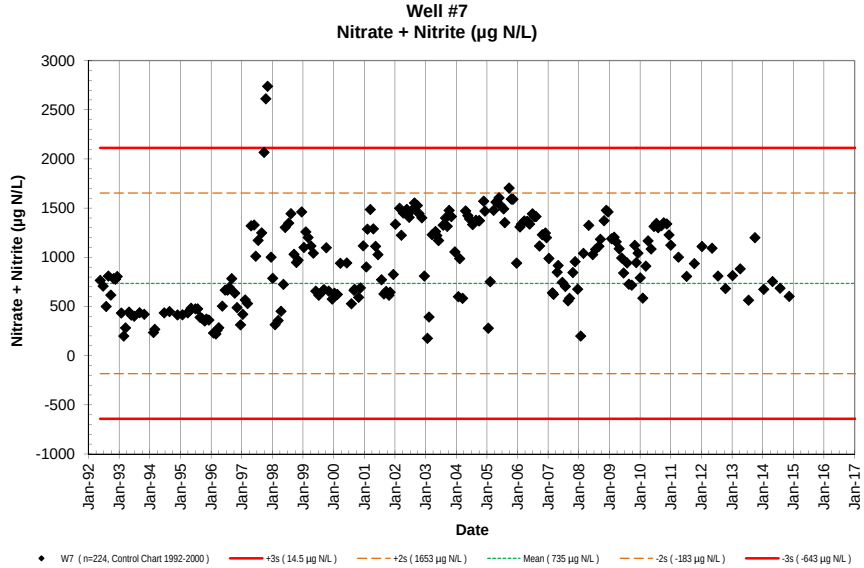
NELHA Water Quality Laboratory

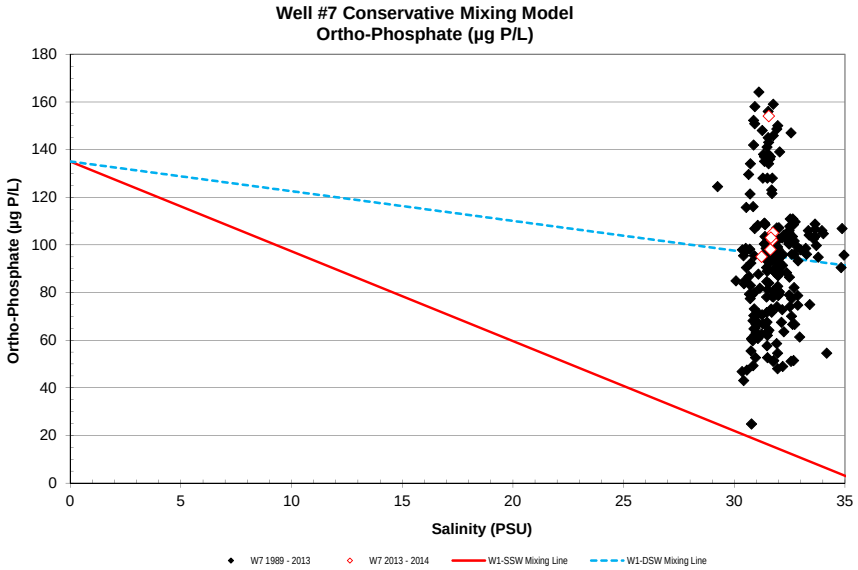
Well 7 Data Table

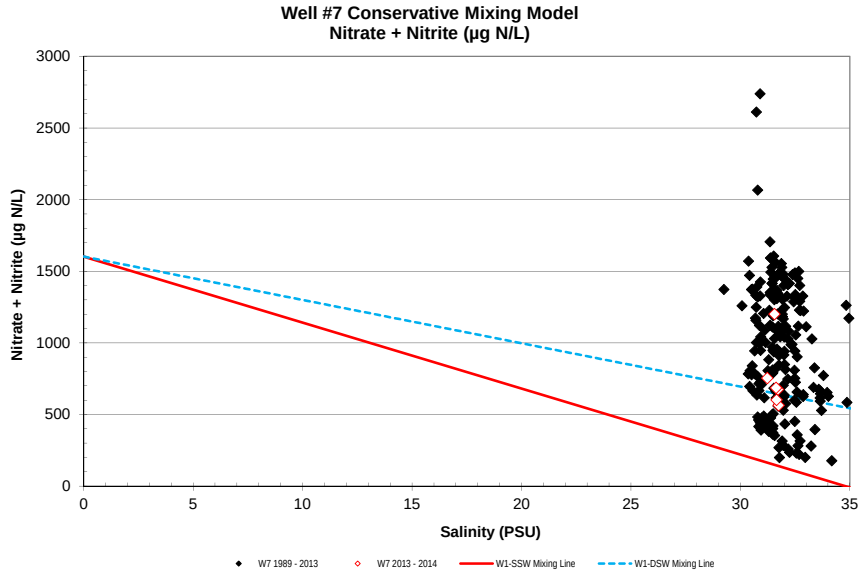
May 1992 - December 2014

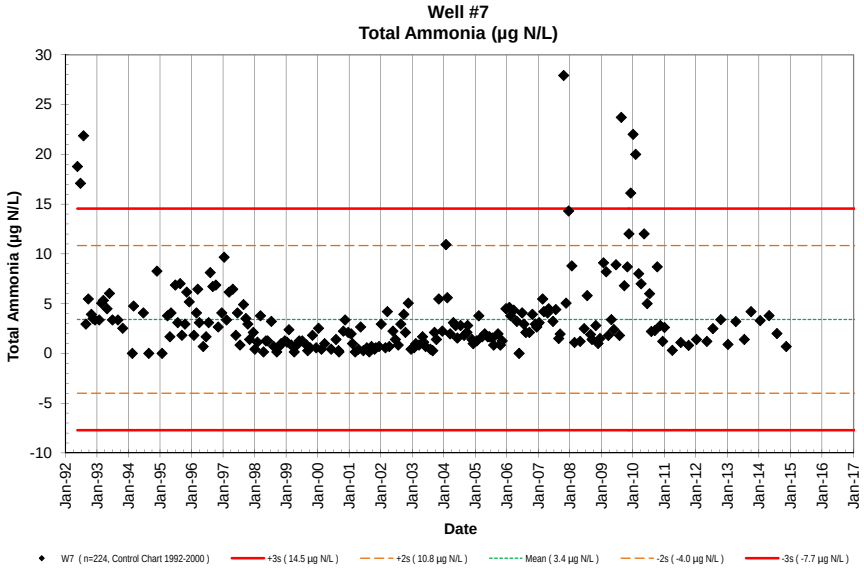
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W7	-17.6784	7/25/07	1249		0.55	Flood	2.67	83	50.2	704	0.31	4.4	135	3788	2.75	85.1	50.4	706		22.1	7.55	31.96	0.12			
W7	-17.6784	8/27/07	1215		0.24	Flood	2.53	78	39.8	558	0.11	1.5	111	3104	2.62	81.2	42.7	598		22.1	7.63	31.72	0.12			
W7	-17.6784	9/13/07	1540		0.40	Flood	2.60	80	41.7	584	0.14	2.0	138	3881	2.87	88.8	45.4	636		21.4	7.64	31.74	0.08			
W7	-17.6784	10/23/07	1157		0.38	Flood	4.71	146	60.4	846	1.99	27.9	275	7712	4.71	145.9	59.2	829		21.5	7.62	31.76	0.10			
W7	-17.6784	11/20/07	1202		0.43	Flood	2.36	73	68.2	955	0.36	5.1	126	3546	2.13	65.9	74.9	1049		22.3	7.61	31.67	0.11			
W7	-17.6784	12/19/07	1152		0.30	High	2.31	72	48.2	676	1.02	14.3	123	3468						20.8	7.67	31.69	0.10			
W7	-17.6784	1/25/08	905		0.43	Ebb	1.66	51	14.2	199	0.63	8.8	86	2405						21.1	7.32	31.78	0.20			
W7	-17.6784	2/26/08	1100		0.09	Ebb	2.58	80	74.3	1040	0.08	1.1	123	3446						20.9	7.48	32.00	0.06			
W7	-17.6784	3/17/08			Well bladder Pump Air Line Leak No Sample																					
W7	-17.6784	4/30/08	1209		0.27	Flood	2.18	68	94.6	1325	0.09	1.2	126	3538						23.3	7.36	32.13	0.41			
W7	-17.6784	5/15/08			Well bladder Pump Air Line Leak No Sample																					
W7	-17.6784	6/16/08	1226		0.30	Flood	2.95	91	73.4	1028	0.18	2.5	141	3954						21.2	7.47	32.18	3.25			
W7	-17.6784	7/21/08	1145		0.09	Low	3.10	96	77.2	1082	0.41	5.8	128	3586						20.7	6.61	32.20	0.93	0.09		
W7	-17.6784	8/30/08	1448		0.58	Flood	3.31	102	79.4	1112	0.14	1.9	68	1896						20.4	7.49	32.02	0.75	0.11		
W7	-17.6784	9/15/08	1208		0.12	Flood	3.46	107	84.4	1183	0.10	1.4	129	3632						21.9	7.46	31.92	0.91			
W7	-17.6784	10/30/08	1025		0.15	Low	4.02	124	98.0	1372	0.20	2.8	127	3580						22.7	7.46	29.25	3.49	0.11		
W7	-17.6784	11/25/08	1000		0.15	Low	3.92	122	105.5	1477	0.07	1.0	294	8244						20.7	7.33	31.70	0.17	0.07		
W7	-17.6784	12/16/08	1043		0.40	Ebb	4.80	149	104.3	1461	0.11	1.5	135	3786						20.4	7.61	31.92	0.72			
W7	-17.6784	1/26/09	1436		0.15	Flood	4.13	128	84.9	1189	0.65	9.1	116	3254						20.2	7.70	31.49	4.63	0.13		
W7	-17.6784	2/26/09	1104		0.03	Low	3.49	108	86.0	1204	0.59	8.2	120	3359						19.3	7.59	31.06	4.58	0.15		
W7	-17.6784	3/23/09	1039		0.06	Flood	3.92	121	82.6	1157	0.13	1.8	115	3219						18.0	7.53	30.71	4.67	1.41		
W7	-17.6784	4/27/09	1050		-0.1	Low	5.30	164	77.6	1087	0.24	3.4	114	3208						18.7	7.65	31.11	4.77	0.16		
W7	-17.6784	5/27/09	1422		0.24	Flood	4.58	142	70.9	993	0.17	2.4	96	2683						18.5	7.77	30.87	4.64	0.11		
W7	-17.6784	6/19/09	1120		0.46	Flood	3.74	116	59.9	840	0.64	8.9	105	2957						17.8	7.26	30.54	4.97	0.06		
W7	-17.6784	7/31/09	1030		0.46	Flood	4.18	130	67.3	943	0.13	1.8	91	2555						18.1	7.63	30.65	5.07	0.04		
W7	-17.6784	8/20/09	1133		0.09	Flood	3.45	107	51.8	726	1.69	23.7	90	2524						20.4	7.64	30.92	3.95	0.03		
W7	-17.6784	9/24/09	1043		0.52	Ebb	3.75	116	51.1	716	0.49	6.8	74	2076						18.3	8.26	30.85	4.49	0.03		
W7	-17.6784	10/30/09	1029		0.21	Flood	4.91	152	80.0	1121	0.62	8.7	165	4625						19.1	7.54	30.87	4.57	0.02		
W7	-17.6784	11/17/09	1133		0.12	Low	4.87	151	67.6	947	0.86	12.0	119	3339						18.1	7.56	30.92	3.61	0.03		
W7	-17.6784	12/8/09	1440		0.09	Ebb	5.10	158	74.4	1042	1.15	16.1	150	4216						19.3	7.55	30.93	1.26	0.02		
W7	-17.6784	1/4/10	1459		0.0	Low	4.55	141	56.5	792	1.57	22.0	154	4313						21.7	7.44	31.48	1.30	0.07		
W7	-17.6784	2/2/10	1419		-0.1	Low	4.75	147	41.8	585	1.43	20.0	138	3885						23.7	7.65	32.56	2.41	0.16		
W7	-17.6784	3/10/10	1339		0.21	High	5.13	159	65.0	911	0.57	8.0	163	4571						23.4	7.64	31.76	0.78	0.11		
W7	-17.6784	4/7/10	1234		0.21	High	4.84	150	83.3	1167	0.50	7.0	166	4673						20.4	7.57	31.96	1.01	0.24		
W7	-17.6784	5/12/10	1344		0.46	Flood	3.97	123	77.5	1085	0.86	12.0	155	4361						20.4	7.63	31.69	0.91	0.05		
W7	-17.6784	6/16/10	1159		0.09	Low	4.46	138	93.7	1313	0.36	5.0	171	4814						21.7	7.62	31.54	1.66	0.08		
W7	-17.6784	7/14/10	949		0.15	Ebb	4.13	128	96.0	1344	0.43	6.0	176	4939						20.5	7.54	31.72	0.93	0.07		
W7	-17.6784	8/4/10	1025		0.52	Flood	4.42	137	92.9	1301	0.16	2.2	164	4619						20.5	7.60	31.55	0.80	0.13		
W7	-17.6784	9/13/10	1606		0.21	Low	4.39	136	94.4	1322	0.16	2.3	165	4623						20.2	7.57	31.60	0.73	0.11		
W7	-17.6784	10/11/10	1130		0.34	Ebb	4.42	137	96.5	1351	0.62	8.7	159	4468						20.9	7.63	31.36	0.72	0.36		
W7	-17.6784	11/15/10	1234		0.43	High	4.33	134	95.6	1339	0.20	2.8	159	4455						20.5	7.56	31.55	0.76	0.04		
W7	-17.6784	12/13/10	1015		0.40	High	4.46	138	87.6	1227	0.09	1.2	158	4439						19.9	7.51	31.32	0.67	0.09		
W7	-17.6784	1/3/11	1430		0.15	Flood	4.36	135	80.2	1123	0.19	2.6	150	4214						20.5	7.56	31.36	0.93	0.04		
W7	-17.6784	4/4/11	1506		0.34	Flood	4.33	134	71.5	1002	0.02	0.3	131	3672						19.3	7.56	30.73	3.80	0.15		
W7	-17.6784	7/11/11	1429		0.73	High	4.78	148	57.5	806	0.08	1.1	143	4005						20.3	7.59	31.26	3.58	0.07		
W7	-17.6784	10/10/11	1326		0.37	Flood	5.04	156	66.9	937	0.06	0.8	139	3908						19.6	7.63	31.53	2.93	0.11		
W7	-17.6784	1/9/12	1348		0.06	Flood	4.36	135	79.2	1110	0.10	1.4	137	3847						20.8	7.64	31.47	1.69	0.03		
W7	-17.6784	5/8/12	1444		0.30	Flood	4.42	137	78.0	1092	0.09	1.2	146	4104						20.5	7.56	31.63	3.18	0.23		
W7	-17.6784	7/17/12	1400		0.61	Flood	4.62	143	57.8	810	0.18	2.5	138	3862						19.4	7.59	31.55	4.29	0.14		
W7	-17.6784	10/15/12	1202		0.06	Flood	4.68	145	48.8	683	0.24	3.4	134	3751						19.1	7.60	31.53	4.05	0.02		
W7	-17.6784	1/7/13	1256		0.24	High	4.49	139	58.1	814	0.06	0.9	174	4899						20.1	7.67	32.05	3.96	0.06		
W7	-17.6784	4/8/13	1235		0.18	Flood	4.13	128	63.0	882	0.23	3.2	122	3418						18.7	7.80	31.29	4.51	0.06		
W7	-17.6784	7/16/13	1446		0.37	Ebb	3.39	105	40.3	564	0.10	1.4	122	3433						19.8	7.74	31.75	4.45	0.11		
W7	-17.6784	10/1/13	1610		0.30	Ebb	4.97	154	85.7	1200	0.30	4.2	149	4175						19.1	7.79	31.56	5.14	0.05		
W7	-17.6784	1/14/14	1506		0.70	High	3.29	102	48.1	674	0.24	3.3	128	3605						19.6	7.76	31.72	4.41	0.02		
W7	-17.6784	4/28/14	1714		0.58	High	3.07	95	53.8	754	0.27	3.8	125	3522						20.9	7.76	31.23	5.77	0.07		
W7	-17.6784	7/28/14	1502		0.49	Flood	3.16	98	49.0	686	0.14	2.0	119	3355						20.0	7.67	31.63	4.55	0.02		
W7	-17.6784	11/13/14	1154		0.37	Flood	3.33	103	43.0	602	0.05	0.7	124	3484						20.9	7.74	31.65	4.15	0.03		
W7	-17.6784	1/1/15																								
W7	-17.6784	4/1/15																								

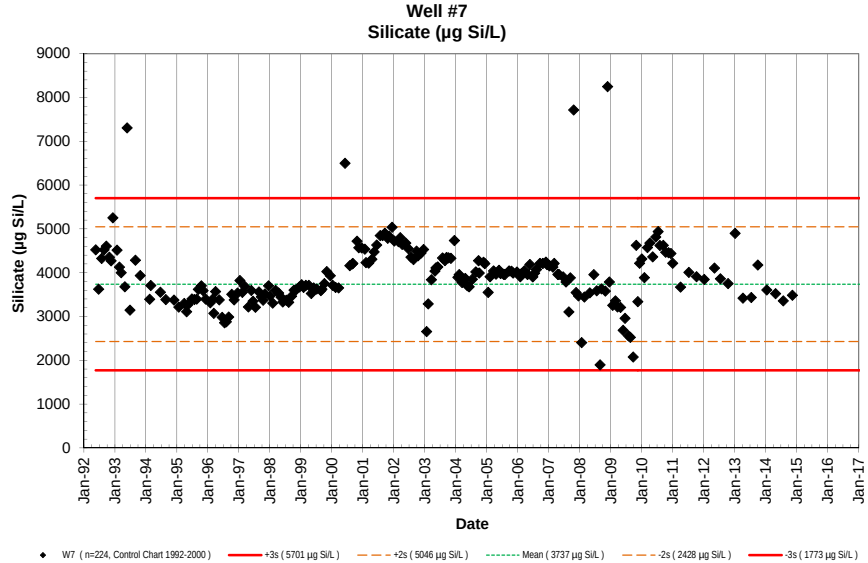

Well #7
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W7 (n=224, Control Chart 1992-2000)
+3s (125 µg P/L)
+2s (108 µg P/L)
Mean (74 µg P/L)
-2s (40 µg P/L)
-3s (23 µg P/L)

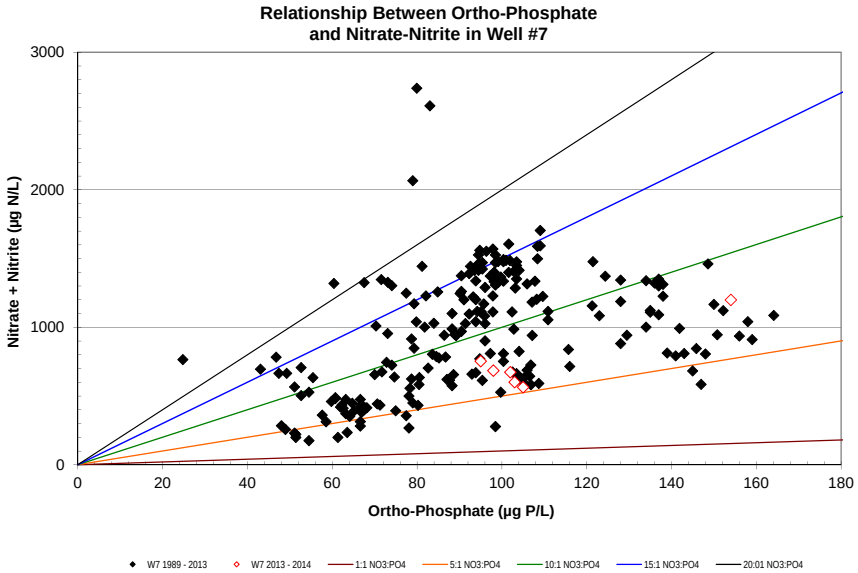

Well #7
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W7 (n=224, Control Chart 1992-2000)
+3s (14.5 µg N/L)
+2s (1653 µg N/L)
Mean (735 µg N/L)
-2s (-183 µg N/L)
-3s (-643 µg N/L)

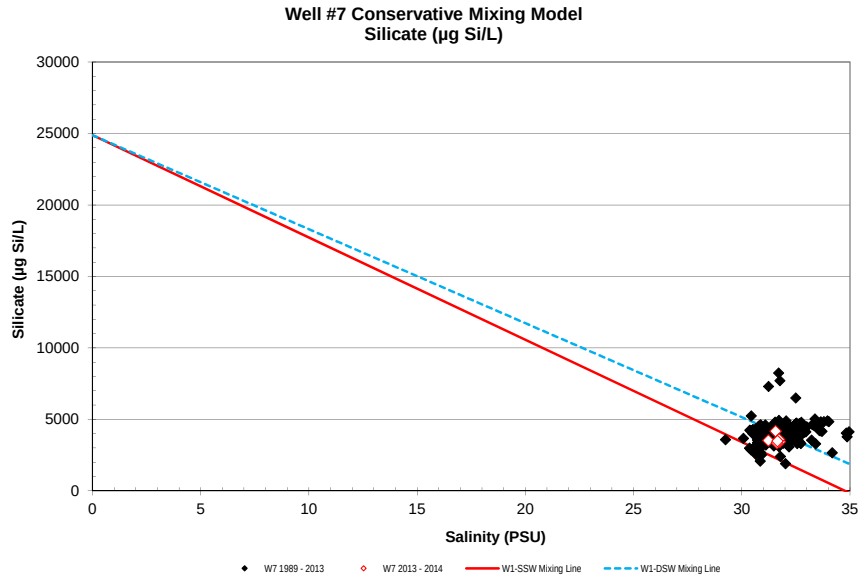

Well #7 Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W7 1989 - 2013
W7 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

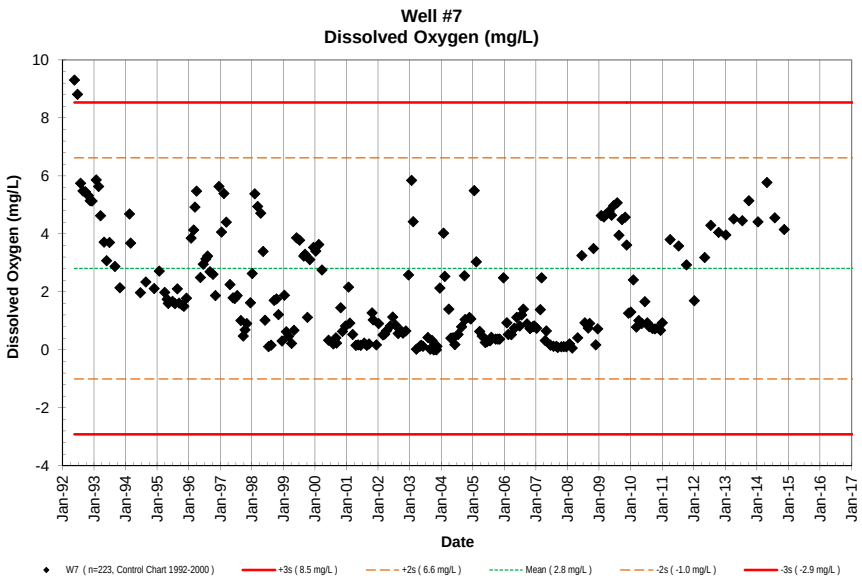

Well #7 Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W7 1989 - 2013
W7 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

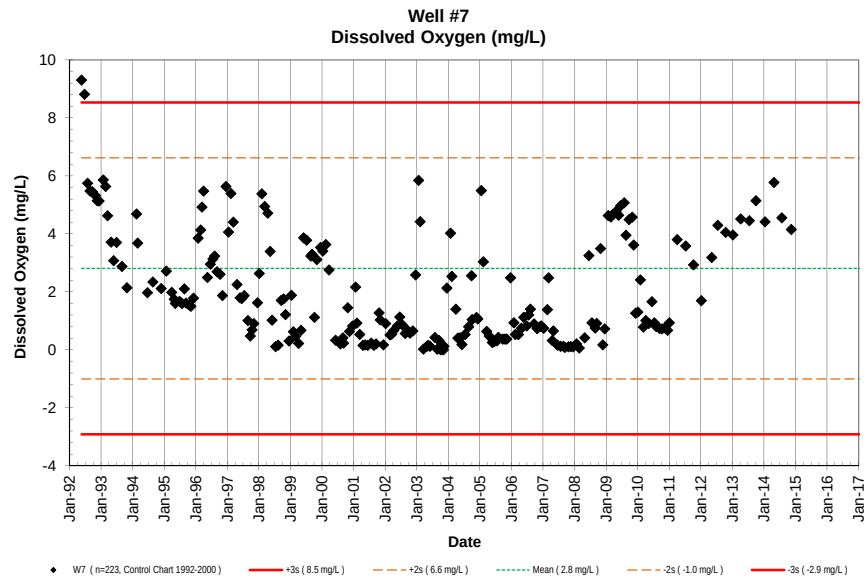

Well #7
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W7 (n=224, Control Chart 1992-2000)
+3s (14.5 µg N/L)
+2s (10.8 µg N/L)
Mean (3.4 µg N/L)
-2s (-4.0 µg N/L)
-3s (-7.7 µg N/L)

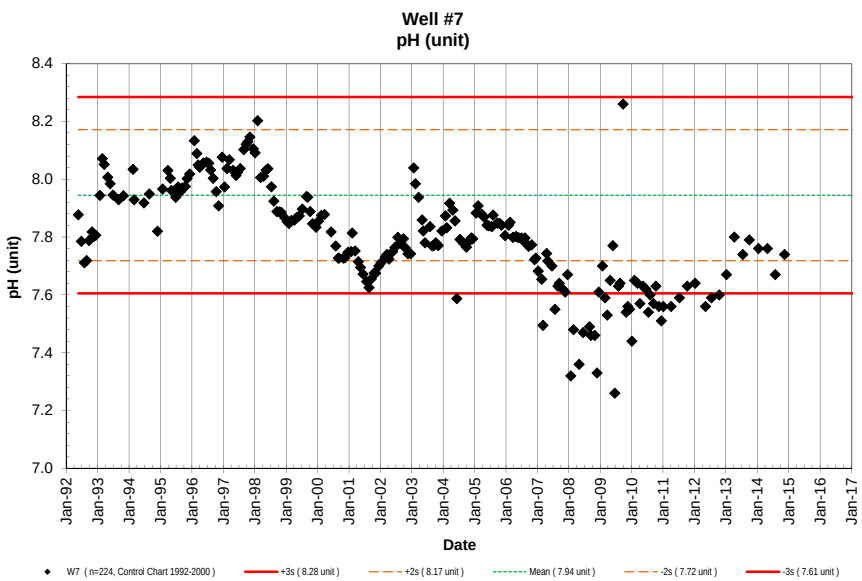

Well #7
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W7 (n=224, Control Chart 1992-2000)
+3s (5701 µg Si/L)
+2s (5046 µg Si/L)
Mean (3737 µg Si/L)
-2s (2428 µg Si/L)
-3s (1773 µg Si/L)

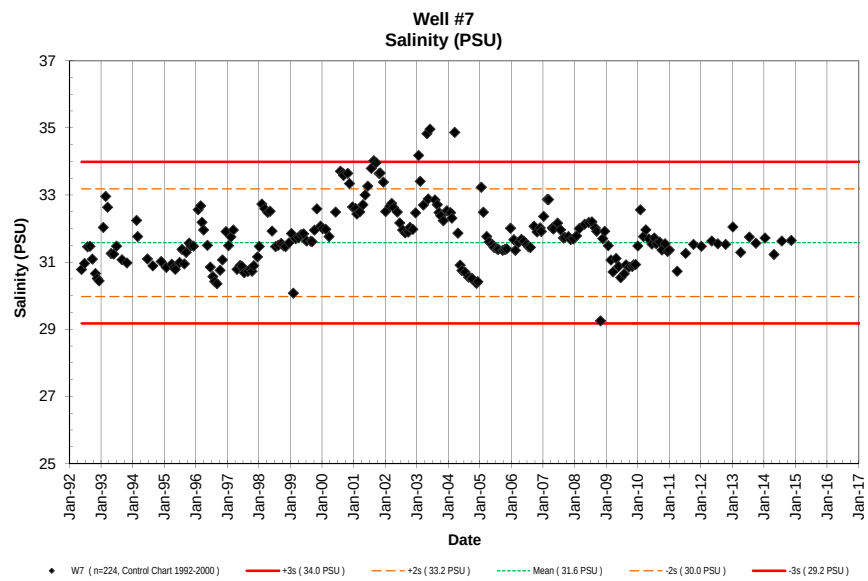

Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #7
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W7 1989 - 2013
W7 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

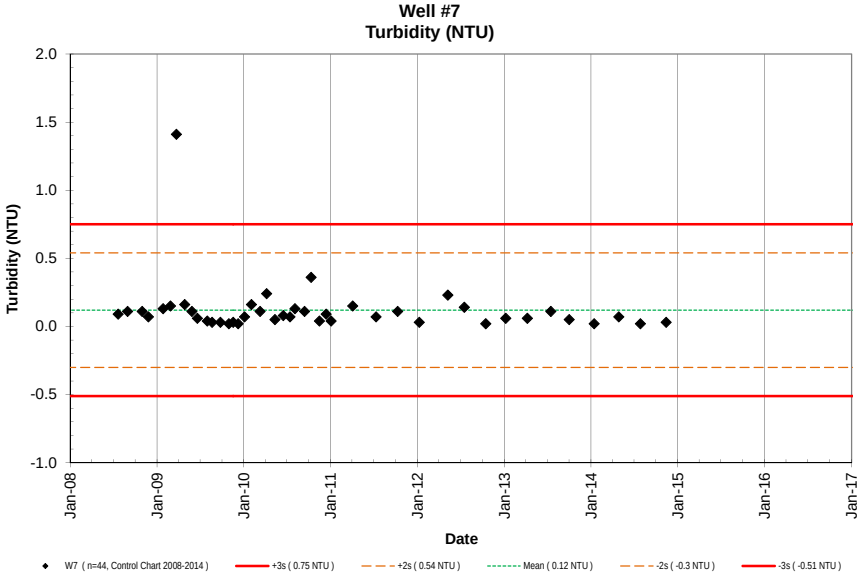

Well #7 Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W7 1989 - 2013
W7 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line


Well #7
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W7 (n=223, Control Chart 1992-2000)
+3s (8.5 mg/L)
+2s (6.6 mg/L)
Mean (2.8 mg/L)
-2s (-1.0 mg/L)
-3s (-2.9 mg/L)


Well #7
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W7 (n=223, Control Chart 1992-2000)
+3s (8.5 mg/L)
+2s (6.6 mg/L)
Mean (2.8 mg/L)
-2s (-1.0 mg/L)
-3s (-2.9 mg/L)


Well #7
pH (unit)
pH (unit)
Date
W7 (n=224, Control Chart 1992-2000)
+3s (8.28 unit)
+2s (8.17 unit)
Mean (7.94 unit)
-2s (7.72 unit)
-3s (7.61 unit)


Well #7
Salinity (PSU)
Salinity (PSU)
Date
W7 (n=224, Control Chart 1992-2000)
+3s (34.0 PSU)
+2s (33.2 PSU)
Mean (31.6 PSU)
-2s (30.0 PSU)
-3s (29.2 PSU)


Well #7
Turbidity (NTU)
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
Turbidity (NTU)
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W7 (n=44, Control Chart 2008-2014)
+3s (0.75 NTU)
+2s (0.54 NTU)
Mean (0.12 NTU)
-2s (-0.3 NTU)
-3s (-0.51 NTU)

NELHA Water Quality Laboratory

Well 7A Data Table

May 1992 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W7A	-10.36	5/20/92	815				3.87	120	58.3	817	0.35	4.9	253	7106	3.95	122.3	59.5	833	0.71	15.1	7.506	28.256	6.98		<1	<1
W7A	-10.36	6/24/92	820				3.55	110	53.7	752	0.72	10.1	217	6095	3.66	113.4	56.6	793	1.13	16.7	7.622	29.313	6.72		<1	<1
W7A	-10.36	7/30/92	744				3.21	99	50.4	706	1.22	17.1	189	5308	3.32	102.8	53.6	751	0.90	19.6	7.779	29.578	6.61		31	22
W7A	-10.36	8/26/92	948				4.22	131	60.4	846	0.18	2.5	229	6432	4.24	131.3	32.6	457	0.78	16.5	7.648	28.509	6.56		<1	<1
W7A	-10.36	9/23/92	807				3.93	122	51.4	720	0.31	4.3	248	6965	3.97	123.0	57.8	809	0.73	16.6	7.648	28.346	6.51		<1	<1
W7A	-10.36	10/28/92	842				3.59	111	53.8	754	0.21	2.9	230	6460	3.68	114.0	56.3	788	0.73	17.3	7.685	28.800	5.86		<1	<1
W7A	-10.36	11/18/92	833				3.77	117	59.9	839	0.21	2.9	248	6965	4.23	131.0	65.8	921	0.79	16.7	7.620	27.953	6.14		<1	<1
W7A	-10.36	12/9/92	825				3.56	110	53.3	747	0.20	2.8	235	6600	3.70	114.6	56.5	792	0.80	16.8	7.682	28.598	6.40		<1	<1
W7A	-10.36	1/27/93	801				2.09	65	30.5	427	0.29	4.1	183	5137	2.32	71.9	33.7	473	0.76	20.8	7.986	30.356	5.71		<1	<1
W7A	-10.36	2/24/93	749				2.86	89	44.8	628	0.35	4.9	208	5847	2.89	89.5	47.2	661	0.69	21.9	8.071	28.986	5.05		<1	<1
W7A	-10.36	3/17/93	756				3.19	99	47.8	669	0.38	5.3	226	6336	3.24	100.4	51.2	717	0.61	21.7	8.051	28.120	5.21		<1	<1
W7A	-10.36	4/28/93	748				2.92	90	40.1	562	0.32	4.5	209	5870	2.95	91.4	43.0	602	0.58	18.7	7.901	28.551	4.73		<1	<1
W7A	-10.36	5/26/93	752				2.57	80	38.4	537	0.24	3.4	260	7302	2.67	82.7	42.9	601	0.61	18.8	7.932	28.719	4.52		<1	<1
W7A	-10.36	6/29/93	805				2.82	87	41.7	584	0.21	2.9	208	5842	2.93	90.8	45.6	638	0.58	18.7	7.878	28.528	4.65		<1	<1
W7A	-10.36	9/1/93	805				3.42	106	53.5	749	0.23	3.2	268	7527	3.51	108.7	63.9	895	0.66	19.1	7.763	26.930	3.74		<1	<1
W7A	-10.36	10/27/93	758				3.26	101	42.9	600	0.17	2.4	234	6572	3.31	102.5	46.1	645	0.68	19.8	7.846	27.248	1.65		<1	<1
W7A	-10.36	3/1/94	1018				3.40	105	39.2	549	0.25	3.5	224	6291	3.35	103.8	45.6	639	0.71	19.6	7.809	26.547	1.77		<1	<1
W7A	-10.36	6/22/94	737				2.98	92	27.9	390	0.29	4.1	195	5485	2.99	92.6	32.0	448	0.65	19.4	7.824	27.780	0.96		<1	<1
W7A	-10.36	8/24/94	759				2.99	93	37.0	518	0.00	0.0	168	4727	3.05	94.5	44.5	624	0.67	19.4	7.817	29.064	2.52		<1	<1
W7A	-10.36	11/28/94	952				2.87	89	53.7	752	0.43	6.0	387	10878	2.92	90.4	52.1	730	0.55	20.4	7.750	26.527	1.43		<1	<1
W7A	-10.36	1/25/95	830				2.71	84	42.2	591	0.00	0.0	197	5538	2.75	85.2	44.9	628	0.55	19.6	7.897	27.646	2.47		<1	<1
W7A	-10.36	2/15/94	848				2.62	81	46.4	650	0.00	0.0	188	5280	2.64	81.8	53.6	751	0.57	20.2	7.934	27.924	2.03		<1	<1
W7A	-10.36	3/29/95	828				2.81	87	47.7	669	0.30	4.2	210	5895	2.83	87.7	50.7	710	0.55	19.9	7.926	26.852	1.83		<1	<1
W7A	-10.36	4/26/95	822				3.01	93	56.3	788	0.08	1.1	195	5488	3.15	97.6	60.3	845	0.64	20.0	7.919	27.178	1.88		<1	<1
W7A	-10.36	5/9/95	1005				3.31	103	56.1	786	0.27	3.8	232	6510	3.31	102.5	58.7	821	0.58	20.3	7.864	26.112	1.28		<1	<1
W7A	-10.36	6/28/95	820				3.12	97	49.5	694	0.51	7.1	213	5977	3.13	96.9	52.1	730	0.58	20.2	7.846	26.409	2.17		<1	<1
W7A	-10.36	7/26/95	1000				3.03	94	42.9	601	0.21	2.9	215	6041	3.09	95.7	45.4	636	0.55	20.7	7.884	26.609	2.34		<1	<1
W7A	-10.36	8/23/95	914				2.54	79	35.6	498	0.44	6.2	169	4741	2.64	81.8	37.1	520	0.57	20.7	7.891	28.595	2.01		<1	<1
W7A	-10.36	9/12/95	907				2.73	85	37.1	520	0.14	2.0	191	5359	2.80	86.7	39.8	558	0.51	20.5	7.896	27.584	1.93		<1	<1
W7A	-10.36	10/17/95	10				2.79	86	49.1	688	0.17	2.4	375	10529	2.95	91.4	50.7	711	0.69	20.6	7.888	28.393	2.78		<1	<1
W7A	-10.36	11/7/95	1005				2.47	77	34.8	487	0.44	6.2	178	5010	2.48	76.8	36.3	508	0.67	20.5	7.952	28.312	2.52		<1	<1
W7A	-10.36	12/6/95	1019				2.12	66	31.8	446	0.38	5.3	165	4645	2.34	72.5	34.4	481	0.71	21.1	7.989	28.931	2.52		<1	<1
W7A	-10.36	1/30/96	1106				2.93	91	43.7	612	0.11	1.5	208	5850	3.12	96.6	44.9	629	0.57	21.0	7.936	26.655	2.45		<1	<1
W7A	-10.36	2/27/96	1220				3.15	98	60.9	852	0.21	2.9	199	5586	3.29	101.9	64.1	898	0.74	20.8	7.918	26.682	2.52		<1	<1
W7A	-10.36	2/27/96	1135				3.51	109	80.2	1123	0.40	5.6	206	5780	3.59	111.2	83.3	1166	0.73	21.2	7.849	26.247	2.39		<1	<1
W7A	-10.36	4/2/96	1020				3.71	115	86.1	1206	0.20	2.8	224	6282	3.84	118.9	91.8	1285	0.78	21.0	7.829	26.749	2.54		<1	<1
W7A	-10.36	5/15/96	1148				3.77	117	76.4	1070	0.05	0.7	203	5713	3.83	118.6	81.7	1144	0.58	20.8	7.855	27.670	2.75		<1	<1
W7A	-10.36	6/18/96	1116				3.67	114	64.2	899	0.11	1.5	195	5483	3.71	114.9	67.8	950	0.59	20.5	7.875	23.773	2.77		<1	<1
W7A	-10.36	7/17/96	1143				4.64	144	117.7	1649	125	1756	197	5531	4.60	142.5	197.2	2763	0.80	21.0	7.929	27.469	0.34		<1	<1
W7A	-10.36	8/6/96	1159				4.21	130	90.6	1269	0.46	6.4	206	5778	4.27	132.3	96.3	1348	0.70	21.8	7.764	27.690	1.93		<1	<1
W7A	-10.36	9/4/96	1145				3.86	120	69.5	974	0.42	5.9	195	5481	3.87	119.9	72.4	1014	0.72	22.1	7.807	28.271	2.61		<1	<1
W7A	-10.36	10/9/96	1239				3.05	94	45.4	636	0.47	6.6	197	5529	3.23	100.0	49.6	694	0.66	21.5	7.877	28.926	3.92		<1	<1
W7A	-10.36	11/6/96	1143				3.18	98	49.5	693	0.20	2.8	181	5091	3.33	103.1	54.8	768	0.71	21.3	7.842	28.254	2.73		<1	<1
W7A	-10.36	12/17/96	1204				2.90	90	54.6	764	0.21	2.9	170	4764	2.99	92.6	59.8	838	0.47	22.3	7.889	28.486	3.19		<1	1
W7A	-10.36	1/14/97	1157				3.18	98	74.8	1048	0.21	2.9	192	5401	3.23	100.0	79.3	1111	0.67	22.1	7.890	27.845	2.63		<1	<1
W7A	-10.36	2/11/97	1021				2.46	76	75.3	1054	0.21	2.9	173	4856	2.47	76.5	78.4	1098	0.84	22.7	7.973	29.586	4.14		<1	<1
W7A	-10.36	3/11/97	909				3.45	107	138.0	1933	0.22	3.1	189	5300	3.69	114.3	141.1	1976	0.71	21.4	7.938	28.416	2.46		<1	<1
W7A	-10.36	4/23/97	1147				3.38	105	150.7	2111	0.34	4.8	170	4783	3.60	111.5	169.8	2378	0.92	21.3	7.987	28.442	1.93		<1	<1
W7A	-10.36	5/28/97	1034				3.61	112	147.5	2066	0.02	0.3	178	5005	4.13	127.9	171.5	2402	0.75	20.5	7.975	28.503	1.84		<1	<1
W7A	-10.36	6/17/97	1115				4.27	132	123.4	1728	0.21	2.9	174	4881	4.31	133.5	149.5	2094	0.71	20.7	7.963	28.724	1.61		<1	<1

NELHA Water Quality Laboratory

Well 7A Data Table

May 1992 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W7A	-10.36	7/15/97	1110				5.55	172	154.1	2158	0.14	2.0	173	4862	5.58	172.8	159.4	2233	0.64	21.0	7.903	28.524	0.41		<1	<1
W7A	-10.36	8/26/97	1142				5.94	184	164.2	2300	0.29	4.1	186	5230	5.94	184.0	176.8	2476	0.66	23.2	7.925	29.156	0.50		<1	<1
W7A	-10.36	9/23/97	957				5.85	181	121.5	1702	0.23	3.2	189	5294	5.85	181.2	125.3	1755	0.69	22.9	7.940	28.498	0.91		<1	<1
W7A	-10.36	10/14/97	1045				5.12	159	85.5	1198	0.21	2.9	189	5303	5.12	158.6	96.5	1352	0.65	22.3	7.932	28.419	1.90		<1	<1
W7A	-10.36	11/4/97	914				4.41	137	75.9	1063	0.22	3.1	182	5112	4.59	142.2	89.0	1247	0.67	21.4	7.993	28.698	1.78		<1	<1
W7A	-10.36	12/16/97	1115				5.14	159	104.6	1465	0.08	1.1	193	5409	5.32	164.8	107.0	1499	0.69	21.9	7.898	28.709	1.32		<1	<1
W7A	-10.36	1/5/98	938				4.50	139	81.8	1146	0.02	0.3	168	4714	4.64	143.7	88.3	1237	0.63	21.9	7.972	29.479	2.32		<1	<1
W7A	-10.36	2/3/98	906				3.84	119	68.5	959	0.04	0.6	171	4814	4.06	125.8	73.6	1031	0.64	22.4	8.028	29.549	2.83		<1	<1
W7A	-10.36	3/10/98	935				5.11	158	83.7	1172	0.11	1.5	198	5555	5.33	165.1	89.0	1246	0.77	21.8	7.741	28.274	2.04		1	1
W7A	-10.36	4/14/98	1103				5.04	156	100.5	1408	0.01	0.1	190	5342	5.21	161.4	103.1	1444	0.73	22.0	7.780	29.041	1.94		<1	<1
W7A	-10.36	5/12/98	937				4.80	149	109.3	1531	0.09	1.3	191	5356	4.89	151.5	110.9	1553	0.71	21.9	7.778	28.920	2.44		<1	<1
W7A	-10.36	6/2/98	938				4.66	144	110.3	1545	0.10	1.4	191	5369	4.80	148.7	114.0	1597	0.68	21.8	7.773	28.861	2.06		<1	<1
W7A	-10.36	7/14/98	930				4.77	148	110.1	1542	0.18	2.5	186	5235	4.93	152.7	110.8	1552	0.62	22.4	7.684	29.583	1.76		<1	<1
W7A	-10.36	8/11/98	952				3.98	123	76.3	1068	0.09	1.3	175	4912	4.16	128.9	84.5	1184	0.85	21.6	7.774	29.845	2.22		<1	<1
W7A	-10.36	9/15/98	944				3.90	121	67.8	949	0.05	0.7	171	4797	3.97	123.0	69.5	973	0.85	21.3	7.749	30.350	1.59		<1	<1
W7A	-10.36	10/13/98	844				4.60	142	95.2	1333	0.06	0.8	176	4937	4.61	142.8	99.5	1394	0.71	22.4	7.704	30.368	1.19		<1	<1
W7A	-10.36	11/4/98	937				4.38	136	84.4	1182	0.10	1.4	176	4932	4.52	140.0	89.3	1251	1.12	23.1	7.724	30.295	1.13		<1	<1
W7A	-10.36	12/16/98	927				4.65	144	82.4	1154	0.09	1.3	173	4853	4.83	149.6	88.9	1245	0.86	23.2	7.698	29.843	1.77		1	<1
W7A	-10.36	1/12/99	958				4.20	130	76.4	1070	0.07	1.0	181	5078	4.36	135.0	78.9	1105	0.89	22.9	7.712	30.024	2.24		<1	<1
W7A	-10.36	2/3/99	950				4.34	134	97.4	1364	0.48	6.7	164	4603	4.45	137.8	103.6	1451	0.85	22.7	7.695	30.096	2.25		<1	<1
W7A	-10.36	3/2/99	947				4.31	133	89.2	1249	0.04	0.6	165	4640	4.48	138.8	91.1	1276	0.79	22.6	7.724	30.075	2.70		<1	<1
W7A	-10.36	4/6/99	934				4.19	130	89.8	1258	0.02	0.3	164	4592	4.28	132.6	93.4	1308	0.63	22.3	7.701	30.596	2.09		<1	<1
W7A	-10.36	5/4/99	943				3.78	117	72.4	1014	0.04	0.6	155	4364	3.88	120.2	78.9	1105	0.69	21.2	7.759	30.276	2.73		<1	<1
W7A	-10.36	6/2/99	933				3.20	99	58.7	822	0.10	1.4	150	4213	3.37	104.4	61.4	860	0.66	20.6	7.768	30.459	2.77		<1	<1
W7A	-10.36	7/7/99	1011				3.53	109	59.8	838	0.07	1.0	150	4224	3.61	111.8	62.4	874	0.69	21.2	7.758	30.340	2.73		<1	<1
W7A	-10.36	8/25/99	935				3.80	118	76.2	1067	0.15	2.1	147	4129	3.92	121.4	81.9	1147	0.76	23.2	7.703	30.791	1.77		<1	<1
W7A	-10.36	9/8/99	946				3.88	120	77.8	1089	0.06	0.8	153	4303	4.07	126.1	89.9	1259	0.76	22.9	7.705	30.838	1.36		<1	<1
W7A	-10.36	10/6/99	952				3.45	107	55.3	775	0.01	0.1	146	4109	3.61	111.8	58.7	822	0.66	22.0	7.738	30.699	2.95		<1	<1
W7A	-10.36	11/3/99	1007				3.04	94	55.8	782	0.13	1.8	150	4210	3.26	101.0	59.9	839	0.65	21.7	7.783	30.485	2.74		<1	<1
W7A	-10.36	12/15/99	1026				3.50	108	60.3	845	0.03	0.4	148	4162	3.93	121.7	72.4	1014	0.72	22.6	7.712	30.849	2.87		<1	<1
W7A	-10.36	1/11/00	1002				3.62	112	73.9	1035	0.15	2.1	149	4176	3.69	114.3	81.4	1140	0.74	22.3	7.715	30.096	2.33		<1	<1
W7A	-10.36	2/14/00	1001				4.02	125	73.2	1025	0.06	0.8	145	4081	4.15	128.5	88.2	1235	0.81	22.6	7.720	30.349	2.31		<1	<1
W7A	-10.36	3/22/00	1018				3.94	122	73.5	1029	0.05	0.7	146	4100	3.86	119.6	75.7	1060	0.76	22.3	7.739	30.235	2.48		<1	<1
W7A	-10.36	4/12/00	1008				4.07	126	66.4	930	0.03	0.4	150	4210	3.98	123.3	70.1	982	0.78	22.2	7.767	29.897	2.50		<1	<1
W7A	-10.36	5/17/00	948				3.95	122	69.6	975	0.02	0.3	147	4123	4.10	127.0	75.2	1053	0.80	21.9	7.718	29.977	2.10		<1	<1
W7A	-10.36	6/6/00	1010				4.16	129	72.9	1021	0.03	0.4	200	5609	4.29	132.9	79.6	1115	0.75	21.9	7.687	29.871	1.93		<1	<1
W7A	-10.36	7/31/00	954				4.31	133	71.1	996	0.11	1.5	167	4679	4.35	134.7	73.3	1027	0.82	22.5	7.677	29.921	1.75		<1	<1
W7A	-10.36	8/30/00	955				4.00	124	74.9	1049	0.01	0.1	158	4423	4.10	127.0	75.9	1063	1.33	23.3	7.576	30.513	1.29		<1	<1
W7A	-10.36	9/6/00	937				3.90	121	75.7	1060	0.04	0.6	157	4409	4.10	127.0	79.0	1107	0.79	23.4	7.545	30.773	1.01		<1	<1
W7A	-10.36	10/25/00	1124				4.05	125	73.4	1028	0.10	1.4	158	4449	4.21	130.4	81.0	1135	0.76	24.4	7.525	31.003	1.56		<1	<1
W7A	-10.36	11/14/00	959				3.90	121	82.7	1158	0.27	3.8	154	4322	4.18	129.5	88.5	1240	0.85	24.2	7.545	30.909	1.34		<1	<1
W7A	-10.36	12/19/00	935				3.89	120	100	1405	0.11	1.5	151	4235	4.33	134.1	102	1429	0.76	23.6	7.609	30.101	1.16		<1	<1
W7A	-10.36	1/24/01	922				3.75	116	72.4	1014	0.11	1.5	170	4775	3.90	120.8	76.2	1067	0.71	23.3	7.618	30.788	1.09		<1	<1
W7A	-10.36	2/7/01	948				3.60	112	75.2	1053	0.08	1.1	150	4221	3.63	112.4	77.2	1081	0.71	23.2	7.682	30.786	0.67		<1	<1
W7A	-10.36	3/12/01	928				3.96	123	79.8	1118	0.01	0.1	156	4381	4.14	128.2	81.4	1140	0.79	22.7	7.542	30.234	0.63		<1	<1
W7A	-10.36	4/18/01	916				4.73	147	75.8	1062	0.03	0.4	143	4019	4.80	148.7	76.6	1073	0.73	22.0	7.548	30.327	1.53		<1	<1
W7A	-10.36	5/14/01	1050				4.94	153	78.6	1101	0.18	2.5	147	4117	4.98	154.2	80.8	1131	0.64	21.9	7.589	30.169	1.67		<1	<1
W7A	-10.36	6/13/01	942				4.88	151	80.2	1124	0.02	0.3	148	4159	4.88	151.2	81.9	1147	0.61	21.9	7.593	30.316	1.46		<1	<1
W7A	-10.36	7/24/01	1002				4.24	131	80.7	1130	0.06	0.8	154	4314	4.22	130.7	83.9	1175	0.76	22.4	7.597	30.530	0.90		<1	<1
W7A	-10.36	8/22/01	1001				4.34	134	88.6	1241	0.01	0.1	148	4143	4.28	132.6	90.4	1266	0.91	22.8	7.586	30.572	0.82		<1	<1
W7A	-10.36	9/17/01	1035				4.32	134	86.5	1212	0.02	0.3	153	4289	4.36	135.0	93.9	1315	0.89	23.6	7.621	30.523	0.91		<1	<1
W7A	-10.36	10/22/01	1023				4.12	128	82.6	1157	0.02	0.3	149	4196	4.24	131.3	85.6	1199	0.71	23.4	7.631	30.478	1.31		<1	<1
W7A	-10.36	11/5/01	1055				4.16	129	88.1	1234	0.02	0.3	150	4213	4.22	130.7	102	1434	0.72	23.3	7.622	30.409	1.30		<1	<1
W7A	-10.36	12/12/01	1039				4.24	131	86.6	1213	0.03	0.4	155	4359	4.31	133.5	97.5	1366	0.75	22.8	7.642	29.943	1.70		<1	<1
W7A	-10.36	1/7/02	1038				2.80	87	47.4	664	0.26	3.6	133	3741	3.18	98.5	55.8	782	0.74	23.3	7.848	31.262	4.33		<1	1
W7A	-10.36	2/25/02	958				4.58	142	97.1	1361	0.05	0.7	158	4429	4.62	143.1	104	1462	0.68	22.1	7.692	30.216	1.78		<1	<1
W7A	-10.36	3/18/02	1023				4.90	152	97.4	1364	0.28	3.9	147	4129	5.04	156.1	102	1431	0.70	21.9	7.727	30.218	1.36		<1	<1
W7A	-10.36	4/10/02	1029				5.56	172	126	1761	2.97	41.6	150	4224	5.66	175.3	136	1898	1.51	22.0	7.780	30.104	0.37		<1	89
W7A	-10.36	5/22/02	1037				6.94	215	79.1	1108	0.14	2.0	157	4415	7.11	220.2	93.5	1310	0.84	22.1	7.862	29.592	0.19		<1	2
W7A	-10.36	6/19/02	1122				6.62	205	73.3	1027	0.11	1.5	156	4379	6.76	209.4	78.6	1101	0.74	22.4	7.778	30.000	0.40		<1	2

NELHA Water Quality Laboratory

Well 7A Data Table

May 1992 - December 2014

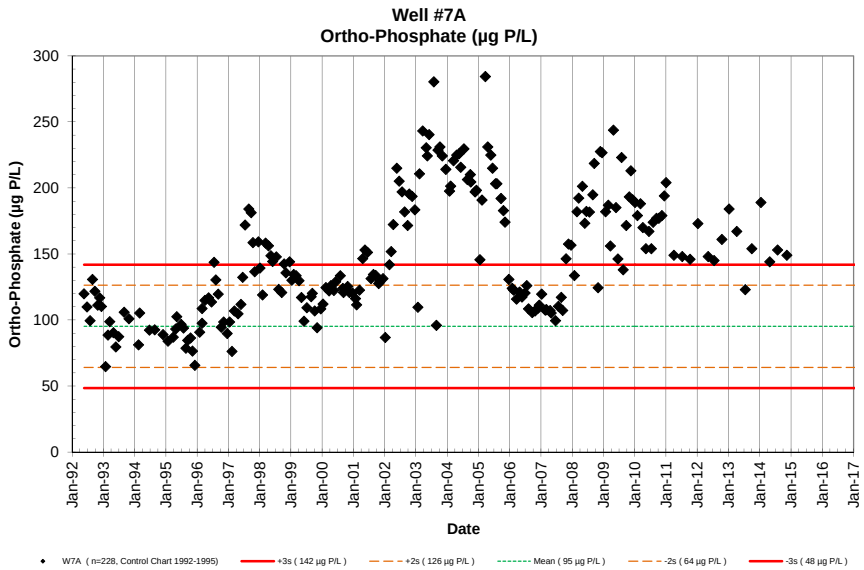
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W7A	-10.36	7/22/02	1105				6.36	197	59.9	839	0.15	2.1	159	4468	6.66	206.3	64.7	906	0.76	23.2	7.727	30.064	0.81		<1	2
W7A	-10.36	8/21/02	1133				5.87	182	54.8	767	0.22	3.1	159	4454	6.02	186.5	58.3	816	0.79	23.4	7.656	30.380	0.61		<1	1
W7A	-10.36	9/25/02	1039				5.54	172	60.7	850	0.26	3.6	171	4794	5.76	178.4	58.9	825	0.78	23.4	7.622	30.531	0.42		<1	<1
W7A	-10.36	10/15/02	1050				6.31	195	61.1	856	0.25	3.5	158	4429	6.68	206.9	62.7	878	0.87	23.9	7.637	30.344	0.27		<1	<1
W7A	-10.36	11/17/02	1018				6.25	194	72.5	1015	0.36	5.0	163	4567	6.27	194.2	69.6	974	0.88	24.1	7.634	30.244	0.26		<1	<1
W7A	-10.36	12/18/02	1042				5.92	183	68.9	965	0.05	0.7	161	4511	6.12	189.6	64.4	902	0.67	23.8	7.690	29.967	0.82		<1	27
W7A	-10.36	1/23/03	1050				3.54	110	50.7	710	0.02	0.3	123	3446	3.68	114.0	56.9	797	0.74	24.1	7.854	32.297	4.16		<1	<1
W7A	-10.36	2/11/03	1107				6.80	211	97.3	1363	0.07	1.0	153	4291	7.00	216.8	106	1478	0.97	23.1	7.718	30.150	0.53		<1	<1
W7A	-10.36	3/20/03	1136				7.85	243	149.4	2093	0.09	1.3	157	4409	7.84	242.8	151	2118	1.18	23.9	7.793	29.848	0.58		<1	<1
W7A	-10.36	4/30/03	1013				7.44	230	102.5	1436	0.16	2.2	156	4387	7.74	239.7	124	1740	1.28	22.7	7.835	30.083	0.61		<1	1
W7A	-10.36	5/14/03	918				7.24	224	86.3	1208	0.04	0.6	153	4291	7.35	227.7	88.2	1235	1.36	22.6	7.815	30.195	0.19		<1	1
W7A	-10.36	6/4/03	1001				7.76	240	62.3	873	1.07	15.0	152	4272	8.04	249.0	79.1	1107	1.56	22.9	7.803	30.290	0.37		<1	7636
W7A	-10.36	7/30/03	934				9.05	280	47.7	667	7.28	102.0	156	4384	9.38	290.5	67.3	943		23.0	7.836	30.056	0.42		<1	1
W7A	-10.36	8/28/03	938				3.10	96	70.4	986	0.15	2.1	151	4249	8.38	259.6	97.6	1366		23.9	7.748	30.199	0.77		<1	6
W7A	-10.36	9/16/03	946				7.38	229	65.1	912	0.08	1.1	152	4255	7.56	234.2	102	1422		23.6	7.709	30.344	0.41		19	TNTC
W7A	-10.36	10/8/03	933				7.46	231	51.4	720	0.86	12.0	155	4353	7.82	242.2	65.8	922		23.5	7.685	30.257	NA		<1	TNTC
W7A	-10.36	11/5/03	946				7.24	224	51.9	727	2.09	29.3	166	4662	7.60	235.4	56.1	786		23.7	7.684	29.795			<1	TNTC
W7A	-10.36	11/14/03	959																	23.3			0.16			
W7A	-10.36	12/17/03	1154				6.91	214	72.0	1008	1.12	15.7	162	4541	7.91	245.0	87.9	1231		24.7	7.646	29.984	0.60		<1	2
W7A	-10.36	1/28/04	1037				6.38	198	73.8	1034	0.73	10.2	177	4968	6.54	202.6	86.0	1204	0.74	24.0	7.662	29.374	0.72		<1	<1
W7A	-10.36	2/11/04	933				6.50	201	90.8	1271	0.13	1.8	160	4480	6.72	208.1	96.0	1344	1.35	23.0	7.600	29.503	0.73		<1	<1
W7A	-10.36	3/16/04	1020				7.12	221	94.7	1326	0.16	2.2	165	4620	7.80	241.6	104	1458		23.3	7.621	29.295	0.54		<1	<1
W7A	-10.36	4/22/04	1006				7.26	225	96.7	1355	0.28	3.9	162	4558	7.52	232.9	107	1504		22.5	7.705	29.299	1.30		<1	1
W7A	-10.36	5/18/04	1001				7.29	226	83.0	1162	0.20	2.8	163	4572	7.31	226.4	86.0	1205		22.2	7.591	28.74	0.94		<1	<1
W7A	-10.36	6/8/04	1038				6.96	216	84.2	1180	0.15	2.1	165	4620	7.36	228.0	87.6	1228		22.3	7.587	28.85	1.20		<1	<1
W7A	-10.36	7/15/04	951				7.41	230	88.2	1235	0.18	2.5	165	4637	7.36	228.0	100	1403		22.5	7.537	28.67	1.06		<1	<1
W7A	-10.36	8/25/04	1027				6.66	206	93.1	1304	0.18	2.5	162	4561	6.80	210.6	99.0	1387		22.6	7.540	28.90	1.05		<1	<1
W7A	-10.36	9/27/04	1139				6.78	210	95.7	1340	0.22	3.1	173	4859	6.92	214.3	100	1395		22.8	7.524	29.20	0.78		<1	<1
W7A	-10.36	10/4/04	1058				6.60	204	86.6	1214	0.20	2.8	156	4384	6.96	215.6	96.2	1347		22.8	7.551	29.36	1.02		<1	<1
W7A	-10.36	11/23/04	932				6.36	197	64.1	898	0.08	1.1	174	4892	6.74	208.8	85.9	1203		23.3	7.494	29.24	1.26		<1	<1
W7A	-10.36	12/8/04	942				6.40	198	61.6	863	0.92	12.9	170	4769	6.68	206.9	75.1	1052		23.9	7.492	29.53	0.47		<1	<1
W7A	-10.36	1/18/05	941				4.70	146	46.3	649	0.06	0.8	141	3952	4.86	150.5	49.5	694		23.7	7.764	31.050	3.15		<1	<1
W7A	-10.36	2/10/05	925				6.16	191	62.7	878	0.24	3.4	159	4463	6.46	200.1	79.8	1118		23.1	7.641	29.914	0.66		<1	<1
W7A	-10.36	3/22/05	930				9.18	284	75.4	1056	0.13	1.8	153	4289	9.52	294.9	78.0	1092	1.16	23.1	7.832	29.829	0.36		<1	<1
W7A	-10.36	4/20/05	930				7.46	231	85.9	1203	0.09	1.3	146	4100	7.70	238.5	88.2	1236		22.9	7.782	30.257	1.21		<1	<1
W7A	-10.36	5/25/05	942				7.26	225	68.8	963	0.15	2.1	150	4202	7.48	231.7	78.3	1097		21.8	7.699	30.109	1.21		<1	<1
W7A	-10.36	6/14/05	943				6.94	215	65.0	910	0.10	1.4	150	4218	7.22	223.6	70.8	991		23.4	7.687	30.170	0.48		<1	<1
W7A	-10.36	7/19/05	934				6.56	203	69.0	967	0.09	1.3	150	4207	6.86	212.5	74.5	1044	0.65	23.1	7.674	30.298	1.64		<1	<1
W7A	-10.36	8/3/05	1004				6.56	203	60.0	841	0.06	0.8	153	4286	6.82	211.2	61.1	856	0.62	24.1	7.711	30.287	1.32		<1	<1
W7A	-10.36	9/22/05	926				6.20	192	61.0	854	0.14	2.0	156	4370	6.42	198.9	65.5	917	0.53	24.4	7.719	30.378	1.80		<1	<1
W7A	-10.36	10/19/05	938				5.90	183	74.7	1046	0.11	1.5	158	4432	6.08	188.3	101	1416		24.9	7.703	30.340	1.42		<1	<1
W7A	-10.36	11/8/05	924				5.62	174	73.2	1025	0.12	1.7	141	3952	5.86	181.5	77.4	1084		24.5	7.710	30.095	1.14		<1	<1
W7A	-10.36	12/22/05	856				4.22	131	52.3	732	0.32	4.5	141	3946	4.36	135.0	54.9	769		24.3	7.767	31.121	2.45		<1	<1
W7A	-10.36	1/31/06	923				4.00	124	68.6	961	0.35	4.9	144	4036	4.24	131.3	77.7	1088		24.4	7.595	30.715	1.41		<1	<1
W7A	-10.36	2/16/06	920				3.96	123	67.7	949	0.27	3.8	141	3954	4.34	134.4	69.2	969	0.92	23.9	7.605	30.729	1.53		<1	<1
W7A	-10.36	3/22/06	911				3.74	116	69.5	973	0.29	4.1	135	3792	3.96	122.7	71.5	1001	0.75	23.6	7.478	30.627	0.33		<1	<1
W7A	-10.36	4/27/06	957				3.91	121	68.6	961	0.10	1.4	129	3623	4.06	125.8	65.4	915	0.63	24.1	7.524	30.766	1.82		<1	<1
W7A	-10.36	5/24/06	1017				3.79	117	63.6	891	<0.05	0.0	133	3735	3.91	121.1	60.6	848	0.67	24.6	7.522	30.594	3.19		<1	<1
W7A	-10.36	6/28/06	1001				3.89	120	57.8	810	0.19	2.7	125	3511	4.11	127.3	53.6	751	0.60	24.9	7.547	30.894	2.18		<1	1
W7A	-10.36	7/19/06	939				4.07	126	60.1	842	0.21	2.9	137	3848	4.38	135.7	51.1	716	0.62	24.7	7.55	30.275	2.82		<1	1
W7A	-10.36	8/9/06	1034				3.50	108	53.1	744	0.19	2.7	127	3567	3.79	117.4	51.4	719	0.62	25.8	7.536	31.424	1.28		<1	<1
W7A	-10.36	9/20/06	1050				3.41	106	44.0	616	4.6	64.4	123	3455	3.63	112.4	44.5	623	0.70	25.7	7.428	31.270	0.47		<1	<1
W7A	-10.36	10/25/06	1009				3.45	107	43.1	604	0.94	13.2	127	3567	3.67	113.7	42.0	588	0.81	26.2	7.429	31.277	0.81		<1	<1
W7A	-10.36	11/29/06	1047				3.52	109	45.5	637	0.31	4.3	124	3483	3.67	113.7	40.9	573	0.69	25.9	7.43	31.394	0.57		<1	<1
W7A	-10.36	12/13/06	1037				3.59	111	46.3	649	0.24	3.4	120	3370	3.76	116.5	42.6	596	0.69	25.7	7.455	31.509	0.64		<1	<1
W7A	-10.36	1/10/07	1040				3.86	120	45.9	643	0.22	3.1	118	3314	3.97	123.0	47.7	668	0.62	24.5	7.483	31.381	1.28		<1	<1
W7A	-10.36	2/21/07	1105				3.47	107	43.2	605	0.51	7.1	115	3230	3.71	114.9	50.7	710	0.63	24.7	7.624	30.830	1.84		<1	<1
W7A	-10.36	3/7/07	1059				3.48	108	55.4	776	0.30	4.2	120	3370	3.61	111.8	55.3	774	0.64	24.1	7.602	31.127	1.39		<1	<1
W7A	-10.36	4/19/07	1043				3.46	107	55.0	770	0.25	3.5	124	3483	3.69	114.3	46.6	652	0.59	24.9	7.541	31.039	0.85		<1	<1
W7A	-10.36	5/2/07	1046				3.40	105	45.4	636	0.25	3.5	119	3342	3.74	115.8	44.4	622	0.60	24.6	7.536	31.372	0.86		<1	<1
W7A	-10.36	6/20/07	1050				3.21	99	36.5	511	0.27	3.8	113	3174	3.37	104.4		0		25.3	7.509	31.574	0.80		<1	<1

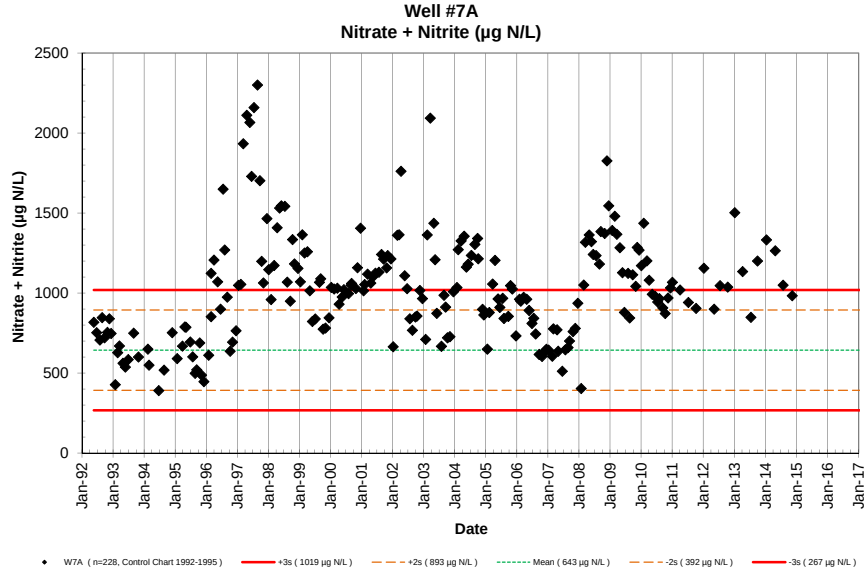
NELHA Water Quality Laboratory

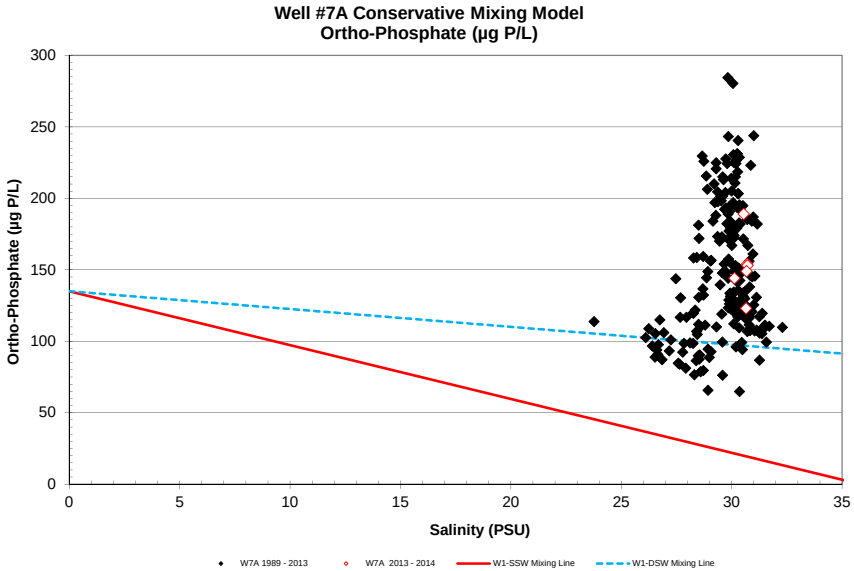
Well 7A Data Table

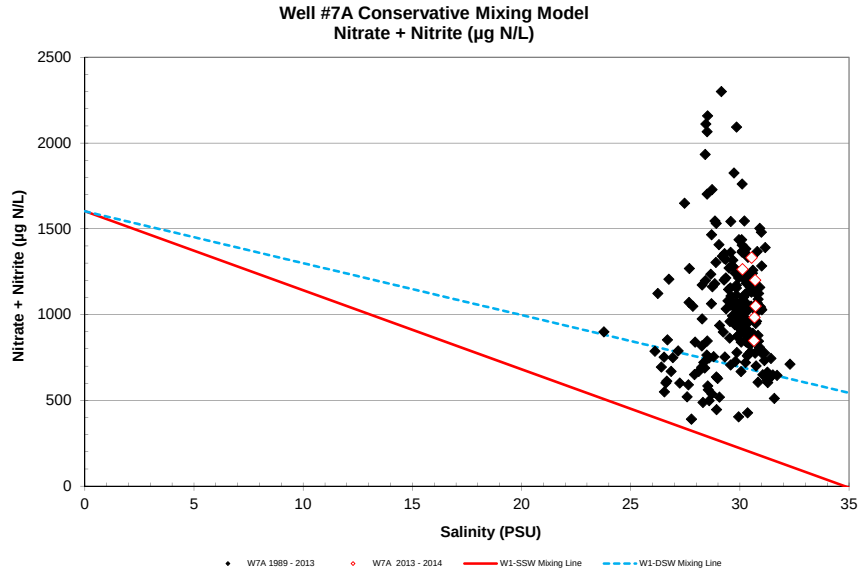
May 1992 - December 2014

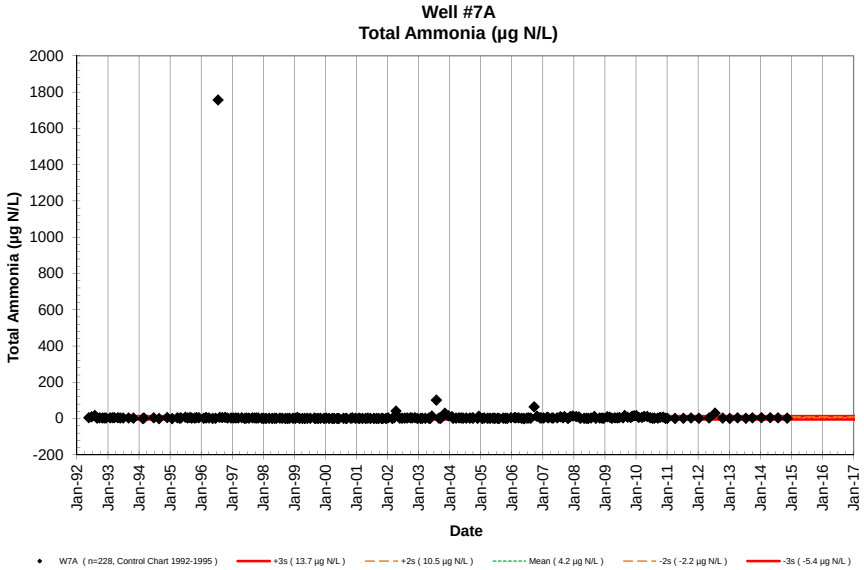
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W7A	-10.36	7/25/07	1211		1.8	Flood	3.56	110	46.0	645	0.76	10.6	106	2966	3.53	109.4	50.0	700.7		25.2	7.46	31.70	1.15			
W7A	-10.36	8/27/07	1200		0.8	Flood	3.78	117	47.1	660	0.31	4.4	99	2777	3.80	117.8	50.5	707.9		25.8	7.52	31.25	2.98			
W7A	-10.36	9/13/07	1613		1.3	Flood	3.46	107	50.0	700	0.81	11.4	117	3286	3.90	120.7	53.6	750.7		25.0	7.49	30.74	0.60			
W7A	-10.36	10/23/07	1143		1.25	Flood	4.72	146	54.2	759	0.01	0.2	142	3986	4.73	146.5	50.3	704.3		22.8	7.39	30.34	0.14			
W7A	-10.36	11/20/07	1151		1.4	Flood	5.08	157	55.6	779	0.79	11.1	159	4468	4.74	146.7	62.7	877.7		23.0	7.38	29.86	2.67			
W7A	-10.36	12/19/07	1143		1	High	5.06	157	66.8	936	1.06	14.8	155	4364						22.5	7.39	29.07	1.36			
W7A	-10.36	1/28/08	854		1.4	Ebb	4.31	134	28.8	404	0.80	11.2	138	3880						22.6	7.22	29.94	0.87			
W7A	-10.36	2/26/08	1037		0.3	Ebb	5.87	182	74.9	1050	0.67	9.4	151	4237						22.1	7.42	29.89	0.72			
W7A	-10.36	3/17/08	1237		0.6	Flood	6.21	192	94.0	1316	0.09	1.2	193	5423						22.5	7.49	29.68	3.78			
W7A	-10.36	4/30/08	1153		0.9	Flood	6.50	201	97.3	1363	0.09	1.2	155	4344						21.0	7.25	29.58	1.88			
W7A	-10.36	5/27/08	1147		0.8	High	5.59	173	94.3	1321	0.09	1.2	183	5147						20.3	7.35	29.36	6.47			
W7A	-10.36	6/16/08	1211		1	Flood	5.88	182	88.6	1241	0.02	0.3	164	4595						21.0	7.38	29.78	5.87			
W7A	-10.36	7/21/08	1134		0.3	Low	5.87	182	88.1	1234	0.20	2.8	144	4058						21.1	7.27	30.29	1.62	0.21		
W7A	-10.36	8/30/08	1448		1.9	Flood	6.29	195	84.3	1181	0.89	12.4	149	4175						22.6	7.38	30.51	1.01	0.14		
W7A	-10.36	9/15/08	1201		0.4	Flood	7.05	219	98.8	1383	0.10	1.4	145	4069						22.3	7.36	30.27	2.54			
W7A	-10.36	10/30/08	1045		0.5	Low	4.02	124	98.0	1372	0.20	2.8	127	3580						21.2	7.14	30.13	0.10	0.37		
W7A	-10.36	11/25/08	1015		0.5	Low	7.34	228	130.3	1826	0.18	2.5	168	4717						21.1	7.33	29.73	0.16	0.23		
W7A	-10.36	12/16/08	1033		1.3	Ebb	7.32	227	110.3	1545	0.11	1.5	155	4367						20.7	7.48	30.21	1.66			
W7A	-10.36	1/26/09	1420		0.5	Flood	5.88	182	99.3	1391	0.71	10.0	125	3510						20.6	7.57	31.16	2.94	0.18		
W7A	-10.36	2/26/09	1052		0.1	Low	6.03	187	105.7	1480	0.53	7.4	143	4006						20.6	7.39	30.98	2.28	0.06		
W7A	-10.36	3/23/09	1023		0.2	Flood	5.04	156	97.6	1367	0.13	1.8	133	3748						20.1	7.34	30.79	1.78	0.15		
W7A	-10.36	4/27/09	1025		-0.2	Low	7.87	244	91.6	1283	0.29	4.1	129	3627						20.8	7.46	31.00	1.69	0.07		
W7A	-10.36	5/27/09	1405		0.6	Flood	5.98	185	80.5	1127	0.24	3.3	111	3130						20.8	7.42	30.70	1.64	0.03		
W7A	-10.36	6/19/09	1044		1.3	Flood	4.72	146	62.7	879	0.39	5.5	107	2997						20.4	7.45	30.83	1.91	0.05		
W7A	-10.36	7/31/09	1002		1.5	Flood	7.20	223	80.2	1123	0.30	4.2	105	2954						22.3	7.46	30.86	1.70	0.06		
W7A	-10.36	8/20/09	1121		0.3	Flood	4.46	138	60.3	845	1.22	17.1	107	2992						21.6	7.46	30.81	1.00	0.02		
W7A	-10.36	9/24/09	1025		1.7	Ebb	5.54	172	79.5	1114	0.51	7.2	114	3198						20.1	8.21	29.84	0.46	0.02		
W7A	-10.36	10/30/09	1050		0.7	Flood	6.24	193	74.4	1042	0.40	5.6	112	3147						21.5	7.37	29.75	0.32	0.02		
W7A	-10.36	11/17/09	1114		0.4	Low	6.88	213	91.7	1285	0.92	12.9	157	4413						21.4	7.39	29.63	0.51	0.04		
W7A	-10.36	12/8/09	1505		0.3	Ebb	6.17	191	90.5	1268	1.12	15.7	169	4738						21.8	7.40	29.78	1.04	0.16		
W7A	-10.36	1/4/10	1516		-0.1	Low	6.10	189	83.6	1171	1.14	16.0	172	4829						21.1	7.50	29.84	2.35	0.02		
W7A	-10.36	2/2/10	1516		-0.2	Low	5.78	179	102.5	1436	0.50	7.0	150	4203						23.7	7.58	29.96	2.03	0.15		
W7A	-10.36	3/10/10	1355		0.7	High	6.07	188	85.7	1201	0.50	7.0	181	5078						22.8	7.59	29.28	2.70	0.11		
W7A	-10.36	4/7/10	1217		0.7	High	5.49	170	77.1	1080	0.86	12.0	181	5095						19.2	7.65	29.45	3.88	0.18		
W7A	-10.36	5/12/10	1337		1.5	Flood	4.97	154	70.8	992	0.86	12.0	164	4605						20.1	7.70	29.66	4.10	0.07		
W7A	-10.36	6/16/10	1153		0.3	Low	5.39	167	69.9	979	0.36	5.0	174	4880						20.5	7.65	30.01	3.36	0.21		
W7A	-10.36	7/14/10	936		0.5	Ebb	4.97	154	67.4	944	0.07	1.0	180	5045						20.0	7.62	30.00	3.01	0.09		
W7A	-10.36	8/4/10	1017		1.7	Flood	5.62	174	68.9	965	0.18	2.5	176	4938						19.7	7.67	30.11	3.46	0.14		
W7A	-10.36	9/13/10	1555		0.7	Low	5.71	177	64.8	907	0.17	2.4	174	4876						20.0	7.61	30.10	2.85	0.11		
W7A	-10.36	10/11/10	1110		1.3	Ebb	5.71	177	62.3	872	0.49	6.8	174	4891						20.2	7.65	29.88	2.98	0.07		
W7A	-10.36	11/15/10	1223		1.3	High	5.78	179	69.2	969	0.61	8.6	173	4848						20.5	7.62	30.23	3.05	0.08		
W7A	-10.36	12/13/10	1002		1.3	High	6.26	194	73.7	1032	0.09	1.3	158	4439						20.1	7.56	29.90	2.16	0.07		
W7A	-10.36	1/3/11	1418		0.5	Flood	6.59	204	76.2	1067	0.13	1.8	173	4849						20.7	7.55	29.72	1.84	0.06		
W7A	-10.36	4/4/11	1459		1.3	Flood	4.81	149	72.8	1019	0.04	0.6	151	4233						19.5	7.58	30.11	3.11	0.02		
W7A	-10.36	7/11/11	1419		2.4	High	4.78	148	67.2	941	0.12	1.7	165	4647						20.3	7.63	29.77	3.64	0.05		
W7A	-10.36	10/10/11	1315		1.1	Flood	4.71	146	64.5	904	0.21	3.0	158	4449						20.6	7.66	30.29	3.94	0.08		
W7A	-10.36	1/9/12	1338		0.2	Flood	5.59	173	82.5	1155	0.10	1.4	170	4771						21.2	7.59	29.56	2.08	0.08		
W7A	-10.36	5/8/12	1437		0.8	Flood	4.78	148	64.2	899	0.25	3.5	167	4694						20.0	7.66	30.26	3.90	0.09		
W7A	-10.36	7/17/12	1348		2.1	Flood	4.68	145	74.7	1046	2.16	30.3	153	4293						19.9	7.60	30.93	3.35	0.68		
W7A	-10.36	10/15/12	1147		0.2	Flood	5.20	161	74.0	1037	0.16	2.2	153	4288						20.6	7.54	30.96	2.44	0.02		
W7A	-10.36	1/7/13	1244		0.8	High	5.94	184	107.2	1502	0.05	0.7	187	5264						20.0	7.59	30.91	2.71	0.09		
W7A	-10.36	4/8/13	1225		0.6	Flood	5.39	167	81.0	1134	0.27	3.8	143	4015						19.8	7.66	30.73	2.78	0.06		
W7A	-10.36	7/16/13	1434		1.2	Ebb	3.97	123	60.5	848	0.11	1.5	139	3894						19.9	7.66	30.65	3.77	0.10		
W7A	-10.36	10/1/13	1602		1.0	Ebb	4.97	154	85.7	1200	0.30	4.2	149	4175						20.2	7.54	30.70	2.57	0.12		
W7A	-10.36	1/14/14	1459		0.7	High	6.10	189	95.1	1332	0.36	5.1	156	4376						20.1	7.55	30.54	2.47	0.02		
W7A	-10.36	4/28/14	1720		0.58	High	4.65	144	90.2	1264	0.34	4.7	143	4019						20.2	7.64	30.12	4.47	0.42		
W7A	-10.36	7/28/14	1454		0.49	Flood	4.94	153	74.9	1049	0.29	4.0	146	4113						20.8	7.54	30.72	2.78	0.05		
W7A	-10.36	11/13/14	1146		0.37	Flood	4.81	149	70.2	983	0.18	2.5	140	3938						21.6	7.82	30.67	2.62	0.05		
W7A	-10.36	1/1/15																								
W7A	-10.36	4/1/15																								

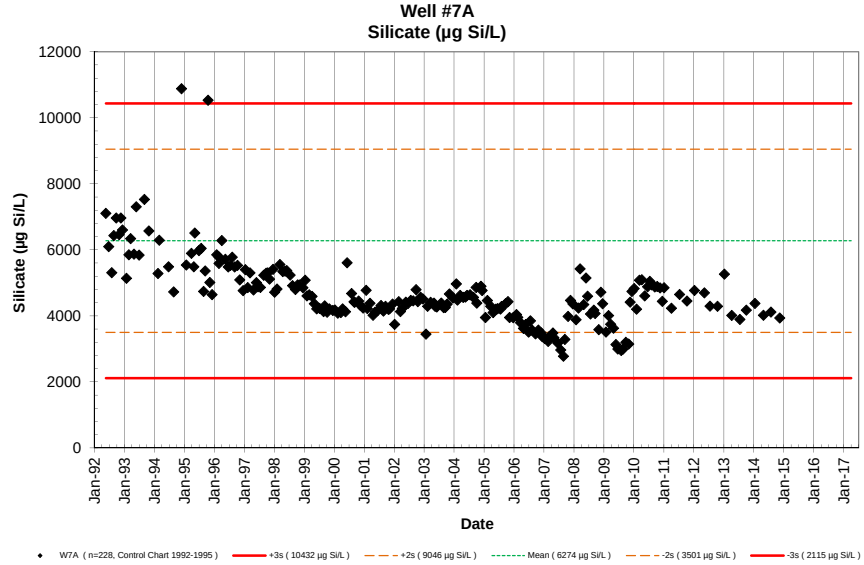

Well #7A
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W7A (n=228, Control Chart 1992-1995)
+3s (142 µg P/L)
+2s (126 µg P/L)
Mean (95 µg P/L)
-2s (64 µg P/L)
-3s (48 µg P/L)

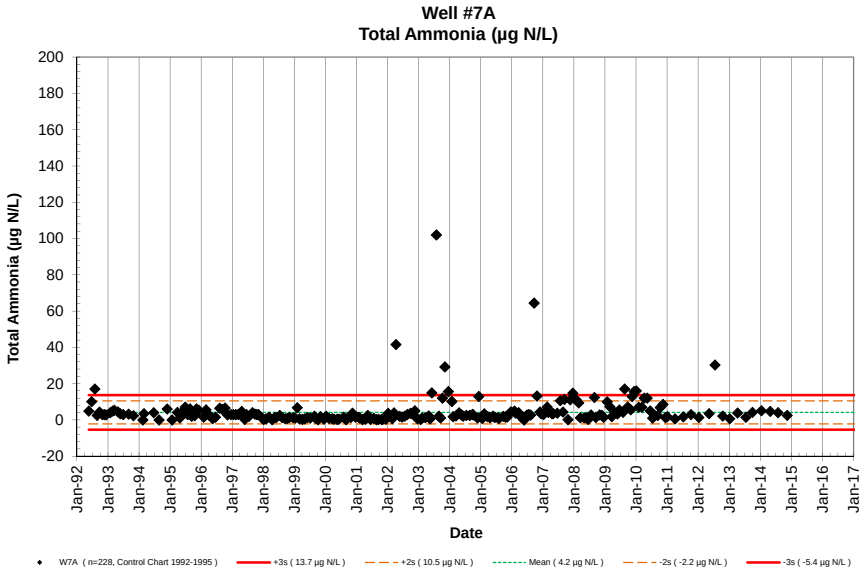

Well #7A
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W7A (n=228, Control Chart 1992-1995)
+3s (1019 µg N/L)
+2s (893 µg N/L)
Mean (643 µg N/L)
-2s (392 µg N/L)
-3s (267 µg N/L)

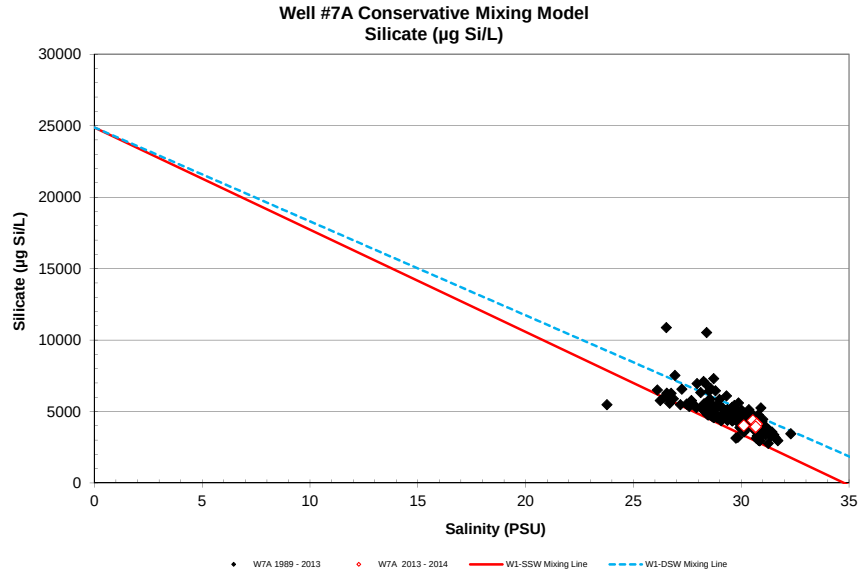

Well #7A Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W7A 1989 - 2013
W7A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

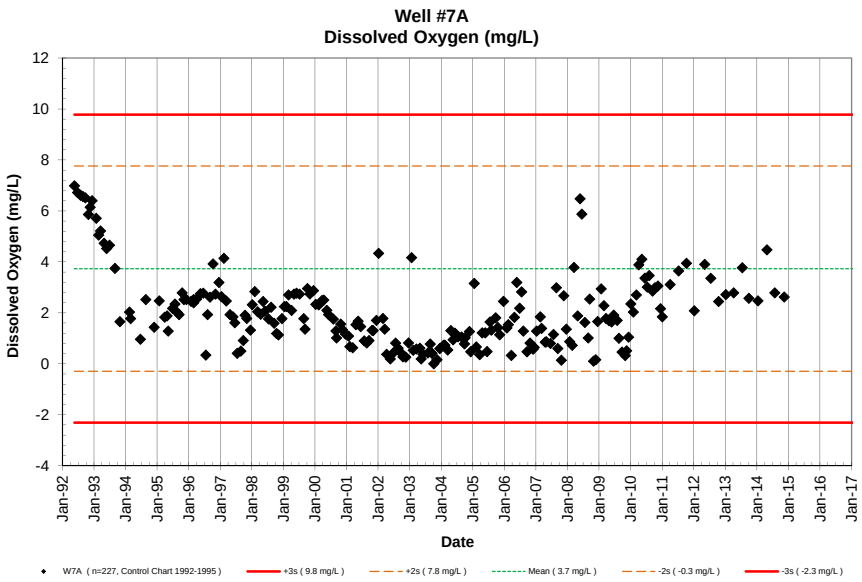

Well #7A Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W7A 1989 - 2013
W7A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

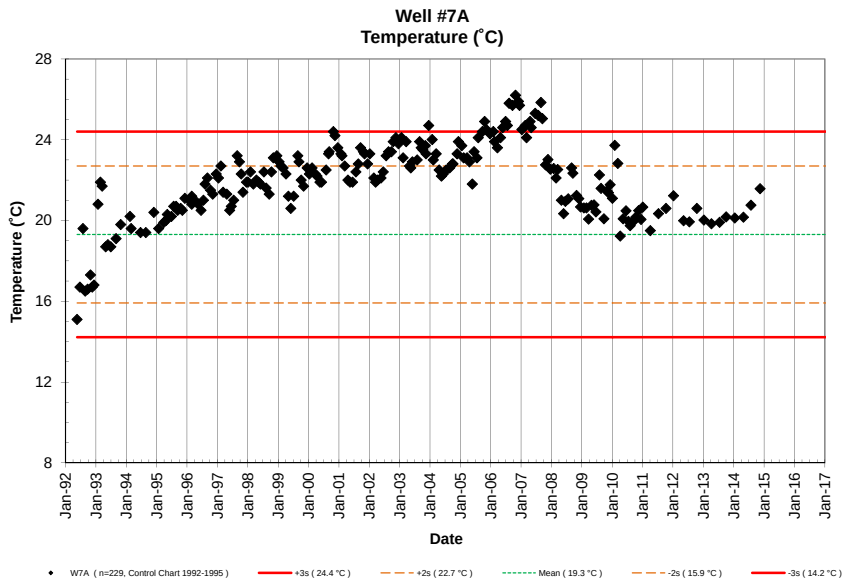

Well #7A
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W7A (n=228, Control Chart 1992-1995)
+3s (13.7 µg N/L)
+2s (10.5 µg N/L)
Mean (4.2 µg N/L)
-2s (-2.2 µg N/L)
-3s (-5.4 µg N/L)

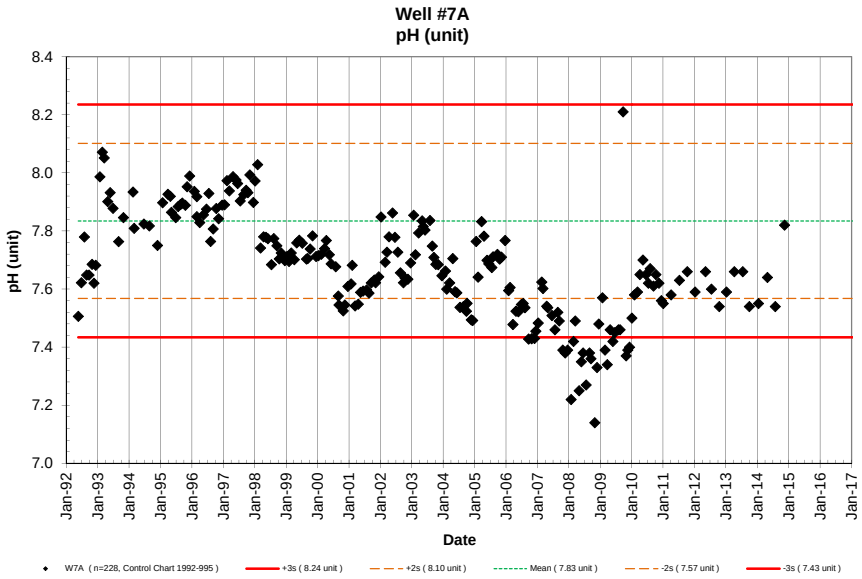

Well #7A
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W7A (n=228, Control Chart 1992-1995)
+3s (10432 µg Si/L)
+2s (9046 µg Si/L)
Mean (6274 µg Si/L)
-2s (3501 µg Si/L)
-3s (2115 µg Si/L)

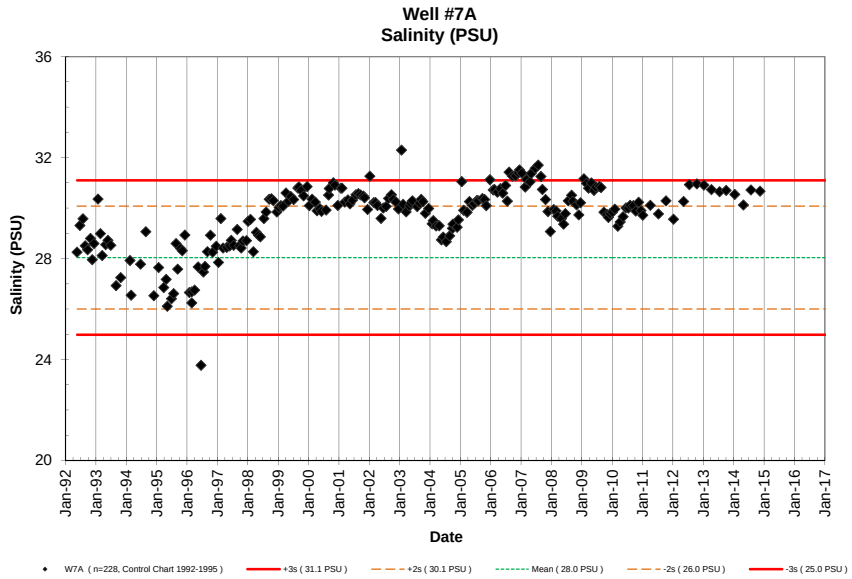

Well #7A
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W7A (n=228, Control Chart 1992-1995)
+3s (13.7 µg N/L)
+2s (10.5 µg N/L)
Mean (4.2 µg N/L)
-2s (-2.2 µg N/L)
-3s (-5.4 µg N/L)

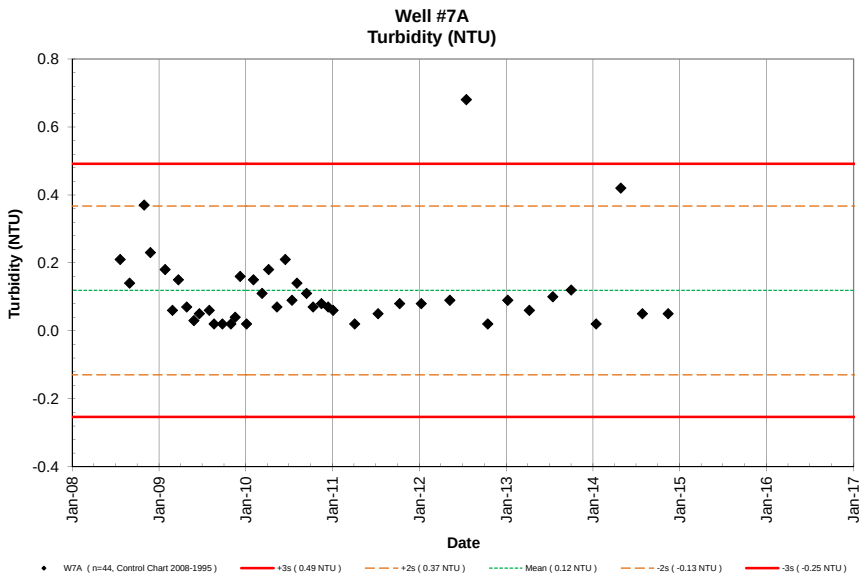

Well #7A Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W7A 1989 - 2013
W7A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

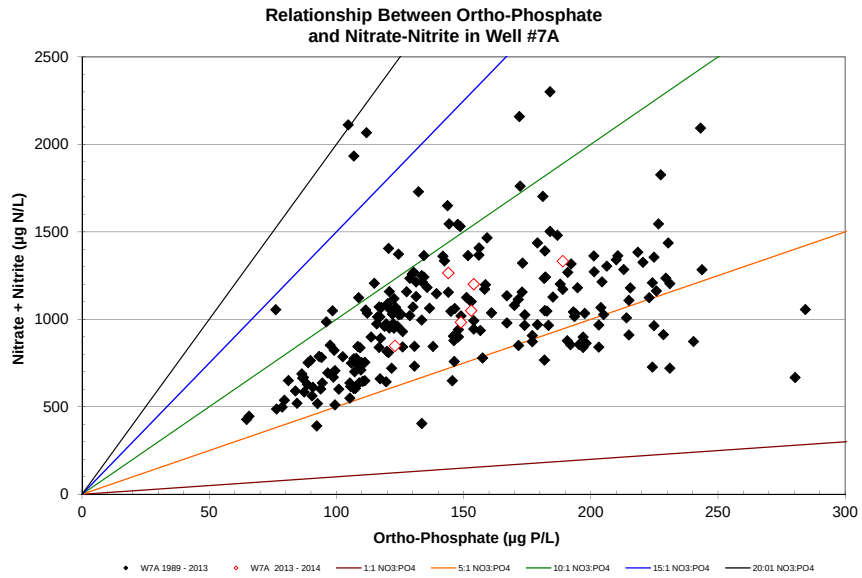

Well #7A
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W7A (n=227, Control Chart 1992-1995)
+3s (9.8 mg/L)
+2s (7.8 mg/L)
Mean (3.7 mg/L)
-2s (-0.3 mg/L)
-3s (-2.3 mg/L)


Well #7A
Temperature (˚C)
Temperature (˚C)
Date
W7A (n=229, Control Chart 1992-1995)
+3s (24.4 °C)
+2s (22.7 °C)
Mean (19.3 °C)
-2s (15.9 °C)
-3s (14.2 °C)


Well #7A
pH (unit)
pH (unit)
Date
W7A (n=228, Control Chart 1992-995)
+3s (8.24 unit)
+2s (8.10 unit)
Mean (7.83 unit)
-2s (7.57 unit)
-3s (7.43 unit)


Well #7A
Salinity (PSU)
Salinity (PSU)
Date
W7A (n=228, Control Chart 1992-1995)
+3s (31.1 PSU)
+2s (30.1 PSU)
Mean (28.0 PSU)
-2s (26.0 PSU)
-3s (25.0 PSU)


Well #7A
Turbidity (NTU)
Turbidity (NTU)
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W7A (n=44, Control Chart 2008-1995)
+3s (0.49 NTU)
+2s (0.37 NTU)
Mean (0.12 NTU)
-2s (-0.13 NTU)
-3s (-0.25 NTU)


Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #7A
Nitrate + Nitrite (µg N/L)
2500
2000
1500
1000
500
0
0
50
100
150
200
250
300
Ortho-Phosphate (µg P/L)
W7A 1989 - 2013
W7A 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

NELHA Water Quality Laboratory

Well 7B Data Table

May 1992 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W7B	-6.1	5/20/92	801				2.91	90	53.3	747	0.31	4.3	461	12947	2.99	92.6	54.3	761	0.54	19.5	7.591	21.101	5.30		<1	1
W7B	-6.1	6/24/92	806				2.99	93	50.3	705	0.47	6.6	446	12526	3.09	95.7	52.1	730	0.93	19.6	7.662	21.911	5.14		<1	<1
W7B	-6.1	7/30/92	730				2.81	87	49.3	690	0.81	11.3	455	12779	2.85	88.3	51.1	716	0.91	20.5	7.543	21.081	5.15		<1	<1
W7B	-6.1	8/26/92	933				3.10	96	58.5	820	0.04	0.6	502	14099	3.14	97.3	31.8	445	0.85	21.1	7.519	19.776	5.00		5	<1
W7B	-6.1	9/23/92	754				2.98	92	52.1	729	0.17	2.4	474	13313	3.02	93.5	57.9	811	0.52	21.8	7.638	21.440	4.89		<1	<1
W7B	-6.1	10/28/92	827				3.21	99	51.4	719	0.14	2.0	399	11206	3.28	101.6	54.1	758	0.64	21.0	7.592	24.433	5.17		<1	<1
W7B	-6.1	11/18/92	819				3.16	98	53.4	748	0.16	2.2	404	11347	3.63	112.4	58.7	822	0.63	20.1	7.730	23.377	5.64		<1	<1
W7B	-6.1	12/9/92	812				3.15	98	56.5	792	0.09	1.3	442	12414	3.30	102.2	59.5	833	0.67	20.6	7.550	22.467	5.44		1	1
W7B	-6.1	1/27/93	748				2.79	86	46.7	655	0.16	2.2	302	8485	2.90	89.8	51.8	726	0.75	20.9	7.812	26.470	5.45		<1	<1
W7B	-6.1	2/24/93	736				2.89	90	50.4	706	0.32	4.5	355	9976	2.89	89.5	52.6	737	0.66	20.8	7.804	25.057	4.88		<1	2
W7B	-6.1	3/17/93	744				2.80	87	52.0	728	0.32	4.5	441	12372	2.85	88.3	55.7	780	0.60	20.2	7.775	21.213	5.09		2	1
W7B	-6.1	4/28/93	734				2.94	91	50.1	702	0.23	3.2	434	12175	2.97	92.0	53.8	753	0.48	19.9	7.736	21.386	4.93		<1	<1
W7B	-6.1	5/26/93	739				2.80	87	49.5	693	0.37	5.2	493	13832	2.87	88.9	55.2	773	0.54	20.2	7.720	21.039	4.95		<1	<1
W7B	-6.1	6/29/93	752				2.66	82	54.6	765	0.12	1.7	475	13349	2.80	86.7	59.1	828	0.58	20.5	7.616	19.668	4.88		<1	<1
W7B	-6.1	9/1/93	752				2.77	86	53.8	754	0.15	2.1	562	15778	2.87	88.9	70.4	986	0.68	21.6	7.490	16.516	5.48		<1	6
W7B	-6.1	10/27/93	744				2.88	89	82.3	1152	0.02	0.3	514	14436	2.96	91.7	87.1	1219	1.09	21.8	7.561	16.879	4.90		221	161
W7B	-6.1	3/1/94	1005				3.20	99	74.6	1045	0.36	5.0	404	11347	3.22	99.7	99.7	1396	0.59	21.4	7.815	19.054	4.28		1	2
W7B	-6.1	6/22/94	722				2.90	90	54.1	757	0.16	2.2	558	15667	2.77	85.8	56.6	793	0.55	21.9	7.625	17.769	4.97		1	2
W7B	-6.1	8/24/94	746				2.81	87	47.1	660	0.08	1.1	389	10914	2.87	88.9	54.9	769	0.60	22.3	7.731	21.547	3.13		<1	<1
W7B	-6.1	11/28/94	938				2.87	89	53.7	752	0.43	6.0	387	10878	2.92	90.4	59.2	829	0.46	22.9	7.740	20.071	3.72		1	<1
W7B	-6.1	1/25/95	817				2.94	91	52.5	735	0.00	0.0	339	9524	2.94	91.1	56.2	787	0.48	22.2	7.835	23.232	2.93		<1	<1
W7B	-6.1	2/15/94	835				3.07	95	61.9	868	0.00	0.0	374	10507	3.08	95.4	72.3	1013	0.58	22.4	7.845	21.411	3.65		<1	<1
W7B	-6.1	3/29/95	815				2.88	89	61.8	866	0.25	3.5	432	12130	2.88	89.2	66.5	932	0.60	21.9	7.857	18.604	4.91		<1	<1
W7B	-6.1	4/26/95	808				2.95	91	82.5	1156	0.11	1.5	461	12956	3.14	97.3	86.3	1209	0.73	22.1	7.825	16.284	5.04		6	11
W7B	-6.1	5/9/95	952				2.96	92	68.9	965	0.20	2.8	392	11007	2.96	91.7	72.7	1019	0.62	22.1	7.887	19.885	4.06		<1	<1
W7B	-6.1	6/28/95	807				3.12	97	71.2	997	0.44	6.2	462	12961	3.18	98.5	74.7	1046	0.58	22.4	7.793	16.661	5.46		<1	<1
W7B	-6.1	7/26/95	947				3.04	94	70.1	981	0.13	1.8	479	13447	3.25	100.7	73.2	1026	0.50	22.8	7.785	15.944	4.97		3	2
W7B	-6.1	8/23/95	900				3.02	94	58.0	812	0.47	6.6	421	11835	3.11	96.3	59.8	837	0.59	22.8	7.741	18.942	4.28		<1	<1
W7B	-6.1	9/12/95	854				3.07	95	56.9	797	0.12	1.7	435	12206	3.10	96.0	59.8	837	0.51	23.3	7.768	18.648	3.95		<1	<1
W7B	-6.1	10/17/95	1036				2.94	91	49.1	688	0.17	2.4	375	10531	2.95	91.4	50.7	711	0.68	23.1	7.812	21.261	3.45		<1	<1
W7B	-6.1	11/7/95	1021				3.04	94	59.3	831	0.41	5.7	434	12181	3.06	94.8	62.8	879	0.70	20.1	7.811	18.369	4.54		1	1
W7B	-6.1	12/6/95	1005				2.89	90	54.6	765	0.35	4.9	423	11891	3.09	95.7	57.1	800	0.60	22.9	7.779	19.435	4.01		1	1
W7B	-6.1	1/30/96	1048				2.88	89	63.4	888	0.07	1.0	395	11097	3.05	94.5	65.5	917	0.57	22.8	7.916	19.571	4.23		15	77
W7B	-6.1	2/27/96	1207				3.06	95	84.2	1180	0.16	2.2	360	10114	3.14	97.3	87.9	1231	0.74	20.8	7.868	20.286	3.98		<1	1
W7B	-6.1	3/13/96	1122				3.33	103	83.1	1164	0.37	5.2	344	9653	3.41	105.6	86.2	1207	0.66	22.6	7.861	20.738	3.74		<1	1
W7B	-6.1	4/2/96	1006				3.78	117	101.7	1424	0.19	2.7	415	11649	3.93	121.7	101.1	1416	0.69	22.5	7.804	18.642	4.44		<1	<1
W7B	-6.1	5/15/96	1136				4.32	134	105.0	1470	0.05	0.7	393	11036	4.35	134.7	107.0	1499	0.62	23.0	7.756	20.735	3.05		<1	<1
W7B	-6.1	6/18/96	1123				3.64	113	75.9	1063	0.12	1.7	433	12149	3.69	114.3	80.1	1121	0.58	23.0	7.756	19.186	6.36		<1	1
W7B	-6.1	7/17/96	1130				4.23	131	108.9	1525	27	373	446	12531	3.69	114.3	113.0	1583	0.71	23.1	7.676	18.528	3.22		<1	1
W7B	-6.1	8/6/96	1146				3.84	119	97.9	1371	0.46	6.4	366	10280	3.87	119.9	103.3	1447	0.64	23.1	7.753	22.145	1.89		<1	1
W7B	-6.1	9/4/96	1133				3.84	119	75.7	1061	0.38	5.3	400	11226	3.86	119.6	78.6	1101	0.57	23.8	7.739	21.550	2.69		<1	1
W7B	-6.1	10/9/96	1227				3.70	115	57.5	806	0.31	4.3	345	9679	3.85	119.2	61.0	855	0.62	23.7	7.782	24.590	2.81		<1	<1
W7B	-6.1	11/6/96	1131				3.48	108	57.1	800	0.27	3.8	348	9763	3.60	111.5	61.3	859	0.59	23.8	7.751	23.119	3.32		<1	<1
W7B	-6.1	12/17/96	1147				3.19	99	63.4	888	0.18	2.5	255	7163	3.27	101.3	67.8	950	0.90	24.2	7.821	25.843	2.24		<1	<1
W7B	-6.1	1/14/97	1144				3.18	98	93.9	1315	0.08	1.1	278	7813	3.23	100.0	98.8	1384	0.78	23.3	7.862	24.544	3.09		<1	<1
W7B	-6.1	2/11/97	1008				2.96	92	98.4	1378	0.10	1.4	214	6010	3.06	94.8	101.6	1423	0.79	22.7	7.902	27.342	3.47		<1	<1
W7B	-6.1	3/11/97	855				3.92	121	134.2	1880	0.17	2.4	381	10696	4.16	128.9	136.3	1908	0.58	22.4	7.837	20.612	3.64		<1	<1
W7B	-6.1	4/23/97	1132				3.75	116	130.3	1825	0.26	3.6	385	10802	3.69	114.3	162.1	2270	0.72	22.9	7.832	21.704	2.85		<1	<1
W7B	-6.1	5/28/97	1029				3.24	100	108.8	1524	0.06	0.8	357	10015	3.85	119.2	118.0	1653	0.70	22.0	7.848	22.582	3.19		<1	<1
W7B	-6.1	6/17/97	1110				3.67	114	88.3	1237	0.22	3.1	344	9661	3.80	117.7	105.4	1476	0.67	21.9	7.829	21.979	4.70		<1	<1

NELHA Water Quality Laboratory

Well 7B Data Table

May 1992 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W7B	-6.1	7/15/97	1105				4.18	129	96.5	1352	0.14	2.0	341	9577	4.33	134.1	104.8	1468	0.61	22.2	7.838	26.629	2.17		<1	<1
W7B	-6.1	8/26/97	1137				4.80	149	100.6	1409	0.23	3.2	316	8881	4.80	148.7	105.1	1472	0.66	23.7	7.883	24.584	0.41		<1	<1
W7B	-6.1	9/23/97	945				4.89	151	80.8	1132	0.40	5.6	337	9470	4.96	153.6	89.0	1247	0.63	23.9	7.884	23.139	1.10		<1	1
W7B	-6.1	10/14/97	1040				4.68	145	66.2	927	0.17	2.4	356	9996	4.68	145.0	78.3	1097	0.65	23.8	7.877	22.428	1.87		<1	<1
W7B	-6.1	11/4/97	909				4.42	137	71.5	1001	0.19	2.7	333	9338	4.57	141.6	81.5	1142	0.54	23.9	7.877	23.683	1.65		<1	<1
W7B	-6.1	12/16/97	1110				4.34	134	74.3	1041	0.10	1.4	380	10667	4.51	139.7	78.8	1104	0.60	23.4	7.893	21.688	3.65		<1	<1
W7B	-6.1	1/5/98	932				4.55	141	73.5	1029	0.02	0.3	277	7793	4.70	145.6	78.4	1098	0.62	22.7	7.890	25.829	1.62		<1	<1
W7B	-6.1	2/3/98	901				4.09	127	67.9	950	0.01	0.1	237	6651	4.32	133.8	72.6	1017	0.60	23.2	7.959	27.470	2.45		<1	<1
W7B	-6.1	3/10/98	929				4.53	140	66.6	932	0.23	3.2	339	9515	4.69	145.3	71.2	997	0.57	22.9	7.752	23.127	3.76		<1	<1
W7B	-6.1	4/14/98	1055				4.39	136	79.3	1111	0.05	0.7	326	9145	4.58	141.9	81.5	1142	0.59	22.9	7.760	23.986	4.39		<1	<1
W7B	-6.1	5/12/98	932				4.15	129	76.6	1073	0.05	0.7	364	10223	4.22	130.7	79.7	1116	0.53	22.8	7.752	22.171	4.48		<1	<1
W7B	-6.1	6/2/98	933				3.96	123	80.7	1131	0.08	1.1	346	9730	4.05	125.4	83.7	1172	0.49	22.9	7.823	22.707	4.20		<1	<1
W7B	-6.1	7/14/98	925				4.06	126	94.3	1321	0.12	1.7	316	8867	4.18	129.5	95.3	1335	0.55	23.2	7.720	24.842	2.95		<1	<1
W7B	-6.1	8/11/98	947				3.98	123	84.7	1186	0.18	2.5	339	9521	4.06	125.8	90.8	1272	0.71	23.2	7.663	24.589	2.70		<1	<1
W7B	-6.1	9/15/98	940				3.91	121	79.8	1118	0.06	0.8	318	8928	3.99	123.6	81.8	1146	0.65	23.4	7.670	25.357	1.80		<1	<1
W7B	-6.1	10/13/98	839				4.07	126	82.0	1149	0.04	0.6	310	8712	4.17	129.2	85.8	1202	0.64	23.6	7.709	25.822	1.29		<1	6
W7B	-6.1	11/4/98	932				4.31	133	89.9	1259	0.09	1.3	386	10835	4.48	138.8	95.7	1340	0.84	23.8	7.713	22.578	2.05		1	3
W7B	-6.1	12/16/98	922				4.70	146	82.7	1158	0.12	1.7	383	10768	4.87	150.8	87.9	1231	0.72	24.0	7.772	21.999	3.12		2	1
W7B	-6.1	1/12/99	953				4.20	130	76.4	1070	0.07	1.0	302	8493	4.36	135.0	78.9	1105	0.79	23.8	7.771	25.346	2.83		<1	<1
W7B	-6.1	2/3/99	945				4.02	125	76.7	1074	0.16	2.2	346	9715	4.17	129.2	83.5	1169	0.69	23.7	7.744	23.220	3.84		<1	<1
W7B	-6.1	3/2/99	942				4.03	125	78.9	1105	0.02	0.3	351	9850	4.23	131.0	80.2	1123	0.71	23.8	7.752	22.694	4.51		<1	<1
W7B	-6.1	4/6/99	929				4.10	127	74.9	1049	0.09	1.3	322	9046	4.17	129.2	77.6	1087	0.67	23.6	7.726	24.888	2.72		<1	<1
W7B	-6.1	5/4/99	938				3.85	119	78.0	1093	0.04	0.6	350	9841	3.95	122.3	82.5	1156	0.57	23.4	7.739	22.700	3.43		<1	<1
W7B	-6.1	6/2/99	928				3.64	113	70.0	980	0.12	1.7	370	10392	3.74	115.8	73.2	1025	0.55	23.0	7.722	23.686	3.35		<1	<1
W7B	-6.1	7/7/99	1006				4.02	125	71.8	1006	0.14	2.0	321	9004	4.12	127.6	73.3	1027	0.64	22.9	7.754	24.188	2.38		<1	<1
W7B	-6.1	8/25/99	930				4.19	130	75.6	1059	0.11	1.5	341	9588	4.33	134.1	81.9	1147	0.66	23.3	7.798	23.105	3.17		<1	<1
W7B	-6.1	9/8/99	941				4.15	129	75.3	1054	0.02	0.3	341	9580	4.33	134.1	84.2	1179	0.65	23.3	7.801	23.637	3.27		<1	<1
W7B	-6.1	10/6/99	947				4.00	124	67.8	950	0.04	0.6	315	8844	4.08	126.4	70.9	993	0.54	23.7	7.775	24.448	2.99		<1	<1
W7B	-6.1	11/3/99	1002				3.62	112	67.8	950	0.15	2.1	315	8850	3.86	119.6	72.0	1008	0.57	23.7	7.801	24.448	3.13		<1	13
W7B	-6.1	12/15/99	1021				3.83	119	69.8	978	0.03	0.4	271	7611	3.93	121.7	72.4	1014	0.66	23.6	7.737	27.126	2.86		<1	6
W7B	-6.1	1/11/00	957				3.93	122	80.9	1133	0.15	2.1	293	8232	3.97	123.0	87.2	1221	0.63	23.5	7.748	24.900	3.35		<1	15
W7B	-6.1	2/14/00	956				4.14	128	81.5	1142	0.03	0.4	280	7850	4.11	127.3	88.2	1235	0.65	23.1	7.792	25.188	2.09		<1	<1
W7B	-6.1	3/22/00	1013				3.93	122	81.4	1140	0.08	1.1	375	10524	3.70	114.6	85.0	1191	0.79	23.3	7.808	21.397	3.76		<1	<1
W7B	-6.1	4/12/00					well plugged - unable to collect																			
W7B	-6.1	5/17/00	947				3.84	119	76.7	1074	0.04	0.6	396	11113	3.82	118.3	88.7	1242	0.65	23.3	7.739	21.054	3.72		<1	<1
W7B	-6.1	6/6/00	1011				3.85	119	77.7	1088	0.02	0.3	407	11428	3.95	122.3	83.6	1171	0.63	23.5	7.707	22.363	3.33		<1	<1
W7B	-6.1	7/31/00	949				3.78	117	78.5	1100	0.23	3.2	417	11703	3.80	117.7	79.5	1114	0.74	23.7	7.687	19.512	4.33		<1	<1
W7B	-6.1	8/30/00	950				3.65	113	76.6	1073	0.05	0.7	430	12077	3.68	114.0	79.1	1108	0.69	24.1	7.564	19.730	3.69		<1	10
W7B	-6.1	9/6/00	932				4.08	126	78.1	1094	0.08	1.1	316	8861	4.21	130.4	81.4	1140	0.60	24.0	7.646	24.804	1.79		<1	<1
W7B	-6.1	10/25/00	1119				4.18	129	83.8	1174	0.15	2.1	340	9560	4.26	131.9	89.1	1248	0.66	24.3	7.641	24.654	2.17		<1	<1
W7B	-6.1	11/14/00	954				3.92	121	100	1400	0.21	2.9	382	10734	4.15	128.5	106	1488	0.80	24.4	7.622	21.812	2.97		1	2
W7B	-6.1	12/19/00	930				4.36	135	122	1709	0.09	1.3	313	8796	4.52	140.0	124	1733	0.71	24.4	7.660	25.164	1.92		<1	<1
W7B	-6.1	1/24/01	917				3.94	122	86.6	1212	0.11	1.5	327	9176	3.94	122.0	88.5	1240	0.61	24.2	7.674	24.632	2.75		<1	<1
W7B	-6.1	2/7/01	957				3.82	118	79.7	1116	0.08	1.1	357	10032	3.84	118.9	83.3	1167	0.60	24.1	7.719	22.900	2.81		<1	<1
W7B	-6.1	3/12/01	923				3.91	121	77.2	1081	0.01	0.1	293	8229	4.05	125.4	79.2	1109	0.59	23.7	7.647	25.534	2.47		<1	<1
W7B	-6.1	4/18/01	911				4.14	128	79.5	1114	0.05	0.7	387	10875	4.26	131.9	81.6	1143	0.50	23.4	7.631	21.183	3.74		<1	<1
W7B	-6.1	5/14/01	1038				5.00	155	78.7	1102	0.13	1.8	296	8313	5.03	155.8	79.2	1109	0.46	23.3	7.632	22.278	3.41		<1	<1
W7B	-6.1	6/13/01	937				4.60	142	76.2	1068	0.06	0.8	351	9864	4.60	142.5	78.3	1097	0.50	23.2	7.639	23.367	3.06		<1	<1
W7B	-6.1	7/24/01	948				4.10	127	75.1	1052	0.07	1.0	346	9704	4.01	124.2	78.8	1103	0.72	23.3	7.629	23.688	3.49		<1	1
W7B	-6.1	8/22/01	948				4.12	128	86.0	1205	0.04	0.6	368	10333	3.92	121.4	89.6	1255	0.97	23.5	7.581	21.975	3.35		<1	1
W7B	-6.1	9/17/01	1030				4.12	128	81.1	1136	0.05	0.7	384	10788	4.12	127.6	83.7	1173	0.83	23.9	7.622	21.911	3.51		<1	2
W7B	-6.1	10/22/01	1018				4.08	126	71.2	998	0.08	1.1	306	8586	4.28	132.6	75.5	1058	0.80	24.3	7.641	21.602	2.04		<1	2
W7B	-6.1	11/5/01	1050				3.86	120	73.5	1029	0.06	0.8	363	10181	3.90	120.8	82.5	1155	0.58	24.3	7.614	23.039	3.27		<1	2
W7B	-6.1	12/12/01	1034				3.76	116	82.3	1153	0.15	2.1	377	10577	3.71	114.9	92.0	1289	0.67	24.1	7.668	21.540	3.64		<1	1
W7B	-6.1	1/7/02	1033				3.20	99	63.2	886	0.21	2.9	245	6889	3.60	111.5	69.0	967	0.76	23.9	7.756	27.481	4.00		<1	1
W7B	-6.1	2/25/02	953				4.24	131	86.8	1216	0.05	0.7	325	9131	4.28	132.6	91.6	1284	0.56	23.6	7.707	24.101	3.02		<1	<1
W7B	-6.1	3/18/02	1018				4.28	133	101	1419	0.25	3.5	375	10532	4.37	135.4	103	1438	0.69	23.1	7.727	21.569	3.30		2	2
W7B	-6.1	4/10/02	1024				4.96	154	115	1609	0.02	0.3	83.6	2348	4.92	152.4	119	1660	0.91	23.3	7.769	23.840	1.43		<1	tntc
W7B	-6.1	5/22/02	1032				6.12	190	104	1456	0.16	2.2	312	8765	6.15	190.5	109	1531	0.82	23.3	7.853	23.995	0.96		<1	1
W7B	-6.1	6/19/02	1117				6.58	204	75.4	1057	0.10	1.4	299	8384	6.64	205.7	79.9	1119	0.67	23.4	7.848	24.648	0.71		<1	<1

NELHA Water Quality Laboratory

Well 7B Data Table

May 1992 - December 2014

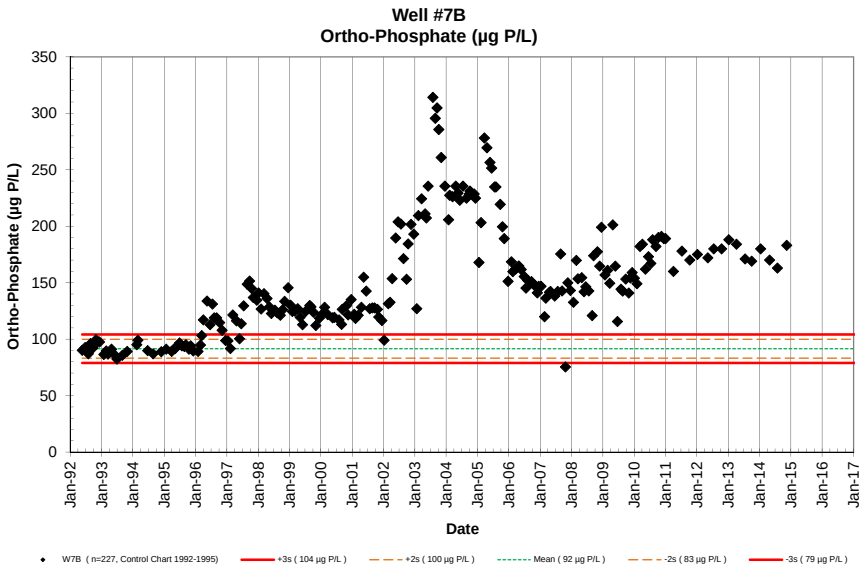
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W7B	-6.1	7/22/02	1100				6.52	202	64.5	903	0.06	0.8	338	9501	6.82	211.2	66.6	933	0.81	23.9	7.813	23.058	1.44		<1	<1
W7B	-6.1	8/21/02	1122				5.53	171	65.5	918	0.16	2.2	386	10847	5.64	174.7	67.0	939	0.60	23.0	7.710	21.886	2.34		<1	<1
W7B	-6.1	9/25/02	1047				4.94	153	73.5	1029	0.22	3.1	434	12189	5.12	158.6	69.6	975	0.62	24.4	7.638	20.161	3.10		<1	1
W7B	-6.1	10/15/02	1045				5.95	184	75.5	1058	0.45	6.3	358	10063	6.13	189.9	70.6	989	0.68	24.3	7.730	23.621	1.40		<1	1
W7B	-6.1	11/17/02	1013				6.51	202	87.2	1221	0.05	0.7	391	10973	6.71	207.8	83.0	1163	1.03	24.6	7.647	22.130	1.47		<1	<1
W7B	-6.1	12/18/02	1037				6.23	193	81.0	1134	0.06	0.8	312	8765	6.38	197.6	73.6	1031	0.72	24.6	7.752	24.753	1.23		<1	<1
W7B	-6.1	1/23/03	1034				4.10	127	61.2	857	<0.02	0.0	193	5421	4.32	133.8	67.8	950	0.86	24.6	7.834	30.322	2.04		<1	<1
W7B	-6.1	2/11/03	1052				6.76	209	104	1459	0.21	2.9	281	7878	6.80	210.6	124	1731	0.84	24.2	7.790	25.636	1.25		<1	<1
W7B	-6.1	3/20/03	1131				7.24	224	172	2406	0.02	0.3	350	9830	7.20	223.0	185	2595	0.95	23.7	7.821	22.310	2.82		<1	3
W7B	-6.1	4/30/03	1008				6.81	211	136	1899	0.26	3.6	389	10931	6.93	214.6	161	2255	1.10	23.5	7.827	20.387	3.14		<1	1
W7B	-6.1	5/14/03	913				6.69	207	112	1567	0.31	4.3	318	8931	6.71	207.8	116	1630	1.08	23.5	7.810	20.551	3.06		<1	15
W7B	-6.1	6/4/03	956				7.60	235	85.5	1198	0.36	5.0	330	9265	7.77	240.7	97.2	1362	1.37	23.7	7.805	23.216	1.54		1	680
W7B	-6.1	7/30/03	941				10.14	314	97.3	1363	5.72	80.1	405	11361	10.54	326.5	120	1681		23.7	7.817	19.712	2.09		<1	TNTC
W7B	-6.1	8/28/03	933				9.54	295	85.3	1195	4.72	66.1	365	10260	9.74	301.7	126	1762		24.2	7.817	21.395	1.44		<1	TNTC
W7B	-6.1	9/16/03	941				9.84	305	58.2	815	3.33	46.6	313	8802	10.2	317.2	91.1	1276		24.5	7.864	24.320	1.13		<1	10
W7B	-6.1	10/8/03	928				9.22	286	65.5	917	0.67	9.4	310	8695	9.48	293.6	80.5	1128		24.2	7.858	24.221	NA		<1	<1
W7B	-6.1	11/5/03	941				8.42	261	66.6	933	0.82	11.5	308	8645	8.68	268.9	71.6	1003		24.2	7.842	24.384			<1	TNTC
W7B	-6.1	11/14/03	1527																	24.3			0.69			
W7B	-6.1	12/17/03	1122				7.60	235	82.8	1160	<0.10	0.0	261	7330	7.91	245.0	87.9	1231		24.9	7.779	26.065	0.28		<1	<1
W7B	-6.1	1/28/04	1015				6.64	206	92.2	1291	0.73	10.2	231	6496	6.78	210.0	94.6	1324	0.77	24.4	7.773	26.919	0.56		<1	<1
W7B	-6.1	2/11/04	928				7.34	227	135	1891	0.27	3.8	261	7339	7.72	239.1	142	1989	0.89	24.2	7.751	25.512	0.43		<1	<1
W7B	-6.1	3/16/04	1035				7.30	226	125	1751	0.17	2.4	251	7052	7.76	240.4	146	2048		27.9	7.813	25.968			<1	<1
W7B	-6.1	3/30/04	931																	25.1			0.71			
W7B	-6.1	4/22/04	1001				7.60	235	150	2095	0.35	4.9	282	7920	7.64	236.6	140	1964		24.0	7.824	24.765	0.59		<1	26
W7B	-6.1	5/18/04	956				7.40	229	128	1794	0.19	2.7	318	8917	7.54	233.5	133	1861		24.3	7.801	22.87	1.12		<1	<1
W7B	-6.1	6/8/04	1033				7.20	223	105	1474	0.14	2.0	288	8083	7.44	230.4	111	1551	NA	24.2	7.745	24.47	0.91		<1	<1
W7B	-6.1	7/15/04	946				7.60	235	97.4	1364	0.15	2.1	309	8687	7.76	240.4	115	1608		24.2	7.738	23.11	0.99		<1	<1
W7B	-6.1	8/25/04	1022				7.26	225	90.1	1263	0.16	2.2	287	8046	7.48	231.7	93.9	1315		24.5	7.702	24.75	0.88		<1	<1
W7B	-6.1	9/27/04	1134				7.38	229	89.2	1249	0.24	3.4	320	8982	7.50	232.3	95.2	1333		24.9	7.681	24.18	0.91		<1	<1
W7B	-6.1	10/4/04	1053				7.46	231	83.8	1173	0.19	2.7	285	8004	7.76	240.4	88.2	1235		24.6	7.691	24.98	0.70		<1	<1
W7B	-6.1	11/23/04	927				7.38	229	78.5	1099	0.13	1.8	290	8136	7.68	237.9	101	1415		24.1	7.692	25.09	0.73		<1	<1
W7B	-6.1	12/8/04	927				7.26	225	78.9	1105	0.13	1.8	298	8378	7.44	230.4	97.4	1364		25.4	7.700	24.93	0.70		<1	<1
W7B	-6.1	1/18/05	950				5.42	168	60.4	846	0.06	0.8	199	5595	5.58	172.8	60.9	853		24.7	7.769	29.005	2.99		<1	<1
W7B	-6.1	2/10/05	920				6.56	203	96.5	1351	0.28	3.9	240	6735	6.84	211.9	124	1742		24.6	7.768	26.655	0.74		<1	<1
W7B	-6.1	3/22/05	945				8.98	278	105	1464	0.12	1.7	249	6999	9.18	284.3	118	1651	1.76	24.9	7.924	26.100	0.49		<1	<1
W7B	-6.1	4/20/05	930				8.70	269	89.4	1252	0.09	1.3	256	7201	9.06	280.6	90.4	1266		25.0	7.962	25.595	0.79		<1	<1
W7B	-6.1	5/25/05	954				8.28	256	92.7	1299	0.24	3.4	291	8176	8.34	258.3	101	1410		24.3	7.943	23.600	2.24		<1	<1
W7B	-6.1	6/14/05	952				8.12	252	81.2	1137	0.16	2.2	266	7465	8.32	257.7	87.6	1226		25.7	7.929	25.198	1.59		<1	<1
W7B	-6.1	7/19/05	941				7.58	235	90.8	1272	0.15	2.1	291	8176	7.94	245.9	94.9	1329	0.62	24.9	7.936	23.665	1.84		<1	<1
W7B	-6.1	8/3/05	1013				7.58	235	87.0	1218	0.13	1.8	294	8260	7.86	243.5	88.4	1238	0.66	25.2	7.978	23.995	2.05		<1	<1
W7B	-6.1	9/22/05	935				7.08	219	67.2	941	0.17	2.4	256	7193	7.32	226.7	75.2	1054	0.49	26.2	7.935	26.326	2.05		<1	<1
W7B	-6.1	10/19/05	948				6.44	199	77.1	1080	0.14	2.0	265	7445	6.68	206.9	82.0	1148		26.4	7.938	26.019	2.39		<1	<1
W7B	-6.1	11/8/05	932				6.10	189	74.5	1043	0.08	1.1	236	6614	6.32	195.8	77.8	1090		26.0	7.944	26.897	1.78		<1	<1
W7B	-6.1	12/22/05	906				4.88	151	55.6	778	0.32	4.5	183	5126	5.04	156.1	57.0	799		25.8	7.782	30.232	2.13		<1	1
W7B	-6.1	1/31/06	931				5.44	168	67.5	945	0.29	4.1	224	6288	5.58	172.8	69.5	973		25.1	7.732	28.208	0.99		<1	<1
W7B	-6.1	2/16/06	931				5.16	160	70.7	990	0.24	3.4	211	5932	5.48	169.7	72.7	1018	0.69	24.8	7.731	28.837	1.18		<1	<1
W7B	-6.1	3/22/06	927				5.24	162	79.1	1108	0.29	4.1	239	6712	5.38	166.6	82.5	1156	0.50	24.0	7.697	27.211	0.82		<1	<1
W7B	-6.1	4/27/06	1004				5.32	165	79.9	1119	0.16	2.2	263	7386	5.61	173.8	73.8	1033	0.53	24.1	7.712	26.195	1.49		<1	<1
W7B	-6.1	5/24/06	1024				5.22	162	74.1	1038	<0.05	0.0	261	7330	5.63	174.4	68.6	960	0.60	24.1	7.696	26.330	1.13		<1	<1
W7B	-6.1	6/28/06	1007				5.02	155	68.6	961	0.30	4.2	258	7246	5.18	160.4	64.9	908	0.48	24.5	7.693	26.699	1.70		<1	<1
W7B	-6.1	7/19/06	934				4.69	145	62.8	880	0.27	3.8	228	6403	4.88	151.2	52.5	735	0.54	25.1	7.684	27.543	1.56		<1	<1
W7B	-6.1	8/9/06	1032				4.91	152	65.8	922	0.18	2.5	268	7527	5.05	156.4	61.9	867	0.49	24.8	7.682	26.584	1.75		<1	<1
W7B	-6.1	9/20/06	1102				4.87	151	61.6	863	0.18	2.5	257	7218	5.16	159.8	57.1	800	0.53	24.6	7.696	27.123	1.20		<1	<1
W7B	-6.1	10/25/06	1012				4.77	148	57.3	803	0.33	4.6	242	6797	4.98	154.2	56.3	788	0.60	25.6	7.658	27.770	1.31		<1	1
W7B	-6.1	11/29/06	1042				4.55	141	57.3	803	0.24	3.4	233	6544	4.78	148.1	52.9	740	0.59	24.6	7.625	28.169	0.93		<1	<1
W7B	-6.1	12/13/06	1032				4.74	147	56.3	789	0.25	3.5	236	6628	4.96	153.6	52.2	731	0.50	25.0	7.642	28.235	0.84		<1	<1
W7B	-6.1	1/10/07	1048				4.74	147	55.4	776	0.23	3.2	228	6403	4.81	149.0	57.3	802	0.52	24.4	7.642	28.472	1.14		<1	<1
W7B	-6.1	2/21/07	1100				3.87	120	50.9	713	0.46	6.4	211	5926	4.21	130.4	56.8	795	0.60	24.4	7.671	27.963	1.87		<1	<1
W7B	-6.1	3/7/07	1054				4.40	136	55.6	779	0.33	4.6	229	6432	4.58	141.9	56.5	791	0.59	25.8	7.761	27.817	1.91		<1	<1
W7B	-6.1	4/19/07	1047				4.57	142	68.0	952	0.25	3.5	257	7218	4.73	146.5	57.8	809	0.45	25.6	7.705	26.363	2.02		<1	<1
W7B	-6.1	5/2/07	1050				4.59	142	62.4	874	0.26	3.6	262	7358	5.01	155.2	59.4	832	0.44	24.0	7.693	26.395	1.79		<1	<1
W7B	-6.1	6/20/07	1050				4.46	138	54.3	761	0.28	3.9	249	6993	4.66	144.3		0		24.7	7.687	27.289	1.47		<1	<1

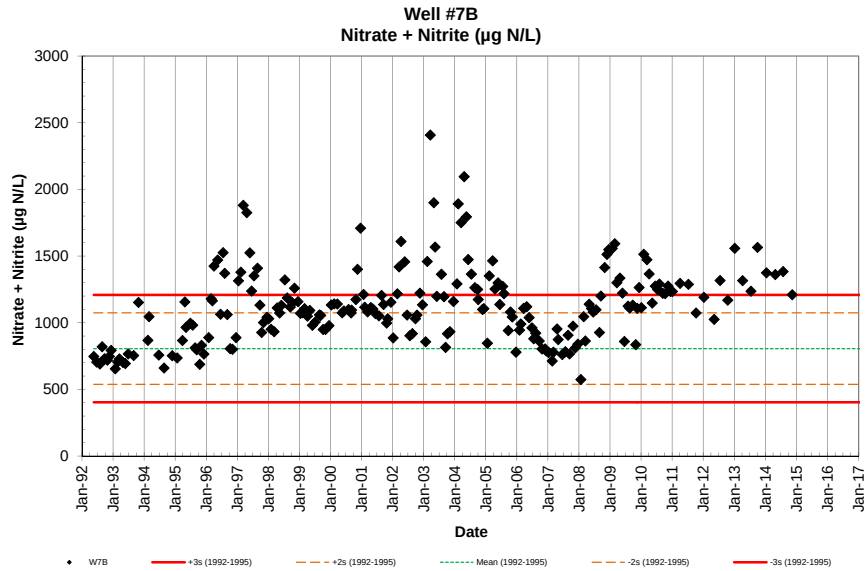
NELHA Water Quality Laboratory

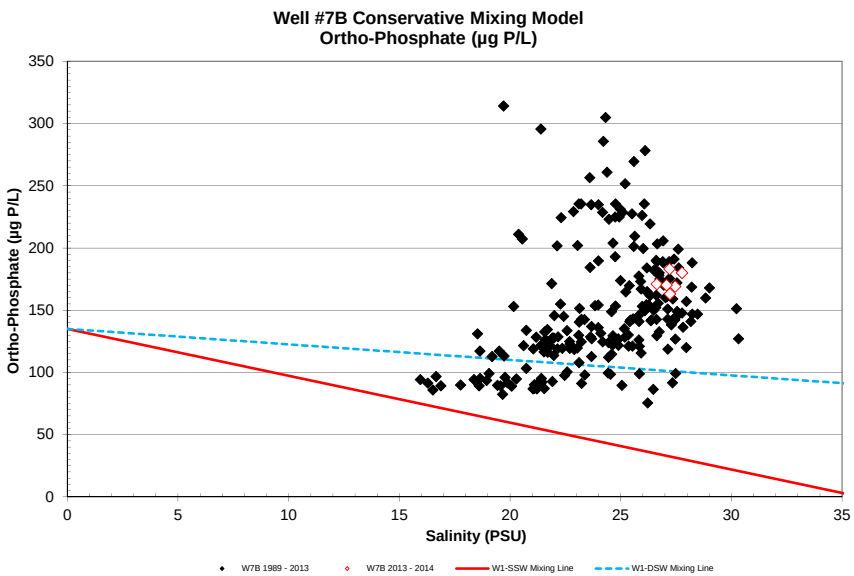
Well 7B Data Table

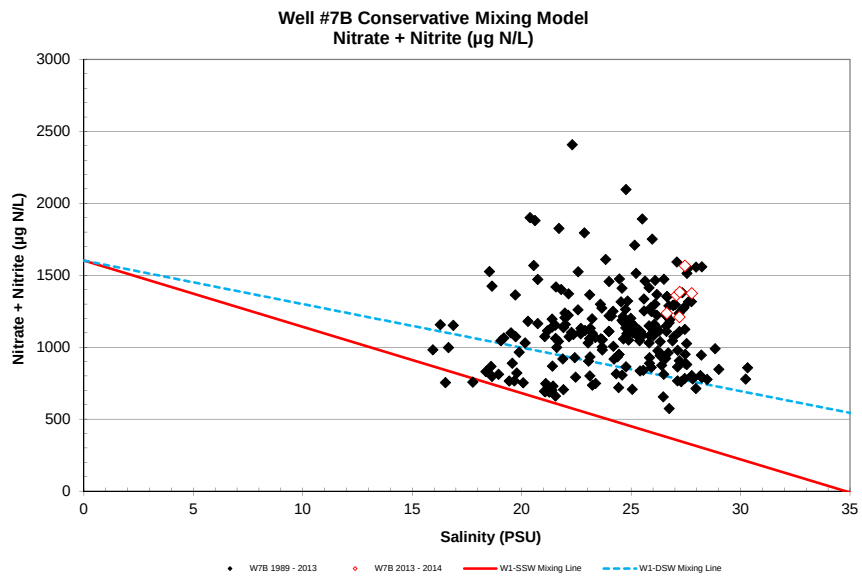
May 1992 - December 2014

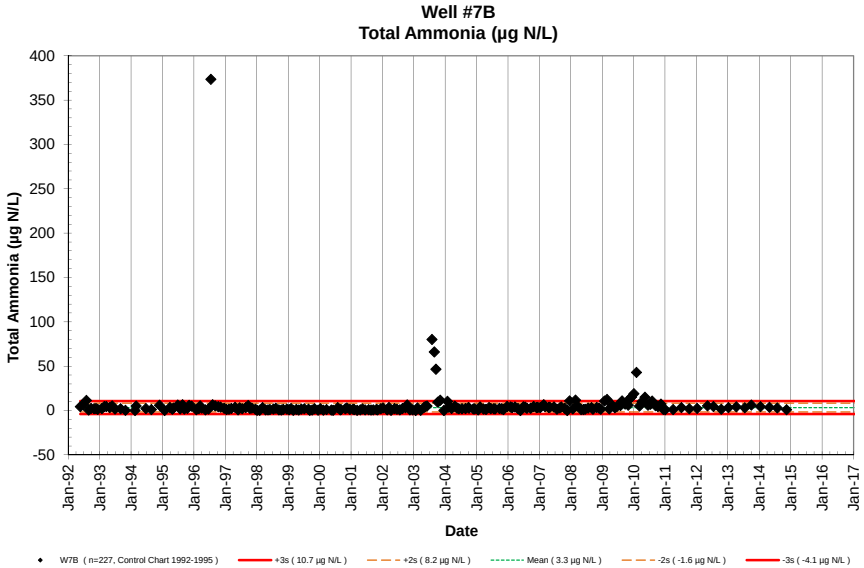
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (ppt)	DO (ppm)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W7B	-6.1	7/25/07	1234		1.8	Flood	4.59	142	55.8	782	0.10	1.4	255	7166	4.57	141.5	55.8	782.1		24.8	7.51	27.45	2.04			
W7B	-6.1	8/27/07	1152		0.8	Flood	5.66	175	64.7	906	0.21	2.9	275	7728	5.35	165.6	67.3	942.3		25.0	7.57	27.20	1.53			
W7B	-6.1	9/13/07	1608		1.3	Flood	4.61	143	54.7	766	0.29	4.0	266	7480	4.92	152.3	61.7	863.9		24.8	7.55	27.12	1.30			
W7B	-6.1	10/23/07	1103		1.25	Flood	2.44	75	69.6	975	0.19	2.6	112	3146	2.47	76.5	65.7	920.1		24.5	7.54	26.22	1.56			
W7B	-6.1	11/20/07	1141		1.4	Flood	4.84	150	58.0	812	0.00	0.1	265	7443	4.48	138.7	64.0	896.2		25.2	7.57	26.49	1.68			
W7B	-6.1	12/19/07	1132		1	High	4.62	143	59.9	839	0.78	10.9	252	7079						24.1	7.56	25.56	1.89			
W7B	-6.1	1/25/08	826		1.4	Ebb	4.28	133	40.9	573	0.14	1.9	228	6400						23.4	7.50	26.74	1.21			
W7B	-6.1	2/26/08	1017		0.3	Ebb	5.48	170	74.6	1045	0.84	11.8	273	7665						23.2	7.53	25.39	1.61			
W7B	-6.1	3/17/08	1224		0.6	Flood	4.95	153	61.6	864	0.39	5.4	291	8169						23.3	7.64	24.77	3.32			
W7B	-6.1	4/30/08	1143		0.9	Flood	4.98	154	81.3	1139	0.09	1.2	240	6741						23.9	7.47	26.16	1.78			
W7B	-6.1	5/27/08	1129		0.8	High	4.58	142	79.0	1106	0.09	1.2	290	8140						22.7	7.59	25.44	1.90			
W7B	-6.1	6/16/08	1157		1	Flood	4.73	146	77.1	1080	0.11	1.5	264	7404						23.4	7.66	25.85	2.15			
W7B	-6.1	7/21/08	1126		0.3	Low	4.61	143	78.3	1097	0.20	2.8	311	8722						24.4	7.60	23.23	4.51	0.12		
W7B	-6.1	8/30/08	1424		1.9	Flood	3.90	121	66.2	927	0.24	3.3	221	6209						22.7	7.58	25.84	1.43	0.32		
W7B	-6.1	9/15/08	1145		0.4	Flood	5.61	174	85.7	1200	0.10	1.4	282	7929						26.3	7.58	24.99	2.27			
W7B	-6.1	10/30/08	1057		0.5	Low	5.73	177	100.9	1413	0.24	3.4	280	7877						23.9	7.37	25.82	1.22	0.09		
W7B	-6.1	11/25/08	1030		0.5	Low	5.32	165	108.0	1512	0.19	2.7	294	8244						23.3	7.65	25.23	1.73	0.15		
W7B	-6.1	12/16/08	1023		1.3	Ebb	6.42	199	110.5	1547	0.11	1.5	225	6315						23.6	7.65	27.60	1.58			
W7B	-6.1	1/26/09	1401		0.5	Flood	5.07	157	111.1	1556	0.76	10.7	231	6499						24.1	7.73	27.97	2.39	0.22		
W7B	-6.1	2/26/09	1040		0.1	Low	5.19	161	113.7	1592	0.89	12.4	262	7359						23.8	7.55	27.09	2.51	0.27		
W7B	-6.1	3/23/09	1004		0.2	Flood	4.83	150	92.7	1299	0.13	1.8	267	7486						23.3	7.44	26.09	1.88	0.54		
W7B	-6.1	4/27/09	1010		-0.2	Ebb	6.50	201	95.3	1335	0.42	5.9	242	6811						24.0	7.62	25.59	1.89	0.16		
W7B	-6.1	5/27/09	1352		0.5	Flood	5.32	165	87.3	1222	0.22	3.1	368	10344						24.0	7.72	26.18	3.35	0.14		
W7B	-6.1	6/19/09	1014		0.9	Flood	3.73	116	61.3	859	0.31	4.3	211	5912						24.8	7.71	25.92	1.88	0.10		
W7B	-6.1	7/31/09	950		1.5	Flood	4.66	144	80.2	1124	0.40	5.6	180	5047						23.9	7.62	27.46	2.28	0.21		
W7B	-6.1	8/20/09	1103		0.3	Flood	4.60	143	79.2	1110	0.78	10.9	245	6880						26.4	7.62	26.62	1.31	0.37		
W7B	-6.1	9/24/09	1003		1.7	Ebb	4.94	153	80.8	1132	0.51	7.2	232	6503						24.9	8.27	25.97	1.79	0.12		
W7B	-6.1	10/30/09	1117		0.7	Flood	4.55	141	59.6	835	0.42	5.9	104	2916						26.2	7.55	25.41	0.32	0.12		
W7B	-6.1	11/17/09	1103		0.4	Low	4.98	154	79.1	1108	0.96	13.4	292	8192						23.8	7.60	23.99	2.70	0.10		
W7B	-6.1	12/8/09	1530		0.3	Ebb	5.13	159	90.2	1263	1.08	15.1	256	7200						24.9	7.78	27.35	2.12	0.10		
W7B	-6.1	1/4/10	1530		-0.1	Low	4.97	154	79.4	1112	1.36	19.0	271	7623						23.5	7.57	26.28	3.50	0.07		
W7B	-6.1	2/2/10	1550		-0.2	Low	4.81	149	108.0	1513	3.07	43.0	226	6354						24.9	7.67	27.55	2.22	0.43		
W7B	-6.1	3/10/10	1419		0.7	High	5.88	182	105.1	1472	0.36	5.0	271	7610						24.4	7.68	26.50	2.88	0.22		
W7B	-6.1	4/7/10	1210		0.7	High	5.94	184	97.5	1366	0.71	10.0	276	7741						24.0	7.71	26.18	4.31	0.93		
W7B	-6.1	5/12/10	1330		1.5	Flood	5.23	162	81.9	1147	1.07	15.0	307	8609						23.8	7.66	26.61	3.40	0.11		
W7B	-6.1	6/16/10	1145		0.3	Low	5.59	173	91.0	1274	0.43	6.0	321	9007						24.2	7.67	25.90	2.90	0.24		
W7B	-6.1	7/14/10	929		0.5	Ebb	5.39	167	89.1	1248	0.50	7.0	312	8776						24.1	7.65	25.92	7.12	0.17		
W7B	-6.1	8/4/10	1008		1.6	Flood	6.07	188	92.1	1290	0.76	10.6	274	7690						24.0	7.71	26.93	2.68	0.18		
W7B	-6.1	9/13/10	1542		0.7	Low	5.88	182	87.1	1220	0.39	5.4	302	8472						23.6	7.64	26.62	1.89	0.21		
W7B	-6.1	10/11/10	1053		1.4	Ebb	6.13	190	87.0	1218	0.33	4.6	292	8208						24.0	7.74	26.60	1.53	0.18		
W7B	-6.1	11/15/10	1211		1.3	High	6.17	191	91.0	1274	0.52	7.3	273	7657						24.3	7.68	27.41	1.68	0.25		
W7B	-6.1	12/13/10	948		1.3	High	6.10	189	88.2	1235	0.09	1.3	284	7967						22.7	7.62	27.19	1.31	0.16		
W7B	-6.1	1/3/11	1404		0.5	Flood	6.10	189	88.1	1234	0.07	1.0	275	7726						23.7	7.62	26.64	1.67	0.16		
W7B	-6.1	4/4/11	1450		1.1	Flood	5.17	160	92.5	1295	0.09	1.2	216	6064						22.7	7.63	27.02	1.93	0.19		
W7B	-6.1	7/11/11	1405		2.4	High	5.75	178	91.9	1287	0.24	3.3	266	7484						26.4	7.61	26.73	1.54	0.12		
W7B	-6.1	10/10/11	1301		1.1	Flood	5.49	170	76.6	1073	0.14	2.0	272	7634						24.5	7.59	26.95	1.73	0.12		
W7B	-6.1	1/9/12	1331		0.2	Flood	5.65	175	85.0	1190	0.16	2.3	262	7351						24.8	7.63	26.77	2.41	0.17		
W7B	-6.1	5/8/12	1426		0.8	Flood	5.55	172	73.2	1025	0.37	5.2	276	7742						23.9	7.60	27.54	3.60	0.26		
W7B	-6.1	7/17/12	1333		1.9	Flood	5.81	180	94.0	1316	0.32	4.5	251	7056						23.8	7.57	27.76	1.79	0.18		
W7B	-6.1	10/15/12	1134		0.2	Flood	5.81	180	83.5	1169	0.11	1.5	279	7848						23.8	7.55	26.74	1.57	0.11		
W7B	-6.1	1/7/13	1233		0.8	High	6.07	188	111.2	1558	0.23	3.2	290	8143						23.6	7.58	28.23	4.62	0.14		
W7B	-6.1	4/8/13	1209		0.5	Flood	5.94	184	93.9	1315	0.29	4.1	253	7096						22.9	7.64	27.62	2.80	0.18		
W7B	-6.1	7/16/13	1426		1.2	Ebb	5.52	171	88.2	1236	0.22	3.1	276	7738						23.8	7.62	26.63	4.93	0.28		
W7B	-6.1	10/1/13	1552		1.0	Ebb	5.46	169	111.7	1565	0.44	6.2	264	7407						23.8	7.61	27.46	4.44	0.14		
W7B	-6.1	1/14/14	1450		0.7	High	5.81	180	98.1	1374	0.31	4.3	244	6853						24.1	7.67	27.77	6.05	0.38		
W7B	-6.1	4/28/14	1728		0.6	High	5.49	170	97.2	1361	0.26	3.6	250	7020						22.6	7.70	27.07	2.96	0.03		
W7B	-6.1	7/28/14	1448		0.5	Flood	5.26	163	98.7	1383	0.21	3.0	249	7004						24.2	7.57	27.22	1.98	0.18		
W7B	-6.1	11/13/14	1138		0.4	Flood	5.91	183	86.3	1209	0.07	1.0	244	6845						25.1	7.61	27.21	3.10	0.37		
W7B	-6.1	1/1/15																								
W7B	-6.1	4/1/15																								

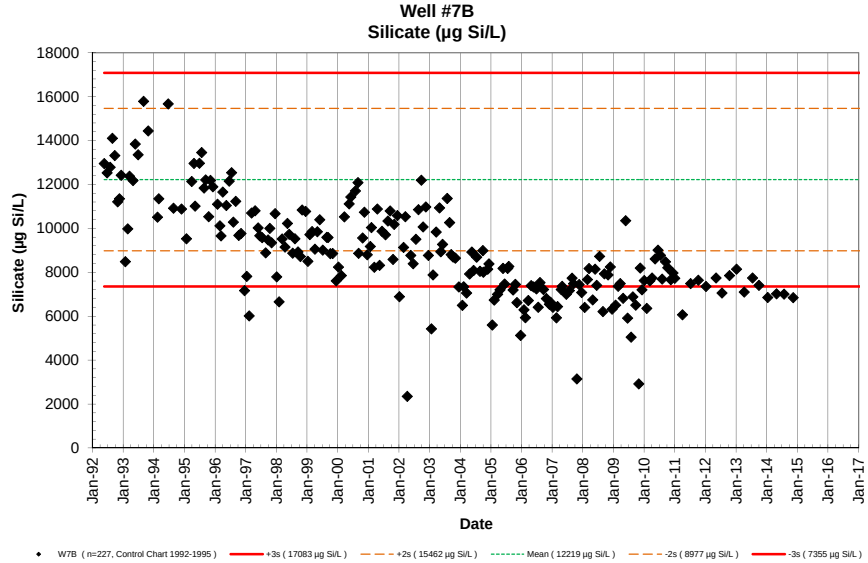

Well #7B
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W7B (n=227, Control Chart 1992-1995)
+3s (104 µg P/L)
+2s (100 µg P/L)
Mean (92 µg P/L)
-2s (83 µg P/L)
-3s (79 µg P/L)

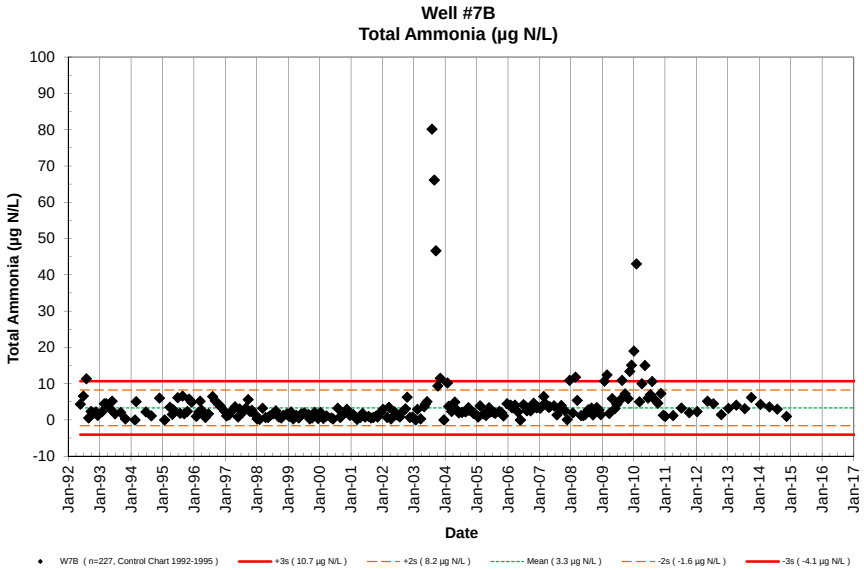

Well #7B
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W7B
+3s (1992-1995)
+2s (1992-1995)
Mean (1992-1995)
-2s (1992-1995)
-3s (1992-1995)

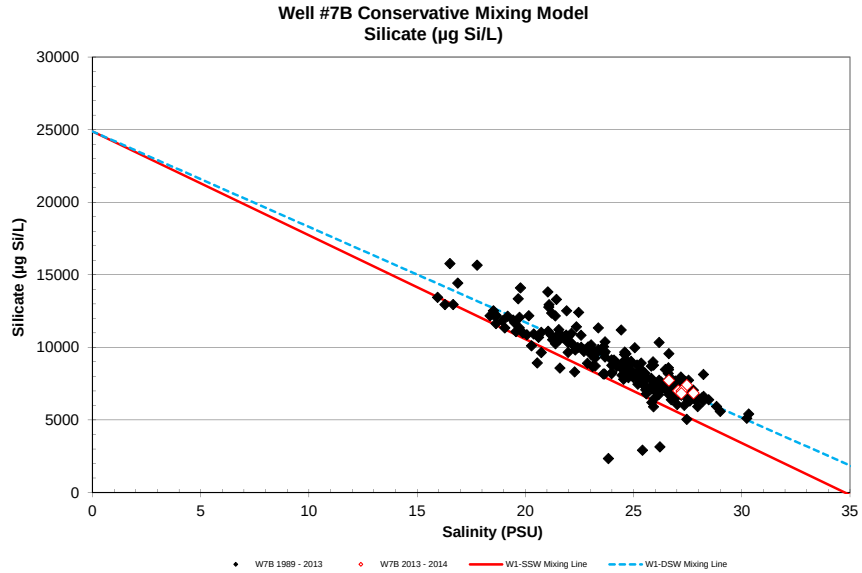

Well #7B Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W7B 1989 - 2013
W7B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

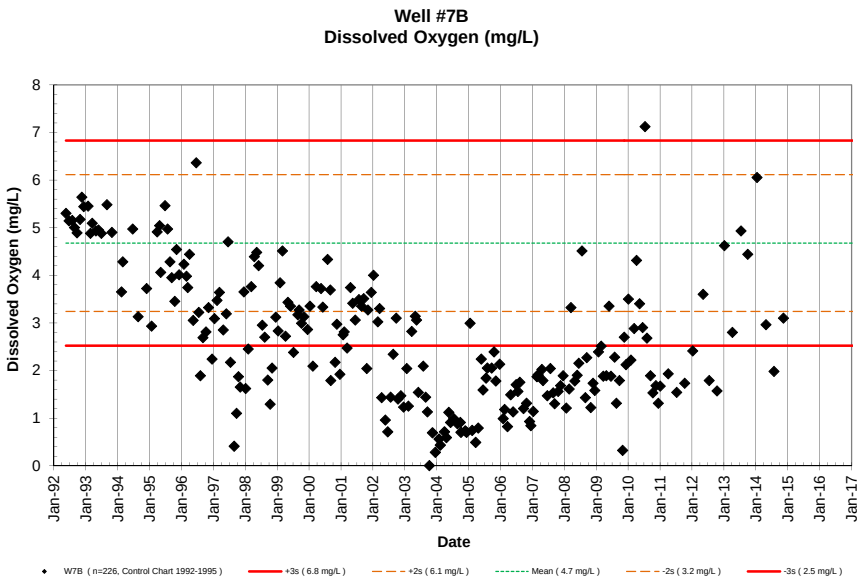

Well #7B Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W7B 1989 - 2013
W7B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

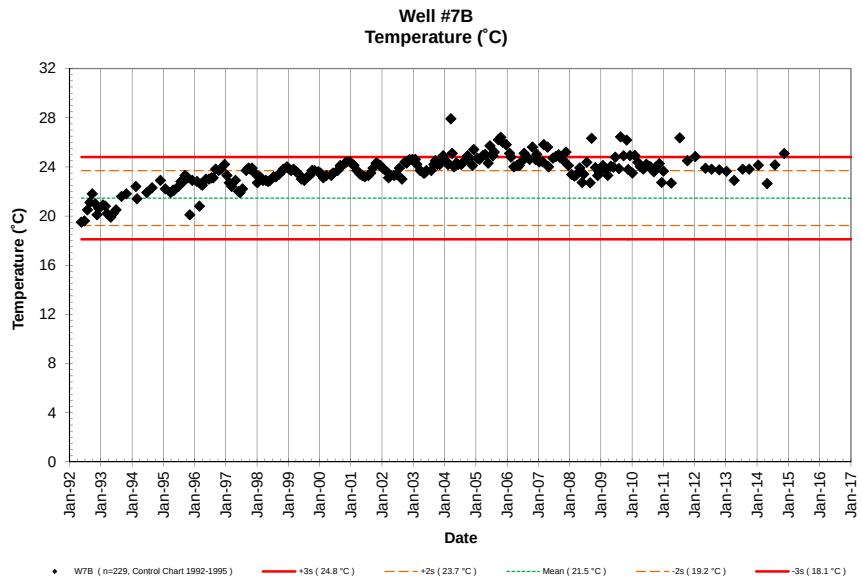

Well #7B
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W7B (n=227, Control Chart 1992-1995)
+3s (10.7 µg N/L)
+2s (8.2 µg N/L)
Mean (3.3 µg N/L)
-2s (-1.6 µg N/L)
-3s (-4.1 µg N/L)

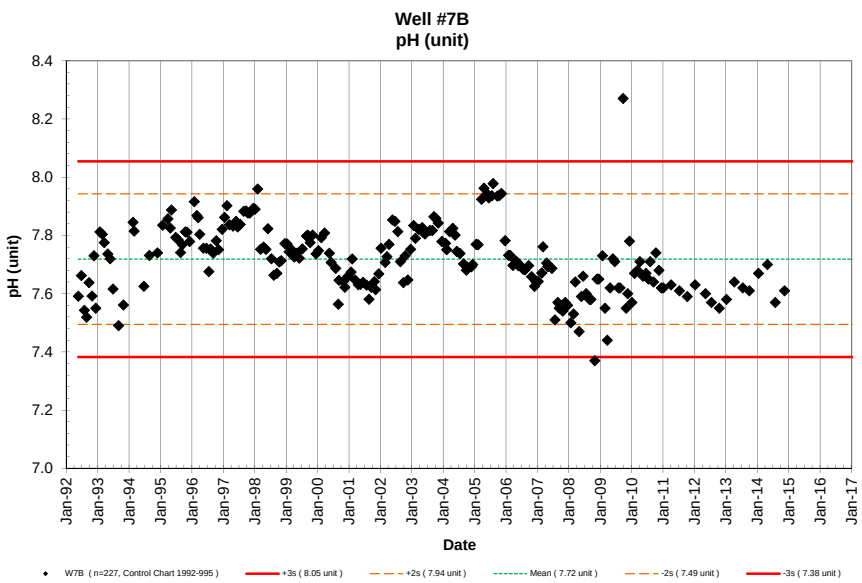

Well #7B
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W7B (n=227, Control Chart 1992-1995)
+3s (17083 µg Si/L)
+2s (15462 µg Si/L)
Mean (12219 µg Si/L)
-2s (8977 µg Si/L)
-3s (7355 µg Si/L)

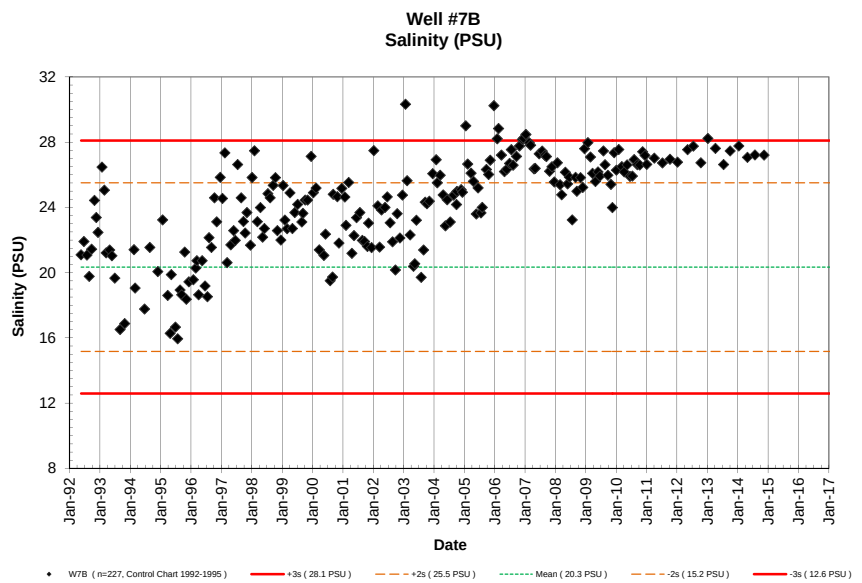

Well #7B
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W7B (n=227, Control Chart 1992-1995)
+3s (10.7 µg N/L)
+2s (8.2 µg N/L)
Mean (3.3 µg N/L)
-2s (-1.6 µg N/L)
-3s (-4.1 µg N/L)

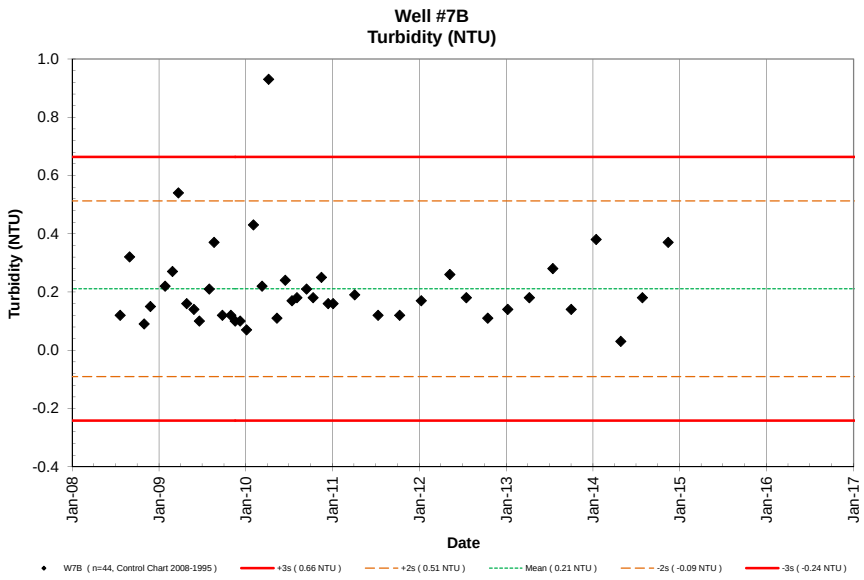

Well #7B Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W7B 1989 - 2013
W7B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

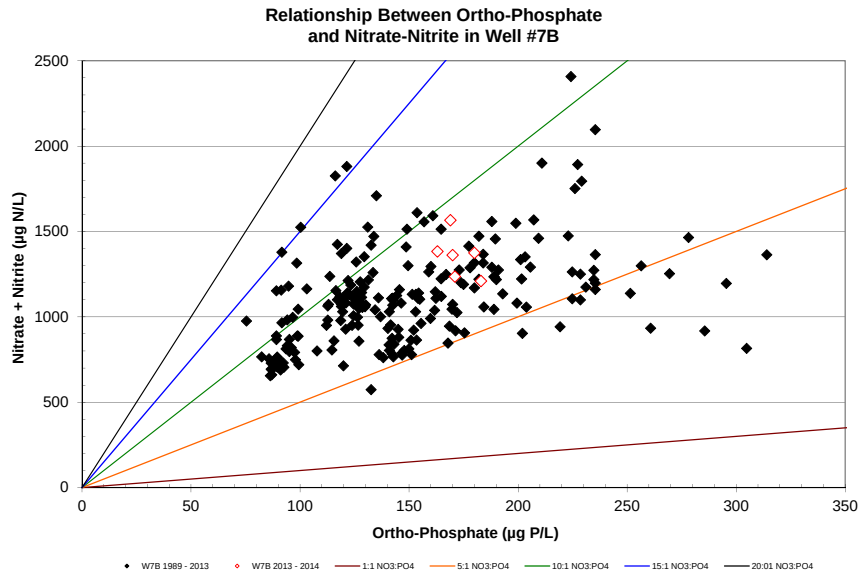

Well #7B
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W7B (n=226, Control Chart 1992-1995)
+3s (6.8 mg/L)
+2s (6.1 mg/L)
Mean (4.7 mg/L)
-2s (3.2 mg/L)
-3s (2.5 mg/L)


Well #7B
Temperature (˚C)
Temperature (˚C)
Date
W7B (n=229, Control Chart 1992-1995)
+3s (24.8 °C)
+2s (23.7 °C)
Mean (21.5 °C)
-2s (19.2 °C)
-3s (18.1 °C)


Well #7B
pH (unit)
pH (unit)
Date
W7B (n=227, Control Chart 1992-995)
+3s (8.05 unit)
+2s (7.94 unit)
Mean (7.72 unit)
-2s (7.49 unit)
-3s (7.38 unit)


Well #7B
Salinity (PSU)
Salinity (PSU)
Date
W7B (n=227, Control Chart 1992-1995)
+3s (28.1 PSU)
+2s (25.5 PSU)
Mean (20.3 PSU)
-2s (15.2 PSU)
-3s (12.6 PSU)


Well #7B
Turbidity (NTU)
Turbidity (NTU)
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W7B (n=44, Control Chart 2008-1995)
+3s (0.66 NTU)
+2s (0.51 NTU)
Mean (0.21 NTU)
-2s (-0.09 NTU)
-3s (-0.24 NTU)


Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #7B
Nitrate + Nitrite (µg N/L)
2500
2000
1500
1000
500
0
0
50
100
150
200
250
300
350
Ortho-Phosphate (µg P/L)
W7B 1989 - 2013
W7B 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

NELHA Water Quality Laboratory

Well 8 Data Table

May 1992 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8	-18.9	5/20/92	957				5.71	177	54.2	759	0.18	2.5	195	5477	5.84	180.9	63.1	884	0.69	14.0	7.395	30.048	6.38		<1	<1
W8	-18.9	6/24/92	938				5.13	159	51.0	714	0.72	10.1	197	5533	5.22	161.7	53.6	751	1.18	14.7	7.440	30.278	6.03		<1	<1
W8	-18.9	7/30/92	858				4.81	149	51.3	718	1.17	16.4	187	5252	5.09	157.7	53.8	754	0.81	14.0	7.535	29.812	7.04		<1	<1
W8	-18.9	8/31/92	916																0.77	15.4	7.623	30.317	7.36		<1	<1
W8	-18.9	9/23/92	946				4.33	134	44.1	617	0.33	4.6	203	5701	4.41	136.6	52.4	734	0.80	14.7	7.652	29.924	7.09		<1	<1
W8	-18.9	10/28/92	1010				4.15	129	48.6	681	0.29	4.1	211	5926	4.27	132.3	52.5	735	0.67	15.4	7.647	29.595	6.78		<1	<1
W8	-18.9	11/18/92	1039				4.13	128	55.5	777	0.23	3.2	207	5814	4.47	138.5	61.5	861	0.69	15.0	7.617	29.284	6.28		<1	<1
W8	-18.9	12/9/92	941				3.84	119	59.2	829	0.11	1.5	207	5814	4.11	127.3	62.0	869	0.86	14.0	7.615	28.951	6.57		<1	<1
W8	-18.9	1/27/93	925				3.95	122	58.3	816	0.27	3.8	208	5836	4.05	125.4	63.5	890	0.66	14.1	7.588	29.261	6.60		<1	<1
W8	-18.9	2/24/93	909				4.15	129	63.4	888	0.09	1.3	217	6106	4.17	129.2	65.3	915	0.75	13.9	7.584	29.252	6.71		<1	<1
W8	-18.9	3/17/93	933				4.06	126	64.6	905	0.40	5.6	212	5960	4.13	127.9	68.9	965	0.84	13.8	7.561	29.090	6.71		<1	<1
W8	-18.9	4/28/93	903				4.20	130	60.9	854	0.32	4.5	205	5752	4.25	131.6	56.6	793	0.61	13.7	7.562	29.099	6.84		<1	<1
W8	-18.9	5/26/93	905				4.18	129	59.1	828	0.37	5.2	245	6881	4.30	133.2	65.7	921	0.77	13.4	7.555	29.201	6.92		<1	<1
W8	-18.9	6/29/93	918				4.22	131	58.3	817	0.17	2.4	203	5701	4.30	133.2	63.2	885	0.54	13.7	7.542	29.218	6.33		<1	<1
W8	-18.9	9/1/93	920				5.02	155	47.5	666	0.22	3.1	240	6741	5.20	161.1	57.6	807	0.97	15.2	7.517	29.111	3.74		<1	<1
W8	-18.9	10/27/93	915				5.31	164	46.8	656	0.13	1.8	224	6291	5.39	166.9	50.5	707	0.74	16.1	7.540	29.172	3.53		<1	<1
W8	-18.9	3/1/94	1128				5.96	185	57.7	808	0.27	3.8	199	5589	5.96	184.6	60.2	843	0.77	17.6	7.551	29.583	1.46		<1	<1
W8	-18.9	6/22/94	853				5.70	177	40.1	562	0.19	2.7	195	5471	5.75	178.1	44.7	626	0.91	18.1	7.548	30.096	0.41		<1	<1
W8	-18.9	8/24/94	935				5.71	177	31.2	437	0.04	0.6	190	5326	5.81	180.0	39.2	550	0.83	18.3	7.558	30.297	0.15		<1	<1
W8	-18.9	11/28/94	1115				6.07	188	8.7	121	0.57	8.0	200	5619	6.17	191.1	13.2	184	0.86	19.7	7.530	30.232	0.14		<1	<1
W8	-18.9	1/25/95	946				6.16	191	10.0	140	0.00	0.0	188	5277	6.32	195.8	13.5	189	0.89	19.6	7.590	30.304	0.10		<1	<1
W8	-18.9	2/15/94	959				6.14	190	12.9	181	0.00	0.0	193	5429	6.25	193.6		0	0.92	19.5	7.589	30.310	0.09		<1	<1
W8	-18.9	3/29/95	945				6.12	190	16.8	235	0.27	3.8	199	5600	6.21	192.3	18.9	265	1.07	19.7	7.574	30.288	0.18		<1	<1
W8	-18.9	4/26/95	936				5.99	186	21.8	305	0.17	2.4	190	5333	6.30	195.1	24.6	345	0.86	19.6	7.586	30.340	0.15		<1	<1
W8	-18.9	5/9/95	1115				5.20	161	20.0	281	0.31	4.3	207	5814	6.34	196.4	22.1	310	0.76	20.0	7.573	30.373	0.20		<1	<1
W8	-18.9	6/28/95	932				6.22	193	28.6	401	0.48	6.7	200	5611	6.31	195.4	31.4	440	0.80	20.0	7.551	30.438	0.10		<1	<1
W8	-18.9	7/26/95	1114				6.45	200	30.3	424	0.39	5.5	201	5631	6.49	201.0	33.2	466	0.92	20.1	7.606	30.478	0.10		<1	<1
W8	-18.9	8/23/95	1030				5.95	184	33.0	462	0.53	7.4	188	5269	6.11	189.2	35.6	498	0.77	19.8	7.591	30.482	0.81		<1	<1
W8	-18.9	9/12/95	1016				6.10	189	32.4	454	0.19	2.7	193	5421	6.26	193.9	35.4	495	0.72	19.8	7.639	30.482	0.32		<1	<1
W8	-18.9	10/17/95	1203				6.04	187	34.2	479	0.16	2.2	193	5426	6.10	188.9	36.4	510	0.92	19.9	7.642	30.541	0.25		<1	<1
W8	-18.9	11/7/95	1114				5.79	179	33.0	463	0.39	5.5	188	5274	5.90	182.7	35.6	499	1.07	20.0	7.692	30.658	0.47		<1	<1
W8	-18.9	12/6/95	1128				5.46	169	32.5	455	0.40	5.6	182	5098	5.60	173.5	34.6	485	0.78	20.2	7.718	30.678	0.70		<1	<1
W8	-18.9	1/30/96	912				6.08	188	36.8	515	0.51	7.1	197	5519	6.19	191.7	41.1	576	0.78	20.0	7.700	30.448	0.32		<1	<1
W8	-18.9	2/27/96	1125				6.03	187	39.9	558	0.25	3.5	188	5286	6.23	193.0	42.2	592	0.69	20.5	7.657	30.394	0.41		<1	<1
W8	-18.9	3/13/96	1241				6.19	192	41.8	586	0.48	6.7	186	5217	6.47	200.4	45.1	631	0.79	20.6	7.650	30.317	0.46		<1	<1
W8	-18.9	4/2/96	1133				6.32	196	44.4	622	0.13	1.8	205	5745	6.61	204.7	51.3	719	0.95	20.6	7.630	31.193	0.76		<1	<1
W8	-18.9	5/15/96	1119				6.30	195	43.7	613	0.40	5.6	199	5601	6.52	201.9	46.6	653	0.59	20.5	7.612	30.161	1.12		<1	<1
W8	-18.9	6/18/96	1054				6.10	189	42.9	601	0.14	2.0	191	5377	6.46	200.1	50.7	710	0.64	20.5	7.635	30.263	1.22		<1	<1
W8	-18.9	7/17/96	1114				6.79	210	48.5	679	0.19	2.7	186	5234	7.04	218.1	51.5	721	0.72	20.3	7.630	29.881	1.39		<1	<1
W8	-18.9	8/6/96	1128				6.96	216	59.2	829	0.46	6.4	189	5295	7.19	222.7	63.0	882	0.66	23.2	7.610	29.594	2.65		<1	<1
W8	-18.9	9/4/96	1116				6.40	198	54.8	767	0.57	8.0	194	5441	6.50	201.3	57.9	811	0.77	21.1	7.648	30.127	3.42		<1	<1
W8	-18.9	10/9/96	1212				6.13	190	61.5	862	0.44	6.2	205	5757	6.38	197.6	65.2	914	0.79	21.1	7.638	30.205	3.03		<1	<1
W8	-18.9	11/6/96	1115				6.16	191	60.3	845	0.18	2.5	185	5201	6.53	202.3	66.0	925	0.79	21.0	7.611	30.158	4.40		<1	<1
W8	-18.9	12/17/96	1107				6.00	186	50.5	708	0.20	2.8	181	5090	6.09	188.6	53.3	746	0.83	20.8	7.644	30.293	5.12		<1	<1
W8	-18.9	1/14/97	1107				5.66	175	53.7	752	0.16	2.2	190	5331	5.67	175.6	56.3	789	0.78	21.0	7.668	30.202	5.21		<1	<1
W8	-18.9	2/11/97	952				5.40	167	70.7	990	0.19	2.7	192	5378	5.5*	0.0	72.3	1012	0.79	21.0	7.675	30.008	4.95		<1	<1
W8	-18.9	3/11/97	1016				5.31	164	103.3	1447	0.20	2.8	260	7288	5.52	171.0	106.1	1486	0.91	20.7	7.720	29.976	4.83		<1	<1
W8	-18.9	4/23/97	1115				5.51	171	152.6	2137	0.37	5.2	251	7052	5.54	171.6	179.9	2520	0.75	20.5	7.738	30.053	4.07		<1	<1
W8	-18.9	5/28/97	1008				5.22	162	240.7	3371	0.02	0.3	177	4978	5.46	169.1	232.8	3260	0.97	20.0	7.776	30.143	3.08		<1	<1
W8	-18.9	6/17/97	1050				5.69	176	187.0	2619	0.23	3.2	180	5055	5.73	177.5	209.1	2929	1.41	20.6	7.808	30.287	3.08		<1	<1

NELHA Water Quality Laboratory

Well 8 Data Table

May 1992 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8	-18.9	7/15/97	1044				6.58	204	120.0	1681	0.12	1.7	174	4873	6.72	208.1	138.3	1937	0.68	21.3	7.876	30.717	3.46		<1	<1
W8	-18.9	8/26/97	1111				5.86	182	58.7	822	0.28	3.9	201	5656	5.93	183.7	59.3	831	0.73	22.8	7.948	31.132	4.44		<1	<1
W8	-18.9	9/23/97	927				4.02	125	58.6	821	0.33	4.6	159	4467	4.12	127.6	67.6	947	0.71	21.5	8.023	30.737	4.13		<1	<1
W8	-18.9	10/14/97	1021				3.55	110	46.9	657	0.20	2.8	153	4289	3.63	112.4	55.7	780	0.71	21.3	8.022	30.697	3.98		<1	<1
W8	-18.9	11/4/97	850				3.32	103	50.3	705	0.11	1.5	148	4154	3.55	110.0	56.2	788	0.71	21.1	8.023	30.789	3.91		<1	<1
W8	-18.9	12/16/97	1051				3.45	107	56.6	793	0.09	1.3	152	4280	3.64	112.7	60.4	846	0.86	21.5	7.960	31.013	3.65		<1	<1
W8	-18.9	1/5/98	912				3.64	113	53.6	750	0.02	0.3	138	3870	3.91	121.1	57.9	811	0.88	21.6	7.961	31.095	3.79		<1	<1
W8	-18.9	2/3/98	751				4.05	125	61.0	854	0.04	0.6	150	4207	4.38	135.7	66.3	929	0.79	21.3	7.961	31.044	3.76		<1	<1
W8	-18.9	3/10/98	908				4.33	134	85.3	1195	0.26	3.6	146	4103	4.48	138.8	89.3	1251	0.82	21.4	7.825	30.886	2.78		<1	<1
W8	-18.9	4/14/98	1033				3.98	123	92.0	1289	0.03	0.4	143	4008	4.17	129.2	93.8	1314	0.87	21.5	7.833	30.805	2.49		<1	<1
W8	-18.9	5/12/98	910				3.81	118	98.8	1384	0.08	1.1	143	4011	3.93	121.7	100.1	1402	0.81	21.5	7.824	30.868	2.14		<1	<1
W8	-18.9	6/2/98	912				3.75	116	99.3	1391	0.10	1.4	144	4046	3.84	118.9	104.0	1457	0.80	21.8	7.807	30.939	2.06		<1	<1
W8	-18.9	7/14/98	904				3.89	120	90.3	1265	0.16	2.2	147	4120	4.11	127.3	94.3	1321	0.82	22.2	7.721	31.035	2.05		<1	<1
W8	-18.9	8/11/98	928				3.86	120	78.2	1096	0.07	1.0	151	4230	4.05	125.4	87.7	1228	0.93	23.1	7.645	31.810	0.87		<1	<1
W8	-18.9	9/15/98	916				3.42	106	77.8	1089	0.06	0.8	154	4317	3.51	108.7	83.4	1168	0.90	24.4	7.622	32.438	2.02		<1	<1
W8	-18.9	10/13/98	822				3.37	104	59.8	838	0.06	0.8	149	4182	3.56	110.3	63.0	882	0.90	25.1	7.641	32.710	0.52		<1	<1
W8	-18.9	11/4/98	914				3.41	106	64.2	899	0.10	1.4	149	4176	3.55	110.0	68.0	952	0.97	24.9	7.654	32.597	1.02		<1	<1
W8	-18.9	12/16/98	905				3.35	104	65.4	916	0.11	1.5	141	3960	3.48	107.8	69.5	973	0.95	24.7	7.665	32.546	0.82		<1	<1
W8	-18.9	1/12/99	936				3.45	107	77.7	1088	0.10	1.4	142	3980	3.55	110.0	81.4	1140	0.85	24.0	7.681	32.241	0.96		<1	<1
W8	-18.9	2/3/99	918				3.22	100	56.2	788	0.11	1.5	132	3693	3.42	105.9	60.6	849	0.94	23.8	7.671	32.260	2.97		<1	<1
W8	-18.9	3/2/99	917				3.01	93	66.5	931	0.06	0.8	123	3452	3.23	100.0	69.7	976	0.91	23.7	7.650	32.190	2.91		<1	<1
W8	-18.9	4/6/99	911				2.79	86	64.9	909	0.05	0.7	120	3367	2.93	90.8	69.1	968	0.82	23.2	7.613	32.414	1.80		<1	<1
W8	-18.9	5/4/99	920				2.64	82	62.6	877	0.08	1.1	104	2915	2.82	87.3	64.2	899	0.78	23.6	7.541	32.901	1.70		<1	<1
W8	-18.9	6/2/99	901				2.73	85	55.7	780	0.10	1.4	101	2837	2.95	91.4	60.4	846	0.81	23.9	7.516	33.086	1.71		<1	<1
W8	-18.9	7/7/99	949				3.18	98	51.9	727	0.02	0.3	90.6	2545	3.22	99.7	54.8	768	0.86	24.6	7.567	33.377	2.25		<1	<1
W8	-18.9	8/25/99	912				2.73	85	55.8	782	0.11	1.5	84.9	2384	2.88	89.2	60.5	847	0.89	25.2	7.675	33.535	2.01		<1	<1
W8	-18.9	9/8/99	924				2.46	76	67.3	942	0.06	0.8	85.8	2410	2.67	82.7	77.4	1084	0.81	25.2	7.665	33.556	1.23		<1	<1
W8	-18.9	10/6/99	919				1.73	54	60.3	844	0.02	0.3	83.1	2333	1.84	57.0	62.4	875	0.77	25.5	7.549	33.633	0.78		<1	<1
W8	-18.9	11/3/99	942				2.16	67	43.7	612	0.11	1.5	74.9	2104	2.30	71.2	46.5	651	0.81	25.2	7.593	33.335	2.78		<1	<1
W8	-18.9	12/15/99	1002				3.05	94	53.9	755	0.04	0.6	84.8	2382	3.24	100.4	57.4	804	0.79	25.0	7.643	33.431	1.68		<1	<1
W8	-18.9	1/11/00	941				2.81	87	56.5	791	0.16	2.2	76.1	2137	2.94	91.1	62.2	871	0.80	24.3	7.659	33.116	2.18		<1	<1
W8	-18.9	2/14/00	934				2.83	88	56.8	796	0.06	0.8	75.0	2106	2.90	89.8	62.2	871	0.81	23.6	7.666	32.658	2.63		<1	<1
W8	-18.9	3/22/00	953				3.98	123	43.3	606	0.05	0.7	88.1	2474	4.05	125.4	46.5	651	0.91	23.3	7.750	32.531	3.55		<1	<1
W8	-18.9	4/12/00	932				4.54	141	49.8	698	0.06	0.8	78.4	2202	4.56	141.2	53.7	752	1.03	23.3	7.810	32.463	3.11		<1	<1
W8	-18.9	5/17/00	923				3.64	113	73.1	1024	0.02	0.3	70.3	1974	3.67	113.7	76.2	1067	0.85	21.2	7.816	31.388	2.43		<1	<1
W8	-18.9	6/6/00	940				3.50	108	67.5	945	0.02	0.3	72.0	2022	3.55	110.0	75.6	1059	0.89	20.2	7.737	31.194	1.43		<1	<1
W8	-18.9	7/31/00	930				3.60	112	57.5	805	0.08	1.1	90.1	2531	3.73	115.5	60.4	846	0.97	22.1	7.698	31.952	2.64		<1	<1
W8	-18.9	8/30/00	925				2.93	91	61.4	860	0.02	0.3	95.5	2682	3.05	94.5	64.7	906	0.86	25.7	7.563	33.579	0.89		<1	<1
W8	-18.9	9/6/00	915				2.52	78	65.0	910	0.07	1.0	97.6	2741	2.71	83.9	69.0	966	1.01	25.9	7.519	33.643	0.35		<1	<1
W8	-18.9	10/25/00	923				1.92	59	63.6	891	0.13	1.8	88.5	2486	2.03	62.9	67.4	944	0.83	26.2	7.430	33.631	0.94		<1	1
W8	-18.9	11/14/00	936				2.26	70	47.5	665	0.21	2.9	82.9	2328	2.42	75.0	51.6	723	0.84	25.8	7.468	33.796	1.85		<1	<1
W8	-18.9	12/19/00	913				2.76	85	56.0	784	0.13	1.8	68.6	1927	3.01	93.2	58.8	824	0.81	24.9	7.588	33.459	0.92		<1	<1
W8	-18.9	1/24/01	857				2.30	71	53.5	750	0.08	1.1	71.6	2011	2.50	77.4	57.9	811	0.78	24.2	7.514	33.100	0.54		<1	<1
W8	-18.9	2/7/01	928				2.16	67	49.3	691	0.03	0.4	73.3	2059	2.28	70.6	53.0	742	0.76	24.3	7.532	33.247	0.37		<1	<1
W8	-18.9	3/12/01	905				2.23	69	53.4	748	0.01	0.1	74.0	2078	2.45	75.9	58.0	813	0.78	23.3	7.444	32.906	0.18		<1	<1
W8	-18.9	4/18/01	853				3.20	99	41.7	584	0.04	0.6	74.1	2081	3.28	101.6	43.8	613	0.73	23.6	7.461	33.044	1.61		<1	<1
W8	-18.9	5/14/01	1017				4.44	138	36.6	512	0.18	2.5	66.8	1876	4.50	139.4	39.4	552	0.72	23.8	7.614	34.250	2.18		<1	<1
W8	-18.9	6/13/01	921				4.76	147	37.3	523	0.01	0.1	72.3	2031	4.88	151.2	40.5	567	0.74	23.8	7.707	33.239	2.28		<1	<1
W8	-18.9	7/24/01	921				4.04	125	59.5	834	0.03	0.4	75.6	2123	4.11	127.3	61.7	864	0.83	24.3	7.756	33.061	1.77		<1	<1
W8	-18.9	8/22/01	929				4.24	131	75.7	1060	0.03	0.4	69.8	1961	4.46	138.1	78.8	1104	0.83	23.5	7.766	32.468	1.11		<1	<1
W8	-18.9	9/17/01	1007				3.60	112	82.0	1149	0.02	0.3	71.7	2014	3.76	116.5	86.3	1209	0.85	23.5	7.803	32.337	1.40		<1	<1
W8	-18.9	10/22/01	1002				2.54	79	89.6	1255	0.10	1.4	71.8	2017	2.60	80.5	97.8	1370	0.80	22.9	7.671	32.105	1.15		<1	<1
W8	-18.9	11/5/01	1031				2.52	78	94.2	1319	0.02	0.3	74.3	2087	2.56	79.3	106	1489	0.76	22.2	7.642	31.850	1.81		<1	<1
W8	-18.9	12/12/01	1014				3.36	104	76.9	1077	0.15	2.1	85.4	2399	3.49	108.1	82.7	1158	0.85	23.7	7.648	32.538	2.36		<1	<1
W8	-18.9	1/7/02	953				4.48	139	89.5	1254	0.21	2.9	92.3	2592	4.68	145.0	91.0	1274	0.82	23.2	7.660	32.137	2.53		<1	<1
W8	-18.9	2/25/02	922				4.14	128	49.3	691	0.07	1.0	94.1	2643	4.26	131.9	51.5	721	0.70	23.2	7.743	32.522	3.00		<1	<1
W8	-18.9	3/18/02	957				4.14	128	87.2	1221	0.35	4.9	80.0	2247	4.34	134.4	91.3	1278	0.86	21.9	7.742	31.850	1.80		<1	<1
W8	-18.9	4/10/02	958				4.02	125	75.3	1055	0.01	0.1	80.1	2250	4.08	126.4	78.6	1101	1.01	22.5	7.746	32.163	1.75		<1	<1
W8	-18.9	5/22/02	1015				4.74	147	92.8	1300	0.18	2.5	87.0	2443	4.97	153.9	92.9	1302	0.93	23.3	7.812	32.283	0.77		<1	<1
W8	-18.9	6/19/02	1046				3.90	121	57.4	804	0.08	1.1	85.5	2401	4.08	126.4	62.6	876	0.79	23.1	7.858	32.151	1.98		<1	<1

NELHA Water Quality Laboratory

Well 8 Data Table

May 1992 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8	-18.9	7/22/02	1040				5.52	171	32.5	455	0.12	1.7	134	3772	5.90	182.7	30.2	423	0.86	25.3	7.839	33.235	2.88		<1	<1
W8	-18.9	8/21/02	1049				3.75	116	43.4	608	0.16	2.2	87.7	2464	3.94	122.0	45.8	641	0.90	25.9	7.814	33.388	1.15		<1	<1
W8	-18.9	9/25/02	929				2.44	76	41.5	581	0.27	3.8	89.0	2498	2.58	79.9	40.1	561	0.74	26.1	7.730	33.675	0.54		2	<1
W8	-18.9	10/15/02	1001				2.18	68	38.3	536	0.17	2.4	98.3	2761	2.29	70.9	40.3	565	0.68	26.1	7.727	33.616	1.08		<1	<1
W8	-18.9	11/17/02	951				2.96	92	44.0	616	0.01	0.1	89.8	2523	3.07	95.1	45.8	641	0.90	25.9	7.745	33.539	1.71		<1	<1
W8	-18.9	12/18/02	1005				2.61	81	32.8	459	0.02	0.3	78.6	2208	2.73	84.6	34.3	481	0.75	25.3	7.796	33.363	1.41		<1	<1
W8	-18.9	1/23/03	954				2.56	79	48.7	682	<0.02	0.0	86.2	2421	2.66	82.4	52.7	738	0.89	24.9	7.819	33.270	1.63		<1	<1
W8	-18.9	2/11/03	1008				2.00	62	48.3	677	0.19	2.7	88.7	2491	3.58	110.9	56.8	796	0.98	24.3	7.783	32.968	0.07		<1	<1
W8	-18.9	3/20/03	1110				2.92	90	71.4	1000	0.04	0.6	85.0	2387	2.96	91.7	79.7	1116	0.79	24.1	7.805	32.898	0.76		<1	<1
W8	-18.9	4/30/03	943				3.17	98	48.6	681	0.04	0.6	80.8	2269	3.27	101.3	55.5	777	0.75	24.5	7.876	34.445	2.17		<1	<1
W8	-18.9	5/14/03	855				3.09	96	44.5	624	0.09	1.3	78.6	2208	3.16	97.9	48.1	674	0.91	24.5	7.896	33.190	2.08		<1	<1
W8	-18.9	6/4/03	932				3.15	98	41.6	582	0.01	0.1	82.8	2324	3.33	103.1	48.0	672	1.10	24.5	7.854	33.068	1.26		<1	<1
W8	-18.9	7/30/03	919				3.00	93	54.2	759	0.03	0.4	85.0	2386	3.18	98.5	65.3	915	NA	24.3	7.849	32.649	0.27		<1	<1
W8	-18.9	8/28/03	908				2.52	78	56.1	786	1.59	22	75.7	2126	2.64	81.8	82.4	1154	NA	23.1	7.818	31.922	0.15		<1	<1
W8	-18.9	9/16/03	902				2.00	62	94.8	1328	3.53	49	81.3	2283	1.96	60.7	92.8	1299	NA	23.0	7.713	31.718	0.19		<1	<1
W8	-18.9	10/8/03	902				2.62	81	58.6	821	1.80	25	88.1	2474	2.86	88.6	75.6	1059	NA	23.9	7.679	32.363	NA		<1	<1
W8	-18.9	11/5/03	909				4.48	139	20.8	291	40.2	563	97.6	2741	4.82	149.3	69.2	969	NA	24.1	7.607	32.476	NA		<1	<1
W8	-18.9	12/17/03	945				4.41	137	37.9	530	23.0	322	100	2804	4.66	144.3	65.6	919	NA	23.6	7.553	32.351	0.15		<1	<1
W8	-18.9	1/28/04	949				4.96	154	76.0	1064	6.55	92	102	2853	5.12	158.6	87.4	1224	1.11	22.8	7.508	31.682	0.05		<1	<1
W8	-18.9	2/11/04	901				5.06	157	83.5	1170	2.27	32	98.9	2778	5.42	167.9	92.4	1294	0.87	21.8	7.477	31.369	0.17		<1	<1
W8	-18.9	3/16/04	951				5.84	181	71.8	1006	7.03	98	101	2845	6.23	193.0	87.8	1229	NA	22.3	7.524	31.469	0.11		<1	<1
W8	-18.9	4/22/04	935				6.13	190	74.9	1050	44.6	625	101	2831	6.22	192.7	90.9	1273	NA	22.1	7.583	31.389	0.14		<1	<1
W8	-18.9	5/18/04	915				6.28	195	61.5	861	5.90	83	104	2924	6.64	205.7	75.9	1062	NA	22.0	7.522	30.54	1.70		<1	<1
W8	-18.9	6/8/04	917				6.68	207	45.7	639	8.23	115	105	2949	7.16	221.8	62.8	880	NA	22.5	7.514	30.74	0.25		<1	<1
W8	-18.9	7/19/04	1017				6.58	204	69.3	971	3.9	54	104	2921	6.74	208.8	75.1	1052	NA	22.4	7.504	30.56	0.15		<1	<1
W8	-18.9	8/25/04	958				7.14	221	76.8	1075	0.15	2.1	106	2980	7.38	228.6	81.9	1147	NA	22.1	7.444	30.29	2.50		<1	<1
W8	-18.9	9/27/04	1114				6.54	203	31.2	436	0.19	2.7	118	3303	6.86	212.5	34.7	486	NA	22.4	7.459	30.50	0.29		<1	<1
W8	-18.9	10/4/04	1033				7.02	217	66.8	936	0.35	4.9	117	3280	7.44	230.4	74.1	1038	NA	23.1	7.449	30.79	0.13		<1	1
W8	-18.9	11/23/04	930				6.02	186	58.3	817	5.0	70	126	3547	6.16	190.8	83.0	1163	NA	24.3	7.458	31.23	0.36		<1	<1
W8	-18.9	12/8/04	1017				5.94	184	72.0	1009	4.1	57	123	3440	6.16	190.8	91.1	1276	NA	24.4	7.439	31.05	0.30		<1	<1
W8	-18.9	1/18/05	1024				6.22	193	48.2	675	6.0	85	116	3252	6.52	201.9	63.6	891	NA	23.5	7.487	31.901	0.17		<1	<1
W8	-18.9	2/10/05	1011				5.96	185	35.1	492	7.2	101	113	3176	6.18	191.4	54.2	759	NA	23.0	7.508	31.867	0.30		<1	<1
W8	-18.9	3/22/05	1017				8.18	253	42.3	593	6.3	88	112	3134	8.68	268.9	50.6	708	1.55	21.7	7.637	31.818	0.28		<1	<1
W8	-18.9	4/20/05	1010				8.45	262	42.4	594	16.5	231	106	2969	9.00	278.8	57.3	802	NA	21.9	7.675	31.779	0.22		<1	<1
W8	-18.9	5/25/05	1033				8.79	272	32.6	457	10.7	149	107	3008	9.48	293.6	49.8	698	NA	22.4	7.686	32.204	0.24		<1	<1
W8	-18.9	6/14/05	1026				9.36	290	39.8	557	8.5	119	108	3022	9.72	301.1	53.3	747	NA	24.0	7.667	32.146	0.18		<1	<1
W8	-18.9	7/19/05	1015				7.98	247	31.7	444	9.4	131	107	3008	8.38	259.6	43.4	608	0.88	24.2	7.648	32.263	0.16		<1	<1
W8	-18.9	8/3/05	1053				7.84	243	39.6	554	9.3	130	109	3047	8.02	248.4	53.9	755	0.83	24.3	7.664	32.284	0.24		<1	<1
W8	-18.9	9/22/05	1009				7.22	224	26.8	376	12.0	169	119	3339	7.52	232.9	41.1	575	0.79	25.8	7.579	32.909	0.21		<1	<1
W8	-18.9	10/19/05	1018				7.28	225	38.0	532	14.8	207	114	3210	7.66	237.3	59.2	829	NA	25.4	7.606	32.621	0.25		<1	<1
W8	-18.9	11/8/05	1003				6.68	207	45.6	639	22.7	318	104	2912	6.92	214.3	76.0	1064	NA	25.0	7.612	32.583	0.13		<1	<1
W8	-18.9	12/22/05	934				6.22	193	53.8	753	18.2	255	108	3042	6.48	200.7	76.6	1073	NA	23.7	7.614	32.050	0.13		<1	<1
W8	-18.9	1/31/06	1002				5.70	177	61.3	858	8.5	118	105	2955	5.86	181.5	72.9	1021	NA	22.9	7.754	31.828	0.17		<1	<1
W8	-18.9	2/16/06	1003				5.62	174	46.5	652	5.8	81	108	3039	6.02	186.5	54.0	756	0.92	22.8	7.563	31.845	0.25		<1	<1
W8	-18.9	3/22/06	1002				5.06	157	96.6	1353	0.25	3.5	107	3005	5.32	164.8	99.9	1399	0.68	21.5	7.530	31.465	0.46		<1	<1
W8	-18.9	4/27/06	1040				5.49	170	109	1527	0.16	2.2	103	2893	5.63	174.4	99.6	1395	0.68	21.1	7.512	31.296	0.25		<1	<1
W8	-18.9	5/24/06	1105				5.83	181	65.3	915	2.38	33.3	110	3089	6.12	189.6	63.9	894	0.82	21.3	7.554	31.354	0.25		<1	<1
W8	-18.9	6/28/06	1052				6.00	186	75.3	1055	0.33	4.6	106	2977	6.34	196.4	71.4	1000	0.62	21.7	7.559	31.446	0.25		<1	<1
W8	-18.9	7/19/06	1024				5.76	178	46.9	657	8.4	117	110	3089	6.02	186.5	50.9	712	0.83	22.2	7.596	31.707	0.26		<1	<1
W8	-18.9	8/9/06	1006				5.89	182	65.4	916	1.07	15.0	117	3286	6.24	193.3	63.4	888	0.68	23.0	7.547	31.998	0.46		<1	<1
W8	-18.9	9/20/06	1015				5.96	185	27.5	385	17.0	238	124	3483	6.36	197.0	42.9	601	0.81	23.5	7.58	32.429	0.21		<1	<1
W8	-18.9	10/25/06	1053				5.70	177	54.5	763	0.81	11.3	129	3623	5.88	182.1	54.4	761	0.78	24.8	7.517	32.796	0.25		<1	<1
W8	-18.9	11/29/06	1020				4.83	150	24.6	345	0.76	10.6	125	3511	5.06	156.7	28.3	396	0.86	24.4	7.478	32.542	0.22		<1	<1
W8	-18.9	12/13/06	1013				4.91	152	55.8	782	0.23	3.2	117	3286	5.14	159.2	55.1	771	0.70	24.0	7.464	32.383	0.03		<1	<1
W8	-18.9	1/10/07	1015				5.54	172	53.0	742	0.32	4.5	117	3286	5.84	180.9	55.6	779	0.71	23.4	7.498	32.283	0.18		<1	<1
W8	-18.9	2/21/07	1036				4.85	150	56.7	794	0.47	6.6	107	3005	5.41	167.6	66.1	925	0.74	22.4	7.475	31.925	0.45		<1	<1
W8	-18.9	3/7/07	1028				4.52	140	48.1	674	0.30	4.2	106	2977	4.71	145.9	49.4	692	0.79	22.2	7.699	31.870	0.25		<1	<1
W8	-18.9	4/19/07	1011				3.50	108	42.8	599	0.23	3.2	113	3174	3.69	114.3	35.9	502	0.69	23.2	7.44	32.196	0.31		<1	<1
W8	-18.9	5/2/07	1023				3.45	107	44.5	623	0.36	5.0	114	3202	3.75	116.2	42.9	600	0.70	22.7	7.396	32.135	0.18		<1	<1
W8	-18.9	6/20/07	1023				3.33	103	25.2	353	0.28	3.9	117	3286	3.53	109.3				24.0	7.368	32.665	0.26		<1	<1

NELHA Water Quality Laboratory

Well 8 Data Table

May 1992 - December 2014

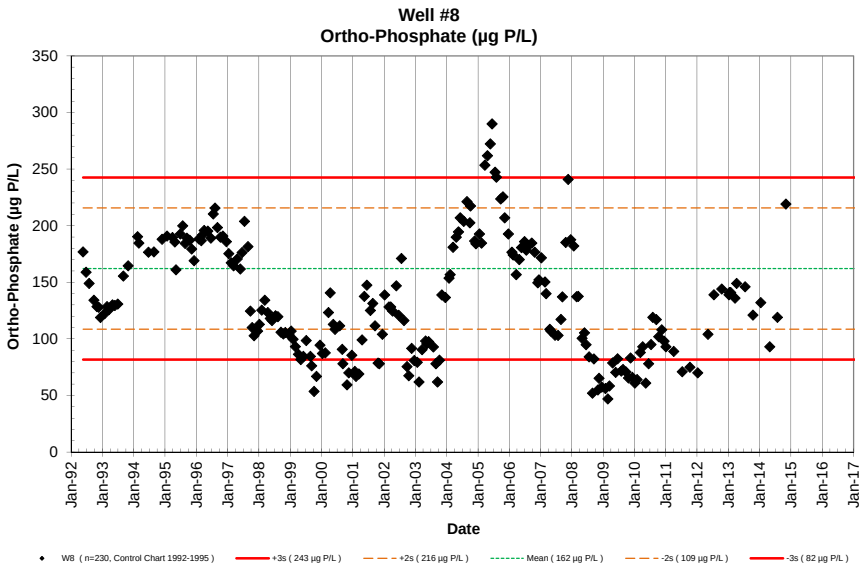
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8	-18.9	7/25/07	1132	-3.96	0.46	Flood	3.33	103	21.7	304	5.00	70	110	3100	3.48	107.9	28.8	403.9		24.3	7.23	32.83	0.09			
W8	-18.9	8/27/07	1110		0.06	Flood	3.78	117	47.2	661	0.32	5	99	2778	4.11	127.3	39.7	555.9		24.6	7.37	32.96	0.13			
W8	-18.9	9/13/07	1530	-3.58	0.4	Flood	4.43	137	14.9	209	20.63	289	127	3573	4.74	146.9	40.7	570.5		25.0	7.36	33.31	0.06			
W8	-18.9	10/23/07	1030	-4.22	0.24	Flood	5.98	185	3.8	53	36.80	515	96	2710	6.36	197.1	43.0	601.7		26.2	7.38	34.01	1.00			
W8	-18.9	11/20/07	1102	-3.96	0.4	Flood	7.78	241	18.9	265	1.93	27	98	2747	7.41	229.6	28.0	391.7		25.5	7.56	33.82	0.38			
W8	-18.9	12/19/07	1045	-3.96	0.3	High	6.06	188	19.1	268	0.78	11	82	2298						24.8	7.67	33.47	2.34			
W8	-18.9	1/24/08	1445	-3.63	0.06	Flood	5.88	182	23.9	335	0.64	8.9	79	2224						24.3	7.69	33.39	2.21			
W8	-18.9	2/26/08	934	-3.96	0.18	Ebb	4.43	137	22.4	314	1.14	16	74	2083						23.5	7.81	33.10	2.67			
W8	-18.9	3/17/08	1115	-4.01	0.06	Flood	4.44	138	20.1	282	0.08	1.1	71	1994						23.5	7.81	32.77	2.11			
W8	-18.9	4/30/08	1111	-3.66	0.21	Flood	3.24	101	17.7	249	0.09	1.2	75	2102						23.9	7.77	33.16	2.87			
W8	-18.9	5/27/08	1055	-4.17	0.24	High	3.40	105	14.6	205	0.66	9.2	95	2662						23.9	7.72	33.38	0.81			
W8	-18.9	6/16/08	1120	-3.61	0.24	Flood	3.06	95	14.3	200	0.18	2.5	92	2585						24.1	7.82	33.51	3.09			
W8	-18.9	7/21/08	1027	-4.11	0.12	Ebb	2.72	84	21.4	300	0.20	2.8	77	2162						24.6	7.84	33.74	2.40	0.08		
W8	-18.9	8/30/08	1352		0.46	Flood	1.68	52	11.4	159	0.20	2.8	62	1752						25.1	7.83	34.19	2.55	0.08		
W8	-18.9	9/15/08	1117	-4.44	0.09	Low	2.66	82	21.1	296	0.10	1.4	82	2293						25.2	7.81	33.93	1.97			
W8	-18.9	10/31/08	1031	-4.18	0.3	Ebb	1.77	55	14.7	206	0.38	5.3	78	2195						28.1	7.63	34.01	2.05			
W8	-18.9	11/14/08	1041	-4.13	0.15	Ebb	2.11	65	38.1	534	0.00	0.0	75	2093						27.0	7.86	34.01	1.24	0.83		
W8	-18.9	12/15/08	1353	-4.36	0.03	Low	1.85	57	36.7	514	0.11	1.5	77	2161						26.4	7.93	33.60	2.60			
W8	-18.9	1/27/09	856	-4.07	0.3	Ebb	1.81	56	44.1	617	0.36	5.0	73	2053						25.6	7.82	34.77	1.41	0.38		
W8	-18.9	2/24/09	1330	-4.33	0.15	Flood	1.52	47	34.4	482	0.42	5.9	76	2127						25.5	7.72	33.72	2.19	0.10		
W8	-18.9	3/16/09	1335	-4.59	0.03	Low	1.89	58	16.8	236	0.13	1.8	70	1967						25.9	7.59	33.49	2.60	0.30		
W8	-18.9	4/22/09	1119	-4.40	0.18	Flood	2.54	79	35.2	492	0.07	1.0	68	1896						24.9	8.09	33.00	2.53	0.94		
W8	-18.9	5/27/09	1130	-4.27	0	Low	2.27	70	22.8	319	0.17	2.4	66	1842						23.2	7.81	33.25	1.91	0.02		
W8	-18.9	6/19/09	1453	-3.82	0.73	High	2.66	83	47.1	660	0.20	2.8	73	2039						23.4	7.95	32.95	1.26	0.02		
W8	-18.9	7/31/09	1305	-3.81	0.67	High	2.31	72	39.4	552	0.21	3.0	61	1703						24.5	7.85	33.37	1.06	0.06		
W8	-18.9	8/20/09	1335	-3.98	0.46	Flood	2.35	73	52.1	730	0.71	10.0	79	2232						23.9	7.85	33.09	0.67	0.05		
W8	-18.9	9/24/09	1528	-4.21	0.21	Ebb	2.29	71	38.2	535	0.49	6.8	58	1618						23.8	8.29	33.13	0.19	0.03		
W8	-18.9	10/23/09	1119	-4.05	0.43	Ebb	2.11	66	31.1	436	0.37	5.2	83	2324						24.8	7.75	33.32	0.40	0.08		
W8	-18.9	11/17/09	1634	-4.20	0.37	High	2.68	83	40.9	573	0.86	12.0	136	3807						24.7	7.69	33.43	1.08	0.02		
W8	-18.9	12/8/09	1058	-4.00	0.52	Ebb	2.13	66	34.8	488	1.11	15.5	82	2290						25.8	7.71	33.55	1.33	0.02		
W8	-18.9	1/6/10	1022	-4.05	0.3	Ebb	1.97	61	43.5	609	1.29	18.0	89	2489						24.7	7.73	32.80	1.33	0.11		
W8	-18.9	2/2/10	1008	-4.10	0.15	Ebb	2.07	64	52.3	732	0.64	9.0	79	2232						24.9	7.76	32.97	1.10	0.25		
W8	-18.9	3/10/10	952	-4.40	0.09	Flood	2.84	88	37.3	523	0.36	5.0	89	2501						25.8	7.80	33.02	1.09	0.16		
W8	-18.9	4/7/10	938	-4.32	0.12	Flood	3.00	93	37.6	526	0.86	12.0	82	2307						25.6	7.74	32.81	1.00	0.25		
W8	-18.9	5/12/10	924	-4.48	-0.03	Flood	1.97	61	38.6	541	0.64	9.0	84	2350						24.3	7.79	32.71	1.11	0.08		
W8	-18.9	6/16/10	1523	-4.28	0.24	Flood	2.52	78	43.9	615	0.29	4.0	92	2593						23.1	7.81	32.55	0.86	0.10		
W8	-18.9	7/13/10	1530	-3.93	0.49	Flood	3.07	95	29.7	416	0.07	1.0	95	2673						23.8	7.78	32.82	1.44	0.09		
W8	-18.9	8/3/10	1533	-4.01	0.37	Ebb	3.84	119	39.6	554	0.24	3.3	98	2762						24.4	7.77	33.18	1.33	0.08		
W8	-18.9	9/14/10	1540	-4.11	0.21	Ebb	3.78	117	37.6	526	0.01	0.1	96	2699						25.0	7.79	33.32	1.29	0.18		
W8	-18.9	10/12/10	1602	-4.17	0.18	Low	3.29	102	30.3	425	0.06	0.8	95	2661						24.8	7.80	32.24	0.92	0.09		
W8	-18.9	11/16/10	1446	-4.00	0.3	Ebb	3.49	108	26.6	373	0.28	3.9	97	2718						25.4	7.74	33.59	0.79	0.30		
W8	-18.9	12/14/10	1512	-4.23	0.12	Ebb	3.16	98	26.2	367	0.09	1.3	98	2764						25.4	7.73	33.25	0.46	0.09		
W8	-18.9	1/4/11	1456	-4.22	0.15	Flood	3.00	93	24.8	348	0.19	2.6	94	2626						25.4	7.72	33.49	1.22	0.08		
W8	-18.9	4/5/11	1513	-4.02	0.37	Flood	2.87	89	37.1	519	0.05	0.7	80	2239						24.2	7.71	32.94	1.71	0.13		
W8	-18.9	7/12/11	1505	-3.78	0.73	High	2.29	71	26.2	367	11.18	157	89	2513						24.9	7.77	33.34	0.09	0.18		
W8	-18.9	10/11/11	1407	-4.03	0.34	Flood	2.42	75	28.4	398	8.79	123	82	2291						23.5	7.73	32.88	0.02	0.07		
W8	-18.9	1/10/12	1531	-4.27	0.18	Flood	2.26	70	44.6	625	0.07	1.0	85	2395						23.3	7.66	32.19	0.76	0.07		
W8	-18.9	5/8/12	1329	-4.34	0.06	Flood	3.36	104	49.5	694	0.21	2.9	89	2499						21.0	7.56	31.61	0.67	0.08		
W8	-18.9	7/17/12	1441	-3.70	0.7	Flood	4.49	139	13.5	189	0.14	2.0	106	2965						23.3	7.50	32.77	0.15	0.55		
W8	-18.9	10/15/12	1358	-4.00	0.3	Flood	4.65	144	36.4	510	0.15	2.1	99	2784						23.1	7.57	32.71	0.57	0.02		
W8	-18.9	1/7/13	1519	-4.25	0.12	Ebb	4.49	139	75.7	1060	0.10	1.4	138	3886						21.7	7.50	32.04	0.51	0.02		
W8	-18.9	1/14/13	1008	-3.94	0.24	Ebb	4.55	141	71.8	1006	0.32	4.5	104	2920						21.5	7.61	32.00	0.54	0.19		
W8	-18.9	1/29/13	1426	-4.05	0.09	Flood	4.55	141	92.5	1296	0.81	11.4	100	2808						21.3	7.44	31.72	0.68			
W8	-18.9	3/20/13	1025	-4.24	0.18	High	4.39	136	83.8	1174	1.00	14.0	99	2775						21.4	7.60	31.62	0.67	0.19		
W8	-18.9	4/8/13	1456	-4.03	0.49	Flood	4.81	149	54.8	767	0.13	1.8	103	2897						22.4	7.55	32.30	0.36	0.02		

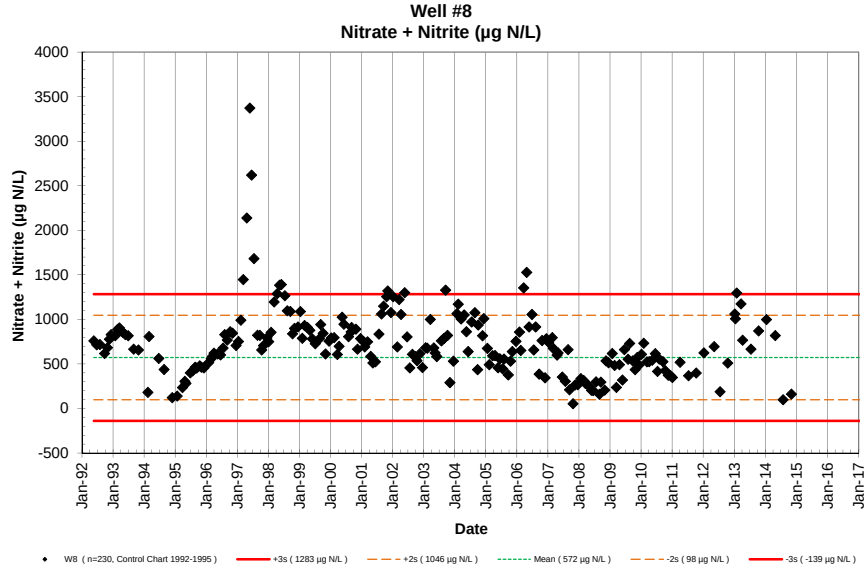
NELHA Water Quality Laboratory

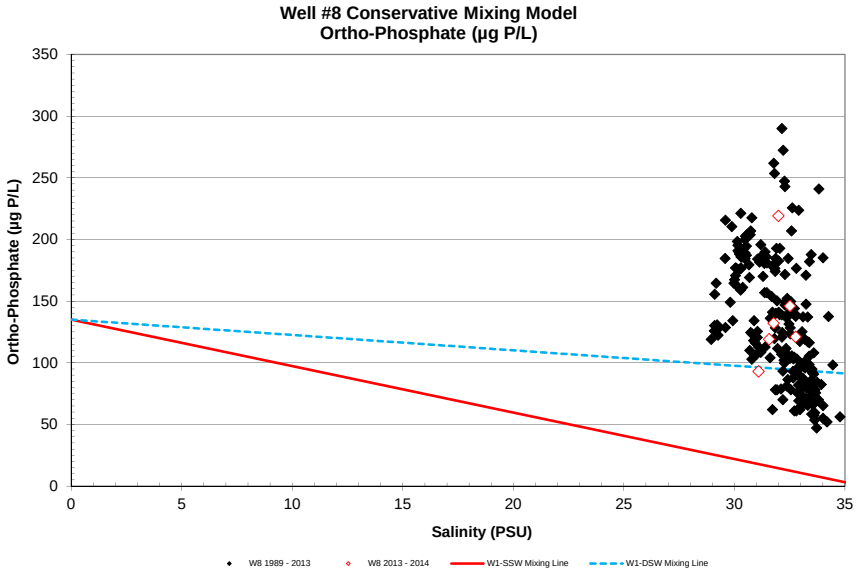
Well 8 Data Table

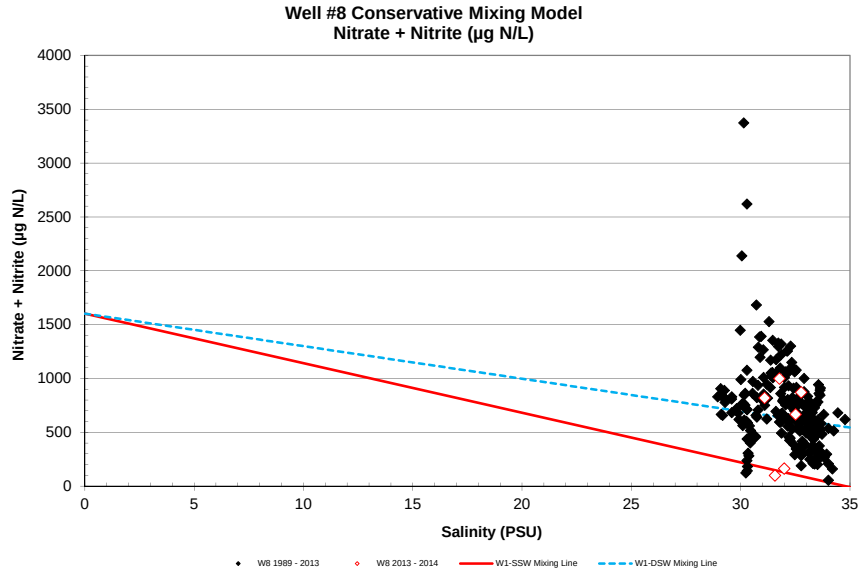
May 1992 - December 2014

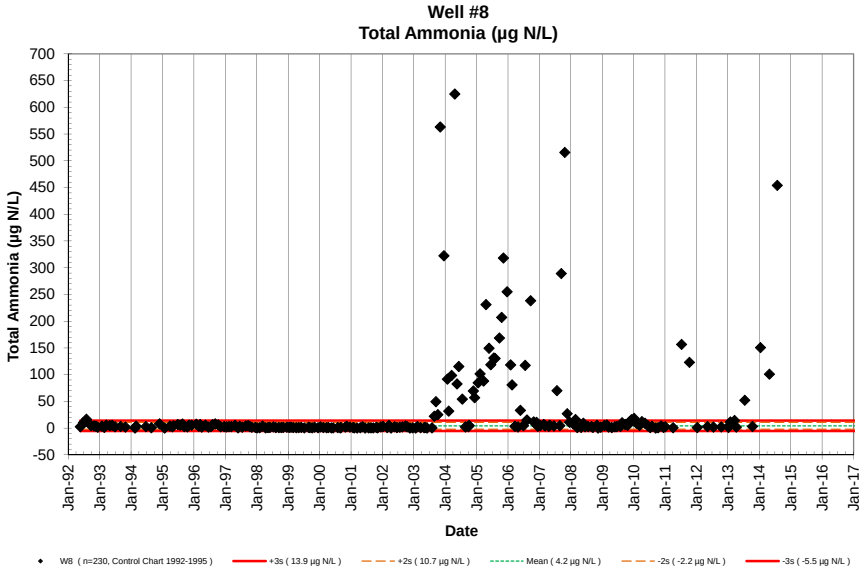
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8	-18.9	7/16/13	1643	-4.17	0.24	Ebb	4.71	146	47.5	666	3.72	52	104	2920						22.8	7.52	32.51	0.10	0.29		
W8	-18.9	10/14/13	1721	-4.20	0.12	Ebb	3.91	121	62.1	870	0.23	3.2	106	2986						23.1	7.52	32.77	0.29	0.02		
W8	-18.9	1/14/14	1525	-4.13	0.18	High	4.26	132	71.3	998	10.75	151	108	3027						20.4	7.49	31.77	0.49	0.22		
W8	-18.9	4/28/14	1456	-3.90	0.55	Flood	3.00	93	58.5	819	7.21	101	103	2902						20.0	8.03	31.09	0.99	0.02		
W8	-18.9	7/28/14	1617	-3.86	0.55	Flood	3.84	119	7.0	98	32.41	454	121	3400						20.6	7.43	31.57	0.62	0.09		
W8	-18.9	11/3/14	1341	-3.79	0.46	Flood	7.07	219	11.5	161	51.53	722	131	3679						21.9	7.36	31.99	0.47	0.15		
W8	-18.9	1/1/15																								
W8	-18.9	4/1/15																								

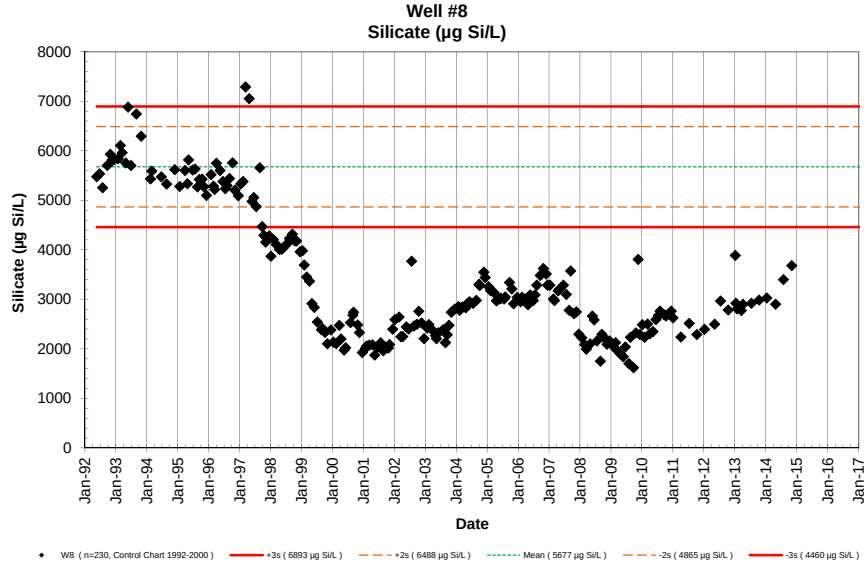

Well #8
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W8 (n=230, Control Chart 1992-1995)
+3s (243 µg P/L)
+2s (216 µg P/L)
Mean (162 µg P/L)
-2s (109 µg P/L)
-3s (82 µg P/L)

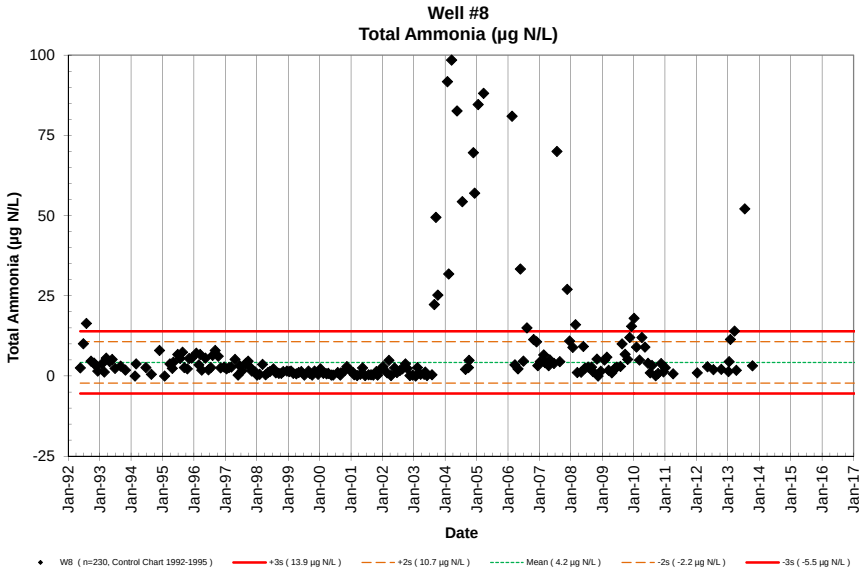

Well #8
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W8 (n=230, Control Chart 1992-1995)
+3s (1283 µg N/L)
+2s (1046 µg N/L)
Mean (572 µg N/L)
-2s (98 µg N/L)
-3s (-139 µg N/L)

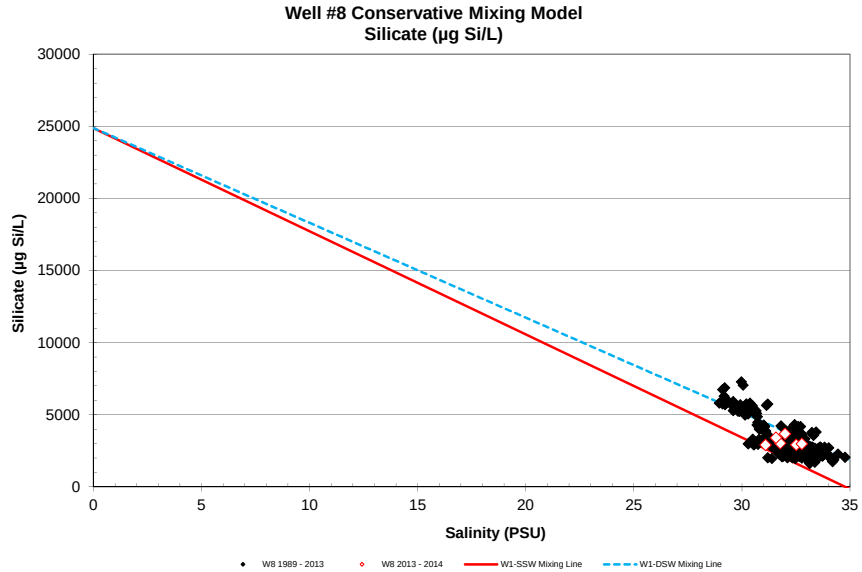

Well #8 Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W8 1989 - 2013
W8 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

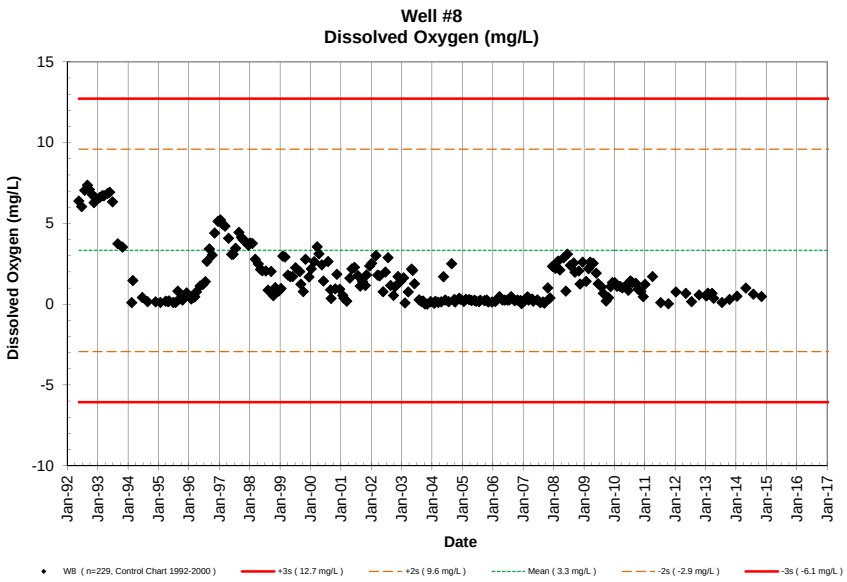

Well #8 Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W8 1989 - 2013
W8 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

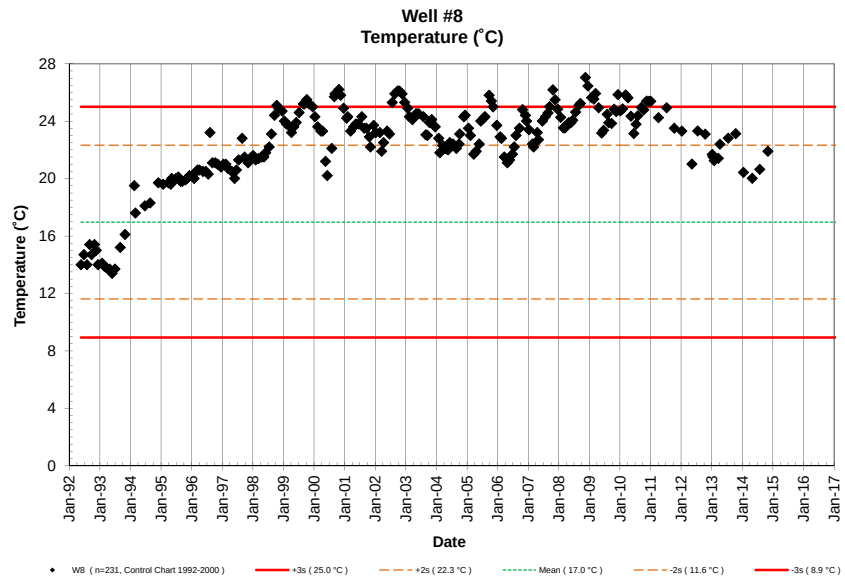

Well #8
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W8 (n=230, Control Chart 1992-1995)
+3s (13.9 µg N/L)
+2s (10.7 µg N/L)
Mean (4.2 µg N/L)
-2s (-2.2 µg N/L)
-3s (-5.5 µg N/L)

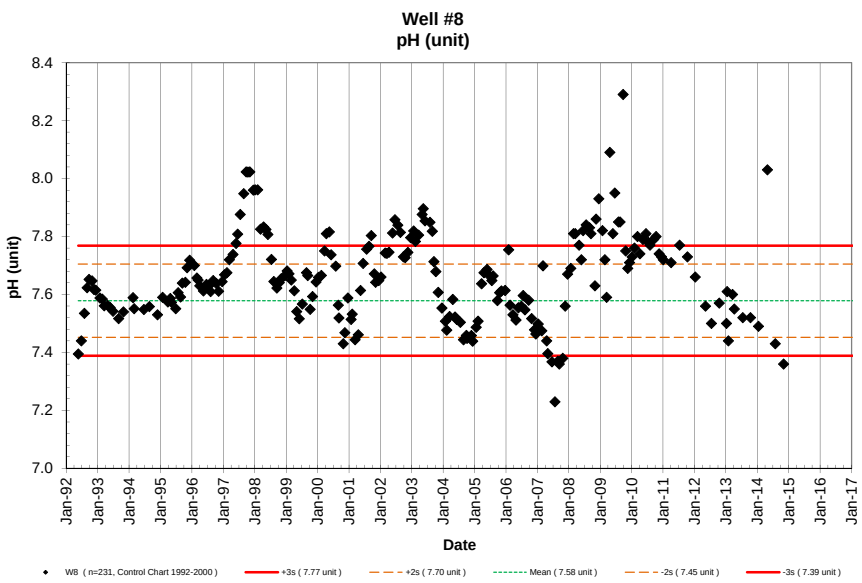

Well #8
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W8 (n=230, Control Chart 1992-2000)
+3s (6893 µg Si/L)
+2s (6488 µg Si/L)
Mean (5677 µg Si/L)
-2s (4865 µg Si/L)
-3s (4460 µg Si/L)

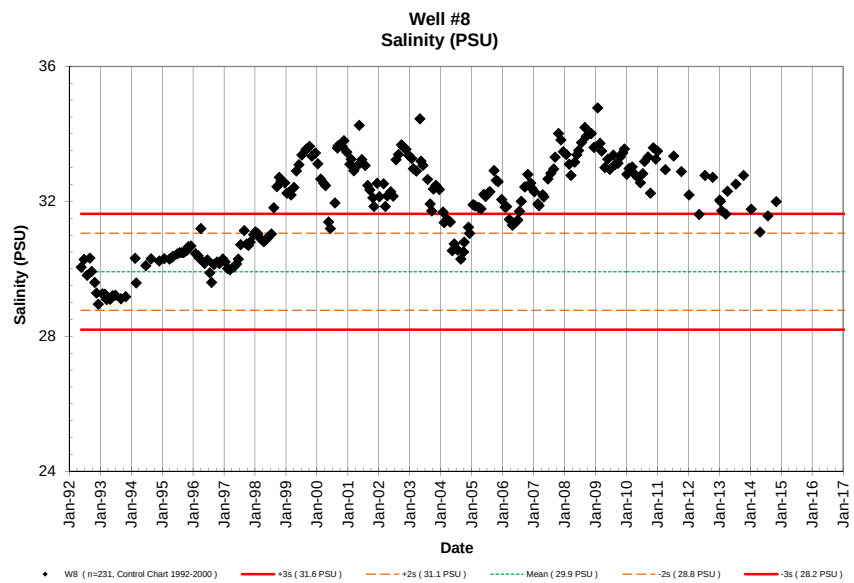

Well #8
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W8 (n=230, Control Chart 1992-1995)
+3s (13.9 µg N/L)
+2s (10.7 µg N/L)
Mean (4.2 µg N/L)
-2s (-2.2 µg N/L)
-3s (-5.5 µg N/L)

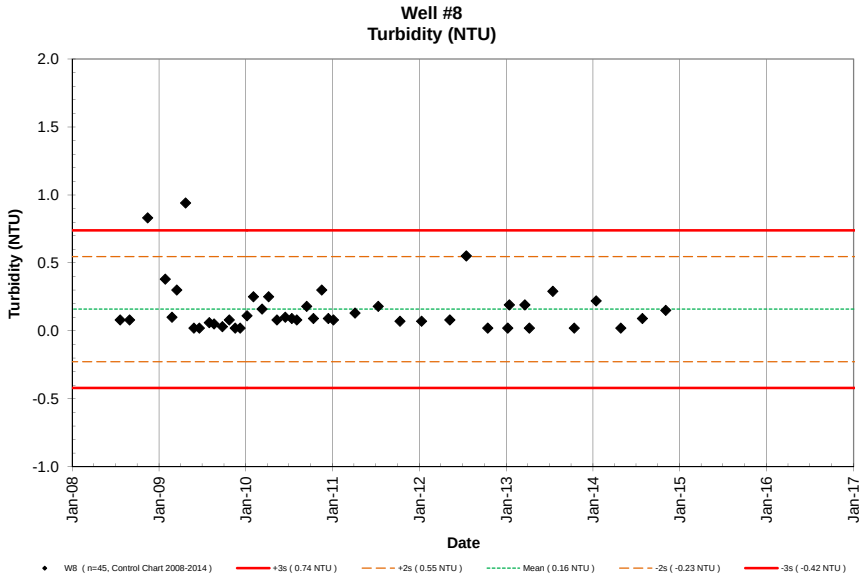

Well #8 Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W8 1989 - 2013
W8 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

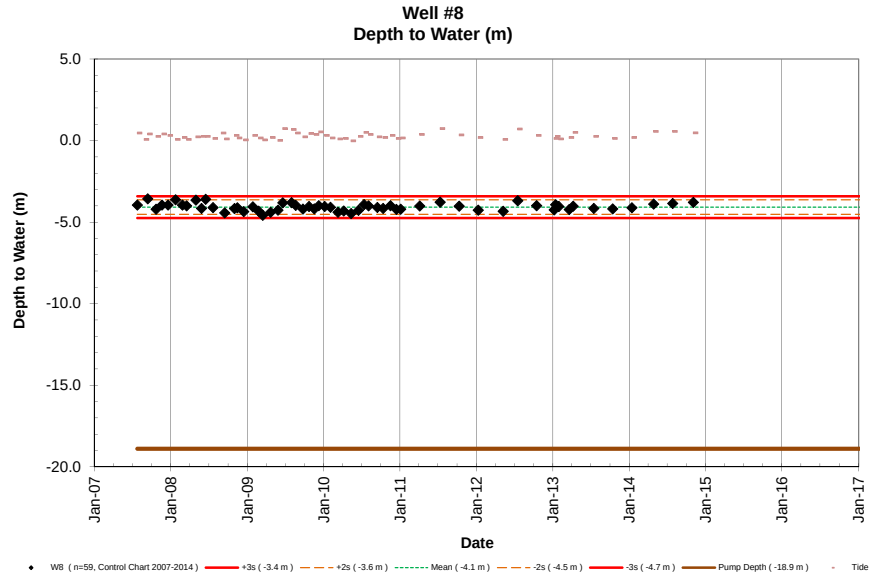

Well #8
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W8 (n=229, Control Chart 1992-2000)
+3s (12.7 mg/L)
+2s (9.6 mg/L)
Mean (3.3 mg/L)
-2s (-2.9 mg/L)
-3s (-6.1 mg/L)

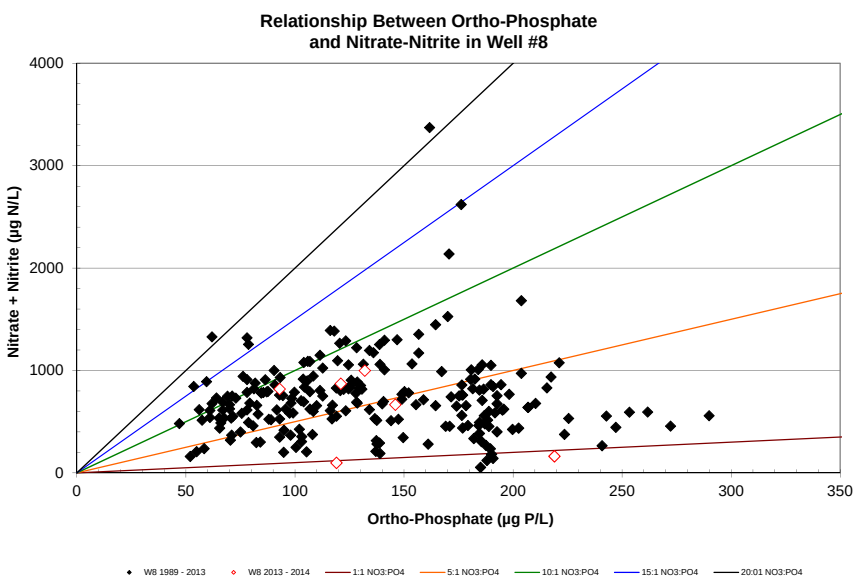

Well #8
Temperature (˚C)
Temperature (˚C)
Date
W8 (n=231, Control Chart 1992-2000)
+3s (25.0 °C)
+2s (22.3 °C)
Mean (17.0 °C)
-2s (11.6 °C)
-3s (8.9 °C)


Well #8
pH (unit)
pH (unit)
Date
W8 (n=231, Control Chart 1992-2000)
+3s (7.77 unit)
+2s (7.70 unit)
Mean (7.58 unit)
-2s (7.45 unit)
-3s (7.39 unit)


Well #8
Salinity (PSU)
Salinity (PSU)
Date
W8 (n=231, Control Chart 1992-2000)
+3s (31.6 PSU)
+2s (31.1 PSU)
Mean (29.9 PSU)
-2s (28.8 PSU)
-3s (28.2 PSU)


Well #8
Turbidity (NTU)
Turbidity (NTU)
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W8 (n=45, Control Chart 2008-2014)
+3s (0.74 NTU)
+2s (0.55 NTU)
Mean (0.16 NTU)
-2s (-0.23 NTU)
-3s (-0.42 NTU)


Well #8
Depth to Water (m)
Depth to Water (m)
5.0
0.0
-5.0
-10.0
-15.0
-20.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W8 (n=59, Control Chart 2007-2014)
+3s (-3.4 m)
+2s (-3.6 m)
Mean (-4.1 m)
-2s (-4.5 m)
-3s (-4.7 m)
Pump Depth (-18.9 m)
Tide


Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #8
Nitrate + Nitrite (µg N/L)
4000
3000
2000
1000
0
0
50
100
150
200
250
300
350
Ortho-Phosphate (µg P/L)
W8 1989 - 2013
W8 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

NELHA Water Quality Laboratory

Well 8A Data Table

May 1992 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8A	-11.0	5/20/92	938				4.02	125	59.9	839	0.31	4.3	283	7948	4.23	131.0	62.2	871	0.64	14.7	7.486	27.588	7.07		<1	<1
W8A	-11.0	6/24/92	920				3.99	124	53.3	747	0.63	8.8	260	7302	4.12	127.6	55.8	782	1.14	15.4	7.533	28.335	6.56		<1	<1
W8A	-11.0	7/30/92	838				4.13	128	53.1	744	1.17	16	254	7134	4.25	131.6	56.1	786	0.78	15.2	7.583	28.140	6.67		<1	<1
W8A	-11.0	8/31/92	856																1.10	15.9	7.606	27.870	6.75		<1	<1
W8A	-11.0	9/23/92	928				4.23	131	54.7	766	0.32	4.5	279	7836	4.31	133.5	62.1	870	0.65	15.9	7.570	27.866	6.44		<1	<1
W8A	-11.0	10/28/92	950				4.22	131	62.1	870	0.20	2.8	294	8257	4.30	133.2	64.7	906	0.69	15.2	7.495	27.436	6.69		<1	<1
W8A	-11.0	11/18/92	932				4.43	137	61.8	866	0.21	2.9	279	7836	4.63	143.4	37.5	526	0.70	14.7	7.474	27.767	6.52		<1	<1
W8A	-11.0	12/9/92	923				4.29	133	61.3	859	0.09	1.3	288	8089	4.46	138.1	63.9	895	0.64	15.1	7.524	27.022	6.68		<1	<1
W8A	-11.0	1/27/93	907				4.30	133	58.3	816	0.22	3.1	302	8485	4.49	139.1	66.3	929	0.85	16.1	7.631	26.821	5.45		<1	<1
W8A	-11.0	2/24/93	850				4.34	134	56.3	788	0.05	0.7	297	8341	4.34	134.4	58.6	820	0.65	16.6	7.744	27.111	5.32		<1	<1
W8A	-11.0	3/17/93	915				4.08	126	47.2	661	0.36	5.0	309	8676	4.18	129.5	50.6	709	0.57	17.1	7.772	25.983	5.08		<1	<1
W8A	-11.0	4/28/93	845				4.34	134	48.9	685	0.28	3.9	293	8229	4.41	136.6	53.2	745	0.60	17.4	7.733	26.791	4.99		<1	<1
W8A	-11.0	5/26/93	848				4.22	131	46.1	645	0.24	3.4	330	9268	4.33	134.1	52.2	731	0.58	17.3	7.737	26.692	4.92		<1	<1
W8A	-11.0	6/29/93	901				4.27	132	46.0	644	0.15	2.1	294	8257	4.38	135.7	50.5	707	0.60	17.6	7.732	26.985	4.61		<1	<1
W8A	-11.0	9/1/93	903				4.77	148	60.5	847	0.24	3.4	360	10100	4.91	152.1	74.5	1043	0.88	19.5	7.559	25.037	1.37		<1	<1
W8A	-11.0	10/27/93	858				4.67	145	39.4	552	0.15	2.1	344	9661	4.78	148.1	47.9	671	0.67	21.2	7.640	25.499	0.64		<1	<1
W8A	-11.0	3/1/94	1110				4.10	127	45.3	634	0.37	5.2	234	6572	4.11	127.3	53.6	750	0.75	21.0	7.675	24.469	1.27		<1	<1
W8A	-11.0	6/22/94	835				3.26	101	23.1	324	0.29	4.1	312	8776	3.26	101.0	27.4	383	0.67	21.9	7.789	26.346	0.97		<1	<1
W8A	-11.0	8/24/94	918				3.99	124	33.2	464	0.00	0.0	287	8052	4.09	126.7	40.5	568	0.67	21.7	7.649	26.288	1.49		<1	<1
W8A	-11.0	11/28/94	1058				3.24	100	49.0	686	0.46	6.4	304	8538	3.31	102.5	55.1	772	0.59	22.7	7.680	24.534	1.27		<1	<1
W8A	-11.0	1/25/95	929				3.65	113	49.8	697	0.00	0.0	288	8080	3.70	114.6	53.7	752	0.92	21.8	7.830	25.102	1.06		<1	<1
W8A	-11.0	2/15/94	943				4.45	138	73.4	1028	0.04	0.6	289	8108	4.46	138.1	88.8	1244	0.86	21.4	7.858	25.029	1.13		<1	<1
W8A	-11.0	3/29/95	928				4.16	129	65.4	916	0.33	4.6	303	8510	4.20	130.1	71.6	1003	0.80	21.7	7.856	24.858	0.80		<1	<1
W8A	-11.0	4/26/95	919				4.24	131	62.9	881	0.10	1.4	288	8097	4.40	136.3	67.4	944	0.60	21.6	7.818	25.309	0.73		<1	<1
W8A	-11.0	5/9/95	1057				3.30	102	49.7	697	0.28	3.9	330	9263	4.10	127.0	53.2	745	0.66	21.8	7.747	24.386	0.65		<1	<1
W8A	-11.0	6/28/95	915				4.11	127	43.2	605	0.49	6.9	328	9198	4.17	129.2	46.6	653	0.57	21.6	7.506	24.031	0.90		<1	<1
W8A	-11.0	7/26/95	1056				4.30	133	36.8	515	0.25	3.5	340	9538	4.41	136.6	39.9	558	0.55	21.4	7.436	23.863	0.85		<1	<1
W8A	-11.0	8/23/95	1023				4.32	134	37.0	518	0.56	7.8	335	9409	4.46	138.1	38.9	544	0.75	21.3	7.465	24.582	BOTTLE BROKE		<1	<1
W8A	-11.0	9/12/95	957				4.26	132	35.7	500	0.18	2.5	332	9336	4.31	133.5	38.0	532	0.48	21.1	7.511	24.207	1.38		<1	<1
W8A	-11.0	10/17/95	1145				4.99	155	45.2	633	0.19	2.7	350	9841	5.03	155.8	47.1	660	0.66	21.1	7.469	23.660	1.19		<1	<1
W8A	-11.0	11/7/95	1057				4.70	146	41.3	579	0.41	5.7	328	9220	4.73	146.5	43.8	613	0.60	21.0	7.595	24.380	1.64		<1	<1
W8A	-11.0	12/6/95	1110				4.80	149	47.8	670	0.35	4.9	320	8993	4.88	151.2	50.2	703	0.66	21.2	7.611	24.435	1.49		<1	<1
W8A	-11.0	1/30/96	854				5.68	176	55.0	770	0.22	3.1	340	9543	5.73	177.5	63.2	886	0.55	21.0	7.642	24.038	1.41		<1	1
W8A	-11.0	2/27/96	1106				6.13	190	90.3	1265	0.21	2.9	315	8844	6.21	192.3	93.3	1307	0.63	21.3	7.627	24.025	1.41		<1	<1
W8A	-11.0	2/27/96	1224				7.12	221	158.8	2224	0.40	5.6	307	8630	7.43	230.1	198.0	2773	0.88	21.6	7.662	23.711	0.65		<1	<1
W8A	-11.0	4/2/96	1115				7.30	226	158.0	2213	0.16	2.2	318	8918	7.51	232.6	166.2	2328	0.84	21.5	7.735	24.124	1.33		<1	<1
W8A	-11.0	5/15/96	1102				7.00	217	102.0	1429	0.07	1.0	310	8707	7.12	220.5	108.3	1516	0.66	22.5	7.893	24.343	0.95		<1	<1
W8A	-11.0	6/18/96	1035				6.75	209	76.7	1074	0.14	2.0	292	8205	6.80	210.6	84.4	1182	0.66	21.6	7.866	25.418	1.10		<1	<1
W8A	-11.0	7/17/96	1057				6.30	195	67.1	939	0.14	2.0	273	7670	6.51	201.6	69.7	976	0.75	22.3	7.851	26.121	1.74		<1	<1
W8A	-11.0	8/6/96	1119				5.57	173	65.2	913	0.47	6.6	255	7167	5.74	177.8	68.9	966	0.84	23.6	7.853	26.635	2.34		<1	<1
W8A	-11.0	9/4/96	1059				5.83	181	60.1	841	0.48	6.7	267	7496	5.95	184.3	63.2	886	0.72	23.5	7.810	26.330	1.98		<1	<1
W8A	-11.0	10/9/96	1154				5.33	165	51.4	719	0.34	4.8	279	7835	5.49	170.0	54.9	770	0.71	23.5	7.790	26.385	3.04		<1	<1
W8A	-11.0	11/6/96	1041				6.07	188	60.5	847	0.17	2.4	284	7964	6.37	197.3	66.3	929	0.67	23.5	7.727	25.347	1.76		<1	<1
W8A	-11.0	12/17/96	1120				5.06	157	78.6	1100	0.20	2.8	272	7637	5.12	158.6	85.2	1193	0.82	23.1	7.759	25.827	1.66		<1	<1
W8A	-11.0	1/14/97	1119				5.90	183	111.1	1555	0.11	1.5	269	7541	6.0*	0.0	114.0	1597	0.76	22.7	7.764	25.269	1.84		<1	<1
W8A	-11.0	2/11/97	934				6.10	189	222.1	3111	0.26	3.6	247	6948	6.2*	0.0	225.0	3152	0.99	22.3	7.915	26.227	2.12		<1	<1
W8A	-11.0	3/11/97	958				6.04	187	262.7	3679	0.20	2.8	260	7288	6.23	193.0	270.0	3782	1.01	22.3	8.022	26.018	0.94		<1	<1
W8A	-11.0	4/23/97	1056				5.34	165	158.6	2221	0.33	4.6	335	9409	5.65	175.0	186.1	2607	0.83	22.5	7.889	25.613	1.68		<1	<1
W8A	-11.0	5/28/97	1003				5.78	179	91.5	1282	0.02	0.3	248	6960	5.95	184.3	104.1	1458	0.85	21.9	7.887	26.434	2.69		<1	<1
W8A	-11.0	6/17/97	1045				5.82	180	77.6	1087	0.25	3.5	245	6873	5.83	180.6	93.1	1304	0.80	22.0	7.886	26.342	2.18		<1	<1

NELHA Water Quality Laboratory

Well 8A Data Table

May 1992 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8A	-11.0	7/15/97	1039				6.91	214	76.3	1069	0.42	5.9	252	7080	7.11	220.2	88.1	1234	0.67	21.9	7.830	25.791	0.40		<1	<1
W8A	-11.0	8/26/97	1106				5.80	180	64.2	899	0.43	6.0	237	6651	5.93	183.7	75.5	1058	0.64	23.0	7.952	27.557	2.16		<1	<1
W8A	-11.0	9/23/97	910				6.20	192	52.4	734	0.25	3.5	255	7173	6.39	197.9	61.5	861	0.58	21.9	7.870	25.819	0.73		<1	<1
W8A	-11.0	10/14/97	1016				6.10	189	44.2	619	0.14	2.0	266	7468	6.14	190.2	53.8	754	0.54	21.7	7.840	25.769	0.96		<1	<1
W8A	-11.0	11/4/97	845				6.04	187	57.0	798	0.12	1.7	263	7389	6.28	194.5	66.0	924	0.54	21.6	7.915	25.707	1.24		<1	<1
W8A	-11.0	12/16/97	1044				5.82	180	59.4	832	0.07	1.0	242	6808	6.09	188.6	62.4	874	0.63	21.7	7.965	26.989	2.59		<1	<1
W8A	-11.0	1/5/98	907				5.55	172	60.1	842	0.02	0.3	218	6118	5.76	178.4	64.5	903	0.69	21.6	7.993	27.373	2.95		<1	<1
W8A	-11.0	2/3/98	755				5.45	169	62.8	880	0.01	0.1	240	6729	5.73	177.5	67.6	947	0.66	21.2	7.949	26.562	2.30		<1	<1
W8A	-11.0	3/10/98	903				5.95	184	96.8	1356	0.14	2.0	243	6828	6.17	191.1	104.4	1462	0.89	21.3	7.852	26.403	2.56		<1	<1
W8A	-11.0	4/14/98	1025				5.02	155	94.6	1325	0.02	0.3	226	6339	5.24	162.3	96.5	1352	0.79	21.7	7.863	27.802	2.71		<1	1
W8A	-11.0	5/12/98	905				4.39	136	123.1	1724	0.08	1.1	239	6707	4.50	139.4	127.3	1783	0.75	21.7	7.865	27.301	2.54		<1	<1
W8A	-11.0	6/2/98	907				4.02	125	114.5	1604	0.08	1.1	234	6583	4.13	127.9	120.4	1686	0.72	21.8	7.850	27.218	2.07		<1	<1
W8A	-11.0	7/14/98	859				4.61	143	93.3	1306	0.16	2.2	194	5457	4.84	149.9	97.2	1361	0.80	22.5	7.785	29.033	2.84		<1	<1
W8A	-11.0	8/11/98	923				4.91	152	99.9	1399	0.08	1.1	198	5569	5.01	155.2	105.8	1482	0.82	22.4	7.798	29.001	1.86		<1	<1
W8A	-11.0	9/15/98	911				4.47	138	86.4	1211	0.12	1.7	181	5069	4.52	140.0	92.1	1290	0.90	23.3	7.774	29.777	3.22		<1	<1
W8A	-11.0	10/13/98	817				4.72	146	84.6	1185	0.04	0.6	170	4786	4.88	151.2	90.0	1261	0.90	24.1	7.731	29.893	1.40		<1	<1
W8A	-11.0	11/4/98	909				5.07	157	83.1	1164	0.04	0.6	190	5345	5.30	164.2	89.4	1252	0.85	23.7	7.749	29.408	1.74		<1	<1
W8A	-11.0	12/16/98	900				5.57	173	82.5	1156	0.12	1.7	207	5800	5.77	178.7	88.1	1234	0.80	22.4	7.776	27.739	2.79		<1	<1
W8A	-11.0	1/12/99	931				5.10	158	82.2	1151	0.18	2.5	208	5831	5.24	162.3	86.2	1207	0.82	22.1	7.795	27.800	3.57		<1	<1
W8A	-11.0	2/3/99	913				5.16	160	103.0	1442	0.08	1.1	190	5325	5.33	165.1	112.2	1572	0.96	22.2	7.839	28.288	2.78		<1	<1
W8A	-11.0	3/2/99	912				5.05	156	80.7	1131	0.02	0.3	204	5735	5.19	160.8	84.1	1178	0.85	21.8	7.818	27.791	3.34		<1	<1
W8A	-11.0	4/6/99	906				4.66	144	80.2	1123	0.09	1.3	182	5123	4.82	149.3	85.4	1196	0.83	22.1	7.788	29.212	2.77		<1	<1
W8A	-11.0	5/4/99	915				4.72	146	77.2	1081	0.06	0.8	191	5362	4.88	151.2	80.0	1121	0.79	21.8	7.814	28.491	2.12		<1	<1
W8A	-11.0	6/2/99	856				4.38	136	59.9	839	0.10	1.4	166	4662	4.55	140.9	64.6	905	0.78	22.8	7.748	29.859	2.63		<1	<1
W8A	-11.0	7/7/99	944				4.52	140	67.9	951	0.01	0.1	176	4937	4.67	144.6	71.4	1000	0.76	22.8	7.803	29.037	2.50		<1	<1
W8A	-11.0	8/25/99	907				4.56	141	68.7	962	0.10	1.4	181	5086	4.73	146.5	74.8	1048	0.80	23.2	7.812	28.967	2.27		<1	<1
W8A	-11.0	9/8/99	919				4.39	136	67.4	945	0.07	1.0	171	4789	4.59	142.2	77.1	1080	0.82	23.6	7.753	29.759	2.19		<1	<1
W8A	-11.0	10/6/99	914				4.41	137	57.0	798	0.02	0.3	154	4311	4.55	140.9	60.4	846	0.73	23.8	7.747	30.082	2.50		<1	<1
W8A	-11.0	11/3/99	937				4.01	124	52.2	731	0.10	1.4	141	3966	4.16	128.9	61.8	866	0.74	23.9	7.797	30.134	2.99		<1	<1
W8A	-11.0	12/15/99	957				4.85	150	79.5	1114	0.05	0.7	160	4505	5.02	155.5	84.9	1189	0.82	23.2	7.751	29.213	2.42		<1	<1
W8A	-11.0	1/11/00	936				5.30	164	94.7	1326	0.16	2.2	177	4982	5.32	164.8	97.5	1366	1.03	22.6	7.744	28.117	2.30		<1	<1
W8A	-11.0	2/14/00	929				5.20	161	73.4	1028	0.05	0.7	186	5232	5.24	162.3	79.1	1108	0.78	22.3	7.823	28.201	3.26		<1	<1
W8A	-11.0	3/22/00	948				4.89	151	71.6	1003	0.09	1.3	188	5280	4.72	146.2	73.3	1027	0.88	22.6	7.813	28.502	2.03		<1	<1
W8A	-11.0	4/12/00	927				5.04	156	63.2	885	0.05	0.7	197	5533	4.97	153.9	68.7	962	0.79	22.5	7.798	28.309	2.17		<1	<1
W8A	-11.0	5/17/00	918				5.01	155	63.6	891	0.02	0.3	188	5286	5.06	156.7	67.7	948	0.82	22.5	7.772	28.486	1.76		<1	<1
W8A	-11.0	6/6/00	935				4.87	151	63.9	895	0.03	0.4	178	4991	5.02	155.5	71.7	1004	0.92	22.4	7.721	29.139	1.88		<1	<1
W8A	-11.0	7/31/00	925				5.10	158	78.3	1097	0.09	1.3	206	5791	5.12	158.6	83.3	1167	0.93	22.9	7.698	18.876	1.67		<1	<1
W8A	-11.0	8/30/00	920				4.63	143	74.2	1039	0.02	0.3	185	5204	4.81	149.0	78.3	1097	0.78	23.7	7.559	20.540	1.38		<1	<1
W8A	-11.0	9/6/00	910				4.73	147	72.0	1008	0.01	0.1	181	5095	4.92	152.4	74.8	1048	0.82	23.8	7.537	20.976	1.03		<1	<1
W8A	-11.0	10/25/00	918				4.40	136	77.8	1090	0.13	1.8	170	4777	4.70	145.6	74.4	1042	0.78	24.1	7.540	29.836	1.89		<1	1
W8A	-11.0	11/14/00	931				4.53	140	118	1654	0.23	3.2	156	4393	4.96	153.6	128	1787	1.16	23.8	7.615	29.677	1.71		<1	<1
W8A	-11.0	12/19/00	908				5.13	159	109	1532	0.13	1.8	184	5173	5.43	168.2	118	1650	0.85	21.6	7.719	27.824	1.77		<1	<1
W8A	-11.0	1/24/01	852				4.83	150	82.8	1159	0.12	1.7	181	5083	5.03	155.8	88.8	1243	0.79	22.0	7.604	28.656	1.20		<1	<1
W8A	-11.0	2/7/01	923				5.03	156	77.9	1091	0.07	1.0	186	5224	5.20	161.1	82.1	1150	0.73	21.6	7.706	28.458	1.46		<1	<1
W8A	-11.0	3/12/01	900				5.74	178	78.9	1105	0.03	0.4	188	5272	6.14	190.2	88.5	1240	1.05	20.9	7.590	28.375	0.37		<1	<1
W8A	-11.0	4/18/01	848				6.36	197	81.3	1139	0.02	0.3	212	5951	6.48	200.7	84.4	1182	0.77	20.5	7.649	27.341	1.87		<1	<1
W8A	-11.0	5/14/01	1021				6.29	195	75.6	1058	0.18	2.5	210	5895	6.29	194.8	78.6	1101	0.61	20.7	7.671	27.398	1.98		<1	<1
W8A	-11.0	6/13/01	906				5.84	181	65.9	923	0.02	0.3	200	5628	5.82	180.3	68.5	959	0.64	21.3	7.688	28.362	2.17		<1	<1
W8A	-11.0	7/24/01	927				4.80	149	77.7	1089	0.04	0.6	182	5123	4.76	147.4	80.5	1127	0.88	22.6	7.714	28.988	1.65		<1	<1
W8A	-11.0	8/22/01	924				4.54	141	75.7	1060	0.03	0.4	146	4109	4.50	139.4	79.9	1119	0.91	23.1	7.711	29.782	1.64		<1	<1
W8A	-11.0	9/17/01	1003				4.44	138	75.5	1058	0.02	0.3	168	4724	4.44	137.5	75.0	1050	0.85	23.6	7.718	29.576	1.51		<1	<1
W8A	-11.0	10/22/01	957				4.44	138	73.0	1022	0.12	1.7	163	4578	4.62	143.1	79.7	1116	0.82	23.2	7.677	29.298	1.80		<1	<1
W8A	-11.0	11/5/01	1026				4.54	141	75.4	1056	0.01	0.1	167	4696	4.66	144.3	87.1	1220	0.80	23.0	7.675	29.254	2.04		<1	<1
W8A	-11.0	12/12/01	1009				5.19	161	79.8	1118	0.31	4.3	204	5732	5.27	163.2	90.2	1263	0.76	22.2	7.730	28.055	2.07		<1	<1
W8A	-11.0	1/7/02	948				5.46	169	96.3	1349	0.25	3.5	204	5718	5.40	167.3	102	1429	0.84	22.6	7.732	28.377	2.44		<1	<1
W8A	-11.0	2/25/02	917				5.82	180	116	1618	0.08	1.1	183	5128	6.02	186.5	125	1755	1.14	21.7	7.867	28.358	1.08		<1	1
W8A	-11.0	3/18/02	952				6.04	187	88.3	1237	0.33	4.6	182	5103	6.32	195.8	92.8	1300	0.82	21.5	7.923	28.137	1.14		<1	<1
W8A	-11.0	4/10/02	953				9.16	284	173	2423	29.2	409	180	5041	9.50	294.3	225	3154	2.87	21.5	8.233	28.054	0.59		<1	<1
W8A	-11.0	5/22/02	1010				10.3	318	52.1	730	1.80	25	191	5373	10.5	326.2	57.5	806	1.01	22.1	7.977	28.452	0.31		<1	<1
W8A	-11.0	6/19/02	1041				7.92	245	45.4	636	0.16	2.2	168	4730	8.16	252.7	51.9	726	0.87	23.1	7.803	29.573	0.76		<1	<1

NELHA Water Quality Laboratory

Well 8A Data Table

May 1992 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8A	-11.0	7/22/02	1035				7.82	242	40.6	568	0.11	1.5	207	5817	8.10	250.9	44.9	630	1.04	22.9	7.775	28.136	0.85		<1	<1
W8A	-11.0	8/21/02	1101				7.01	217	40.4	566	0.28	3.9	202	5670	7.32	226.7	45.3	635	1.06	22.8	7.645	29.237	0.48		<1	<1
W8A	-11.0	9/25/02	942				8.54	265	61.0	854	0.26	3.6	202	5659	8.88	275.0	64.5	903	1.32	23.9	7.708	28.890	0.28		<1	1
W8A	-11.0	10/15/02	956				9.34	289	60.3	845	0.19	2.7	188	5280	9.72	301.1	64.0	896	1.12	23.5	7.816	28.605	0.21		<1	1
W8A	-11.0	11/17/02	946				8.12	252	64.5	903	0.03	0.4	176	4937	8.50	263.3	66.6	933	1.10	23.6	7.751	29.275	0.20		<1	<1
W8A	-11.0	12/18/02	1000				8.58	266	69.4	972	0.07	1.0	195	5471	8.69	269.2	66.3	928	0.91	22.8	7.724	27.979	0.26		1	<1
W8A	-11.0	1/23/03	949				9.56	296	94.8	1328	<0.02	0.0	169	4741	9.80	303.5	109	1521	1.51	22.6	7.792	29.628	0.02		<1	<1
W8A	-11.0	2/11/03	1014				13.3	411	171	2390	0.10	1.4	191	5373	13.4	415.7	198	2776	2.00	22.0	7.981	27.728	0.14		<1	<1
W8A	-11.0	3/20/03	1105				12.7	393	206	2885	0.06	0.8	188	5291	13.1	405.8	251	3521	2.03	22.1	8.117	28.004	0.12		<1	<1
W8A	-11.0	4/30/03	938				11.6	359	81.6	1143	0.12	1.7	194	5451	11.9	368.6	107	1503	2.14	22.5	8.075	27.836	1.21		1	<1
W8A	-11.0	5/14/03	850				12.3	382	49.8	697	3.36	47	185	5199	12.8	396.2	67.0	939	2.36	22.5	8.082	28.635	1.31		<1	<1
W8A	-11.0	6/4/03	927				15.1	469	25.2	354	22.1	309	188	5274	15.79	489.1	61.4	861	2.88	22.9	8.101	28.684	0.09		<1	<1
W8A	-11.0	7/30/03	922				12.15	376	24.6	344	6.73	94	194	5437	12.57	389.3	50.1	702	1.52	22.8	8.056	27.924	0.07		<1	<1
W8A	-11.0	8/28/03	901				9.90	307	41.3	578	3.04	43	196	5513	12.78	395.8	57.8	810		23.3	7.852	28.292	0.09		<1	<1
W8A	-11.0	9/16/03	857				9.42	292	26.7	374	0.23	3.2	195	5482	9.52	294.9	43.5	610		23.8	7.774	28.800	0.15		<1	1
W8A	-11.0	10/8/03	857				8.80	273	39.7	556	2.70	38	209	5859	9.22	285.6	52.2	731		23.6	7.726	28.033	NA		<1	<1
W8A	-11.0	11/5/03	904				9.04	280	36.8	515	4.63	65	222	6232	9.42	291.8	46.9	657		22.8	7.687	27.378			<1	<1
W8A	-11.0	11/14/03	1512																	22.9			0.22			
W8A	-11.0	12/17/03	940				9.46	293	70.0	980	1.50	21	218	6117	9.59	297.0	76.9	1077		22.5	7.624	27.566	0.24		<1	<1
W8A	-11.0	1/28/04	944				8.12	252	74.3	1041	0.55	7.7	239	6715	8.40	260.2	77.7	1089	1.52	21.6	7.611	26.511	0.32		<1	<1
W8A	-11.0	2/11/04	856				9.28	287	73.1	1024	0.21	2.9	198	5569	10.1	314.1	80.9	1134	1.10	22.0	7.591	27.720	0.39		<1	2
W8A	-11.0	3/16/04	946				8.65	268	75.0	1051	0.17	2.4	215	6041	9.25	286.5	84.8	1187		21.9	7.632	27.410	0.86		<1	<1
W8A	-11.0	4/22/04	930				8.10	251	65.9	923	0.27	3.8	216	6055	8.14	252.1	73.8	1034		22.1	7.634	27.348	1.22		<1	<1
W8A	-11.0	5/18/04	910				7.20	223	66.4	930	0.15	2.1	219	6154	7.45	230.8	70.5	987		22.0	7.558	26.65	3.29		<1	2
W8A	-11.0	6/8/04	912				7.48	232	63.6	891	0.12	1.7	220	6168	7.82	242.2	66.8	936		22.3	7.525	27.09	0.83		<1	<1
W8A	-11.0	7/19/04	1006				6.94	215	70.8	992	0.19	2.7	208	5828	6.98	216.2	72.1	1010		21.9	7.489	26.98	1.57		<1	6
W8A	-11.0	8/25/04	942				6.84	212	65.4	915	0.15	2.1	222	6243	7.00	216.8	69.2	969		21.6	7.483	26.74	1.60		5	1
W8A	-11.0	9/27/04	1101				7.68	238	51.8	725	0.19	2.7	224	6280	7.92	245.3	57.7	808		23.4	7.462	27.75	0.77		<1	<1
W8A	-11.0	10/4/04	1020				7.56	234	47.3	663	0.26	3.6	194	5454	7.98	247.2	55.3	774		24.0	7.452	27.99	0.69		<1	<1
W8A	-11.0	11/23/04	1014				6.96	216	37.6	526	2.55	35.7	207	5822	7.10	219.9	51.3	719		23.8	7.629	27.69	0.82		<1	<1
W8A	-11.0	12/8/04	1012				6.68	207	40.4	566	0.34	4.8	199	5583	6.86	212.5	48.7	682		23.9	7.411	27.90	0.69		<1	<1
W8A	-11.0	1/18/05	1019				6.7	209	59.4	832	0.07	1.0	213	5991	6.92	214.3	65.4	915		22.5	7.513	27.565	0.71		<1	<1
W8A	-11.0	2/10/05	1006				10.4	322	70.9	994	0.56	7.8	187	5249	10.8	335.8	91.9	1287		22.2	7.959	27.675	0.28		<1	<1
W8A	-11.0	3/22/05	1012				14.0	433	74.6	1044	0.13	1.8	198	5572	14.5	450.4	80.6	1128	1.54	21.8	8.114	27.106	0.19		<1	<1
W8A	-11.0	4/20/05	1005				8.52	264	56.9	797	0.14	2.0	182	5106	9.00	278.8	57.8	810		22.4	7.906	28.296	0.49		<1	<1
W8A	-11.0	5/25/05	1028				8.52	264	66.9	937	0.15	2.1	208	5828	9.04	280.0	75.3	1054		21.1	7.910	27.315	1.25		<1	<1
W8A	-11.0	6/14/05	1021				7.66	237	52.5	735	0.13	1.8	201	5645	7.90	244.7	55.4	776		22.8	7.823	27.828	0.56		<1	<1
W8A	-11.0	7/19/05	1010				7.64	237	34.0	477	1.85	26	191	5359	7.64	236.6	42.5	595	0.90	24.1	7.674	28.560	0.42		<1	<1
W8A	-11.0	8/3/05	1048				8.3	256	38.3	536	0.29	4.1	200	5628	8.46	262.0	41.9	587	0.84	24.1	7.734	28.175	0.48		<1	<1
W8A	-11.0	9/22/05	1004				7.46	231	56.0	784	0.17	2.4	212	5957	7.62	236.0	59.5	833	0.68	24.6	7.674	27.973	0.60		<1	<1
W8A	-11.0	10/19/05	1013				6.36	197	99.6	1395	0.13	1.8	216	6064	6.50	201.3	106	1482		23.7	7.641	27.665	0.43		<1	<1
W8A	-11.0	11/8/05	958				6.49	201	57.7	809	0.04	0.6	222	6235	6.68	206.9	61.7	865		22.8	7.614	27.349	0.71		<1	<1
W8A	-11.0	12/22/05	929				6.90	214	42.1	590	0.34	4.8	236	6628	7.02	217.4	43.8	614		22.2	7.632	27.427	0.62		<1	<1
W8A	-11.0	1/31/06	957				6.74	209	62.8	879	0.24	3.4	242	6808	6.82	211.2	63.5	890		21.6	7.637	27.351	0.84		<1	<1
W8A	-11.0	2/16/06	958				6.50	201	61.9	866	0.12	1.7	239	6707	6.84	211.9	62.9	881	0.71	21.4	7.663	27.318	1.01		<1	1
W8A	-11.0	3/22/06	957				6.18	191	87.4	1224	0.23	3.2	254	7134	6.28	194.5	89.0	1247	0.55	20.9	7.629	26.818	1.67		<1	<1
W8A	-11.0	4/27/06	1035				6.01	186	71.0	994	0.10	1.4	238	6684	6.16	190.8	63.1	883	0.54	20.5	7.653	27.354	2.11		<1	<1
W8A	-11.0	5/24/06	1100				5.87	182	71.8	1006	<0.05	0.0	257	7218	6.12	189.6	65.6	919	0.59	20.6	7.64	26.968	2.71		<1	<1
W8A	-11.0	6/28/06	1047				5.67	176	58.3	817	0.26	3.6	244	6853	5.93	183.7	55.9	783	0.61	21.2	7.605	27.529	2.29		<1	<1
W8A	-11.0	7/19/06	1019				5.60	173	65.1	912	0.19	2.7	253	7106	5.74	177.8	59.2	829	0.57	20.8	7.605	27.227	2.81		<1	<1
W8A	-11.0	8/9/06	1001				5.57	173	53.2	745	0.11	1.5	260	7302	5.85	181.2	50.3	704	0.58	21.5	7.597	27.471	2.39		<1	<1
W8A	-11.0	9/20/06	1010				5.54	172	54.8	768	0.09	1.3	254	7134	5.84	180.9	51.2	717	0.58	21.7	7.579	27.507	2.34		<1	<1
W8A	-11.0	10/25/06	1048				5.42	168	55.1	772	0.21	2.9	238	6684	5.70	176.6	53.9	755	0.68	23.3	7.579	27.475	1.44		<1	<1
W8A	-11.0	11/29/06	1015				5.46	169	54.3	761	0.23	3.2	227	6375	5.55	171.9	52.5	735	0.66	22.3	7.612	27.603	1.53		<1	<1
W8A	-11.0	12/13/06	1007				5.45	169	49.9	699	0.21	2.9	225	6319	5.59	173.1	47.4	663	0.58	22.3	7.606	27.557	1.48		<1	<1
W8A	-11.0	1/10/07	1010				5.72	177	57.3	803	0.28	3.9	250	7021	5.95	184.3	59.0	826	0.56	21.2	7.581	26.652	2.08		<1	<1
W8A	-11.0	2/21/07	1031				5.49	170	51.4	720	0.40	5.6	262	7358	5.86	181.5	56.9	797	0.59	20.5	7.576	26.432	1.93		<1	1
W8A	-11.0	3/7/07	1023				5.46	169	53.5	749	0.18	2.5	264	7415	5.64	174.7	52.6	737	0.61	20.6	7.587	26.300	2.01		<1	<1
W8A	-11.0	4/19/07	1006				5.32	165	61.7	864	0.18	2.5	272	7639	5.49	170.0	53.8	753	0.49	21.2	7.586	26.363	2.19		<1	1
W8A	-11.0	5/2/07	1018				5.26	163	55.5	777	0.27	3.8	272	7639	5.77	178.7	52.4	733	0.48	20.8	7.592	26.363	2.27		<1	<1
W8A	-11.0	6/20/07	1018				5.11	158			0.17	2.4	258	7246	5.40	167.3	48.0	672		21.7	7.635	26.967	2.00		<1	<1

NELHA Water Quality Laboratory

Well 8A Data Table

May 1992 - December 2014

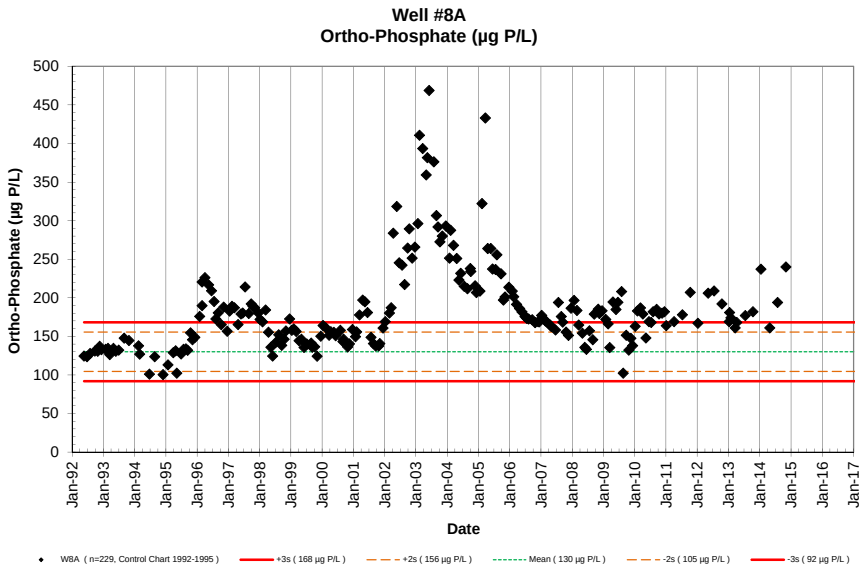
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8A	-11.0	7/25/07	1046	-4.06	0.46	Flood	6.26	194	57.0	798	0.61	8.5	273	7657	5.52	171.1	55.2	773		21.4	7.46	27.07	2.48			
W8A	-11.0	8/27/07	1054		0.06	Flood	5.68	176	64.7	906	0.16	2.3	276	7747	5.40	167.2	54.1	758		22.1	7.52	27.11	2.60			
W8A	-11.0	9/13/07	1515	-4.14	0.4	Flood	5.44	169	46.4	650	0.21	2.9	265	7430	5.70	176.5	49.9	699		21.7	7.56	27.67	2.39			
W8A	-11.0	10/23/07	1015	-2.87	0.24	Flood	5.02	156	53.1	744	0.02	0.3	239	6699	6.16	190.7	92.2	1291		22.3	7.41	27.54	2.16			
W8A	-11.0	11/20/07	1050	-3.30	0.4	Flood	4.88	151	56.8	795	0.04	0.5	256	7189	4.57	141.4	62.2	872		21.6	7.42	27.21	2.49			
W8A	-11.0	12/19/07	1035	-3.96	0.3	High	6.02	187	57.8	810	6.22	87	227	6377						21.3	7.55	27.02	1.83			
W8A	-11.0	1/24/08	1428	-3.33	0.06	Flood	6.35	197	72.9	1021	0.76	11	218	6120						21.1	7.53	26.71	1.63			
W8A	-11.0	2/26/08	904	-4.19	0.18	Ebb	5.93	184	66.0	925	0.42	5.9	251	7045						20.4	7.53	26.23	2.39			
W8A	-11.0	3/17/08	1102	-1.93	0.06	Flood	5.32	165	60.8	852	0.06	0.8	247	6928						20.5	7.47	26.30	2.56			
W8A	-11.0	4/30/08	1101	-2.44	0.21	Flood	4.98	154	50.7	711	0.09	1.2	222	6243						21.2	7.49	27.20	2.22			
W8A	-11.0	5/27/08	1037	-3.96	0.24	High	4.38	136	58.5	819	0.09	1.2	256	7184						20.6	7.55	26.35	3.05			
W8A	-11.0	6/16/08	1101	-3.35	0.24	Flood	4.30	133	55.1	771	0.16	2.3	257	7220						21.1	7.56	26.68	4.63			
W8A	-11.0	7/21/08	957	-5.82	0.12	Ebb	5.08	157	55.4	776	0.29	4.0	228	6408						22.4	7.58	26.93	3.34	0.02		
W8A	-11.0	8/30/08	1352		0.46	Flood	4.70	146	58.1	814	0.31	4.4	227	6375						21.2	7.57	27.84	2.35	0.16		
W8A	-11.0	9/15/08	1107	-4.50	0.09	Low	5.77	179	80.5	1128	0.13	1.8	227	6374						21.0	7.54	27.32	2.27			
W8A	-11.0	10/31/08	1041	-4.29	0.3	Ebb	5.98	185	69.7	977	0.22	3.1	246	6902												
W8A	-11.0	11/14/08	1024	-4.23	0.15	Ebb	5.80	180	90.1	1262	0.01	0.2	231	6487						22.6	7.65	26.40	3.62	0.29		
W8A	-11.0	12/15/08	1337	-4.45	0.03	Low	5.91	183	86.7	1215	0.11	1.5	227	6377						22.8	7.73	26.45	3.09			
W8A	-11.0	1/27/09	837	-4.15	0.3	Ebb	5.55	172	172.0	2409	0.66	9.3	274	7692						21.8	7.60	25.87	2.60	1.93		
W8A	-11.0	2/24/09	1313	-4.41	0.15	Flood	5.37	166	135.4	1897	1.04	14.5	267	7491						21.3	7.55	26.16	2.78	0.17		
W8A	-11.0	3/16/09	1324	-4.56	0.03	Low	4.37	135	69.0	966	0.13	1.8	212	5965						21.9	7.39	24.67	3.46	0.32		
W8A	-11.0	4/22/09	1133	-4.47	0.18	Flood	6.28	195	95.8	1342	0.32	4.5	241	6770						22.1	7.66	25.67	3.33	2.06		
W8A	-11.0	5/27/09	1114	-4.33	0	Low	5.97	185	106.2	1488	0.24	3.4	491	13802						20.4	7.69	23.68	2.98	0.12		
W8A	-11.0	6/19/09	1438	-3.88	0.73	High	6.27	194	61.8	866	0.44	6.1	193	5413						21.1	7.61	28.10	3.06	0.06		
W8A	-11.0	7/31/09	1246	-3.91	0.67	High	6.72	208	66.1	926	0.68	9.5	140	3927						21.0	7.58	28.30	3.29	0.04		
W8A	-11.0	8/20/09	1319	-4.07	0.46	Flood	3.30	102	36.5	511	0.27	3.8	94	2642						21.3	7.67	28.29	2.52	0.04		
W8A	-11.0	9/24/09	1503	-4.30	0.21	Ebb	4.89	152	70.5	987	0.59	8.3	186	5236						20.5	8.20	26.93	3.54	3.57		
W8A	-11.0	10/23/09	1056	-4.17	0.43	Ebb	4.27	132	50.9	712	0.56	7.8	102	2863						21.1	7.53	27.24	2.97	0.08		
W8A	-11.0	11/17/09	1618	-4.39	0.37	High	4.76	148	59.9	839	0.97	13.6	223	6250						20.2	7.52	26.90	3.63	0.07		
W8A	-11.0	12/8/09	1110	-4.12	0.52	Ebb	4.46	138	82.2	1152	1.04	14.5	307	8619						20.4	7.53	25.90	3.50	0.21		
W8A	-11.0	1/6/10	1039	-4.15	0.3	Ebb	5.26	163	103.7	1453	1.29	18.0	265	7438						21.2	7.63	26.20	2.50	2.59		
W8A	-11.0	2/2/10	1016	-4.21	0.15	Ebb	5.91	183	124.2	1739	0.57	8.0	244	6861						20.9	7.66	25.96	2.54	0.61		
W8A	-11.0	3/10/10	950	-4.50	0.09	Flood	6.04	187	90.0	1261	0.36	5.0	280	7874						20.1	7.65	25.39	3.57	0.05		
W8A	-11.0	4/7/10	931	-4.44	0.12	Flood	5.78	179	80.1	1122	1.07	15	276	7744						19.9	7.66	25.89	3.58	0.03		
W8A	-11.0	5/12/10	929	-4.57	-0.03	Flood	4.78	148	59.5	834	1.21	17	216	6056						20.3	7.71	27.31	3.40	0.04		
W8A	-11.0	6/16/10	1513	-4.38	0.24	Flood	5.46	169	72.9	1021	0.43	6.0	276	7742						20.3	7.69	27.27	3.38	0.06		
W8A	-11.0	7/13/10	1537	-4.06	0.49	Flood	5.42	168	67.3	942	0.14	2.0	264	7413						20.1	7.74	27.38	3.26	0.13		
W8A	-11.0	8/3/10	1542	-4.13	0.37	Ebb	5.88	182	67.0	938	0.44	6.2	276	7758						20.2	7.73	27.20	3.49	0.07		
W8A	-11.0	9/14/10	1548	-4.22	0.21	Ebb	5.97	185	65.8	922	0.18	2.5	273	7654						20.5	7.66	27.24	3.43	0.10		
W8A	-11.0	10/12/10	1611	-4.26	0.18	Low	5.78	179	63.1	884	0.17	2.4	277	7777						20.2	7.63	27.18	3.19	0.07		
W8A	-11.0	11/16/10	1453	-4.14	0.3	Ebb	5.81	180	66.5	932	0.31	4.4	272	7652						21.0	7.57	27.29	2.80	0.18		
W8A	-11.0	12/14/10	1520	-4.33	0.12	Ebb	5.88	182	71.3	999	0.19	2.7	265	7448						21.8	7.53	27.06	1.93	0.10		
W8A	-11.0	1/4/11	1503	-4.32	0.15	Flood	5.29	164	81.0	1135	0.28	3.9	263	7373						21.3	7.48	26.69	2.63	0.08		
W8A	-11.0	4/5/11	1518	-4.14	0.37	Flood	5.46	169	91.7	1285	0.07	1.0	240	6739						21.1	7.59	26.77	2.10	0.03		
W8A	-11.0	7/12/11	1457	-3.89	0.73	High	5.75	178	69.5	973	0.25	3.5	239	6725						20.9	7.95	27.46	2.31	0.05		
W8A	-11.0	10/11/11	1426	-4.12	0.34	Flood	6.68	207	43.8	614	5.04	71	236	6636						21.2	7.64	27.79	0.02	0.05		
W8A	-11.0	1/10/12	1538	-4.36	0.18	Flood	5.39	167	46.1	646	0.35	4.9	303	8498						20.4	7.75	25.59	2.49	0.04		
W8A	-11.0	5/8/12	1338	-4.45	0.06	Flood	6.65	206	60.3	845	0.30	4.2	269	7567						20.4	7.66	27.51	1.96	0.10		
W8A	-11.0	7/17/12	1450	-3.86	0.7	Flood	6.75	209	67.8	949	0.31	4.4	237	6645						20.4	7.58	28.15	2.28	0.18		
W8A	-11.0	10/15/12	1406	-4.21	0.3	Flood	6.20	192	66.8	936	0.46	6.4	253	7119						20.1	7.61	27.62	0.70	0.02		
W8A	-11.0	1/7/13	1511	-4.35	0.12	Ebb	5.46	169	62.8	879	0.13	1.8	341	9581						20.0	7.57	26.22	1.66	0.15		
W8A	-11.0	1/14/13	958	-4.03	0.24	Ebb	5.84	181	63.3	887	0.20	2.8	298	8358						20.5	7.67	26.73	1.56	0.11		
W8A	-11.0	1/29/13	1434	-4.30	0.09	Flood	5.62	174	62.2	871	0.99	14	292	8192						20.4	7.55	26.47	1.77			
W8A	-11.0	3/20/13	1035	-4.33	0.18	High	5.20	161	61.0	855	1.14	16	289	8114						20.4	7.64	25.88	2.82	0.04		
W8A	-11.0	4/8/13	1505	-4.08	0.49	Flood	5.42	168	74.4	1042	0.39	5.5	269	7552						20.3	7.61	26.62	2.25	0.02		
W8A	-11.0	7/16/13	1652	-4.29	0.24	Ebb	5.71	177	60.2	843	0.22	3.1	294	8262						20.7	7.54	26.34	2.31	0.10		
W8A	-11.0	10/14/13	1728	-4.30	0.12	Ebb	5.88	182	60.3	844	2.98	42	272	7640						20.3	7.51	26.81	2.49	0.02		
W8A	-11.0	1/14/14	1533	-4.24	0.18	High	7.65	237	42.2	591	10.24	143	313	8788						22.2	7.48	23.21	0.33	0.02		
W8A	-11.0	4/28/14	1504	-4.02	0.55	Flood	5.20	161	76.9	1077	0.49	6.8	264	7418						20.1	7.73	26.41	3.21	0.02		

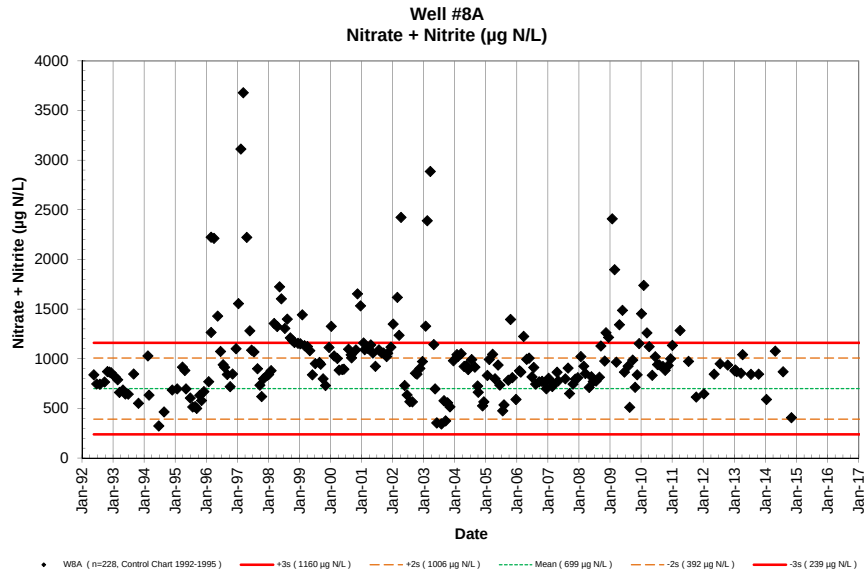
NELHA Water Quality Laboratory

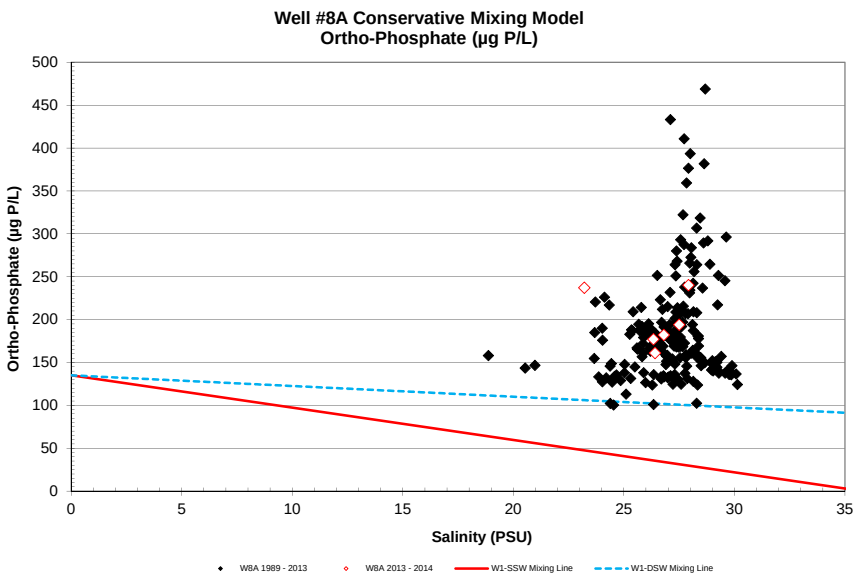
Well 8A Data Table

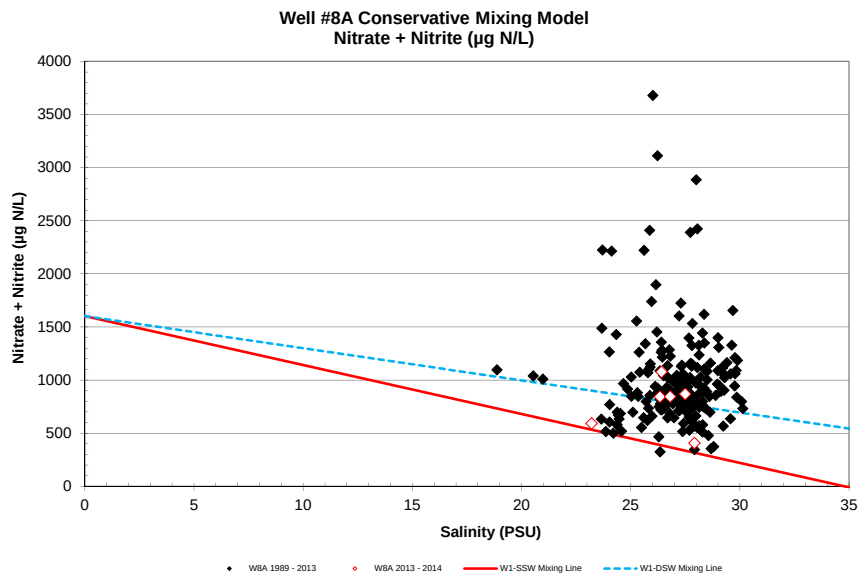
May 1992 - December 2014

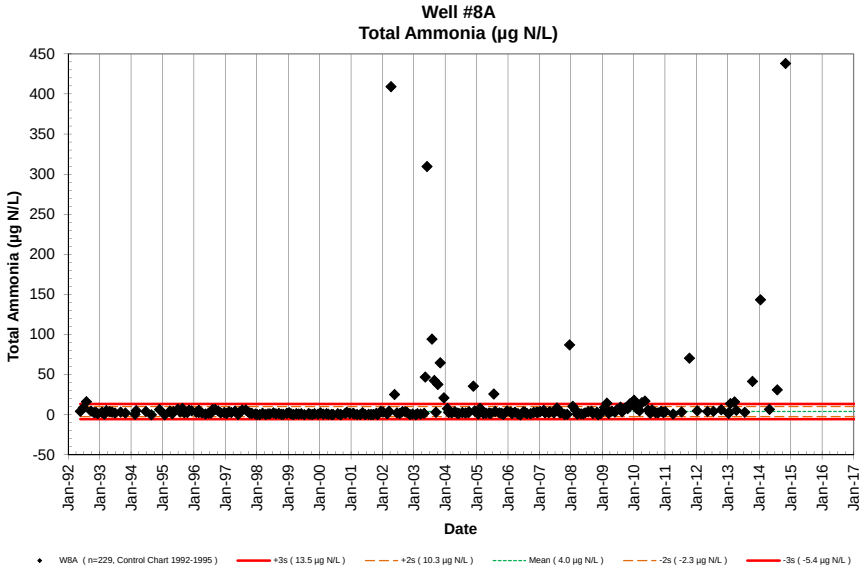
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8A	-11.0	7/28/14	1623	-4.01	0.55	Flood	6.26	194	62.0	869	2.21	31	241	6769						21.5	7.38	27.50	0.83	0.06		
W8A	-11.0	11/3/14	1349	-3.92	0.46	Flood	7.75	240	29.0	406	31.27	438	236	6615						22.6	7.40	27.92	0.08	0.10		
W8A	-11.0	1/1/15																								
W8A	-11.0	4/1/15																								

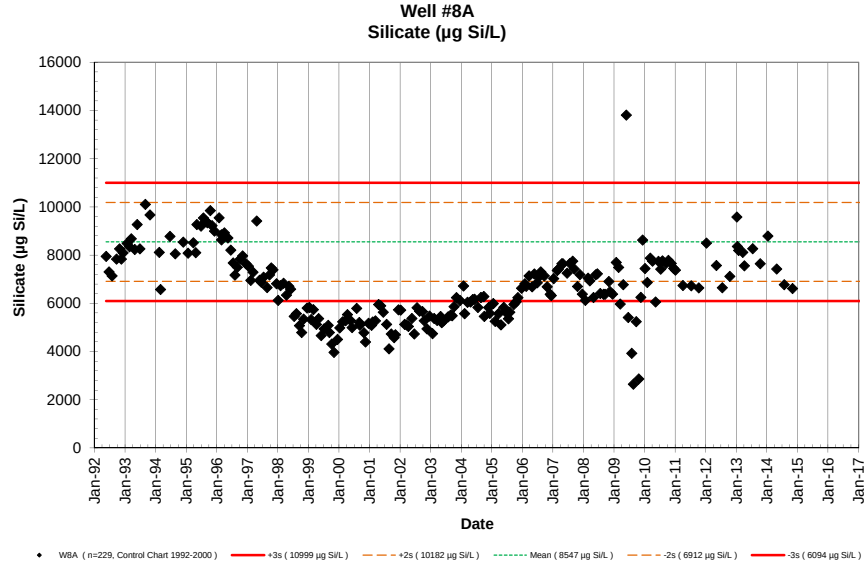

Well #8A
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W8A (n=229, Control Chart 1992-1995)
+3s (168 µg P/L)
+2s (156 µg P/L)
Mean (130 µg P/L)
-2s (105 µg P/L)
-3s (92 µg P/L)

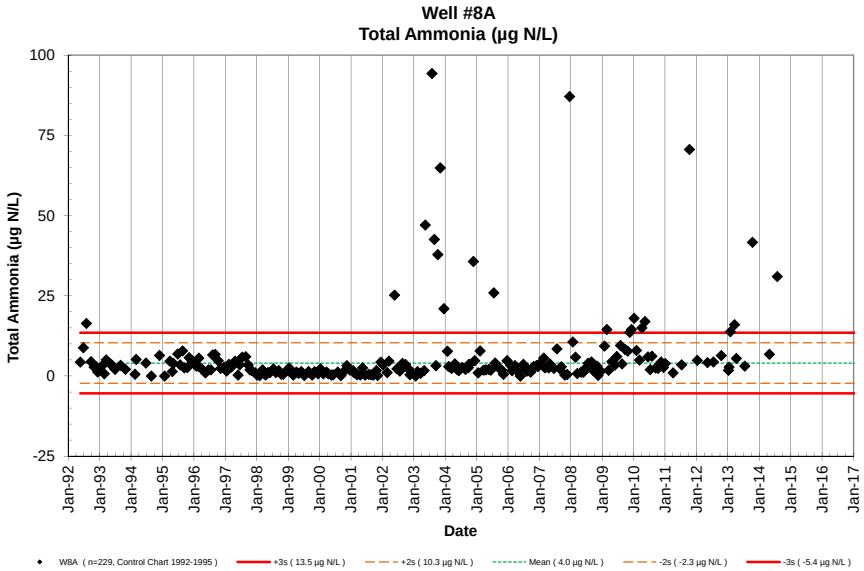

Well #8A
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W8A (n=228, Control Chart 1992-1995)
+3s (1160 µg N/L)
+2s (1006 µg N/L)
Mean (699 µg N/L)
-2s (392 µg N/L)
-3s (239 µg N/L)

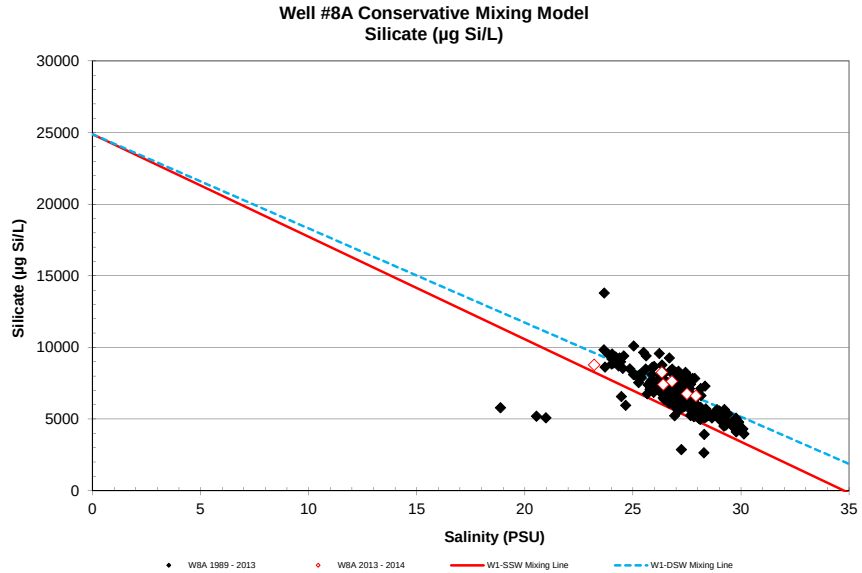

Well #8A Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W8A 1989 - 2013
W8A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

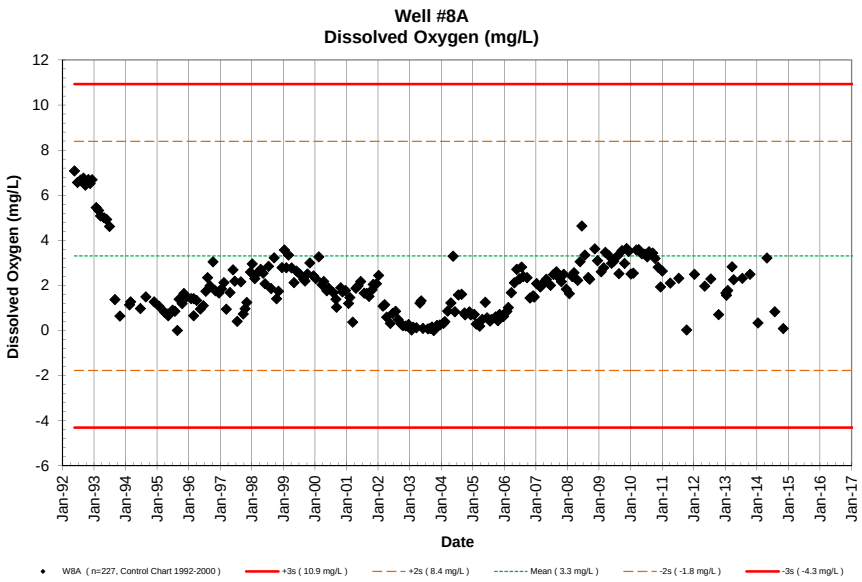

Well #8A Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W8A 1989 - 2013
W8A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

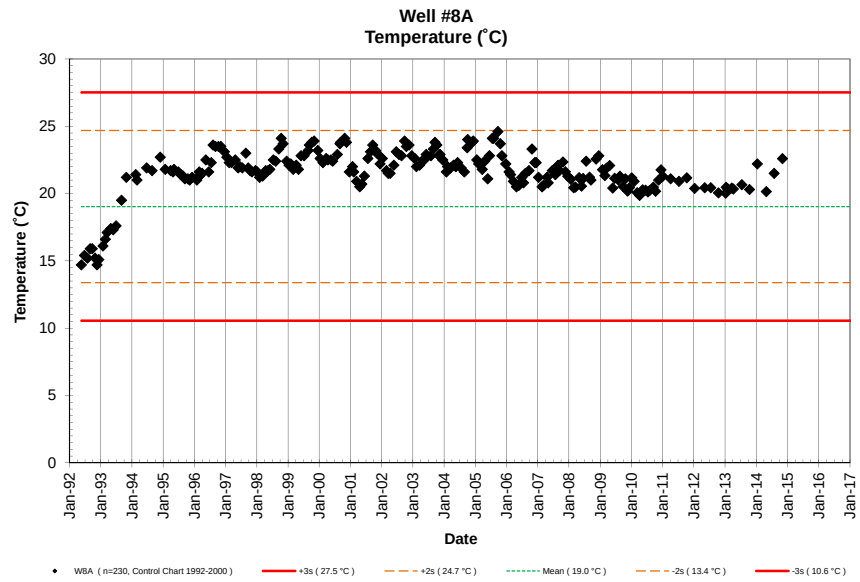

Well #8A
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W8A (n=229, Control Chart 1992-1995)
+3s (13.5 µg N/L)
+2s (10.3 µg N/L)
Mean (4.0 µg N/L)
-2s (-2.3 µg N/L)
-3s (-5.4 µg N/L)

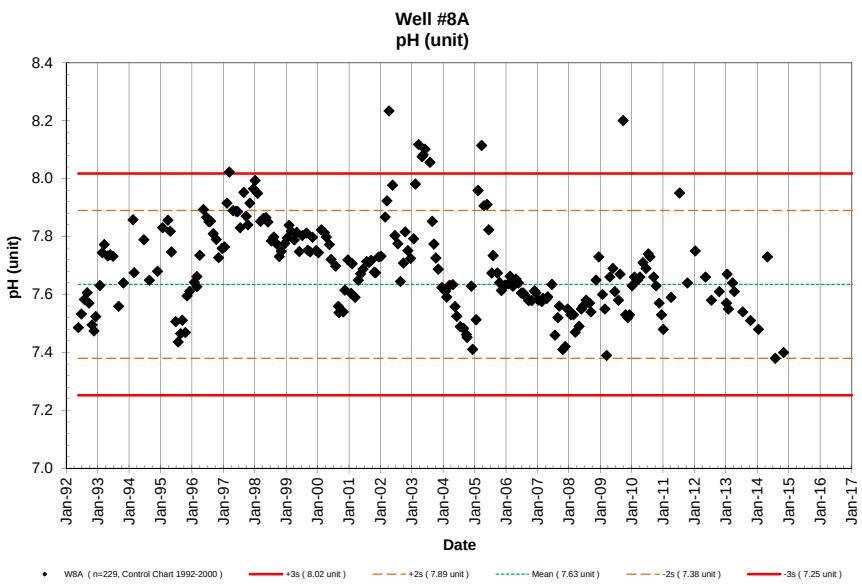

Well #8A
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W8A (n=229, Control Chart 1992-2000)
+3s (10999 µg Si/L)
+2s (10182 µg Si/L)
Mean (8547 µg Si/L)
-2s (6912 µg Si/L)
-3s (6094 µg Si/L)

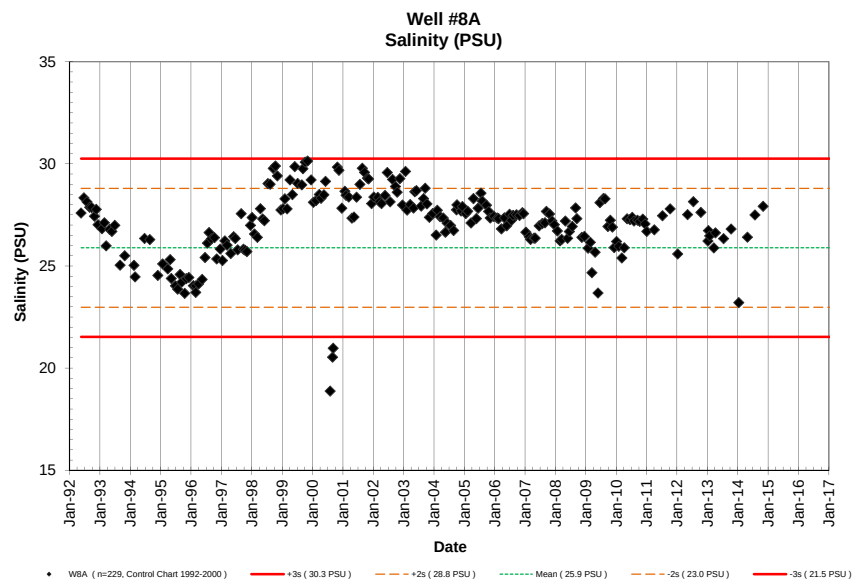

Well #8A
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W8A (n=229, Control Chart 1992-1995)
+3s (13.5 µg N/L)
+2s (10.3 µg N/L)
Mean (4.0 µg N/L)
-2s (-2.3 µg N/L)
-3s (-5.4 µg N/L)

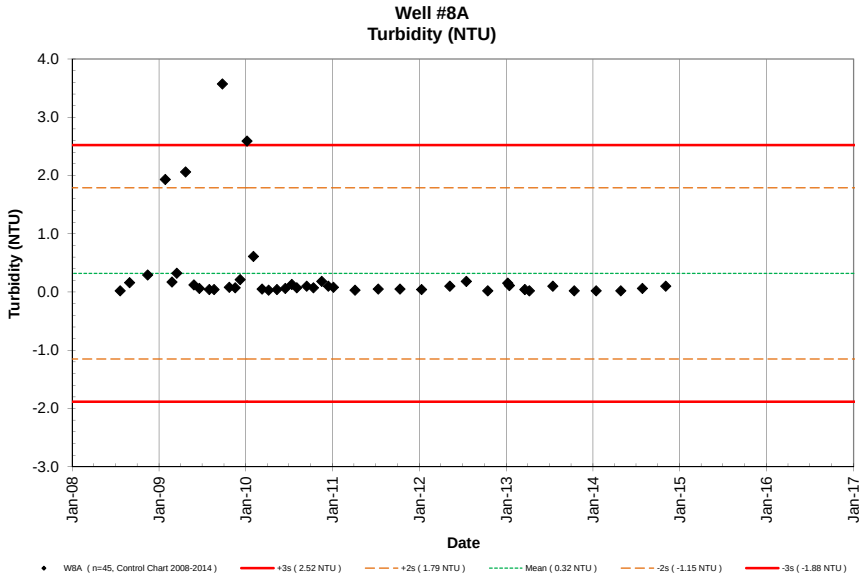

Well #8A Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W8A 1989 - 2013
W8A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

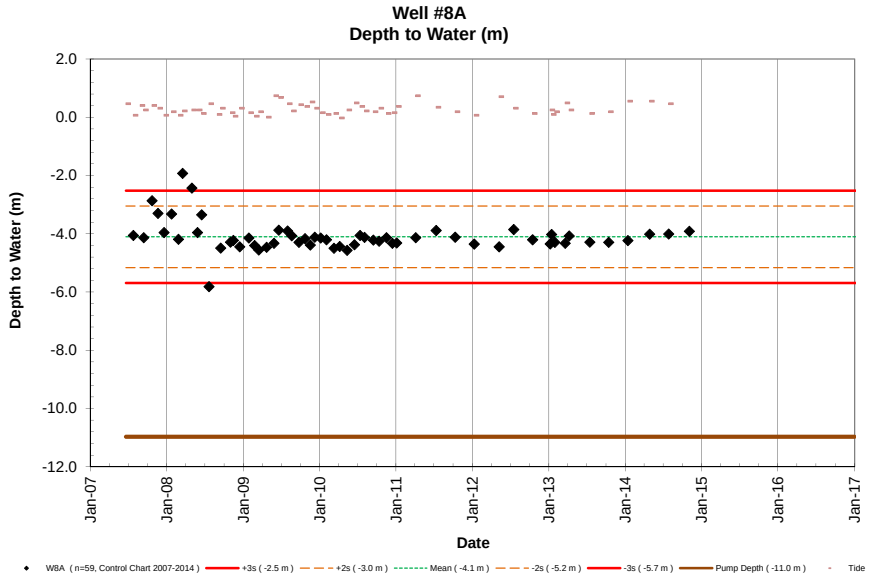

Well #8A
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W8A (n=227, Control Chart 1992-2000)
+3s (10.9 mg/L)
+2s (8.4 mg/L)
Mean (3.3 mg/L)
-2s (-1.8 mg/L)
-3s (-4.3 mg/L)

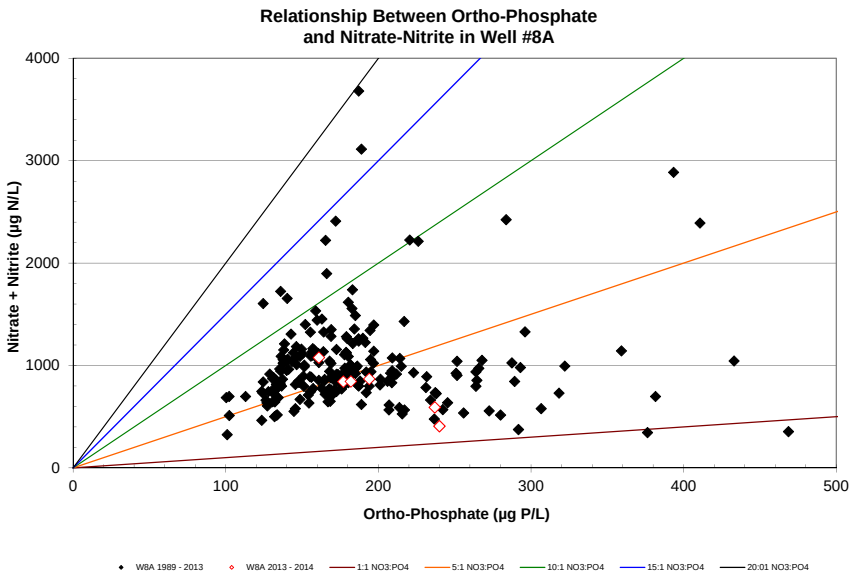

Well #8A
Temperature (˚C)
Temperature (˚C)
Date
W8A (n=230, Control Chart 1992-2000)
+3s (27.5 °C)
+2s (24.7 °C)
Mean (19.0 °C)
-2s (13.4 °C)
-3s (10.6 °C)


Well #8A
pH (unit)
pH (unit)
Date
W8A (n=229, Control Chart 1992-2000)
+3s (8.02 unit)
+2s (7.89 unit)
Mean (7.63 unit)
-2s (7.38 unit)
-3s (7.25 unit)


Well #8A
Salinity (PSU)
Salinity (PSU)
Date
W8A (n=229, Control Chart 1992-2000)
+3s (30.3 PSU)
+2s (28.8 PSU)
Mean (25.9 PSU)
-2s (23.0 PSU)
-3s (21.5 PSU)


Well #8A
Turbidity (NTU)
Turbidity (NTU)
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W8A (n=45, Control Chart 2008-2014)
+3s (2.52 NTU)
+2s (1.79 NTU)
Mean (0.32 NTU)
-2s (-1.15 NTU)
-3s (-1.88 NTU)


Well #8A
Depth to Water (m)
Depth to Water (m)
2.0
0.0
-2.0
-4.0
-6.0
-8.0
-10.0
-12.0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W8A (n=59, Control Chart 2007-2014)
+3s (-2.5 m)
+2s (-3.0 m)
Mean (-4.1 m)
-2s (-5.2 m)
-3s (-5.7 m)
Pump Depth (-11.0 m)
Tide


Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #8A
Nitrate + Nitrite (µg N/L)
4000
3000
2000
1000
0
0
100
200
300
400
500
Ortho-Phosphate (µg P/L)
W8A 1989 - 2013
W8A 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

NELHA Water Quality Laboratory

Well 8B Data Table

May 1992 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8B	-7.01	5/20/92	923				3.09	96	58.5	819	0.26	3.6	496	13930	3.17	98.2	64.9	909	0.50	19.9	7.66	20.05	4.66		<1	<1
W8B	-7.01	6/24/92	904				2.91	90	49.3	691	0.50	7.0	477	13397	3.03	93.9	51.4	720	0.99	20.2	7.69	20.94	4.48		<1	<1
W8B	-7.01	7/30/92	824				3.03	94	49.3	690	0.76	10.6	472	13256	3.12	96.6	50.6	708	0.60	20.3	7.71	20.20	4.67		<1	<1
W8B	-7.01	8/31/92	842																0.55	20.4	7.72	20.55	4.79		<1	<1
W8B	-7.01	9/23/92	915				2.90	90	46.7	654	0.17	2.4	279	7836	2.99	92.6	42.6	597	0.49	20.4	7.75	20.53	4.65		<1	<1
W8B	-7.01	10/28/92	936				3.06	95	51.2	718	0.13	1.8	483	13565	3.17	98.2	54.6	765	0.50	20.6	7.74	21.31	5.09		<1	<1
W8B	-7.01	11/18/92	919				3.73	116	39.0	546	0.12	1.7	481	13509	3.99	123.6	41.0	575	0.57	19.4	7.59	20.12	6.23		<1	<1
W8B	-7.01	12/9/92	910				3.55	110	63.9	895	0.01	0.1	497	13958	3.73	115.5	66.9	936	0.60	19.2	7.65	20.34	6.76		<1	<1
W8B	-7.01	1/27/93	854				2.66	82	62.1	870	0.13	1.8	510	14321	2.84	88.0	68.0	952	0.62	20.3	7.80	19.52	4.88		<1	<1
W8B	-7.01	2/24/93	838				2.51	78	59.6	835	0.27	3.8	502	14102	2.60	80.5	50.7	711	0.50	16.6	7.74	20.20	4.85		<1	<1
W8B	-7.01	3/17/93	903				2.64	82	59.3	831	0.29	4.1	545	15312	2.70	83.6	63.2	885	0.55	20.9	7.88	17.55	5.64		<1	<1
W8B	-7.01	4/28/93	832				2.65	82	55.2	773	0.19	2.7	527	14801	2.71	83.9	58.9	825	0.44	21.0	7.87	18.41	7.05		<1	<1
W8B	-7.01	5/26/93	836				2.67	83	55.8	781	0.06	0.8	565	15868	2.75	85.2	61.8	865	0.33	21.0	7.88	17.89	5.60		<1	<1
W8B	-7.01	6/29/93	848				2.68	83	60.1	841	0.09	1.3	557	15644	2.80	86.7	63.4	888	0.45	21.2	7.88	17.08	5.76		<1	<1
W8B	-7.01	9/1/93	850				3.06	95	67.1	940	0.27	3.8	602	16907	3.06	94.8	78.6	1101	0.54	21.9	7.90	14.99	5.86		<1	<1
W8B	-7.01	10/27/93	845				3.32	103	68.8	964	0.17	2.4	574	16121	3.39	105.0	71.3	998	0.54	22.4	7.90	14.64	5.94		<1	<1
W8B	-7.01	3/1/94	1057				3.59	111	91.4	1280	0.30	4.2	546	15335	3.59	111.2	119.5	1673	0.69	22.3	7.84	14.42	5.74		<1	<1
W8B	-7.01	6/22/94	821				3.18	98	68.0	953	0.26	3.6	457	12835	3.19	98.8	70.5	987	0.59	22.6	7.91	14.97	6.12		<1	<1
W8B	-7.01	8/24/94	906				3.36	104	62.1	870	0.00	0.0	487	13676	3.44	106.5	71.8	1005	0.54	22.8	7.77	17.67	3.62		<1	<1
W8B	-7.01	11/28/94	1043				3.32	103	64.3	901	0.34	4.8	488	13717	3.51	108.7	70.3	985	0.40	23.2	7.75	17.04	4.68		<1	<1
W8B	-7.01	1/25/95	916				4.54	141	83.6	1171	0.00	0.0	467	13124	4.54	140.6	90.0	1261	0.51	22.7	7.98	17.74	4.50		<1	<1
W8B	-7.01	2/15/95	930				4.71	146	87.7	1228	0.05	0.7	480	13484	4.71	145.9	105.2	1473	0.54	22.5	8.03	17.02	4.79		<1	<1
W8B	-7.01	3/29/95	915				3.91	121	84.3	1181	0.29	4.1	504	14147	3.91	121.1	92.3	1292	0.83	22.3	8.00	16.18	5.15		<1	1
W8B	-7.01	4/26/95	905				4.19	130	97.1	1360	0.05	0.7	531	14913	4.27	132.3	104.9	1469	0.48	22.4	8.03	13.93	5.78		<1	<1
W8B	-7.01	5/9/95	1045				4.13	128	94.7	1326	0.15	2.1	513	14399	4.18	129.5	98.2	1375	0.54	22.5	7.93	16.03	4.54		<1	4
W8B	-7.01	6/28/95	902				4.42	137	84.9	1190	0.42	5.9	524	14703	4.48	138.8	89.1	1248	0.50	22.7	7.87	14.56	5.26		<1	<1
W8B	-7.01	7/26/95	1043				4.29	133	79.9	1120	0.19	2.7	537	15088	4.32	133.8	83.9	1175	0.41	22.7	7.88	14.27	5.41		<1	<1
W8B	-7.01	8/23/95	957				4.15	129	66.4	929	0.44	6.2	502	14090	4.29	132.9	68.4	958	0.51	22.7	7.76	16.35	4.35		<1	<1
W8B	-7.01	9/12/95	945				4.01	124	70.4	986	0.15	2.1	510	14321	4.03	124.8	73.1	1024	0.48	22.6	7.82	15.79	5.48		<1	<1
W8B	-7.01	10/17/95	1131				3.99	124	71.6	1003	0.20	2.8	519	14571	4.05	125.4	73.0	1022	0.84	22.7	7.83	15.86	4.71		<1	<1
W8B	-7.01	11/7/95	1045				3.96	123	73.2	1025	0.33	4.6	526	14776	3.98	123.3	76.8	1076	0.65	22.7	7.90	15.18	5.48		<1	<1
W8B	-7.01	12/6/95	1057				4.02	125	75.7	1060	0.28	3.9	512	14388	4.05	125.4	77.7	1088	0.63	22.7	7.89	15.63	5.19		<1	<1
W8B	-7.01	1/30/96	841				4.10	127	86.2	1207	0.14	2.0	562	15787	4.13	127.9	96.8	1356	0.55	22.1	7.98	13.20	6.50		2	1
W8B	-7.01	2/27/96	1053				4.44	138	110.2	1544	0.20	2.8	509	14307	4.45	137.8	109.4	1532	0.60	22.6	7.88	15.61	5.18		<1	<1
W8B	-7.01	3/13/96	1212				4.59	142	119.3	1671	0.27	3.8	498	13997	4.72	146.2	121.5	1702	0.67	22.8	7.85	15.01	5.16		<1	<1
W8B	-7.01	4/2/96	1102				4.72	146	111.0	1555	0.15	2.1	525	14740	4.81	149.0	115.1	1613	0.70	22.6	7.86	14.39	5.56		<1	<1
W8B	-7.01	5/15/96	1049				4.71	146	105.2	1473	0.05	0.7	518	14536	4.81	149.0			0.64	23.8	7.92	14.71	5.36		<1	<1
W8B	-7.01	6/18/96	1022				4.50	139	89.8	1258	0.11	1.5	522	14673	4.59	142.2	92.4	1294	0.47	22.7	7.93	16.24	5.12		<1	<1
W8B	-7.01	7/17/96	1044				4.21	130	87.9	1232	0.10	1.4	512	14386	4.28	132.6	90.9	1273	0.55	22.8	7.91	16.21	5.18		<1	<1
W8B	-7.01	8/6/96	1106				4.40	136	83.7	1172	0.36	5.0	480	13495	4.52	140.0	88.8	1243	0.54	20.4	7.86	17.79	3.91		<1	<1
W8B	-7.01	9/4/96	1047				4.38	136	78.4	1097	0.35	4.9	493	13846	4.41	136.6	81.7	1144	0.57	23.3	7.82	17.85	4.42		1	<1
W8B	-7.01	10/9/96	1142				3.79	117	69.6	975	0.37	5.2	475	13347	3.88	120.2	73.2	1026	0.59	23.2	7.80	18.13	5.10		<1	<1
W8B	-7.01	11/6/96	1041				3.88	120	77.1	1079	0.18	2.5	477	13402	4.03	124.8	82.6	1156	0.43	23.1	7.74	18.03	4.89		<1	<1
W8B	-7.01	12/17/96	1129				4.69	145	240.7	3372	0.14	2.0	469	13169	4.57	141.6	225.9	3164	0.97	23.2	7.94	17.69	3.46		2	<1
W8B	-7.01	1/14/97	1126				5.53	171	223.9	3136	0.09	1.3	454	12748	5.80	179.6	226.0	3166	0.74	23.3	7.97	16.98	4.01		<1	<1
W8B	-7.01	2/11/97	919				5.64	175	213.2	2986	0.35	4.9	443	12436	5.92	183.4	218.0	3053	0.78	23.0	8.03	17.24	3.96		<1	<1
W8B	-7.01	3/11/97	944				5.59	173	229.5	3215	0.09	1.3	457	12829	5.66	175.3	240.0	3362	0.60	22.9	8.09	16.60	4.21		<1	<1
W8B	-7.01	4/23/97	1043				4.80	149	150.5	2108	0.21	2.9	483	13571	5.66	175.3	193.0	2703	0.64	22.8	7.96	15.40	4.93		<1	<1
W8B	-7.01	5/28/97	958				4.26	132	106.1	1486	0.04	0.6	437	12276	4.85	150.2	112.4	1574	0.66	22.0	7.85	17.85	4.77		<1	<1
W8B	-7.01	6/17/97	1040				4.54	141	103.2	1445	0.21	2.9	438	12304	4.59	142.2	106.4	1490	0.60	22.1	7.84	16.93	4.66		<1	<1

NELHA Water Quality Laboratory

Well 8B Data Table

May 1992 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8B	-7.01	7/15/97	1034				6.69	207	142.9	2002	1.74	24.4	463	12995	6.78	210.0	165.4	2317	0.84	21.9	7.61	16.85	0.93		<1	<1
W8B	-7.01	8/26/97	1101				6.03	187	106.5	1492	0.29	4.1	460	12905	6.05	187.4	116.9	1637	0.54	22.9	7.59	18.93	0.69		<1	<1
W8B	-7.01	9/23/97	857				5.87	182	96.9	1357	0.19	2.7	473	13290	5.89	182.4	106.9	1497	0.57	22.9	7.59	16.88	1.58		<1	<1
W8B	-7.01	10/14/97	1011				5.93	184	105.3	1475	0.15	2.1	506	14206	5.96	184.6	123.2	1726	0.58	23.1	7.60	15.73	2.35		<1	<1
W8B	-7.01	11/4/97	840				6.12	190	115.9	1623	0.05	0.7	462	12978	6.37	197.3	134.7	1887	0.60	22.8	7.69	17.61	2.43		<1	<1
W8B	-7.01	12/16/97	1036				5.05	156	90.5	1268	0.08	1.1	465	13051	5.26	162.9	94.8	1328	0.67	22.8	7.74	18.14	3.87		<1	<1
W8B	-7.01	1/5/98	902				4.86	151	78.4	1099	0.01	0.1	418	11731	4.98	154.2	82.9	1161	0.58	22.5	7.75	19.91	3.39		<1	<1
W8B	-7.01	2/3/98	741				4.46	138	74.9	1049	0.01	0.1	442	12411	4.69	145.3	79.9	1119	0.58	22.0	7.82	19.09	4.08		<1	<1
W8B	-7.01	3/10/98	857				4.37	135	84.8	1188	0.13	1.8	460	12914	4.51	139.7	90.9	1273	0.58	22.1	7.77	18.14	5.03		<1	<1
W8B	-7.01	4/14/98	1016				3.73	116	77.0	1079	0.03	0.4	459	12883	3.94	122.0	79.0	1107	0.54	22.2	7.75	18.97	5.03		<1	<1
W8B	-7.01	5/12/98	901				3.56	110	83.5	1170	0.08	1.1	469	13172	3.66	113.4	86.7	1214	0.51	22.2	7.81	18.33	5.27		<1	<1
W8B	-7.01	6/2/98	902				3.40	105	79.3	1111	0.07	1.0	459	12883	3.51	108.7	83.2	1165	0.44	22.2	7.75	18.74	5.05		<1	<1
W8B	-7.01	7/14/98	854				4.06	126	96.2	1347	0.13	1.8	430	12063	4.28	132.6	99.1	1388	0.55	22.2	7.76	20.59	3.06		<1	<1
W8B	-7.01	8/11/98	918				4.76	147	98.1	1374	0.06	0.8	423	11889	4.91	152.1	108.0	1513	1.12	22.2	7.75	20.83	3.22		<1	<1
W8B	-7.01	9/15/98	906				4.91	152	108.0	1513	0.07	1.0	415	11647	5.01	155.2	118.0	1653	0.80	22.4	7.82	20.81	2.69		<1	<1
W8B	-7.01	10/13/98	812				7.03	218	141.9	1988	10.38	145.4	387	10866	7.30	226.1	160.1	2242	1.43	22.8	8.21	20.87	0.45		<1	<1
W8B	-7.01	11/4/98	904				7.77	241	132.3	1853	0.11	1.5	418	11740	7.88	244.1	150.6	2109	0.89	22.9	8.08	20.47	1.38		<1	<1
W8B	-7.01	12/16/98	855				5.90	183	93.8	1314	0.15	2.1	420	11807	6.14	190.2	99.1	1388	0.77	22.4	7.89	20.05	3.61		<1	2
W8B	-7.01	1/12/99	926				4.95	153	89.5	1254	0.10	1.4	417	11706	5.04	156.1	95.0	1330	0.70	22.2	7.82	20.40	4.31		<1	1
W8B	-7.01	2/3/99	908				4.56	141	96.1	1345	0.17	2.4	408	11462	4.86	150.5	105.9	1483	0.77	22.0	7.81	20.45	4.26		<1	<1
W8B	-7.01	3/2/99	907				4.28	133	84.2	1179	0.04	0.6	425	11934	4.44	137.5	88.5	1240	0.65	21.9	7.80	20.09	5.13		<1	<1
W8B	-7.01	4/6/99	901				5.09	158	95.5	1338	0.01	0.1	392	11004	5.21	161.4	103	1448	0.77	21.7	7.89	21.41	1.97		<1	<1
W8B	-7.01	5/4/99	910				4.80	149	107	1503	0.07	1.0	400	11220	4.87	150.8	111	1558	0.68	21.8	7.77	20.67	2.39		<1	<1
W8B	-7.01	6/2/99	851				4.79	148	83.3	1167	0.14	2.0	393	11038	4.98	154.2	89.7	1256	1.05	21.9	7.81	21.39	3.87		<1	<1
W8B	-7.01	7/7/99	939				6.34	196	108	1511	0.02	0.3	369	10352	6.43	199.2	113	1587	1.23	22.1	7.98	20.52	2.61		<1	<1
W8B	-7.01	8/25/99	902				5.22	162	91.1	1276	0.11	1.5	377	10597	5.42	167.9	102	1427	0.82	22.2	7.95	20.61	4.19		<1	<1
W8B	-7.01	9/8/99	914				5.18	160	90.7	1270	0.17	2.4	390	10951	5.32	164.8	103	1441	0.81	22.2	7.92	20.65	4.00		<1	<1
W8B	-7.01	10/6/99	909				5.10	158	84.7	1186	0.08	1.1	368	10321	5.33	165.1	92.0	1289	0.74	22.3	7.84	20.73	4.12		<1	<1
W8B	-7.01	11/3/99	932				5.45	169	96.3	1349	0.10	1.4	375	10529	5.53	171.3	104	1450	0.74	22.5	7.85	20.61	4.59		<1	<1
W8B	-7.01	12/15/99	952				5.22	162	103	1447	0.02	0.3	362	10175	5.32	164.8	109	1523	0.65	22.3	7.77	22.02	3.99		<1	<1
W8B	-7.01	1/11/00	931				5.44	168	130	1821	0.14	2.0	359	10091	5.41	167.6	134	1877	0.76	22.0	7.76	21.15	3.55		<1	<1
W8B	-7.01	2/14/00	924				5.79	179	111	1555	0.09	1.3	365	10251	5.59	173.1	118	1653	0.76	21.8	7.84	20.10	1.17		<1	<1
W8B	-7.01	3/22/00	943				5.24	162	109	1523	0.12	1.7	370	10380	4.66	144.3	116	1625	0.74	22.1	7.67	20.00	2.69		<1	<1
W8B	-7.01	4/12/00	922				5.05	156	104	1458	0.08	1.1	414	11636	4.77	147.7	110	1539	0.68	22.0	7.65	19.61	3.52		<1	<1
W8B	-7.01	5/17/00	913				4.90	152	102	1431	0.06	0.8	415	11641	4.87	150.8	104	1457	0.81	22.3	7.66	19.87	3.80		<1	<1
W8B	-7.01	6/6/00	930				4.87	151	103	1444	0.04	0.6	409	11490	4.89	151.5	113	1580	0.67	22.4	7.63	20.42	3.24		<1	<1
W8B	-7.01	7/31/00	918				4.89	151	103	1447	0.04	0.6	422	11855	4.83	149.6	117	1639	0.64	23.0	7.73	27.90	4.27		<1	1
W8B	-7.01	8/30/00	915				4.69	145	99.3	1391	0.11	1.5	401	11257	4.78	148.1	101	1409	0.63	22.6	7.59	29.21	3.56		<1	<1
W8B	-7.01	9/6/00	905				4.95	153	105	1468	0.11	1.5	395	11094	5.03	155.8	107	1496	0.70	22.7	7.57	29.34	3.38		<1	<1
W8B	-7.01	10/25/00	913				5.45	169	139	1946	0.11	1.5	408	11470	5.61	173.8	150	2107	0.87	23.0	7.76	19.07	3.89		<1	<1
W8B	-7.01	11/14/00	926				5.59	173	166	2318	0.19	2.7	395	11097	5.84	180.9	169	2367	0.93	22.8	7.76	19.19	3.45		1	<1
W8B	-7.01	12/19/00	903				4.86	151	127	1773	0.13	1.8	393	11024	5.08	157.3	133	1859	0.81	22.1	7.79	19.68	3.22		<1	<1
W8B	-7.01	1/24/01	847				4.22	131	91.0	1275	0.13	1.8	403	11327	4.44	137.5	96.3	1349	0.75	21.6	7.70	21.31	3.23		<1	<1
W8B	-7.01	2/7/01	918				4.32	134	87.8	1230	0.12	1.7	425	11948	4.48	138.8	90.4	1266	0.70	21.7	7.77	20.08	3.21		<1	<1
W8B	-7.01	3/12/01	855				4.78	148	83.1	1164	0.13	1.8	422	11863	5.01	155.2	87.2	1221	0.71	21.5	7.63	20.31	2.70		<1	<1
W8B	-7.01	4/18/01	843				4.72	146	101	1420	0.04	0.6	422	11846	4.70	145.6	105	1468	0.66	21.4	7.61	18.91	3.75		<1	<1
W8B	-7.01	5/14/01	1007				5.66	175	109	1531	0.16	2.2	421	11824	5.70	176.6	114	1595	0.77	21.2	7.66	19.10	4.06		<1	<1
W8B	-7.01	6/13/01	901				4.98	154	98.6	1381	0.04	0.6	408	11448	4.62	143.1	103	1448	0.88	21.2	7.70	19.94	4.13		<1	<1
W8B	-7.01	7/24/01	911				4.70	146	120	1683	0.06	0.8	387	10858	4.44	137.5	127	1774	1.10	21.8	7.76	20.12	3.77		<1	<1
W8B	-7.01	8/22/01	919				4.76	147	114	1597	0.02	0.3	359	10088	4.80	148.7	117	1639	0.91	22.2	7.73	20.25	4.07		<1	<1
W8B	-7.01	9/17/01	957				4.18	129	99.7	1396	0.06	0.8	412	11568	4.14	128.2	104	1451	0.70	22.5	7.74	19.35	4.52		<1	<1
W8B	-7.01	10/22/01	952				4.30	133	107	1504	0.18	2.5	385	10810	5.96	184.6	117	1632	0.74	22.2	7.63	20.73	3.43		<1	<1
W8B	-7.01	11/5/01	1021				4.16	129	92.5	1295	0.06	0.8	395	11105	4.33	134.1	109	1526	0.64	22.5	7.60	20.77	3.40		<1	<1
W8B	-7.01	12/12/01	1004				5.24	162	128	1786	0.31	4.3	417	11720	5.50	170.4	148	2077	1.01	22.7	7.69	19.53	3.68		<1	1
W8B	-7.01	1/7/02	943				5.36	166	142	1989	0.12	1.7	396	11111	5.08	157.3	143	2007	0.89	22.4	7.75	20.74	3.21		<1	<1
W8B	-7.01	2/25/02	912				6.72	208	248	3474	8.74	122.4	363	10195	6.74	208.8	284	3981	2.84	21.9	8.22	20.09	0.67		<1	<1
W8B	-7.01	3/18/02	947				7.68	238	140	1954	0.25	3.5	377	10577	7.87	243.8	146	2044	0.95	21.6	8.09	19.58	1.63		<1	<1
W8B	-7.01	4/10/02	948				21.6	669	429	6002	121	1691	287	8046	25.4	786.7	573	8023	8.59	22.2	8.59	19.73	2.92		<1	<1
W8B	-7.01	5/22/02	1005				15.7	487	92.6	1298	14.5	203.5	360	10119	16.3	504.9	110	1541	1.26	22.0	8.22	19.64	0.37		<1	<1
W8B	-7.01	6/19/02	1036				16.3	505	28.3	396	19.0	266.1	360	10100	16.6	515.4	56.2	787	1.73	22.5	8.13	20.68	0.19		<1	<1

NELHA Water Quality Laboratory

Well 8B Data Table

May 1992 - December 2014

Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8B	-7.01	7/22/02	1030				13.7	424	42.6	596	13.7	191.6	415	11664	14.7	455.3	60.2	844	1.40	23.2	7.90	19.43	0.16		<1	<1
W8B	-7.01	8/21/02	1108				9.83	304	50.0	700	0.30	4.2	427	11990	10.2	315.3	54.7	766	1.09	22.4	7.67	20.51	0.85		<1	<1
W8B	-7.01	9/25/02	951				11.3	351	63.1	884	0.24	3.4	411	11546	11.6	358.7	67.0	938	1.38	23.9	7.65	21.43	0.33		<1	<1
W8B	-7.01	10/15/02	951				11.8	365	90.1	1262	0.15	2.1	376	10560	12.4	382.5	96.0	1345	1.64	23.8	7.83	21.07	0.41		1	<1
W8B	-7.01	11/17/02	941				11.8	365	96.9	1357	0.09	1.3	357	10027	12.2	378.5	101	1408	1.90	23.9	7.91	20.92	0.55		<1	<1
W8B	-7.01	12/18/02	955				8.68	269	110	1544	0.09	1.3	349	9791	8.81	272.9	102	1422	1.03	23.5	7.79	21.31	0.86		<1	<1
W8B	-7.01	1/23/03	944				9.82	304	123	1716	0.11	1.5	329	9243	9.88	306.0	138	1933	1.37	22.7	7.80	23.41	2.14		<1	<1
W8B	-7.01	2/11/03	958				9.70	300	174	2443	1.14	16.0	345	9689	9.70	300.4	213	2989	1.44	22.4	7.83	21.93	0.89		<1	<1
W8B	-7.01	3/20/03	1110				10.4	323	254	3556	0.13	1.8	368	10335	10.4	323.1	270	3786	1.28	22.3	7.99	20.40	1.57		<1	<1
W8B	-7.01	4/30/03	933				10.5	325	163	2279	0.12	1.7	380	10672	10.6	328.3	248	3474	1.56	22.4	7.95	19.55	1.67		<1	1
W8B	-7.01	5/14/03	845				12.7	392	115.2	1614	0.57	8.0	390	10951	12.8	395.8	120	1675	1.54	22.7	7.95	19.79	1.28		<1	<1
W8B	-7.01	6/4/03	922				17.9	554	59.5	833	27.6	386.0	362	10164	17.8	550.1	104	1452	2.44	22.9	8.14	20.66	0.17		<1	<1
W8B	-7.01	7/30/03	909				33.7	1045	22.4	314	216	3023	315	8836	36.3	1124.0	352	4932	NA	23.0	8.46	18.75	0.27		<1	<1
W8B	-7.01	8/28/03	855				28.7	889	36.4	509	116	1622	320	8996	26.9	833.2	162	2269	NA	24.2	8.17	19.95	0.45		<1	<1
W8B	-7.01	9/16/03	852				24.3	753	21.4	300	3.45	48.3	316	8875	24.1	746.8	150	2101	NA	23.6	8.07	21.41	0.19		<1	<1
W8B	-7.01	10/8/03	852				24.9	771	54.6	765	54.0	756.4	341	9583	25.3	783.6	149	2087	NA	23.5	8.07	19.83	NA		<1	<1
W8B	-7.01	11/5/03	859				22.4	694	70.9	993	43.6	610.7	364	10215	22.6	700.0	154	NA	NA	23.1	8.03	19.47	NA		<1	<1
W8B	-7.01	11/14/03	928																	23.3			0.19			
W8B	-7.01	12/17/03	935				21.0	651	92.0	1288	33.0	462.2	341	9569	22.0	682.7	135	1891	NA	22.9	8.02	20.53	0.17		<1	<1
W8B	-7.01	1/28/04	939				18.0	556	150	2097	1.20	16.8	333	9361	20.7	640.5	177	2476	1.64	22.6	7.99	20.40	0.04		<1	<1
W8B	-7.01	2/11/04	851				17.4	540	181	2536	0.40	5.6	325	9114	17.7	548.2	222	3104	1.77	22.5	8.02	20.51	0.26		<1	<1
W8B	-7.01	3/16/04	941				21.9	677	141	1969	0.21	2.9	336	9434	23.3	721.7	160	2238	NA	22.4	8.13	18.31	0.07		<1	<1
W8B	-7.01	4/22/04	925				16.6	513	180	2521	0.17	2.4	346	9720	19.6	607.1	211	2961	NA	22.3	8.07	18.54	0.64		<1	<1
W8B	-7.01	5/18/04	905				14.7	455	142	1988	0.16	2.2	368	10347	14.7	456.6	147	2062	NA	22.3	8.01	17.03	2.96		<1	<1
W8B	-7.01	6/8/04	907				15.6	484	109	1524	0.08	1.1	358	10055	16.3	504.9	116	1630	NA	22.4	7.86	18.66	0.75		<1	<1
W8B	-7.01	7/19/04	1001				16.2	503	105	1464	0.13	1.8	377	10595	16.2	503.0	114	1593	NA	22.3	7.81	17.82	0.98		<1	<1
W8B	-7.01	8/25/04	937				15.7	485	91.2	1277	0.19	2.7	384	10779	16.0	495.9	106	1479	NA	22.2	7.77	18.90	0.30		<1	<1
W8B	-7.01	9/27/04	1056				23.7	734	25.7	361	24	331.1	456	12799	23.8	737.2	58.4	817	NA	22.9	7.70	17.68	0.16		<1	<1
W8B	-7.01	10/4/04	1015				21.1	654	14.2	199	20	283.9	403	11304	21.8	675.2	48.5	679	NA	23.0	7.67	19.31	0.19		<1	<1
W8B	-7.01	11/23/04	1009				15.9	492	25.5	357	14.2	198.3	454	12740	16.3	505.5	52.5	735	NA	23.0	7.43	17.97	0.39		<1	<1
W8B	-7.01	12/8/04	1007				16.2	501	16.8	236	16.7	233.5	442	12414	16.6	515.4	43.8	613	NA	23.2	7.61	18.24	0.19		<1	<1
W8B	-7.01	1/18/05	1014				14.0	435	58.7	822	0.24	3.4	396	11127	14.9	462.7	69.1	968	NA	22.6	7.80	18.86	0.67		<1	<1
W8B	-7.01	2/10/05	1001				18.2	563	179	2513	65.1	911.8	238	6676	18.8	583.5	260	3643	NA	21.9	8.68	18.40	1.24		<1	<1
W8B	-7.01	3/22/05	1007				12.3	382	151	2112	30.3	424.3	222	6235	13.0	402.7	185	2591	3.19	23.0	8.56	18.44	0.70		<1	<1
W8B	-7.01	4/20/05	1000				13.8	427	89.8	1257	1.34	18.8	258	7246	14.3	442.9	93.0	1302	NA	23.0	8.40	19.04	0.20		<1	<1
W8B	-7.01	5/25/05	1023				13.7	425	95.8	1342	0.13	1.8	338	9493	14.1	435.5	110	1546	NA	20.9	8.32	17.79	1.49		<1	4
W8B	-7.01	6/14/05	1016				13.8	426	76.6	1072	0.16	2.2	294	8243	13.9	429.3	83.0	1162	NA	22.4	8.28	19.66	0.44		<1	<1
W8B	-7.01	7/19/05	1005				19.1	592	83.2	1165	0.19	2.7	332	9324	19.6	608.3	87.9	1231	1.21	23.9	8.16	18.09	0.28		<1	<1
W8B	-7.01	8/3/05	1043				24.0	743	41.4	580	0.65	9.1	312	8749	25.4	786.7	49.1	688	1.71	23.3	8.22	18.42	0.39		<1	<1
W8B	-7.01	9/22/05	959				15.2	470	74.4	1042	0.24	3.4	317	8897	15.6	482.6	79.6	1115	0.84	24.0	8.10	20.90	0.31		<1	<1
W8B	-7.01	10/19/05	1008				13.4	415	115	1607	0.21	2.9	328	9218	13.9	430.5	120	1684	NA	24.1	8.08	20.01	0.49		<1	1
W8B	-7.01	11/8/05	953				11.5	356	89.6	1255	0.05	0.7	317	8892	17.8	551.3	97.3	1363	NA	23.4	8.00	21.50	0.60		<1	1
W8B	-7.01	12/22/05	924				10.0	311	62.4	874	0.23	3.2	324	9111	10.2	316.6	68.5	959	NA	22.4	8.01	21.88	0.59		<1	<1
W8B	-7.01	1/31/06	952				9.62	298	75.2	1053	0.26	3.6	360	10097	9.86	305.4	78.2	1095	NA	22.3	8.01	20.41	1.49		<1	<1
W8B	-7.01	2/16/06	953				9.24	286	69.5	973	0.12	1.7	352	9895	9.64	298.6	69.6	975	0.72	22.1	8.03	21.11	1.19		<1	<1
W8B	-7.01	3/22/06	952				8.75	271	72.4	1014	0.19	2.7	366	10279	8.95	277.2	79.1	1108	0.62	21.7	7.98	19.89	0.77		<1	<1
W8B	-7.01	4/27/06	1030				10.9	338	104	1457	<0.05	0.0	379	10644	11.0	340.7	93.4	1308	0.78	22.0	7.92	18.98	2.25		<1	<1
W8B	-7.01	5/24/06	1055				10.2	316	76.0	1065	<0.05	0.0	380	10672	10.5	325.2	68.6	961	0.70	22.0	7.89	20.11	1.68		<1	6
W8B	-7.01	6/28/06	1042				8.50	263	71.9	1007	0.19	2.7	374	10504	8.78	271.9	65.5	917	0.60	22.2	7.86	20.69	1.81		<1	<1
W8B	-7.01	7/19/06	1014				8.92	276	72.2	1011	0.21	2.9	354	9942	9.20	285.0	63.4	888	0.68	22.1	7.79	21.68	0.96		<1	<1
W8B	-7.01	8/9/06	956				8.04	249	66.7	934	0.10	1.4	383	10757	8.36	258.9	61.9	866	0.58	22.3	7.82	20.66	1.75		<1	<1
W8B	-7.01	9/20/06	1005				8.45	262	66.2	927	0.18	2.5	388	10897	8.93	276.6	60.9	852	0.66	22.2	7.79	21.02	0.60		<1	<1
W8B	-7.01	10/25/06	1043				7.45	231	72.2	1011	0.19	2.7	386	10841	7.71	238.8	72.6	1017	0.72	22.5	7.78	20.56	0.93		<1	<1
W8B	-7.01	11/29/06	1010				7.92	245	66.8	936	0.24	3.4	360	10111	8.37	259.3	57.0	798	0.74	22.0	7.79	21.39	0.65		<1	<1
W8B	-7.01	12/13/06	1003				7.32	227	53.8	754	0.22	3.1	342	9605	7.64	236.6	52.4	733	0.63	21.9	7.78	21.66	0.62		<1	<1
W8B	-7.01	1/10/07	1005				8.00	248	56.3	789	0.32	4.5	357	10027	8.22	254.6	57.9	810	0.65	21.4	7.75	21.31	1.06		<1	<1
W8B	-7.01	2/21/07	1026				7.76	240	56.5	791	0.52	7.3	376	10560	8.08	250.3	63.5	889	0.66	21.2	7.75	20.73	1.27		<1	<1
W8B	-7.01	3/7/07	1018				7.30	226	54.1	758	0.15	2.1	369	10364	7.54	233.5	54.5	763	0.66	21.3	7.70	21.21	1.06		<1	<1
W8B	-7.01	4/19/07	1001				6.80	211	68.3	957	0.18	2.5	379	10644	7.18	222.4	58.9	824	0.58	21.8	7.77	20.77	1.67		<1	<1
W8B	-7.01	5/2/07	1013				6.70	208	57.3	803	0.35	4.9	382	10729	7.16	221.8	53.9	754	0.57	21.7	7.77	20.84	1.04		<1	<1
W8B	-7.01	6/20/07	1013				5.79	179	48.3	677	0.19	2.7	368	10335	5.91	183.1	n/a	n/a		22.0	7.77	21.38	1.51		<1	<1

NELHA Water Quality Laboratory

Well 8B Data Table

May 1992 - December 2014

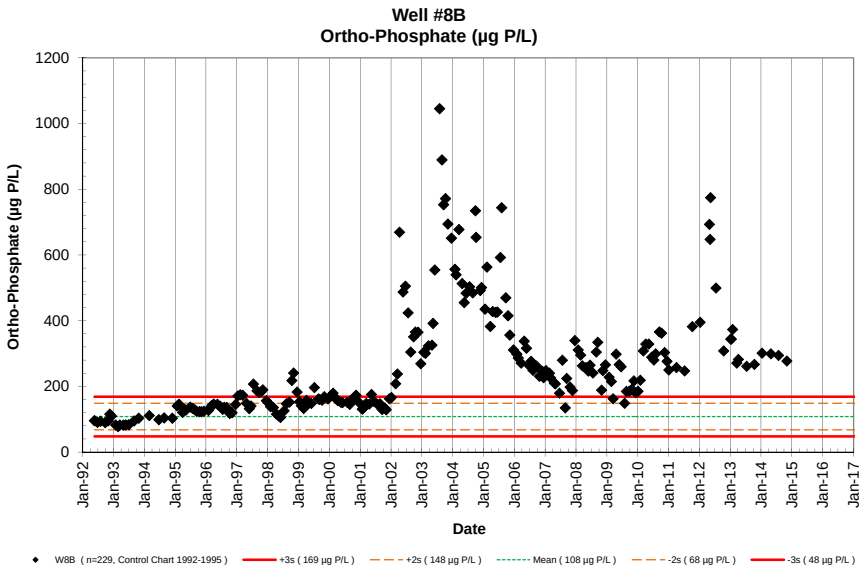
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8B	-7.01	7/25/07	1104	-4.11	0.46	Flood	9.02	279	68.8	964	0.04	0.5	480	13477	8.66	268.2	69.1	968		21.8	7.54	20.60	0.72			
W8B	-7.01	8/27/07	1039		0.06	Flood	4.35	135	20.8	292	14.71	206.0	108	3037	7.89	244.5	80.2	1123		22.1	7.65	19.63	2.02			
W8B	-7.01	9/13/07	1505	-4.17	0.40	Flood	7.24	224	73.1	1023	0.37	5.3	425	11931	7.43	230.1	76.0	1064		22.1	7.67	20.91	2.22			
W8B	-7.01	10/23/07	951	-4.17	0.24	Flood	6.39	198	83.4	1168	0.04	0.5	395	11106	5.08	157.5	50.5	707		22.1	7.64	19.75	2.50			
W8B	-7.01	11/20/07	1037	-3.89	0.40	Flood	6.05	187	77.2	1081	0.04	0.5	426	11977	5.54	171.7	84.6	1185		21.7	7.62	19.99	2.39			
W8B	-7.01	12/19/07	1008	-2.44	0.30	High	10.97	340	79.3	1111	1.88	26.3	330	9264						21.6	8.02	17.94	0.33			
W8B	-7.01	1/28/08	1400	-4.47	0.06	Flood	10.04	311	110.6	1549	1.03	14.4	345	9677						21.3	7.81	18.80	2.19			
W8B	-7.01	2/26/08	851	-4.34	0.18	Ebb	9.53	295	87.2	1221	0.65	9.1	379	10637						20.9	7.71	19.41	2.07			
W8B	-7.01	3/17/08	1049	-3.84	0.06	Flood	8.48	263	83.4	1168	0.06	0.8	361	10131						21.1	7.70	19.55	2.39			
W8B	-7.01	4/30/08	1044	-4.17	0.21	Flood	8.30	257	81.8	1146	0.09	1.2	353	9919						21.3	7.54	20.40	2.83			
W8B	-7.01	5/27/08	1021	-4.22	0.24	High	7.96	247	86.6	1213	0.09	1.2	414	11636						20.9	7.64	19.83	7.76			
W8B	-7.01	6/16/08	1054	-4.27	0.24	Flood	8.54	265	78.7	1103	0.28	3.9	410	11519						21.2	7.64	19.49	5.22			
W8B	-7.01	7/21/08	945	-4.34	0.12	Ebb	7.77	241	87.5	1226	0.56	7.9	352	9878						22.0	7.64	20.85	3.53	0.10		
W8B	-7.01	8/30/08	1341		0.46	Flood	9.83	305	87.4	1225	0.44	6.1	379	10656						20.7	7.67	20.83	3.51			
W8B	-7.01	9/15/08	1053	-4.42	0.09	Low	10.79	334	123.8	1734	0.20	2.8	376	10549						22.3	7.58	19.94	3.07	0.12		
W8B	-7.01	10/31/08	1104	-4.25	0.30	Ebb	6.09	189	1.2	17	0.22	3.1	374	10500						22.6	7.56	20.09	3.52			
W8B	-7.01	11/14/08	1003	-4.17	0.15	Ebb	8.00	248	140.6	1969	0.18	2.5	338	9483						22.3	7.54	20.06	4.13	0.32		
W8B	-7.01	12/15/08	1320	-4.40	0.03	Low	8.57	265	136.0	1905	0.11	1.5	377	10575						22.2	7.93	18.75	4.44			
W8B	-7.01	1/27/09	824	-4.09	0.30	Ebb	7.36	228	193.1	2704	0.73	10.2	341	9590						21.9	7.65	20.48	2.31	0.19		
W8B	-7.01	2/24/09	1302	-4.37	0.15	Flood	6.93	215	151.1	2117	0.69	9.7	386	10844						22.0	7.65	19.91	2.48	0.25		
W8B	-7.01	3/16/09	1311	-4.51	0.03	Low	5.24	162	51.7	725	0.13	1.8	259	7266						23.9	7.50	18.64	2.94	0.58		
W8B	-7.01	4/22/09	1145	-4.35	0.18	Flood	9.63	298	125.9	1763	0.41	5.8	389	10931						22.9	7.78	19.87	1.59	0.96		
W8B	-7.01	5/27/09	1104	-4.29	0.00	Low	8.60	266	127.3	1784	0.27	3.8	532	14928						21.1	7.66	19.89	3.13	0.23		
W8B	-7.01	6/19/09	1427	-3.81	0.73	High	8.38	260	98.7	1382	0.54	7.6	192	5399						21.3	7.56	21.85	2.42	0.05		
W8B	-7.01	7/31/09	1237	-3.26	0.67	High	4.81	149	61.8	866	0.35	4.9	204	5717						22.5	7.57	22.23	2.51	0.19		
W8B	-7.01	8/20/09	1308	-4.02	0.46	Flood	5.96	185	93.0	1303	0.59	8.3	310	8717						21.6	8.29	21.85	2.64	0.26		
W8B	-7.01	9/24/09	1449	-4.24	0.21	Ebb	5.99	185	92.5	1296	0.59	8.3	195	5482						21.7	8.39	20.61	2.87	0.12		
W8B	-7.01	10/23/09	1040	-4.13	0.43	Ebb	6.17	191	72.9	1021	0.46	6.5	150	4202						21.9	7.66	21.17	2.37	0.12		
W8B	-7.01	11/17/09	1605	-4.34	0.37	High	7.00	217	71.5	1002	0.94	13.2	397	11150						21.6	7.56	20.57	2.55	0.09		
W8B	-7.01	12/8/09	1050	-4.06	0.52	Ebb	5.84	181	88.8	1244	0.91	12.7	415	11647						21.5	7.56	21.17	2.83	0.03		
W8B	-7.01	1/6/10	1036	-4.12	0.30	Ebb	5.97	185	133.9	1876	1.64	23.0	370	10381						22.1	7.79	21.23	1.97	0.22		
W8B	-7.01	2/2/10	1000	-4.18	0.15	Ebb	7.07	219	149.3	2091	0.57	8.0	324	9087						21.9	7.81	21.49	2.95	0.13		
W8B	-7.01	3/10/10	940	-4.46	0.09	Flood	9.94	308	124.7	1746	0.36	5.0	407	11437						21.7	8.03	19.11	2.51	0.22		
W8B	-7.01	4/7/10	924	-4.39	0.12	Flood	10.62	329	123.7	1732	0.07	1.0	387	10856						21.3	7.89	19.11	2.27	0.10		
W8B	-7.01	5/12/10	917	-4.53	-0.03	Flood	10.62	329	118.4	1658	2.07	29.0	302	8475						21.4	7.75	17.74	2.67	0.03		
W8B	-7.01	6/16/10	1503	-4.33	0.24	Flood	9.33	289	107.2	1502	0.43	6.0	446	12522						21.4	7.85	19.61	2.94	0.26		
W8B	-7.01	7/13/10	1543	-4.03	0.49	Flood	9.04	280	85.5	1197	0.79	11.0	419	11756						21.3	7.76	21.10	2.26	0.09		
W8B	-7.01	8/3/10	1551	-4.18	0.34	Ebb	9.65	299	86.3	1209	0.44	6.1	434	12185						21.5	7.74	21.25	1.75	0.13		
W8B	-7.01	9/14/10	1555	-4.18	0.21	Ebb	11.82	366	93.5	1310	0.33	4.6	462	12983						21.3	7.65	20.36	1.61	0.11		
W8B	-7.01	10/12/10	1621	-4.22	0.18	Low	11.69	362	84.6	1185	0.44	6.1	458	12855						21.2	7.65	20.47	1.72	0.05		
W8B	-7.01	11/16/10	1500	-4.12	0.30	Ebb	9.78	303	88.5	1240	0.30	4.2	430	12084						21.2	7.61	21.46	1.62	0.11		
W8B	-7.01	12/14/10	1526	-4.28	0.12	Ebb	8.91	276	98.6	1381	0.28	3.9	451	12654						21.3	7.65	19.88	2.18	0.12		
W8B	-7.01	1/4/11	1510	-4.28	0.15	Flood	8.07	250	105.3	1475	0.27	3.8	424	11914						21.3	7.59	19.99	2.69	0.10		
W8B	-7.01	4/5/11	1525	-4.12	0.37	Flood	8.30	257	133.8	1874	0.22	3.1	358	10053						21.0	7.62	20.47	1.69	0.09		
W8B	-7.01	7/12/11	1449	-3.85	0.73	High	7.97	247	116.7	1634	0.20	2.8	398	11185						21.3	7.70	20.39	1.67	0.37		
W8B	-7.01	10/11/11	1434	-4.06	0.34	Flood	12.33	382	69.3	971	0.09	1.2	340	9549						21.8	8.01	20.41	0.06	0.02		
W8B	-7.01	1/10/12	1547	-4.31	0.18	Flood	12.75	395	84.0	1177	0.51	7.1	380	10672						21.8	8.01	18.53	2.11	0.11		
W8B	-7.01	4/30/12	1550	-4.16	0.21	Ebb	22.37	693	27.6	386	40.41	566.0	373	10485						21.6	8.16	20.83	0.08	0.07		
W8B	-7.01	5/8/12	1348	-4.47	0.40	Flood	20.89	647	68.0	953	19.48	272.8	379	10651						21.9	8.10	19.78	0.03	0.11		
W8B	-7.01	5/14/12	1350	-4.04	0.43	Ebb	24.99	774	33.9	475	35.70	500.0	344	9673						21.9	8.18	21.28	0.08	0.10		
W8B	-7.01	7/17/12	1400	-3.82	0.70	Flood	16.11	499	35.4	496	8.81	123.4	336	9429						21.8	7.99	22.01	1.80	0.12		
W8B	-7.01	10/15/12	1413	-4.17	0.30	Flood	9.94	308	65.7	920	0.46	6.4	388	10905						22.1	7.90	20.59	1.02	0.02		
W8B	-7.01	1/7/13	1502	-4.31	0.12	Ebb	11.11	344	304.1	4260	0.48	6.7	409	11496						21.8	8.13	19.44	1.50	0.03		
W8B	-7.01	1/14/13	949	-4.03	0.24	Ebb	11.11	344	249.4	3494	0.93	13.0	376	10568						21.9	8.11	19.39	2.21	0.47		
W8B	-7.01	1/29/13	1442	-4.31	0.09	Flood	12.04	373	296.8	4158	1.26	17.7	364	10220						21.9	8.11	19.39	2.21	0.47		
W8B	-7.01	3/20/13	1143	-4.31	0.18	High	8.75	271	116.2	1627	1.93	27.0	354	9946						22.0	7.98	19.88	5.24	0.09		
W8B	-7.01	4/8/13	1513	-4.04	0.49	Flood	9.10	282	143.9	2015	0.44	6.2	363	10196						21.9	7.94	20.25	1.34	0.12		

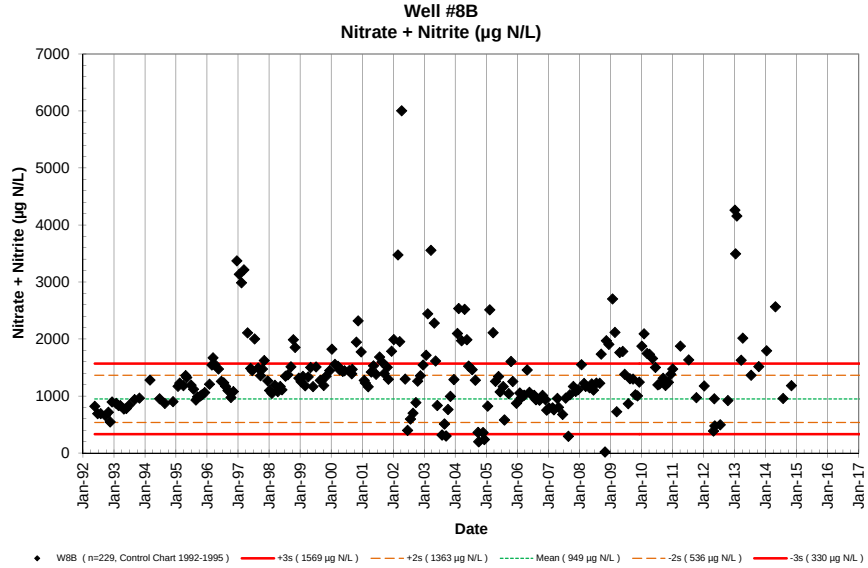
NELHA Water Quality Laboratory

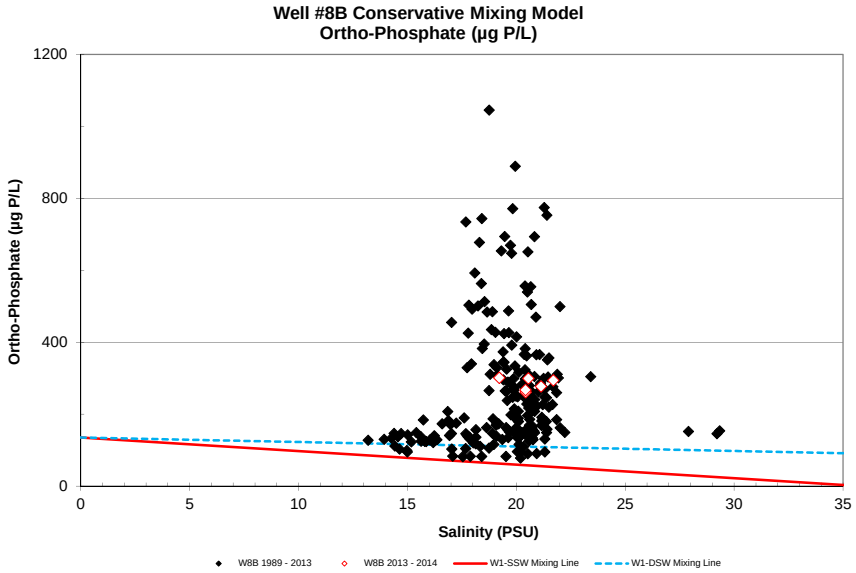
Well 8B Data Table

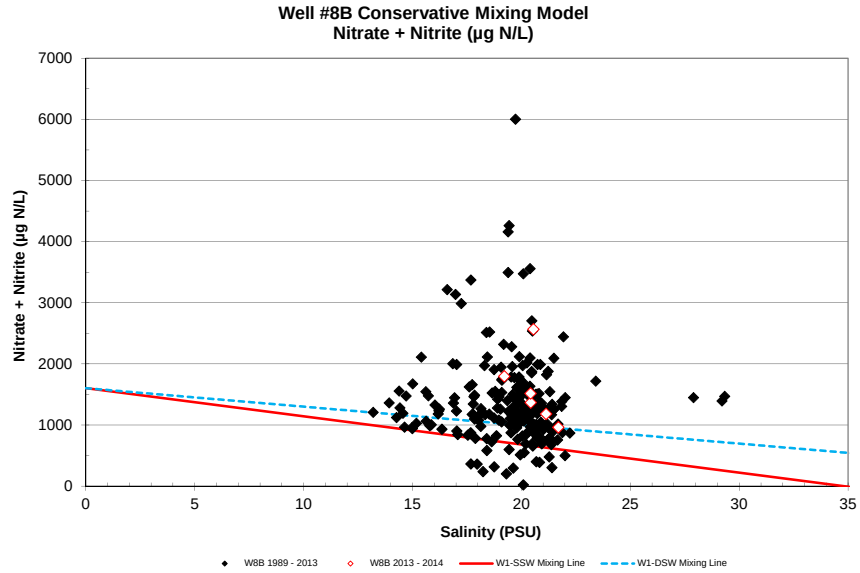
May 1992 - December 2014

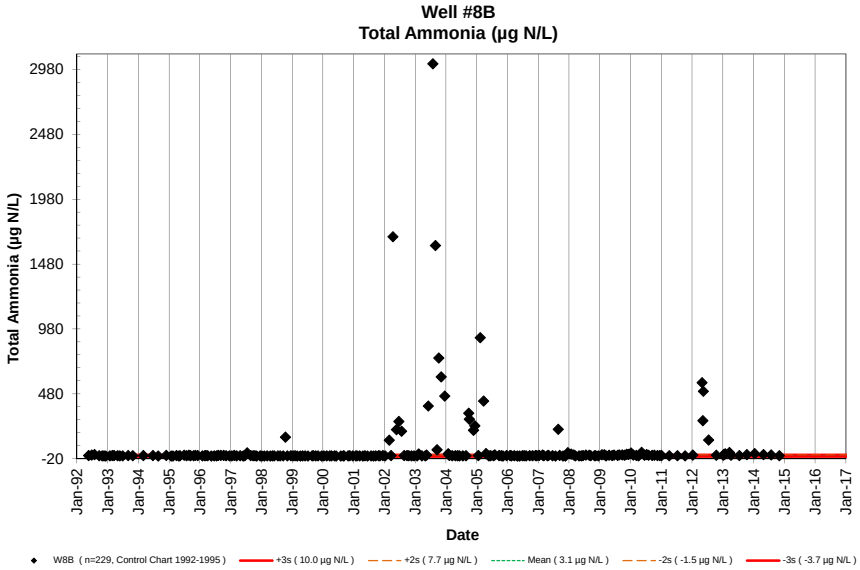
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (°C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W8B	-7.01	7/16/13	1658	-4.24	0.24	Ebb	8.43	261	97.5	1365	0.26	3.6	366	10271						22.2	7.87	20.43	1.64	0.08		
W8B	-7.01	10/14/13	1736	-4.27	0.12	Ebb	8.62	267	108.2	1515	0.77	10.8	368	10339						20.2	7.76	20.42	1.69	0.44		
W8B	-7.01	1/14/14	1540	-4.19	0.18	High	9.72	301	128.2	1795	1.32	18.5	358	10057						22.4	7.73	19.22	1.23	0.04		
W8B	-7.01	4/28/14	1512	-3.97	0.55	Flood	9.65	299	183.1	2565	0.76	10.7	317	8908						22.5	7.86	20.55	1.21	0.06		
W8B	-7.01	7/28/14	1630	-3.93	0.55	Flood	9.49	294	68.5	959	0.64	8.9	316	8882						23.3	7.59	21.70	0.63	0.21		
W8B	-7.01	11/3/14	1357	-3.87	0.46	Flood	8.94	277	84.3	1181	0.18	2.5	320	8978						22.9	7.61	21.13	0.47	0.14		
W8B	-7.01	1/1/15																								
W8B	-7.01	4/1/15																								

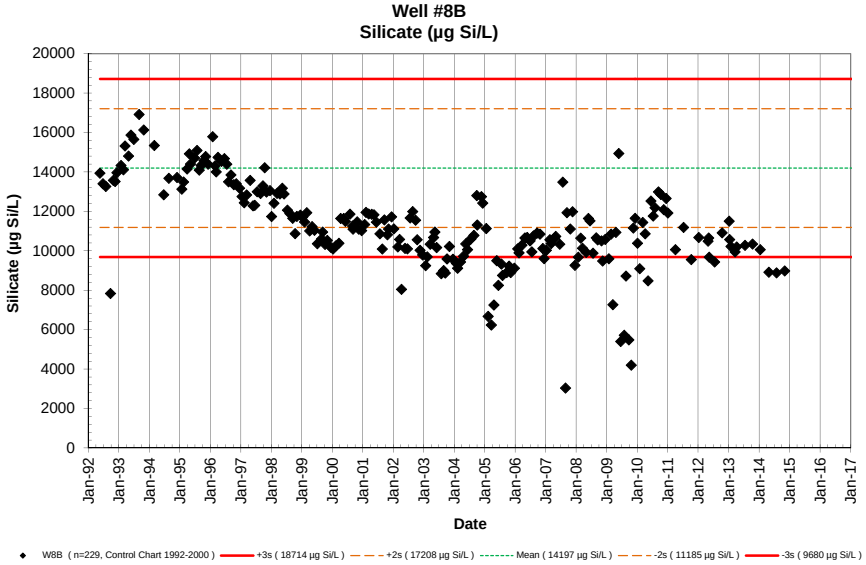

Well #8B
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W8B (n=229, Control Chart 1992-1995)
+3s (169 µg P/L)
+2s (148 µg P/L)
Mean (108 µg P/L)
-2s (68 µg P/L)
-3s (48 µg P/L)

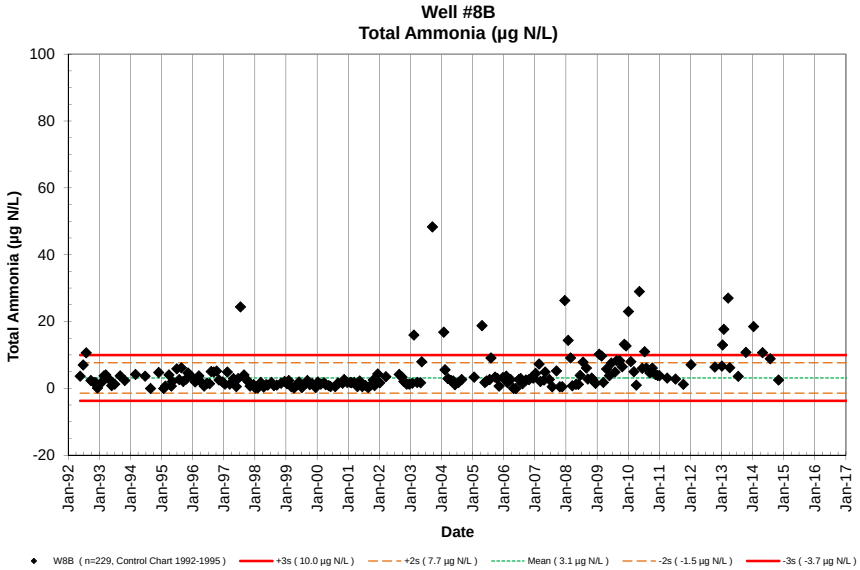

Well #8B
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W8B (n=229, Control Chart 1992-1995)
+3s (1569 µg N/L)
+2s (1363 µg N/L)
Mean (949 µg N/L)
-2s (536 µg N/L)
-3s (330 µg N/L)

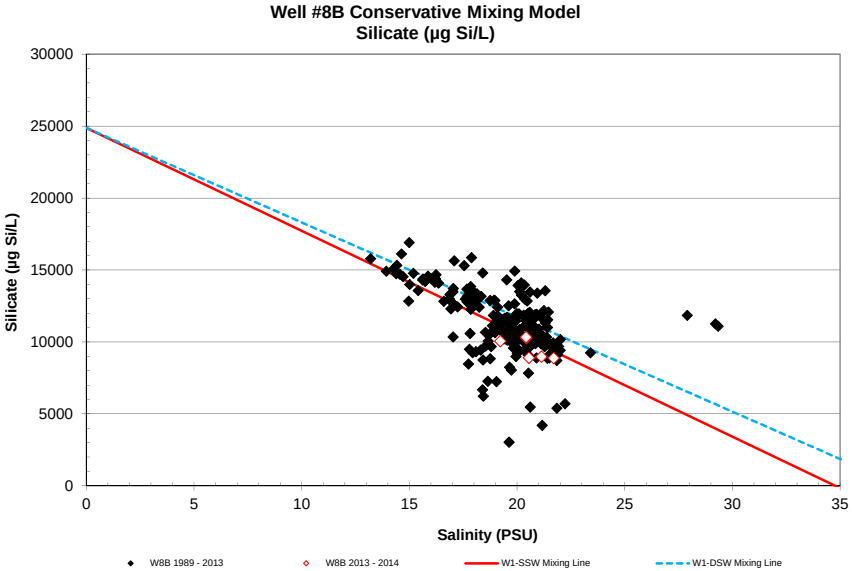

Well #8B Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W8B 1989 - 2013
W8B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

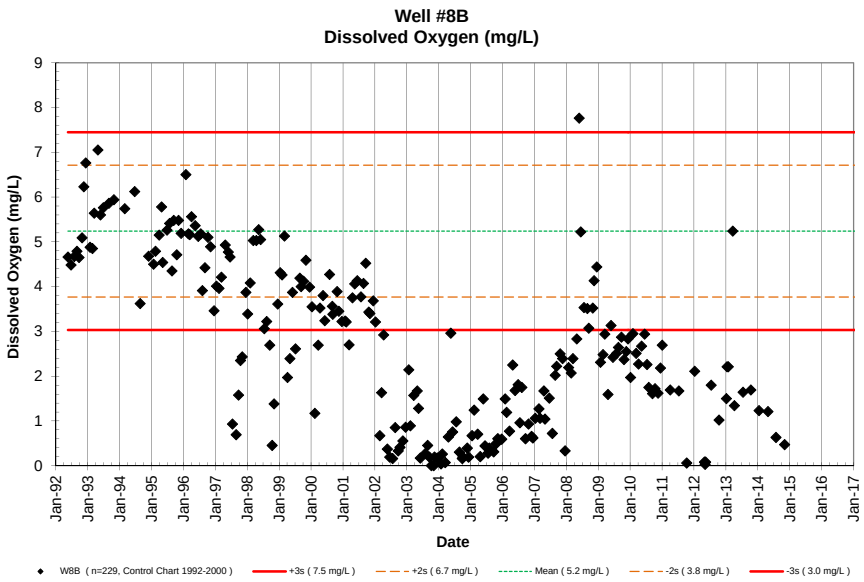

Well #8B Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W8B 1989 - 2013
W8B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

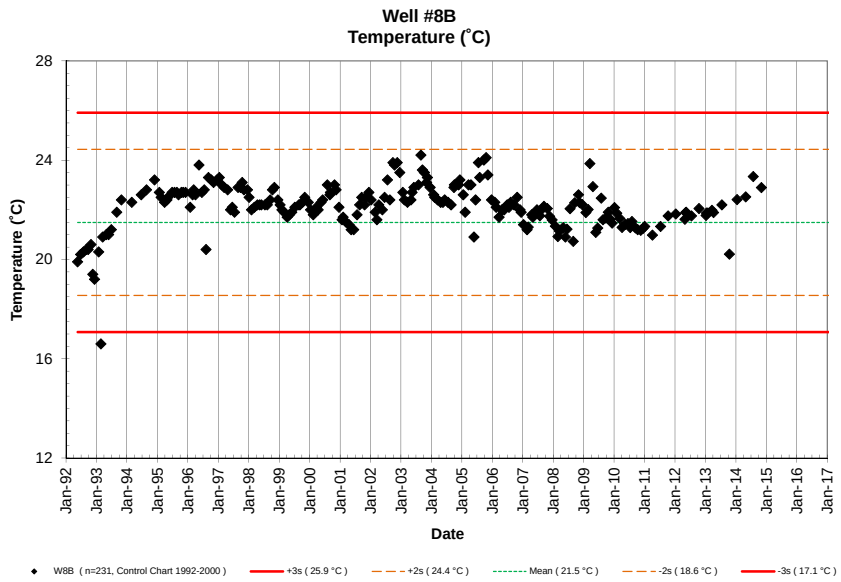

Well #8B
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W8B (n=229, Control Chart 1992-1995)
+3s (10.0 µg N/L)
+2s (7.7 µg N/L)
Mean (3.1 µg N/L)
-2s (-1.5 µg N/L)
-3s (-3.7 µg N/L)

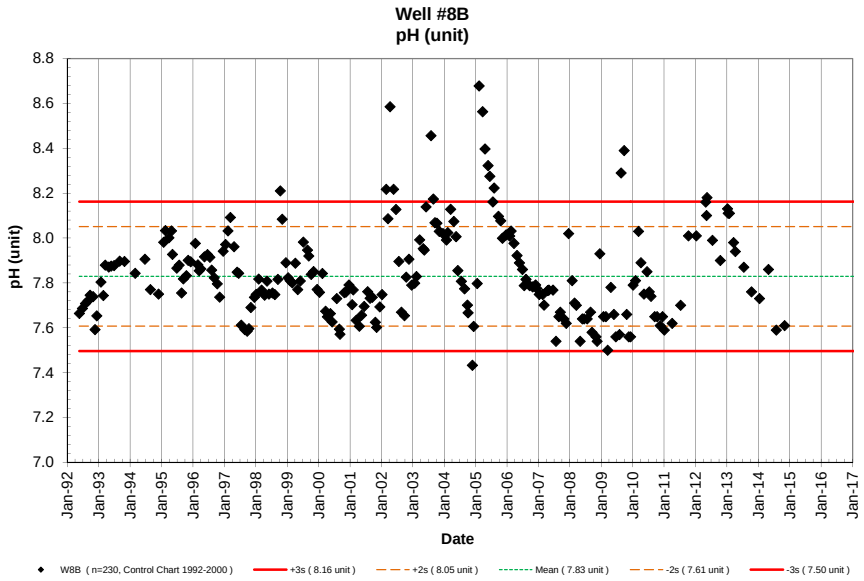

Well #8B
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W8B (n=229, Control Chart 1992-2000)
+3s (18714 µg Si/L)
+2s (17208 µg Si/L)
Mean (14197 µg Si/L)
-2s (11185 µg Si/L)
-3s (9680 µg Si/L)

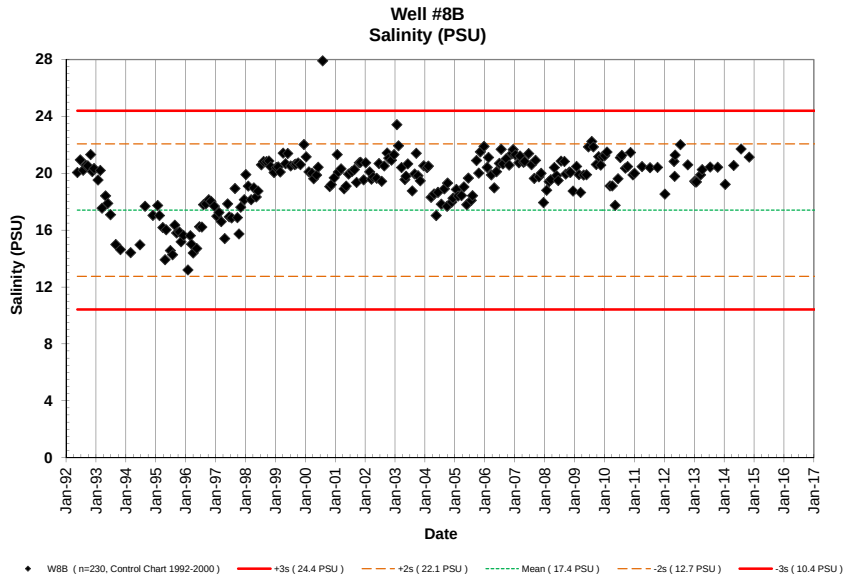

Well #8B
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W8B (n=229, Control Chart 1992-1995)
+3s (10.0 µg N/L)
+2s (7.7 µg N/L)
Mean (3.1 µg N/L)
-2s (-1.5 µg N/L)
-3s (-3.7 µg N/L)

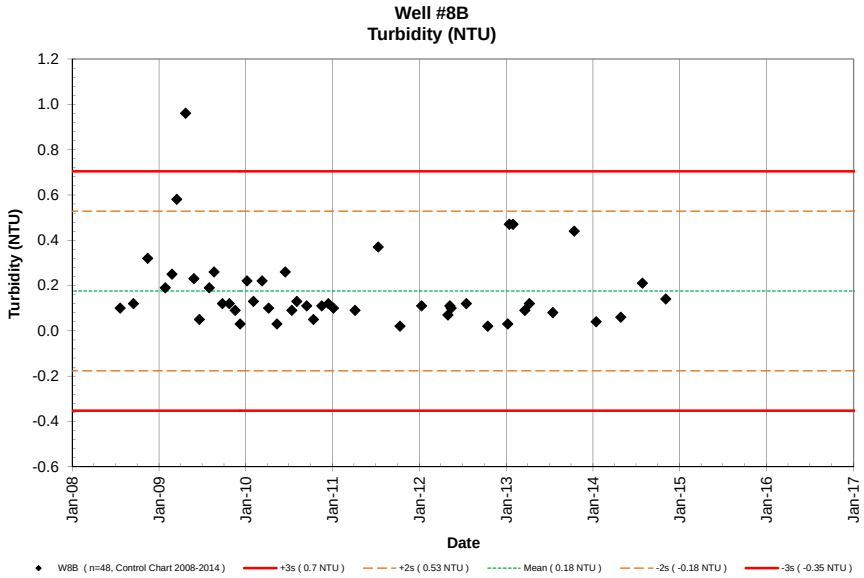

Well #8B Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W8B 1989 - 2013
W8B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

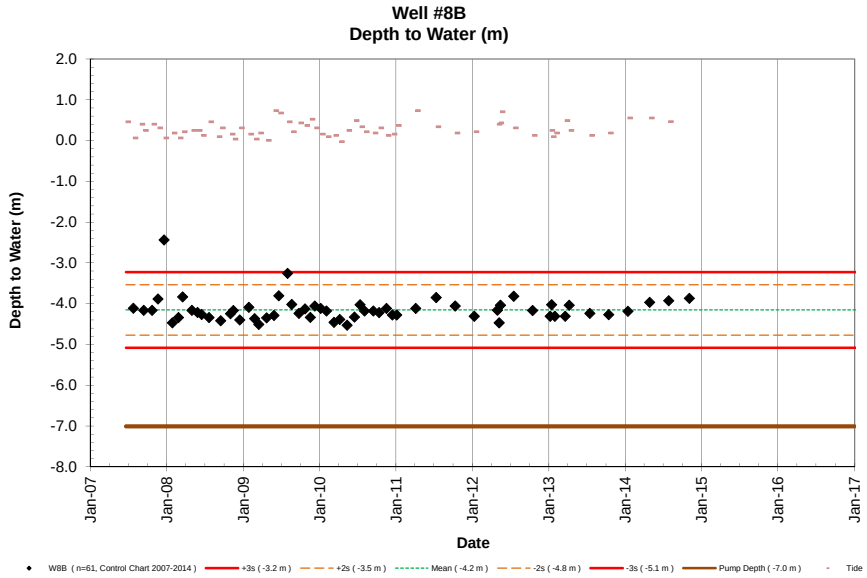

Well #8B
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W8B (n=229, Control Chart 1992-2000)
+3s (7.5 mg/L)
+2s (6.7 mg/L)
Mean (5.2 mg/L)
-2s (3.8 mg/L)
-3s (3.0 mg/L)

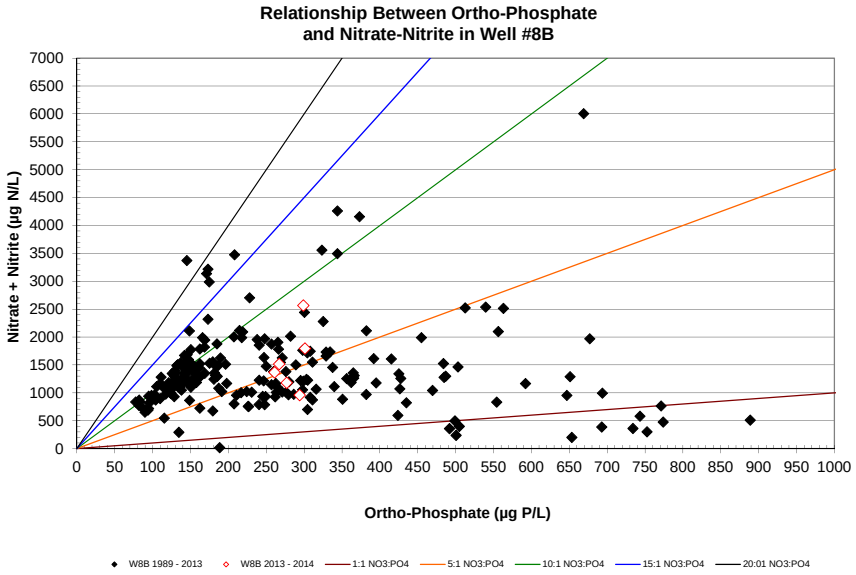

Well #8B
Temperature (˚C)
Temperature (˚C)
Date
W8B (n=231, Control Chart 1992-2000)
+3s (25.9 °C)
+2s (24.4 °C)
Mean (21.5 °C)
-2s (18.6 °C)
-3s (17.1 °C)


Well #8B
pH (unit)
pH (unit)
Date
W8B (n=230, Control Chart 1992-2000)
+3s (8.16 unit)
+2s (8.05 unit)
Mean (7.83 unit)
-2s (7.61 unit)
-3s (7.50 unit)


Well #8B
Salinity (PSU)
Salinity (PSU)
Date
W8B (n=230, Control Chart 1992-2000)
+3s (24.4 PSU)
+2s (22.1 PSU)
Mean (17.4 PSU)
-2s (12.7 PSU)
-3s (10.4 PSU)


Well #8B
Turbidity (NTU)
Turbidity (NTU)
Date
W8B (n=48, Control Chart 2008-2014)
+3s (0.7 NTU)
+2s (0.53 NTU)
Mean (0.18 NTU)
-2s (-0.18 NTU)
-3s (-0.35 NTU)


Well #8B
Depth to Water (m)
Depth to Water (m)
Date
W8B (n=61, Control Chart 2007-2014)
+3s (-3.2 m)
+2s (-3.5 m)
Mean (-4.2 m)
-2s (-4.8 m)
-3s (-5.1 m)
Pump Depth (-7.0 m)
Tide

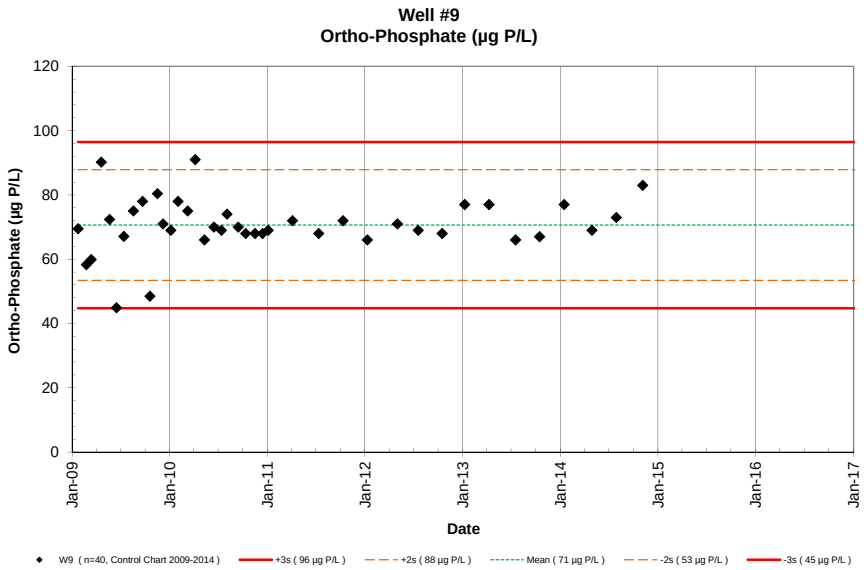

Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #8B
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W8B 1989 - 2013
W8B 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

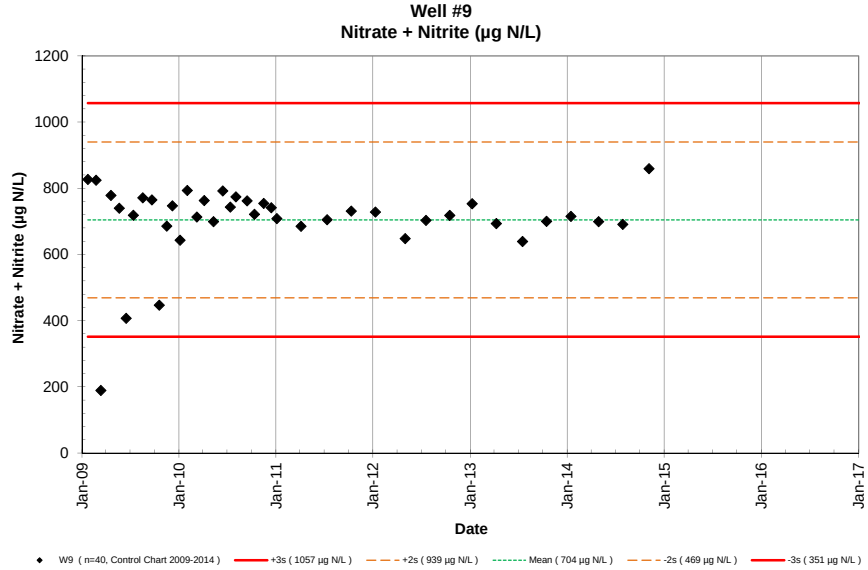
NELHA Water Quality Laboratory

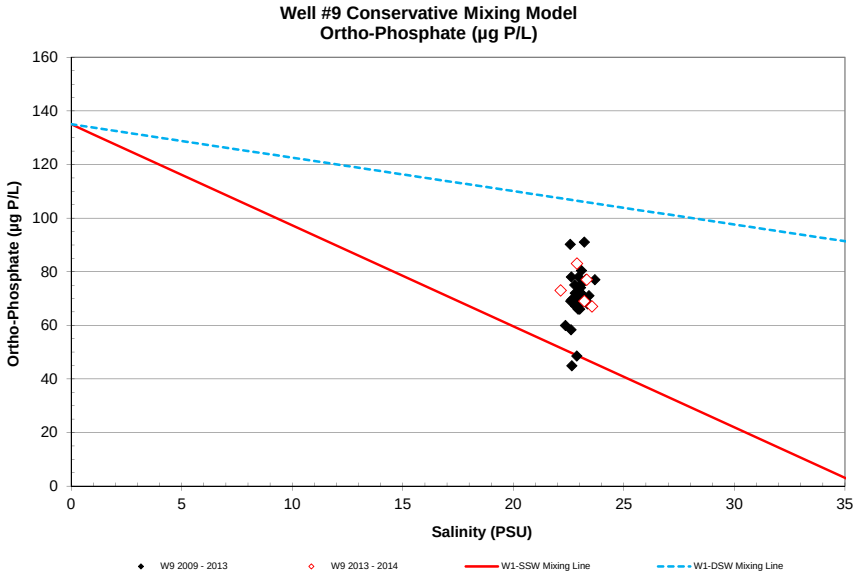
Well 9 Data Table

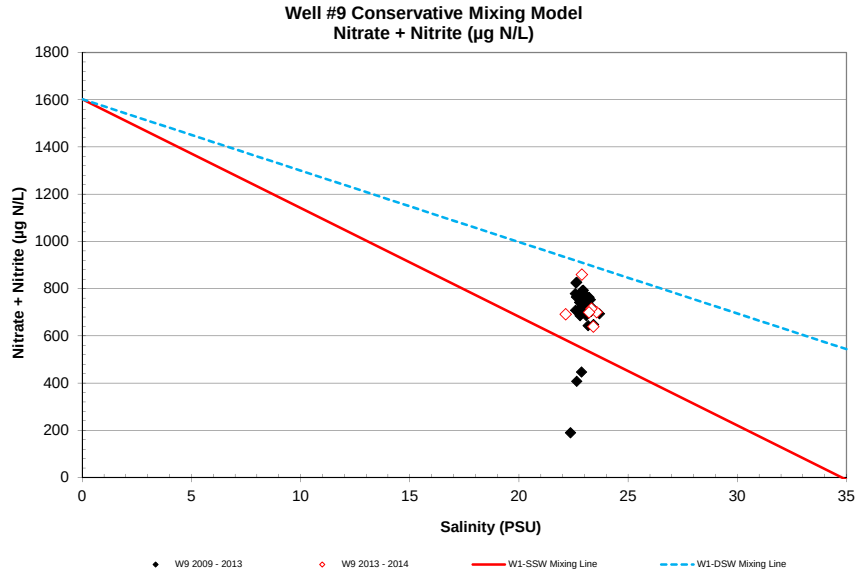
January 2009 - December 2014

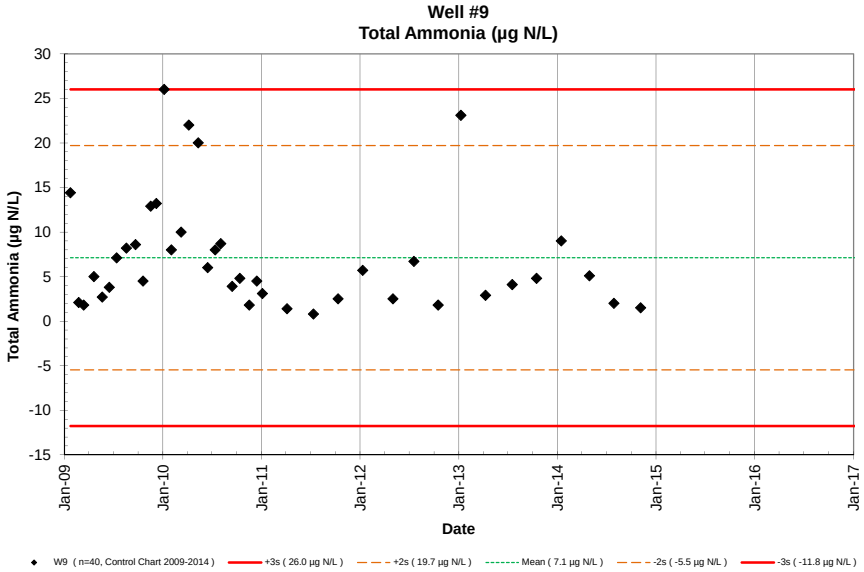
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W9	-25.908	1/23/09	1145	-8.50	0.09	Low	2.24	70	59.0	826	1.03	14.4	340	9561						20.4	7.90	22.65	6.21	5.75		
W9	-25.908	2/23/09	1355	-9.11	0.09	Ebb	1.88	58	58.8	824	0.15	2.1	367	10305						20.4	7.75	22.61	6.17	2.91		
W9	-25.908	3/13/09	1354	-9.36	0.09	Flood	1.93	60	13.5	189	0.13	1.8	274	7700						20.8	7.81	22.36	6.33	0.30		
W9	-25.908	4/20/09	1058	-9.32	0.21	Flood	2.91	90	55.6	778	0.36	5.0	272	7648						19.3	7.71	22.58	6.58	0.41		
W9	-25.908	5/21/09	1352	-9.35	0.55	Flood	2.34	72	52.8	740	0.19	2.7	506	14206						18.1	7.90	23.00	6.57	1.30		
W9	-25.908	6/16/09	1030	-9.14	0.40	Flood	1.45	45	29.1	407	0.27	3.8	93	2611						17.8	7.22	22.65	6.20	0.09		
W9	-25.908	7/13/09	1343	-9.15	0.21	Low	2.17	67	51.3	719	0.51	7.1	100	2795						17.6	7.91	22.82	6.18	0.23		
W9	-25.908	8/18/09	1333	-8.99	0.61	Flood	2.42	75	55.0	771	0.59	8.2	321	9023						17.8	7.80	22.78	6.47	0.18		
W9	-25.908	9/21/09	1220	-9.17	0.15	Low	2.52	78	54.6	765	0.61	8.6	185	5207						18.0	8.38	22.63	6.36	0.18		
W9	-25.908	10/19/09	1457	-9.26	0.21	Flood	1.57	49	31.9	447	0.32	4.5	115	3224						18.0	8.16	22.87	5.92	0.25		
W9	-25.908	11/16/09	1212	-9.30	0.09	Low	2.60	80	48.9	686	0.92	12.9	359	10093						18.4	7.93	23.08	5.86	0.12		
W9	-25.908	12/7/09	1045	-9.03	0.46	Ebb	2.29	71	53.3	747	0.94	13.2	359	10088						18.9	7.85	23.13	5.65	0.42		
W9	-25.908	1/5/10	815	-8.94	0.49	High	2.23	69	45.9	643	1.86	26.0	355	9975						18.9	7.58	23.17	5.47	0.12		
W9	-25.908	2/1/10	1018	-9.04	0.12	Ebb	2.52	78	56.6	793	0.57	8.0	316	8862						18.9	7.94	22.95	5.94	0.39		
W9	-25.908	3/9/10	951	-9.32	0.12	Flood	2.42	75	50.9	713	0.71	10.0	376	10563						18.9	7.92	23.04	5.79	0.18		
W9	-25.908	4/6/10	918	-9.33	0.12	Flood	2.94	91	54.5	763	1.57	22.0	381	10706						19.9	7.88	23.21	6.22	0.50		
W9	-25.908	5/11/10	936	-9.39	0.00	Flood	2.13	66	49.9	699	1.43	20.0	304	8545						19.1	7.99	22.93	6.67	0.21		
W9	-25.908	6/15/10	1035	-9.36	0.06	Ebb	2.26	70	56.5	792	0.43	6.0	402	11277						19.7	7.93	22.91	6.30	0.13		
W9	-25.908	7/13/10	948	-9.31	0.06	Ebb	2.23	69	53.0	743	0.57	8.0	391	10975						19.5	7.90	22.81	6.10	0.28		
W9	-25.908	8/3/10	940	-9.03	0.49	Flood	2.39	74	55.3	774	0.62	8.7	393	11036						19.7	7.91	23.04	6.01	0.94		
W9	-25.908	9/14/10	939	-8.92	0.58	High	2.26	70	54.4	762	0.28	3.9	404	11335						19.4	7.87	22.95	6.32	0.44		
W9	-25.908	10/12/10	945	-8.86	0.58	Ebb	2.20	68	51.5	721	0.34	4.8	406	11410						19.4	7.88	23.00	6.02	0.38		
W9	-25.908	11/16/10	913	-9.12	0.02	Flood	2.20	68	53.8	754	0.13	1.8	396	11119						19.5	7.88	22.94	6.10	0.27		
W9	-25.908	12/14/10	936	-9.07	0.34	Flood	2.20	68	52.9	741	0.32	4.5	402	11288						19.4	7.88	22.78	6.01	0.61		
W9	-25.908	1/4/11	938	-9.09	0.12	Ebb	2.23	69	50.5	708	0.22	3.1	371	10411						19.3	7.81	22.60	6.03	0.84		
W9	-25.908	4/5/11	1013	-9.26	-0.1	Low	2.32	72	48.9	685	0.10	1.4	352	9888						19.8	7.76	22.80	5.07	0.27		
W9	-25.908	7/12/11	929	-9.44	0.37	Flood	2.20	68	50.3	705	0.06	0.8	390	10958						19.4	7.84	22.81	5.73	0.26		
W9	-25.908	10/11/11	948	-9.18	0.12	Low	2.32	72	52.2	731	0.18	2.5	378	10619						19.2	7.81	23.06	6.48	0.42		
W9	-25.908	1/10/12	947	-9.11	0.21	Ebb	2.13	66	52.0	728	0.41	5.7	369	10358						18.9	7.88	23.00	6.55	0.61		
W9	-25.908	5/1/12	1004	-9.22	0.18	Flood	2.29	71	46.3	648	0.18	2.5	373	10485						18.8	7.88	23.42	5.93	0.09		
W9	-25.908	7/18/12	919	-9.34	0.00	Low	2.23	69	50.2	703	0.48	6.7	382	10736						17.8	7.92	23.31	6.33	0.18		
W9	-25.908	10/16/12	1000	-9.15	0.18	Ebb	2.20	68	51.3	718	0.13	1.8	379	10654						18.0	7.85	23.36	5.95	0.04		
W9	-25.908	1/8/13	1022	-9.20	0.12	Flood	2.49	77	53.8	753	1.65	23.1	428	12016						17.9	7.83	23.27	6.17	0.06		
W9	-25.908	4/9/13	956	-9.37	-0.1	Low	2.49	77	49.5	693	0.21	2.9	374	10491						18.2	7.87	23.69	0.86	0.06		
W9	-25.908	7/17/13	1017	-9.17	0.49	Flood	2.13	66	45.6	639	0.29	4.1	373	10469						17.9	7.79	23.41	5.66	0.22		
W9	-25.908	10/15/13	945	-9.20	0.27	Flood	2.16	67	50.0	700	0.34	4.8	367	10304						17.9	7.83	23.56	6.12	0.25		
W9	-25.908	1/15/14	922	-9.15	0.15	Ebb	2.49	77	51.0	715	0.64	9.0	361	10138						17.9	7.89	23.32	6.12	0.02		
W9	-25.908	4/29/14	1037	-9.45	0.00	Flood	2.23	69	49.9	699	0.36	5.1	359	10074						18.1	7.85	23.21	6.61	0.02		
W9	-25.908	7/29/14	1012	-9.25	0.12	Ebb	2.36	73	49.3	691	0.14	2.0	368	10331						17.8	7.80	22.14	6.37	0.04		
W9	-25.908	11/5/14	1013	-9.17	0.12	Low	2.68	83	61.3	859	0.11	1.5	351	9866						17.8	7.87	22.88	7.36	0.04		
W9	-25.908	1/1/15																								
W9	-25.908	4/1/15																								

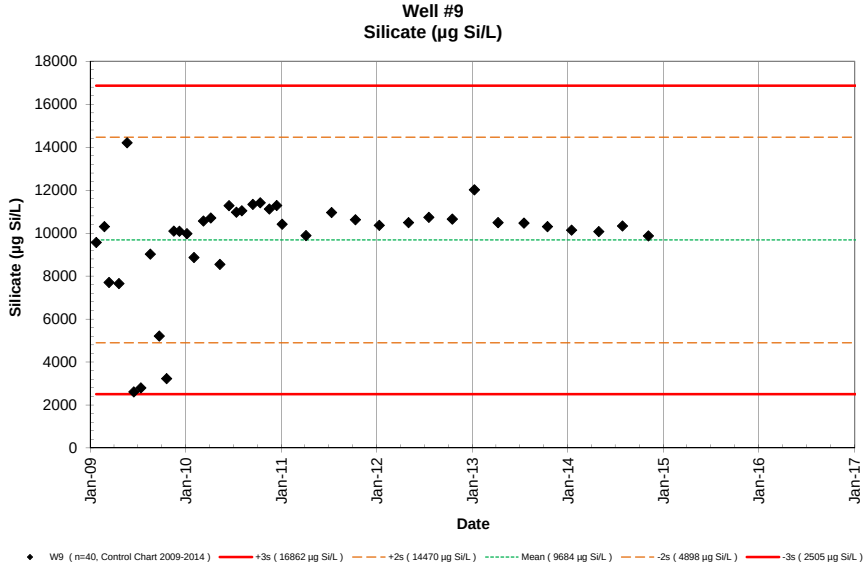

Well #9
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W9 (n=40, Control Chart 2009-2014)
+3s (96 µg P/L)
+2s (88 µg P/L)
Mean (71 µg P/L)
-2s (53 µg P/L)
-3s (45 µg P/L)

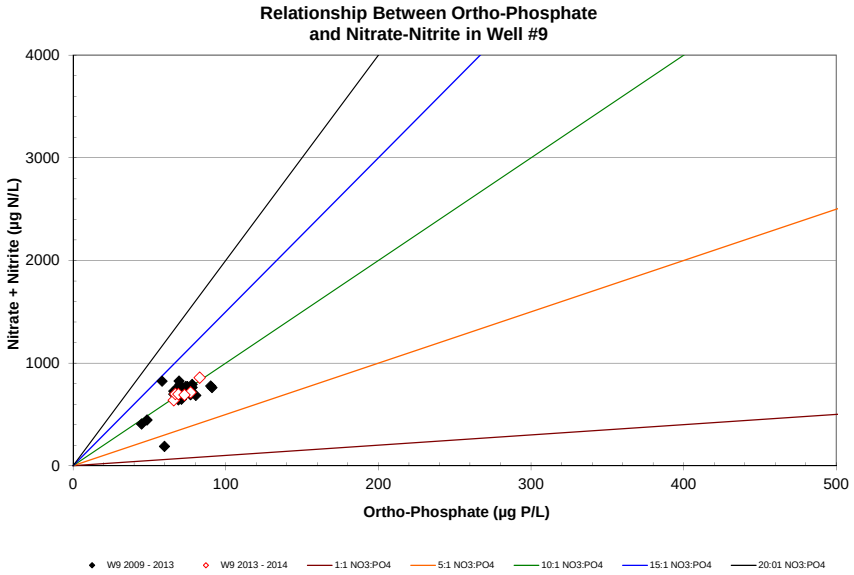

Well #9
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W9 (n=40, Control Chart 2009-2014)
+3s (1057 µg N/L)
+2s (939 µg N/L)
Mean (704 µg N/L)
-2s (469 µg N/L)
-3s (351 µg N/L)

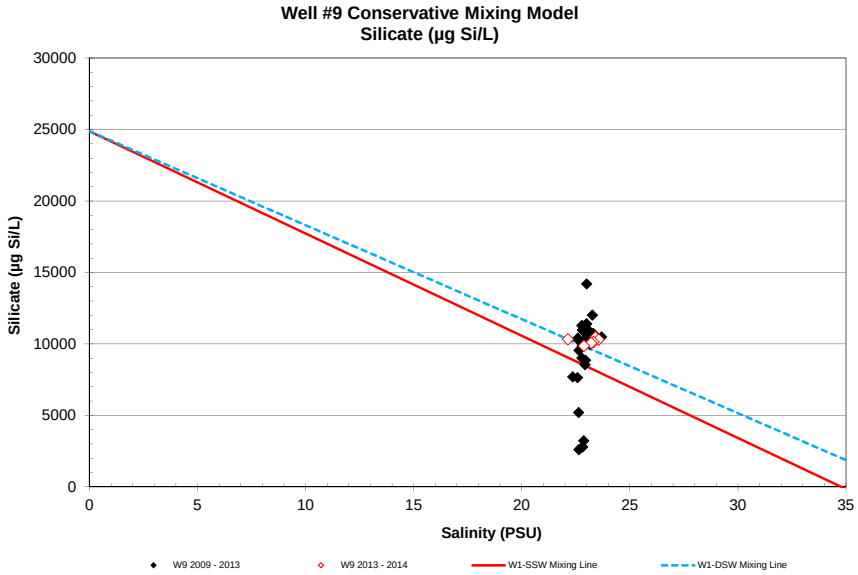

Well #9 Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W9 2009 - 2013
W9 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

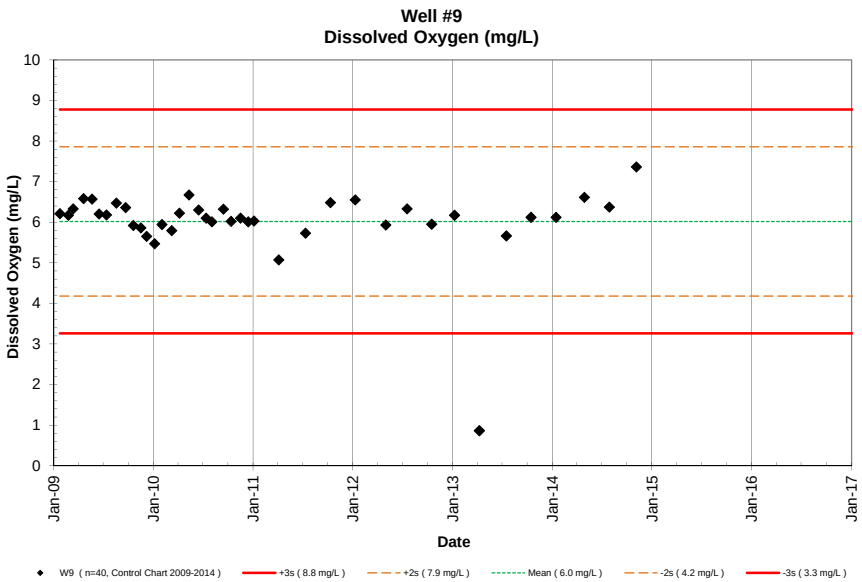

Well #9 Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W9 2009 - 2013
W9 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

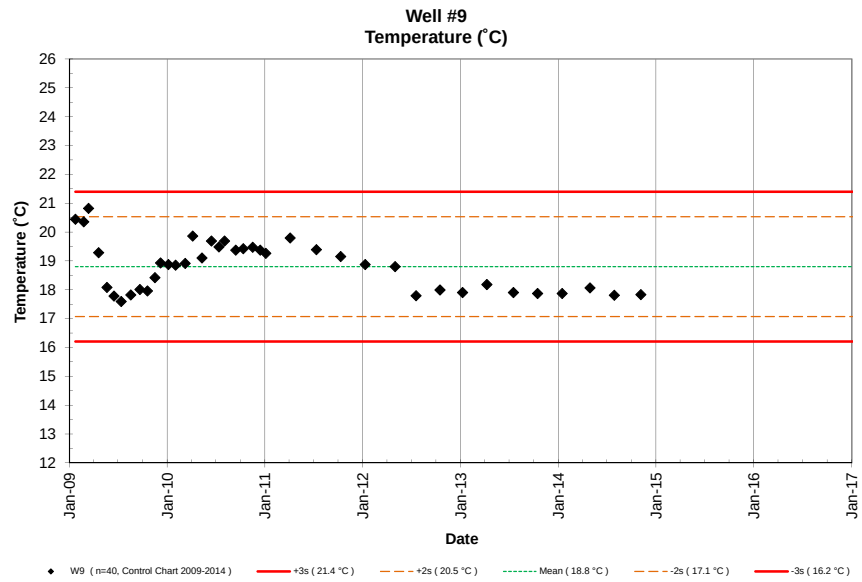

Well #9
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W9 (n=40, Control Chart 2009-2014)
+3s (26.0 µg N/L)
+2s (19.7 µg N/L)
Mean (7.1 µg N/L)
-2s (-5.5 µg N/L)
-3s (-11.8 µg N/L)

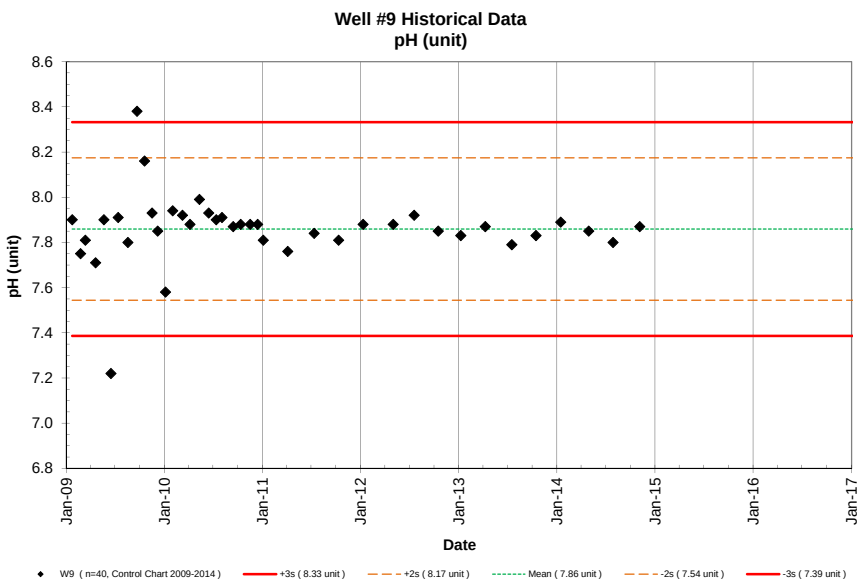

Well #9
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W9 (n=40, Control Chart 2009-2014)
+3s (16862 µg Si/L)
+2s (14470 µg Si/L)
Mean (9684 µg Si/L)
-2s (4898 µg Si/L)
-3s (2505 µg Si/L)

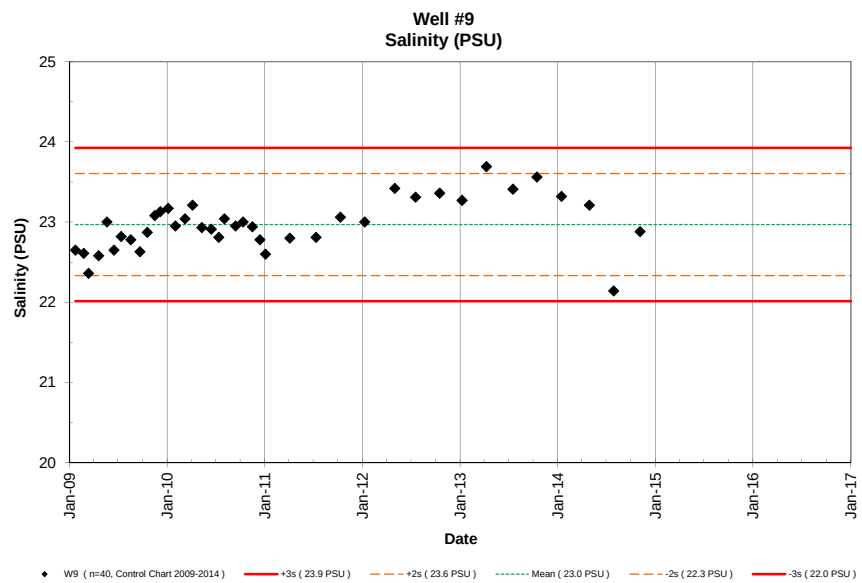

Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #9
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W9 2009 - 2013
W9 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

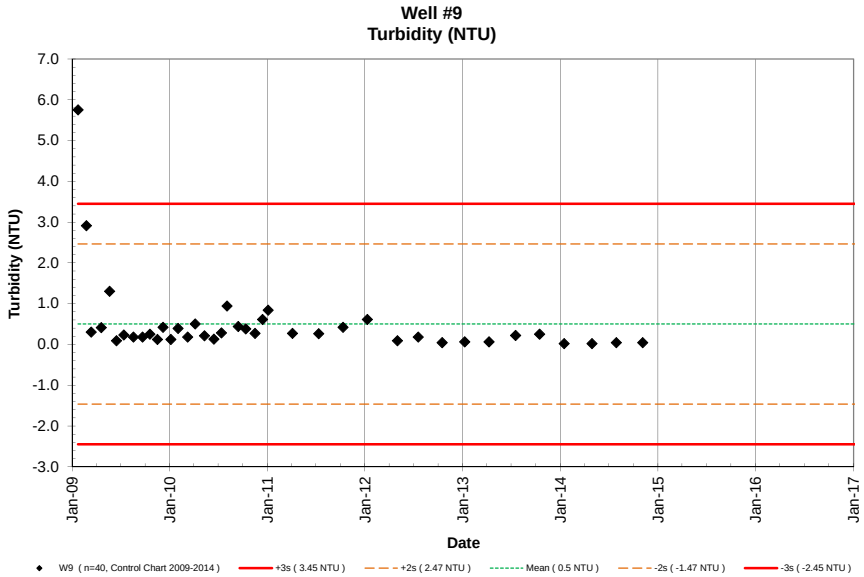

Well #9 Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W9 2009 - 2013
W9 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

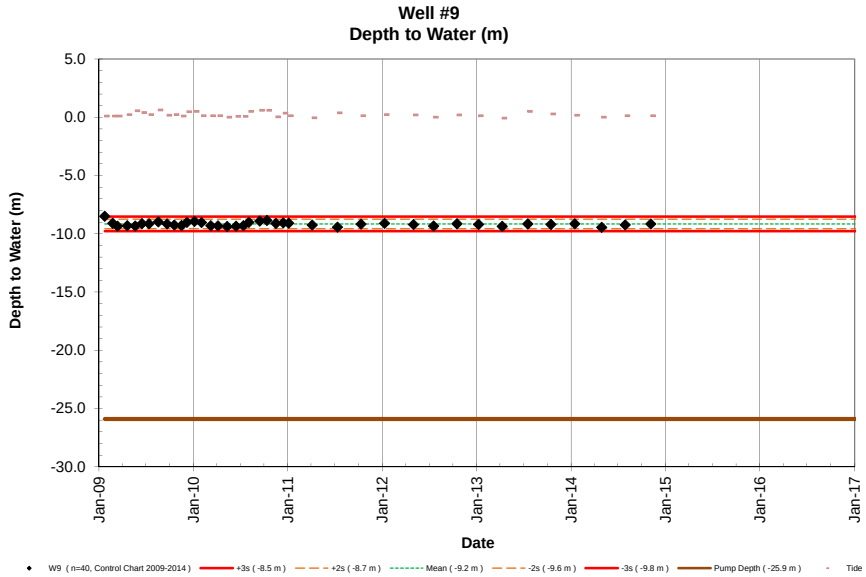

Well #9
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W9 (n=40, Control Chart 2009-2014)
+3s (8.8 mg/L)
+2s (7.9 mg/L)
Mean (6.0 mg/L)
-2s (4.2 mg/L)
-3s (3.3 mg/L)


Well #9
Temperature (˚C)
Temperature (˚C)
Date
W9 (n=40, Control Chart 2009-2014)
+3s (21.4 °C)
+2s (20.5 °C)
Mean (18.8 °C)
-2s (17.1 °C)
-3s (16.2 °C)


Well #9 Historical Data
pH (unit)
pH (unit)
Date
W9 (n=40, Control Chart 2009-2014)
+3s (8.33 unit)
+2s (8.17 unit)
Mean (7.86 unit)
-2s (7.54 unit)
-3s (7.39 unit)


Well #9
Salinity (PSU)
Salinity (PSU)
Date
W9 (n=40, Control Chart 2009-2014)
+3s (23.9 PSU)
+2s (23.6 PSU)
Mean (23.0 PSU)
-2s (22.3 PSU)
-3s (22.0 PSU)


Well #9
Turbidity (NTU)
Turbidity (NTU)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W9 (n=40, Control Chart 2009-2014)
+3s (3.45 NTU)
+2s (2.47 NTU)
Mean (0.5 NTU)
-2s (-1.47 NTU)
-3s (-2.45 NTU)

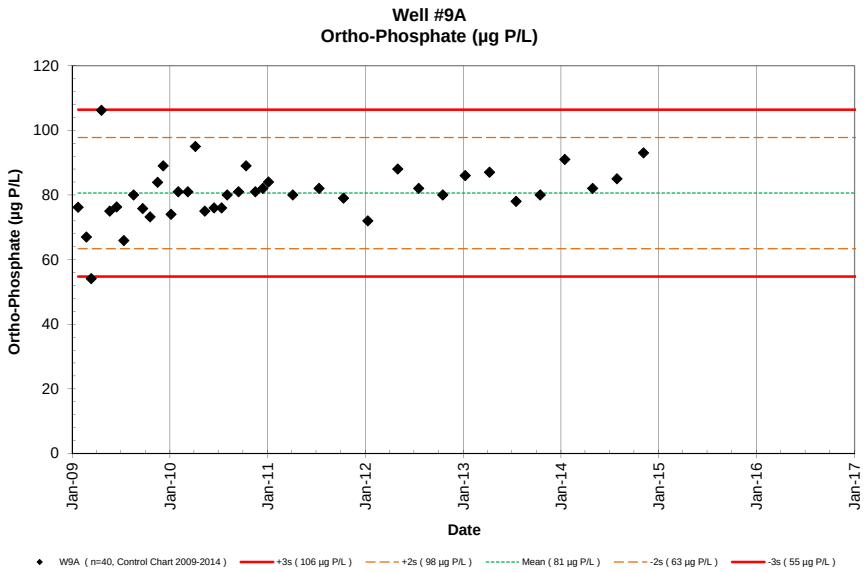

Well #9
Depth to Water (m)
Depth to Water (m)
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
-30.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W9 (n=40, Control Chart 2009-2014)
+3s (-8.5 m)
+2s (-8.7 m)
Mean (-9.2 m)
-2s (-9.6 m)
-3s (-9.8 m)
Pump Depth (-25.9 m)
Tide

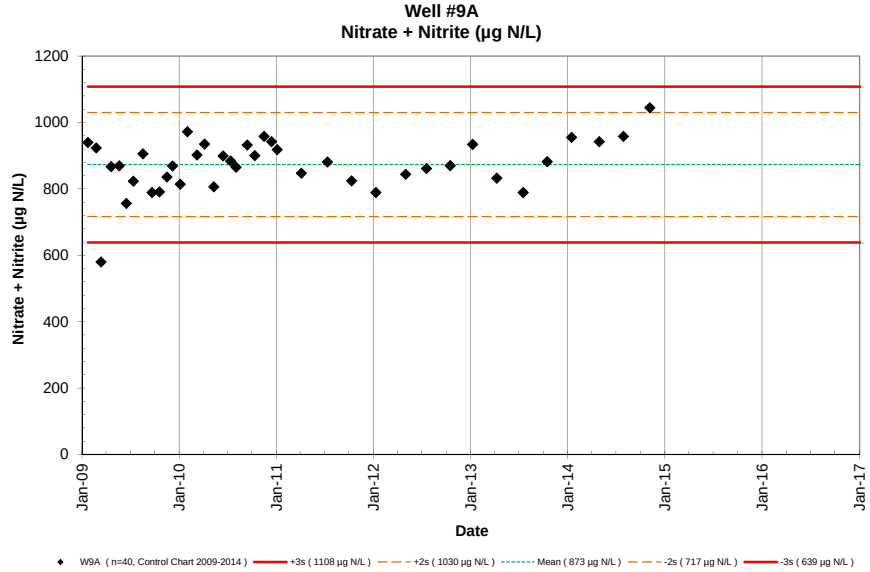
NELHA Water Quality Laboratory

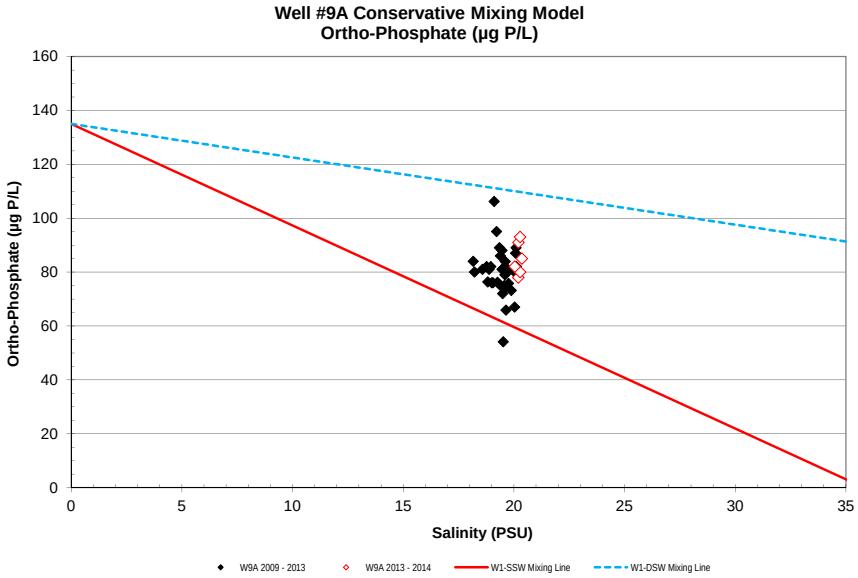
Well 9A Data Table

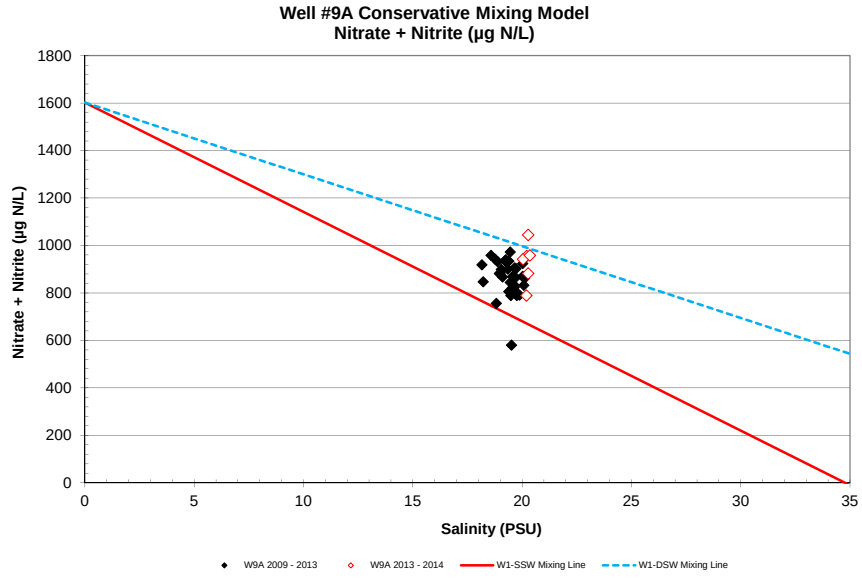
January 2009 - December 2014

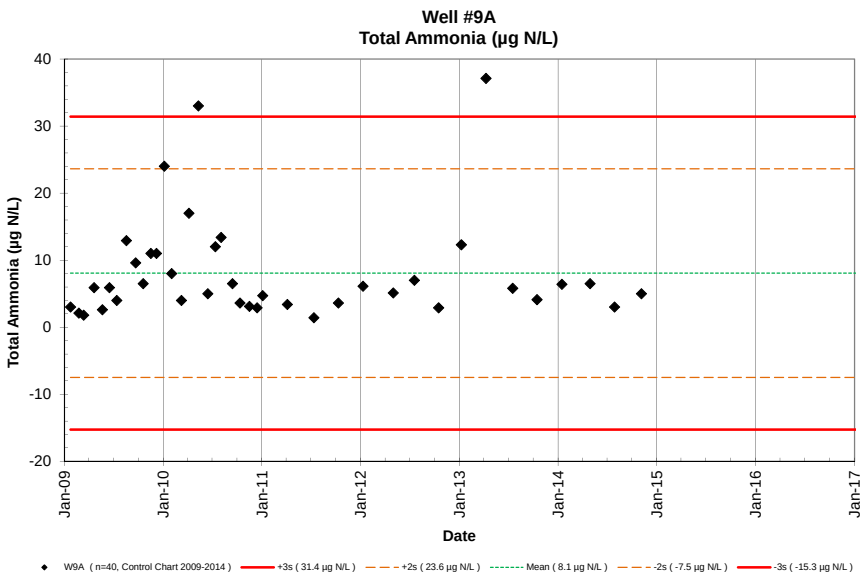
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W9A	-19.812	1/23/09	1130	-9.88	0.09	Low	2.46	76	67.1	940	0.21	3.0	405	11371						20.4	7.90	19.26	6.17	1.03		
W9A	-19.812	2/23/09	1340	-9.15	0.09	Ebb	2.16	67	65.9	923	0.15	2.1	408	11468						20.0	7.74	20.03	6.50	8.11		
W9A	-19.812	3/13/09	1338	-9.36	0.09	Flood	1.75	54	41.4	580	0.13	1.8	331	9286						21.0	7.82	19.52	6.63	1.08		
W9A	-19.812	4/20/09	1120	-9.24	0.21	Flood	3.43	106	61.9	867	0.42	5.9	368	10333						19.9	7.67	19.11	6.48	19.1		
W9A	-19.812	5/21/09	1057	-9.36	0.55	Flood	2.42	75	62.1	869	0.19	2.6	534	14987						21.7	7.89	19.57	5.95	1.26		
W9A	-19.812	6/16/09	1013	-9.07	0.40	Flood	2.46	76	54.0	756	0.42	5.9	242	6803						18.4	7.79	18.82	6.21	0.97		
W9A	-19.812	7/13/09	1322	-9.15	0.21	Low	2.13	66	58.8	823	0.29	4.0	147	4116						18.4	7.78	19.64	6.40	1.80		
W9A	-19.812	8/18/09	1315	-8.90	0.61	Flood	2.58	80	64.6	906	0.92	12.9	351	9866						18.6	7.84	19.66	6.86	0.48		
W9A	-19.812	9/21/09	1133	-9.10	0.15	Low	2.45	76	56.3	789	0.69	9.6	173	4862						18.8	8.38	19.76	6.23	0.38		
W9A	-19.812	10/19/09	1411	-9.18	0.21	Flood	2.36	73	56.5	791	0.46	6.5	206	5786						18.8	8.16	19.88	6.32	0.81		
W9A	-19.812	11/16/09	1140	-9.21	0.09	Low	2.71	84	59.7	836	0.79	11.0	414	11633						20.4	7.92	19.61	5.05	0.14		
W9A	-19.812	12/7/09	1142	-8.97	0.46	Ebb	2.87	89	62.0	869	0.79	11.0	434	12181						19.6	7.85	20.10	6.64	0.70		
W9A	-19.812	1/5/10	851	-8.91	0.49	High	2.39	74	58.1	814	1.71	24.0	429	12052						19.0	7.91	19.62	6.22	2.26		
W9A	-19.812	2/1/10	1035	-9.07	0.12	Ebb	2.62	81	69.4	972	0.57	8.0	405	11386						19.0	7.93	19.46	6.26	1.66		
W9A	-19.812	3/9/10	1008	-9.28	0.12	Flood	2.62	81	64.4	902	0.29	4.0	444	12477						19.4	7.90	19.72	6.32	0.62		
W9A	-19.812	4/6/10	936	-9.26	0.12	Flood	3.07	95	66.8	935	1.21	17.0	428	12015						20.3	7.87	19.22	6.36	3.21		
W9A	-19.812	5/11/10	1001	-9.32	0.00	Flood	2.42	75	57.5	806	2.36	33.0	453	12718						20.3	7.98	19.39	6.84	2.03		
W9A	-19.812	6/15/10	1043	-9.28	0.06	Ebb	2.45	76	64.2	899	0.36	5.0	456	12815						18.5	7.94	19.05	6.65	0.26		
W9A	-19.812	7/13/10	1002	-9.23	0.03	Ebb	2.45	76	63.1	884	0.86	12.0	479	13462						20.2	7.90	19.00	6.43	3.01		
W9A	-19.812	8/3/10	955	-8.94	0.49	Flood	2.58	80	61.8	865	0.96	13.4	457	12847						20.2	7.92	19.71	6.58	3.61		
W9A	-19.812	9/14/10	949	-8.87	0.58	High	2.62	81	66.5	932	0.46	6.5	488	13709						18.8	7.88	18.88	6.34	0.35		
W9A	-19.812	10/12/10	958	-8.16	0.58	Ebb	2.87	89	64.3	900	0.26	3.6	486	13641						18.4	7.89	19.35	6.52	0.13		
W9A	-19.812	11/16/10	919	-8.99	0.24	Flood	2.62	81	68.4	958	0.22	3.1	485	13622						18.5	7.88	18.58	6.40	0.08		
W9A	-19.812	12/14/10	948	-8.93	0.34	High	2.65	82	67.3	942	0.21	2.9	483	13558						18.3	7.87	18.77	6.47	0.21		
W9A	-19.812	1/4/11	946	-9.02	0.12	Ebb	2.71	84	65.5	918	0.34	4.7	468	13153						18.5	7.80	18.16	6.28	0.12		
W9A	-19.812	4/5/11	1023	-9.21	-0.1	Low	2.58	80	60.5	847	0.24	3.4	443	12436						18.6	7.82	18.22	5.47	0.12		
W9A	-19.812	7/12/11	941	-9.39	0.37	Flood	2.65	82	62.9	881	0.10	1.4	467	13107						18.3	7.86	18.96	6.37	0.08		
W9A	-19.812	10/11/11	1007	-9.10	0.12	Low	2.55	79	58.8	824	0.26	3.6	435	12220						18.2	7.81	19.59	6.65	0.12		
W9A	-19.812	1/10/12	956	-9.04	0.15	Ebb	2.32	72	56.3	789	0.44	6.1	420	11795						18.5	7.84	19.49	6.19	0.09		
W9A	-19.812	5/1/12	1014	-9.14	0.18	Flood	2.84	88	60.3	844	0.36	5.1	472	13252						17.9	7.89	19.46	6.56	0.06		
W9A	-19.812	7/18/12	931	-9.25	0.00	Low	2.65	82	61.5	861	0.50	7.0	443	12431						18.2	7.95	20.11	6.83	0.57		
W9A	-19.812	10/16/12	1008	-9.07	0.18	Ebb	2.58	80	62.1	870	0.21	2.9	441	12389						18.6	7.85	20.03	6.41	0.55		
W9A	-19.812	1/8/13	1029	-9.13	0.12	Flood	2.78	86	66.7	934	0.88	12.3	507	14246						18.3	7.81	19.39	6.49	0.13		
W9A	-19.812	4/9/13	1010	-9.30	-0.1	Low	2.81	87	59.4	832	2.65	37.1	434	12177						18.4	7.86	20.08	7.09	0.66		
W9A	-19.812	7/17/13	1043	-9.09	0.49	Flood	2.52	78	56.3	789	0.41	5.8	441	12398						18.8	7.80	20.20	6.33	0.18		
W9A	-19.812	10/15/13	952	-9.15	0.27	Flood	2.58	80	63.0	882	0.29	4.1	424	11914						18.4	7.84	20.28	7.11	0.05		
W9A	-19.812	1/15/14	929	-9.08	0.15	Ebb	2.94	91	68.2	955	0.46	6.4	411	11533						18.2	7.86	20.21	7.14	0.11		
W9A	-19.812	4/29/14	1045	-9.36	0.00	Flood	2.65	82	67.3	942	0.46	6.5	408	11467						18.6	7.82	20.04	7.21	0.13		
W9A	-19.812	7/29/14	1031	-9.17	0.12	Ebb	2.74	85	68.4	958	0.21	3.0	408	11457						18.6	7.75	20.36	7.58	0.31		
W9A	-19.812	11/5/14	1023	-9.07	0.12	Low	3.00	93	74.5	1044	0.36	5.0	403	11319						18.5	7.83	20.28	7.81	0.24		
W9A	-19.812	1/1/15																								
W9A	-19.812	4/1/15																								

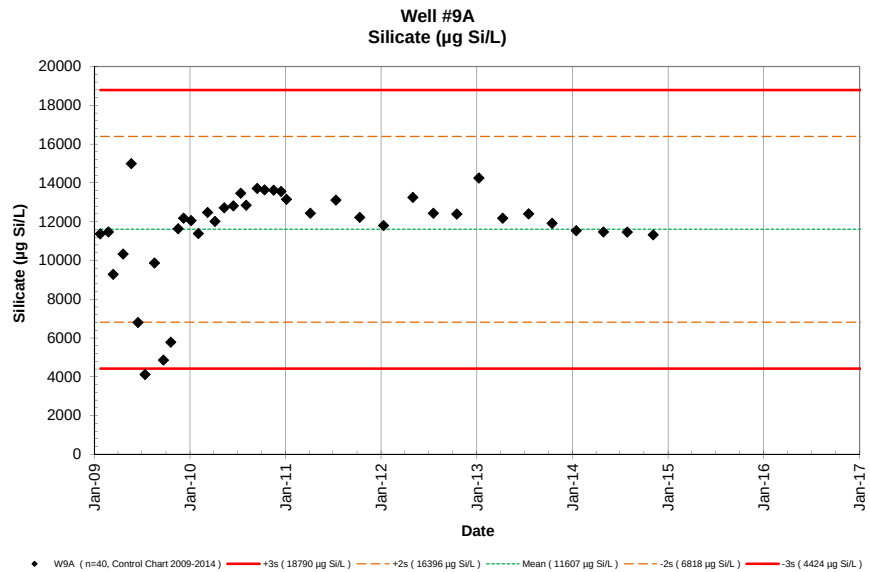

Well #9A
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W9A (n=40, Control Chart 2009-2014)
+3s (106 µg P/L)
+2s (98 µg P/L)
Mean (81 µg P/L)
-2s (63 µg P/L)
-3s (55 µg P/L)

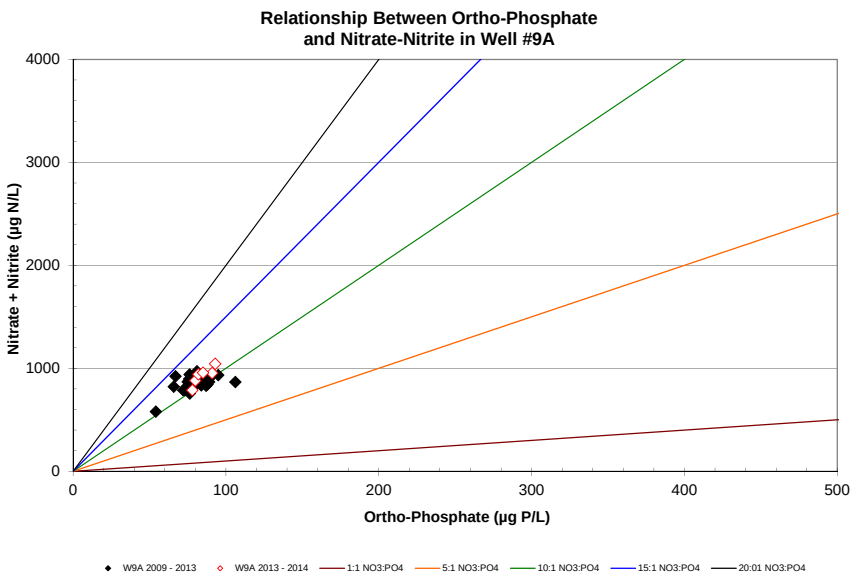

Well #9A
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W9A (n=40, Control Chart 2009-2014)
+3s (1108 µg N/L)
+2s (1030 µg N/L)
Mean (873 µg N/L)
-2s (717 µg N/L)
-3s (639 µg N/L)

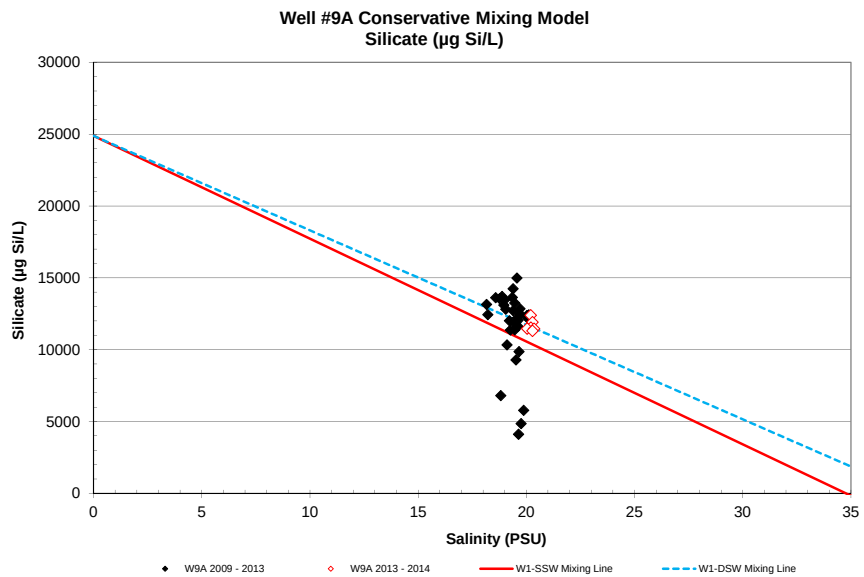

Well #9A Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W9A 2009 - 2013
W9A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

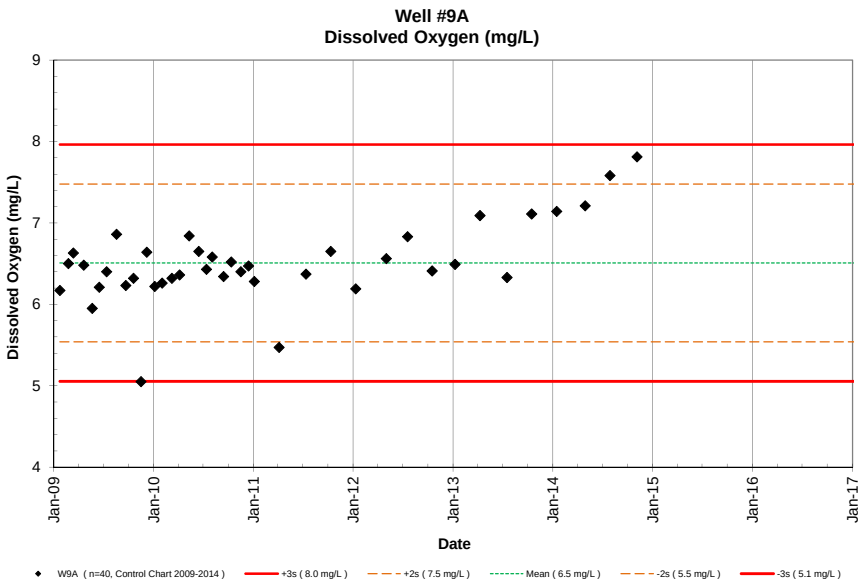

Well #9A Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W9A 2009 - 2013
W9A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

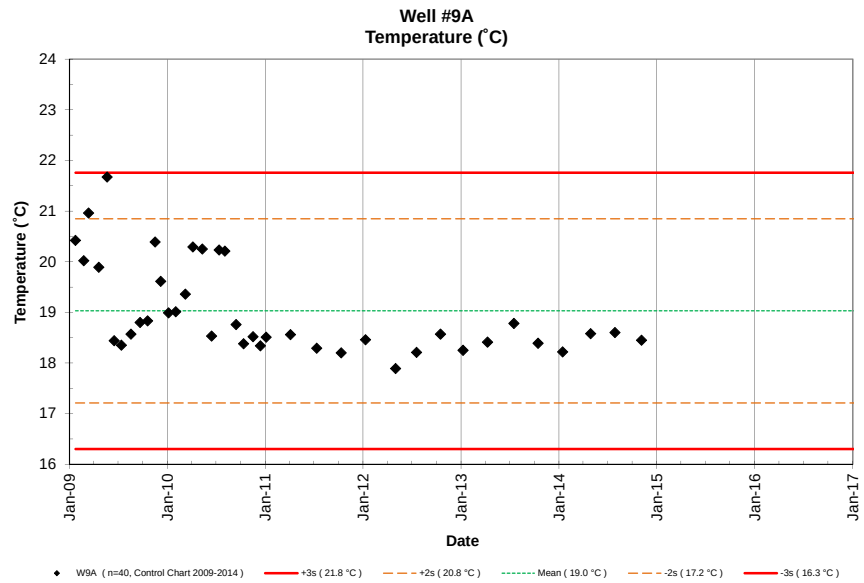

Well #9A
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
40
30
20
10
0
-10
-20
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W9A (n=40, Control Chart 2009-2014)
+3s (31.4 µg N/L)
+2s (23.6 µg N/L)
Mean (8.1 µg N/L)
-2s (-7.5 µg N/L)
-3s (-15.3 µg N/L)

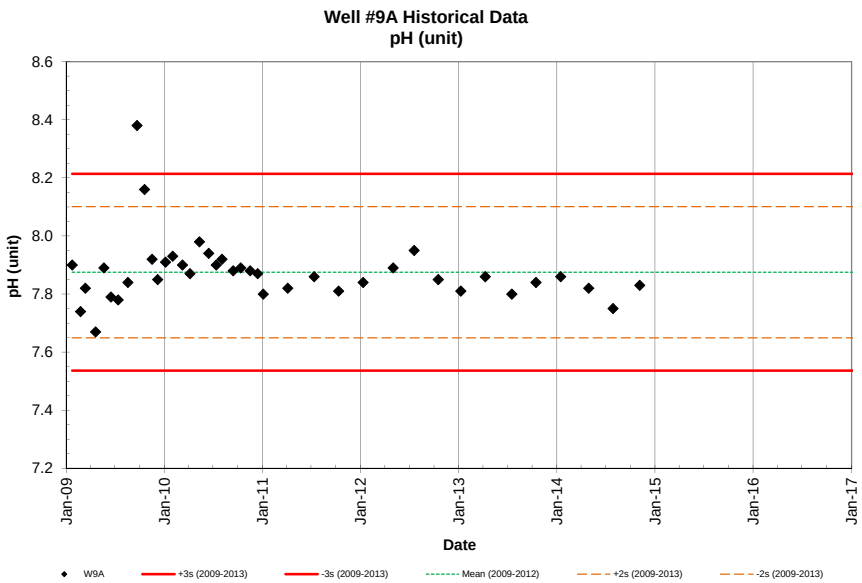

Well #9A
Silicate (µg Si/L)
Silicate (µg Si/L)
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W9A (n=40, Control Chart 2009-2014)
+3s (18790 µg Si/L)
+2s (16396 µg Si/L)
Mean (11607 µg Si/L)
-2s (6818 µg Si/L)
-3s (4424 µg Si/L)

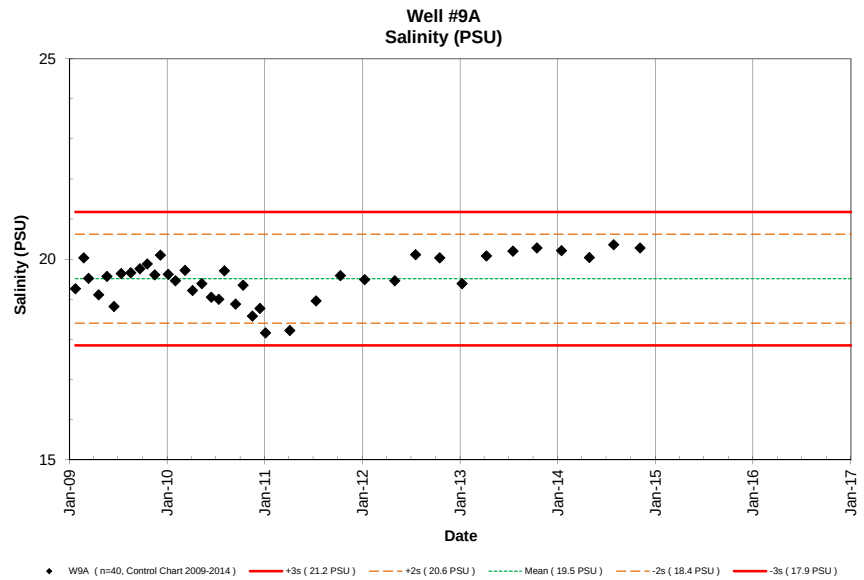

Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #9A
Nitrate + Nitrite (µg N/L)
4000
3000
2000
1000
0
0
100
200
300
400
500
Ortho-Phosphate (µg P/L)
W9A 2009 - 2013
W9A 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

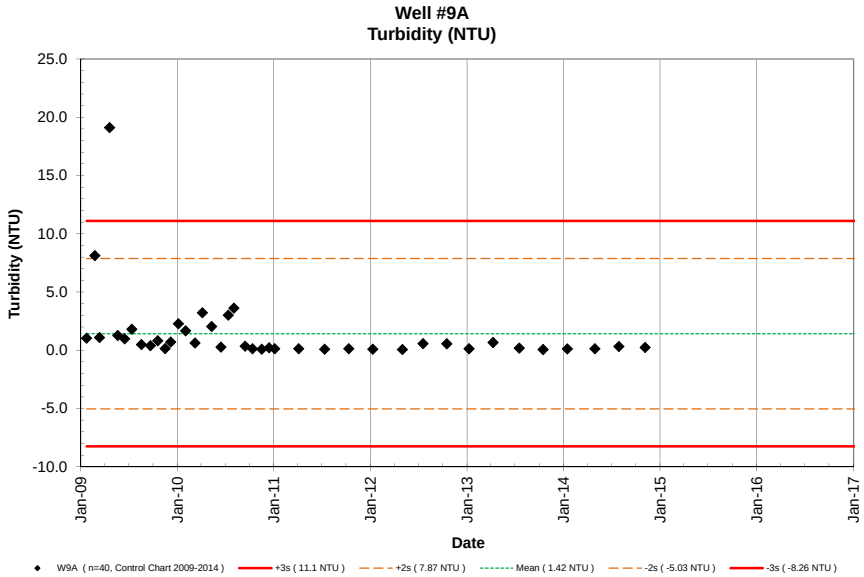

Well #9A Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
30000
25000
20000
15000
10000
5000
0
0
5
10
15
20
25
30
35
Salinity (PSU)
W9A 2009 - 2013
W9A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

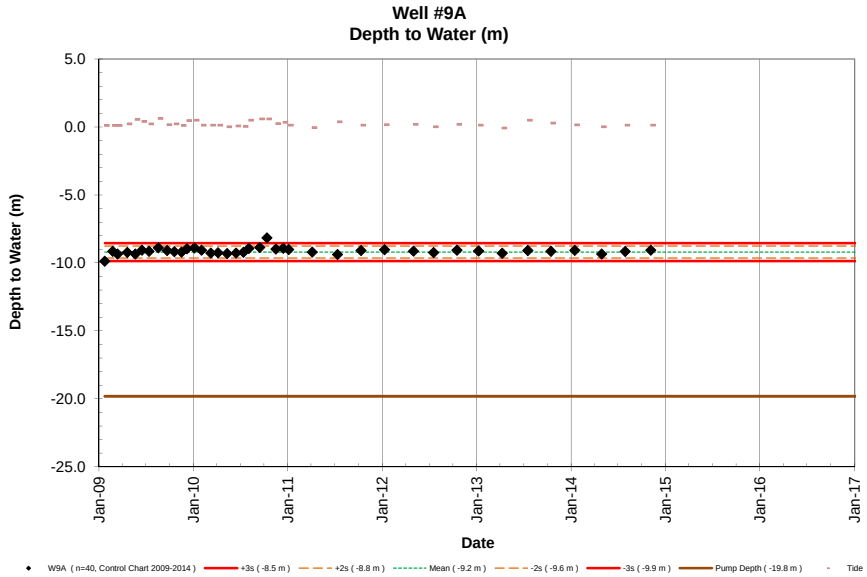

Well #9A
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W9A (n=40, Control Chart 2009-2014)
+3s (8.0 mg/L)
+2s (7.5 mg/L)
Mean (6.5 mg/L)
-2s (5.5 mg/L)
-3s (5.1 mg/L)


Well #9A
Temperature (˚C)
Temperature (˚C)
Date
W9A (n=40, Control Chart 2009-2014)
+3s (21.8 °C)
+2s (20.8 °C)
Mean (19.0 °C)
-2s (17.2 °C)
-3s (16.3 °C)


Well #9A Historical Data
pH (unit)
pH (unit)
Date
W9A
+3s (2009-2013)
-3s (2009-2013)
Mean (2009-2012)
+2s (2009-2013)
-2s (2009-2013)


Well #9A
Salinity (PSU)
Salinity (PSU)
Date
W9A (n=40, Control Chart 2009-2014)
+3s (21.2 PSU)
+2s (20.6 PSU)
Mean (19.5 PSU)
-2s (18.4 PSU)
-3s (17.9 PSU)


Well #9A
Turbidity (NTU)
Turbidity (NTU)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W9A (n=40, Control Chart 2009-2014)
+3s (11.1 NTU)
+2s (7.87 NTU)
Mean (1.42 NTU)
-2s (-5.03 NTU)
-3s (-8.26 NTU)

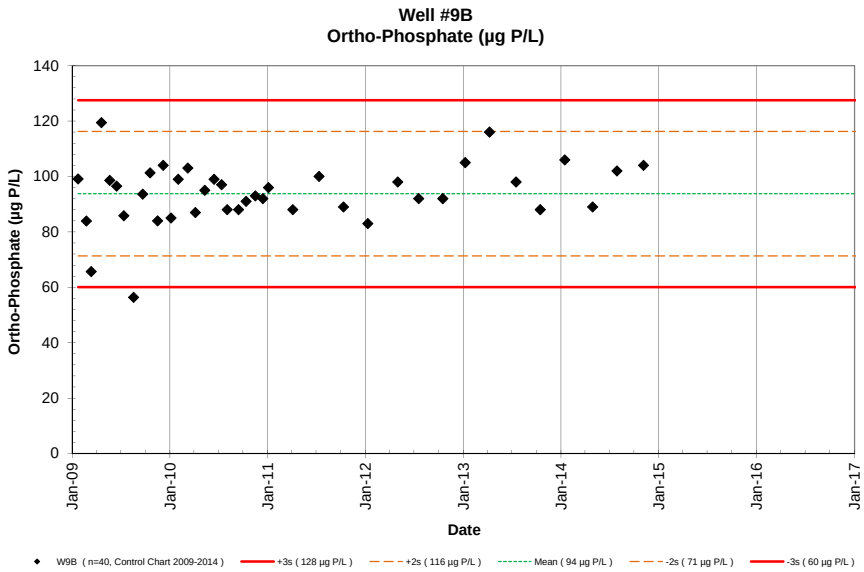

Well #9A
Depth to Water (m)
Depth to Water (m)
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W9A (n=40, Control Chart 2009-2014)
+3s (-8.5 m)
+2s (-8.8 m)
Mean (-9.2 m)
-2s (-9.6 m)
-3s (-9.9 m)
Pump Depth (-19.8 m)
Tide

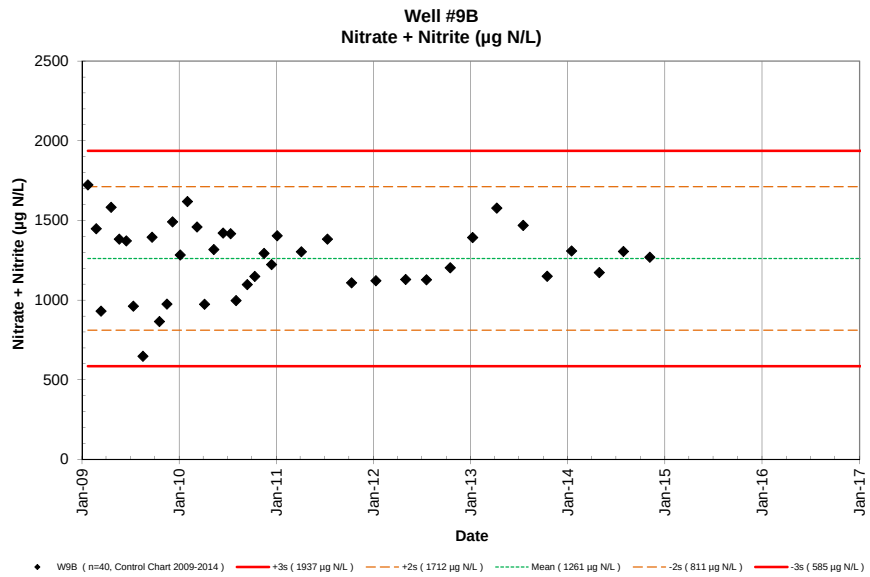
NELHA Water Quality Laboratory

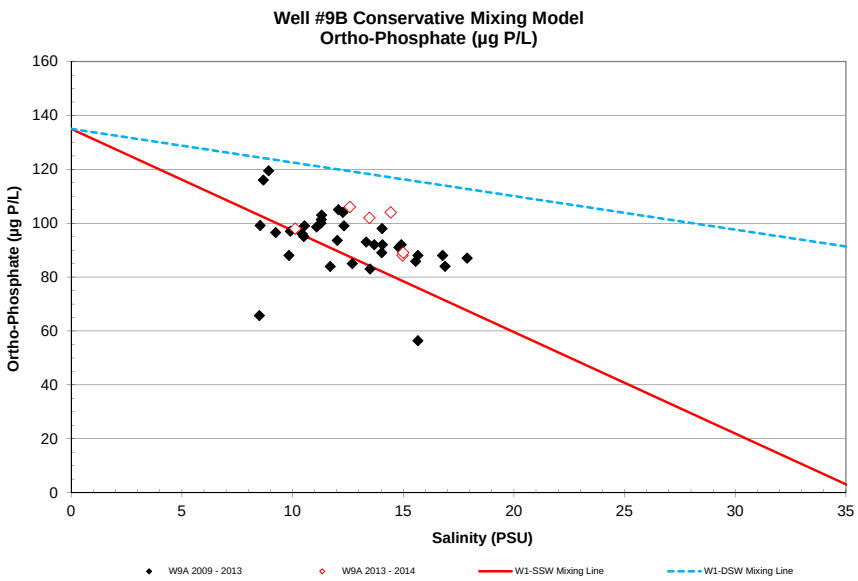
Well 9B Data Table

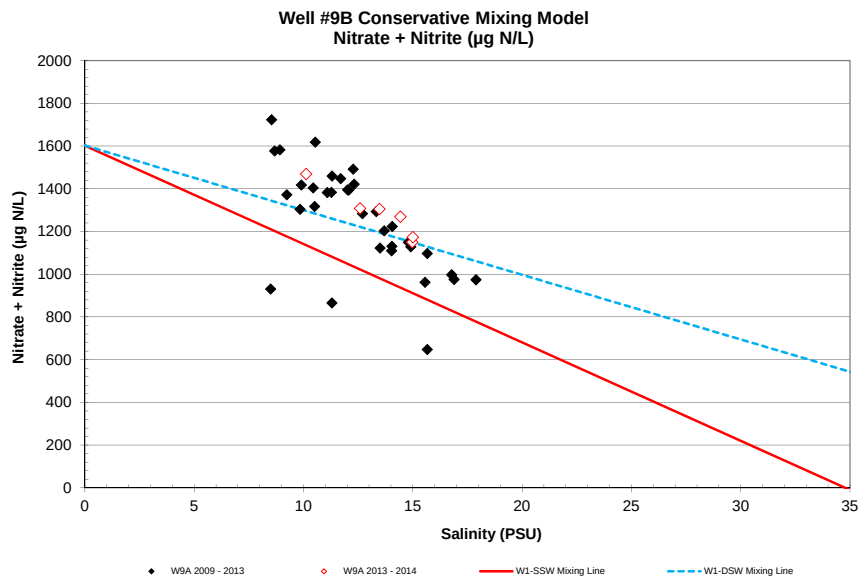
January 2009 - December 2014

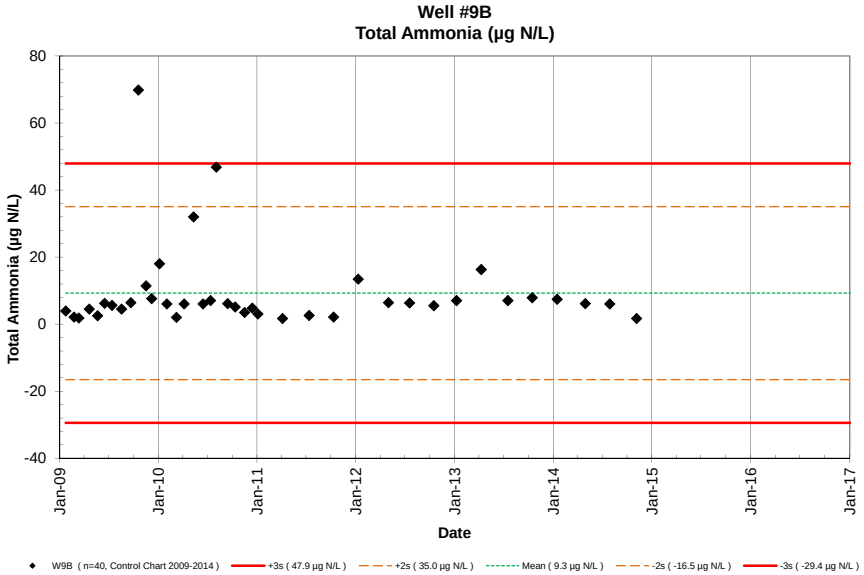
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W9B	-13.716	1/23/09	1115	-9.24	0.09	Low	3.20	99	123.0	1723	0.28	3.9	560	15730						21.9	8.03	8.54	7.44	1.62		
W9B	-13.716	2/23/09	1328	-9.15	0.09	Ebb	2.71	84	103.3	1447	0.15	2.1	560	15726						21.9	7.78	11.70	7.30	0.16		
W9B	-13.716	3/13/09	1313	-9.33	0.09	Flood	2.12	66	66.4	931	0.13	1.8	423	11887						23.0	7.91	8.50	7.54	0.40		
W9B	-13.716	4/20/09	1131	-9.22	0.21	Flood	3.85	119	112.9	1582	0.32	4.5	525	14757						21.7	7.85	8.92	7.06	1.93		
W9B	-13.716	5/21/09	1033	-9.26	0.55	Flood	3.18	99	98.7	1382	0.18	2.5	381	10712						22.4	7.98	11.09	6.97	0.16		
W9B	-13.716	6/16/09	1001	-9.14	0.40	Flood	3.12	97	97.9	1371	0.44	6.2	300	8415						20.0	7.98	9.24	7.71	0.04		
W9B	-13.716	7/13/09	1307	-9.17	0.21	Low	2.77	86	68.7	962	0.40	5.6	259	7270						19.7	7.95	15.56	6.40	0.12		
W9B	-13.716	8/18/09	1302	-8.93	0.61	Flood	1.82	56	46.2	648	0.32	4.5	366	10266						20.3	7.87	15.66	6.21	0.06		
W9B	-13.716	9/21/09	1101	-9.11	0.15	Low	3.02	94	99.6	1395	0.46	6.4	238	6674						20.3	8.44	12.02	7.14	0.07		
W9B	-13.716	10/19/09	1346	-9.21	0.21	Flood	3.27	101	61.8	865	4.98	69.8	255	7152						20.9	8.19	11.30	7.50	0.16		
W9B	-13.716	11/16/09	1105	-9.29	0.09	Low	2.71	84	69.6	975	0.81	11.4	608	17071						21.5	7.89	16.89	4.85	0.21		
W9B	-13.716	12/7/09	1128	-9.02	0.46	Ebb	3.36	104	106.4	1491	0.54	7.6	582	16342						20.3	7.88	12.27	7.47	0.02		
W9B	-13.716	1/5/10	902	-8.96	0.49	High	2.74	85	91.6	1283	1.29	18.0	467	13104						20.3	7.95	12.70	6.80	0.65		
W9B	-13.716	2/1/10	1029	-9.03	0.12	Ebb	3.20	99	115.5	1618	0.43	6.0	461	12938						19.5	8.00	10.54	7.52	0.10		
W9B	-13.716	3/9/10	940	-9.30	0.12	Flood	3.33	103	104.2	1459	0.14	2.0	558	15660						19.9	7.95	11.31	6.79	0.03		
W9B	-13.716	4/6/10	927	-9.29	0.12	Flood	2.81	87	69.5	974	0.43	6.0	525	14739						18.9	7.87	17.89	6.49	0.09		
W9B	-13.716	5/11/10	946	-9.33	0.00	Flood	3.07	95	94.0	1317	2.28	32.0	683	19181						19.8	8.05	10.51	7.70	0.02		
W9B	-13.716	6/15/10	1026	-9.28	0.06	Ebb	3.20	99	101.5	1421	0.43	6.0	610	17139						19.7	8.00	12.32	7.39	0.02		
W9B	-13.716	7/13/10	956	-9.27	0.03	Ebb	3.13	97	101.2	1417	0.50	7.0	613	17228						19.9	7.95	9.90	7.55	0.09		
W9B	-13.716	8/3/10	945	-8.97	0.49	Flood	2.84	88	71.2	997	3.34	46.8	525	14756						19.4	7.92	16.78	6.54	0.13		
W9B	-13.716	9/14/10	1000	-8.90	0.58	High	2.84	88	78.3	1097	0.44	6.1	558	15685						19.6	7.91	15.66	6.86	0.11		
W9B	-13.716	10/12/10	1010	-8.80	0.58	Ebb	2.94	91	82.0	1149	0.36	5.1	577	16194						19.5	7.90	14.80	6.79	0.11		
W9B	-13.716	11/16/10	929	-9.06	0.24	Flood	3.00	93	92.3	1293	0.25	3.5	588	16524						19.5	7.91	13.33	7.05	0.05		
W9B	-13.716	12/14/10	1009	-8.99	0.34	High	2.97	92	87.3	1223	0.34	4.8	574	16113						19.4	7.90	14.06	6.92	0.11		
W9B	-13.716	1/4/11	958	-9.04	0.12	Ebb	3.10	96	100.2	1404	0.21	3.0	576	16176						19.6	7.90	10.44	7.37	0.05		
W9B	-13.716	4/5/11	1032	-9.22	-0.1	Low	2.84	88	93.0	1303	0.12	1.7	525	14744						19.6	7.89	9.84	6.56	0.08		
W9B	-13.716	7/12/11	957	-9.37	0.37	Flood	3.23	100	98.7	1383	0.19	2.6	605	16998						19.6	7.95	11.28	7.28	0.05		
W9B	-13.716	10/11/11	1015	-9.11	0.12	Low	2.87	89	79.2	1109	0.15	2.1	542	15234						19.5	7.85	14.03	6.90	0.03		
W9B	-13.716	1/10/12	1007	-9.07	0.15	Ebb	2.68	83	80.1	1122	0.96	13.4	529	14857						19.6	7.86	13.50	6.96	0.07		
W9B	-13.716	5/1/12	1022	-9.17	0.18	Flood	3.16	98	80.7	1130	0.46	6.4	585	16440						19.6	7.96	14.04	6.86	0.04		
W9B	-13.716	7/18/12	927	-9.28	0.00	Low	2.97	92	80.5	1128	0.45	6.3	545	15302						19.2	7.99	14.91	7.00	0.30		
W9B	-13.716	10/16/12	1016	-9.11	0.18	Ebb	2.97	92	85.9	1203	0.39	5.5	556	15616						19.5	7.92	13.69	6.87	0.23		
W9B	-13.716	1/8/13	1036	-9.15	0.12	Flood	3.39	105	99.5	1393	0.50	7.0	620	17409						19.5	7.89	12.07	7.22	0.35		
W9B	-13.716	4/9/13	1003	-9.32	-0.1	Low	3.75	116	112.6	1577	1.16	16.3	652	18302						19.9	7.98	8.68	8.42	0.04		
W9B	-13.716	7/17/13	1028	-9.14	0.49	Flood	3.16	98	104.9	1469	0.50	7.0	566	15889						19.8	7.92	10.12	7.58	0.08		
W9B	-13.716	10/15/13	1001	-9.16	0.27	Flood	2.84	88	82.1	1150	0.56	7.9	530	14872						19.5	7.86	14.97	7.08	0.06		
W9B	-13.716	1/15/14	938	-9.09	0.15	Ebb	3.42	106	93.4	1308	0.53	7.4	516	14506						19.6	7.91	12.59	7.90	1.27		
W9B	-13.716	4/29/14	1052	-9.38	0.00	Flood	2.87	89	83.7	1173	0.44	6.1	490	13775						19.8	7.85	15.00	7.34	0.04		
W9B	-13.716	7/29/14	1031	-9.17	0.12	Ebb	3.29	102	93.2	1305	0.43	6.0	542	15222						19.4	7.82	13.47	7.53	0.06		
W9B	-13.716	11/5/14	1031	-9.12	0.12	Low	3.36	104	90.6	1269	0.12	1.7	500	14029						19.7	7.88	14.43	7.57	0.05		
W9B	-13.716	1/1/15																								
W9B	-13.716	4/1/15																								

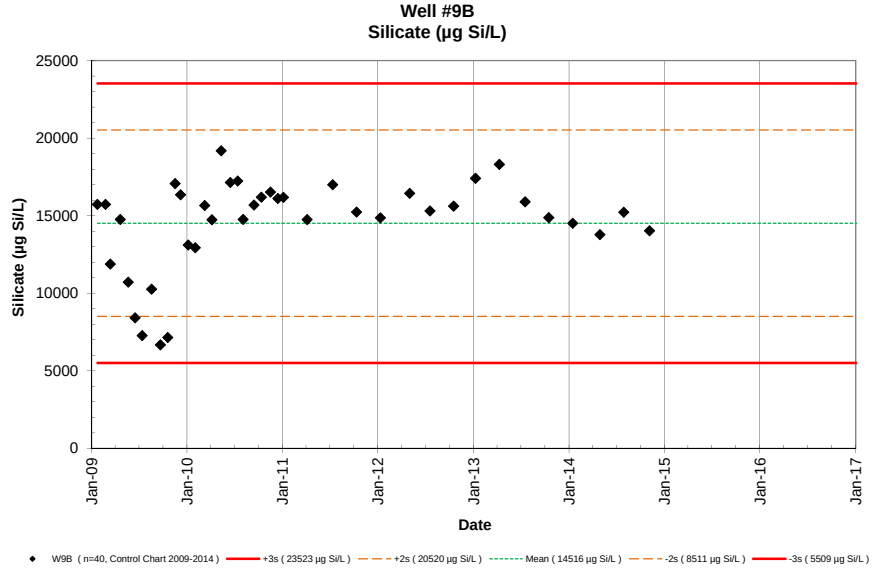

Well #9B
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W9B (n=40, Control Chart 2009-2014)
+3s (128 µg P/L)
+2s (116 µg P/L)
Mean (94 µg P/L)
-2s (71 µg P/L)
-3s (60 µg P/L)

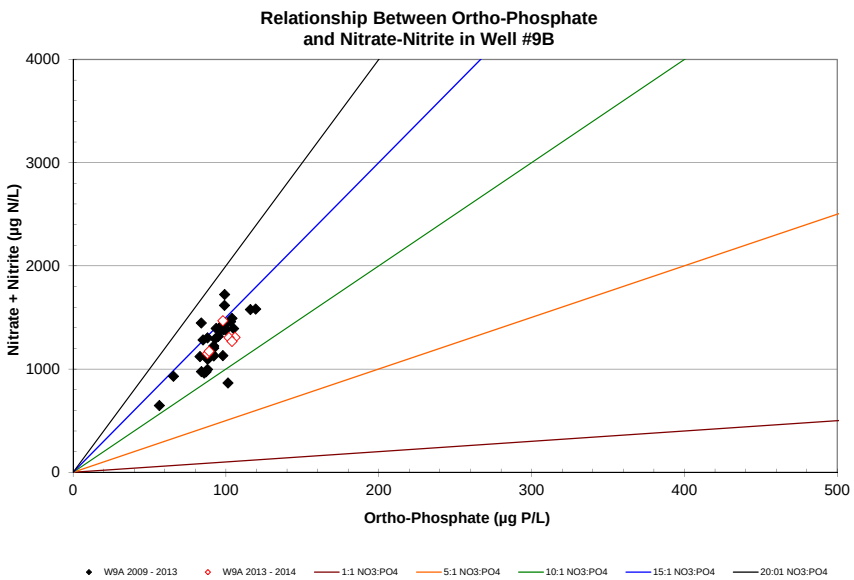

Well #9B
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W9B (n=40, Control Chart 2009-2014)
+3s (1937 µg N/L)
+2s (1712 µg N/L)
Mean (1261 µg N/L)
-2s (811 µg N/L)
-3s (585 µg N/L)

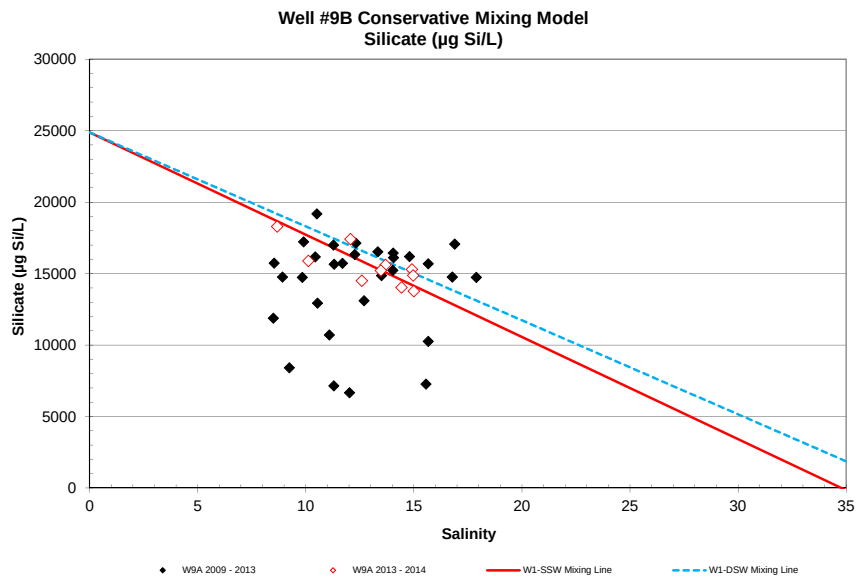

Well #9B Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W9A 2009 - 2013
W9A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

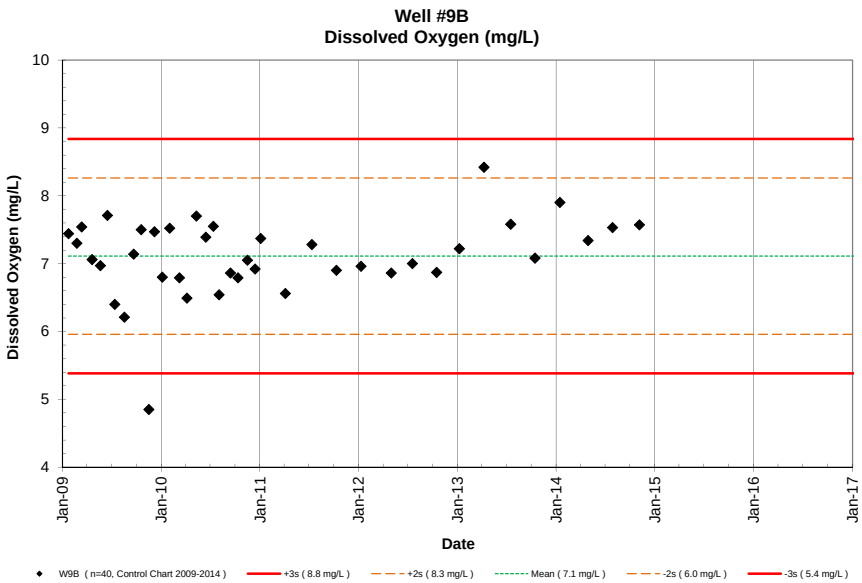

Well #9B Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W9A 2009 - 2013
W9A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

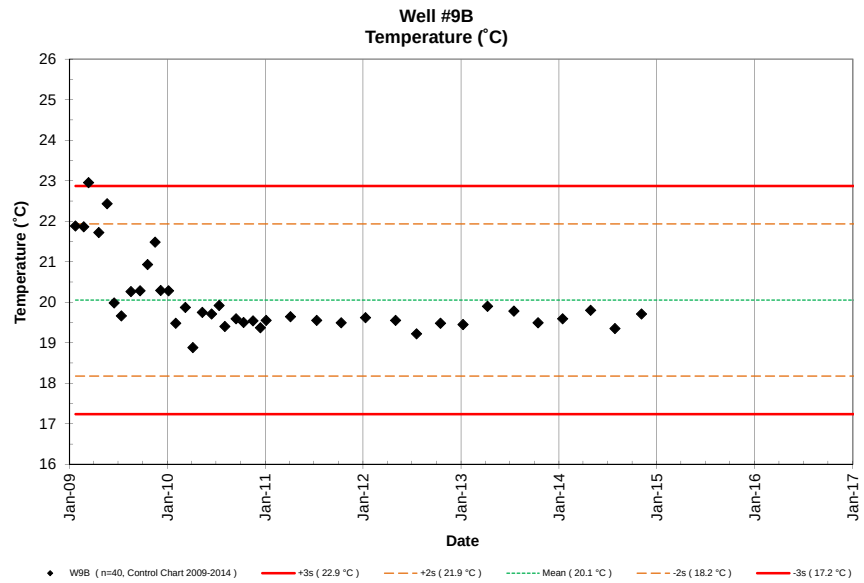

Well #9B
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
80
60
40
20
0
-20
-40
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W9B (n=40, Control Chart 2009-2014)
+3s (47.9 µg N/L)
+2s (35.0 µg N/L)
Mean (9.3 µg N/L)
-2s (-16.5 µg N/L)
-3s (-29.4 µg N/L)

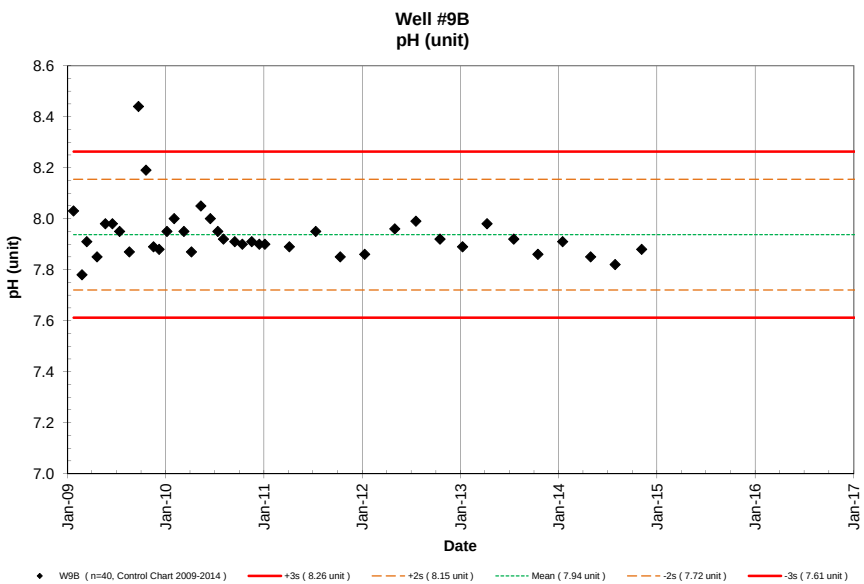

Well #9B
Silicate (µg Si/L)
Silicate (µg Si/L)
25000
20000
15000
10000
5000
0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W9B (n=40, Control Chart 2009-2014)
+3s (23523 µg Si/L)
+2s (20520 µg Si/L)
Mean (14516 µg Si/L)
-2s (8511 µg Si/L)
-3s (5509 µg Si/L)

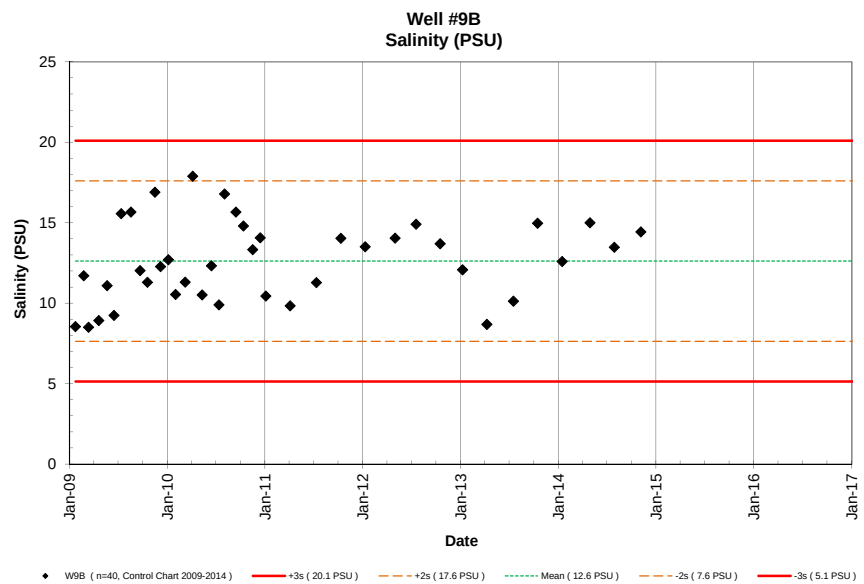

Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #9B
Nitrate + Nitrite (µg N/L)
4000
3000
2000
1000
0
0
100
200
300
400
500
Ortho-Phosphate (µg P/L)
W9A 2009 - 2013
W9A 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

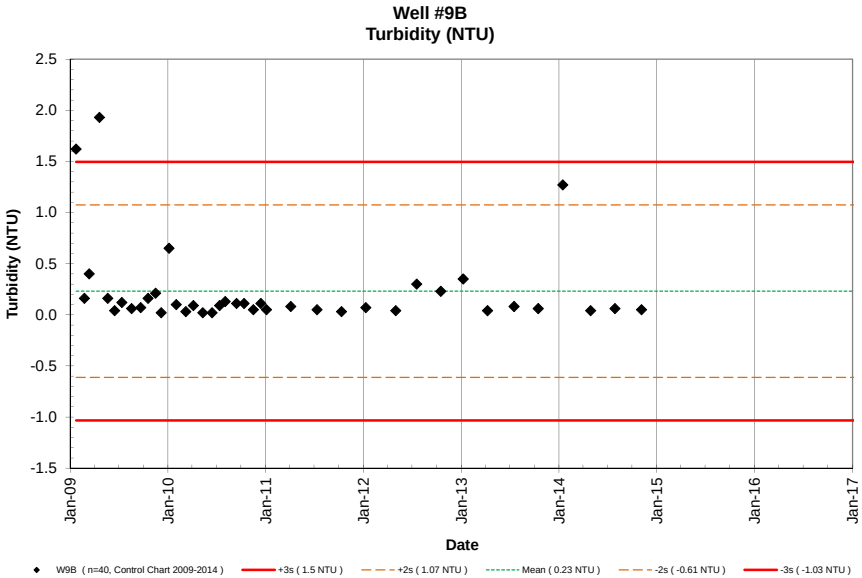

Well #9B Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
30000
25000
20000
15000
10000
5000
0
0
5
10
15
20
25
30
35
Salinity
W9A 2009 - 2013
W9A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

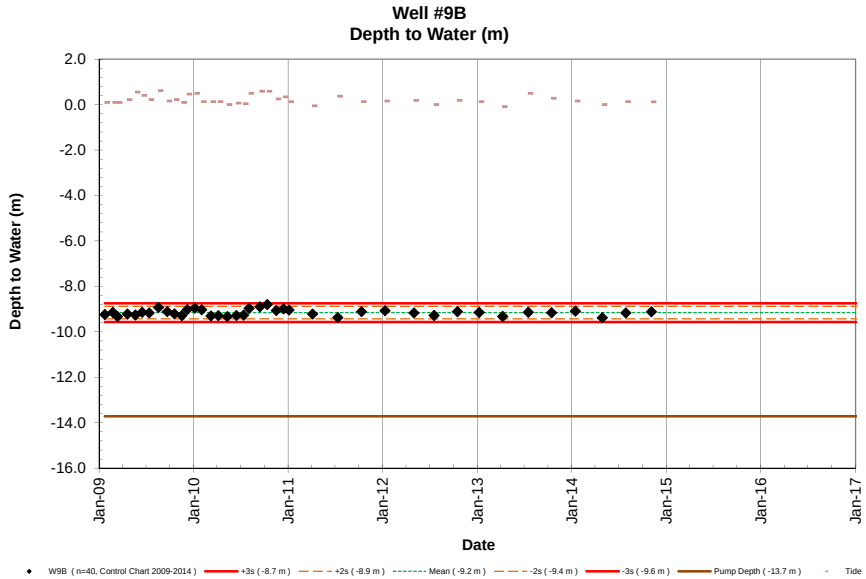

Well #9B
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W9B (n=40, Control Chart 2009-2014)
+3s (8.8 mg/L)
+2s (8.3 mg/L)
Mean (7.1 mg/L)
-2s (6.0 mg/L)
-3s (5.4 mg/L)


Well #9B
Temperature (˚C)
Temperature (˚C)
Date
W9B (n=40, Control Chart 2009-2014)
+3s (22.9 °C)
+2s (21.9 °C)
Mean (20.1 °C)
-2s (18.2 °C)
-3s (17.2 °C)


Well #9B
pH (unit)
pH (unit)
Date
W9B (n=40, Control Chart 2009-2014)
+3s (8.26 unit)
+2s (8.15 unit)
Mean (7.94 unit)
-2s (7.72 unit)
-3s (7.61 unit)


Well #9B
Salinity (PSU)
Salinity (PSU)
Date
W9B (n=40, Control Chart 2009-2014)
+3s (20.1 PSU)
+2s (17.6 PSU)
Mean (12.6 PSU)
-2s (7.6 PSU)
-3s (5.1 PSU)


Well #9B
Turbidity (NTU)
Turbidity (NTU)
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W9B (n=40, Control Chart 2009-2014)
+3s (1.5 NTU)
+2s (1.07 NTU)
Mean (0.23 NTU)
-2s (-0.61 NTU)
-3s (-1.03 NTU)

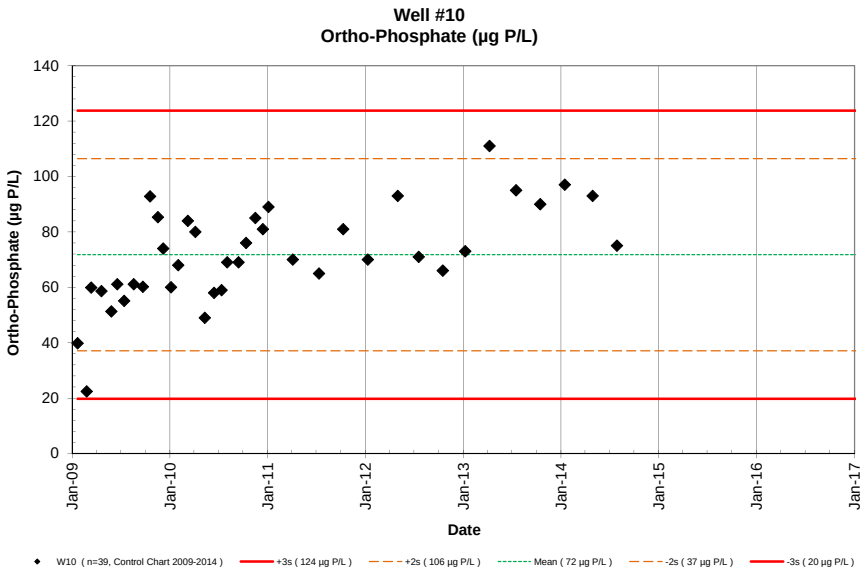

Well #9B
Depth to Water (m)
Depth to Water (m)
2.0
0.0
-2.0
-4.0
-6.0
-8.0
-10.0
-12.0
-14.0
-16.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W9B (n=40, Control Chart 2009-2014)
+3s (-8.7 m)
+2s (-8.9 m)
Mean (-9.2 m)
-2s (-9.4 m)
-3s (-9.6 m)
Pump Depth (-13.7 m)
Tide

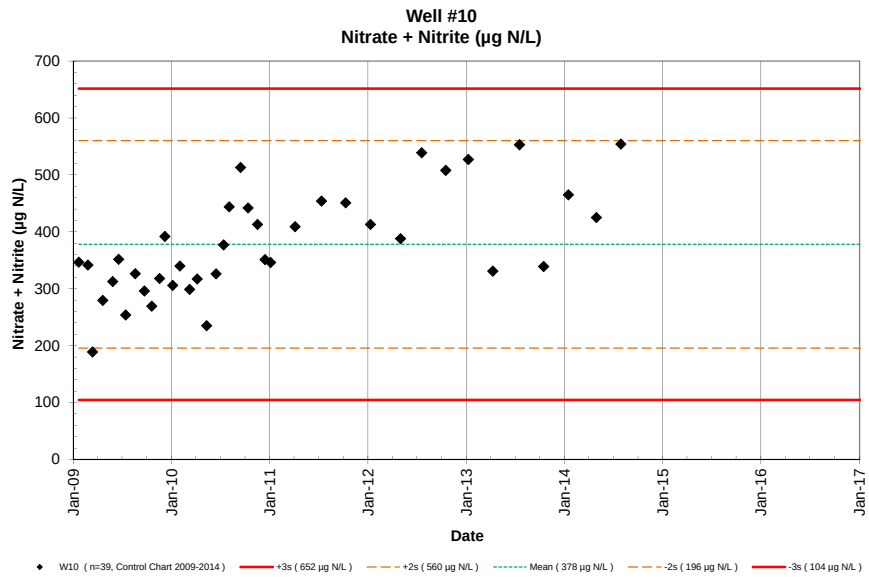
NELHA Water Quality Laboratory

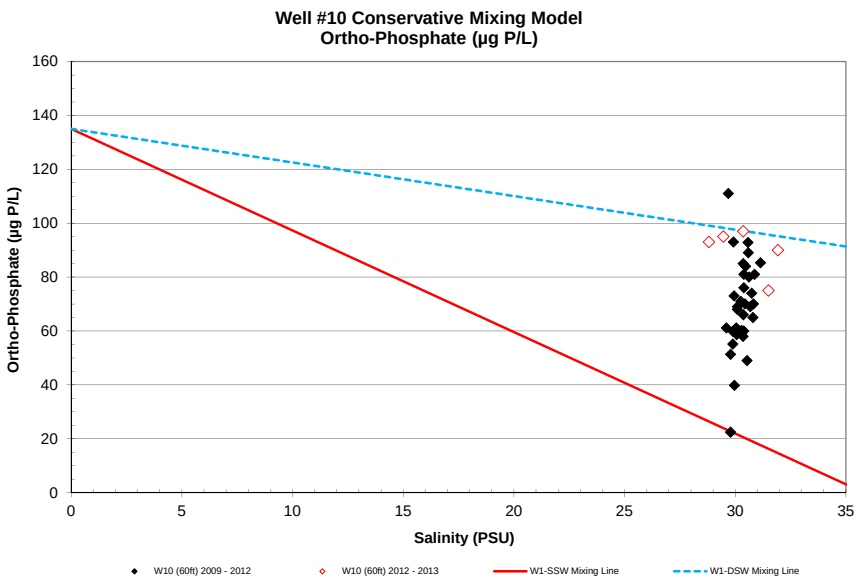
Well 10 Data Table

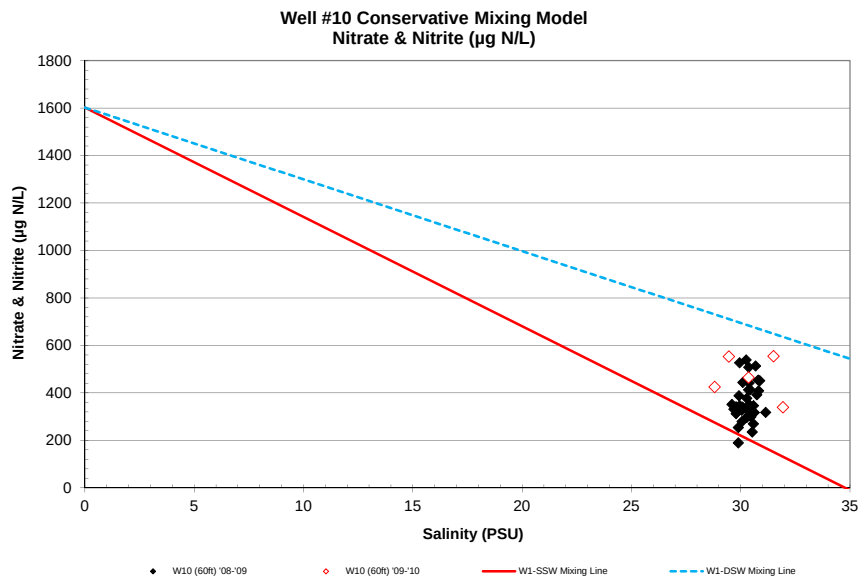
January 2009 - December 2014

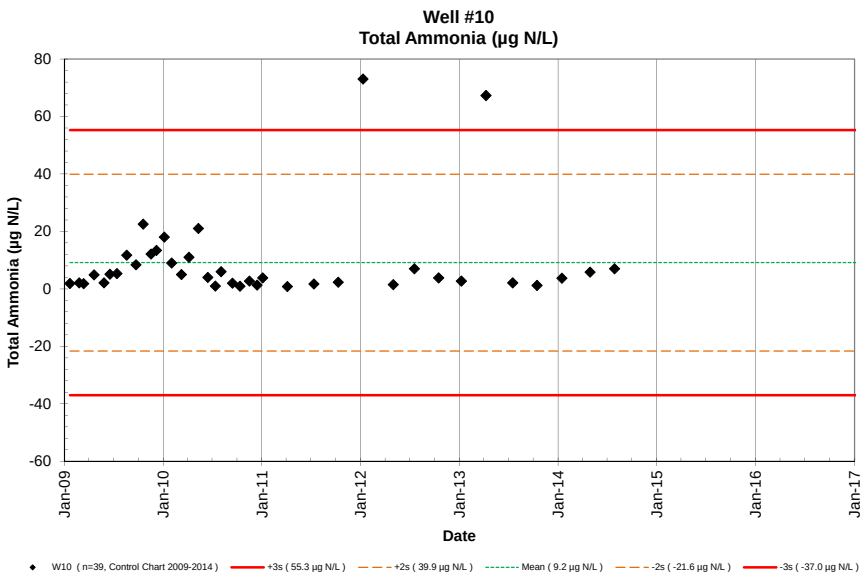
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W10	-18.288	1/21/09	1118	-2.02	0.12	Flood	1.28	40	24.7	347	0.14	1.9	135	3801						23.9	8.02	29.96	2.50	2.39		
W10	-18.288	2/24/09	1239	-2.40	0.09	Flood	0.72	22	24.4	342	0.15	2.1	143	4018						23.6	7.95	29.79	2.07	2.77		
W10	-18.288	3/13/09	1555	-2.23	0.37	Flood	1.93	60	13.5	189	0.13	1.8	274	7700						23.3	7.91	29.89	2.48	1.50		
W10	-18.288	4/20/09	1535	-2.09	0.37	Flood	1.89	59	20.0	280	0.35	4.9	123	3447						24.9	7.79	30.06	2.91	2.42		
W10	-18.288	5/27/09	827	-2.28	0.12	Ebb	1.66	51	22.3	313	0.15	2.1	120	3372						22.5	7.91	29.79	2.88	0.67		
W10	-18.288	6/18/09	931	-2.21	0.21	Flood	1.97	61	25.1	352	0.36	5.1	147	4121						22.5	8.03	29.60	3.25	0.48		
W10	-18.288	7/14/09	1017	-2.10	0.43	High	1.78	55	18.1	254	0.38	5.3	94	2638						22.3	8.06	29.89	3.39	0.34		
W10	-18.288	8/19/09	825	-2.45	0.03	Ebb	1.97	61	23.3	327	0.84	11.7	114	3190						22.3	7.98	30.05	3.57	0.49		
W10	-18.288	9/22/09	834	-2.00	0.58	Ebb	1.94	60	21.1	296	0.60	8.4	101	2827						22.5	7.94	30.28	2.65	0.48		
W10	-18.288	10/19/09	1608	-2.27	0.27	Flood	3.00	93	19.2	269	1.61	22.5	85	2388						23.1	8.22	30.58	2.71	0.90		
W10	-18.288	11/17/09	1411	-2.50	0.15	Flood	2.75	85	22.7	318	0.86	12.1	108	3022						23.4	7.90	31.14	1.87	0.33		
W10	-18.288	12/7/09	1449	-2.55	0.09	Ebb	2.39	74	28.0	392	0.96	13.4	166	4660						24.0	7.83	30.74	1.07	0.21		
W10	-18.288	1/5/10	1257	-2.45	0.09	Ebb	1.94	60	21.8	306	1.29	18.0	150	4206						24.1	7.88	30.38	2.75	0.64		
W10	-18.288	2/1/10	1426	-2.33	0.00	Flood	2.20	68	24.3	340	0.64	9.0	143	4025						23.1	7.90	30.09	2.82	0.20		
W10	-18.288	3/9/10	1343	-2.44	0.15	High	2.71	84	21.3	299	0.36	5.0	156	4370						24.2	7.92	30.47	3.69	0.55		
W10	-18.288	4/6/10	1143	-2.40	0.15	High	2.58	80	22.6	317	0.79	11.0	150	4204						25.1	7.97	30.62	3.67	0.44		
W10	-18.288	5/11/10	1214	-2.18	0.30	Flood	1.58	49	16.8	235	1.50	21.0	124	3469						24.6	8.09	30.53	3.62	0.46		
W10	-18.288	6/15/10	1325	-2.52	0.09	Flood	1.87	58	23.3	326	0.29	4.0	158	4434						22.4	8.08	30.35	3.40	0.14		
W10	-18.288	7/13/10	1155	-2.57	0.09	Flood	1.90	59	26.9	377	0.07	1.0	155	4346						22.1	7.98	30.28	2.28	0.63		
W10	-18.288	8/3/10	1153	-1.97	0.55	High	2.23	69	31.7	444	0.43	6.0	159	4458						22.0	7.95	30.10	1.48	0.61		
W10	-18.288	9/14/10	1152	-1.97	0.52	Ebb	2.23	69	36.6	513	0.14	2.0	170	4765						22.5	7.82	30.68	1.00	0.17		
W10	-18.288	10/12/10	1205	-2.07	0.40	Ebb	2.45	76	31.6	442	0.06	0.9	173	4847						22.6	7.82	30.39	1.47	0.23		
W10	-18.288	11/16/10	1118	-2.05	0.37	Flood	2.74	85	29.5	413	0.19	2.7	174	4874						22.6	7.79	30.36	2.40	0.13		
W10	-18.288	12/14/10	1156	-2.11	0.30	Ebb	2.62	81	25.1	351	0.09	1.3	180	5064						22.6	7.81	30.39	2.28	0.17		
W10	-18.288	1/4/11	1146	-2.49	0.03	Low	2.87	89	24.7	346	0.27	3.8	171	4813						23.0	7.74	30.59	2.56	0.13		
W10	-18.288	4/5/11	1211	-2.46	0.00	Flood	2.26	70	29.2	409	0.06	0.8	141	3967						23.4	7.90	30.82	2.34	0.06		
W10	-18.288	7/12/11	1201	-2.22	0.43	Flood	2.10	65	32.4	454	0.12	1.7	156	4391						22.6	7.56	30.80	0.39	0.67		
W10	-18.288	10/10/11	1416	-2.02	0.43	Flood	2.62	81	32.2	451	0.16	2.3	155	4345						22.7	7.57	30.87	0.18	0.27		
W10	-18.288	1/10/12	1202	-2.50	0.00	Low	2.26	70	29.5	413	5.21	73	153	4290						22.9	7.54	30.44	0.10	0.10		
W10	-18.288	5/1/12	1220	-2.07	0.40	Flood	3.00	93	27.7	388	0.11	1.5	159	4475						20.1	7.78	29.92	3.89	0.10		
W10	-18.288	7/18/12	1108	-2.42	0.09	Flood	2.29	71	38.5	539	0.50	7.0	167	4695						22.0	7.83	30.25	4.43	0.15		
W10	-18.288	10/16/12	1211	-2.39	0.09	Low	2.13	66	36.3	508	0.27	3.8	166	4649						22.1	7.72	30.37	3.86	0.14		
W10	-18.288	1/8/13	1215	-2.25	0.18	Flood	2.36	73	37.6	527	0.19	2.7	196	5492						22.2	7.77	29.95	3.94	0.08		
W10	-18.288	4/9/13	1410	-2.12	0.43	Flood	3.58	111	23.6	331	4.80	67.3	180	5059						20.7	7.60	29.69	1.68	0.13		
W10	-18.288	7/17/13	1411	-1.97	0.58	Ebb	3.07	95	39.5	553	0.15	2.1	144	4036						19.5	7.70	29.46	3.69	0.29		
W10	-18.288	10/15/13	1143	-2.11	0.46	Flood	2.91	90	24.2	339	0.09	1.2	164	4595						23.0	7.53	31.93	0.57	0.09		
W10	-18.288	1/15/14	1141	-2.40	0.00	Low	3.13	97	33.2	465	0.26	3.7	146	4105						21.6	7.69	30.36	1.61	0.13		
W10	-18.288	4/29/14	1415	-2.21	0.40	Flood	3.00	93	30.3	425	0.41	5.8	176	4937						18.8	7.53	28.81	1.73	0.06		
W10	-18.288	7/29/14	1224	-2.36	0.12	Flood	2.42	75	39.6	554	0.50	7.0	142	3994						23.0	7.48	31.50	3.77	0.23		
W10	-18.288	10/1/14																								
W10	-18.288	1/1/15																								
W10	-18.288	4/1/15																								

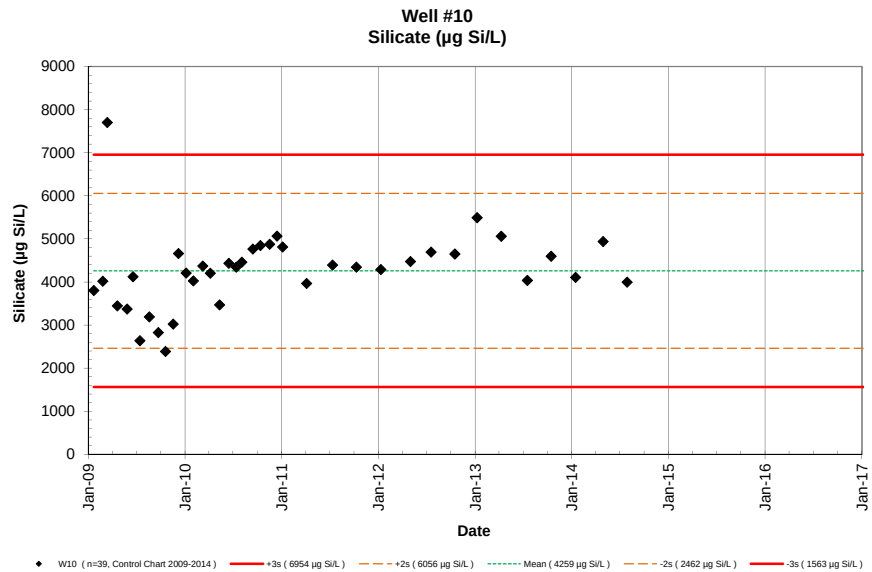

Well #10
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W10 (n=39, Control Chart 2009-2014)
+3s (124 µg P/L)
+2s (106 µg P/L)
Mean (72 µg P/L)
-2s (37 µg P/L)
-3s (20 µg P/L)

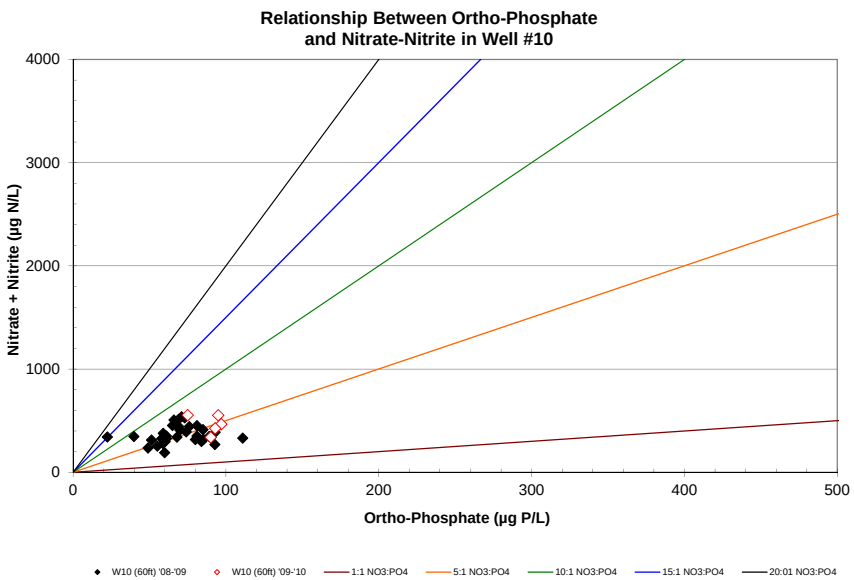

Well #10
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W10 (n=39, Control Chart 2009-2014)
+3s (652 µg N/L)
+2s (560 µg N/L)
Mean (378 µg N/L)
-2s (196 µg N/L)
-3s (104 µg N/L)

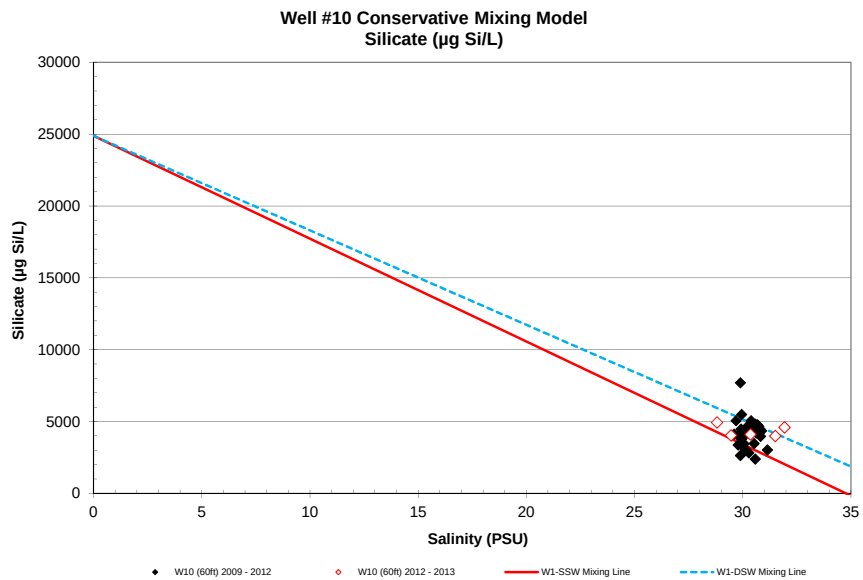

Well #10 Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W10 (60ft) 2009 - 2012
W10 (60ft) 2012 - 2013
W1-SSW Mixing Line
W1-DSW Mixing Line

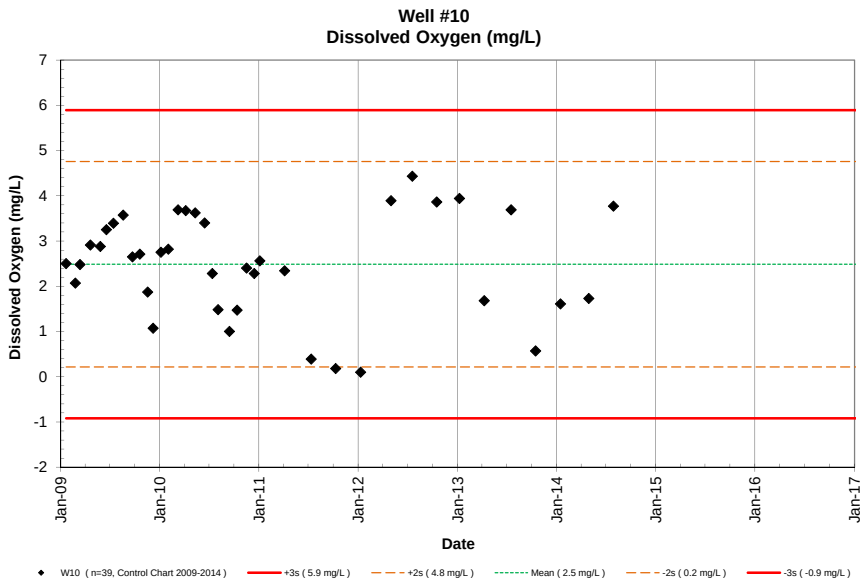

Well #10 Conservative Mixing Model
Nitrate & Nitrite (µg N/L)
Nitrate & Nitrite (µg N/L)
Salinity (PSU)
W10 (60ft) '08-'09
W10 (60ft) '09-'10
W1-SSW Mixing Line
W1-DSW Mixing Line

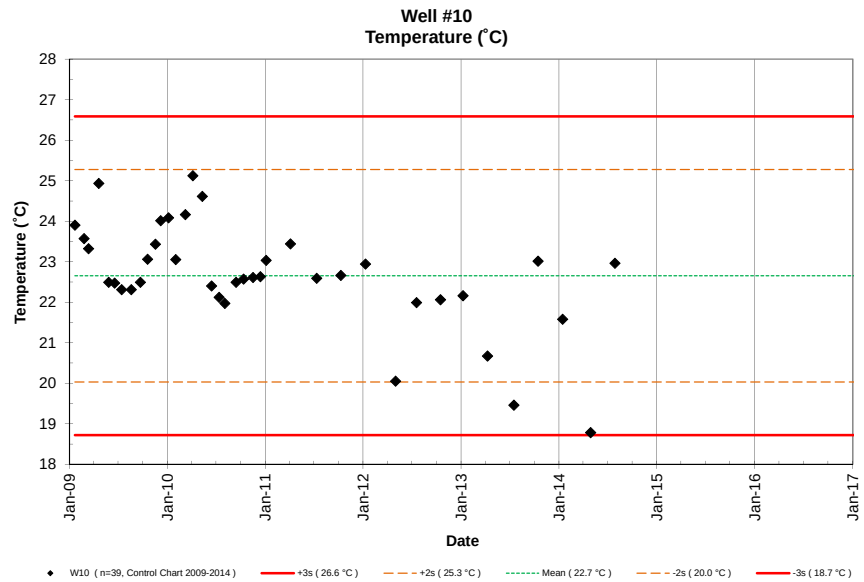

Well #10
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
80
60
40
20
0
-20
-40
-60
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W10 (n=39, Control Chart 2009-2014)
+3s (55.3 µg N/L)
+2s (39.9 µg N/L)
Mean (9.2 µg N/L)
-2s (-21.6 µg N/L)
-3s (-37.0 µg N/L)

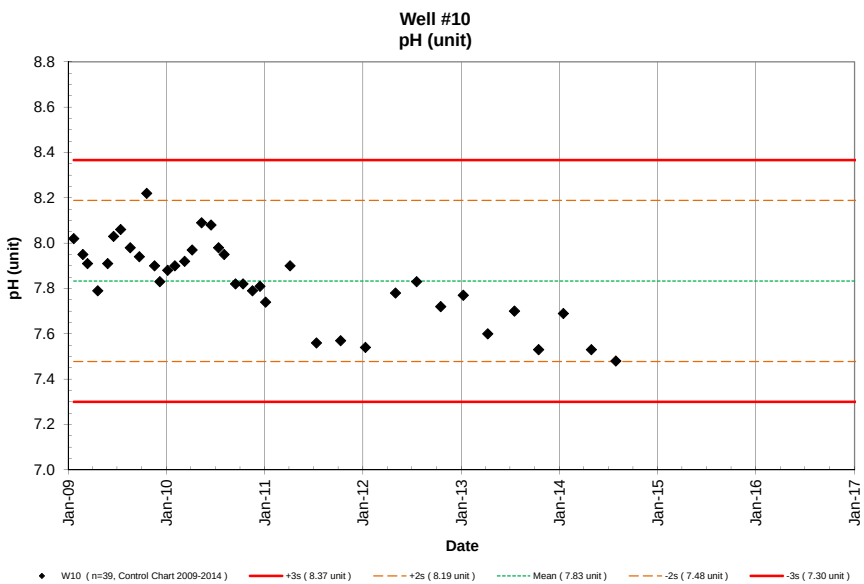

Well #10
Silicate (µg Si/L)
Silicate (µg Si/L)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W10 (n=39, Control Chart 2009-2014)
+3s (6954 µg Si/L)
+2s (6056 µg Si/L)
Mean (4259 µg Si/L)
-2s (2462 µg Si/L)
-3s (1563 µg Si/L)

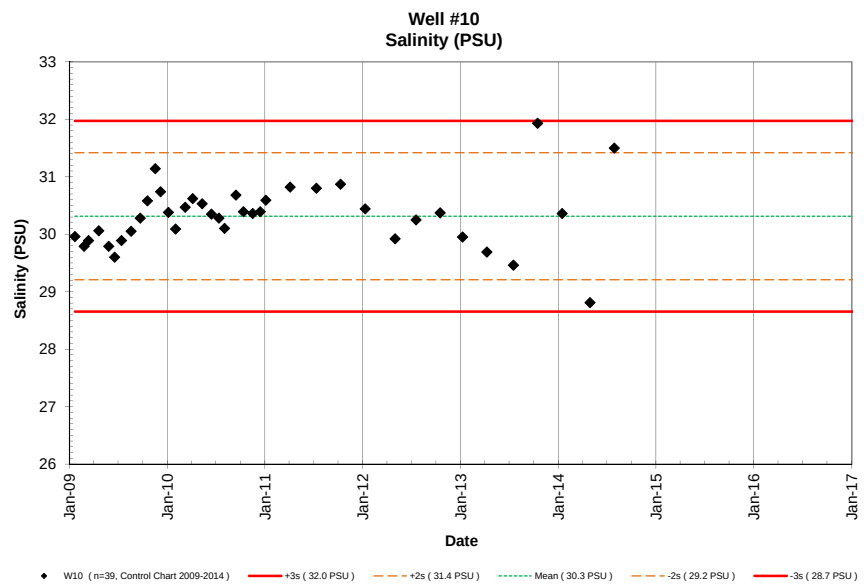

Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #10
Nitrate + Nitrite (µg N/L)
4000
3000
2000
1000
0
0
100
200
300
400
500
Ortho-Phosphate (µg P/L)
W10 (60ft) '08-'09
W10 (60ft) '09-'10
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

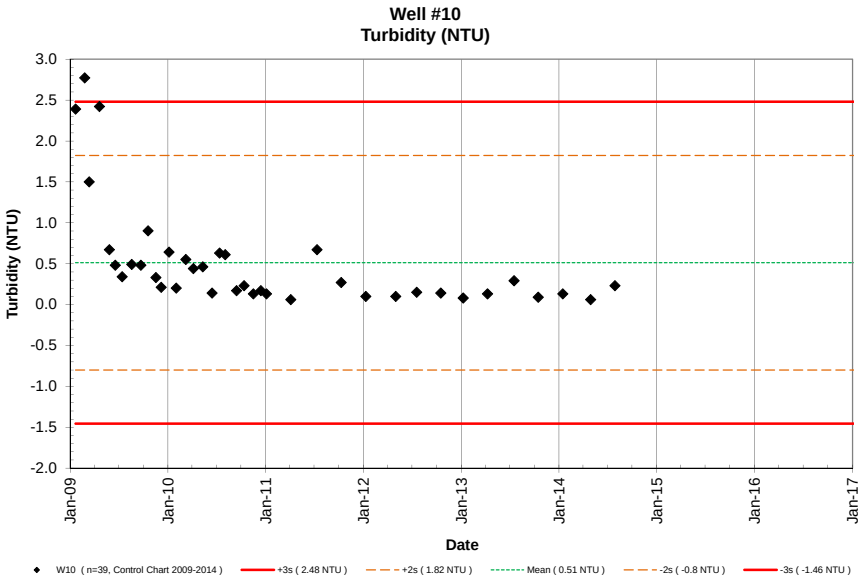

Well #10 Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
30000
25000
20000
15000
10000
5000
0
0
5
10
15
20
25
30
35
Salinity (PSU)
W10 (60ft) 2009 - 2012
W10 (60ft) 2012 - 2013
W1-SSW Mixing Line
W1-DSW Mixing Line

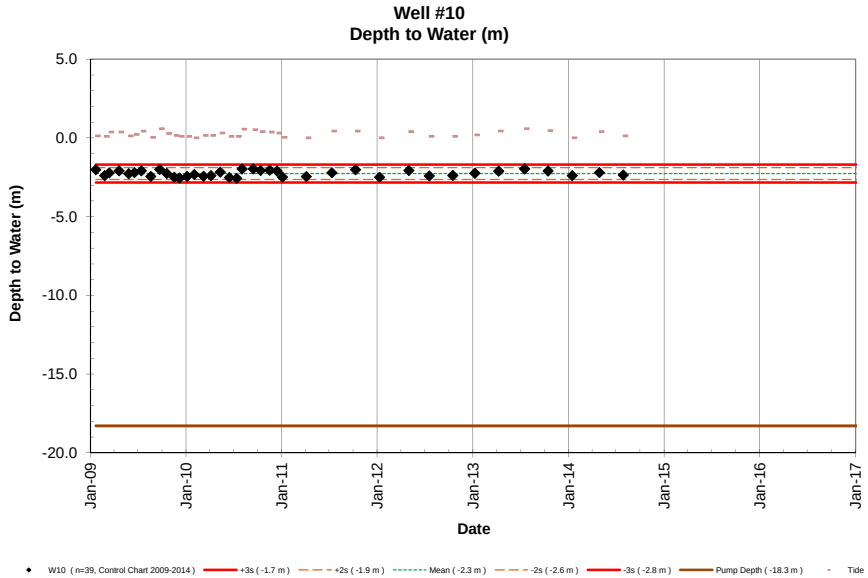

Well #10
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W10 (n=39, Control Chart 2009-2014)
+3s (5.9 mg/L)
+2s (4.8 mg/L)
Mean (2.5 mg/L)
-2s (0.2 mg/L)
-3s (-0.9 mg/L)


Well #10
Temperature (˚C)
Temperature (˚C)
Date
W10 (n=39, Control Chart 2009-2014)
+3s (26.6 °C)
+2s (25.3 °C)
Mean (22.7 °C)
-2s (20.0 °C)
-3s (18.7 °C)


Well #10
pH (unit)
pH (unit)
Date
W10 (n=39, Control Chart 2009-2014)
+3s (8.37 unit)
+2s (8.19 unit)
Mean (7.83 unit)
-2s (7.48 unit)
-3s (7.30 unit)


Well #10
Salinity (PSU)
Salinity (PSU)
Date
W10 (n=39, Control Chart 2009-2014)
+3s (32.0 PSU)
+2s (31.4 PSU)
Mean (30.3 PSU)
-2s (29.2 PSU)
-3s (28.7 PSU)


Well #10
Turbidity (NTU)
Turbidity (NTU)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W10 (n=39, Control Chart 2009-2014)
+3s (2.48 NTU)
+2s (1.82 NTU)
Mean (0.51 NTU)
-2s (-0.8 NTU)
-3s (-1.46 NTU)

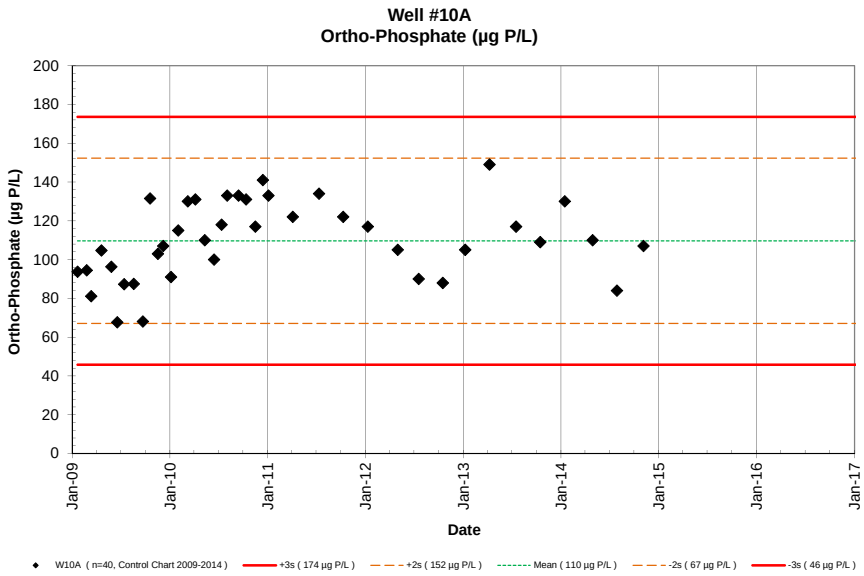

Well #10
Depth to Water (m)
Depth to Water (m)
5.0
0.0
-5.0
-10.0
-15.0
-20.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W10 (n=39, Control Chart 2009-2014)
+3s (-1.7 m)
+2s (-1.9 m)
Mean (-2.3 m)
-2s (-2.6 m)
-3s (-2.8 m)
Pump Depth (-18.3 m)
Tide

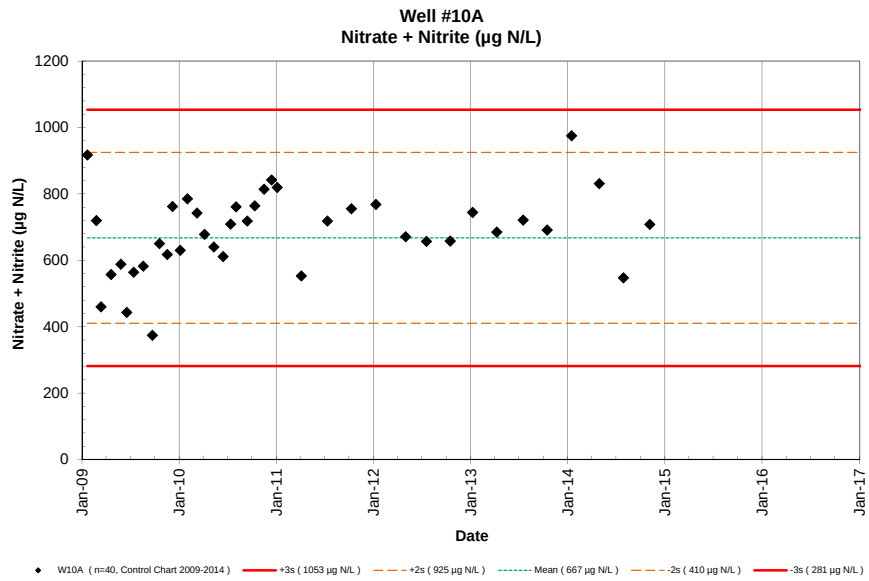
NELHA Water Quality Laboratory

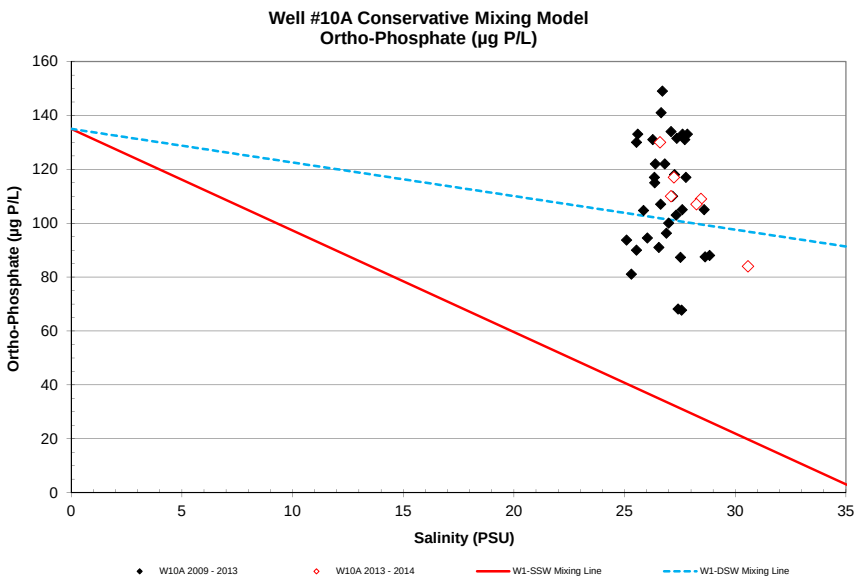
Well 10A Data Table

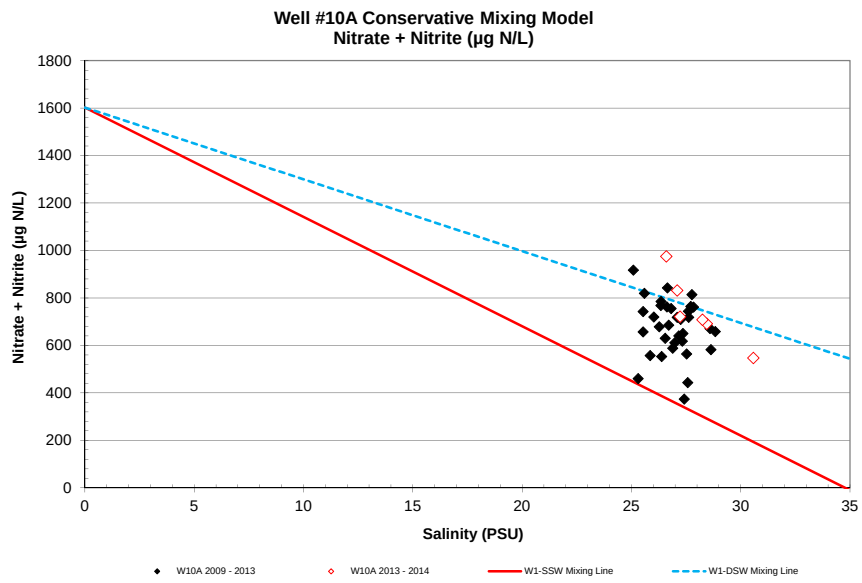
January 2009 - December 2014

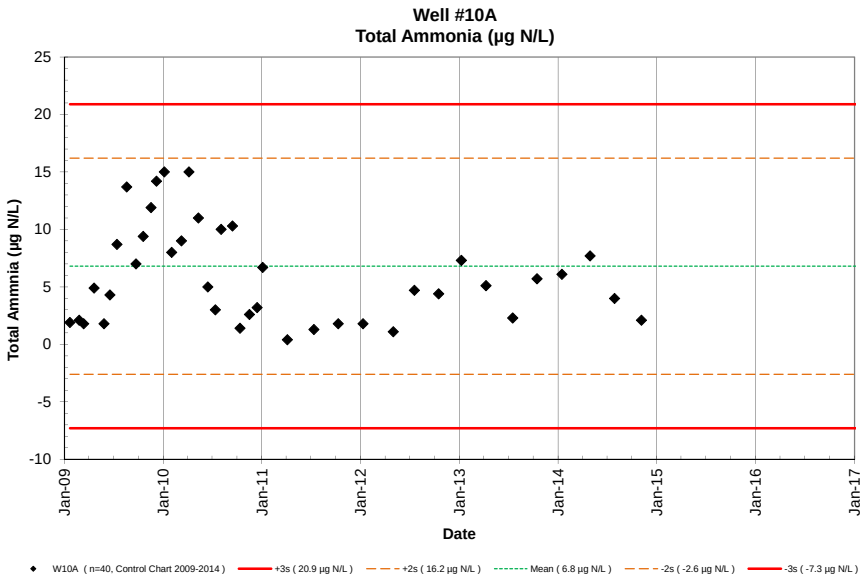
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W10A	-12.192	1/21/09	1104	-2.97	0.12	Flood	3.03	94	65.5	917	0.14	1.9	252	7090						21.6	7.68	25.09	5.16	1.70		
W10A	-12.192	2/24/09	1224	-2.46	0.09	Flood	3.05	95	51.4	720	0.15	2.1	257	7224						21.6	7.65	26.03	5.06	3.03		
W10A	-12.192	3/13/09	1539	-2.23	0.37	Flood	2.62	81	32.8	460	0.13	1.8	198	5561						21.2	7.64	25.31	4.79	0.42		
W10A	-12.192	4/20/09	1551	-2.23	0.37	Flood	3.38	105	39.8	557	0.35	4.9	183	5145						22.5	7.67	25.86	5.01	15.1		
W10A	-12.192	5/27/09	840	-2.37	0.12	Ebb	3.11	96	42.0	588	0.13	1.8	377	10600						21.1	7.83	26.89	4.40	0.53		
W10A	-12.192	6/18/09	915	-2.31	0.21	Flood	2.19	68	31.6	443	0.31	4.3	158	4426						21.3	7.72	27.58	5.11	0.81		
W10A	-12.192	7/14/09	953	-2.16	0.43	High	2.82	87	40.3	564	0.62	8.7	137	3854						21.3	7.79	27.53	5.04	0.35		
W10A	-12.192	8/19/09	814	-2.44	0.03	Ebb	2.82	88	41.6	582	0.98	13.7	164	4619						21.6	7.83	28.64	4.83	0.21		
W10A	-12.192	9/22/09	817	-1.97	0.58	Ebb	2.20	68	26.7	374	0.50	7.0	112	3140						20.9	8.20	27.42	4.49	0.13		
W10A	-12.192	10/19/09	1543	-2.30	0.27	Flood	4.25	132	46.4	650	0.67	9.4	87	2450						20.7	7.91	27.36	4.93	3.98		
W10A	-12.192	11/17/09	1350	-2.49	0.15	Flood	3.33	103	44.1	618	0.85	11.9	149	4177						20.6	7.59	27.33	4.82	0.16		
W10A	-12.192	12/7/09	1458	-2.55	0.09	Ebb	3.45	107	54.4	762	1.01	14.2	254	7136						20.9	7.64	26.63	4.88	0.04		
W10A	-12.192	1/5/10	1323	-2.43	0.09	Ebb	2.94	91	45.0	630	1.07	15.0	245	6891						21.1	7.67	26.55	4.25	1.62		
W10A	-12.192	2/1/10	1451	-2.36	0.00	Flood	3.71	115	56.0	785	0.57	8.0	224	6288						21.1	7.68	26.36	4.49	1.44		
W10A	-12.192	3/9/10	1354	-2.41	0.15	High	4.20	130	53.0	742	0.64	9.0	269	7553						22.0	7.70	25.54	4.84	5.89		
W10A	-12.192	4/6/10	1138	-2.38	0.15	High	4.23	131	48.4	678	1.07	15.0	259	7283						20.6	7.68	26.28	4.84	0.30		
W10A	-12.192	5/11/10	1210	-2.17	0.30	Flood	3.55	110	45.7	640	0.79	11.0	233	6544						21.2	7.81	27.17	4.72	0.28		
W10A	-12.192	6/15/10	1338	-2.38	0.09	Flood	3.23	100	43.6	611	0.36	5.0	236	6626						20.6	7.74	26.99	4.29	0.17		
W10A	-12.192	7/13/10	1206	-2.50	0.09	Flood	3.81	118	50.6	709	0.21	3.0	265	7437						20.6	7.67	27.26	4.18	0.10		
W10A	-12.192	8/3/10	1202	-2.03	0.55	High	4.29	133	54.3	761	0.71	10.0	245	6883						20.9	7.66	27.84	4.09	0.20		
W10A	-12.192	9/14/10	1202	-1.98	0.52	Ebb	4.29	133	51.3	718	0.74	10.3	256	7201						20.6	7.62	27.62	3.58	0.24		
W10A	-12.192	10/12/10	1214	-2.11	0.40	Ebb	4.23	131	54.5	764	0.10	1.4	250	7013						20.9	7.61	27.72	4.49	0.09		
W10A	-12.192	11/16/10	1126	-2.06	0.37	Flood	3.78	117	58.1	814	0.19	2.6	229	6445						21.6	7.67	27.77	4.93	0.12		
W10A	-12.192	12/14/10	1205	-2.11	0.30	Ebb	4.55	141	60.1	842	0.23	3.2	251	7038						21.0	7.66	26.65	4.47	0.28		
W10A	-12.192	1/4/11	1154	-2.39	0.03	Low	4.29	133	58.5	819	0.48	6.7	270	7592						20.8	7.50	25.60	3.32	0.18		
W10A	-12.192	4/5/11	1217	-2.37	0.00	Flood	3.94	122	39.5	553	0.03	0.4	232	6520						21.2	7.64	26.39	2.36	0.19		
W10A	-12.192	7/12/11	1152	-2.23	0.43	Flood	4.33	134	51.3	718	0.09	1.3	270	7584						20.8	7.50	27.10	2.47	0.47		
W10A	-12.192	10/10/11	1426	-2.03	0.43	Flood	3.94	122	53.9	755	0.13	1.8	275	7726						19.8	7.55	26.82	3.99	0.35		
W10A	-12.192	1/10/12	1213	-2.50	0.00	Low	3.78	117	54.8	768	0.13	1.8	249	7000						20.5	7.39	26.35	2.53	0.42		
W10A	-12.192	5/1/12	1227	-2.05	0.40	Flood	3.39	105	47.9	671	0.08	1.1	228	6403						20.5	7.75	28.60	4.84	0.20		
W10A	-12.192	7/18/12	1114	-2.45	0.21	Flood	2.91	90	46.9	657	0.34	4.7	209	5873						20.5	7.81	25.54	5.69	0.23		
W10A	-12.192	10/16/12	1204	-2.37	0.09	Low	2.84	88	47.0	658	0.31	4.4	214	6000						20.6	7.68	28.84	4.92	0.33		
W10A	-12.192	1/8/13	1230	-2.24	0.18	Flood	3.39	105	53.1	744	0.52	7.3	271	7625						20.5	7.58	27.61	4.31	0.67		
W10A	-12.192	4/9/13	1422	-2.12	0.43	Flood	4.81	149	48.9	685	0.36	5.1	270	7573						19.0	7.51	26.71	3.80	2.41		
W10A	-12.192	7/17/13	1422	-1.96	0.58	Ebb	3.78	117	51.5	721	0.16	2.3	256	7203						19.0	7.50	27.23	5.07	0.54		
W10A	-12.192	10/15/13	1153	-2.10	0.46	Flood	3.52	109	49.3	691	0.41	5.7	244	6840						19.9	7.47	28.45	3.99	0.59		
W10A	-12.192	1/15/14	1148	-2.43	0.00	Low	4.20	130	69.6	975	0.44	6.1	260	7303						18.6	7.49	26.60	4.68	0.73		
W10A	-12.192	4/29/14	1415	-2.21	0.40	Flood	3.55	110	59.3	831	0.55	7.7	245	6878						18.0	7.46	27.10	5.57	0.11		
W10A	-12.192	7/29/14	1224	-2.38	0.12	Flood	2.71	84	39.1	547	0.29	4.0	158	4441						22.4	7.59	30.58	4.70	0.71		
W10A	-12.192	11/5/14	1220	-2.17	0.15	Flood	3.45	107	50.5	708	0.15	2.1	207	5819						21.6	7.57	28.25	3.32	0.72		
W10A	-12.192	1/1/15																								
W10A	-12.192	4/1/15																								

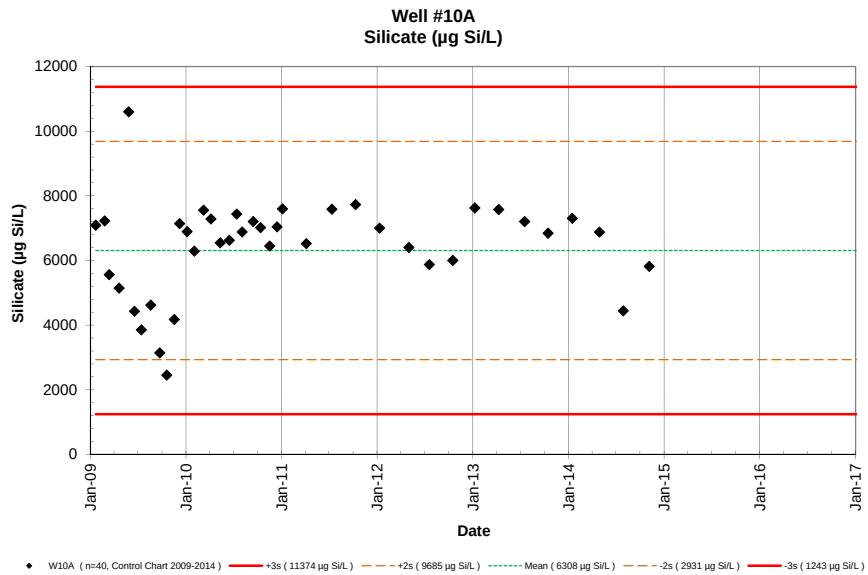

Well #10A
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W10A (n=40, Control Chart 2009-2014)
+3s (174 µg P/L)
+2s (152 µg P/L)
Mean (110 µg P/L)
-2s (67 µg P/L)
-3s (46 µg P/L)

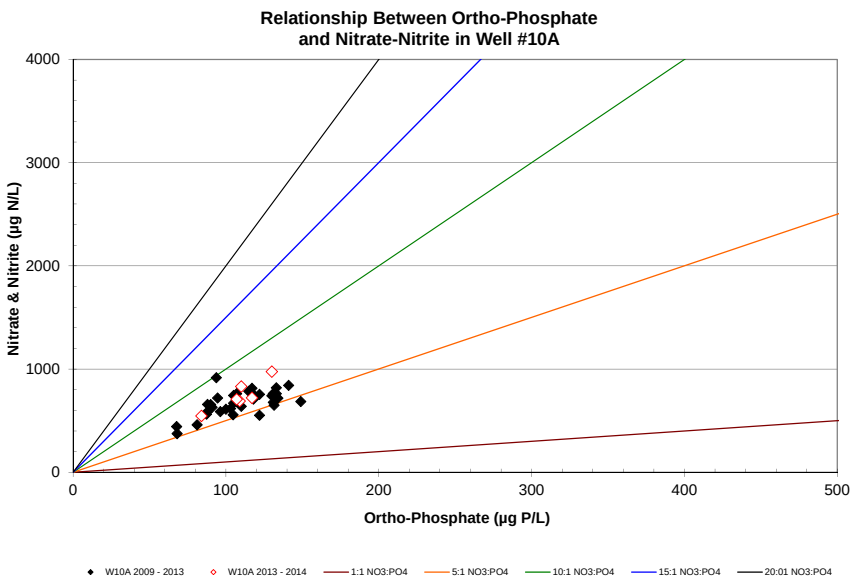

Well #10A
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W10A (n=40, Control Chart 2009-2014)
+3s (1053 µg N/L)
+2s (925 µg N/L)
Mean (667 µg N/L)
-2s (410 µg N/L)
-3s (281 µg N/L)

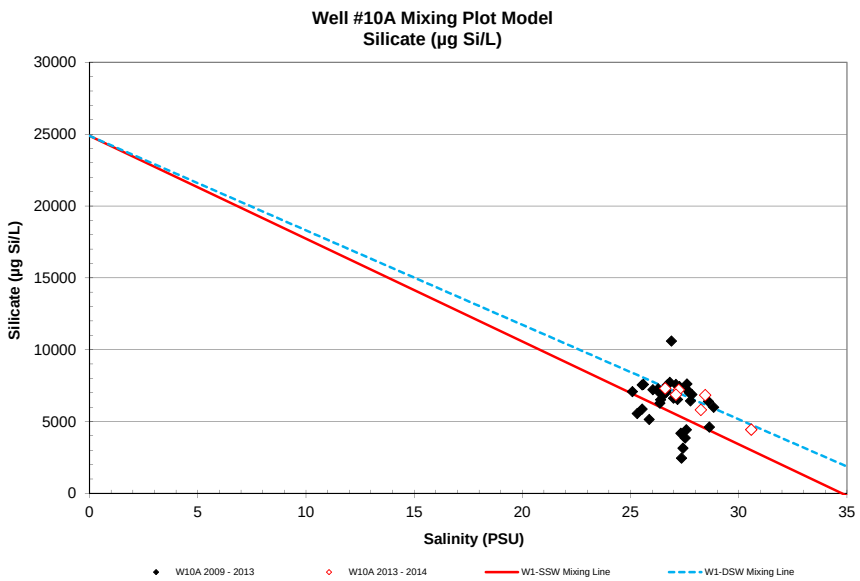

Well #10A Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W10A 2009 - 2013
W10A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

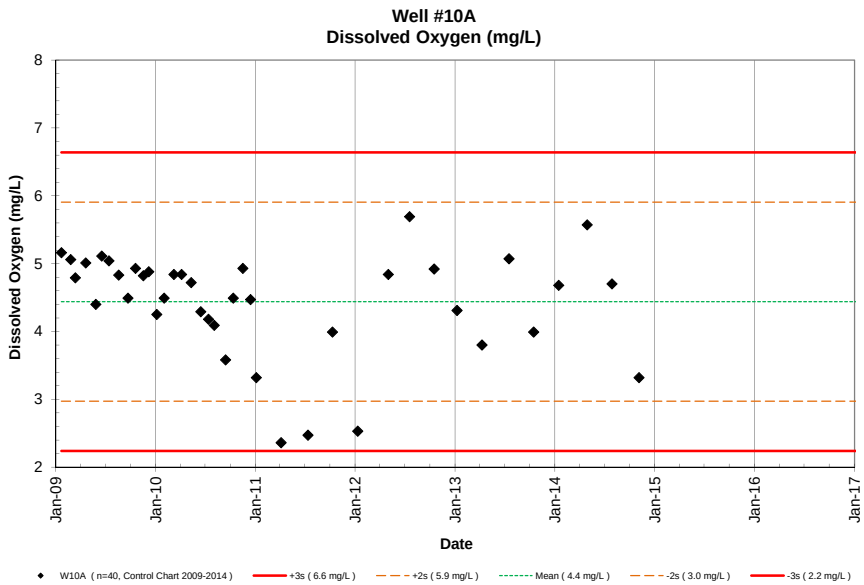

Well #10A Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W10A 2009 - 2013
W10A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

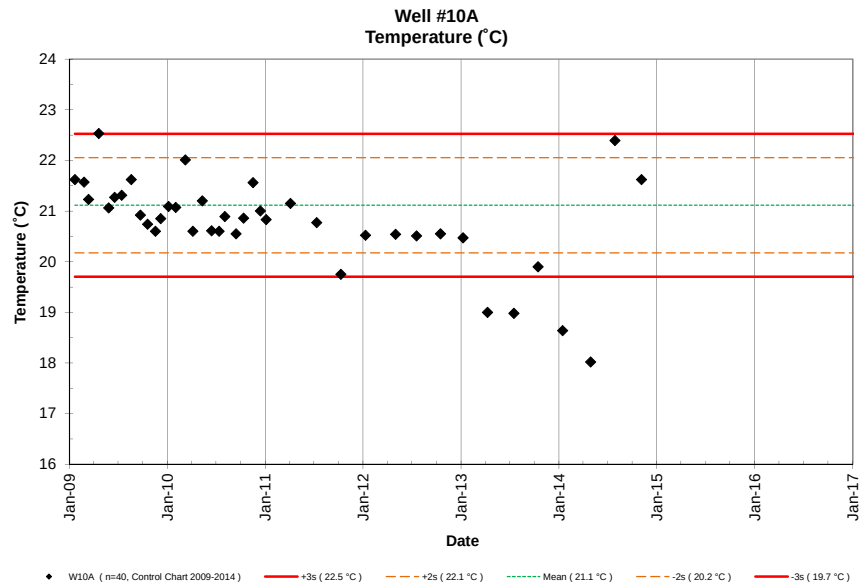

Well #10A
Total Ammonia (µg N/L)
Total Ammnia (µg N/L)
Date
W10A (n=40, Control Chart 2009-2014)
+3s (20.9 µg N/L)
+2s (16.2 µg N/L)
Mean (6.8 µg N/L)
-2s (-2.6 µg N/L)
-3s (-7.3 µg N/L)

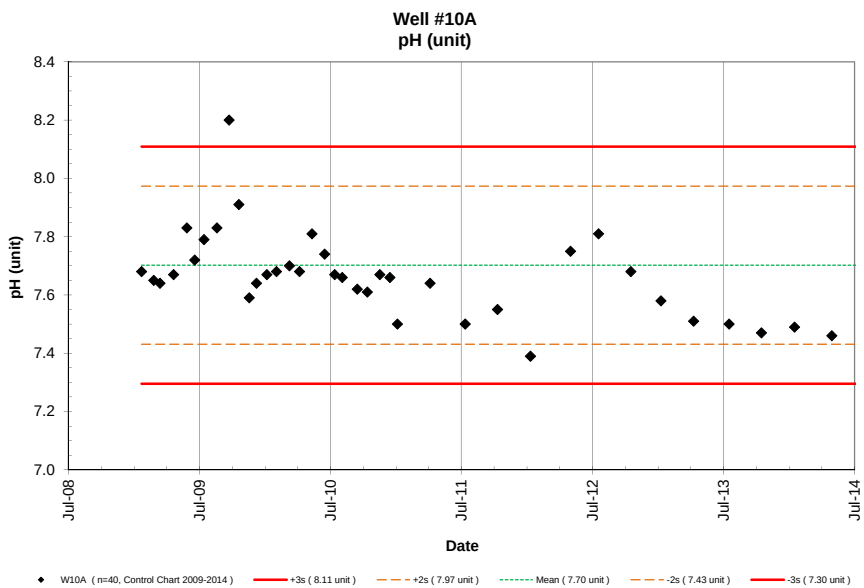

Well #10A
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W10A (n=40, Control Chart 2009-2014)
+3s (11374 µg Si/L)
+2s (9685 µg Si/L)
Mean (6308 µg Si/L)
-2s (2931 µg Si/L)
-3s (1243 µg Si/L)

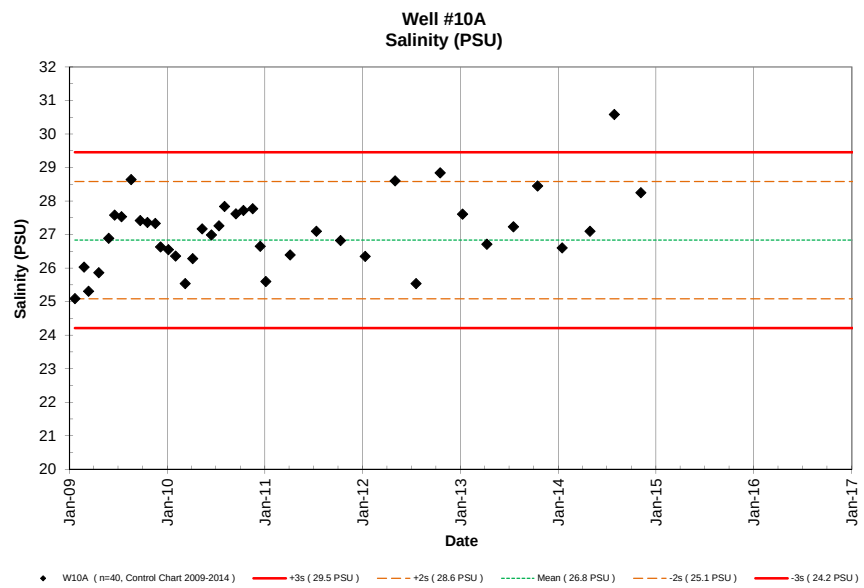

Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #10A
Nitrate & Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W10A 2009 - 2013
W10A 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

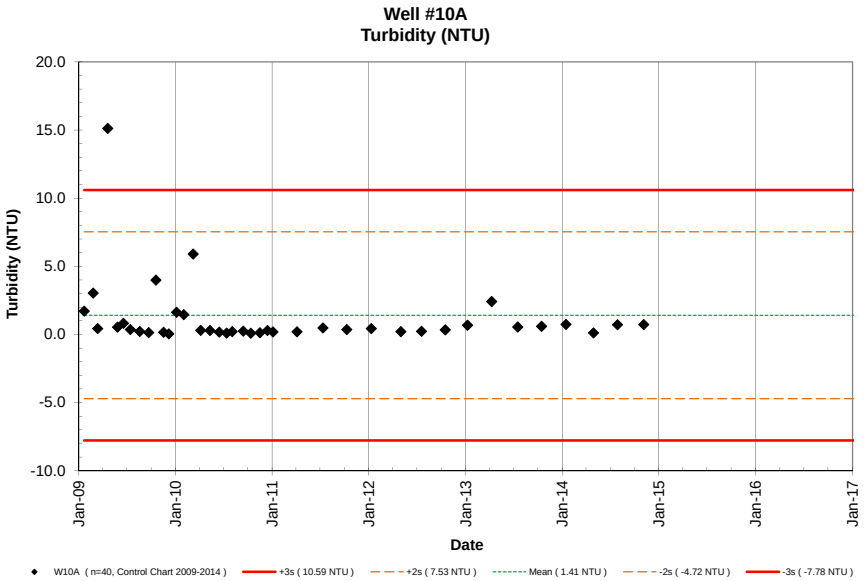

Well #10A Mixing Plot Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W10A 2009 - 2013
W10A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

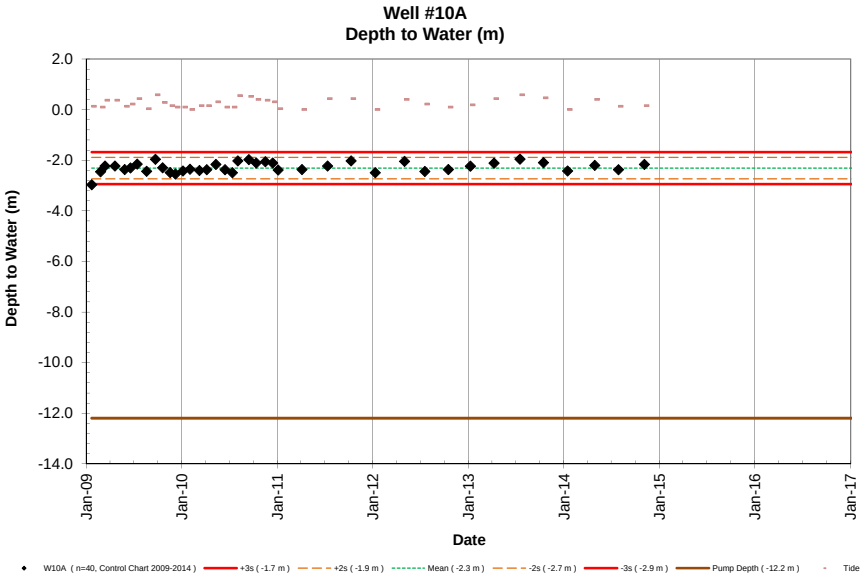

Well #10A
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W10A (n=40, Control Chart 2009-2014)
+3s (6.6 mg/L)
+2s (5.9 mg/L)
Mean (4.4 mg/L)
-2s (3.0 mg/L)
-3s (2.2 mg/L)


Well #10A
Temperature (˚C)
Temperature (˚C)
Date
W10A (n=40, Control Chart 2009-2014)
+3s (22.5 °C)
+2s (22.1 °C)
Mean (21.1 °C)
-2s (20.2 °C)
-3s (19.7 °C)


Well #10A
pH (unit)
pH (unit)
Date
W10A (n=40, Control Chart 2009-2014)
+3s (8.11 unit)
+2s (7.97 unit)
Mean (7.70 unit)
-2s (7.43 unit)
-3s (7.30 unit)


Well #10A
Salinity (PSU)
Salinity (PSU)
Date
W10A (n=40, Control Chart 2009-2014)
+3s (29.5 PSU)
+2s (28.6 PSU)
Mean (26.8 PSU)
-2s (25.1 PSU)
-3s (24.2 PSU)


Well #10A
Turbidity (NTU)
Turbidity (NTU)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W10A (n=40, Control Chart 2009-2014)
+3s (10.59 NTU)
+2s (7.53 NTU)
Mean (1.41 NTU)
-2s (-4.72 NTU)
-3s (-7.78 NTU)

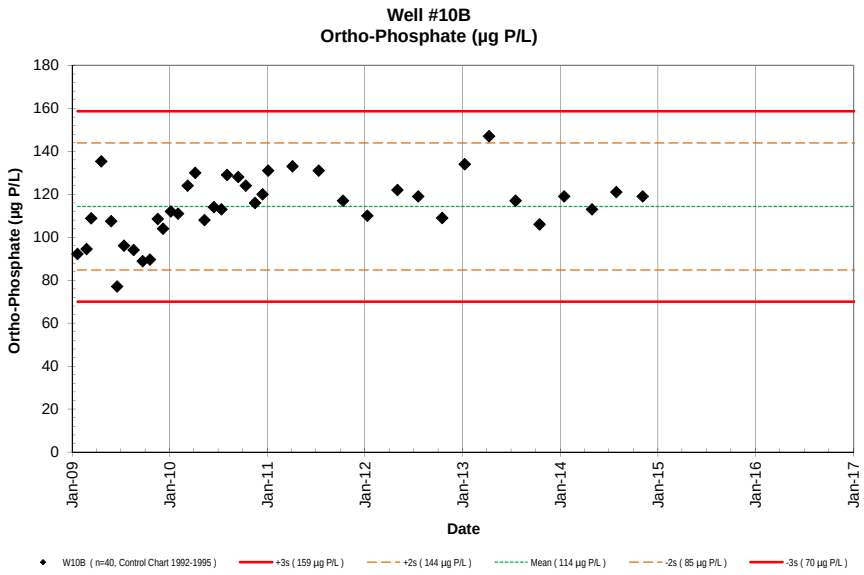

Well #10A
Depth to Water (m)
Depth to Water (m)
2.0
0.0
-2.0
-4.0
-6.0
-8.0
-10.0
-12.0
-14.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W10A (n=40, Control Chart 2009-2014)
+3s (-1.7 m)
+2s (-1.9 m)
Mean (-2.3 m)
-2s (-2.7 m)
-3s (-2.9 m)
Pump Depth (-12.2 m)
Tide

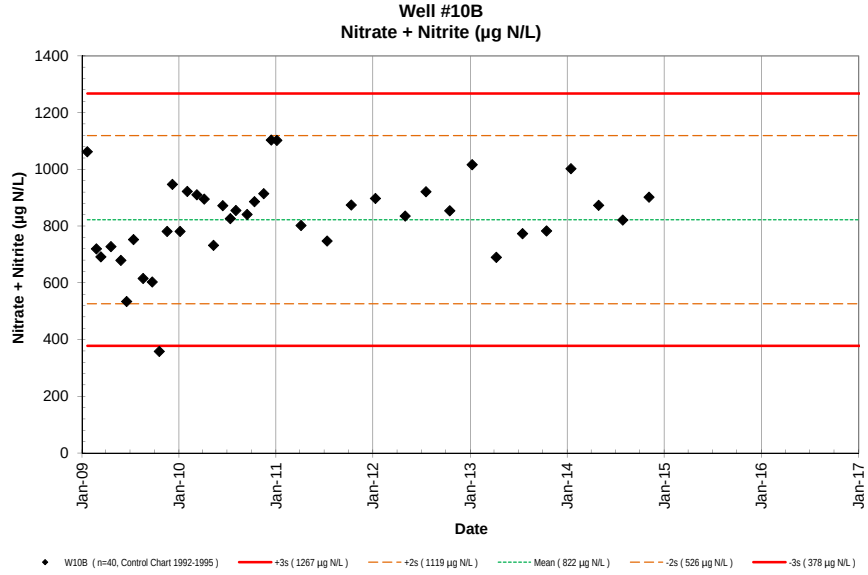
NELHA Water Quality Laboratory

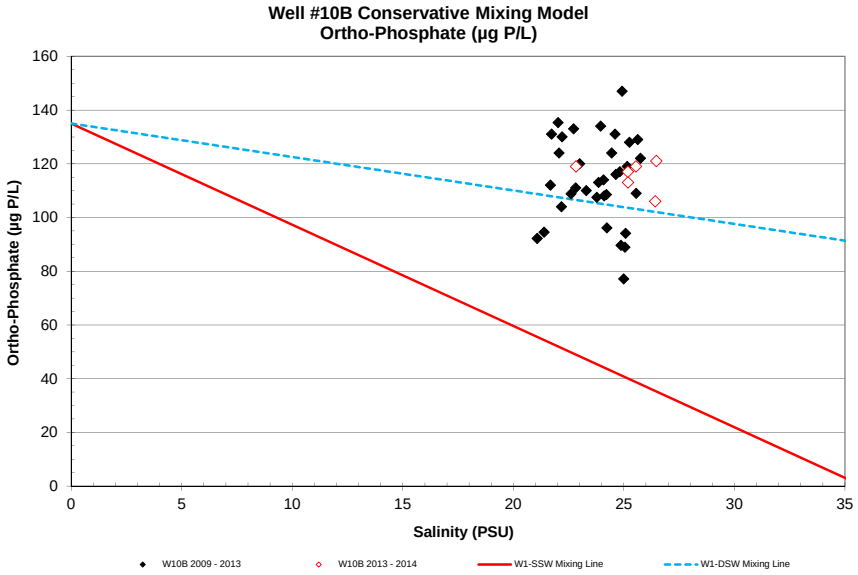
Well 10B Data Table

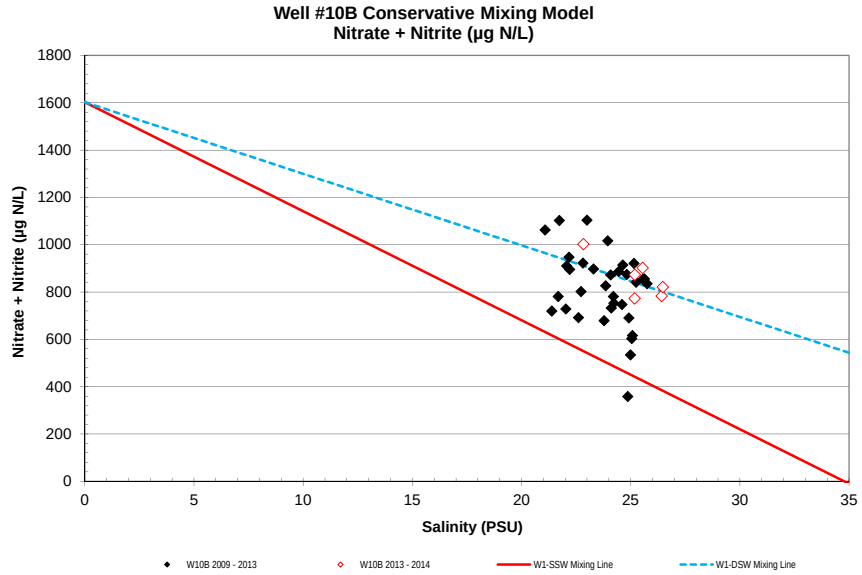
January 2009 - December 2014

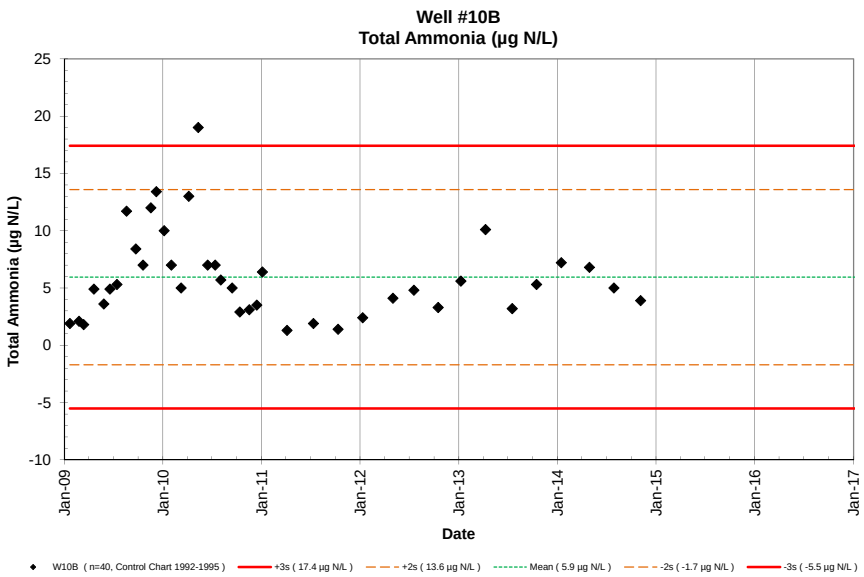
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W10B	-4.572	01/21/09	1050	-2.44	0.12	Flood	2.98	92	75.8	1062	0.14	1.9	343	9647						22.0	7.71	21.08	5.23	8.13		
W10B	-4.572	02/24/09	1213	-2.50	0.09	Flood	3.05	95	51.4	720	0.15	2.1	257	7224						22.2	7.55	21.39	4.89	2.01		
W10B	-4.572	03/13/09	1521	-2.26	0.37	Flood	3.51	109	49.4	692	0.13	1.8	304	8533						21.6	7.64	22.61	4.65	37.40		
W10B	-4.572	04/20/09	1602	-2.19	0.37	Flood	4.37	135	52.0	728	0.35	4.9	298	8363						22.8	7.64	22.03	4.26	24.70		
W10B	-4.572	05/27/09	848	-2.44	0.12	Ebb	3.47	108	48.5	679	0.26	3.6	517	14533						21.8	7.74	23.78	4.18	1.72		
W10B	-4.572	06/18/09	901	-2.36	0.21	Flood	2.49	77	38.1	534	0.35	4.9	104	2930						21.2	7.56	24.99	5.58	0.76		
W10B	-4.572	07/14/09	922	-2.20	0.43	High	3.10	96	53.7	753	0.38	5.3	185	5206						21.5	7.81	24.23	5.34	0.13		
W10B	-4.572	08/19/09	758	-2.50	0.03	Ebb	3.04	94	43.9	616	0.84	11.7	224	6295						21.8	7.70	25.08	3.74	1.96		
W10B	-4.572	09/22/09	759	-2.02	0.58	Ebb	2.87	89	43.1	603	0.60	8.4	183	5127						22.2	8.20	25.05	4.93	0.23		
W10B	-4.572	10/19/09	1525	-2.29	0.27	Flood	2.89	90	25.6	358	0.50	7.0	63	1778						22.5	7.16	24.87	5.34	0.12		
W10B	-4.572	11/17/09	1334	-2.52	0.15	Flood	3.50	109	55.8	781	0.86	12.0	290	8152						21.7	7.68	24.21	5.62	0.28		
W10B	-4.572	12/07/09	1445	-2.60	0.09	Ebb	3.36	104	67.6	947	0.96	13.4	344	9648						21.1	7.72	22.18	5.42	0.10		
W10B	-4.572	01/05/10	1308	-2.51	0.09	Ebb	3.62	112	55.8	781	0.71	10.0	311	8741						21.3	7.70	21.68	4.86	0.13		
W10B	-4.572	02/01/10	1435	-2.41	0.00	Flood	3.58	111	65.8	922	0.50	7.0	292	8192						20.0	7.67	22.82	4.99	0.30		
W10B	-4.572	03/09/10	1347	-2.38	0.15	High	4.00	124	65.0	910	0.36	5.0	346	9717						20.2	7.67	22.07	5.21	0.17		
W10B	-4.572	04/06/10	1134	-2.43	0.15	High	4.20	130	63.9	895	0.93	13.0	352	9887						20.0	7.67	22.21	5.30	0.26		
W10B	-4.572	05/11/10	1200	-2.22	0.30	Flood	3.49	108	52.3	732	1.36	19.0	344	9656						20.2	7.70	24.11	5.46	0.17		
W10B	-4.572	06/15/10	1347	-2.57	0.09	Flood	3.68	114	62.3	872	0.50	7.0	344	9662						20.4	7.72	24.08	5.27	0.12		
W10B	-4.572	07/13/10	1217	-2.55	0.09	Flood	3.65	113	59.0	826	0.50	7.0	353	9906						20.5	7.65	23.86	4.77	0.23		
W10B	-4.572	08/03/10	1210	-2.00	0.55	High	4.16	129	61.0	855	0.41	5.7	316	8868						20.4	7.64	25.63	4.70	0.28		
W10B	-4.572	09/14/10	1212	-2.03	0.52	Ebb	4.13	128	60.0	841	0.36	5.0	333	9359						20.4	7.65	25.25	4.29	0.44		
W10B	-4.572	10/12/10	1220	-2.14	0.40	Ebb	4.00	124	63.3	886	0.21	2.9	339	9530						20.5	7.61	24.45	4.82	0.19		
W10B	-4.572	11/16/10	1135	-2.15	0.37	Flood	3.75	116	65.3	914	0.22	3.1	324	9112						21.0	7.66	24.64	5.25	0.11		
W10B	-4.572	12/14/10	1211	-2.11	0.30	Ebb	3.87	120	78.7	1103	0.25	3.5	348	9765						21.1	7.64	23.00	5.16	0.18		
W10B	-4.572	01/04/11	1202	-2.45	0.03	Low	4.23	131	78.7	1102	0.46	6.4	355	9976						20.8	7.48	21.73	4.87	0.38		
W10B	-4.572	04/05/11	1223	-2.49	0.00	Flood	4.29	133	57.3	802	0.09	1.3	323	9081						21.1	7.59	22.73	3.59	0.24		
W10B	-4.572	07/12/11	1145	-2.28	0.43	Flood	4.23	131	53.3	747	0.14	1.9	341	9590						20.6	7.56	24.60	4.65	0.50		
W10B	-4.572	10/11/11	1434	-2.07	0.43	Flood	3.78	117	62.4	874	0.10	1.4	326	9148						20.2	7.59	24.82	5.09	2.62		
W10B	-4.572	01/10/12	1220	-2.54	0.00	Low	3.55	110	64.0	897	0.17	2.4	311	8723						20.2	7.47	23.30	4.95	0.31		
W10B	-4.572	5/1/12	1237	-2.12	0.40	Flood	3.94	122	59.6	835	0.29	4.1	322	9044						20.1	7.57	25.75	4.51	0.09		
W10B	-4.572	7/18/12	1123	-2.51	0.09	Flood	3.84	119	65.8	921	0.34	4.8	328	9209						20.1	7.66	25.15	5.98	3.02		
W10B	-4.572	10/16/12	1156	-2.46	0.09	Low	3.52	109	61.0	854	0.24	3.3	308	8663						19.9	7.53	25.56	5.35	1.85		
W10B	-4.572	1/8/13	1235	-2.29	0.18	Flood	4.33	134	72.5	1016	0.40	5.6	375	10534						19.2	7.48	23.95	4.77	0.69		
W10B	-4.572	4/9/13	1429	-2.13	0.43	Flood	4.75	147	49.3	690	0.72	10.1	322	9045						19.6	7.48	24.92	3.71	1.12		
W10B	-4.572	7/17/13	1432	-2.01	0.58	Ebb	3.78	117	55.2	773	0.23	3.2	335	9409						21.0	7.46	25.18	4.86	0.25		
W10B	-4.572	10/15/13	1200	-2.15	0.46	Flood	3.42	106	55.9	783	0.38	5.3	295	8282						20.3	7.48	26.42	4.34	0.09		
W10B	-4.572	1/15/14	1207	-2.46	0.00	Low	3.84	119	71.5	1002	0.51	7.2	328	9218						20.7	7.58	22.84	5.23	0.06		
W10B	-4.572	4/29/14	1352	-2.27	0.40	Flood	3.65	113	62.3	873	0.49	6.8	306	8585						19.6	7.45	25.19	5.45	0.13		
W10B	-4.572	7/29/14	1218	-2.42	0.12	Flood	3.91	121	58.6	821	0.36	5.0	282	7928						19.7	7.42	26.47	5.34	0.26		
W10B	-4.572	11/5/14	1227	-2.21	0.15	Flood	3.84	119	64.4	902	0.28	3.9	269	7567						21.8	7.56	25.55	4.87	0.16		
W10B	-4.572	1/1/15																								
W10B	-4.572	4/1/15																								

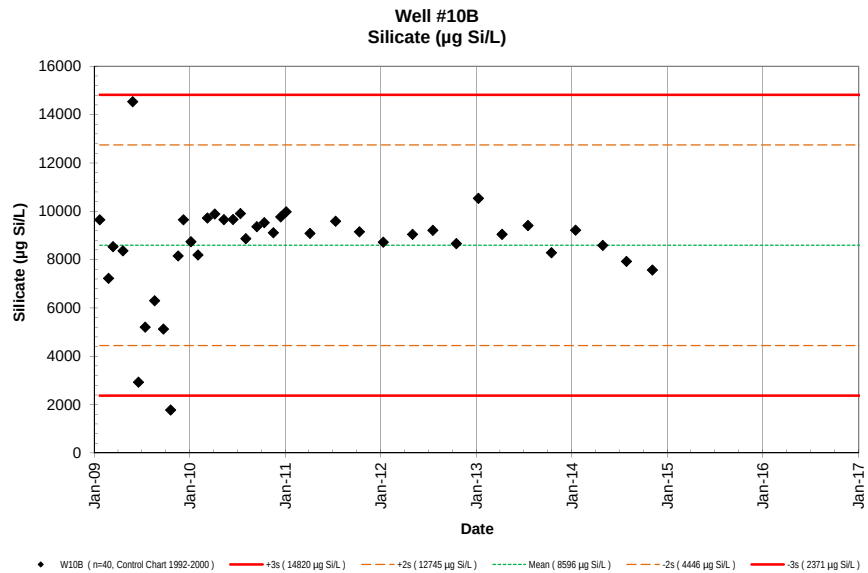

Well #10B
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W10B (n=40, Control Chart 1992-1995)
+3s (159 µg P/L)
+2s (144 µg P/L)
Mean (114 µg P/L)
-2s (85 µg P/L)
-3s (70 µg P/L)

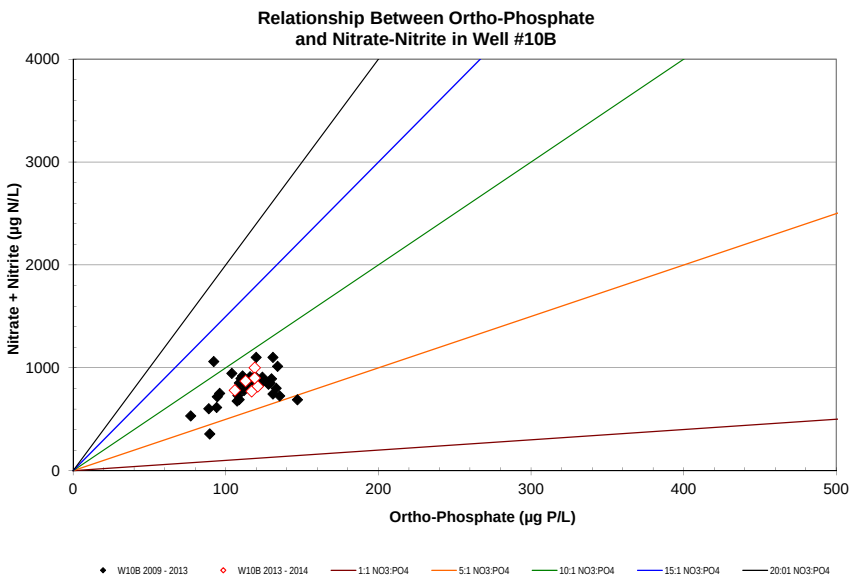

Well #10B
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W10B (n=40, Control Chart 1992-1995)
+3s (1267 µg N/L)
+2s (1119 µg N/L)
Mean (822 µg N/L)
-2s (526 µg N/L)
-3s (378 µg N/L)

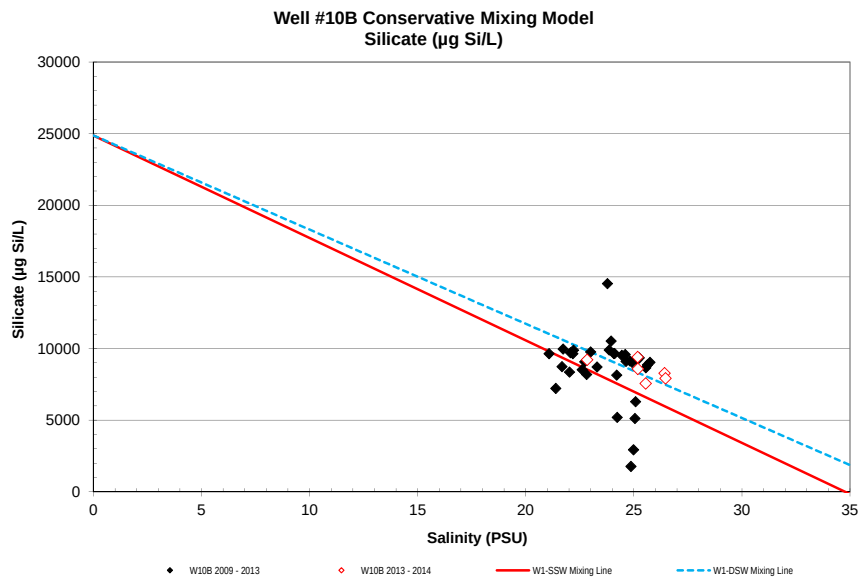

Well #10B Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W10B 2009 - 2013
W10B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

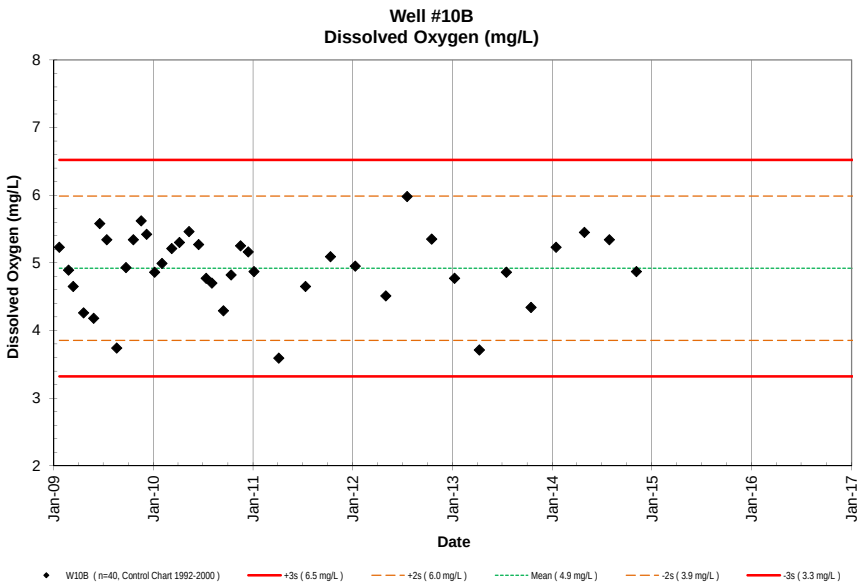

Well #10B Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W10B 2009 - 2013
W10B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

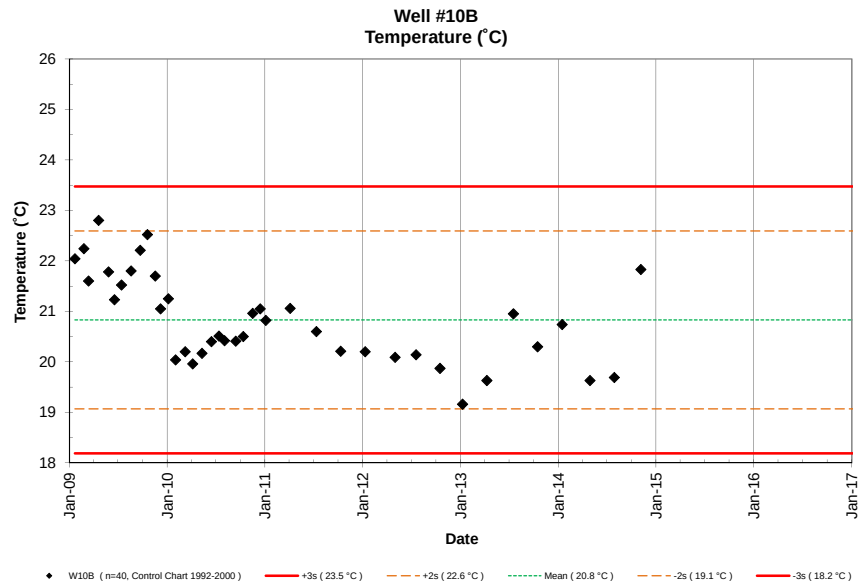

Well #10B
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W10B (n=40, Control Chart 1992-1995)
+3s (17.4 µg N/L)
+2s (13.6 µg N/L)
Mean (5.9 µg N/L)
-2s (-1.7 µg N/L)
-3s (-5.5 µg N/L)

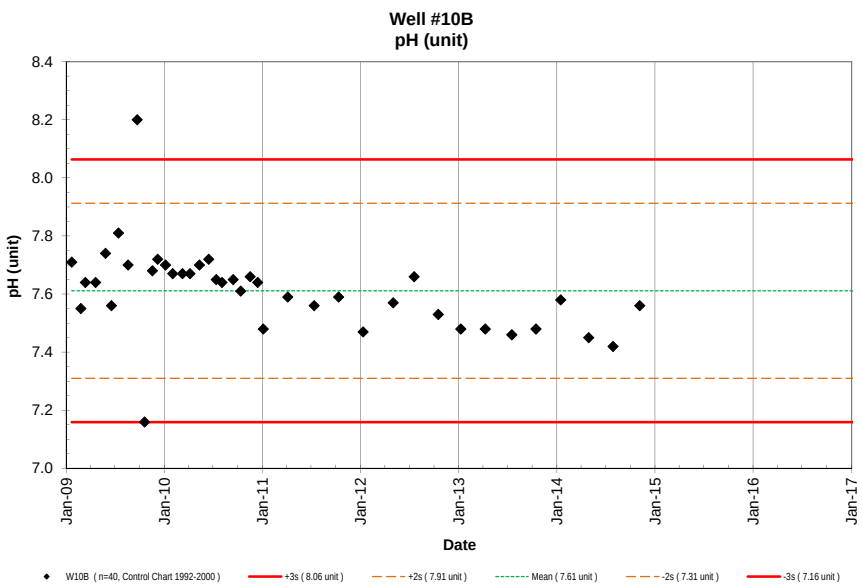

Well #10B
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W10B (n=40, Control Chart 1992-2000)
+3s (14820 µg Si/L)
+2s (12745 µg Si/L)
Mean (8596 µg Si/L)
-2s (4446 µg Si/L)
-3s (2371 µg Si/L)

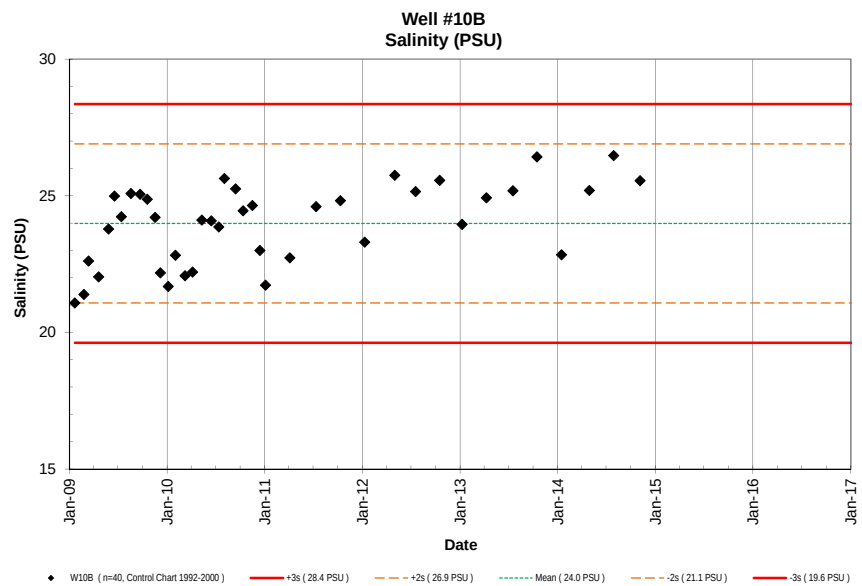

Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #10B
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W10B 2009 - 2013
W10B 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

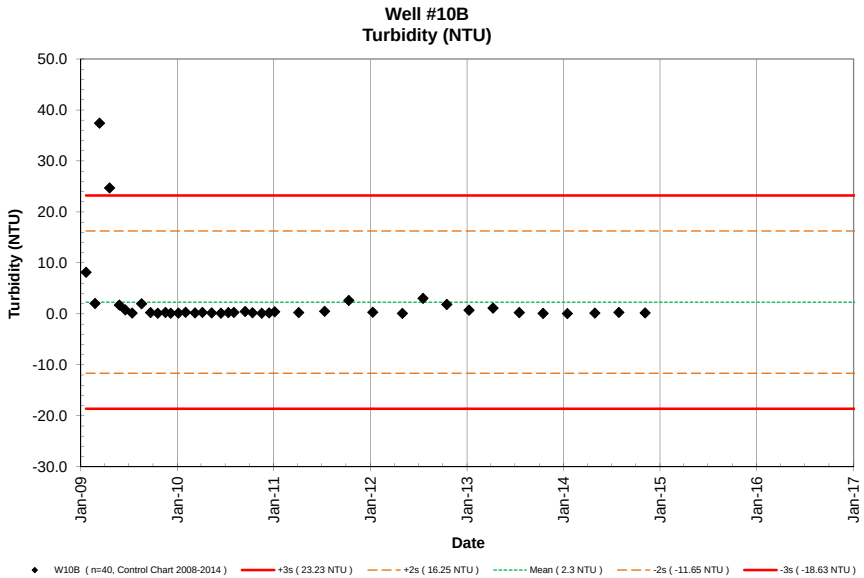

Well #10B Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W10B 2009 - 2013
W10B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

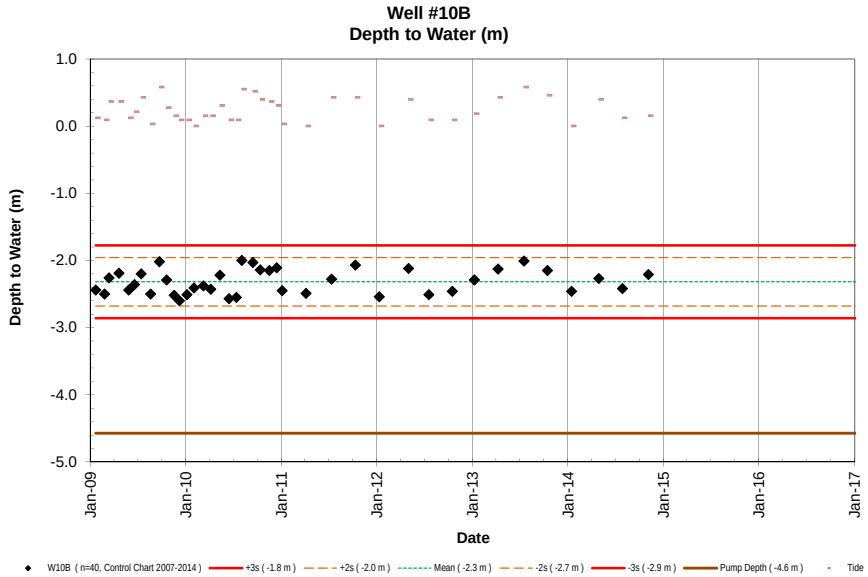

Well #10B
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
8
7
6
5
4
3
2
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W10B (n=40, Control Chart 1992-2000)
+3s (6.5 mg/L)
+2s (6.0 mg/L)
Mean (4.9 mg/L)
-2s (3.9 mg/L)
-3s (3.3 mg/L)


Well #10B
Temperature (˚C)
Temperature (˚C)
26
25
24
23
22
21
20
19
18
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W10B (n=40, Control Chart 1992-2000)
+3s (23.5 °C)
+2s (22.6 °C)
Mean (20.8 °C)
-2s (19.1 °C)
-3s (18.2 °C)


Well #10B
pH (unit)
pH (unit)
8.4
8.2
8.0
7.8
7.6
7.4
7.2
7.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W10B (n=40, Control Chart 1992-2000)
+3s (8.06 unit)
+2s (7.91 unit)
Mean (7.61 unit)
-2s (7.31 unit)
-3s (7.16 unit)


Well #10B
Salinity (PSU)
Salinity (PSU)
30
25
20
15
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W10B (n=40, Control Chart 1992-2000)
+3s (28.4 PSU)
+2s (26.9 PSU)
Mean (24.0 PSU)
-2s (21.1 PSU)
-3s (19.6 PSU)


Well #10B
Turbidity (NTU)
Turbidity (NTU)
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W10B (n=40, Control Chart 2008-2014)
+3s (23.23 NTU)
+2s (16.25 NTU)
Mean (2.3 NTU)
-2s (-11.65 NTU)
-3s (-18.63 NTU)

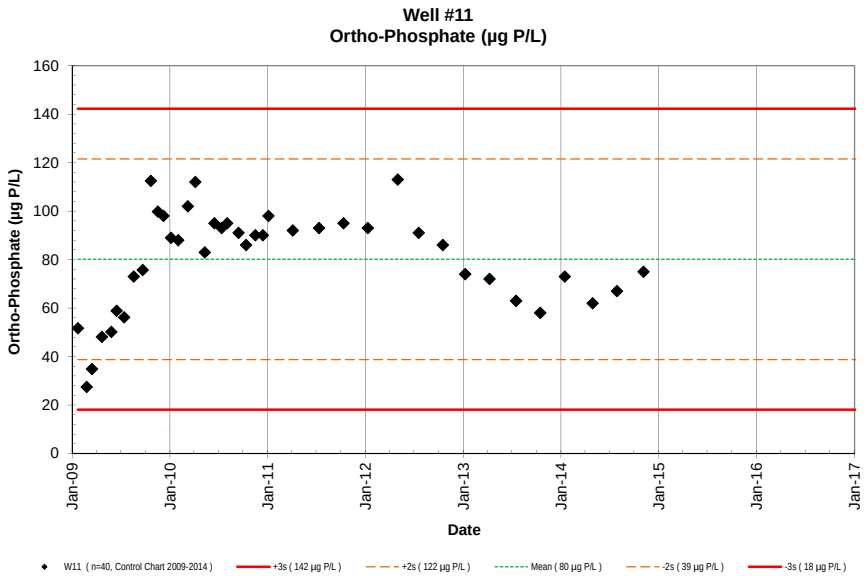

Well #10B
Depth to Water (m)
Depth to Water (m)
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W10B (n=40, Control Chart 2007-2014)
+3s (-1.8 m)
+2s (-2.0 m)
Mean (-2.3 m)
-2s (-2.7 m)
-3s (-2.9 m)
Pump Depth (-4.6 m)
Tide

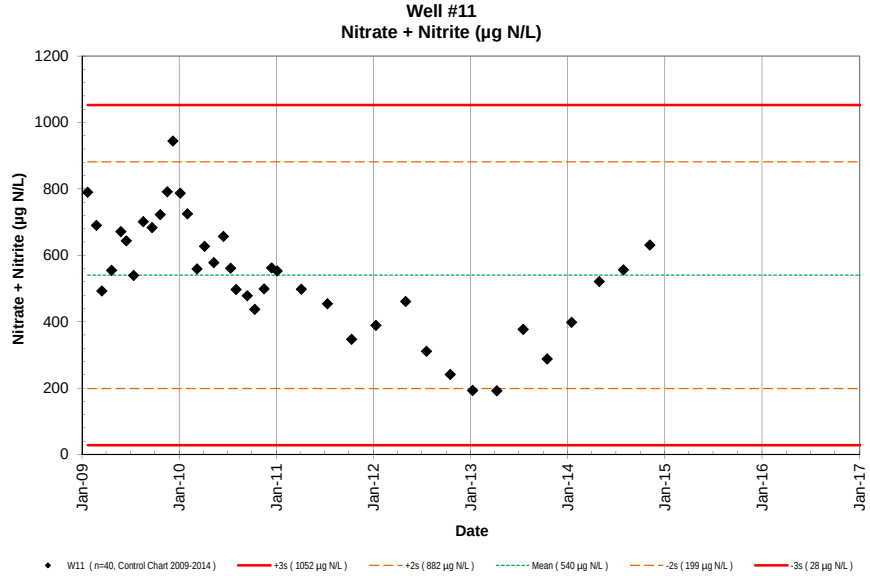
NELHA Water Quality Laboratory

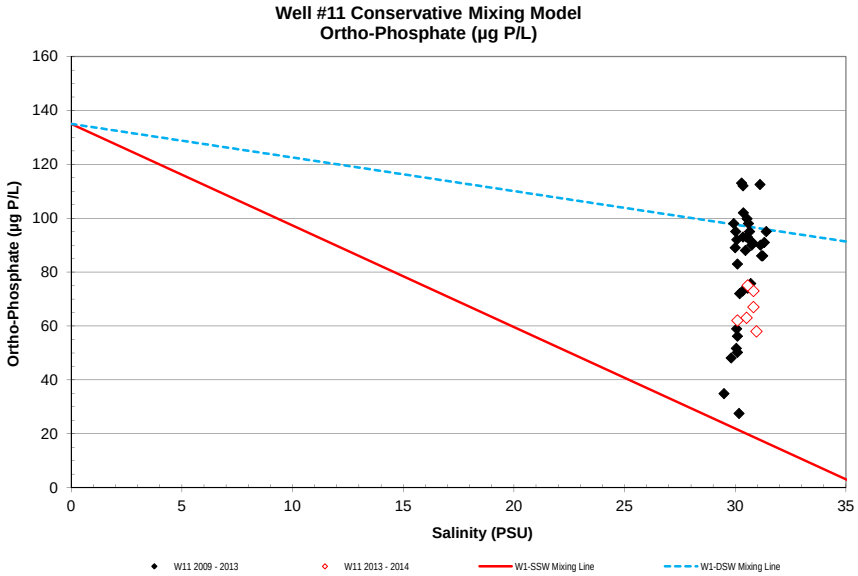
Well 11 Data Table

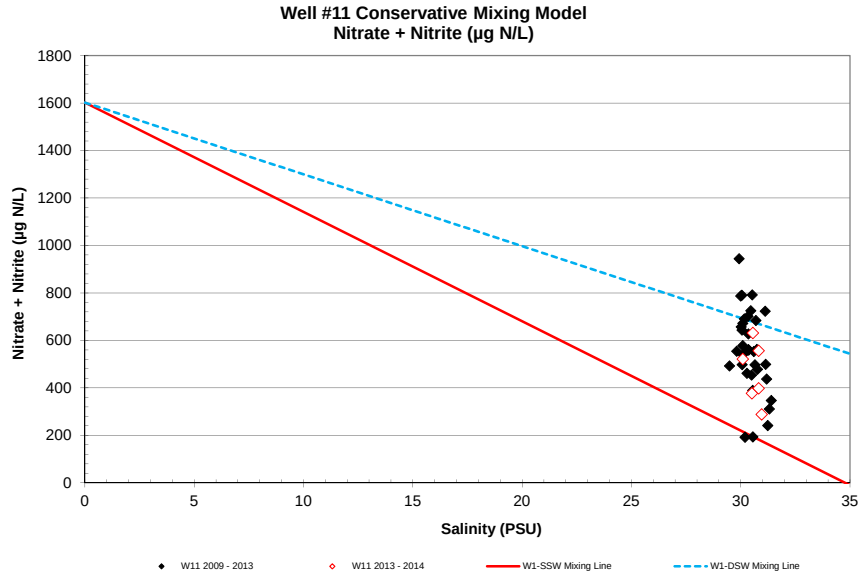
January 2009 - December 2014

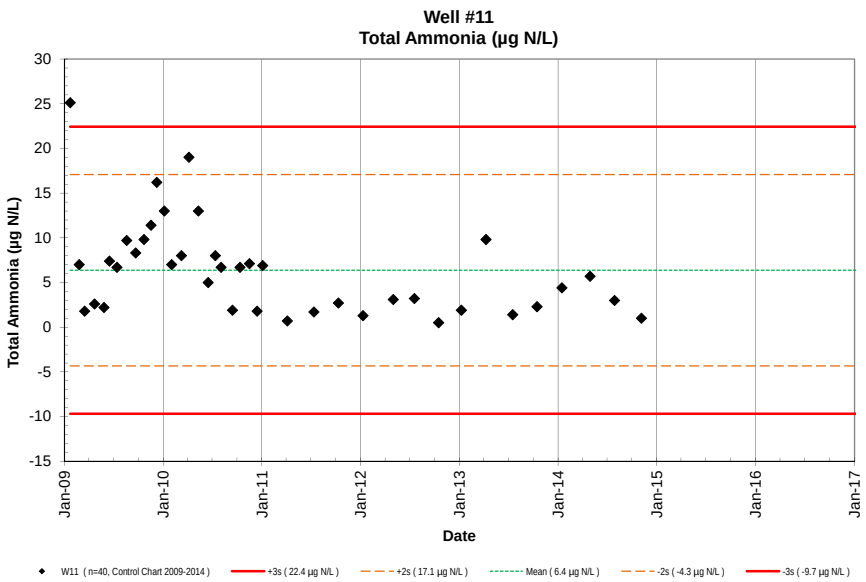
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W11	-18.288	1/22/09	1037	-3.2	0.09	Low	1.67	52	56.4	790	1.79	25.1	106	2966						22.7	8.09	30.05	3.01	0.95		
W11	-18.288	2/24/09	958	-3.3	0.06	Ebb	0.89	28	49.3	690	0.50	7.0	105	2949						20.7	7.91	30.17	3.33	0.75		
W11	-18.288	3/16/09	1044	-3.3	0.09	Ebb	1.13	35	35.2	493	0.13	1.8	87	2436						22.3	7.75	29.49	3.84	0.41		
W11	-18.288	4/22/09	1218	-3.1	0.34	Flood	1.55	48	39.6	555	0.19	2.6	108	3035						21.6	7.80	29.82	3.32	9.77		
W11	-18.288	5/27/09	920	-3.3	0.09	Ebb	1.62	50	47.9	671	0.16	2.2	101	2835						19.4	7.77	30.10	3.84	0.52		
W11	-18.288	6/16/09	1359	-3.0	0.40	Ebb	1.90	59	45.9	643	0.53	7.4	124	3494						19.5	7.58	30.06	4.23	0.29		
W11	-18.288	7/14/09	1256	-3.1	0.40	Ebb	1.81	56	38.5	540	0.48	6.7	77	2168						19.7	7.89	30.10	4.16	0.19		
W11	-18.288	8/19/09	1334	-2.8	0.52	Flood	2.36	73	50.0	701	0.69	9.7	118	3312						20.9	7.78	30.34	3.59	0.19		
W11	-18.288	9/21/09	1518	-3.2	0.24	Flood	2.44	76	48.8	684	0.59	8.3	93	2600						21.4	8.31	30.70	3.90	0.15		
W11	-18.288	10/22/09	1555	-3.3	0.15	Low	3.63	113	51.6	723	0.70	9.8	92	2579						22.7	7.82	31.12	3.55	0.06		
W11	-18.288	11/17/09	821	-3.1	0.40	Ebb	3.22	100	56.5	792	0.81	11.4	144	4058						21.5	7.82	30.53	3.87	0.06		
W11	-18.288	12/8/09	811	-3.0	0.49	Flood	3.16	98	67.4	944	1.16	16.2	166	4671						22.4	7.91	29.93	4.12	0.05		
W11	-18.288	1/5/10	1432	-3.4	0.0	Low	2.87	89	56.2	787	0.93	13.0	142	3977						22.3	7.87	30.00	4.33	0.07		
W11	-18.288	2/1/10	1529	-3.2	0.15	Flood	2.84	88	51.8	725	0.50	7.0	130	3651						22.3	7.94	30.46	4.19	0.07		
W11	-18.288	3/9/10	1517	-3.4	0.12	Ebb	3.29	102	39.9	559	0.57	8.0	147	4117						23.6	7.93	30.37	3.96	0.07		
W11	-18.288	4/6/10	1349	-3.4	0.12	Ebb	3.62	112	44.8	627	1.36	19.0	161	4519						23.6	7.90	30.35	4.42	0.14		
W11	-18.288	5/11/10	1414	-2.9	0.52	Flood	2.68	83	41.3	578	0.93	13.0	140	3933						22.6	7.96	30.10	4.58	0.06		
W11	-18.288	6/16/10	920	-3.2	0.09	Ebb	3.07	95	46.9	657	0.36	5.0	152	4278						22.2	7.90	30.02	4.24	0.19		
W11	-18.288	7/13/10	1402	-3.2	0.24	Flood	3.00	93	40.1	561	0.57	8.0	152	4268						20.5	7.87	30.35	3.96	0.10		
W11	-18.288	8/3/10	1403	-3.0	0.43	Ebb	3.07	95	35.5	497	0.48	6.7	160	4484						23.5	7.94	30.65	3.98	0.05		
W11	-18.288	9/14/10	1417	-3.0	0.34	Ebb	2.94	91	34.1	478	0.14	1.9	161	4516						21.8	7.88	30.77	3.96	0.12		
W11	-18.288	10/12/10	1442	-3.1	0.18	Low	2.78	86	31.2	437	0.48	6.7	157	4410						23.1	7.95	31.19	3.96	0.08		
W11	-18.288	11/16/10	1331	-3.1	0.37	Ebb	2.91	90	35.6	499	0.51	7.1	156	4394						23.1	7.94	31.14	4.12	0.09		
W11	-18.288	12/14/10	1402	-3.2	0.18	Ebb	2.91	90	40.1	562	0.13	1.8	159	4473						22.1	7.92	30.74	4.01	0.10		
W11	-18.288	1/4/11	1400	-3.3	0.12	Flood	3.16	98	39.5	553	0.49	6.9	153	4292						21.7	7.81	30.60	3.85	0.11		
W11	-18.288	4/5/11	1409	-3.1	0.21	Flood	2.97	92	35.6	498	0.05	0.7	140	3945						20.8	7.77	30.07	3.38	0.05		
W11	-18.288	7/12/11	1426	-2.9	0.73	Flood	3.00	93	32.4	454	0.12	1.7	156	4391						21.1	7.86	30.50	3.70	0.10		
W11	-18.288	10/11/11	1240	-3.1	0.24	Flood	3.07	95	24.8	347	0.19	2.7	156	4390						22.2	7.87	31.40	3.66	0.07		
W11	-18.288	1/10/12	1504	-3.4	0.09	Flood	3.00	93	27.8	389	0.09	1.3	145	4082						21.7	7.81	30.55	2.65	0.09		
W11	-18.288	5/1/12	1450	-3.1	0.40	Ebb	3.65	113	32.9	461	0.22	3.1	151	4240						19.5	7.83	30.29	3.00	0.05		
W11	-18.288	7/18/12	1406	-2.9	0.52	Flood	2.94	91	22.2	311	0.23	3.2	157	4420						21.5	7.89	31.31	2.79	0.34		
W11	-18.288	10/16/12	1358	-3.2	0.24	Flood	2.78	86	17.2	241	0.04	0.5	153	4299						21.9	7.82	31.24	1.64	0.07		
W11	-18.288	1/8/13	1448	-3.3	0.15	Ebb	2.39	74	13.8	193	0.14	1.9	171	4812						20.3	7.75	30.56	0.63	0.04		
W11	-18.288	4/9/13	1427	-3.1	0.46	Flood	2.32	72	13.7	192	0.70	9.8	143	4013						18.6	7.76	30.20	0.34	0.07		
W11	-18.288	7/17/13	1545	-3.1	0.46	Ebb	2.03	63	26.9	377	0.10	1.4	151	4239						19.4	7.64	30.51	1.09	0.29		
W11	-18.288	10/15/13	1424	-2.8	0.52	Ebb	1.87	58	20.6	288	0.16	2.3	146	4104						19.3	7.68	30.96	0.98	0.06		
W11	-18.288	1/15/14	1412	-3.0	0.15	Flood	2.36	73	28.4	398	0.31	4.4	154	4328						19.2	7.69	30.82	1.30	0.07		
W11	-18.288	4/29/14	1640	-2.8	0.58	High	2.00	62	37.2	521	0.41	5.7	155	4357						18.5	7.57	30.10	1.41	0.12		
W11	-18.288	7/29/14	1505	-3.1	0.40	Flood	2.16	67	39.7	556	0.21	3.0	152	4272						19.0	7.69	30.82	1.30	0.07		
W11	-18.288	11/5/14	1447	-2.9	0.40	High	2.42	75	45.0	631	0.07	1.0	154	4315						20.1	7.62	30.56	1.08	0.10		
W11	-18.288	1/1/15																								
W11	-18.288	4/1/15																								

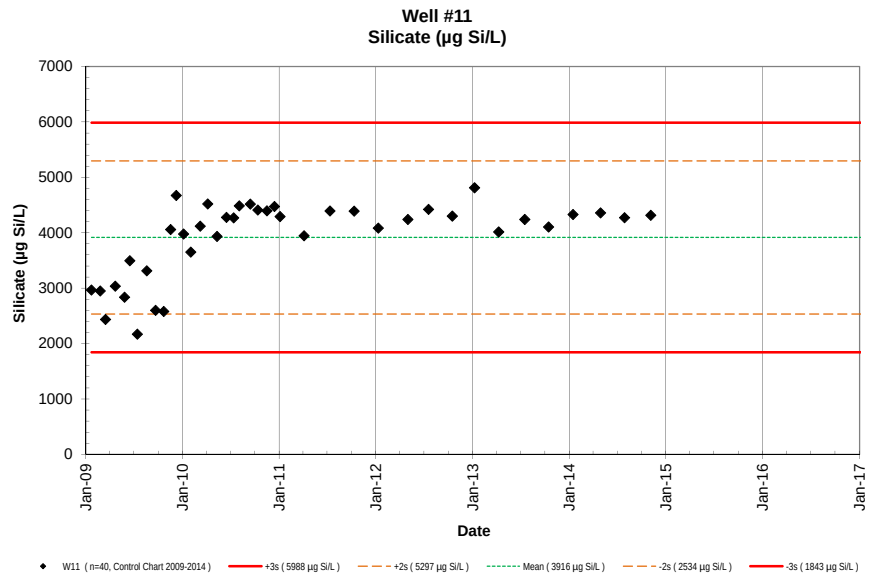

Well #11
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W11 (n=40, Control Chart 2009-2014)
+3s (142 µg P/L)
+2s (122 µg P/L)
Mean (80 µg P/L)
-2s (39 µg P/L)
-3s (18 µg P/L)

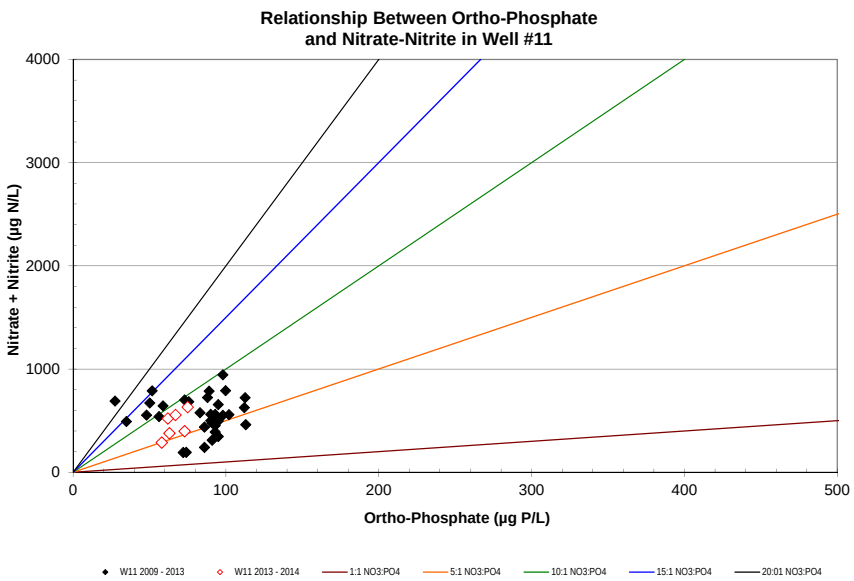

Well #11
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W11 (n=40, Control Chart 2009-2014)
+3s (1052 µg N/L)
+2s (882 µg N/L)
Mean (540 µg N/L)
-2s (199 µg N/L)
-3s (28 µg N/L)

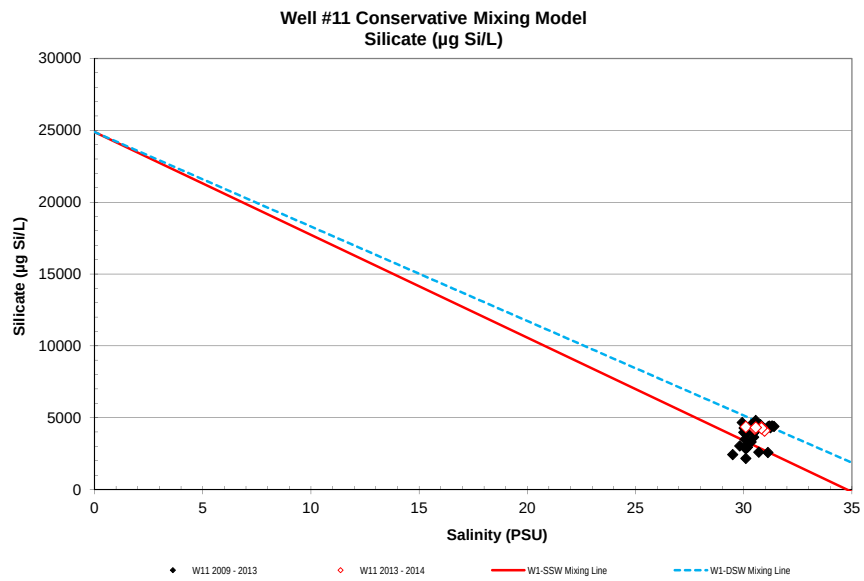

Well #11 Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W11 2009 - 2013
W11 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

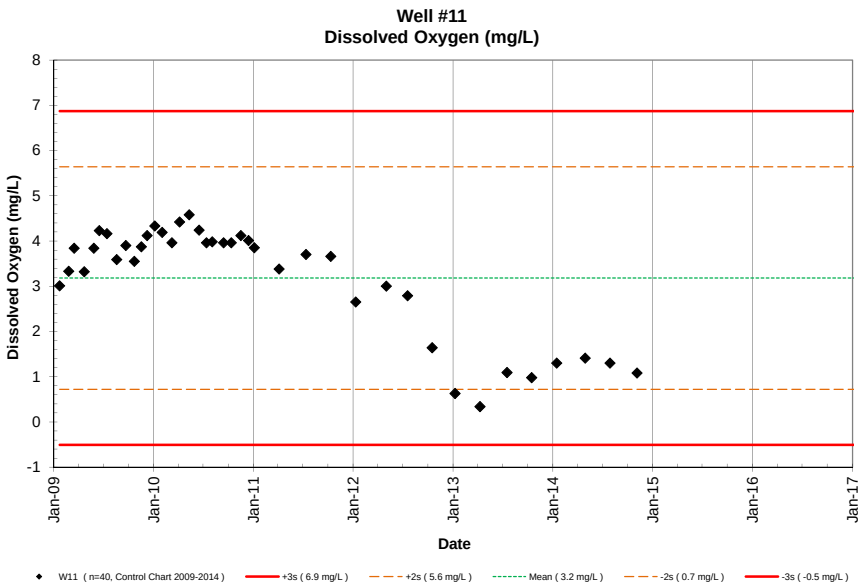

Well #11 Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W11 2009 - 2013
W11 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

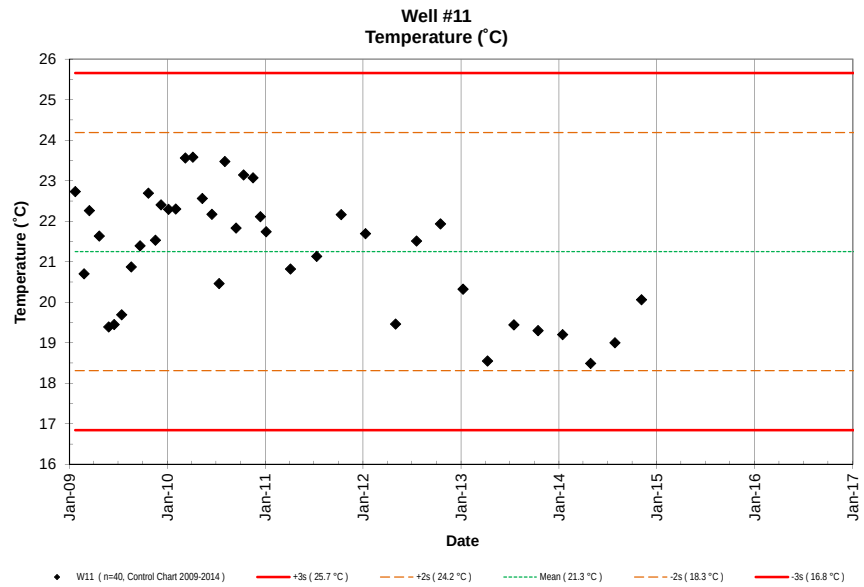

Well #11
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W11 (n=40, Control Chart 2009-2014)
+3s (22.4 µg N/L)
+2s (17.1 µg N/L)
Mean (6.4 µg N/L)
-2s (-4.3 µg N/L)
-3s (-9.7 µg N/L)

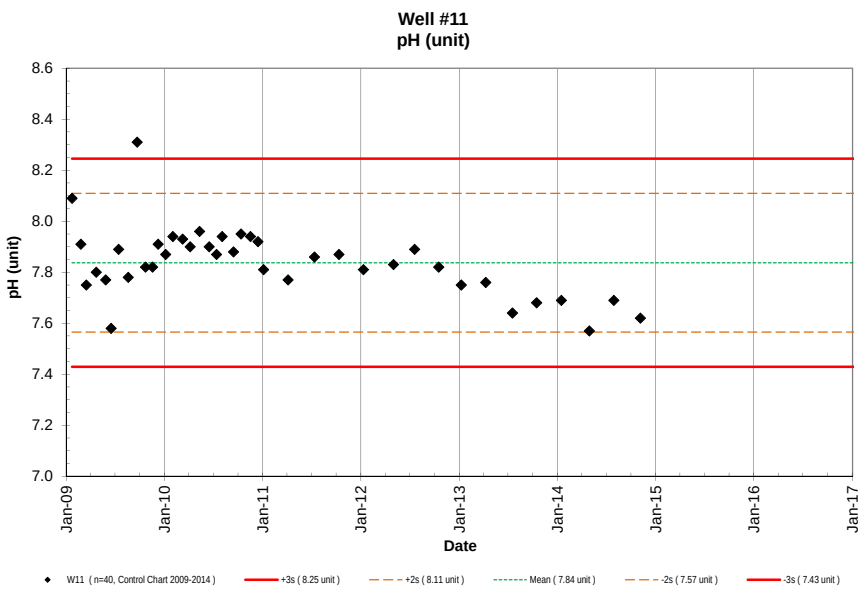

Well #11
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W11 (n=40, Control Chart 2009-2014)
+3s (5988 µg Si/L)
+2s (5297 µg Si/L)
Mean (3916 µg Si/L)
-2s (2534 µg Si/L)
-3s (1843 µg Si/L)

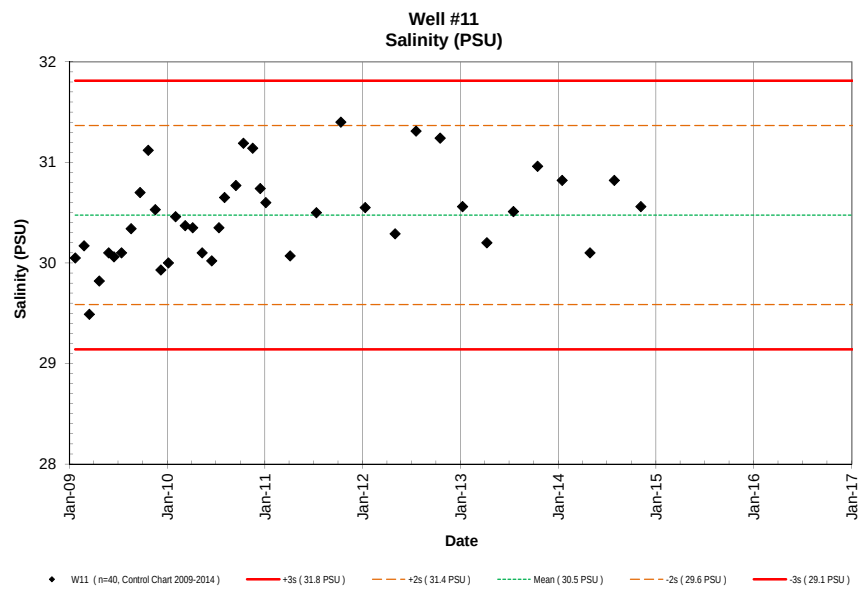

Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #11
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W11 2009 - 2013
W11 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

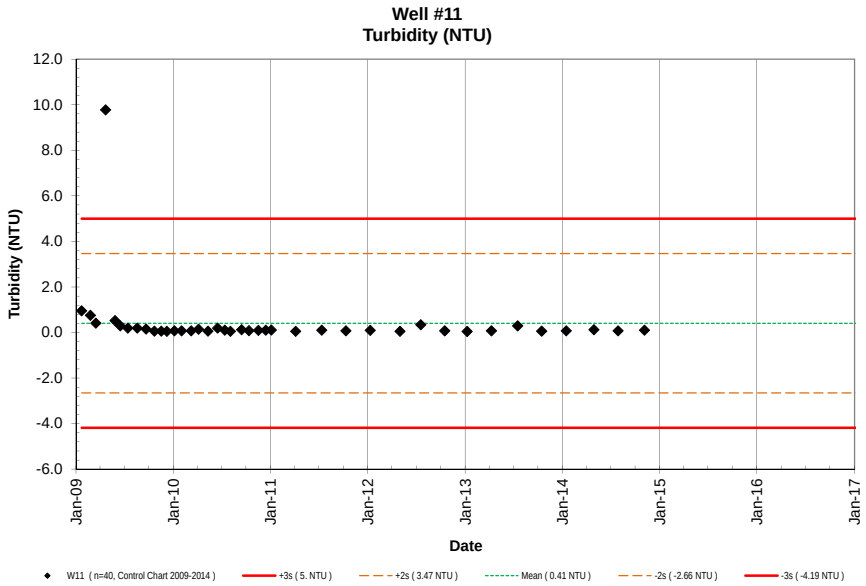

Well #11 Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W11 2009 - 2013
W11 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

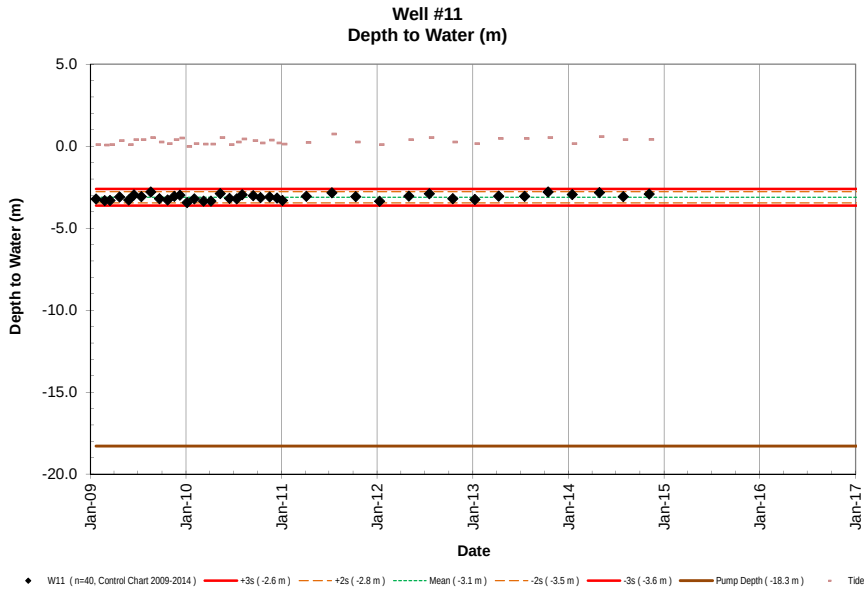

Well #11
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W11 (n=40, Control Chart 2009-2014)
+3s (6.9 mg/L)
+2s (5.6 mg/L)
Mean (3.2 mg/L)
-2s (0.7 mg/L)
-3s (-0.5 mg/L)


Well #11
Temperature (˚C)
Temperature (˚C)
Date
W11 (n=40, Control Chart 2009-2014)
+3s (25.7 °C)
+2s (24.2 °C)
Mean (21.3 °C)
-2s (18.3 °C)
-3s (16.8 °C)


Well #11
pH (unit)
pH (unit)
Date
W11 (n=40, Control Chart 2009-2014)
+3s (8.25 unit)
+2s (8.11 unit)
Mean (7.84 unit)
-2s (7.57 unit)
-3s (7.43 unit)


Well #11
Salinity (PSU)
Salinity (PSU)
Date
W11 (n=40, Control Chart 2009-2014)
+3s (31.8 PSU)
+2s (31.4 PSU)
Mean (30.5 PSU)
-2s (29.6 PSU)
-3s (29.1 PSU)


Well #11
Turbidity (NTU)
Turbidity (NTU)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
-2.0
-4.0
-6.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W11 (n=40, Control Chart 2009-2014)
+3s (5. NTU)
+2s (3.47 NTU)
Mean (0.41 NTU)
-2s (-2.66 NTU)
-3s (-4.19 NTU)

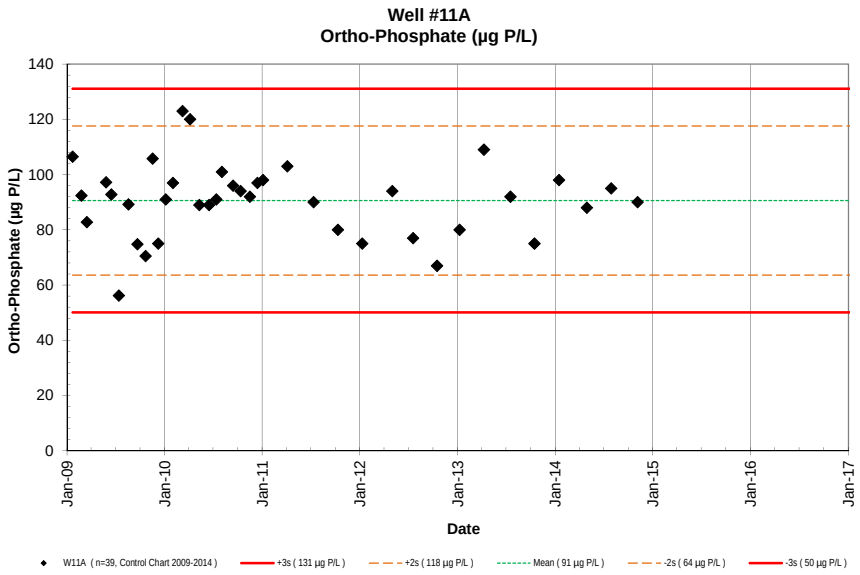

Well #11
Depth to Water (m)
Depth to Water (m)
5.0
0.0
-5.0
-10.0
-15.0
-20.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W11 (n=40, Control Chart 2009-2014)
+3s (-2.6 m)
+2s (-2.8 m)
Mean (-3.1 m)
-2s (-3.5 m)
-3s (-3.6 m)
Pump Depth (-18.3 m)
Tide

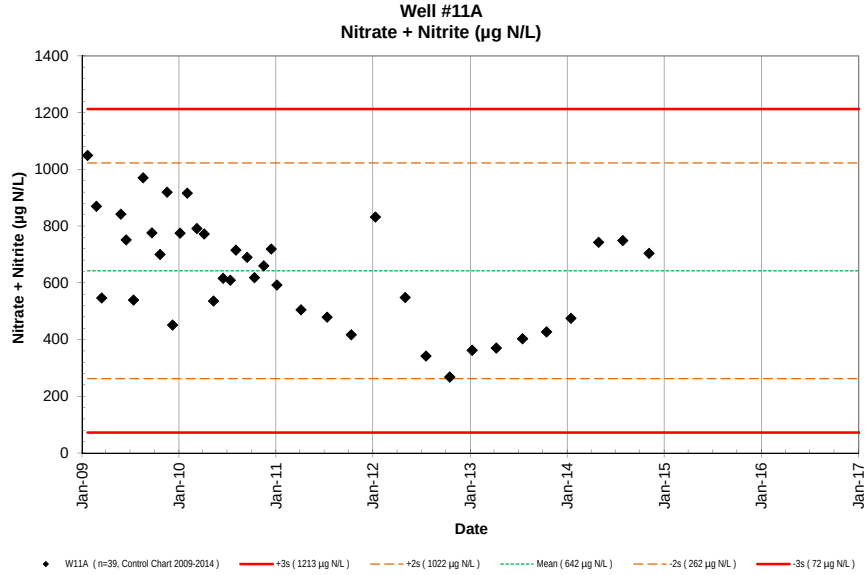
NELHA Water Quality Laboratory

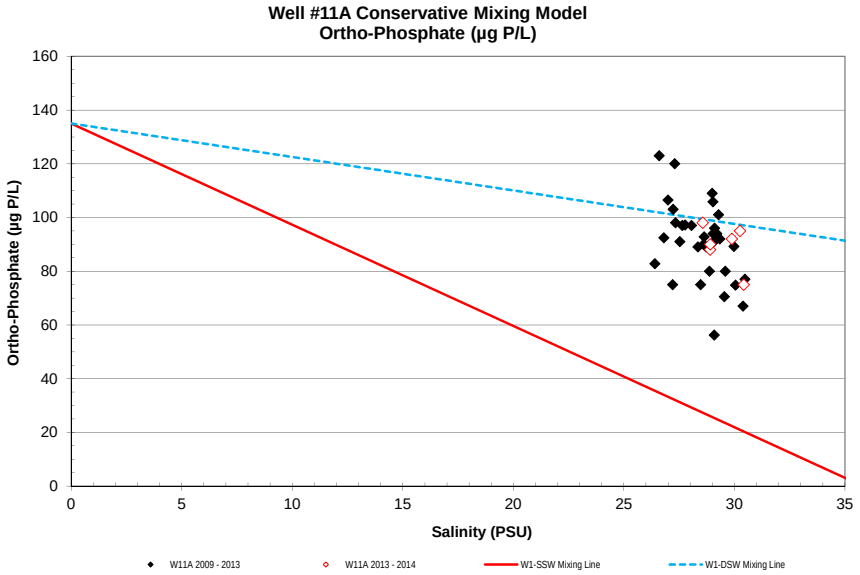
Well 11A Data Table

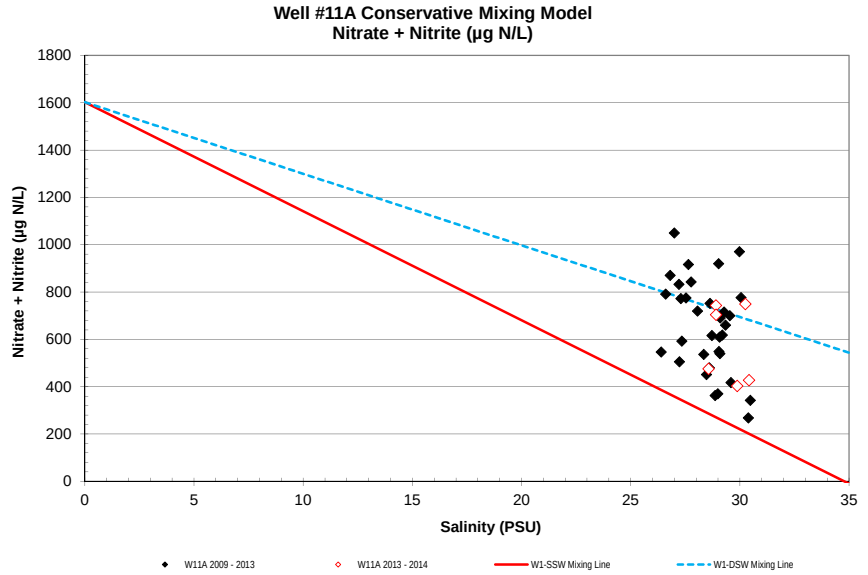
January 2009 - December 2014

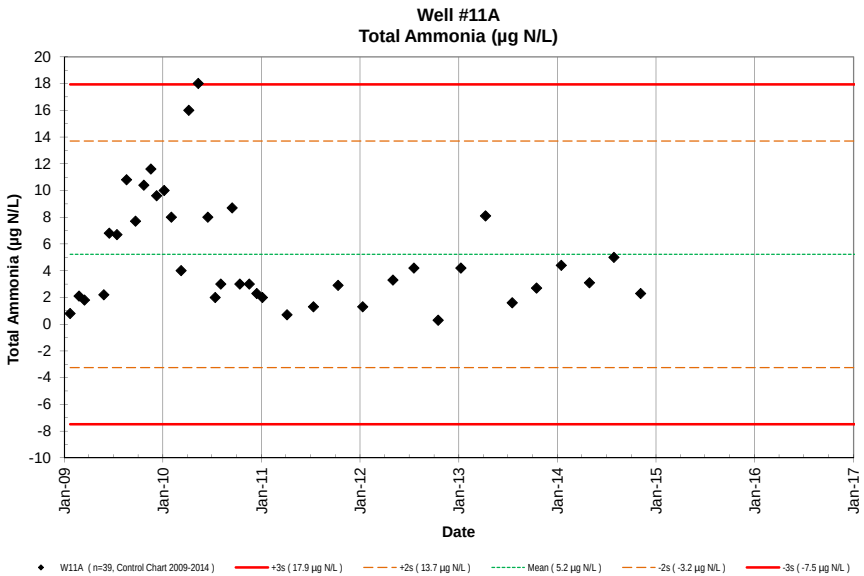
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W11A	-12.192	1/22/09	1026	-3.4	0.09	Low	3.44	107	74.9	1049	0.06	0.8	167	4690						24.3	7.83	27.00	4.21	5.23		
W11A	-12.192	2/24/09	942	-3.4	0.06	Ebb	2.98	92	62.1	870	0.15	2.1	193	5432						23.1	7.71	26.81	3.95	0.74		
W11A	-12.192	3/16/09	1031	-3.4	0.09	Ebb	2.67	83	39.0	547	0.13	1.8	151	4251						23.6	7.59	26.40	4.48	2.52		
W11A	-12.192	4/22/09	1230	-3.2	0.34	Flood																				
W11A	-12.192	5/27/09	947	-3.4	0.09	Ebb	3.14	97	60.1	842	0.16	2.2	272	7636						22.2	7.64	27.77	3.78	1.44		
W11A	-12.192	6/16/09	1346	-3.1	0.40	Ebb	3.00	93	53.7	752	0.49	6.8	163	4583						22.5	7.79	28.63	3.97	1.25		
W11A	-12.192	7/14/09	1243	-3.2	0.40	Ebb	1.81	56	38.5	540	0.48	6.7	77	2168						23.3	7.72	29.09	3.83	0.72		
W11A	-12.192	8/19/09	1319	-2.9	0.52	Flood	2.88	89	69.3	970	0.77	10.8	140	3940						23.7	7.80	29.98	3.85	0.14		
W11A	-12.192	9/21/09	1455	-3.2	0.24	Flood	2.41	75	55.4	776	0.55	7.7	106	2987						24.6	8.45	30.05	4.55	0.51		
W11A	-12.192	10/22/09	1536	-3.4	0.15	Low	2.28	71	50.0	700	0.74	10.4	86	2423						24.4	7.86	29.54	3.80	0.44		
W11A	-12.192	11/17/09	800	-3.1	0.40	Ebb	3.42	106	65.6	920	0.83	11.6	186	5221						23.6	7.78	29.03	4.04	0.29		
W11A	-12.192	12/8/09	832	-3.1	0.49	Flood	2.42	75	32.2	451	0.69	9.6	214	6018						22.7	7.75	28.47	3.92	0.04		
W11A	-12.192	1/5/10	1451	-3.5	0.0	Low	2.94	91	55.3	775	0.71	10.0	201	5649						23.3	7.76	27.53	4.35	3.63		
W11A	-12.192	2/1/10	1540	-3.3	0.15	Flood	3.13	97	65.4	916	0.57	8.0	178	5013						23.2	7.85	27.64	3.80	16.60		
W11A	-12.192	3/9/10	1529	-3.5	0.12	Ebb	3.97	123	56.5	791	0.29	4.0	224	6279						22.5	7.73	26.60	4.15	0.26		
W11A	-12.192	4/6/10	1354	-3.4	0.12	Ebb	3.87	120	55.1	772	1.14	16.0	214	6014						22.3	7.83	27.30	4.26	0.12		
W11A	-12.192	5/11/10	1420	-2.9	0.52	Flood	2.87	89	38.3	536	1.29	18.0	191	5351						22.3	7.91	28.35	3.85	0.61		
W11A	-12.192	6/16/10	908	-3.2	0.09	Ebb	2.87	89	44.0	616	0.57	8.0	197	5533						22.6	7.84	28.72	3.57	0.14		
W11A	-12.192	7/13/10	1409	-3.2	0.24	Flood	2.94	91	43.5	609	0.14	2.0	197	5529						23.0	7.87	29.07	3.74	0.30		
W11A	-12.192	8/3/10	1420	-3.0	0.43	Ebb	3.26	101	51.0	715	0.21	3.0	197	5526						23.1	7.83	29.28	3.90	0.07		
W11A	-12.192	9/14/10	1435	-3.1	0.34	Ebb	3.10	96	49.3	690	0.62	8.7	207	5815						23.2	7.80	29.10	4.91	0.32		
W11A	-12.192	10/12/10	1454	-3.2	0.18	Low	3.03	94	44.1	618	0.21	3.0	192	5394						23.4	7.85	29.20	3.91	0.40		
W11A	-12.192	11/16/10	1339	-3.0	0.37	Ebb	2.97	92	47.1	660	0.21	3.0	190	5326						23.6	7.84	29.34	3.62	0.25		
W11A	-12.192	12/14/10	1410	-3.2	0.18	Ebb	3.13	97	51.3	719	0.16	2.3	202	5675						23.2	7.81	28.06	3.53	0.33		
W11A	-12.192	1/4/11	1351	-3.3	0.12	Flood	3.16	98	42.3	592	0.14	2.0	194	5450						23.2	7.75	27.34	3.45	0.18		
W11A	-12.192	4/5/11	1416	-3.2	0.21	Flood	3.33	103	36.1	505	0.05	0.7	193	5425						22.3	7.75	27.23	2.94	0.12		
W11A	-12.192	7/12/11	1416	-2.9	0.73	Flood	2.91	90	34.2	479	0.09	1.3	203	5713						22.9	7.80	28.60	2.89	0.26		
W11A	-12.192	10/11/11	1248	-3.2	0.24	Flood	2.58	80	29.8	417	0.21	2.9	204	5733						23.2	7.77	29.59	2.62	0.49		
W11A	-12.192	1/10/12	1456	-3.3	0.09	Flood	2.42	75	59.4	832	0.09	1.3	207	5801						22.1	7.62	27.21	2.05	0.29		
W11A	-12.192	5/1/12	1500	-3.1	0.40	Ebb	3.03	94	39.1	548	0.24	3.3	198	5566						21.9	7.65	29.04	1.61	0.13		
W11A	-12.192	7/18/12	1413	-2.9	0.52	Flood	2.49	77	24.4	342	0.30	4.2	179	5036						22.9	7.80	30.48	2.01	0.35		
W11A	-12.192	10/16/12	1351	-3.2	0.24	Flood	2.16	67	19.1	268	0.02	0.3	169	4751						23.5	7.73	30.39	1.52	0.38		
W11A	-12.192	1/8/13	1456	-3.2	0.15	Ebb	2.58	80	25.8	362	0.30	4.2	193	5415						22.5	7.76	28.87	1.18	4.75		
W11A	-12.192	4/9/13	1435	-3.1	0.46	Flood	3.52	109	26.4	370	0.58	8.1	180	5050						21.2	7.78	28.99	4.63	1.32		
W11A	-12.192	7/17/13	1552	-3.1	0.46	Ebb	2.97	92	28.8	403	0.11	1.6	194	5438						22.5	7.63	29.88	1.54	0.17		
W11A	-12.192	10/15/13	1431	-2.9	0.52	Ebb	2.42	75	30.5	427	0.19	2.7	172	4819						22.5	7.71	30.42	1.92	1.16		
W11A	-12.192	1/15/14	1420	-3.2	0.15	Flood	3.16	98	33.9	475	0.31	4.4	183	5144						22.1	7.65	28.57	2.17	0.08		
W11A	-12.192	4/29/14	1634	-2.9	0.58	High	2.84	88	53.0	743	0.22	3.1	178	4995						21.1	7.60	28.90	2.38	0.81		
W11A	-12.192	7/29/14	1512	-3.1	0.40	Flood	3.07	95	53.5	749	0.36	5.0	167	4691						22.6	7.65	30.25	2.36	0.21		
W11A	-12.192	11/5/14	1454	-2.9	0.40	High	2.91	90	50.3	704	0.16	2.3	175	4928						23.0	7.66	28.91	1.58	0.10		
W11A	-12.192	1/1/15																								
W11A	-12.192	4/1/15																								

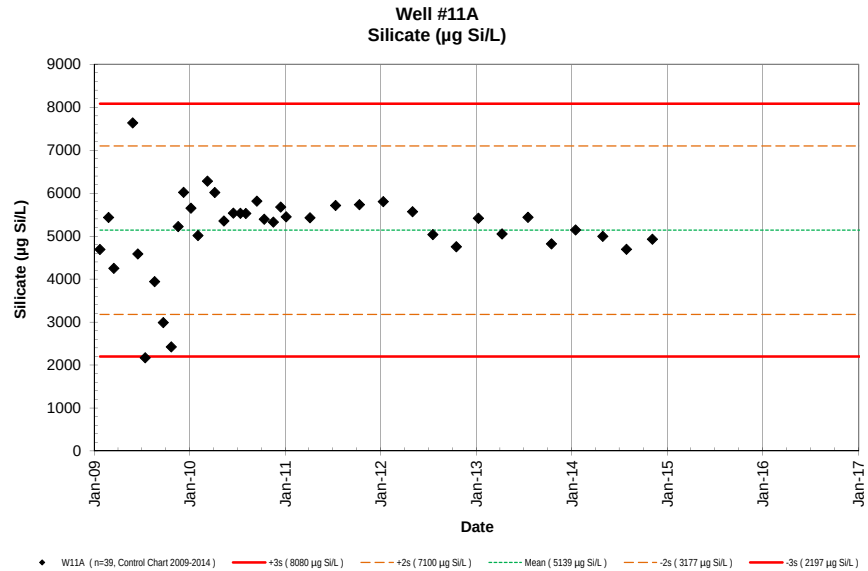

Well #11A
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W11A (n=39, Control Chart 2009-2014)
+3s (131 µg P/L)
+2s (118 µg P/L)
Mean (91 µg P/L)
-2s (64 µg P/L)
-3s (50 µg P/L)

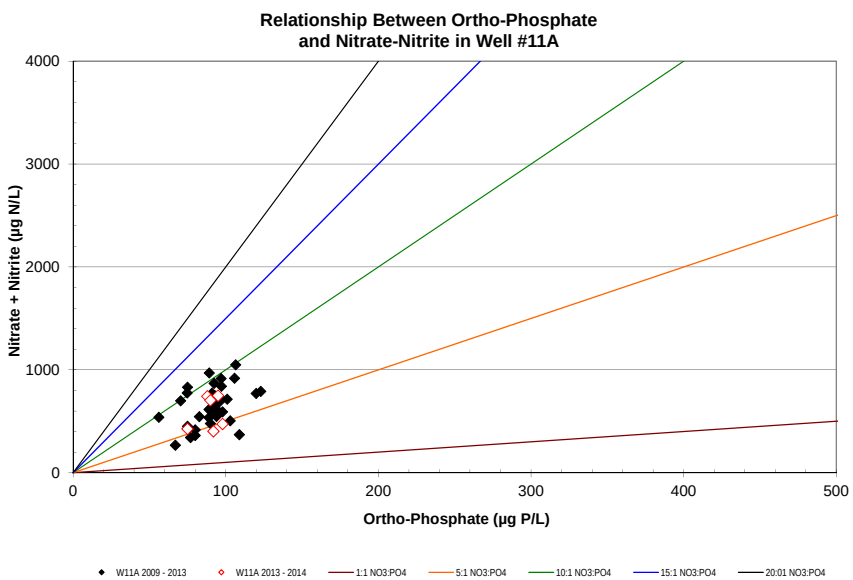

Well #11A
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W11A (n=39, Control Chart 2009-2014)
+3s (1213 µg N/L)
+2s (1022 µg N/L)
Mean (642 µg N/L)
-2s (262 µg N/L)
-3s (72 µg N/L)

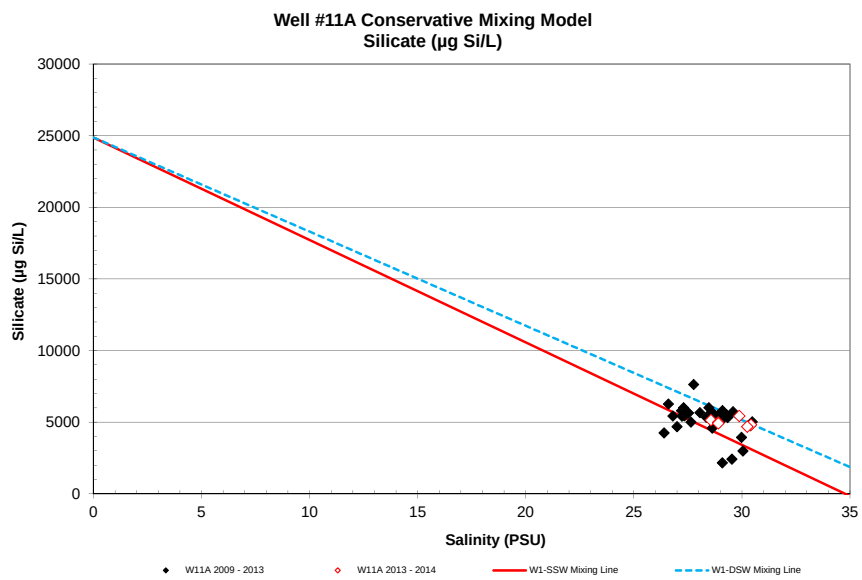

Well #11A Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W11A 2009 - 2013
W11A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

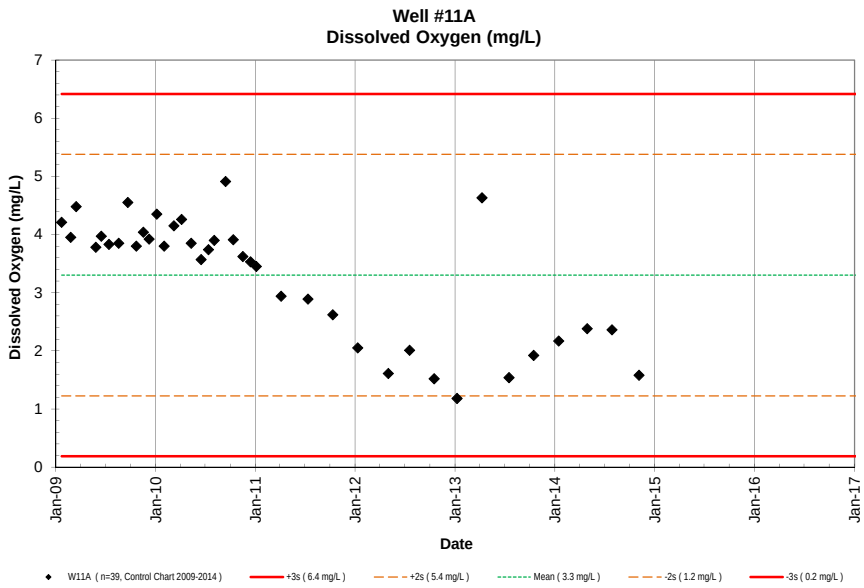

Well #11A Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W11A 2009 - 2013
W11A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

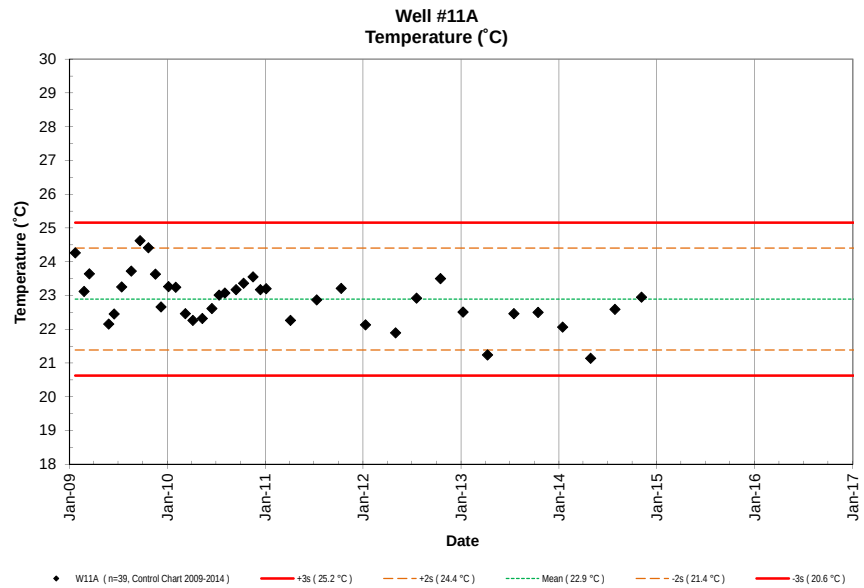

Well #11A
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W11A (n=39, Control Chart 2009-2014)
+3s (17.9 µg N/L)
+2s (13.7 µg N/L)
Mean (5.2 µg N/L)
-2s (-3.2 µg N/L)
-3s (-7.5 µg N/L)

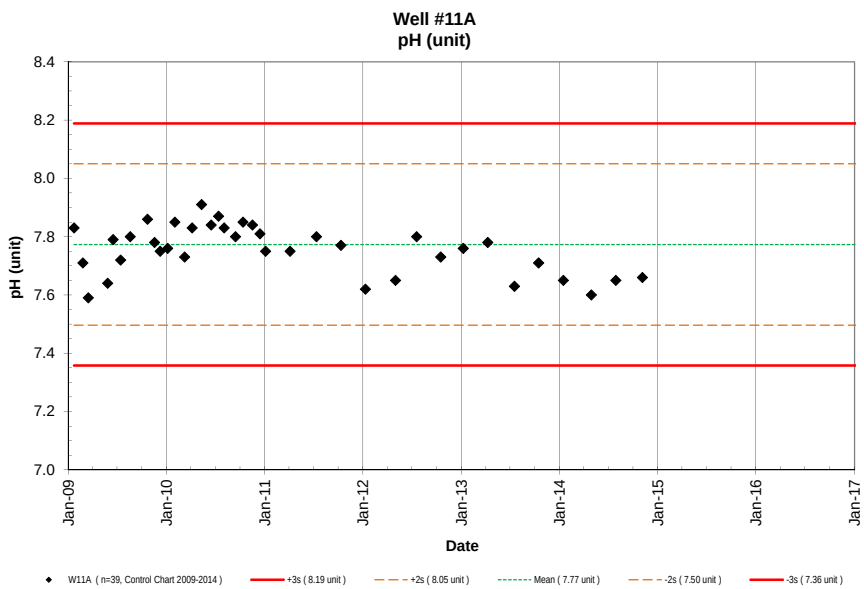

Well #11A
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W11A (n=39, Control Chart 2009-2014)
+3s (8080 µg Si/L)
+2s (7100 µg Si/L)
Mean (5139 µg Si/L)
-2s (3177 µg Si/L)
-3s (2197 µg Si/L)

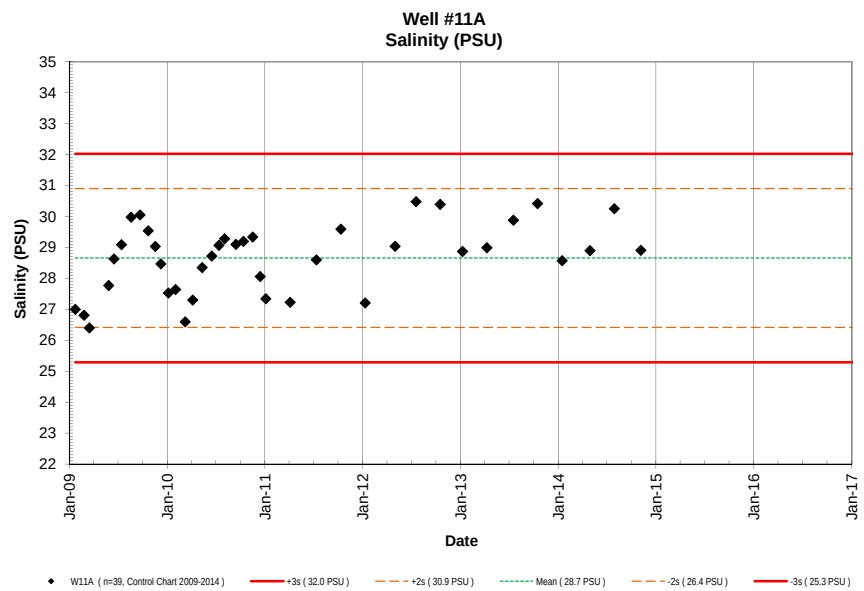

Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #11A
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W11A 2009 - 2013
W11A 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

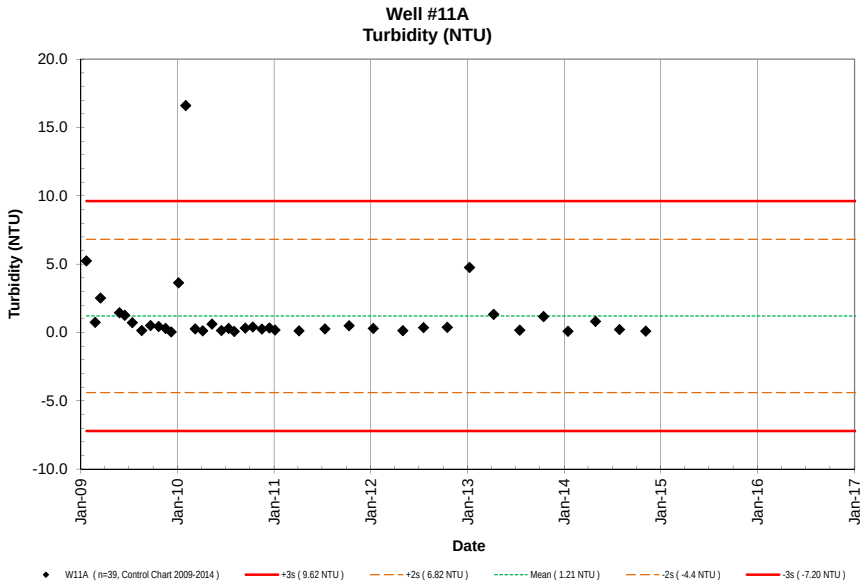

Well #11A Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W11A 2009 - 2013
W11A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

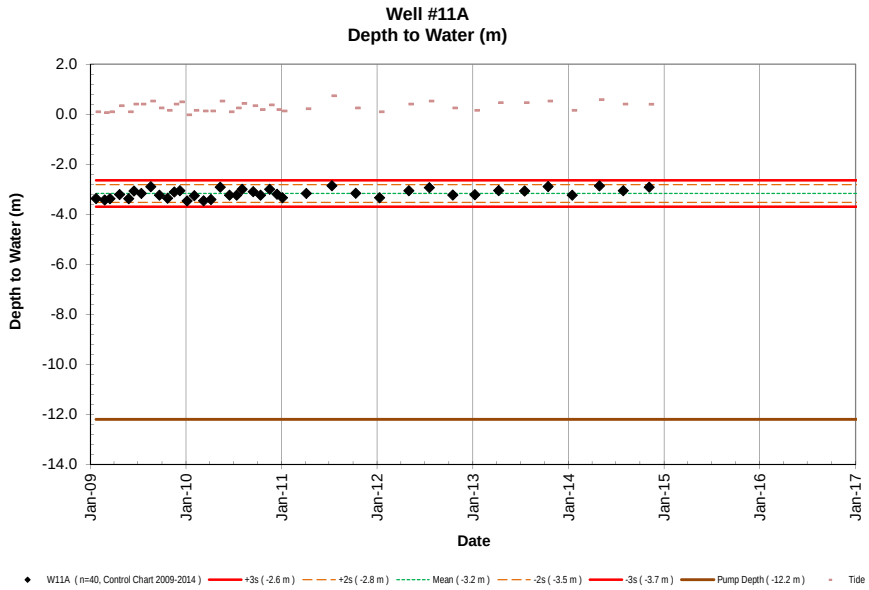

Well #11A
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W11A (n=39, Control Chart 2009-2014)
+3s (6.4 mg/L)
+2s (5.4 mg/L)
Mean (3.3 mg/L)
-2s (1.2 mg/L)
-3s (0.2 mg/L)


Well #11A
Temperature (˚C)
Temperature (˚C)
Date
W11A (n=39, Control Chart 2009-2014)
+3s (25.2 °C)
+2s (24.4 °C)
Mean (22.9 °C)
-2s (21.4 °C)
-3s (20.6 °C)


Well #11A
pH (unit)
pH (unit)
Date
W11A (n=39, Control Chart 2009-2014)
+3s (8.19 unit)
+2s (8.05 unit)
Mean (7.77 unit)
-2s (7.50 unit)
-3s (7.36 unit)


Well #11A
Salinity (PSU)
Salinity (PSU)
Date
W11A (n=39, Control Chart 2009-2014)
+3s (32.0 PSU)
+2s (30.9 PSU)
Mean (28.7 PSU)
-2s (26.4 PSU)
-3s (25.3 PSU)


Well #11A
Turbidity (NTU)
Turbidity (NTU)
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W11A (n=39, Control Chart 2009-2014)
+3s (9.62 NTU)
+2s (6.82 NTU)
Mean (1.21 NTU)
-2s (-4.4 NTU)
-3s (-7.20 NTU)

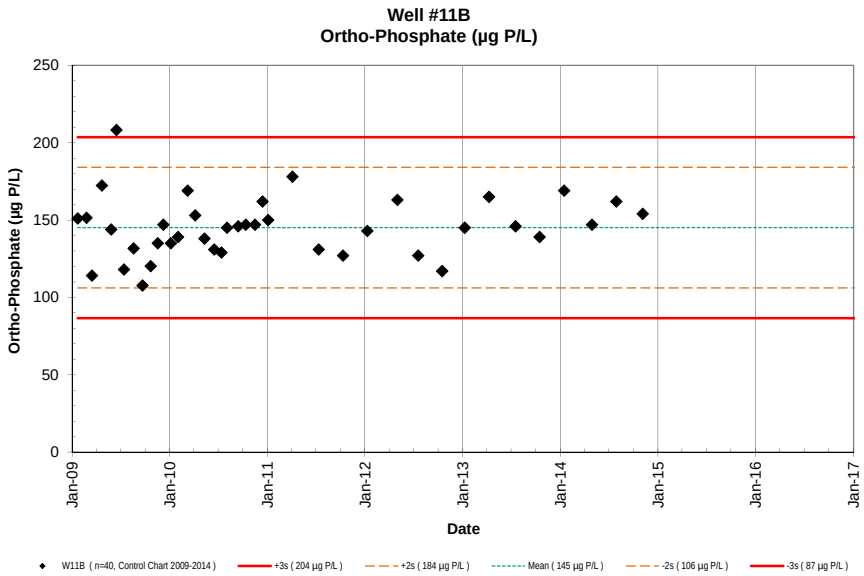

Well #11A
Depth to Water (m)
Depth to Water (m)
2.0
0.0
-2.0
-4.0
-6.0
-8.0
-10.0
-12.0
-14.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W11A (n=40, Control Chart 2009-2014)
+3s (-2.6 m)
+2s (-2.8 m)
Mean (-3.2 m)
-2s (-3.5 m)
-3s (-3.7 m)
Pump Depth (-12.2 m)
Tide

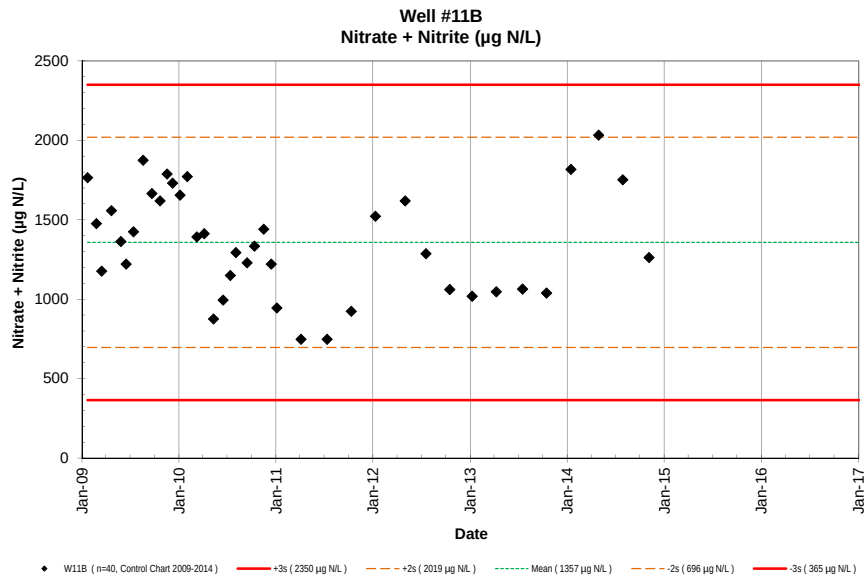
NELHA Water Quality Laboratory

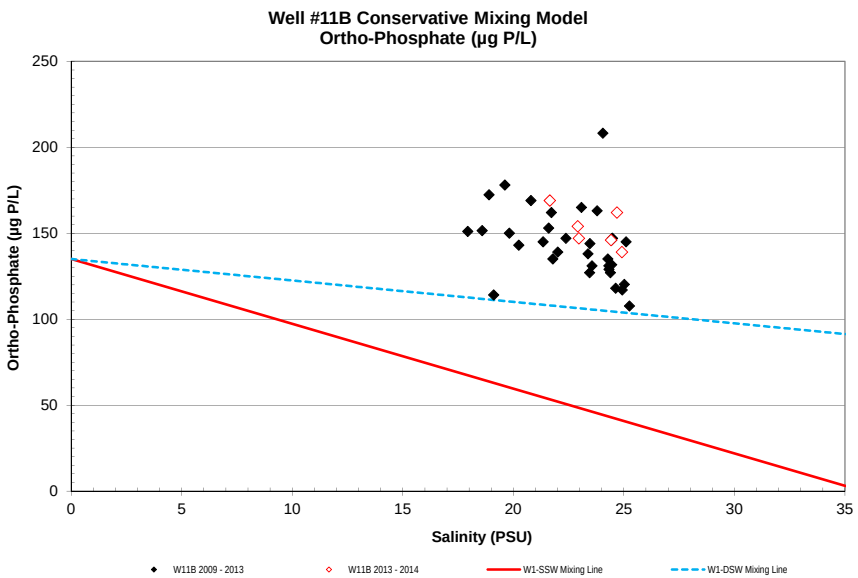
Well 11B Data Table

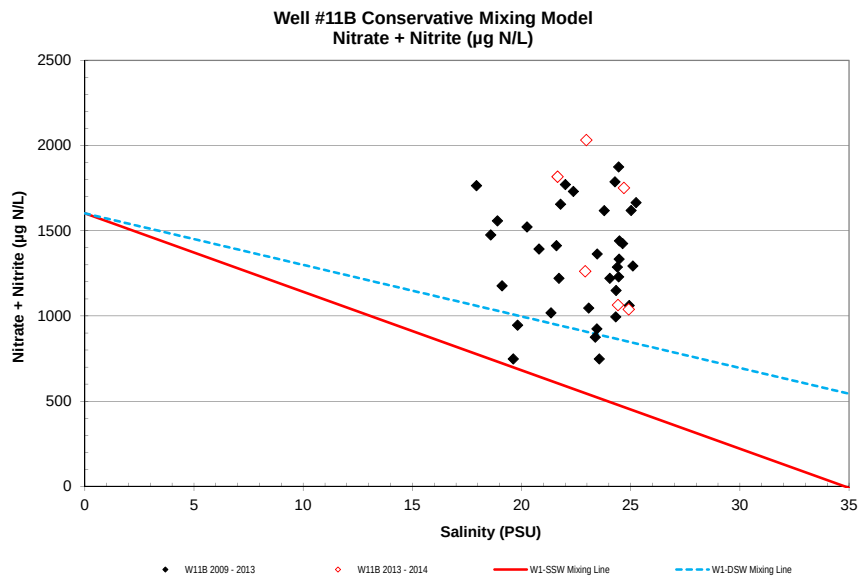
January 2009 - December 2014

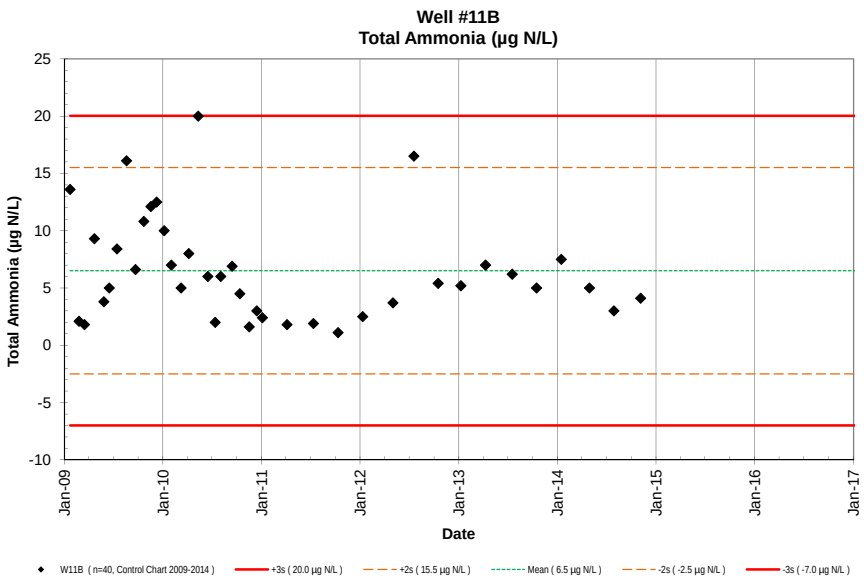
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W11B	-4.572	1/22/09	1014	-3.39	0.09	Low	4.88	151	126.0	1764	0.97	13.6	330	9255						25.8	7.60	17.94	4.28	0.50		
W11B	-4.572	2/24/09	927	-3.44	0.06	Ebb	4.89	152	105.3	1475	0.15	2.1	391	10995						24.4	7.50	18.59	4.11	0.29		
W11B	-4.572	3/16/09	1017	-3.39	0.09	Ebb	3.68	114	84.0	1177	0.13	1.8	260	7290						24.7	7.41	19.11	4.64	0.25		
W11B	-4.572	4/22/09	1235	-3.25	0.34	Flood	5.56	172	111.2	1557	0.66	9.3	271	7613						24.6	7.51	18.90	4.13	79.6		
W11B	-4.572	5/27/09	934	-3.40	0.09	Ebb	4.65	144	97.3	1363	0.27	3.8	444	12468						22.8	7.71	23.47	3.79	4.98		
W11B	-4.572	6/16/09	1335	-3.03	0.40	Ebb	6.72	208	87.1	1220	0.36	5.0	205	5761						23.5	7.44	24.05	3.79	0.11		
W11B	-4.572	7/14/09	1233	-3.18	0.40	Ebb	3.81	118	101.7	1425	0.60	8.4	128	3587						23.9	7.62	24.63	3.93	0.98		
W11B	-4.572	8/19/09	1304	-2.90	0.52	Flood	4.25	132	133.8	1874	1.15	16.1	253	7104						25.2	7.58	24.45	4.69	0.83		
W11B	-4.572	9/21/09	1441	-3.27	0.24	Flood	3.48	108	118.8	1665	0.47	6.6	164	4615						24.9	8.10	25.25	4.74	0.06		
W11B	-4.572	10/22/09	1517	-3.35	0.15	Low	3.88	120	115.5	1618	0.77	10.8	128	3586						25.3	7.60	25.02	4.77	0.15		
W11B	-4.572	11/17/09	744	-3.12	0.40	Ebb	4.36	135	127.6	1787	0.86	12.1	317	8896						25.1	7.59	24.28	4.73	0.06		
W11B	-4.572	12/8/09	823	-3.06	0.49	Flood	4.75	147	123.5	1730	0.89	12.5	338	9488						25.4	7.61	22.38	4.61	1.09		
W11B	-4.572	1/5/10	1444	-3.49	0.0	Low	4.36	135	118.2	1655	0.71	10.0	315	8848						25.4	7.68	21.79	5.07	1.28		
W11B	-4.572	2/1/10	1520	-3.31	0.15	Flood	4.49	139	126.4	1771	0.50	7.0	281	7890						24.2	7.70	22.01	4.10	5.38		
W11B	-4.572	3/9/10	1512	-3.43	0.12	Ebb	5.46	169	99.4	1392	0.36	5.0	361	10146						23.6	7.64	20.80	4.49	1.39		
W11B	-4.572	4/6/10	1342	-3.46	0.12	Ebb	4.94	153	100.8	1412	0.57	8.0	338	9490						23.0	7.65	21.60	4.80	0.50		
W11B	-4.572	5/11/10	1407	-2.93	0.52	Flood	4.46	138	62.5	875	1.43	20.0	296	8307						23.1	7.70	23.38	3.78	0.23		
W11B	-4.572	6/16/10	900	-3.25	0.09	Ebb	4.23	131	71.0	994	0.43	6.0	309	8691						23.2	7.63	24.32	3.53	0.06		
W11B	-4.572	7/13/10	1417	-3.21	0.24	Flood	4.16	129	82.0	1149	0.14	2.0	332	9324						23.4	7.61	24.33	4.23	0.17		
W11B	-4.572	8/3/10	1412	-3.00	0.43	Ebb	4.68	145	92.3	1293	0.43	6.0	321	9017						23.9	7.62	25.10	3.98	0.04		
W11B	-4.572	9/14/10	1443	-3.06	0.34	Ebb	4.71	146	87.7	1229	0.49	6.9	343	9634						24.2	7.58	24.45	4.56	0.37		
W11B	-4.572	10/12/10	1500	-3.28	0.18	Low	4.75	147	95.2	1333	0.32	4.5	330	9258						24.1	7.65	24.47	4.61	0.14		
W11B	-4.572	11/16/10	1347	-3.01	0.37	Ebb	4.75	147	102.8	1440	0.11	1.6	327	9185						24.2	7.62	24.49	3.95	0.24		
W11B	-4.572	12/14/10	1418	-3.21	0.18	Ebb	5.23	162	87.2	1221	0.21	3.0	385	10806						24.2	7.67	21.72	4.26	0.10		
W11B	-4.572	1/4/11	1342	-3.33	0.12	Flood	4.84	150	67.5	945	0.17	2.4	361	10151						24.2	7.49	19.82	3.85	0.09		
W11B	-4.572	4/5/11	1422	-3.17	0.21	Flood	5.75	178	53.3	747	0.13	1.8	372	10441						23.3	7.52	19.62	2.16	0.28		
W11B	-4.572	7/12/11	1407	-2.88	0.73	Flood	4.23	131	53.3	747	0.14	1.9	341	9590						23.5	7.46	23.56	2.79	0.50		
W11B	-4.572	10/11/11	1255	-3.18	0.24	Flood	4.10	127	66.0	924	0.08	1.1	334	9384						23.6	7.45	23.45	3.76	0.17		
W11B	-4.572	1/10/12	1447	-3.37	0.09	Flood	4.62	143	108.7	1522	0.18	2.5	392	10998						23.2	7.40	20.25	3.08	0.16		
W11B	-4.572	5/1/12	1506	-3.15	0.40	Ebb	5.26	163	115.5	1618	0.26	3.7	371	10424						22.6	7.41	23.79	1.98	0.08		
W11B	-4.572	7/18/12	1418	-2.96	0.52	Flood	4.10	127	91.8	1286	1.18	16.5	340	9549						23.0	7.39	24.39	2.43	0.15		
W11B	-4.572	10/16/12	1346	-3.25	0.24	Flood	3.78	117	75.7	1061	0.39	5.4	329	9248						23.9	7.30	24.93	2.51	0.38		
W11B	-4.572	1/8/13	1504	-3.22	0.15	Ebb	4.68	145	72.7	1018	0.37	5.2	386	10834						23.6	7.32	21.35	2.82	6.99		
W11B	-4.572	4/9/13	1442	-3.07	0.46	Flood	5.33	165	74.7	1046	0.50	7.0	350	9840						22.4	7.43	23.08	1.91	2.87		
W11B	-4.572	7/17/13	1556	-3.09	0.46	Ebb	4.71	146	76.0	1064	0.44	6.2	345	9703						23.6	7.41	24.42	3.96	0.10		
W11B	-4.572	10/15/13	1439	-2.91	0.52	Ebb	4.49	139	74.1	1038	0.36	5.0	325	9114						24.2	7.44	24.91	3.62	2.07		
W11B	-4.572	1/15/14	1430	-3.30	0.15	Flood	5.46	169	129.7	1817	0.54	7.5	343	9637						24.0	7.54	21.65	4.02	1.81		
W11B	-4.572	4/29/14	1626	-2.88	0.58	High	4.75	147	145.1	2032	0.36	5.0	319	8955						22.6	7.43	22.97	3.34	1.77		
W11B	-4.572	7/29/14	1516	-3.07	0.40	Flood	5.23	162	125.0	1751	0.21	3.0	328	9219						22.8	7.75	24.69	4.43	0.26		
W11B	-4.572	11/5/14	1500	-2.93	0.40	High	4.97	154	90.1	1262	0.29	4.1	296	8301						24.9	7.50	22.92	3.59	1.38		
W11B	-4.572	1/1/15																								
W11B	-4.572	4/1/15																								

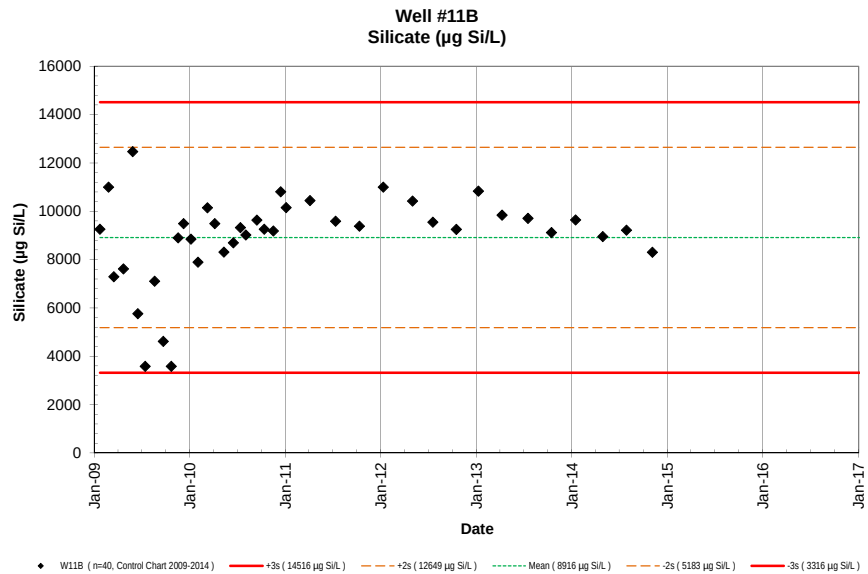

Well #11B
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W11B (n=40, Control Chart 2009-2014)
+3s (204 µg P/L)
+2s (184 µg P/L)
Mean (145 µg P/L)
-2s (106 µg P/L)
-3s (87 µg P/L)

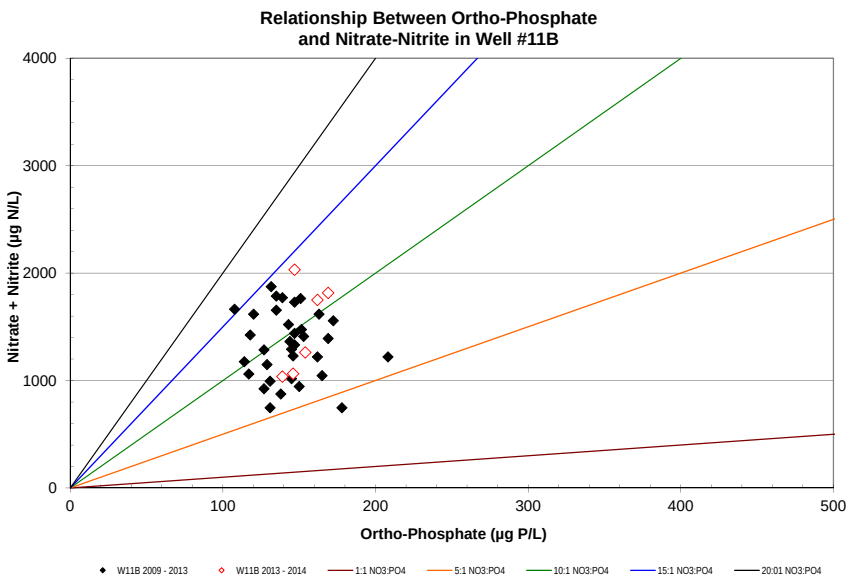

Well #11B
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W11B (n=40, Control Chart 2009-2014)
+3s (2350 µg N/L)
+2s (2019 µg N/L)
Mean (1357 µg N/L)
-2s (696 µg N/L)
-3s (365 µg N/L)

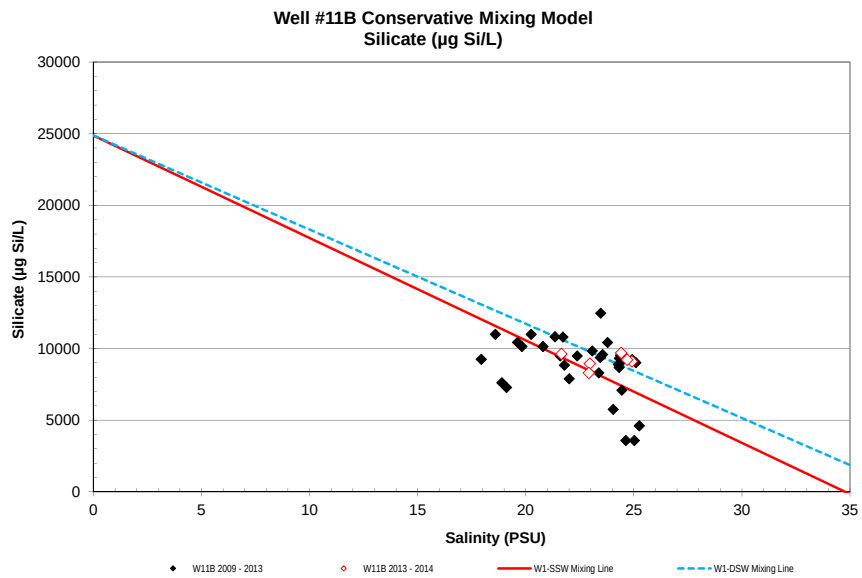

Well #11B Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W11B 2009 - 2013
W11B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

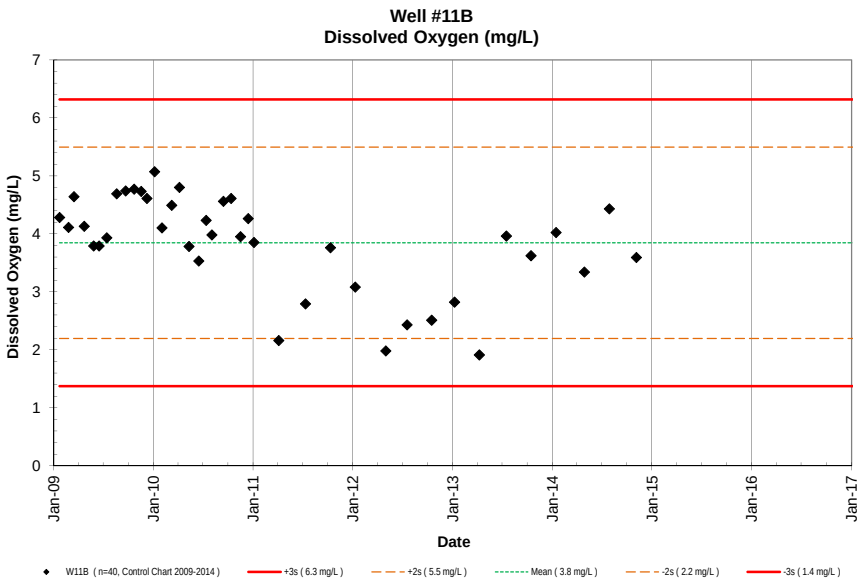

Well #11B Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W11B 2009 - 2013
W11B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

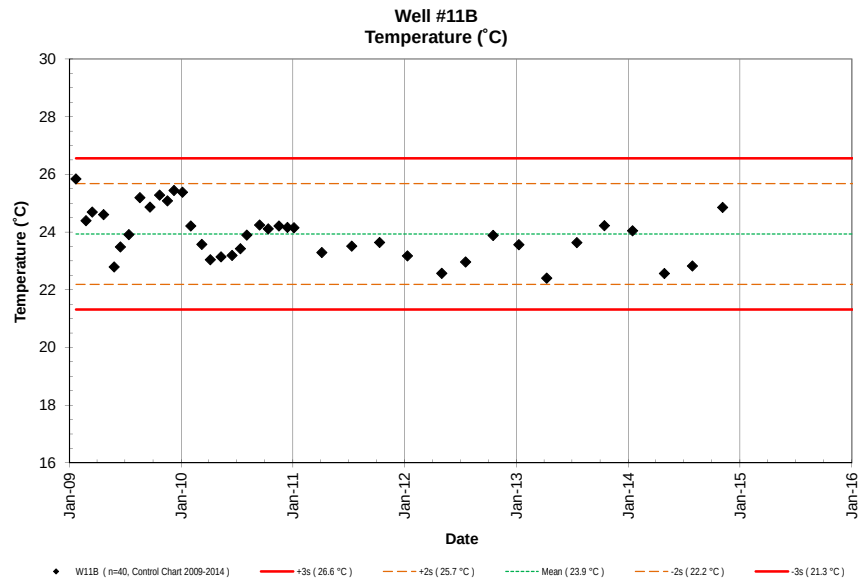

Well #11B
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W11B (n=40, Control Chart 2009-2014)
+3s (20.0 µg N/L)
+2s (15.5 µg N/L)
Mean (6.5 µg N/L)
-2s (-2.5 µg N/L)
-3s (-7.0 µg N/L)

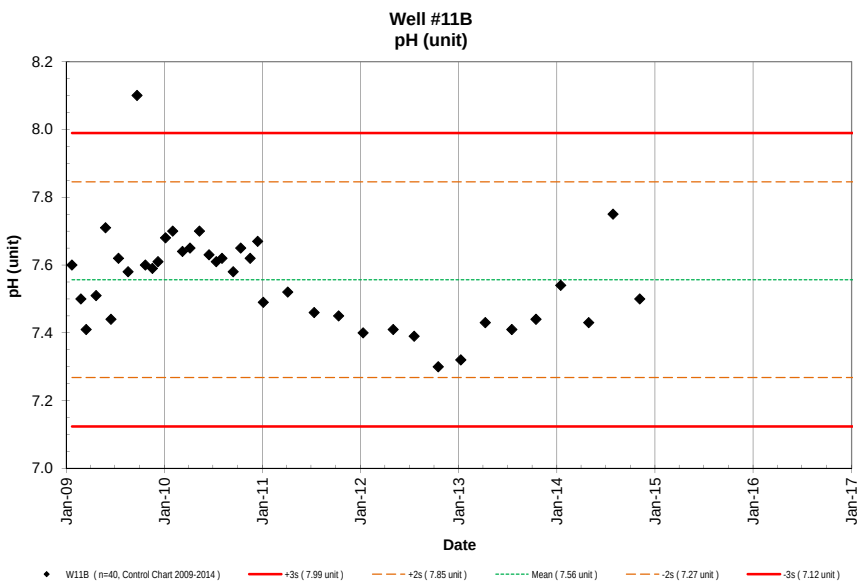

Well #11B
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W11B (n=40, Control Chart 2009-2014)
+3s (14516 µg Si/L)
+2s (12649 µg Si/L)
Mean (8916 µg Si/L)
-2s (5183 µg Si/L)
-3s (3316 µg Si/L)

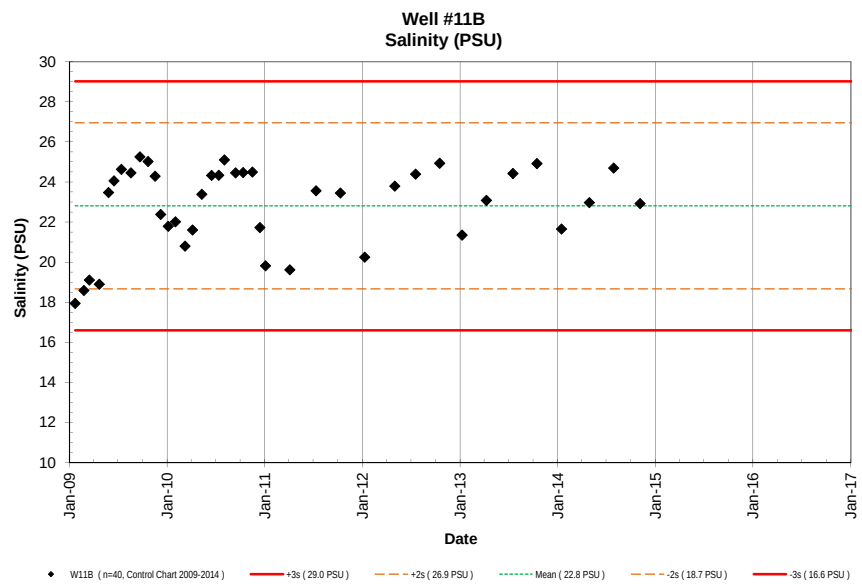

Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #11B
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W11B 2009 - 2013
W11B 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

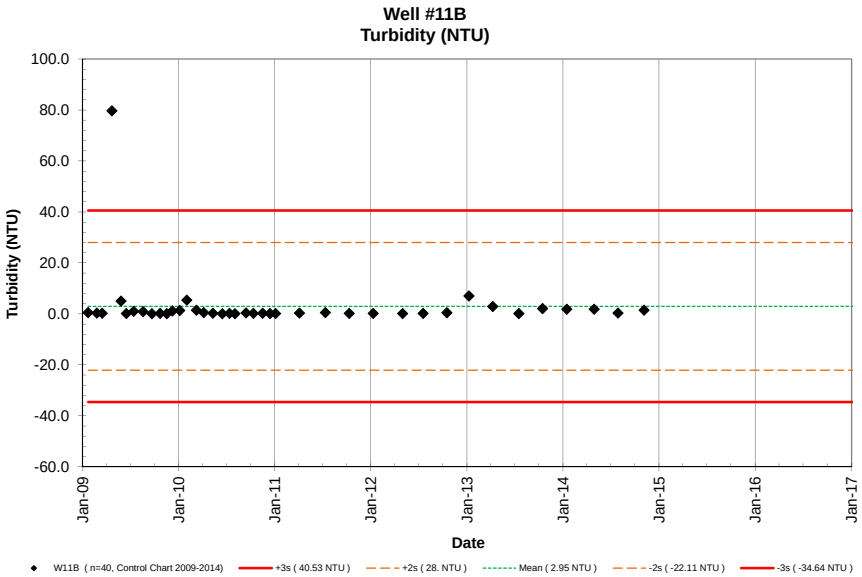

Well #11B Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W11B 2009 - 2013
W11B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

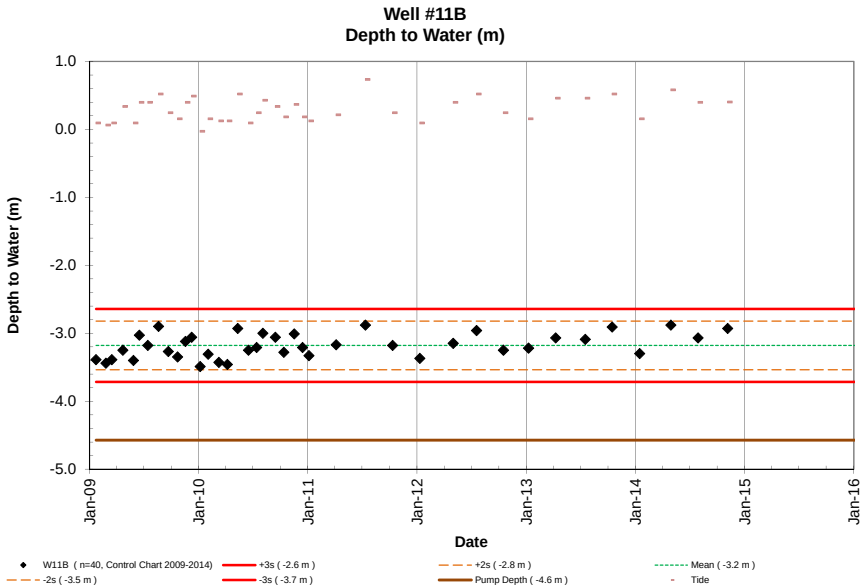

Well #11B
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W11B (n=40, Control Chart 2009-2014)
+3s (6.3 mg/L)
+2s (5.5 mg/L)
Mean (3.8 mg/L)
-2s (2.2 mg/L)
-3s (1.4 mg/L)


Well #11B
Temperature (˚C)
Temperature (˚C)
Date
W11B (n=40, Control Chart 2009-2014)
+3s (26.6 °C)
+2s (25.7 °C)
Mean (23.9 °C)
-2s (22.2 °C)
-3s (21.3 °C)


Well #11B
pH (unit)
pH (unit)
Date
W11B (n=40, Control Chart 2009-2014)
+3s (7.99 unit)
+2s (7.85 unit)
Mean (7.56 unit)
-2s (7.27 unit)
-3s (7.12 unit)


Well #11B
Salinity (PSU)
Salinity (PSU)
Date
W11B (n=40, Control Chart 2009-2014)
+3s (29.0 PSU)
+2s (26.9 PSU)
Mean (22.8 PSU)
-2s (18.7 PSU)
-3s (16.6 PSU)


Well #11B
Turbidity (NTU)
Turbidity (NTU)
100.0
80.0
60.0
40.0
20.0
0.0
-20.0
-40.0
-60.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W11B (n=40, Control Chart 2009-2014)
+3s (40.53 NTU)
+2s (28. NTU)
Mean (2.95 NTU)
-2s (-22.11 NTU)
-3s (-34.64 NTU)

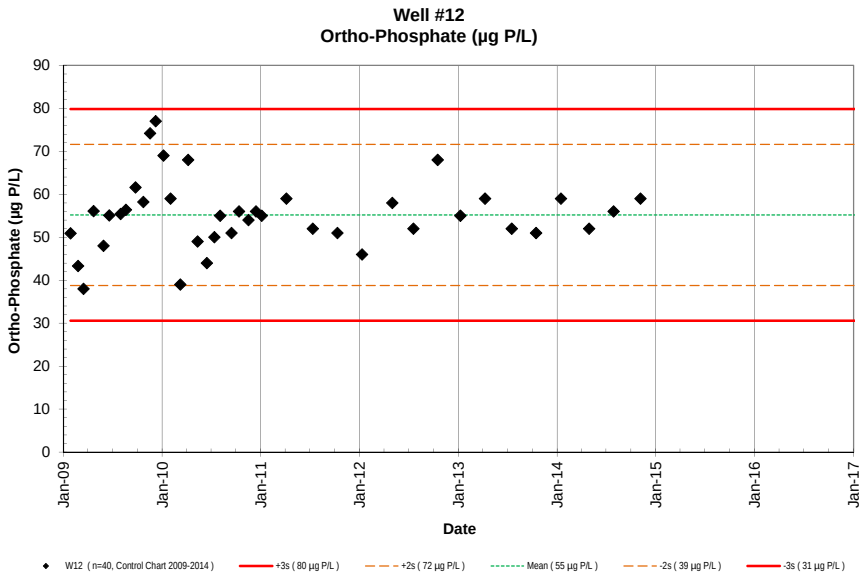

Well #11B
Depth to Water (m)
Depth to Water (m)
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Date
W11B (n=40, Control Chart 2009-2014)
+3s (-2.6 m)
+2s (-2.8 m)
Mean (-3.2 m)
-2s (-3.5 m)
-3s (-3.7 m)
Pump Depth (-4.6 m)
Tide

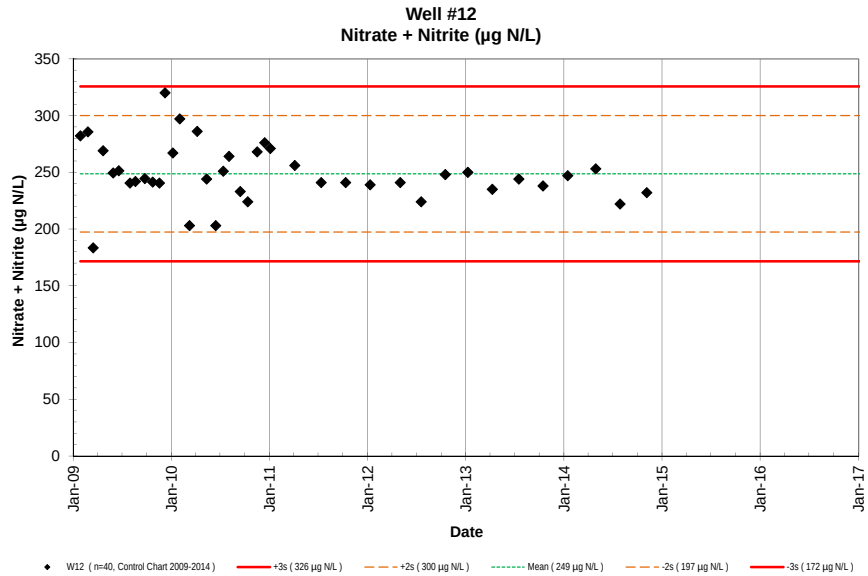
NELHA Water Quality Laboratory

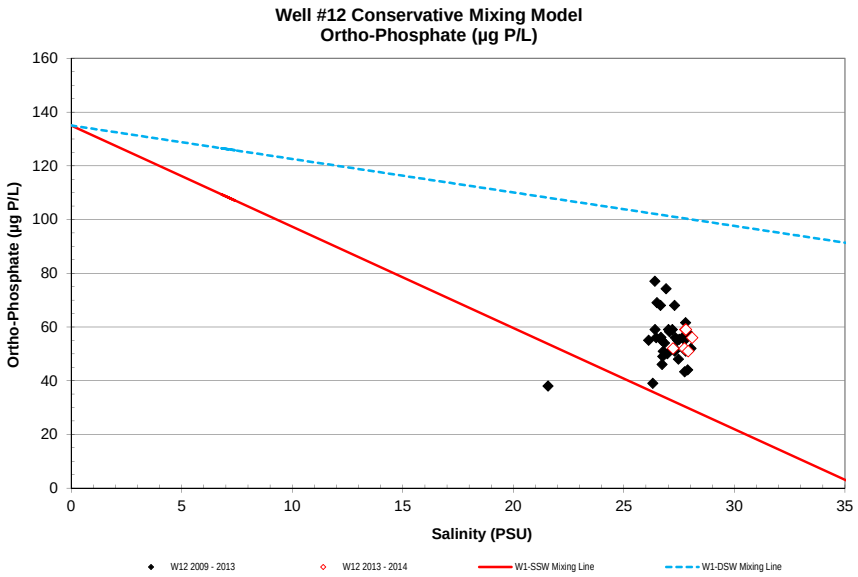
Well 12 Data Table

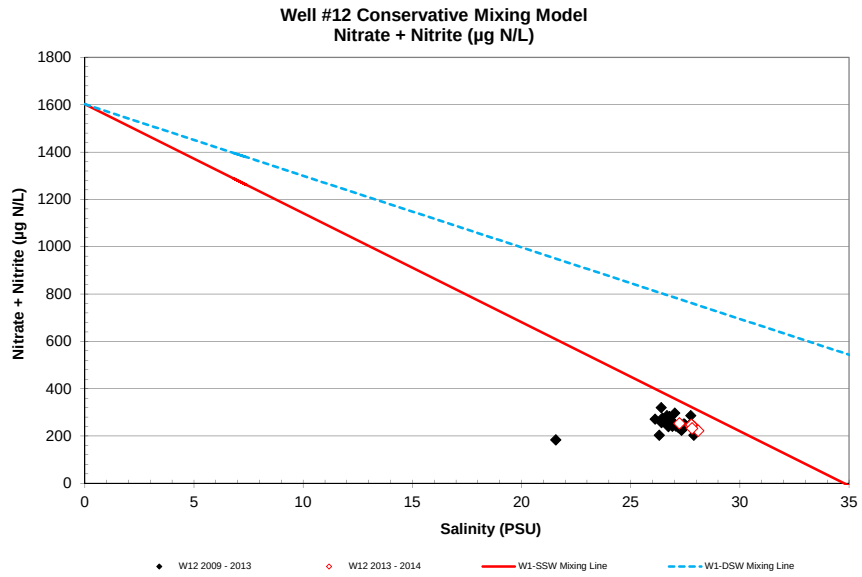
January 2009 - December 2014

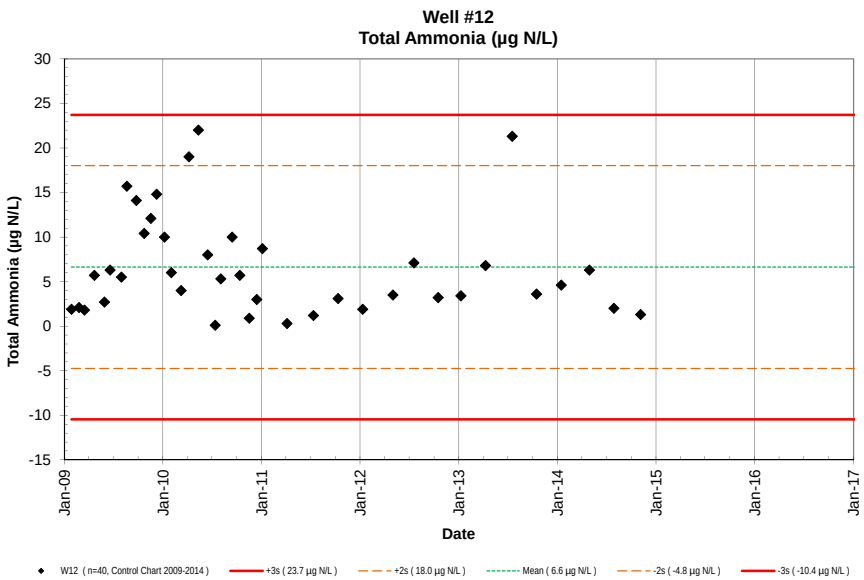
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W12	-18.288	01/27/09	1024	-5.37	0.09	Ebb	1.64	51	20.1	282	0.14	1.9	146	4094						24.0	7.90	26.78	1.53	0.42		
W12	-18.288	02/24/09	1440	-5.32	0.24	Flood	1.40	43	20.4	286	0.15	2.1	319	8965						22.9	7.74	27.75	1.49	0.10		
W12	-18.288	03/16/09	1440	-5.56	0.06	Flood	1.23	38	13.1	184	0.13	1.8	233	6549						24.0	7.68	21.57	2.65	0.11		
W12	-18.288	04/22/09	922	-5.58	0.00	Flood	1.81	56	19.2	269	0.41	5.7	280	7867						24.6	7.64	26.68	1.69	1.81		
W12	-18.288	05/29/09	1324	-5.49	0.12	Low	1.55	48	17.8	249	0.19	2.7	482	13529						21.7	7.73	27.47	1.60	0.04		
W12	-18.288	06/19/09	1343	-4.89	0.70	High	1.78	55	17.9	251	0.45	6.3	218	6137						21.7	7.86	27.75	1.52	0.07		
W12	-18.288	07/31/09	1355	-4.90	0.64	High	1.79	55	17.2	241	0.39	5.5	226	6349						21.8	7.80	27.50	1.54	0.04		
W12	-18.288	08/20/09	1443	-4.91	0.61	Flood	1.82	56	17.3	242	1.12	15.7	287	8067						21.9	7.85	27.70	1.45	0.02		
W12	-18.288	09/24/09	1413	-5.30	0.30	Ebb	1.99	62	17.5	245	1.01	14.1	242	6800						21.8	8.30	27.79	1.57	0.05		
W12	-18.288	10/23/09	1606	-5.40	0.15	Low	1.88	58	17.2	241	0.74	10.4	169	4743						21.7	7.80	27.07	1.80	0.03		
W12	-18.288	11/17/09	1537	-5.51	0.21	Flood	2.40	74	17.2	241	0.86	12.1	283	7951						21.7	7.80	26.91	1.75	0.11		
W12	-18.288	12/08/09	1150	-5.23	0.37	Ebb	2.49	77	22.8	320	1.06	14.8	367	10317						22.1	7.75	26.40	1.67	0.02		
W12	-18.288	01/06/10	1121	-5.22	0.21	Ebb	2.23	69	19.1	267	0.71	10.0	333	9363						22.3	7.80	26.50	1.67	0.04		
W12	-18.288	02/01/10	1105	-5.33	0.00	Ebb	1.90	59	21.2	297	0.43	6.0	347	9736						22.2	7.87	27.02	2.03	0.10		
W12	-18.288	03/09/10	1058	-5.58	0.15	Flood	1.26	39	14.5	203	0.29	4.0	364	10231						23.2	7.81	26.31	1.91	0.09		
W12	-18.288	04/07/10	826	-5.50	0.09	Flood	2.20	68	20.4	286	1.36	19.0	341	9584						23.1	7.85	26.66	1.73	0.08		
W12	-18.288	05/12/10	1028	-5.53	0.06	Flood	1.58	49	17.4	244	1.57	22.0	328	9226						22.9	7.88	26.76	1.79	0.03		
W12	-18.288	06/15/10	1614	-5.24	0.46	Flood	1.42	44	14.5	203	0.57	8.0	298	8377						21.4	7.91	27.89	1.48	0.03		
W12	-18.288	7/13/10	1528	-4.96	0.46	Flood	1.61	50	17.9	251	0.01	0.1	363	10183						21.3	7.87	26.97	1.64	0.06		
W12	-18.288	8/3/10	1624	-5.15	0.30	Ebb	1.78	55	18.8	264	0.38	5.3	364	10236						21.4	7.86	26.71	1.68	0.04		
W12	-18.288	9/14/10	1630	-5.31	0.24	Low	1.65	51	16.6	233	0.71	10.0	345	9692						21.4	7.86	27.80	1.52	0.08		
W12	-18.288	10/12/10	1649	-5.27	0.18	Low	1.81	56	16.0	224	0.41	5.7	359	10095						21.4	7.86	27.33	1.70	0.33		
W12	-18.288	11/16/10	1531	-5.20	0.24	Ebb	1.74	54	19.1	268	0.06	0.9	377	10576						21.4	7.84	26.84	1.60	0.13		
W12	-18.288	12/14/10	1559	-5.39	0.06	Ebb	1.81	56	19.7	276	0.21	3.0	385	10806						21.4	7.84	26.46	1.59	0.08		
W12	-18.288	1/4/11	1540	-5.32	0.21	Flood	1.78	55	19.3	271	0.62	8.7	363	10191						21.3	7.76	26.12	1.68	0.09		
W12	-18.288	4/5/11	1552	-5.05	0.46	Flood	1.90	59	18.3	256	0.02	0.3	337	9473						21.3	7.70	26.41	1.39	0.07		
W12	-18.288	7/12/11	1556	-4.94	0.73	Ebb	1.68	52	17.2	241	0.09	1.2	334	9381						21.5	7.82	27.29	1.26	0.09		
W12	-18.288	10/11/11	1523	-5.10	0.43	High	1.65	51	17.2	241	0.22	3.1	339	9525						21.5	7.81	27.30	1.47	0.03		
W12	-18.288	1/10/12	1646	-5.32	0.24	Flood	1.49	46	17.1	239	0.14	1.9	322	9031						21.5	7.79	26.73	1.55	0.62		
W12	-18.288	5/1/12	1604	-5.18	0.30	Ebb	1.87	58	17.2	241	0.25	3.5	344	9675						21.4	7.80	27.87	1.40	0.05		
W12	-18.288	7/18/12	1454	-4.95	0.64	Flood	1.68	52	16.0	224	0.51	7.1	330	9260						21.6	7.92	28.04	1.49	0.07		
W12	-18.288	10/16/12	1446	-5.25	0.30	Flood	2.20	68	17.7	248	0.23	3.2	343	9630						21.4	7.82	27.29	1.50	0.10		
W12	-18.288	1/8/13	1545	-5.39	-0.03	Ebb	1.78	55	17.8	250	0.24	3.4	366	10268						21.4	7.77	27.43	1.48	2.25		
W12	-18.288	4/9/13	1525	-5.03	0.55	High	1.90	59	16.8	235	0.49	6.8	346	9721						21.4	7.82	27.19	1.37	0.04		
W12	-18.288	7/17/13	1644	-5.24	0.30	Ebb	1.68	52	17.4	244	1.52	21.3	334	9393						21.9	7.78	27.74	1.45	0.16		
W12	-18.288	10/15/13	1512	-5.08	0.49	Ebb	1.65	51	17.0	238	0.26	3.6	327	9187						21.5	7.78	27.91	1.47	0.16		
W12	-18.288	1/15/14	1513	-5.34	0.15	Flood	1.90	59	17.6	247	0.33	4.6	336	9442						21.9	7.88	27.78	1.71	0.03		
W12	-18.288	4/29/14	1739	-4.95	0.61	High	1.68	52	18.1	253	0.45	6.3	337	9474						21.5	7.76	27.23	1.73	0.14		
W12	-18.288	7/29/14	1558	-5.09	0.46	Flood	1.81	56	15.8	222	0.14	2.0	331	9287						22.8	7.75	28.09	1.96	0.06		
W12	-18.288	11/5/14	1541	-5.05	0.36	Ebb	1.90	59	16.6	232	0.09	1.3	317	8893						21.9	7.77	27.81	1.40	0.10		
W12	-18.288	1/1/15																								
W12	-18.288	4/1/15																								

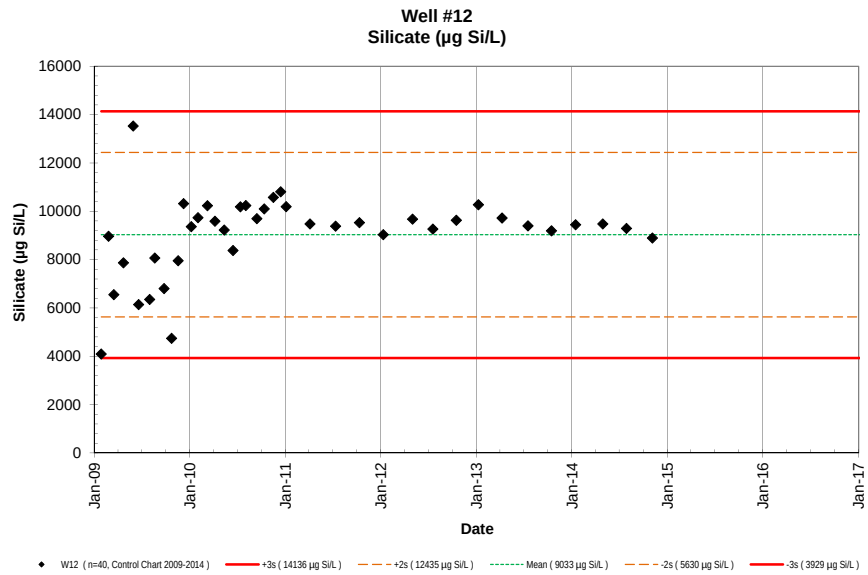

Well #12
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W12 (n=40, Control Chart 2009-2014)
+3s (80 µg P/L)
+2s (72 µg P/L)
Mean (55 µg P/L)
-2s (39 µg P/L)
-3s (31 µg P/L)

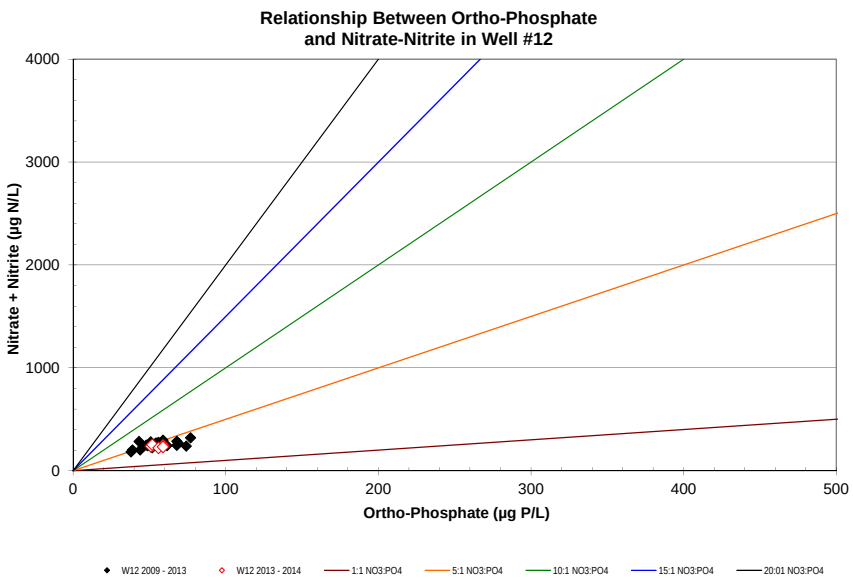

Well #12
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W12 (n=40, Control Chart 2009-2014)
+3s (326 µg N/L)
+2s (300 µg N/L)
Mean (249 µg N/L)
-2s (197 µg N/L)
-3s (172 µg N/L)

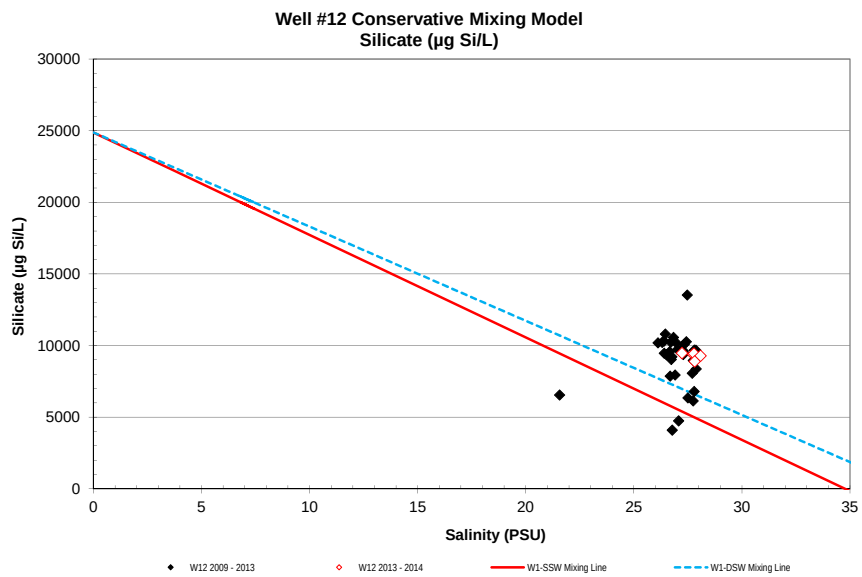

Well #12 Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W12 2009 - 2013
W12 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

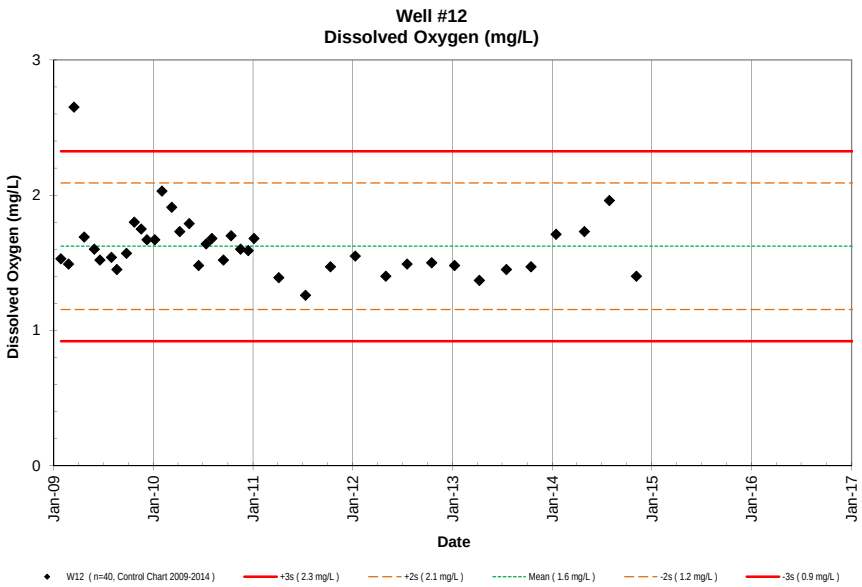

Well #12 Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W12 2009 - 2013
W12 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

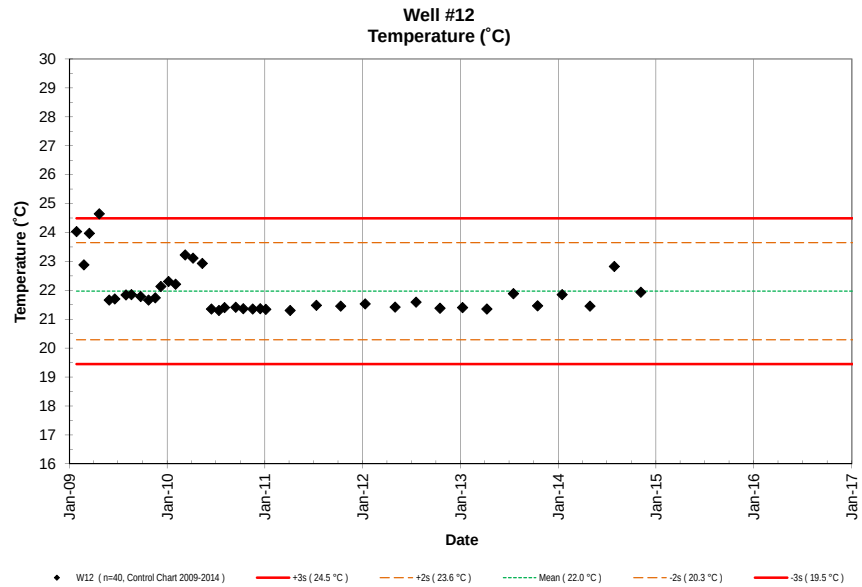

Well #12
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W12 (n=40, Control Chart 2009-2014)
+3s (23.7 µg N/L)
+2s (18.0 µg N/L)
Mean (6.6 µg N/L)
-2s (-4.8 µg N/L)
-3s (-10.4 µg N/L)

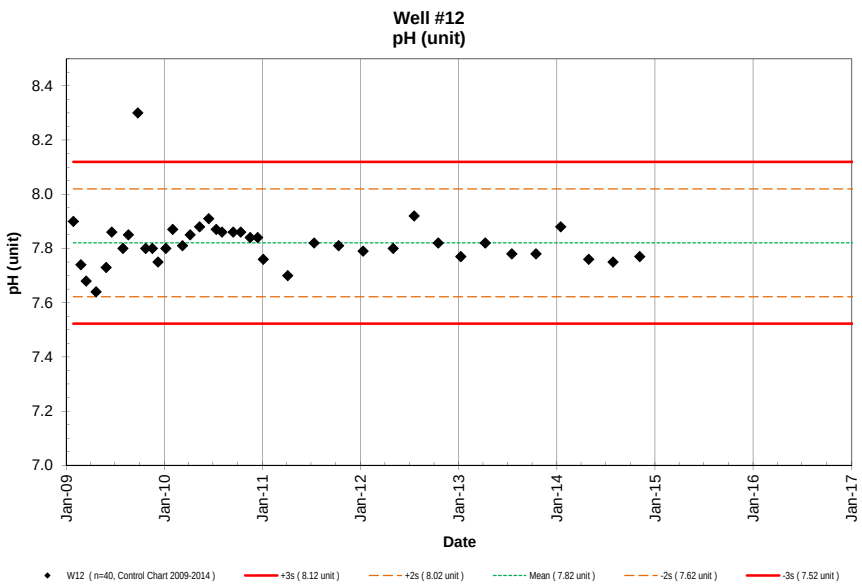

Well #12
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W12 (n=40, Control Chart 2009-2014)
+3s (14136 µg Si/L)
+2s (12435 µg Si/L)
Mean (9033 µg Si/L)
-2s (5630 µg Si/L)
-3s (3929 µg Si/L)

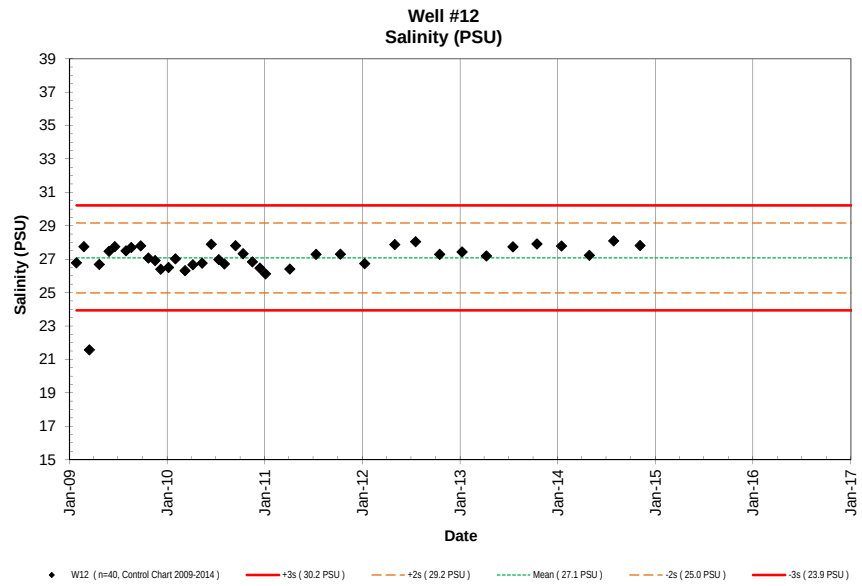

Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #12
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W12 2009 - 2013
W12 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

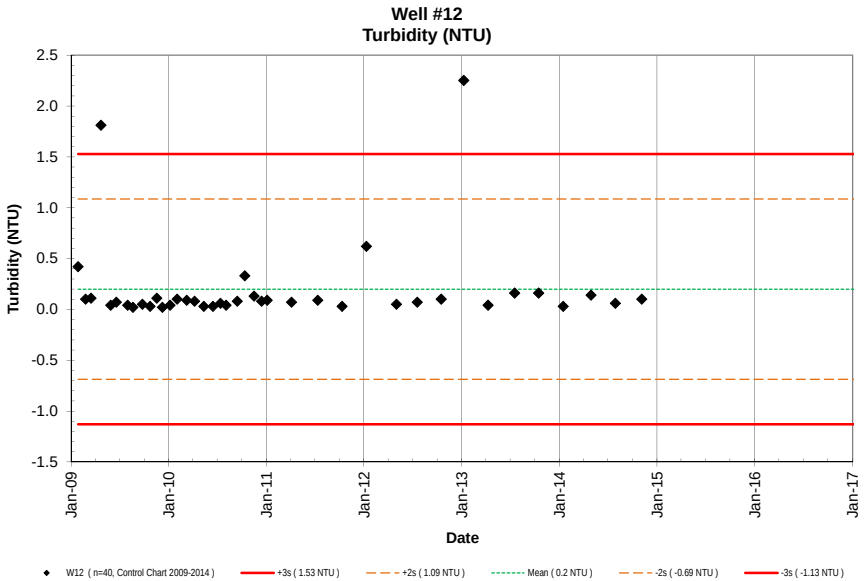

Well #12 Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W12 2009 - 2013
W12 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

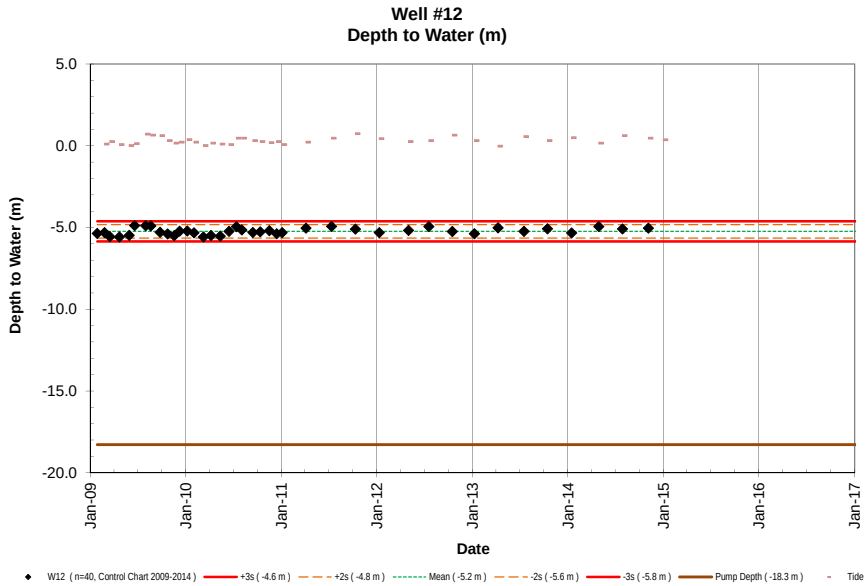

Well #12
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W12 (n=40, Control Chart 2009-2014)
+3s (2.3 mg/L)
+2s (2.1 mg/L)
Mean (1.6 mg/L)
-2s (1.2 mg/L)
-3s (0.9 mg/L)


Well #12
Temperature (˚C)
Temperature (˚C)
Date
W12 (n=40, Control Chart 2009-2014)
+3s (24.5 °C)
+2s (23.6 °C)
Mean (22.0 °C)
-2s (20.3 °C)
-3s (19.5 °C)


Well #12
pH (unit)
pH (unit)
Date
W12 (n=40, Control Chart 2009-2014)
+3s (8.12 unit)
+2s (8.02 unit)
Mean (7.82 unit)
-2s (7.62 unit)
-3s (7.52 unit)


Well #12
Salinity (PSU)
Salinity (PSU)
Date
W12 (n=40, Control Chart 2009-2014)
+3s (30.2 PSU)
+2s (29.2 PSU)
Mean (27.1 PSU)
-2s (25.0 PSU)
-3s (23.9 PSU)


Well #12
Turbidity (NTU)
Turbidity (NTU)
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W12 (n=40, Control Chart 2009-2014)
+3s (1.53 NTU)
+2s (1.09 NTU)
Mean (0.2 NTU)
-2s (-0.69 NTU)
-3s (-1.13 NTU)

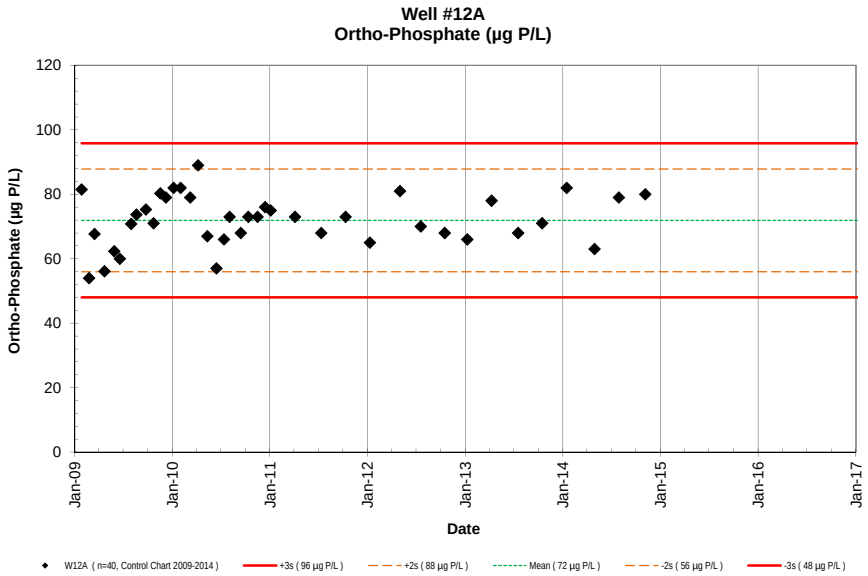

Well #12
Depth to Water (m)
Depth to Water (m)
5.0
0.0
-5.0
-10.0
-15.0
-20.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W12 (n=40, Control Chart 2009-2014)
+3s (-4.6 m)
+2s (-4.8 m)
Mean (-5.2 m)
-2s (-5.6 m)
-3s (-5.8 m)
Pump Depth (-18.3 m)
Tide

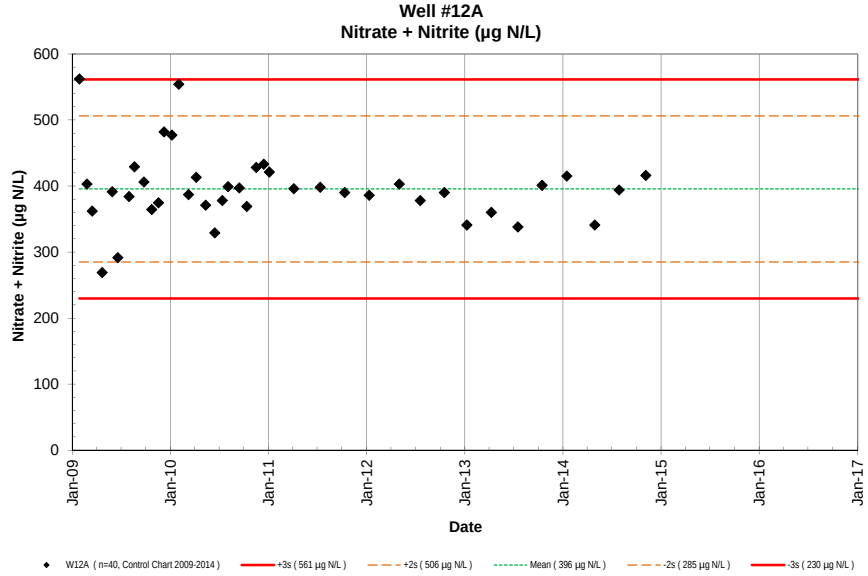
NELHA Water Quality Laboratory

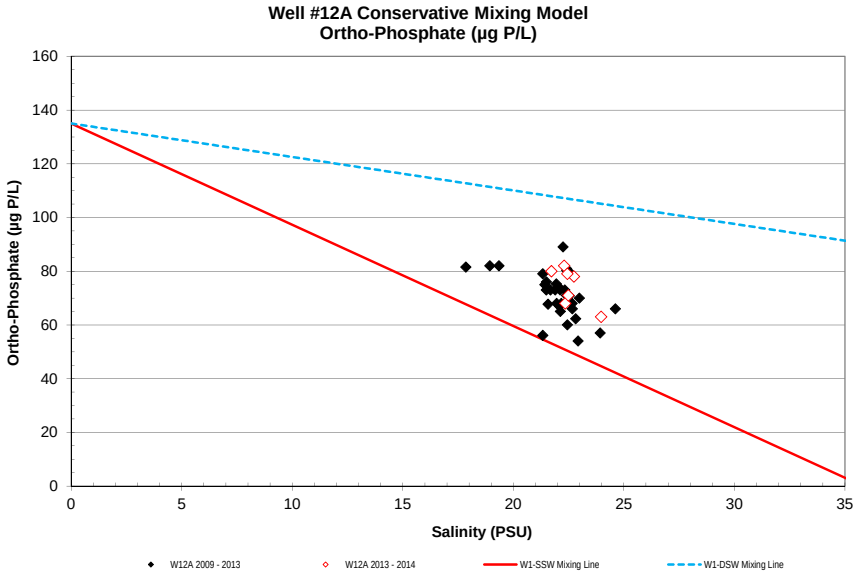
Well 12A Data Table

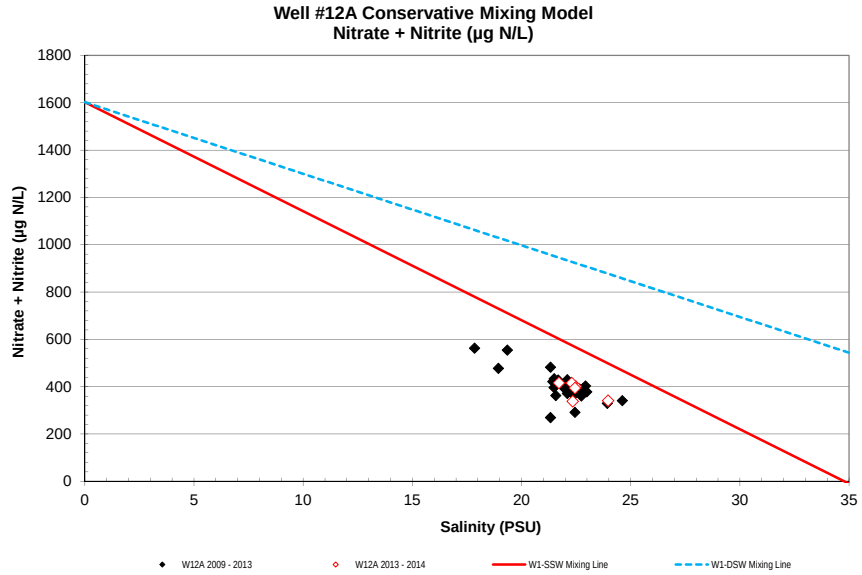
January 2009 - December 2014

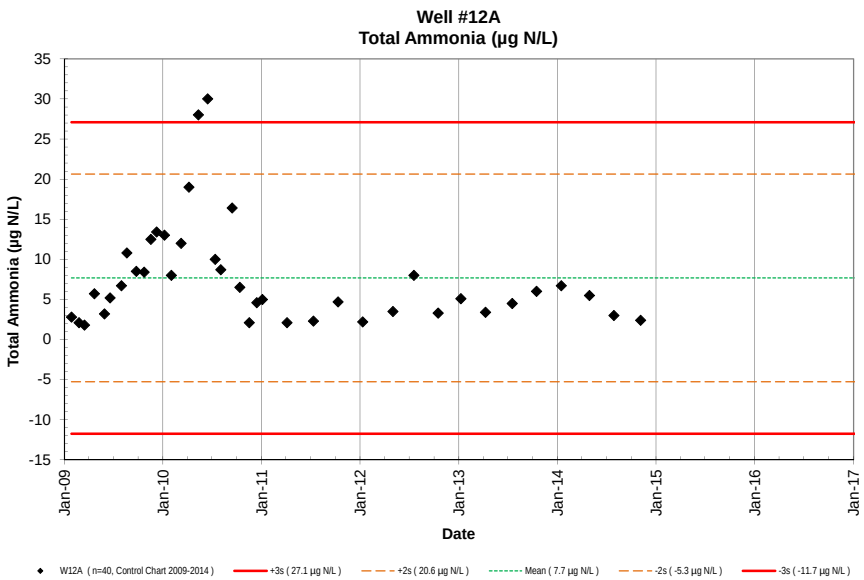
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W12A	-12.192	01/27/09	1004	-5.36	0.09	Ebb	2.63	82	40.1	562	0.20	2.8	504	14155						23.6	7.94	17.85	3.72	0.16		
W12A	-12.192	02/24/09	1421	-5.34	0.24	Flood	1.74	54	28.8	403	0.15	2.1	423	11884						22.8	7.75	22.93	2.30	0.18		
W12A	-12.192	03/16/09	1425	-5.56	0.06	Flood	2.19	68	25.8	362	0.13	1.8	379	10643						24.0	7.68	21.57	2.65	0.11		
W12A	-12.192	04/22/09	941	-5.59	0.00	Flood	1.81	56	19.2	269	0.41	5.7	280	7867						25.7	7.74	21.33	2.62	0.72		
W12A	-12.192	05/29/09	1308	-5.43	0.12	Low	2.01	62	27.9	391	0.23	3.2	541	15207						21.8	7.35	22.82	2.47	0.10		
W12A	-12.192	06/19/09	1327	-4.89	0.70	High	1.94	60	20.8	292	0.37	5.2	239	6710						21.8	7.91	22.45	2.46	0.04		
W12A	-12.192	07/31/09	1341	-4.92	0.64	High	2.29	71	27.4	384	0.48	6.7	315	8861						22.0	7.82	22.53	2.51	0.02		
W12A	-12.192	08/20/09	1425	-4.93	0.61	Flood	2.38	74	30.6	429	0.77	10.8	491	13781						21.9	7.87	22.10	2.41	0.03		
W12A	-12.192	09/24/09	1353	-5.30	0.30	Ebb	2.43	75	29.0	406	0.61	8.5	233	6539						22.0	7.95	21.95	2.64	0.02		
W12A	-12.192	10/23/09	1531	-5.49	0.15	Low	2.29	71	26.0	365	0.60	8.4	200	5631						21.9	7.83	22.40	2.64	0.05		
W12A	-12.192	11/17/09	1507	-5.47	0.21	Flood	2.59	80	26.7	375	0.89	12.5	436	12253						22.1	7.83	22.42	2.60	0.02		
W12A	-12.192	12/08/09	1208	-5.23	0.37	Ebb	2.55	79	34.4	482	0.96	13.4	479	13439						22.3	7.80	21.33	2.80	0.02		
W12A	-12.192	01/06/10	1130	-5.25	0.21	Ebb	2.65	82	34.1	477	0.93	13.0	473	13280						22.5	7.88	18.94	3.55	0.12		
W12A	-12.192	02/01/10	1116	-5.34	0.00	Ebb	2.65	82	39.6	554	0.57	8.0	445	12500						22.5	7.92	19.35	3.49	0.08		
W12A	-12.192	03/09/10	1044	-5.51	0.15	Flood	2.55	79	27.6	387	0.86	12.0	443	12454						21.7	7.83	22.62	2.68	0.03		
W12A	-12.192	04/07/10	822	-5.56	0.09	Flood	2.87	89	29.5	413	1.36	19.0	460	12917						21.5	7.78	22.25	2.63	0.11		
W12A	-12.192	05/12/10	1023	-5.55	0.06	Flood	2.16	67	26.5	371	2.00	28.0	419	11766						21.7	7.89	22.10	2.67	0.05		
W12A	-12.192	06/15/10	1607	-5.25	0.46	Flood	1.84	57	23.5	329	2.14	30.0	421	11819						21.3	7.92	23.93	2.14	0.04		
W12A	-12.192	7/13/10	1516	-4.97	0.46	Flood	2.13	66	27.0	378	0.71	10.0	476	13380						21.6	7.86	22.67	2.48	0.11		
W12A	-12.192	8/3/10	1632	-5.16	0.30	Ebb	2.36	73	28.5	399	0.62	8.7	487	13669						21.7	7.93	21.90	2.63	0.05		
W12A	-12.192	9/14/10	1636	-5.29	0.24	Low	2.20	68	28.3	397	1.17	16.4	495	13916						21.5	7.87	22.17	2.71	0.14		
W12A	-12.192	10/12/10	1659	-5.25	0.18	Low	2.36	73	26.3	369	0.46	6.5	501	14063						21.5	7.88	22.33	2.53	0.16		
W12A	-12.192	11/16/10	1538	-5.21	0.24	Ebb	2.36	73	30.6	428	0.15	2.1	510	14336						21.6	7.88	21.68	2.64	0.08		
W12A	-12.192	12/14/10	1607	-5.38	0.06	Ebb	2.45	76	30.9	433	0.33	4.6	512	14392						21.6	7.86	21.50	2.75	0.08		
W12A	-12.192	1/4/11	1547	-5.32	0.21	Flood	2.42	75	30.1	421	0.36	5.0	487	13683						21.6	7.78	21.43	2.71	0.10		
W12A	-12.192	4/5/11	1558	-5.05	0.46	Flood	2.36	73	28.3	396	0.15	2.1	454	12756						21.6	7.83	21.49	2.39	0.03		
W12A	-12.192	7/12/11	1548	-4.92	0.73	Ebb	2.20	68	28.4	398	0.16	2.3	470	13193						21.8	7.86	21.96	2.39	0.02		
W12A	-12.192	10/11/11	1533	-5.11	0.43	High	2.36	73	27.8	390	0.34	4.7	480	13491						21.8	7.85	22.12	2.67	0.05		
W12A	-12.192	1/10/12	1635	-5.32	0.24	Flood	2.10	65	27.6	386	0.16	2.2	458	12869						21.9	7.82	22.13	2.57	0.16		
W12A	-12.192	5/1/12	1612	-5.17	0.30	Ebb	2.62	81	28.8	403	0.25	3.5	511	14350						21.7	7.82	22.41	2.50	0.02		
W12A	-12.192	7/18/12	1459	-4.92	0.64	Flood	2.26	70	27.0	378	0.57	8.0	462	12977						21.6	7.92	22.99	2.53	0.04		
W12A	-12.192	10/16/12	1439	-5.25	0.30	Flood	2.20	68	27.8	390	0.24	3.3	471	13227						21.8	7.85	22.66	2.43	0.19		
W12A	-12.192	1/8/13	1545	-5.39	-0.03	Ebb	2.13	66	24.3	341	0.36	5.1	455	12766						21.4	7.79	24.62	1.95	0.36		
W12A	-12.192	4/9/13	1534	-5.04	0.55	High	2.52	78	25.7	360	0.24	3.4	467	13125						21.7	7.84	22.74	2.06	0.76		
W12A	-12.192	7/17/13	1651	-5.23	0.30	Ebb	2.20	68	24.1	338	0.32	4.5	479	13439						22.3	7.81	22.35	2.58	0.19		
W12A	-12.192	10/15/13	1520	-5.06	0.49	Ebb	2.29	71	28.6	401	0.43	6.0	462	12973						21.8	7.81	22.49	2.68	0.02		
W12A	-12.192	1/15/14	1521	-5.31	0.15	Flood	2.65	82	29.6	415	0.48	6.7	464	13035						22.1	7.88	22.30	2.87	0.02		
W12A	-12.192	4/29/14	1729	-4.98	0.61	High	2.03	63	24.3	341	0.39	5.5	421	11812						21.5	7.80	23.97	2.38	0.02		
W12A	-12.192	7/29/14	1605	-5.08	0.46	Flood	2.55	79	28.1	394	0.21	3.0	492	13817						22.2	7.77	22.45	2.74	0.03		
W12A	-12.192	11/5/14	1549	-5.03	0.36	Ebb	2.58	80	29.7	416	0.17	2.4	460	12906						22.2	7.86	21.72	2.81	0.05		
W12A	-12.192	1/1/15																								
W12A	-12.192	4/1/15																								

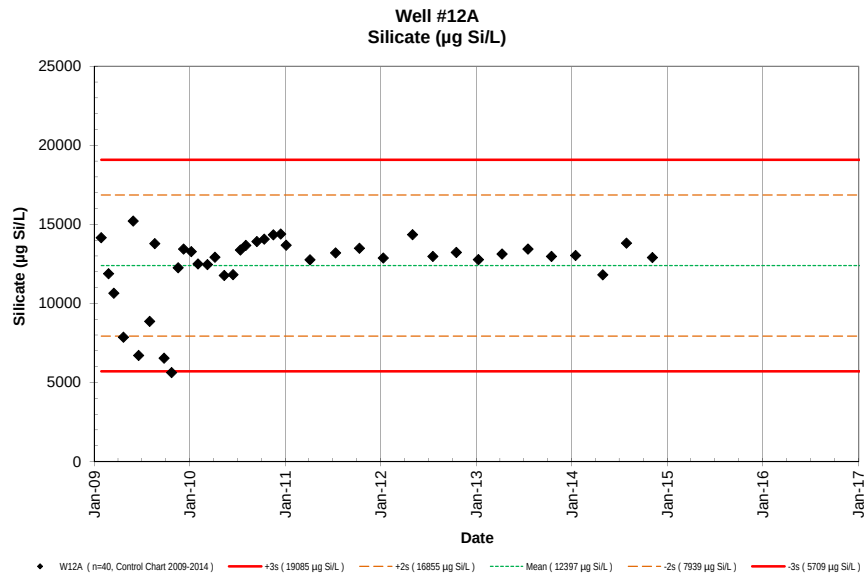

Well #12A
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W12A (n=40, Control Chart 2009-2014)
+3s (96 µg P/L)
+2s (88 µg P/L)
Mean (72 µg P/L)
-2s (56 µg P/L)
-3s (48 µg P/L)

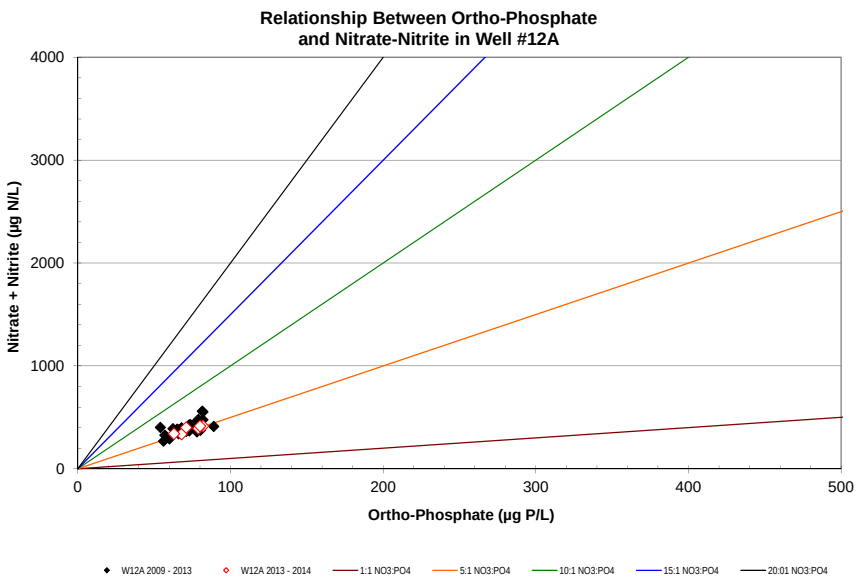

Well #12A
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W12A (n=40, Control Chart 2009-2014)
+3s (561 µg N/L)
+2s (506 µg N/L)
Mean (396 µg N/L)
-2s (285 µg N/L)
-3s (230 µg N/L)

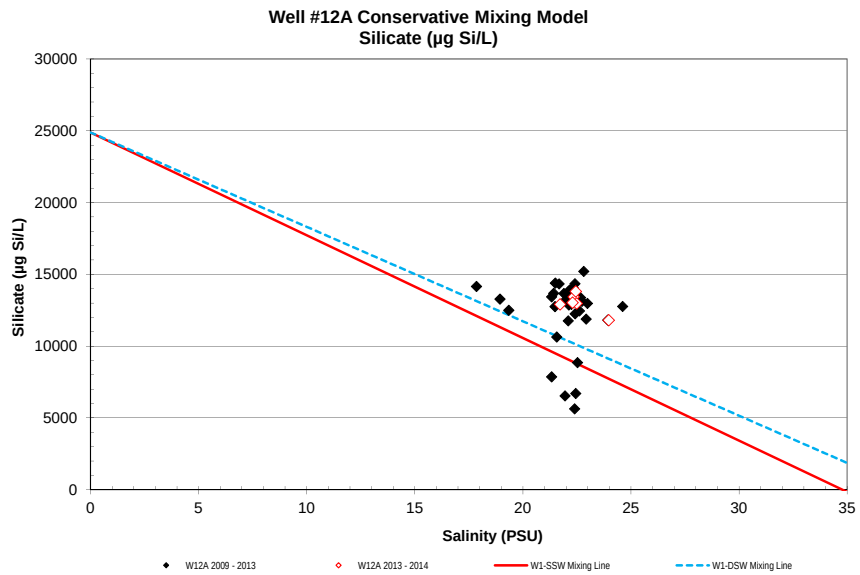

Well #12A Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W12A 2009 - 2013
W12A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

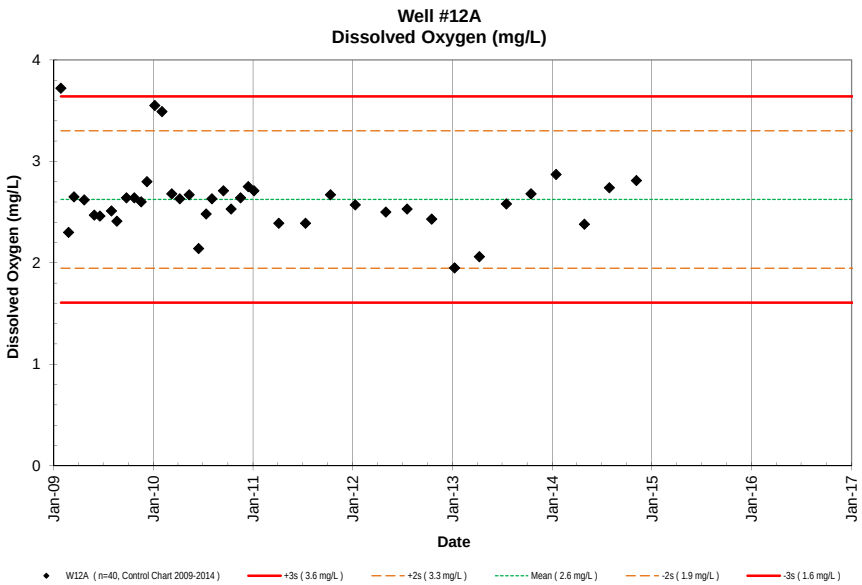

Well #12A Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W12A 2009 - 2013
W12A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

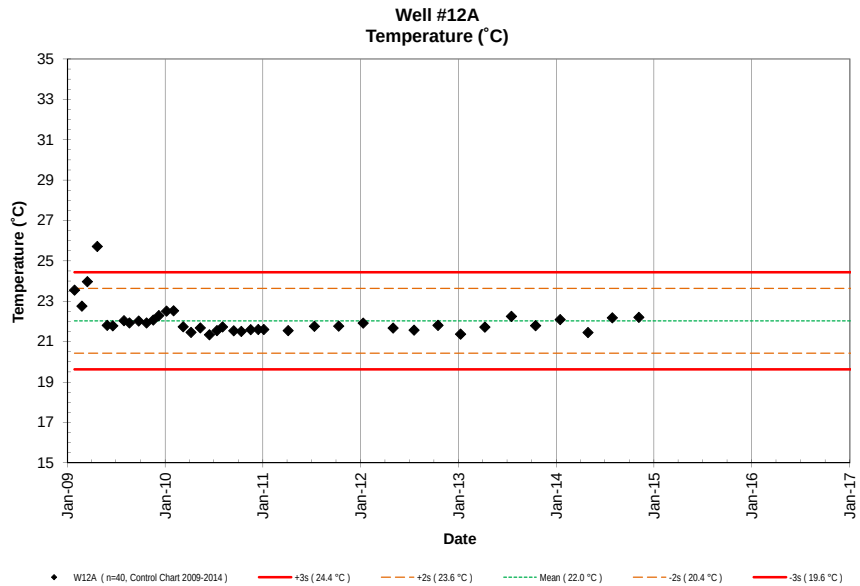

Well #12A
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
35
30
25
20
15
10
5
0
-5
-10
-15
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W12A (n=40, Control Chart 2009-2014)
+3s (27.1 µg N/L)
+2s (20.6 µg N/L)
Mean (7.7 µg N/L)
-2s (-5.3 µg N/L)
-3s (-11.7 µg N/L)

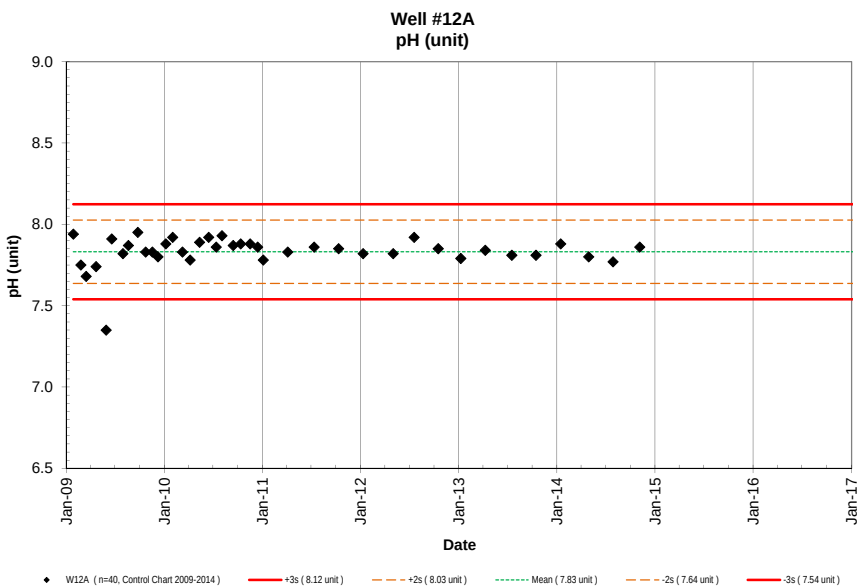

Well #12A
Silicate (µg Si/L)
Silicate (µg Si/L)
25000
20000
15000
10000
5000
0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W12A (n=40, Control Chart 2009-2014)
+3s (19085 µg Si/L)
+2s (16855 µg Si/L)
Mean (12397 µg Si/L)
-2s (7939 µg Si/L)
-3s (5709 µg Si/L)

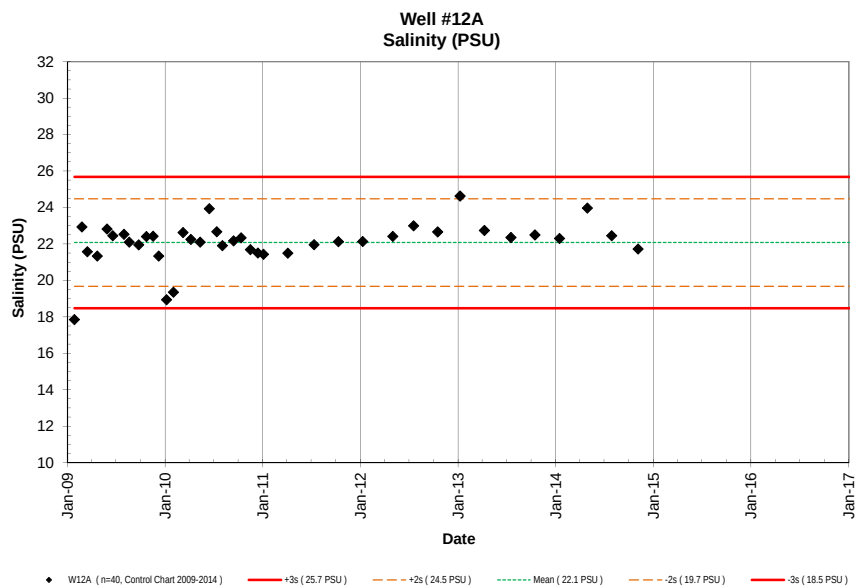

Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #12A
Nitrate + Nitrite (µg N/L)
4000
3000
2000
1000
0
0
100
200
300
400
500
Ortho-Phosphate (µg P/L)
W12A 2009 - 2013
W12A 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

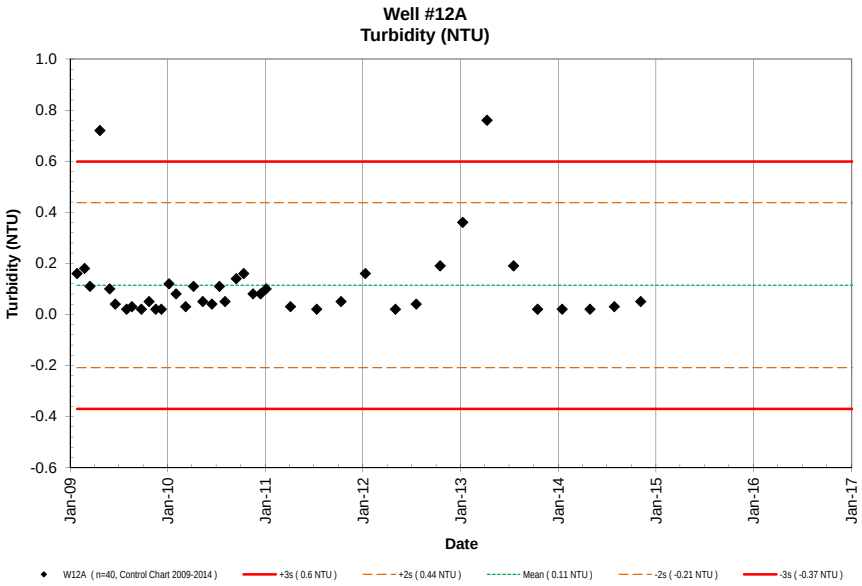

Well #12A Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
30000
25000
20000
15000
10000
5000
0
0
5
10
15
20
25
30
35
Salinity (PSU)
W12A 2009 - 2013
W12A 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

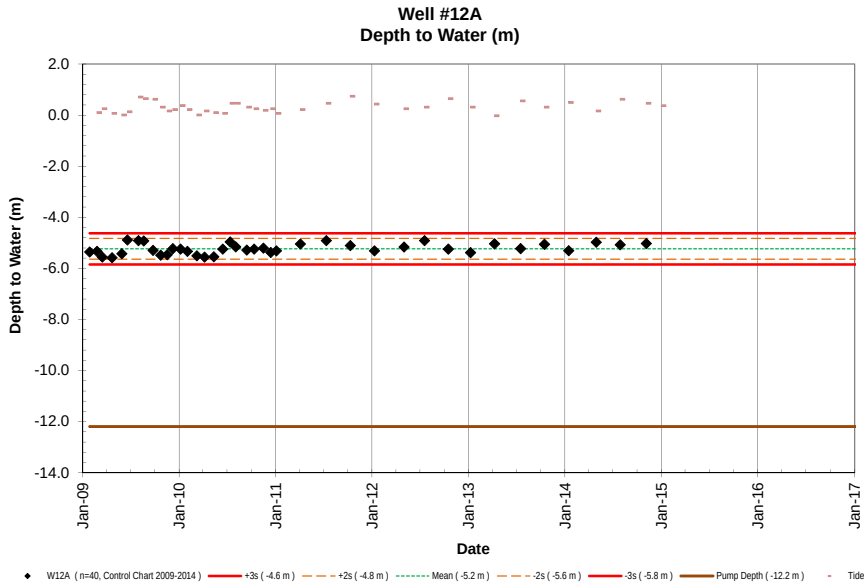

Well #12A
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W12A (n=40, Control Chart 2009-2014)
+3s (3.6 mg/L)
+2s (3.3 mg/L)
Mean (2.6 mg/L)
-2s (1.9 mg/L)
-3s (1.6 mg/L)


Well #12A
Temperature (˚C)
Temperature (˚C)
Date
W12A (n=40, Control Chart 2009-2014)
+3s (24.4 °C)
+2s (23.6 °C)
Mean (22.0 °C)
-2s (20.4 °C)
-3s (19.6 °C)


Well #12A
pH (unit)
pH (unit)
Date
W12A (n=40, Control Chart 2009-2014)
+3s (8.12 unit)
+2s (8.03 unit)
Mean (7.83 unit)
-2s (7.64 unit)
-3s (7.54 unit)


Well #12A
Salinity (PSU)
Salinity (PSU)
Date
W12A (n=40, Control Chart 2009-2014)
+3s (25.7 PSU)
+2s (24.5 PSU)
Mean (22.1 PSU)
-2s (19.7 PSU)
-3s (18.5 PSU)


Well #12A
Turbidity (NTU)
Turbidity (NTU)
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W12A (n=40, Control Chart 2009-2014)
+3s (0.6 NTU)
+2s (0.44 NTU)
Mean (0.11 NTU)
-2s (-0.21 NTU)
-3s (-0.37 NTU)

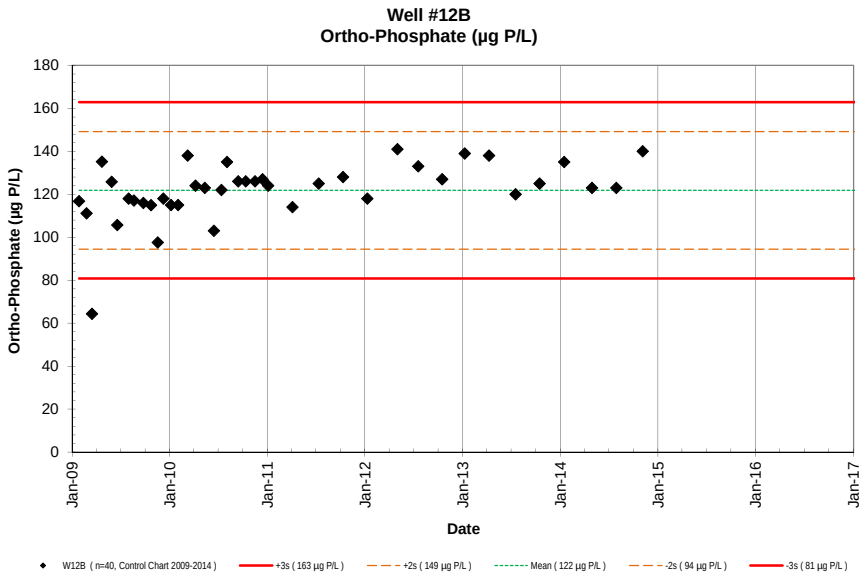

Well #12A
Depth to Water (m)
Depth to Water (m)
2.0
0.0
-2.0
-4.0
-6.0
-8.0
-10.0
-12.0
-14.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W12A (n=40, Control Chart 2009-2014)
+3s (-4.6 m)
+2s (-4.8 m)
Mean (-5.2 m)
-2s (-5.6 m)
-3s (-5.8 m)
Pump Depth (-12.2 m)
Tide

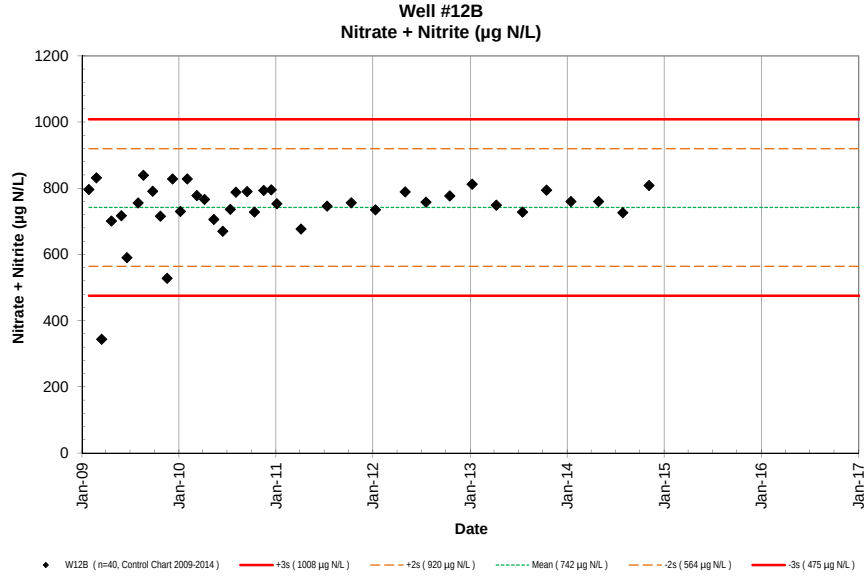
NELHA Water Quality Laboratory

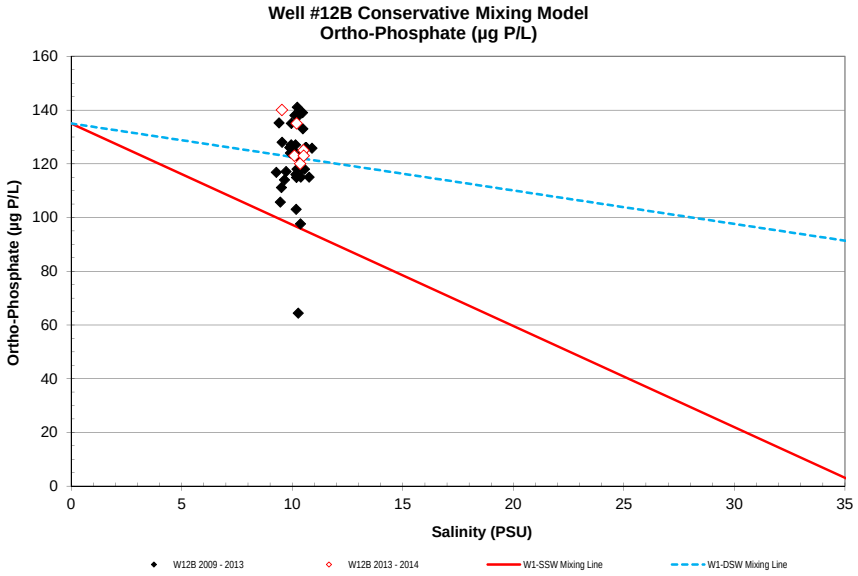
Well 12B Data Table

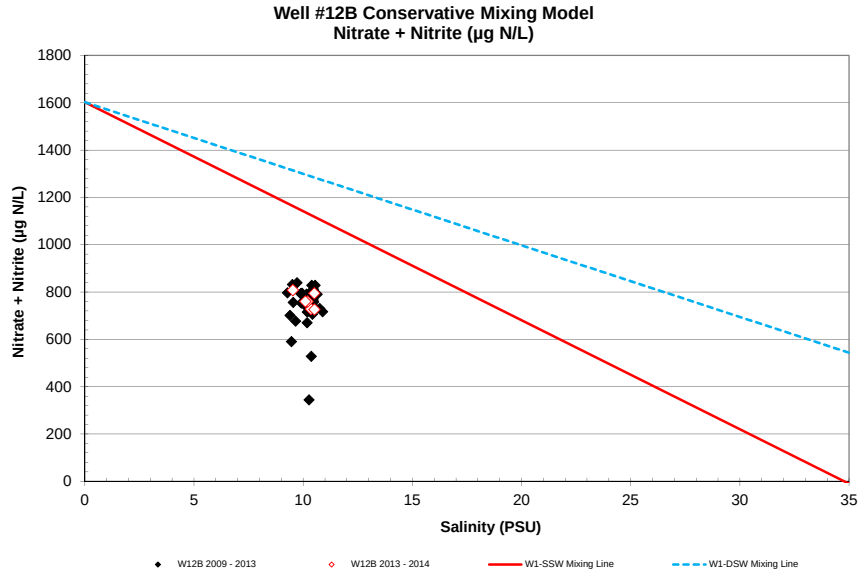
January 2009 - December 2014

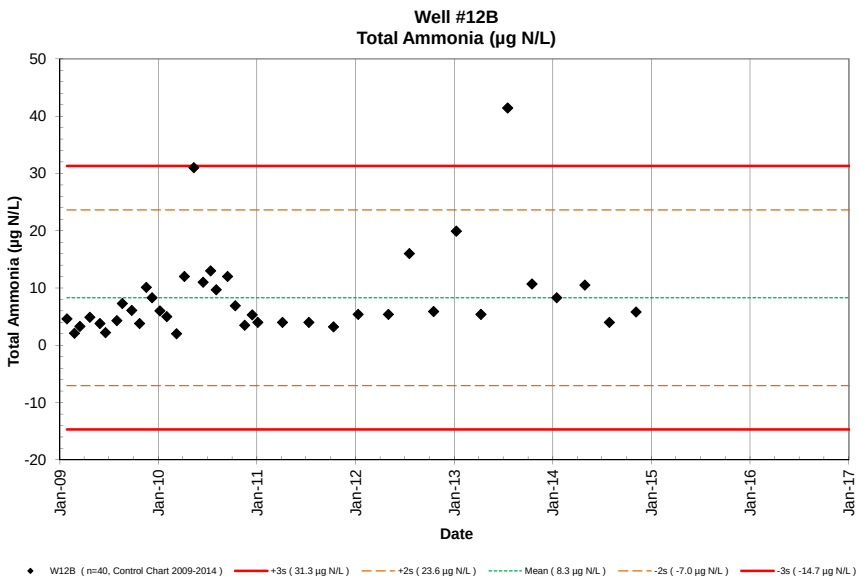
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W12B	-6.096	1/27/09	943	-5.42	0.09	Ebb	3.77	117	56.8	796	0.33	4.6	668	18752						24.1	8.09	9.28	6.54	21.60		
W12B	-6.096	2/24/09	1408	-5.38	0.24	Flood	3.59	111	59.4	832	0.15	2.1	727	20425						23.6	7.92	9.51	6.53	1.71		
W12B	-6.096	3/16/09	1410	-5.59	0.06	Flood	2.08	64	24.6	344	0.24	3.3	395	11107						25.4	7.81	10.27	6.45	15.50		
W12B	-6.096	4/22/09	1010	-5.58	0.00	Flood	4.36	135	50.1	701	0.35	4.9	628	17634						23.7	7.89	9.40	6.91	20.10		
W12B	-6.096	5/29/09	1255	-5.52	0.12	Low	4.06	126	51.2	717	0.27	3.8	756	21236						23.1	7.97	10.89	6.84	3.83		
W12B	-6.096	6/19/09	1314	-4.96	0.70	High	3.41	106	42.1	590	0.16	2.2	323	9066						22.6	8.09	9.46	6.96	0.17		
W12B	-6.096	7/31/09	1332	-4.98	0.64	High	3.81	118	53.9	756	0.31	4.3	385	10809						23.2	7.97	10.21	6.62	0.10		
W12B	-6.096	8/20/09	1412	-4.98	0.61	Flood	3.78	117	59.9	839	0.52	7.3	498	13983						22.8	8.02	9.72	6.39	0.24		
W12B	-6.096	9/24/09	1338	-5.34	0.30	Ebb	3.75	116	56.5	791	0.44	6.1	389	10928						23.1	7.92	10.16	6.69	0.10		
W12B	-6.096	10/23/09	1513	-5.48	0.15	Low	3.71	115	51.1	715	0.27	3.8	307	8622						23.3	7.97	10.19	7.14	0.27		
W12B	-6.096	11/17/09	1445	-5.52	0.21	Flood	3.15	98	37.7	528	0.72	10.1	722	20264						22.7	8.00	10.37	7.19	0.04		
W12B	-6.096	12/8/09	1158	-5.27	0.37	Ebb	3.81	118	59.1	828	0.59	8.3	664	18642						22.8	7.94	10.55	6.11	1.33		
W12B	-6.096	1/6/10	1115	-5.32	0.21	Ebb	3.71	115	52.1	730	0.43	6.0	605	17002						24.4	8.03	10.76	5.70	0.23		
W12B	-6.096	2/1/10	1050	-5.41	0.00	Ebb	3.71	115	59.1	828	0.36	5.0	662	18594						25.2	8.04	10.39	7.57	7.45		
W12B	-6.096	3/9/10	1033	-5.65	0.15	Flood	4.46	138	55.5	778	0.14	2.0	660	18535						22.7	7.96	10.12	6.72	0.04		
W12B	-6.096	4/7/10	817	-5.59	0.09	Flood	4.00	124	54.7	766	0.86	12.0	572	16063						22.1	8.02	10.46	6.93	0.23		
W12B	-6.096	5/12/10	1016	-5.60	0.06	Flood	3.97	123	50.4	706	2.21	31.0	730	20506						22.3	8.08	10.42	7.16	0.15		
W12B	-6.096	6/15/10	1558	-5.31	0.46	Flood	3.33	103	47.8	670	0.79	11.0	603	16933						22.2	8.05	10.18	7.46	0.15		
W12B	-6.096	7/13/10	1509	-5.02	0.46	Flood	3.94	122	52.5	736	0.93	13.0	720	20218						22.5	8.02	10.33	6.79	0.25		
W12B	-6.096	8/3/10	1637	-5.23	0.30	Ebb	4.36	135	56.3	788	0.69	9.7	763	21425						22.5	8.05	9.96	6.85	0.18		
W12B	-6.096	9/14/10	1642	-5.32	0.24	Low	4.07	126	56.4	790	0.86	12.0	768	21577						22.3	8.01	10.64	7.04	0.30		
W12B	-6.096	10/12/10	1708	-5.34	0.18	Low	4.07	126	52.0	728	0.49	6.9	804	22592						22.3	8.03	10.60	6.79	0.15		
W12B	-6.096	11/16/10	1547	-5.26	0.24	Ebb	4.07	126	56.6	793	0.25	3.5	795	22328						22.4	8.00	9.89	6.92	0.32		
W12B	-6.096	12/14/10	1614	-5.43	0.06	Ebb	4.10	127	56.8	795	0.38	5.3	801	22486						22.4	8.00	9.95	6.79	0.80		
W12B	-6.096	1/4/11	1554	-5.37	0.21	Flood	4.00	124	53.8	753	0.29	4.0	735	20638						22.3	7.93	9.92	6.80	0.10		
W12B	-6.096	4/5/11	1604	-5.10	0.46	Flood	3.68	114	48.3	677	0.29	4.0	633	17766						22.2	7.98	9.65	5.99	0.14		
W12B	-6.096	7/12/11	1540	-4.98	0.73	Ebb	4.04	125	53.3	746	0.29	4.0	718	20155						22.5	8.03	10.05	6.66	0.07		
W12B	-6.096	10/11/11	1542	-5.16	0.43	High	4.13	128	54.0	756	0.23	3.2	733	20595						22.6	8.00	9.54	7.20	0.04		
W12B	-6.096	1/10/12	1628	-5.37	0.24	Flood	3.81	118	52.5	735	0.39	5.4	687	19286						22.7	7.96	10.42	6.68	0.27		
W12B	-6.096	5/1/12	1620	-5.22	0.30	Ebb	4.55	141	56.3	789	0.39	5.4	794	22296						22.3	8.02	10.23	6.74	0.09		
W12B	-6.096	7/18/12	1504	-4.94	0.64	Flood	4.29	133	54.1	758	1.14	16.0	725	20374						22.4	8.03	10.48	7.12	0.16		
W12B	-6.096	10/16/12	1431	-5.32	0.30	Flood	4.10	127	55.5	777	0.42	5.9	703	19738						22.6	8.04	10.15	7.09	0.09		
W12B	-6.096	1/8/13	1552	-5.42	-0.03	Ebb	4.49	139	58.0	812	1.42	19.9	798	22410						22.4	7.92	10.47	6.87	0.12		
W12B	-6.096	4/9/13	1542	-5.09	0.55	High	4.46	138	53.5	749	0.39	5.4	774	21733						22.4	7.99	10.30	5.75	0.06		
W12B	-6.096	7/17/13	1701	-5.30	0.30	Ebb	3.87	120	52.0	728	2.96	41.4	720	20217						23.0	7.95	10.36	6.67	0.58		
W12B	-6.096	10/15/13	1526	-5.14	0.49	Ebb	4.04	125	56.7	794	0.76	10.7	742	20848						22.7	7.90	10.51	6.84	0.02		
W12B	-6.096	1/15/14	1529	-5.38	0.15	Flood	4.36	135	54.3	760	0.59	8.3	697	19569						22.9	8.00	10.20	7.06	0.02		
W12B	-6.096	4/29/14	1720	-5.05	0.61	High	3.97	123	54.3	760	0.75	10.5	714	20055						22.4	7.98	10.10	7.37	0.09		
W12B	-6.096	7/29/14	1614	-5.19	0.46	Flood	3.97	123	51.8	726	0.29	4.0	704	19770						23.0	7.93	10.52	6.97	0.09		
W12B	-6.096	11/5/14	1558	-5.09	0.36	Ebb	4.52	140	57.7	808	0.41	5.8	729	20474						23.0	7.99	9.53	7.33	0.11		
W12B	-6.096	1/1/15																								
W12B	-6.096	4/1/15																								

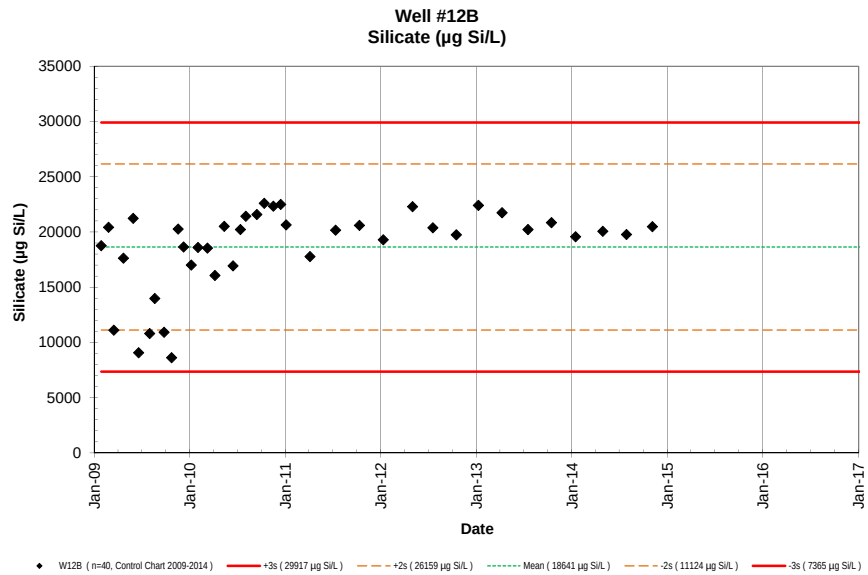

Well #12B
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W12B (n=40, Control Chart 2009-2014)
+3s (163 µg P/L)
+2s (149 µg P/L)
Mean (122 µg P/L)
-2s (94 µg P/L)
-3s (81 µg P/L)

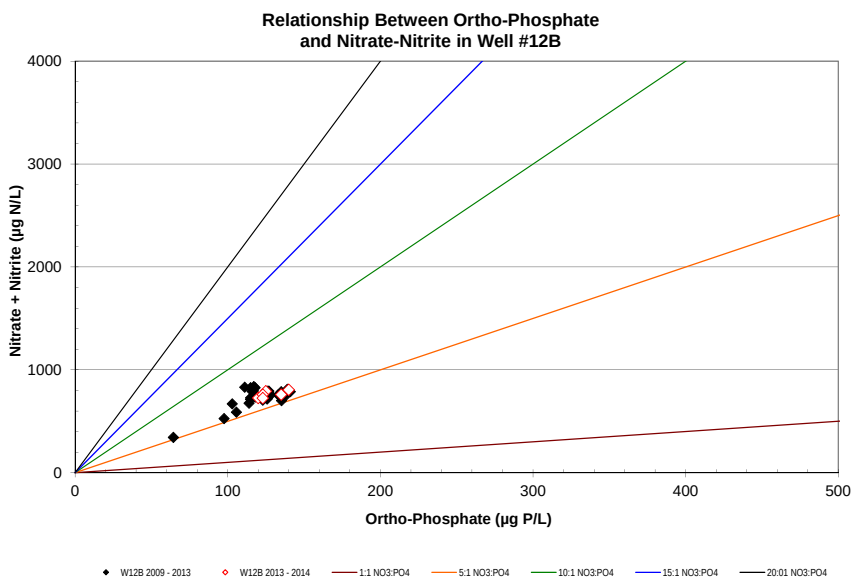

Well #12B
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W12B (n=40, Control Chart 2009-2014)
+3s (1008 µg N/L)
+2s (920 µg N/L)
Mean (742 µg N/L)
-2s (564 µg N/L)
-3s (475 µg N/L)

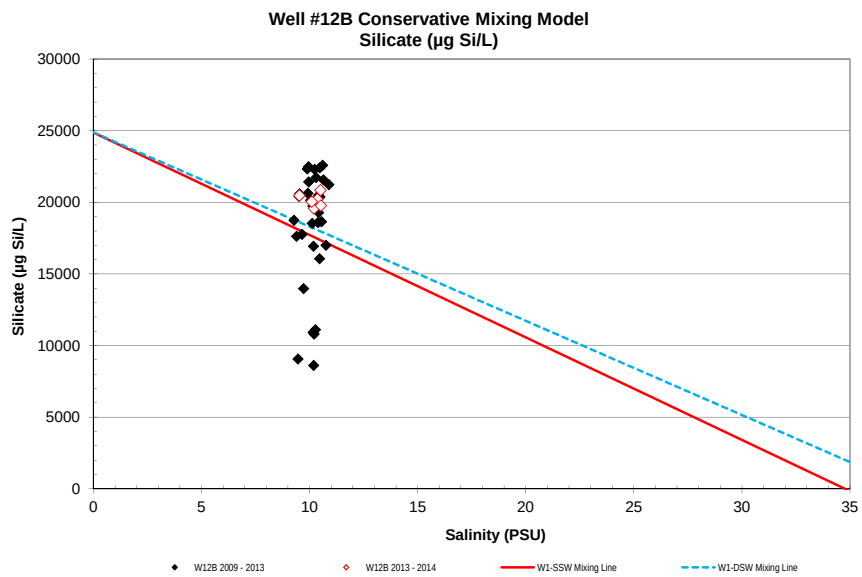

Well #12B Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W12B 2009 - 2013
W12B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

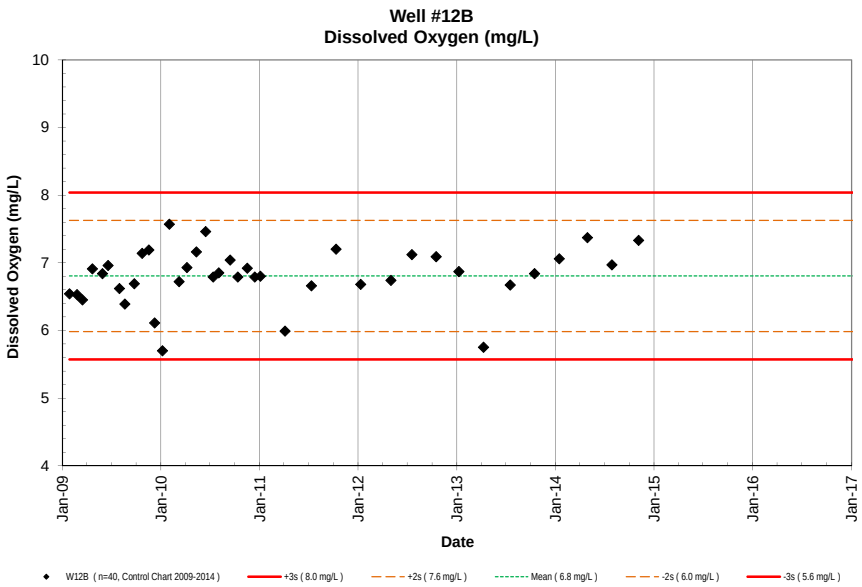

Well #12B Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W12B 2009 - 2013
W12B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

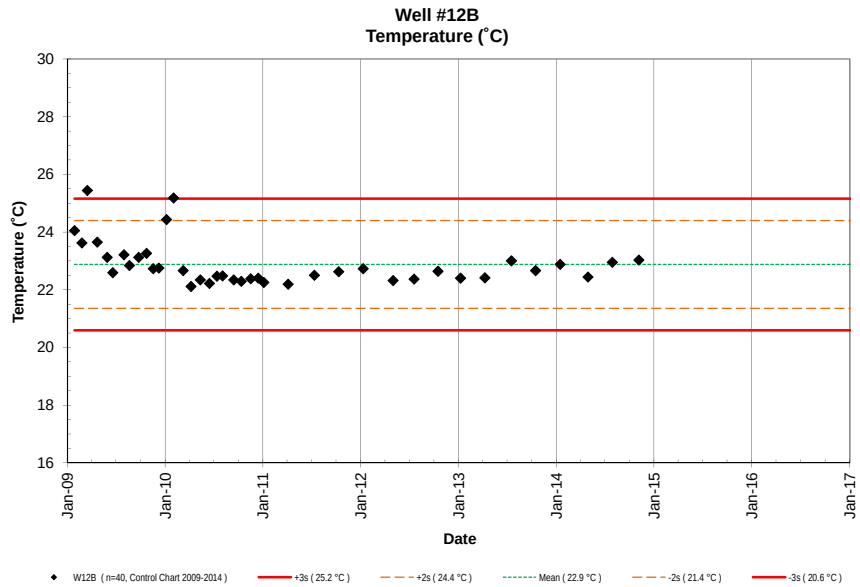

Well #12B
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
W12B (n=40, Control Chart 2009-2014)
+3s (31.3 µg N/L)
+2s (23.6 µg N/L)
Mean (8.3 µg N/L)
-2s (-7.0 µg N/L)
-3s (-14.7 µg N/L)

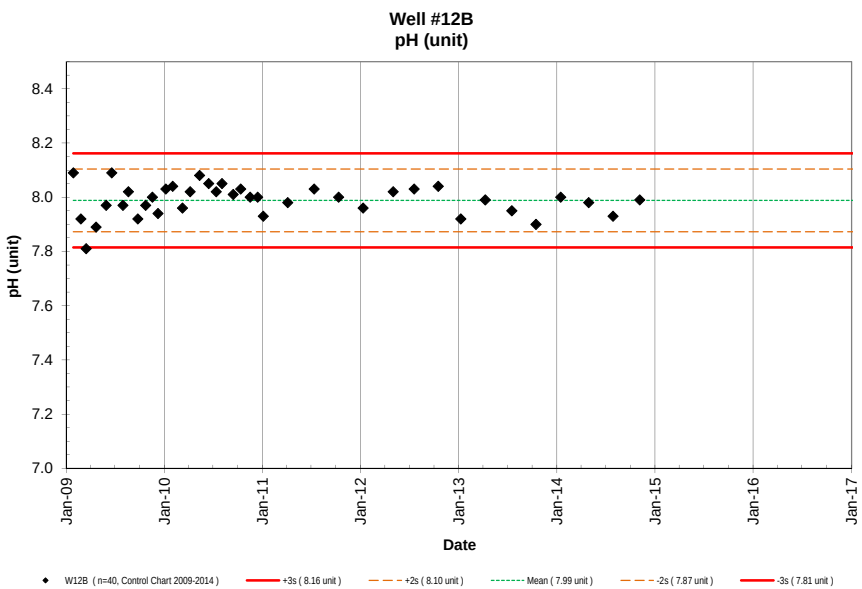

Well #12B
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
W12B (n=40, Control Chart 2009-2014)
+3s (29917 µg Si/L)
+2s (26159 µg Si/L)
Mean (18641 µg Si/L)
-2s (11124 µg Si/L)
-3s (7365 µg Si/L)

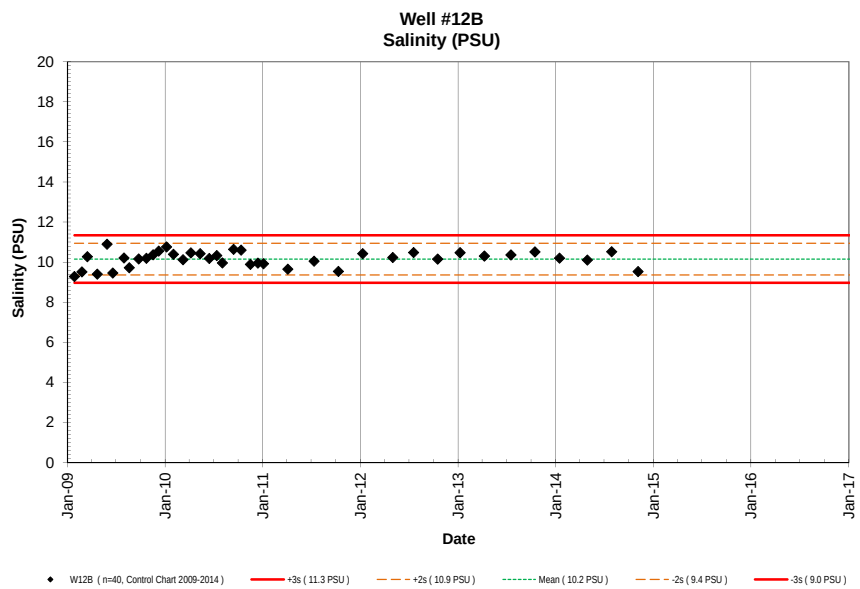

Relationship Between Ortho-Phosphate
and Nitrate-Nitrite in Well #12B
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
W12B 2009 - 2013
W12B 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4


Well #12B Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
W12B 2009 - 2013
W12B 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

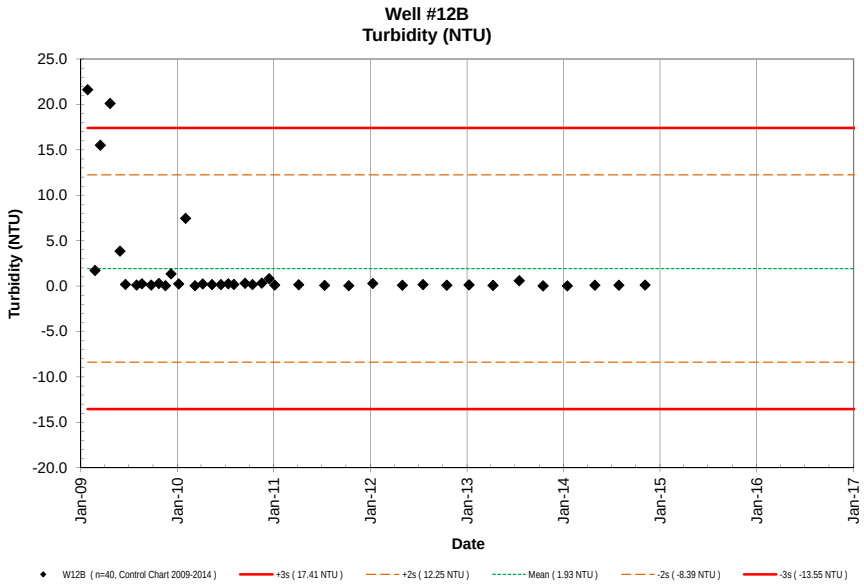

Well #12B
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W12B (n=40, Control Chart 2009-2014)
+3s (8.0 mg/L)
+2s (7.6 mg/L)
Mean (6.8 mg/L)
-2s (6.0 mg/L)
-3s (5.6 mg/L)

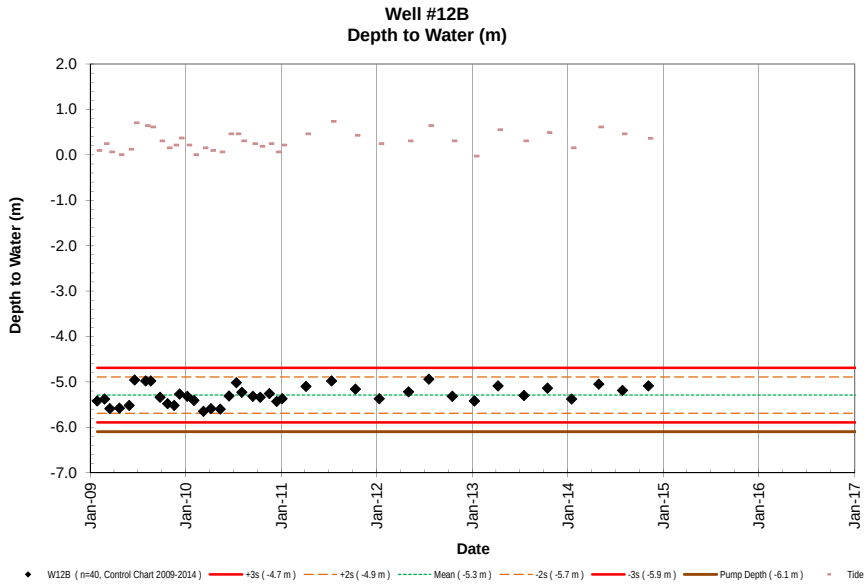

Well #12B
Temperature (˚C)
Temperature (˚C)
Date
W12B (n=40, Control Chart 2009-2014)
+3s (25.2 °C)
+2s (24.4 °C)
Mean (22.9 °C)
-2s (21.4 °C)
-3s (20.6 °C)


Well #12B
pH (unit)
pH (unit)
Date
W12B (n=40, Control Chart 2009-2014)
+3s (8.16 unit)
+2s (8.10 unit)
Mean (7.99 unit)
-2s (7.87 unit)
-3s (7.81 unit)


Well #12B
Salinity (PSU)
Salinity (PSU)
Date
W12B (n=40, Control Chart 2009-2014)
+3s (11.3 PSU)
+2s (10.9 PSU)
Mean (10.2 PSU)
-2s (9.4 PSU)
-3s (9.0 PSU)

Not


Well #12B
Turbidity (NTU)
Turbidity (NTU)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W12B (n=40, Control Chart 2009-2014)
+3s (17.41 NTU)
+2s (12.25 NTU)
Mean (1.93 NTU)
-2s (-8.39 NTU)
-3s (-13.55 NTU)

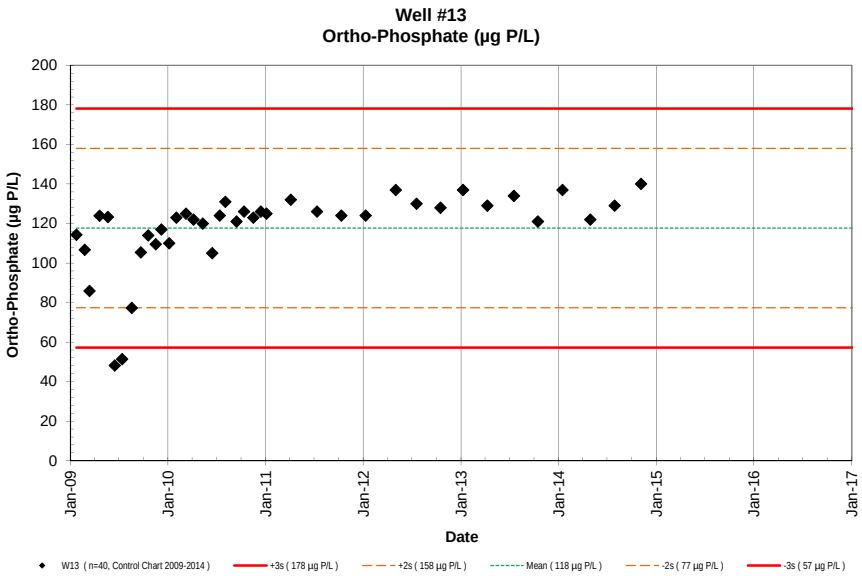

Well #12B
Depth to Water (m)
Depth to Water (m)
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
-6.0
-7.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W12B (n=40, Control Chart 2009-2014)
+3s (-4.7 m)
+2s (-4.9 m)
Mean (-5.3 m)
-2s (-5.7 m)
-3s (-5.9 m)
Pump Depth (-6.1 m)
Tide

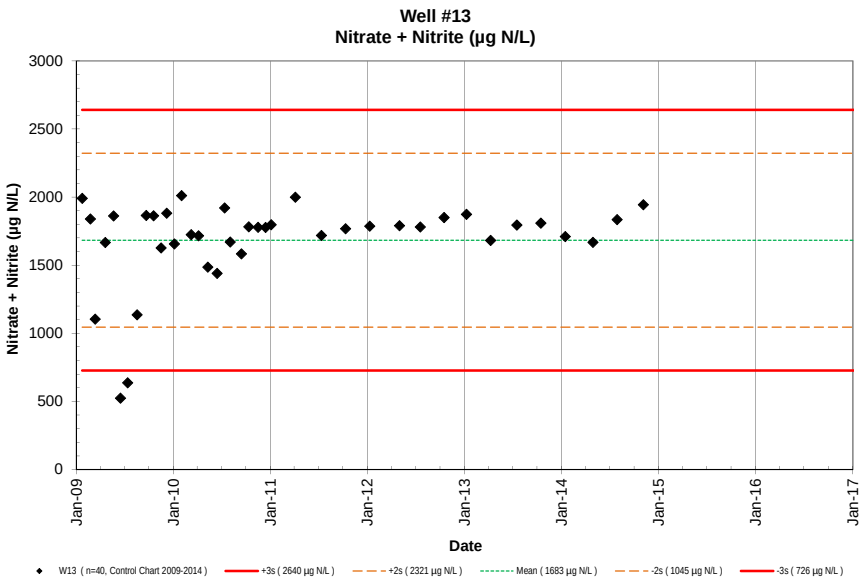
NELHA Water Quality Laboratory

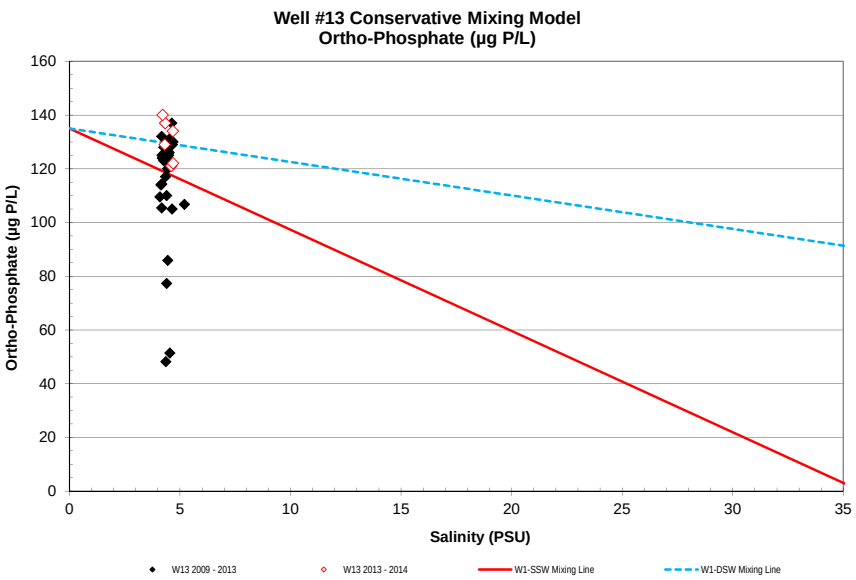
Well 13 Data Table

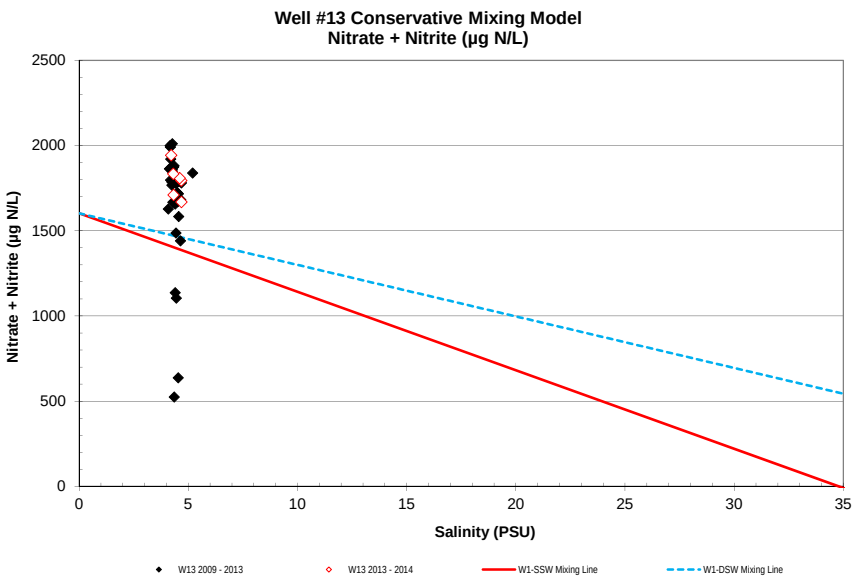
January 2009 - December 2014

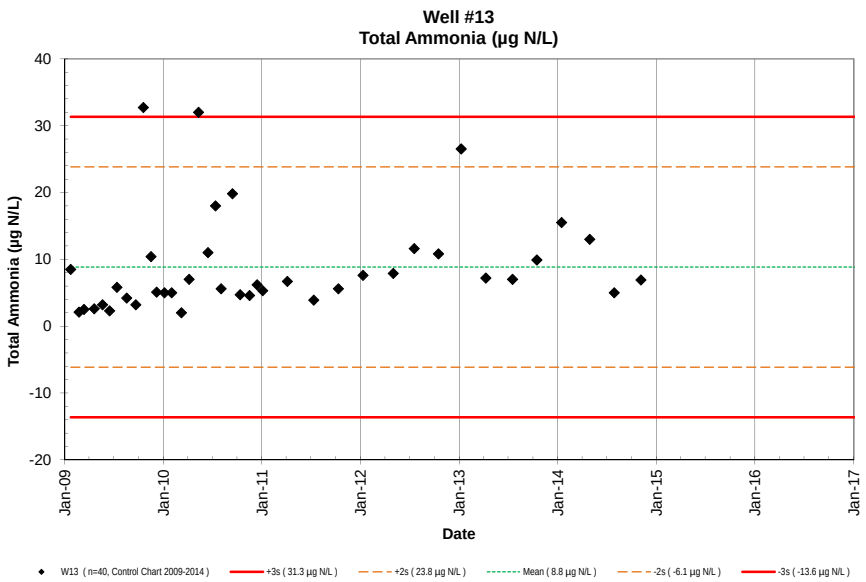
Site	Pump Depth (m)	Date M/D/Y	Time (2400)	Depth to H_2O (m)	Tide (m)	Tide (cycle)	PO_4^{3-} (µM)	PO_4^{3-} (µg P/L)	NO_3^- & NO_2^- (µM)	NO_3^- & NO_2^- (µg N/L)	NH_4^+ & NH_3 (µM)	NH_4^+ & NH_3 (µg N/L)	Si (µM)	Si (µg Si/L)	TDP (µM)	TDP (µg P/L)	TDN (µM)	TDN (µg N/L)	TOC (mgC/L)	Temp. (˚C)	pH (unit)	Salinity (PSU)	DO (mg/L)	Turbidity NTU	Fecal Col. CFU/100ml	Entero. CFU/100ml
W13	-45.72	01/23/09	945	-39.2	0.12	Ebb	3.69	114	142.1	1990	0.61	8.5	651	18279						23.8	8.03	4.18	7.95	6.62		
W13	-45.72	02/23/09	1110	-39.2	0.06	Low	3.44	107	131.3	1839	0.15	2.1	718	20169						23.2	7.86	5.20	7.95	0.25		
W13	-45.72	03/13/09	1052	-39.3	-0.03	Ebb	2.77	86	78.9	1105	0.18	2.5	609	17106						22.6	7.86	4.45	8.17	0.88		
W13	-45.72	04/20/09	942	-39.2	0.06	Flood	4.00	124	119.0	1666	0.19	2.6	570	16007						23.4	7.83	4.29	8.07	3.51		
W13	-45.72	05/21/09	914	-39.3	0.00	Flood	3.98	123	132.9	1861	0.23	3.2	871	24466						25.6	8.07	4.27	7.53	0.80		
W13	-45.72	06/16/09	847	-39.2	0.21	Flood	1.56	48	37.4	524	0.16	2.3	426	11973						25.8	7.90	4.36	7.51	0.39		
W13	-45.72	07/13/09	1033	-39.0	0.37	Ebb	1.66	51	45.5	637	0.41	5.8	223	6252						24.0	8.00	4.54	7.65	0.21		
W13	-45.72	08/18/09	829	-39.2	0.00	Low	2.50	77	81.1	1136	0.30	4.2	518	14537						23.2	7.99	4.40	8.01	7.35		
W13	-45.72	09/21/09	938	-39.0	0.37	Ebb	3.40	105	133.1	1865	0.23	3.2	294	8256						25.7	8.01	4.17	7.78	0.81		
W13	-45.72	10/19/09	931	-39.1	0.34	Ebb	3.68	114	133.0	1863	2.33	32.7	341	9568						22.5	8.25	4.14	8.35	0.11		
W13	-45.72	11/16/09	907	-39.1	0.21	Ebb	3.54	110	116.2	1627	0.74	10.4	565	15882						22.8	8.07	4.09	8.10	0.16		
W13	-45.72	12/07/09	1013	-39.0	0.52	Ebb	3.78	117	134.3	1881	0.36	5.1	683	19180						22.1	7.93	4.35	7.48	0.10		
W13	-45.72	01/05/10	956	-39.0	0.40	Ebb	3.55	110	118.2	1656	0.36	5.0	615	17286						22.4	8.01	4.40	7.87	0.16		
W13	-45.72	02/01/10	950	-38.9	0.15	Ebb	3.97	123	143.5	2010	0.36	5.0	646	18148						22.2	8.03	4.27	8.19	0.18		
W13	-45.72	03/09/10	901	-39.2	0.09	Low	4.04	125	123.1	1724	0.14	2.0	642	18041						22.1	7.96	4.49	7.84	0.17		
W13	-45.72	04/06/10	839	-39.2	0.24	Low	3.94	122	122.5	1716	0.50	7.0	635	17837						23.2	7.95	4.55	8.17	0.09		
W13	-45.72	05/11/10	856	-39.3	-0.03	Low	3.87	120	106.1	1486	2.28	32.0	586	16471						22.2	8.07	4.44	8.30	0.12		
W13	-45.72	06/15/10	940	-39.2	0.12	Ebb	3.39	105	102.8	1440	0.79	11.0	676	18994						22.9	8.04	4.64	7.94	0.06		
W13	-45.72	7/13/10	910	-39.1	0.06	Ebb	4.00	124	137.1	1920	1.29	18.0	794	22312						23.3	8.06	4.20	8.06	0.16		
W13	-45.72	8/3/10	907	-39.0	0.40	Flood	4.23	131	119.2	1670	0.40	5.6	806	22636						23.2	8.02	4.52	8.01	0.28		
W13	-45.72	9/14/10	901	-39.0	0.55	Flood	3.91	121	113.0	1583	1.41	19.8	801	22503						23.3	7.98	4.56	7.74	0.16		
W13	-45.72	10/12/10	908	-38.9	0.64	Ebb	4.07	126	127.2	1781	0.34	4.7	837	23508						23.3	8.02	4.32	8.22	0.12		
W13	-45.72	11/16/10	841	-39.0	0.24	Flood	3.97	123	126.9	1778	0.33	4.6	816	22912						23.0	7.96	4.45	7.63	0.11		
W13	-45.72	12/14/10	903	-39.0	0.34	Flood	4.07	126	126.9	1777	0.44	6.2	837	23495						22.9	7.97	4.45	8.01	0.09		
W13	-45.72	1/4/11	905	-39.0	0.24	Ebb	4.04	125	128.3	1797	0.38	5.3	770	21635						22.9	7.93	4.19	8.32	0.08		
W13	-45.72	4/5/11	945	-39.2	-0.03	Ebb	4.26	132	142.7	1999	0.48	6.7	719	20182						23.1	7.99	4.17	7.19	0.06		
W13	-45.72	7/12/11	855	-39.4	0.00	Flood	4.07	126	122.7	1718	0.28	3.9	741	20821						22.7	7.98	4.51	7.72	0.04		
W13	-45.72	10/11/11	917	-39.0	0.12	Low	4.00	124	126.2	1767	0.40	5.6	736	20674						22.9	7.97	4.25	8.27	0.09		
W13	-45.72	1/10/12	916	-39.0	0.30	Ebb	4.00	124	127.5	1786	0.54	7.6	717	20126						22.9	7.96	4.25	8.25	0.14		
W13	-45.72	5/1/12	926	-39.2	0.09	Flood	4.42	137	127.8	1790	0.56	7.9	810	22753						23.0	7.95	4.63	7.92	0.16		
W13	-45.72	7/18/12	852	-39.3	0.00	Ebb	4.20	130	127.1	1780	0.83	11.6	698	19594						22.2	7.95	4.69	8.38	0.18		
W13	-45.72	10/16/12	922	-39.0	0.24	Ebb	4.13	128	132.1	1850	0.77	10.8	730	20500						22.3	7.99	4.27	8.35	0.07		
W13	-45.72	1/8/13	951	-38.9	0.09	Low	4.42	137	133.7	1873	1.89	26.5	801	22493						22.3	7.90	4.33	8.30	0.10		
W13	-45.72	4/9/13	922	-39.2	-0.09	Low	4.16	129	120.1	1682	0.51	7.2	759	21327						22.5	7.96	4.66	8.36	0.07		
W13	-45.72	7/17/13	943	-39.2	0.37	Flood	4.33	134	128.1	1794	0.50	7.0	732	20569						21.8	7.86	4.68	7.76	0.13		
W13	-45.72	10/15/13	920	-38.9	0.21	Flood	3.91	121	129.1	1808	0.71	9.9	748	21010						22.2	7.82	4.61	7.48	0.04		
W13	-45.72	1/15/14	854	-39.0	0.18	Ebb	4.42	137	122.1	1710	1.11	15.5	685	19225						21.7	8.00	4.33	8.49	0.02		
W13	-45.72	4/29/14	1007	-39.3	-0.06	Low	3.94	122	119.1	1668	0.93	13.0	727	20407						21.7	7.88	4.69	8.25	0.05		
W13	-45.72	7/29/14	946	-39.1	0.15	Ebb	4.16	129	130.9	1834	0.36	5.0	737	20690						22.2	7.93	4.31	8.42	0.06		
W13	-45.72	11/5/14	939	-39.0	0.13	Low	4.52	140	138.7	1943	0.49	6.9	742	20828						22.2	8.05	4.22	8.75	0.09		
W13	-45.72	1/1/15																								
W13	-45.72	4/1/15																								

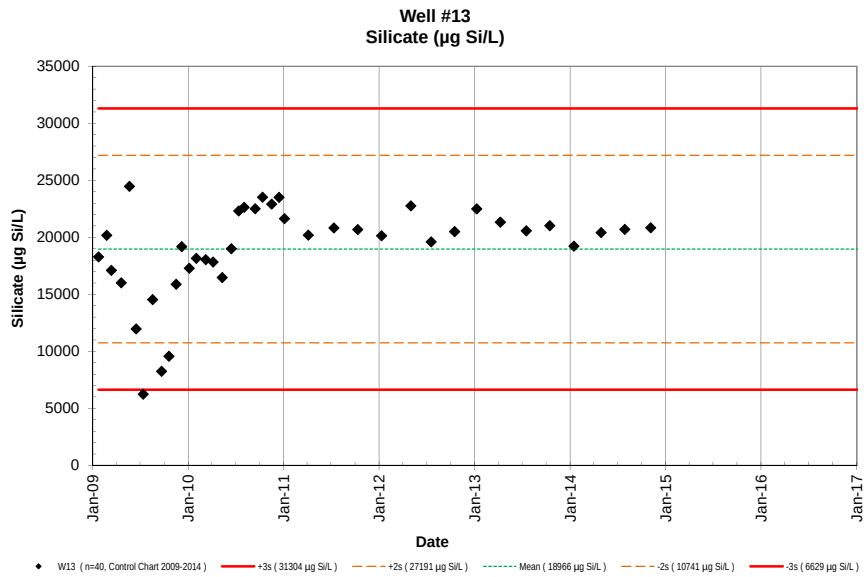

Well #13
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
W13 (n=40, Control Chart 2009-2014)
+3s (178 µg P/L)
+2s (158 µg P/L)
Mean (118 µg P/L)
-2s (77 µg P/L)
-3s (57 µg P/L)

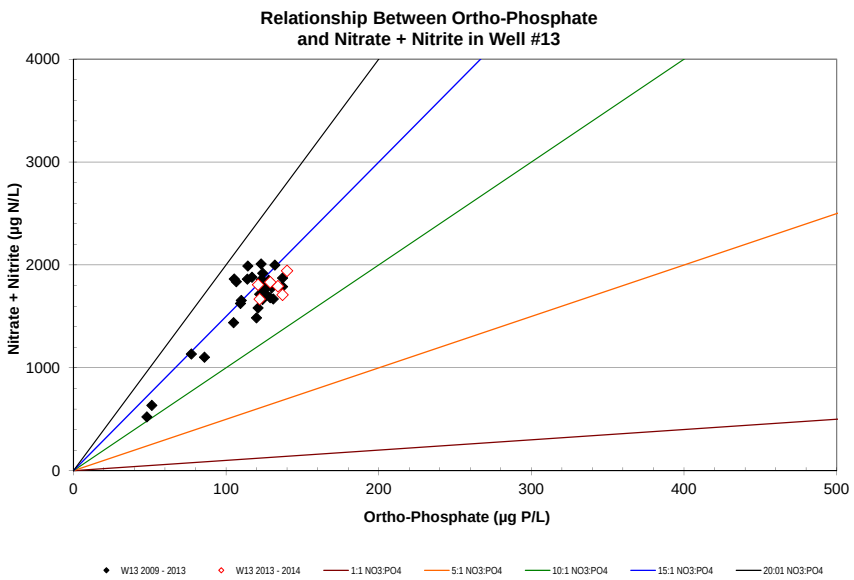

Well #13
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
W13 (n=40, Control Chart 2009-2014)
+3s (2640 µg N/L)
+2s (2321 µg N/L)
Mean (1683 µg N/L)
-2s (1045 µg N/L)
-3s (726 µg N/L)

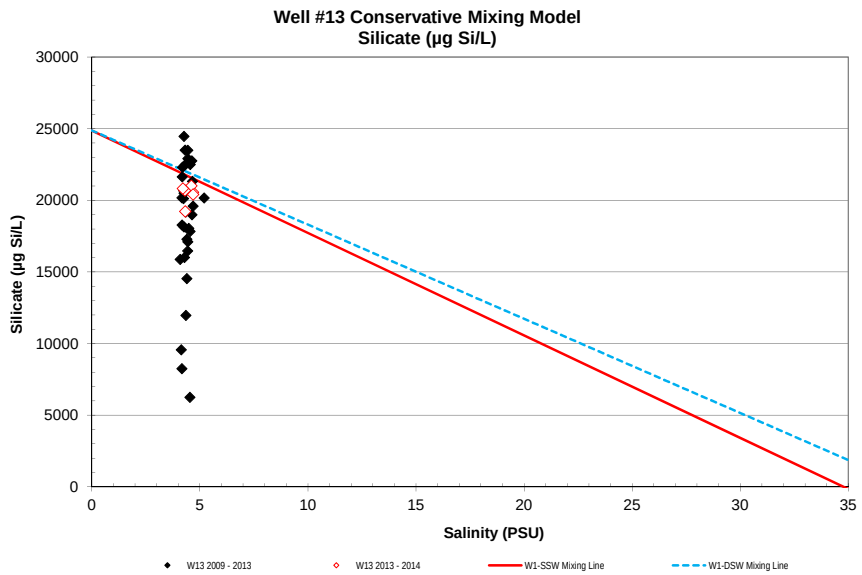

Well #13 Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
W13 2009 - 2013
W13 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

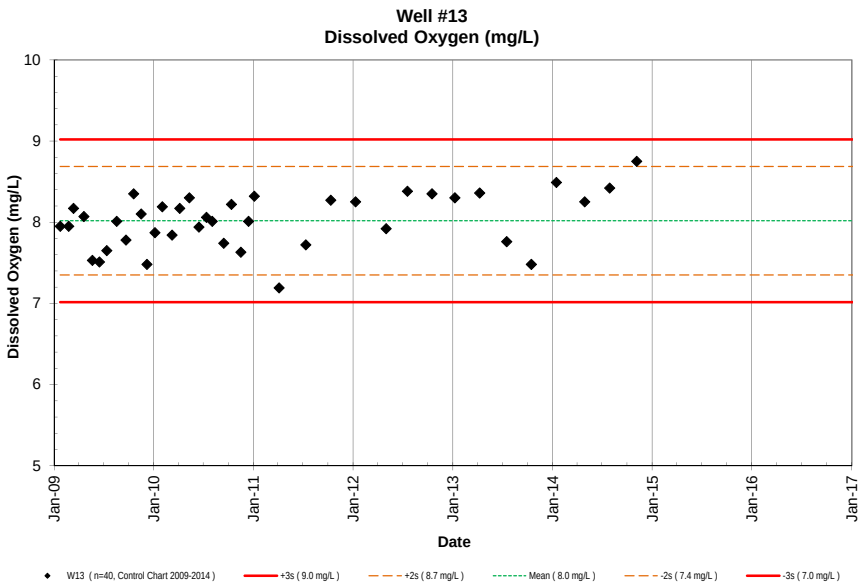

Well #13 Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
W13 2009 - 2013
W13 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

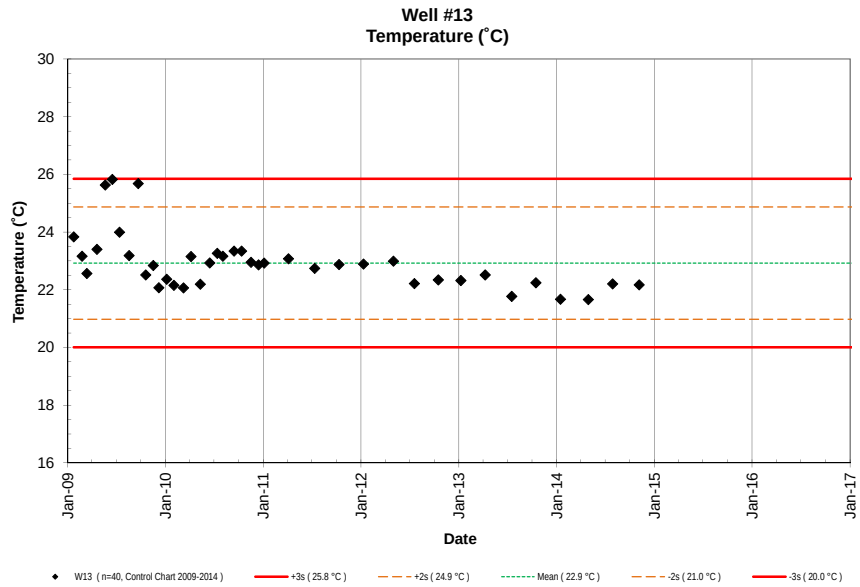

Well #13
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
40
30
20
10
0
-10
-20
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W13 (n=40, Control Chart 2009-2014)
+3s (31.3 µg N/L)
+2s (23.8 µg N/L)
Mean (8.8 µg N/L)
-2s (-6.1 µg N/L)
-3s (-13.6 µg N/L)

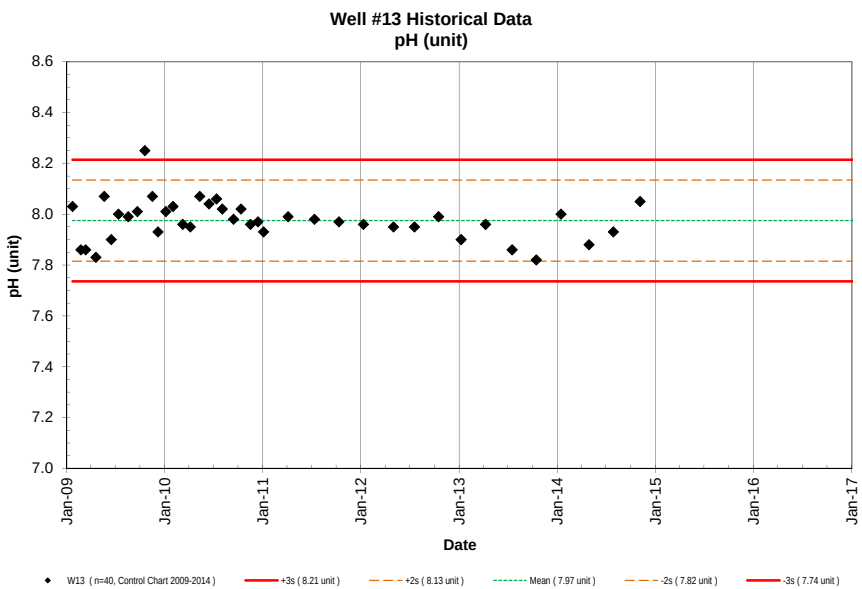

Well #13
Silicate (µg Si/L)
Silicate (µg Si/L)
35000
30000
25000
20000
15000
10000
5000
0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W13 (n=40, Control Chart 2009-2014)
+3s (31304 µg Si/L)
+2s (27191 µg Si/L)
Mean (18966 µg Si/L)
-2s (10741 µg Si/L)
-3s (6629 µg Si/L)

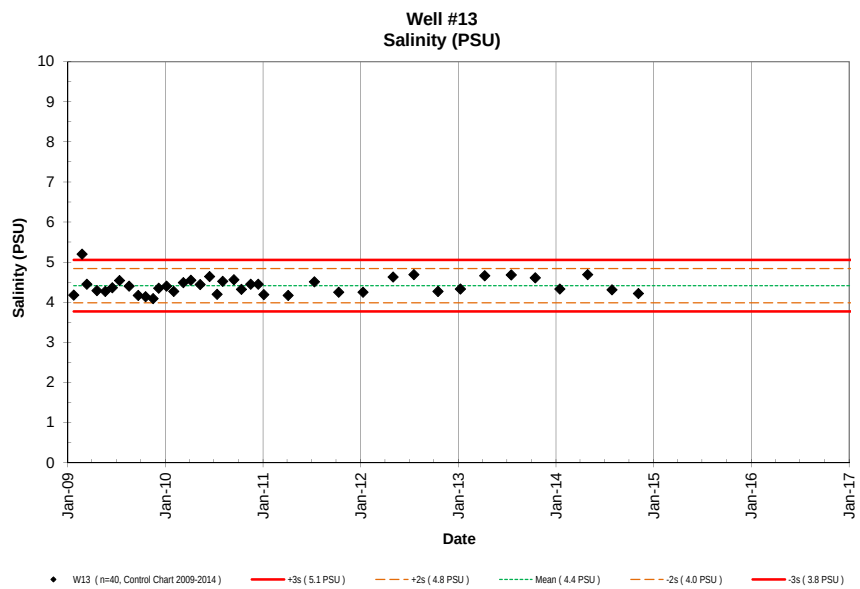

Relationship Between Ortho-Phosphate
and Nitrate + Nitrite in Well #13
Nitrate + Nitrite (µg N/L)
4000
3000
2000
1000
0
0
100
200
300
400
500
Ortho-Phosphate (µg P/L)
W13 2009 - 2013
W13 2013 - 2014
1:1 NO3:PO4
5:1 NO3:PO4
10:1 NO3:PO4
15:1 NO3:PO4
20:01 NO3:PO4

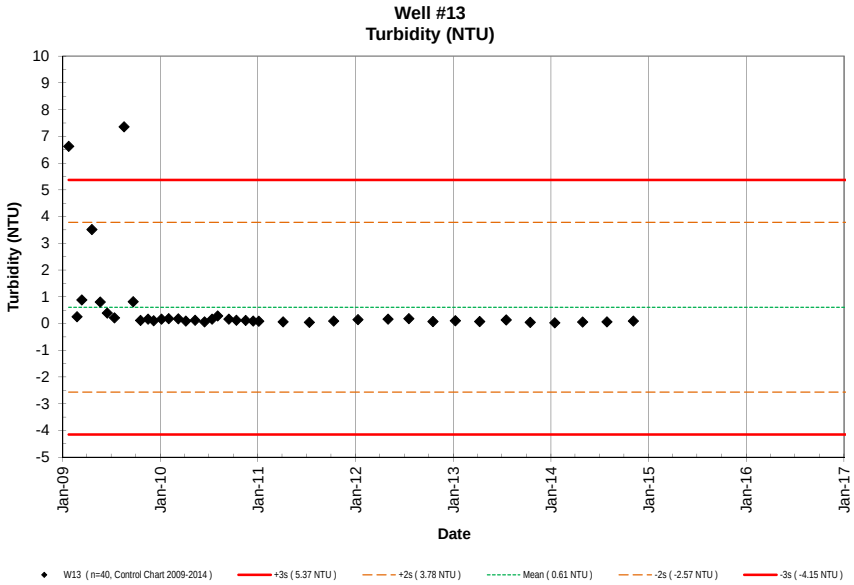

Well #13 Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
30000
25000
20000
15000
10000
5000
0
0
5
10
15
20
25
30
35
Salinity (PSU)
W13 2009 - 2013
W13 2013 - 2014
W1-SSW Mixing Line
W1-DSW Mixing Line

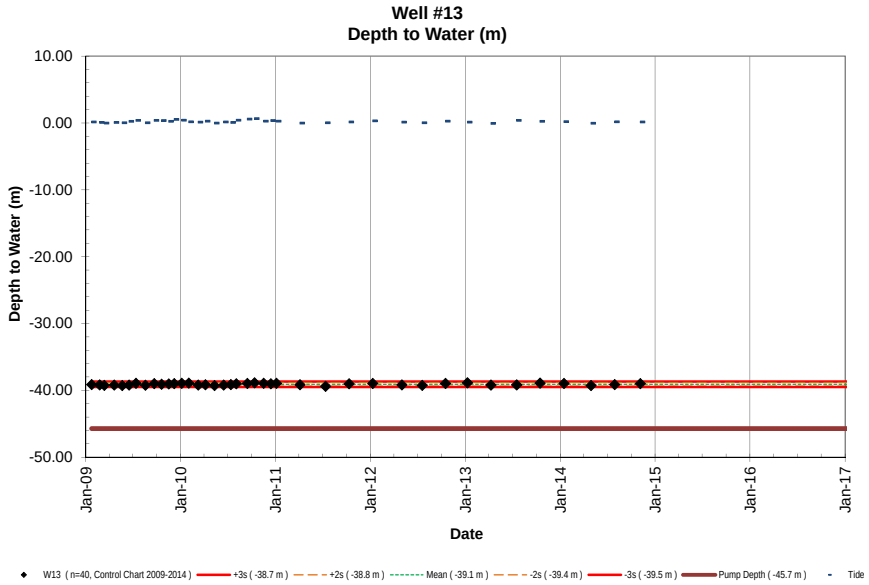

Well #13
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Date
W13 (n=40, Control Chart 2009-2014)
+3s (9.0 mg/L)
+2s (8.7 mg/L)
Mean (8.0 mg/L)
-2s (7.4 mg/L)
-3s (7.0 mg/L)


Well #13
Temperature (˚C)
Temperature (˚C)
Date
W13 (n=40, Control Chart 2009-2014)
+3s (25.8 °C)
+2s (24.9 °C)
Mean (22.9 °C)
-2s (21.0 °C)
-3s (20.0 °C)


Well #13 Historical Data
pH (unit)
pH (unit)
Date
W13 (n=40, Control Chart 2009-2014)
+3s (8.21 unit)
+2s (8.13 unit)
Mean (7.97 unit)
-2s (7.82 unit)
-3s (7.74 unit)


Well #13
Salinity (PSU)
Salinity (PSU)
Date
W13 (n=40, Control Chart 2009-2014)
+3s (5.1 PSU)
+2s (4.8 PSU)
Mean (4.4 PSU)
-2s (4.0 PSU)
-3s (3.8 PSU)


Well #13
Turbidity (NTU)
Turbidity (NTU)
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W13 (n=40, Control Chart 2009-2014)
+3s (5.37 NTU)
+2s (3.78 NTU)
Mean (0.61 NTU)
-2s (-2.57 NTU)
-3s (-4.15 NTU)


Well #13
Depth to Water (m)
Depth to Water (m)
10.00
0.00
-10.00
-20.00
-30.00
-40.00
-50.00
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Date
W13 (n=40, Control Chart 2009-2014)
+3s (-38.7 m)
+2s (-38.8 m)
Mean (-39.1 m)
-2s (-39.4 m)
-3s (-39.5 m)
Pump Depth (-45.7 m)
Tide

NELHA Water Quality Laboratory

Seawater Return Trench 4

January 1992 - December 2014

SITE ID	DATE	TIME	TIDE		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	TEMP	pH	DO	Chl a	Fecal Col.	Entero.
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	CFU/100ml	CFU/100ml
SRT 4s	1/28/92	705	0.6	Low	1.8	54	60.2	843	0.1	0.7	478	13425	1.9	59	63	880	1.07		15.51	19.8	8.21		6.57	3	1
SRT 4s	4/20/92	1146	-0.1	Low	2.6	82	56.3	789	0.1	0.7	508	14267	2.9	91	61	853	1.01	SS 1.36 mg	14.86	24.1	8.03		2.39	<1	<1
SRT 4s	5/20/92	1059	0.1	Low	0.6	20	31.6	443	0.3	4.6	601	16879	1.0	30	39	550	1.07	SS 5.31 mg	15.67	25.5	8.50		30.0	<1	<1
SRT 4s	6/24/92	1053	1.3	Flood	2.1	64	50.3	705	0.5	7.3	586	16458	2.3	72	59	831	0.84	SS 0.57 mg	14.42	24.9	8.06		3.50	<1	<1
SRT 4s	7/30/92	1000	-0.1	Low	2.0	62	50.4	706	1.3	18.8	525	14731	2.2	68	55	767	1.22	0.38*	16.31	24.5	8.02	7.70	6.55	<1	<1
SRT 4s	8/31/92	1005	1.2	Ebb	2.0	62	44.0	616	1.1	14.9	570	16009	2.2	67	48	674	1.10	0.55	16.58	24.6	8.06	8.48	5.27	<1	<1
SRT 4s	9/23/92	1041	1.0	Flood	2.0	61	303	4243	46.5	651.3	585	16430	2.0	62	403	5639	1.65	1.64	15.57	24.9	7.59	ND	1.13	<1	<1
SRT 4s	10/28/92	1059	0.8	Ebb													0.68	0.94	15.95	24.1	8.10	8.19	3.84	<1	<1
SRT 4s	11/18/92	1121	1.6	High	2.0	63	61.0	855	0.2	2.2	577	16205	2.5	76	137	1919	0.93	0.75	15.23	23.9	8.15	9.11	13.1	1	<1
SRT 4s	12/28/92	811	1.7	High	2.9	90	60.6	849	0.3	4.6	654	18368	3.5	107	75	1056	0.65	0.84	13.78	20.5	8.02	7.71	0.21	<1	4
SRT 4s	1/27/93	1013	0.7	Ebb	2.5	78	69.6	975	0.4	5.7	637	17901	2.7	83	78	1093	1.09	1.08	11.46	20.8	7.87	5.95	0.26	<1	<1
SRT 4s	2/24/93	945	0.4	Ebb	2.7	83	66.8	936	0.2	3.4	615	17284	2.8	85	69	968	0.49	0.37	13.53	19.1	7.98	7.29	0.40	<1	<1
SRT 4s	3/17/93	1010	0.4	Flood	2.5	77	67.6	946	0.3	4.8	642	18028	2.5	79	72	1002	0.68	4.0	11.56	21.9	8.06	7.78	1.68	<1	<1
SRT 4s	4/28/93	938	0.5	High	2.6	82	70.7	990	1.5	20.7	638	17919	2.8	87	77	1080	0.60	0.54	11.55	22.3	8.05	7.74	0.28	<1	<1
SRT 4s	5/26/93	947	0.6	High	1.5	46	20.9	292	0.5	6.4	725	20362	1.7	51	26	365	0.75	0.14	34.43	16.0	7.96	6.83	0.24	<1	<1
SRT 4s	6/29/93	949	0.8	Flood	2.7	84	71.3	998	1.5	21.3	655	18396	2.9	90	78	1095	0.78	0.77	11.58	22.9	8.08	7.79	0.36	2	3
SRT 4s	9/1/93	952	0.3	Low	2.8	86	68.1	954	0.1	1.5	660	18536	2.9	90	90	1256	0.67	0.29	11.61	23.9	8.08	7.31	0.10	2	0
SRT 4s	10/27/93	941	0.6	Low	2.8	88	73.2	1025	0.8	10.6	610	17132	2.9	90	76	1071	0.80	0.98	10.59	22.5	8.00	6.73	0.08	0	6
SRT 4s	2/8/94	945	0.2	Low	3.0	93	68.9	965	0.5	7.3	580	16290	3.0	94	80	1116	0.61	0.15	12.70	21.7	8.00	7.55	0.09	<1	<1
SRT 4s	6/22/94	939	-0.2	Low	2.4	75	63.8	894	0.8	10.8	568	15939	2.5	77	69	963	0.78	0.88	12.84	23.5	8.09	8.21	7.72	<1	<1
SRT 4s	7/26/94	1043	0.7	Ebb	1.3	42	19.2	269	0.3	3.9	43	1202	1.6	49	25	347	0.74	0.07	34.48	17.4	7.98	1.60	0.00	<1	<1
SRT 4s	10/26/94	857	1.8	High	2.9	91	75.4	1056	1.0	13.6	589	16537	3.1	96	80	1114	0.51	0.25	11.50	22.7	8.05	7.30	1.26	2	3
SRT 4s	1/25/95	1048	0.8	High	3.4	105	76.8	1076	0.0	0.0	535	15017	3.4	105	56	786	0.44	0.06	13.65	20.7	8.08	7.74	0.00	27	11
SRT 4s	5/10/95	630	-0.1	Low	3.3	102	99.0	1387	0.2	3.1	543	15259	3.3	102	88	1233	0.62	0.16	12.70	19.6	8.07	7.08	0.14	<1	12
SRT 4s	9/13/95	710	1.8	High	3.3	103	74.6	1045	0.4	5.7	539	15124	3.4	106	78	1093	0.53	0.19	13.90	20.8	7.99	6.72	0.04	1	15
SRT 4s	11/7/95	1131	0.5	Flood	1.2	36	16.5	231	0.6	8.0	48	1344	1.3	40	23	315	1.06	0.09	34.23	19.3	8.09	2.56	0.03	<1	<1
SRT 4s	1/31/96	956	0.4	Flood	3.1	95	94.0	1317	0.9	11.9	473	13276	3.1	97	98	1379	0.93	1.83	12.68	23.4	8.06	6.77	0.36	utc-spreaders	116
SRT 4s	6/18/96	1221	0.3	Flood	2.6	81	58.7	823	8.7	122.1	370	10386	2.8	85	65	911	0.73	0.16	31.38	23.0	8.03	8.13	0.18	<1	1
SRT 4s	8/6/96	1226	1.6	Ebb	2.1	65	68.8	963	0.3	4.2	499	14019	2.5	77	72	1010	0.93	0.63	14.58	29.3	8.32	9.89	2.63	<1	3
SRT 4s	10/7/96	903	1.1	Flood	2.9	91	88.5	1239	0.6	8.3	598	16809	3.1	95	93	1308	0.68	0.12	11.17	23.5	7.96	6.97	0.00	1	<1
SRT 4s	1/15/97	1103	1.0	Ebb	3.8	116	179	2510	0.3	3.9	513	14411	3.8	116	182	2551	0.74	0.10	12.64	22.4	7.99	7.05	0.13	2	<1
SRT 4s	4/30/97	912	0.5	Flood	1.5	46	17.7	248	0.4	5.9	42	1168	2.5	77	21	290	1.03	0.13	34.22	17.8	8.05	3.39	0.08	<1	<1
SRT 4s	7/14/97	1047	1.4	Flood	1.0	31	87.2	1221	0.1	0.7	574	16132	1.7	53	97	1354	1.11	0.77	11.16	25.5	8.43	10.86	13.7	<1	1
SRT 4s	10/14/97	1112	0.8	Flood	3.0	93	111	1551	0.1	1.0	597	16761	3.3	102	112	1564	0.91	0.65	10.39	26.2	8.42	9.12	7.49	<1	<1
SRT 4s	3/11/98	1304	0.6	Flood	3.4	104	84.5	1184	0.1	2.0	576	16183	3.6	110	89	1243	0.56	0.25	12.25	26.3	8.18	8.93	6.67	<1	<1
SRT 4s	4/15/98	1152	0.0	Low	2.8	85	77.2	1081	0.2	2.2	563	15812	3.0	93	82	1154	0.56	0.42	12.95	24.8	8.23	9.44	7.47	<1	<1
SRT 4s	7/15/98	945	1.3	High	1.7	54	67.8	950	0.2	2.1	562	15781	2.0	61	71	1000	0.73	0.94	13.84	24.5	8.40	10.25	11.2	2	5
SRT 4s	10/14/98	954	1.6	Flood	3.1	97	92.5	1296	0.1	0.7	571	16037	3.3	103	94	1310	0.84	0.27	12.54	24.9	8.39	9.76	8.34	<1	1
SRT 4s	3/3/99	954	0.3	Ebb	3.4	105	77.1	1080	0.6	8.1	533	14970	3.5	107	85	1191	0.65	0.15	14.46	22.3	8.00	8.74	1.04	<1	2
SRT 4s	4/14/99	947	-0.2	Flood	3.1	97	65.1	912	0.6	7.7	423	11869	3.3	101	68	954	0.69	0.10	19.24	19.7	7.94	6.55	0.09	2	5
SRT 4s	8/24/99	950	0.7	Flood	2.6	81	68.9	965	0.2	2.4	645	18118	2.9	90	71	1001	0.74	0.45	12.93	25.2	8.28	8.78	8.37	<1	<1
SRT 4s	10/12/99	1011	0.9	Ebb	3.4	106	77.5	1085	0.6	8.7	549	15422	3.6	112	81	1136	0.62	0.15	12.79	24.3	8.10	7.67	0.29	1	5
SRT 4s	3/1/00	1015	0.4	Flood	3.6	113	81.5	1142	0.3	4.8	564	15837	3.6	112	85	1192	0.99	0.24	19.49	23.1	8.22	7.78	0.46	<1	1
SRT 4s	4/24/00	1039	0.3	Ebb	3.0	94	78.1	1094	0.1	1.7	564	15835	3.1	96	79	1108	0.59	0.15	13.40	24.0	8.15	8.14	3.39	1	1
SRT 4s	8/1/00	1000	0.0	Low	2.9	90	76.3	1069	0.1	1.3	536	15043	3.1	96	80	1121	0.81	0.26	15.03	26.1	8.16	8.21	4.41	1	<1
SRT 4s	12/20/00	935	0.9	Flood	3.8	116	104	1452	1.1	15.7	571	16048	4.0	122	111	1561	0.87	0.22	11.90	22.7	8.11	7.17	0.38	1	1
SRT 4s	2/27/01	958	0.6	Ebb	2.9	90	85.6	1199	0.1	1.7	542	15211	3.1	96	87	1215	0.72	0.24	13.19	23.4	8.17	8.35	1.16	<1	<1
SRT 4s	5/9/01	1006	-0.2	Low	2.9	90	82.7	1158	0.4	4.9	504	14152	3.2	99	85	1188	0.78	0.22	14.72	24.3	8.12	8.12	4.81	<1	<1
SRT 4s	9/11/01	1050	2.1	High	2.9	91	87.8	1230	0.3	3.8	544	15284	3.0	92	93	1300	0.75	0.22	12.77	26.7	8.14	7.99	3.25	<1	1
SRT 4s	10/31/01	1009	0.4	Low	3.3	103	89.3	1250	1.0	13.7	577	16205	3.5	107	87	1218	0.67	0.12	12.52	24.9	8.07	7.84	1.24	1	2
SRT 4s	1/15/02	958	0.7	Ebb	3.6	113	105	1472	1.3	18.5	536	15054	3.7	113	107	1497	0.67	0.10	14.04	21.9	8.06	7.39	0.99	<1	<1
SRT 4s	5/28/02	1022	-0.2	Low	4.3	133	57.9	810	0.8	11.8	406	11391	4.6	143	64	889	1.24	0.79	17.70	26.3	8.37	11.38	7.21	<1	<1
SRT 4s	9/17/02	1025	1.2	Flood	4.5	138	108	1509	0.3	3.8	568	15961	4.8	147	98	1369	0.72	0.15	12.91	25.5	8.08	7.68	1.72	<1	<1
SRT 4s	12/16/02	1105	0.6	Flood	4.7	145	99.9	1399	0.3	4.1	548	15396	5.3	163	109	1525	0.81	0.21	12.47	24.3	8.14	7.47	1.28	<1	1
SRT 4s	1/30/03	1040	0.1	Flood	4.8	148	122	1709	0.7	9.1	516	14498	5.0	155	152	2133	0.75	0.17	14.57	24.2	8.08	7.17	3.85	<1	1
SRT 4s	5/28/03	948	0.3	Flood	5.4	168	114	1591	0.2	3.2	524	14720	5.6	174	126	1758		0.30	13.50	25.4	8.25	8.25	2.83	<1	<1

NELHA Water Quality Laboratory

Seawater Return Trench 4

January 1992 - December 2014

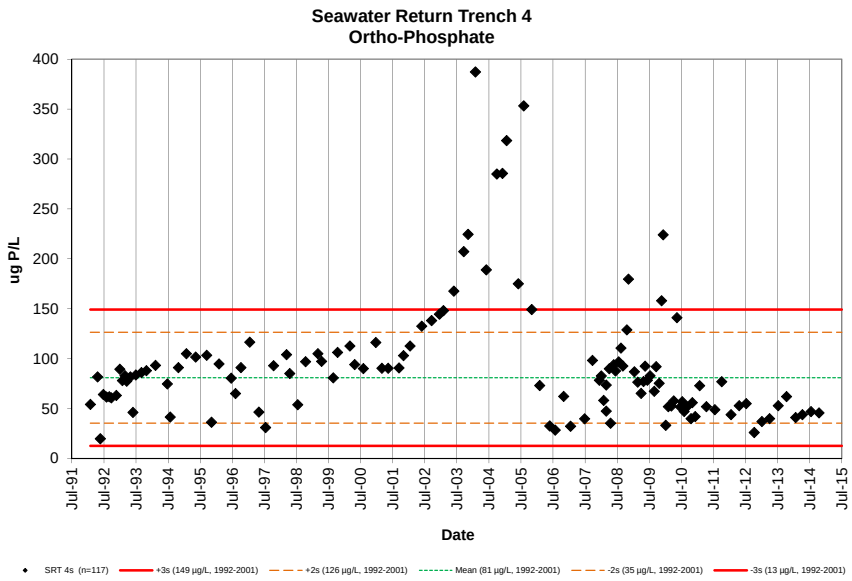
SITE ID	DATE	TIME	TIDE		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	TEMP	pH	DO	Chl a	Fecal Col.	Entero.
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	CFU/100ml	CFU/100ml
SRT 4s	9/18/03	1016	1.7	Flood	6.7	207	140	1965	0.7	9.9	522	14672	7.1	220	146	2041	4.27	0.10	12.41	26.4	8.11	7.19	0.18	1	1
SRT 4s	11/6/03	936	0.6	Flood	7.3	225	134	1878	1.2	16.4	549	15405	7.5	232	172	2412	31.5	0.11	12.63	24.4	8.23		1.24	<1	1
SRT 4s	11/14/03	1007	1.7	Ebb																23.8		6.84			
SRT 4s	1/29/04	951	0.9	Ebb	12.5	387	465	6515	1.7	23.8	704	19758	12.2	378	477	6677	2.08	0.24	12.04	22.4	8.40	6.87	0.47	1	<1
SRT 4s	6/1/04	822	-0.2	Flood	6.1	189	140	1965	0.1	0.8	534	15003	6.6	206	147	2065	2.65	0.51	11.42	24.5	8.20	7.48	0.11	<1	<1
SRT 4s	9/29/04	906	0.7	Ebb	9.2	285	129	1807	0.5	7.1	508	14276	9.8	302	142	1986	1.04	0.26	12.85	24.4	8.10	7.04	2.23	1	1
SRT 4s	12/2/04	929	1.9	Ebb	9.2	286	165	2308	0.4	5.9	534	15006	9.5	295	176	2465	1.10	0.58	11.82	23.8	8.12	6.71	2.42	<1	<1
SRT 4s	1/19/05	920	0.5	Flood	10.3	318	247	3462	0.2	2.1	497	13970	10.7	330	275	3846	1.52	0.17	11.82	22.9	8.40	6.56	1.89	1	1
SRT 4s	5/31/05	912	0.5	Flood	5.7	175	114	1594	0.2	3.2	507	14234	5.6	174	118	1646	0.87	0.25	12.45	23.6	8.27	7.67	1.14	<1	2
SRT 4s	8/2/05	1013	0.6	Flood	11.4	353	159	2233	0.1	1.0	510	14324	11.8	366	163	2287	1.11	0.21	14.69	24.9	8.27	7.29	1.49	<1	<1
SRT 4s	11/1/05	845	0.7	Ebb	4.8	149	105	1467	1.6	22	474	13321	5.1	158	112	1567	0.61	0.46	11.36	25.2	8.15	6.71	0.38	<1	3
SRT 4s	1/30/06	850	0.9	Ebb	2.4	73	36	502	19.8	277	175	4926	2.7	84	53	743	0.96	0.41	27.93	23.1	7.77	5.72	0.34	135	2
SRT 4s	5/25/06	1042	0.5	Flood	1.1	33	3	42	16.8	235	4	112	1.6	50	29	412	1.19	0.45	34.73	26.8	7.95	7.22	0.96	41	33
SRT 4s	7/27/06	1010	0.2	Low	0.9	28	3	41	13.5	189	17	486	2.0	61	34	480	2.61	1.29	34.47	26.8	8.29	10.23	3.37	<1	<1
SRT 4s	10/31/06	1041	1.8	Flood	2.0	62	9	124	36.5	511	3	88	2.9	89	63	879	1.65	0.47	34.86	28.2	7.71	8.65	1.10	<1	41
SRT 4s	1/17/07	1017	0.2	Low	1.0	32	3	44	15.3	214	3	96	1.8	55	29	412	1.49	1.36	34.77	25.7	8.04	7.73	4.90	<1	1
SRT 4s	6/26/07	942	0.8	Flood	1.3	40	7	99	15.1	212	6	158	2.3	72	32	453		0.33	34.65	26.7	7.92	6.87	0.87	<1	21
SRT 4s	9/24/07	1348	2.0	Flood	3.2	98	51	718	7.3	103	441	12380	3.4	106	75	1056		1.01	33.58	27.0	8.12	4.27	2.75		
SRT 4s	12/11/07	1048	0.8	Ebb	2.5	78	84	1182	1.2	16	299	8401	3.2	100	112	1563		0.84	13.71	26.1	8.97	11.24	6.40		
SRT 4s	1/29/08	1101	0.6	Ebb	1.9	58	58	815	1.2	16	231	6479	2.7	85	80	1118		n/a	19.91	26.7	8.36	13.67	21.89		
SRT 4s	2/28/08	951	0.4	Ebb	1.5	48	70	976	1.6	23	402	11286	2.0	61	76	1068		1.04	20.71	26.7	8.36	11.84	38.44		
SRT 4s	2/28/08	2259	1.5	Ebb	2.4	74	85	1190	2.2	31	451	12673	2.4	73	88	1232		1.44	17.24	26.1	8.48	15.07	39.93		
SRT 4s	4/2/08	1023	0.2	Flood	2.9	90	36	502	4.0	56	476	13380	2.0	61	94	1321		1.26	15.34	24.6	8.28	8.40	20.13		
SRT 4s	4/16/08	1351	1.3	Flood	1.1	35	43	602	0.2	3	445	12493	2.7	83	64	893		0.99	15.45	28.5	8.47	11.32	10.32		
SRT 4s	5/23/08	1012	0.0	Ebb	3.0	94	69	962	1.0	14	641	17990	3.1	95	80	1123		0.64	15.44	25.1	8.37	7.92	0.11		
SRT 4s	6/12/08	1022	1.0	Flood	2.8	88	68	948	3.2	46	487	13688	2.9	89	77	1076		0.38	14.05	24.5	7.91	7.22	5.45		
SRT 4s	7/18/08	935	-0.1	Low	3.1	97	69	967	1.1	15	494	13886	3.0	92	84	1182		0.52	17.32	25.4	7.97	5.72	1.25		
SRT 4s	8/13/08	1039	0.7	Flood	3.6	111	73	1016	0.7	10	435	12231	0.0		0			1.68	14.74	26.3	8.08	7.40	11.48		
SRT 4s	9/4/08	1045	1.3	Ebb	3.0	93	69	964	0.6	8	409	11501	5.1	157	103	1445		1.40	15.26	25.8	8.15	6.42	1.53		
SRT 4s	10/20/08	1054	2.0	Ebb	4.2	129	85	1187	0.4	6	425	11927	0.0		0			0.87	16.85	26.7	7.84	6.86	0.78		
SRT 4s	11/6/08	1039	1.8	High	5.8	180	135	1894	1.3	18	498	13990	9.3	288	287	4017		0.54	15.41	25.7	8.28	8.06	0.69		
SRT 4s	1/2/08	1053	1.0	Ebb	2.7	83	40	566	0.1	2	72	2015	2.4	76	39	550		0.16	34.72	11.7	7.85	9.51	0.98		
SRT 4s	1/12/09	1033	0.3	Ebb	2.8	87	40	557	0.1	2	71	1983	0.4	12	41	578		0.18	34.73	11.3	7.84	9.03	0.06		
SRT 4s	2/20/09	941	0.3	Low	2.5	77	47	659	0.4	6	77	2162	2.3	72	41	575		0.15	34.62	9.9	7.57	9.18	0.38		
SRT 4s	3/30/09	1440	0.3	Flood	2.1	65	41	571	0.5	8	75	2116	12.7	393	198	2775		0.24	34.49	11.3	7.52	9.49	0.19		
SRT 4s	4/27/09	1109	-0.2	Flood	2.5	77	39	543	1.7	24	74	2076	3.3	102	53	736		0.07	34.37	12.1	7.97	9.25	0.07		
SRT 4s	5/14/09	1432	0.5	Flood	3.0	93	40	554	1.9	26	67	1875	2.8	85	43	600		0.31	34.73	11.9	7.40	8.81	0.08		
SRT 4s	6/10/09	840	0.2	Ebb	2.5	78	37	516	1.9	26	65	1830	3.1	96	47	657		0.09	34.45	11.9	7.48	8.58	0.03		
SRT 4s	7/10/09	845	0.5	Ebb	2.7	83	39	541	1.9	26	72	2008	3.2	101	22	314		0.13	34.91	10.1	7.68	9.58	0.17		
SRT 4s	8/27/09	909	1.8	Flood	2.2	67	30	419	1.3	19	52	1471	2.0	62	33	456		0.11	34.52	11.0	7.66	6.70	0.10		
SRT 4s	9/17/09	1225	0.3	Flood	3.0	92	38	528	0.5	7	63	1758	2.9	90	42	591		0.54	34.59	8.7	7.55	9.98	0.06		
SRT 4s	10/22/09	908	1.8	Ebb	2.4	75	42	588	1.0	15	184	5158	2.6	82	47	655		0.47	18.96	25.8	7.65	3.09	5.91		
SRT 4s	11/19/09	856	1.7	Ebb	5.1	158	93	1309	4.6	64	356	9994	5.0	154	102	1431		0.50	16.47	24.3	7.72	3.50	2.00		
SRT 4s	12/7/09	830	2.0	High	7.2	224	61	854	5.6	78	334	9367	7.0	218	71	996		0.52	23.33	23.9	7.75	1.75	2.47		
SRT 4s	1/4/10	1416	0.0	Low	1.1	33	12	169	0.6	8	32	894	2.3	70	16	231		0.29	34.88	19.4	8.16	9.61	0.60		
SRT 4s	2/2/10	1353	-0.2	Low	1.7	52	24	339	1.4	20	49	1388	2.0	61	27	384		0.33	34.65	16.7	8.01	8.43	0.34		
SRT 4s	3/10/10	1308	0.7	High	1.7	53	25	344	0.2	3	51	1445	1.9	59	28	397		0.11	32.55	16.8	7.96	7.84	0.89		
SRT 4s	4/5/10	958	0.4	High	1.9	58	24	340	2.2	31	74	2084	2.0	63	28	388		0.15	34.66	15.5	8.08	7.94	0.15		
SRT 4s	5/12/10	1252	1.5	Flood	4.6	141	98	1372	1.5	21	454	12757	4.2	129	98	1371		0.30	17.55	22.6	8.13	7.43	0.15		
SRT 4s	6/21/10	1018	1.3	Flood	1.7	52	24	334	0.7	10	55	1551	2.0	61	28	396		0.30	34.61	16.0	7.92	7.45	1.07		

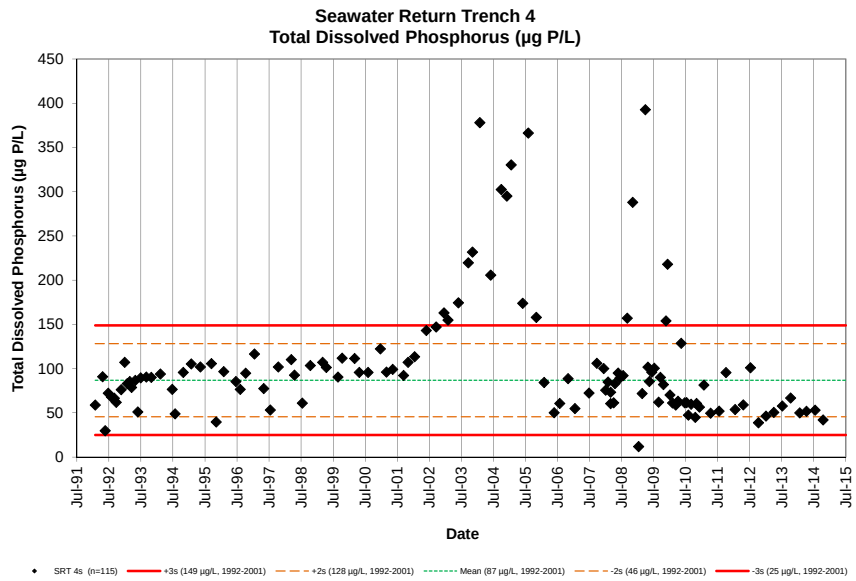
NELHA Water Quality Laboratory

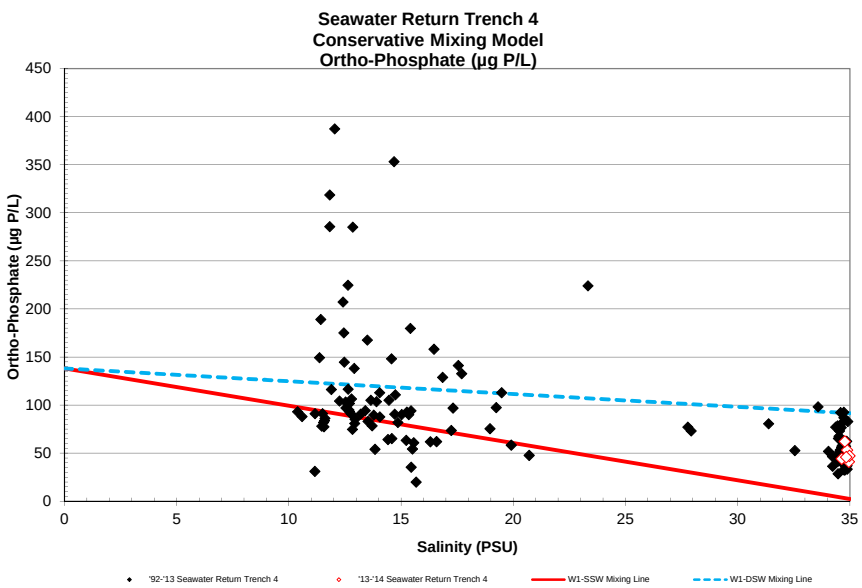
Seawater Return Trench 4

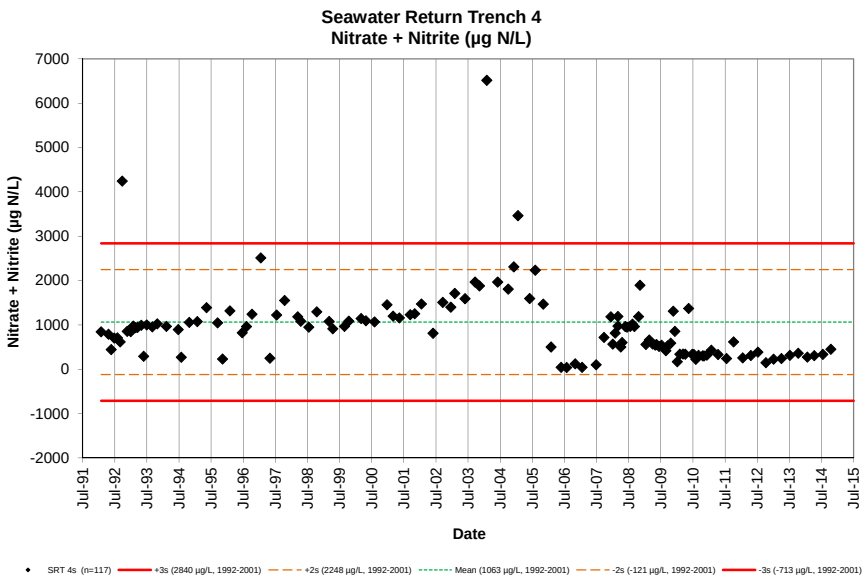
January 1992 - December 2014

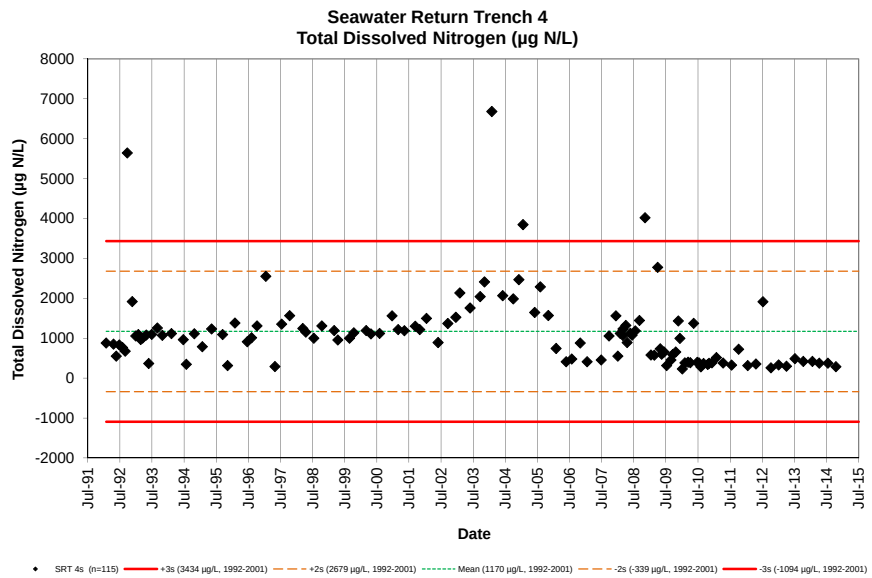
SITE ID	DATE	TIME	TIDE		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	TEMP	pH	DO	Chl a	Fecal Col.	Entero.
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	CFU/100ml	CFU/100ml
SRT 4s	7/12/10	1011	-0.1	Low	1.8	57	24	333	0.9	13	55	1554	2.0	62	27	384		0.90	34.81	17.3	7.91	7.74	7.24		
SRT 4s	8/2/10	1219	1.3	Ebb	1.5	47	16	223	0.4	5.8	51	1434	1.5	47	20	281		0.13	34.53	17.6	8.13	12.71	0.14		
SRT 4s	9/2/10	1143	1.9	Flood	1.7	52	22	313	0.4	6.2	44	1237	1.9	60	26	366		0.11	34.05	17.3	7.99	8.39	0.24		
SRT 4s	10/19/10	1123	1.2	Flood	1.3	40	22	302	0.0	0.3	45	1250	1.4	45	24	341		0.21	34.69	17.3	8.02	8.05	0.07		
SRT 4s	11/3/10	1001	0.6	Flood	1.8	56	21	300	1.1	15.5	48	1337	2.0	61	26	369		0.86	34.63	17.4	7.98	7.52	5.50		
SRT 4s	12/6/10	937	0.7	Ebb	1.4	42	23	317	0.7	9.8	50	1392	1.8	57	27	381		0.13	34.47	16.6	7.93	7.74	0.17		
SRT 4s	1/26/11	1014	0.8	Ebb	2.4	73	31	430	0.2	3.1	65	1833	2.6	82	37	515		0.16	34.54	14.7	7.78	7.13	0.25		
SRT 4s	4/13/11	1014	0.4	Flood	1.7	52	24	331	0.4	5.0	53	1493	1.6	50	27	380		0.16	34.67	16.3	7.93	7.26	0.14		
SRT 4s	7/18/11	935	0.6	Ebb	1.6	49	17	240	0.5	7.2	42	1185	1.7	52	23	327		25.6	34.45	18.5	7.86	9.08	5.76		
SRT 4s	10/5/11	956	1.6	Flood	2.5	77	44	615	0.4	5.5	211	5925	3.1	96	52	723		1.25	27.78	19.7	7.95	9.31	2.45		
SRT 4s	1/17/12	830	0.7	Flood	1.4	44	18	256	0.4	5.0	39	1088	1.7	54	23	315		0.29	34.54	16.8	7.93	7.20	0.15		
SRT 4s	4/19/12	1043	0.3	Flood	1.7	53	22	310	0.7	9.7	45	1265	1.9	59	25	355		0.46	34.57	15.5	7.94	8.22	0.08		
SRT 4s	7/9/12	1140	1.1	Ebb	1.8	55	28	386	0.3	3.7	59	1662	3.3	101	137	1915		1.50	35.29	15.2	7.90	9.26	0.58		
SRT 4s	10/8/12	1047	1.8	High	0.8	26	11	148	0.2	3.2	33	918	1.2	39	18	257		0.26	35.05	22.0	8.22	10.20	1.67		
SRT 4s	1/3/13	1020	1.2	Ebb	1.2	37	16	227	0.6	7.8	31	877	1.5	46	23	329		0.18	34.87	17.5	8.25	11.23	0.85		
SRT 4s	4/1/13	1031	0.4	Ebb	1.3	40	17	240	0.4	5.4	37	1034	1.6	51	21	299		0.67	34.68	19.1	8.06	7.90	0.65		
SRT 4s	7/8/13	1004	-0.1	Low	1.7	53	22	313	1.3	18.0	46	1285	1.9	58	35	486		0.48	34.87	17.9	7.87	6.96	0.03		
SRT 4s	10/10/13	1119	1.7	Ebb	2.0	62	26	360	0.6	8.9	51	1432	2.2	67	30	420		0.72	34.77	14.8	7.90	6.62	0.25		
SRT 4s	1/22/14	910	0.7	High	1.3	41	20	275	0.9	12.2	43	1211	1.6	50	30	417		0.61	34.95	16.2	7.89	6.26	38.89		
SRT 4s	4/9/14	1057	0.7	Flood	1.4	44	22	306	1.3	18.1	49	1371	1.7	52	27	373		0.16	34.64	16.4	7.85	6.20	0.15		
SRT 4s	7/16/14	1109	0.5	Ebb	1.5	47	24	337	1.8	24.6	39	1092	1.7	53	27	375		0.32	34.98	17.4	7.92	7.25	0.08		
SRT 4s	10/15/14	1144	1.5	Ebb	1.5	46	32	450	1.9	26.1	40	1114	1.4	42	21	288		0.35	34.84	18.0	7.93	6.24	0.12		
SRT 4s	1/1/15																								
SRT 4s	4/1/15																								

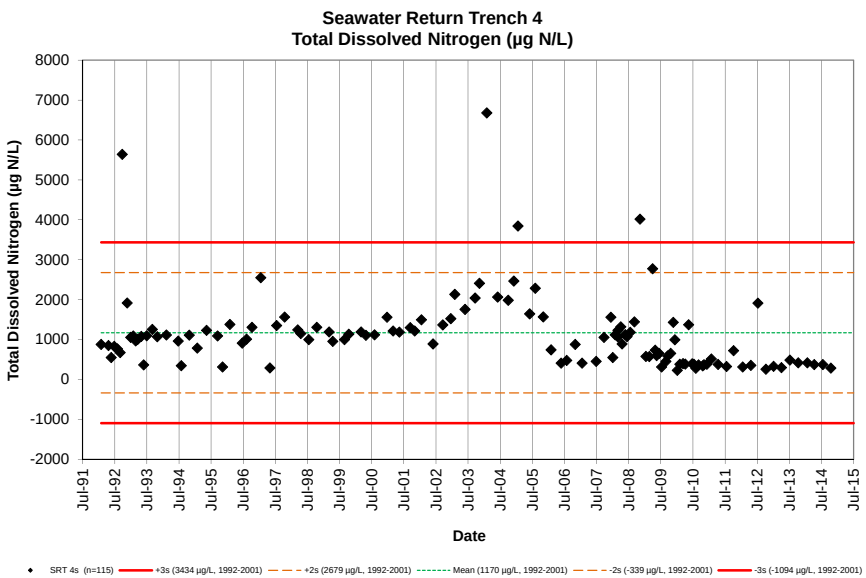

Seawater Return Trench 4
Ortho-Phosphate
ug P/L
Date
SRT 4s (n=117)
+3s (149 µg/L, 1992-2001)
+2s (126 µg/L, 1992-2001)
Mean (81 µg/L, 1992-2001)
-2s (35 µg/L, 1992-2001)
-3s (13 µg/L, 1992-2001)

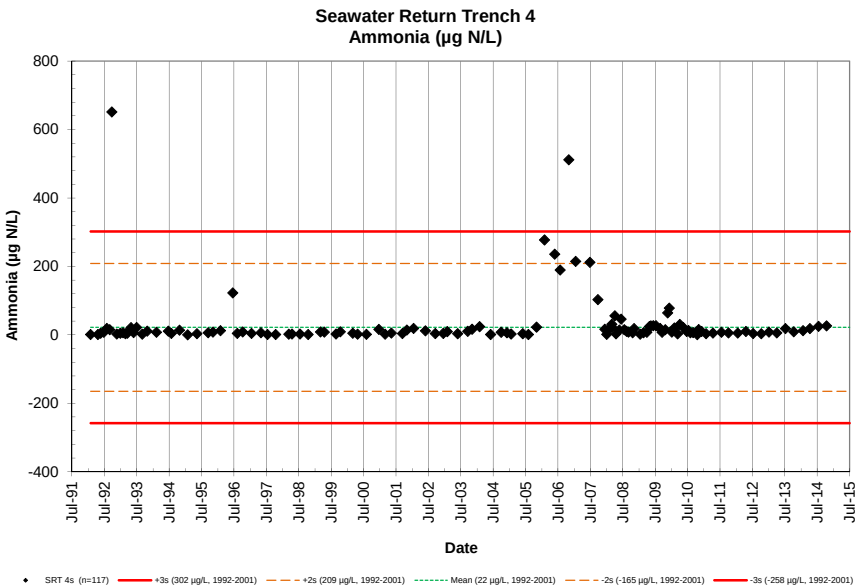

Seawater Return Trench 4
Total Dissolved Phosphorus (µg P/L)
Total Dissolved Phosphorus (µg P/L)
Date
SRT 4s (n=115)
+3s (149 µg/L, 1992-2001)
+2s (128 µg/L, 1992-2001)
Mean (87 µg/L, 1992-2001)
-2s (46 µg/L, 1992-2001)
-3s (25 µg/L, 1992-2001)

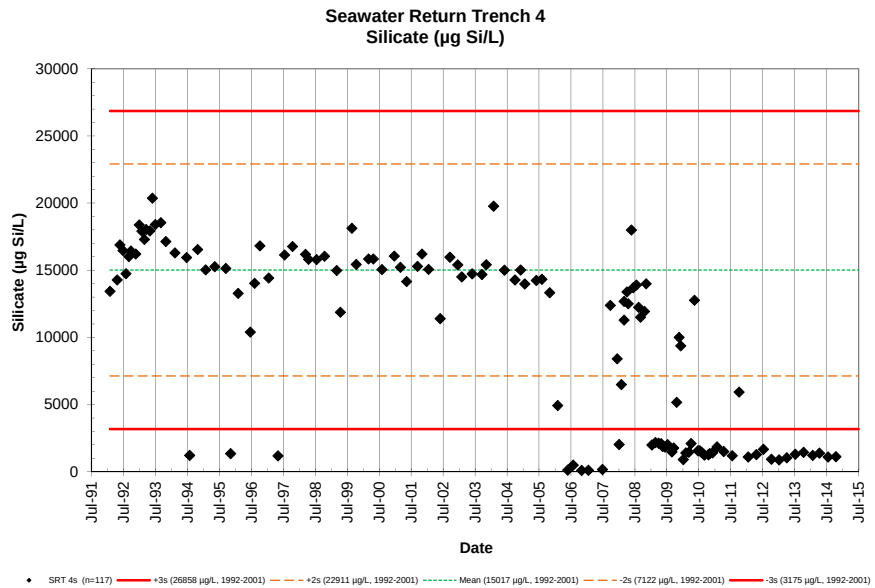

Seawater Return Trench 4
Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
'92-'13 Seawater Return Trench 4
'13-'14 Seawater Return Trench 4
W1-SSW Mixing Line
W1-DSW Mixing Line

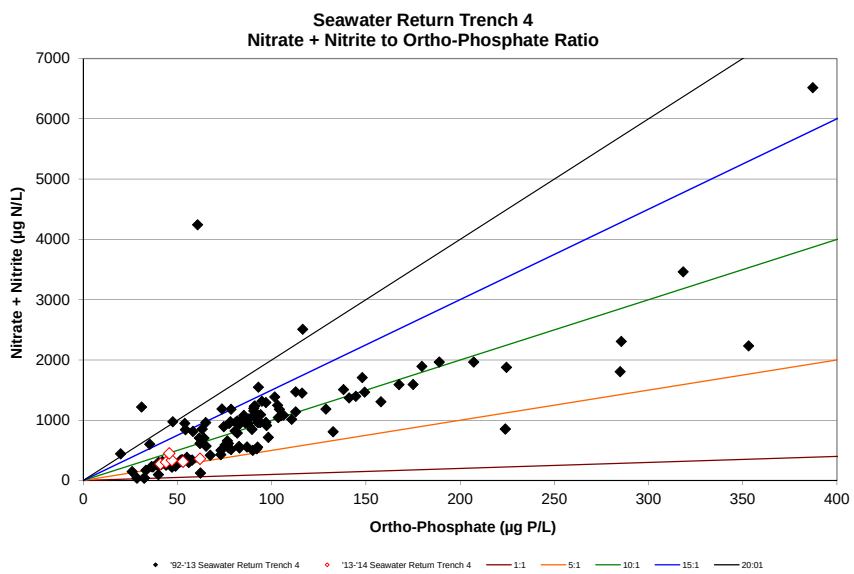

Seawater Return Trench 4
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
SRT 4s (n=117)
+3s (2840 µg/L, 1992-2001)
+2s (2248 µg/L, 1992-2001)
Mean (1063 µg/L, 1992-2001)
-2s (-121 µg/L, 1992-2001)
-3s (-713 µg/L, 1992-2001)

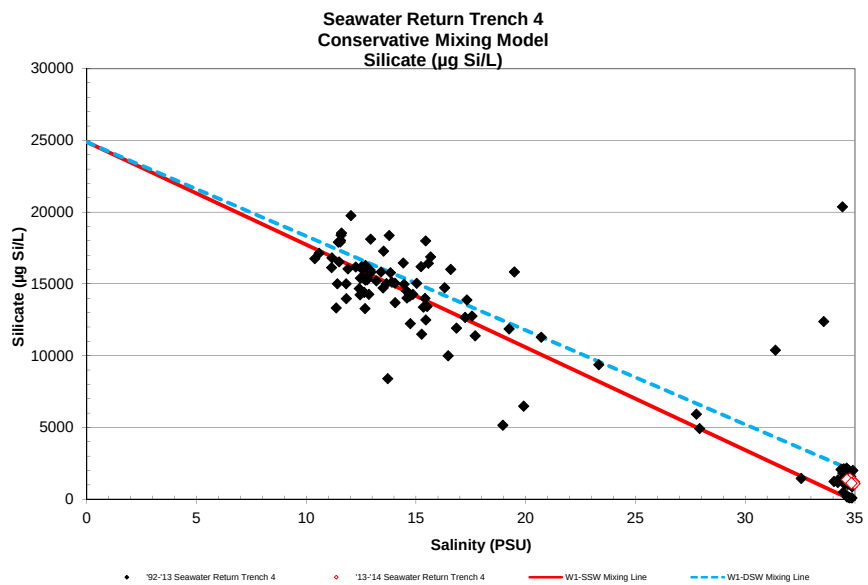

Seawater Return Trench 4
Total Dissolved Nitrogen (µg N/L)
Total Dissolved Nitrogen (µg N/L)
Date
SRT 4s (n=115)
+3s (3434 µg/L, 1992-2001)
+2s (2679 µg/L, 1992-2001)
Mean (1170 µg/L, 1992-2001)
-2s (-339 µg/L, 1992-2001)
-3s (-1094 µg/L, 1992-2001)

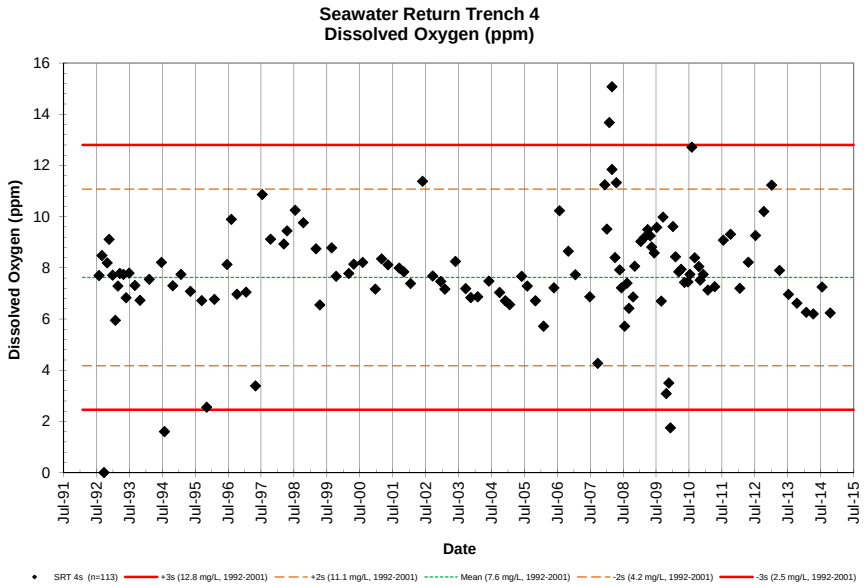

Seawater Return Trench 4
Total Dissolved Nitrogen (µg N/L)
Total Dissolved Nitrogen (µg N/L)
Date
SRT 4s (n=115)
+3s (3434 µg/L, 1992-2001)
+2s (2679 µg/L, 1992-2001)
Mean (1170 µg/L, 1992-2001)
-2s (-339 µg/L, 1992-2001)
-3s (-1094 µg/L, 1992-2001)

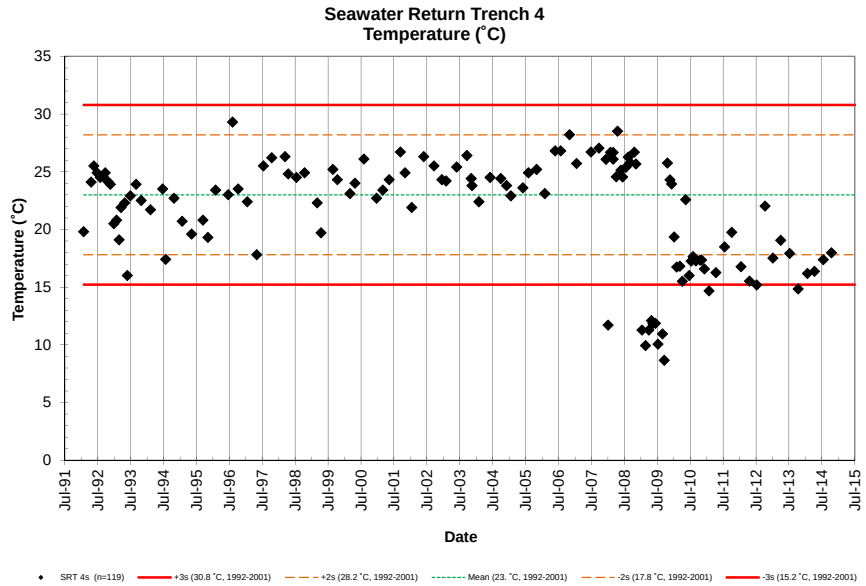

Seawater Return Trench 4
Ammonia (µg N/L)
Ammonia (µg N/L)
Date
SRT 4s (n=117)
+3s (302 µg/L, 1992-2001)
+2s (209 µg/L, 1992-2001)
Mean (22 µg/L, 1992-2001)
-2s (-165 µg/L, 1992-2001)
-3s (-258 µg/L, 1992-2001)

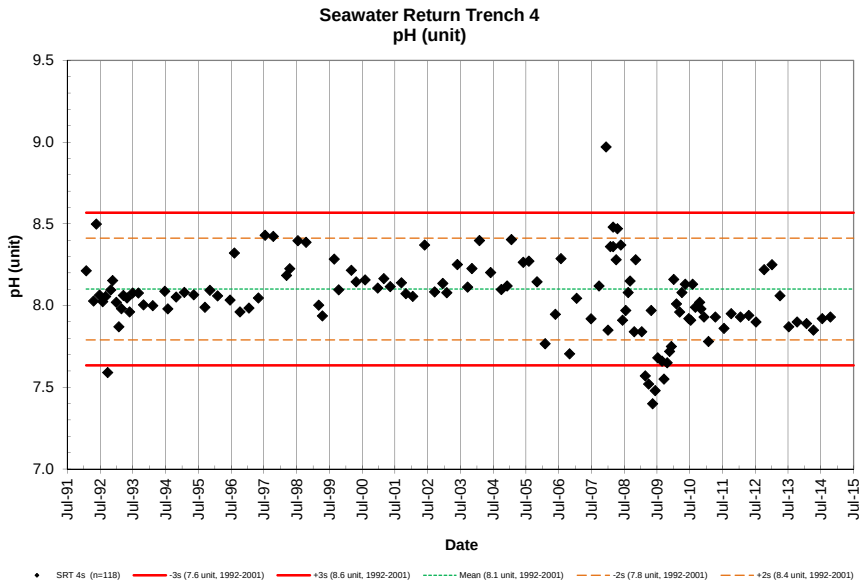

Seawater Return Trench 4
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
SRT 4s (n=117)
+3s (26858 µg/L, 1992-2001)
+2s (22911 µg/L, 1992-2001)
Mean (15017 µg/L, 1992-2001)
-2s (7122 µg/L, 1992-2001)
-3s (3175 µg/L, 1992-2001)

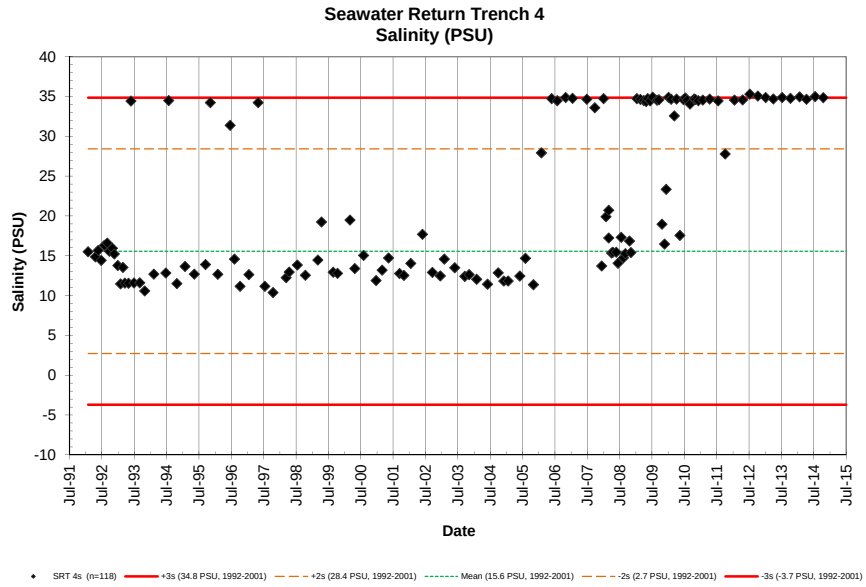

Seawater Return Trench 4
Nitrate + Nitrite to Ortho-Phosphate Ratio
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
'92-'13 Seawater Return Trench 4
'13-'14 Seawater Return Trench 4
1:1
5:1
10:1
15:1
20:01

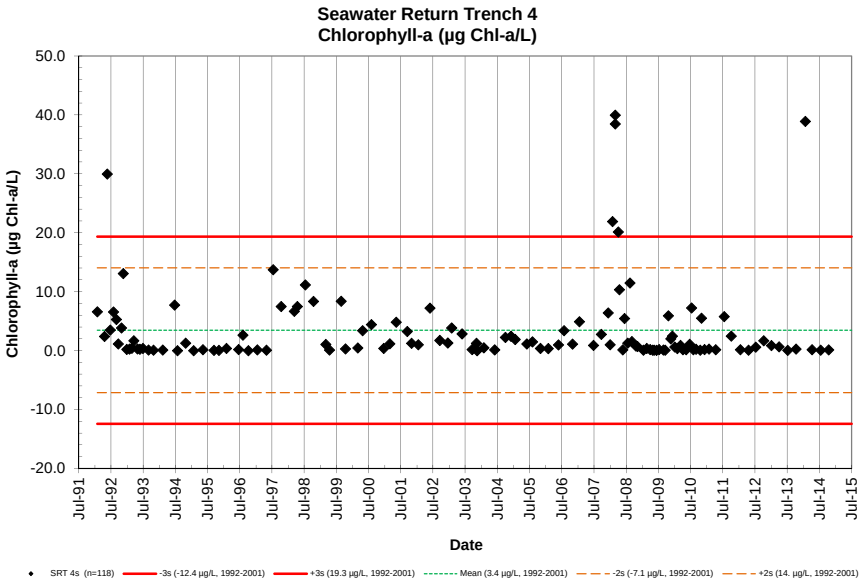

Seawater Return Trench 4
Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
'92-'13 Seawater Return Trench 4
'13-'14 Seawater Return Trench 4
W1-SSW Mixing Line
W1-DSW Mixing Line

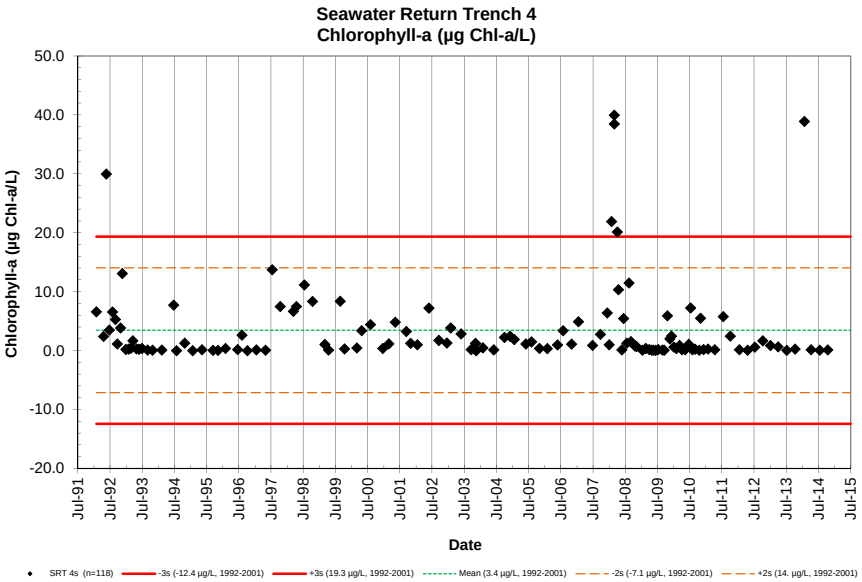

Seawater Return Trench 4
Dissolved Oxygen (ppm)
Dissolved Oxygen (ppm)
Date
SRT 4s (n=113)
+3s (12.8 mg/L, 1992-2001)
+2s (11.1 mg/L, 1992-2001)
Mean (7.6 mg/L, 1992-2001)
-2s (4.2 mg/L, 1992-2001)
-3s (2.5 mg/L, 1992-2001)


Seawater Return Trench 4
Temperature (˚C)
Temperature (˚C)
Date
SRT 4s (n=119)
+3s (30.8 ˚C, 1992-2001)
+2s (28.2 ˚C, 1992-2001)
Mean (23. ˚C, 1992-2001)
-2s (17.8 ˚C, 1992-2001)
-3s (15.2 ˚C, 1992-2001)


Seawater Return Trench 4
pH (unit)
pH (unit)
Date
SRT 4s (n=118)
-3s (7.6 unit, 1992-2001)
+3s (8.6 unit, 1992-2001)
Mean (8.1 unit, 1992-2001)
-2s (7.8 unit, 1992-2001)
+2s (8.4 unit, 1992-2001)


Seawater Return Trench 4
Salinity (PSU)
Salinity (PSU)
Date
SRT 4s (n=118)
+3s (34.8 PSU, 1992-2001)
+2s (28.4 PSU, 1992-2001)
Mean (15.6 PSU, 1992-2001)
-2s (2.7 PSU, 1992-2001)
-3s (-3.7 PSU, 1992-2001)


Seawater Return Trench 4
Chlorophyll-a (µg Chl-a/L)
Chlorophyll-a (µg Chl-a/L)
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
Jul-91
Jul-92
Jul-93
Jul-94
Jul-95
Jul-96
Jul-97
Jul-98
Jul-99
Jul-00
Jul-01
Jul-02
Jul-03
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Jul-12
Jul-13
Jul-14
Jul-15
Date
SRT 4s (n=118)
-3s (-12.4 µg/L, 1992-2001)
+3s (19.3 µg/L, 1992-2001)
Mean (3.4 µg/L, 1992-2001)
-2s (-7.1 µg/L, 1992-2001)
+2s (14. µg/L, 1992-2001)


Seawater Return Trench 4
Chlorophyll-a (µg Chl-a/L)
Chlorophyll-a (µg Chl-a/L)
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
Jul-91
Jul-92
Jul-93
Jul-94
Jul-95
Jul-96
Jul-97
Jul-98
Jul-99
Jul-00
Jul-01
Jul-02
Jul-03
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Jul-12
Jul-13
Jul-14
Jul-15
Date
SRT 4s (n=118)
-3s (-12.4 µg/L, 1992-2001)
+3s (19.3 µg/L, 1992-2001)
Mean (3.4 µg/L, 1992-2001)
-2s (-7.1 µg/L, 1992-2001)
+2s (14. µg/L, 1992-2001)

NELHA Water Quality Laboratory

Seawater Return Trench 5

June 1992 - December 2014

SITE ID	DATE	TIME	TIDE		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	TEMP	pH	DO	Chl a	Fecal Col.	Entero.
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(˚C)		(ppm)	(µg/L)	CFU/100ml	CFU/100ml
SRT-5s	6/24/92	1150	1.4	High	3.0	92	77.9	1091	0.44	6	729	20474	3.0	94	82	1151	0.71	0.91	8.36	25.3	8.18		0.1	1	5
SRT-5s	7/31/92	918	0.4	Ebb	3.0	94	73.5	1029			680	19093	3.2	98	76	1067	1.05	0.17	10.09	22.7	7.98	8.06	0.1	<1	<1
SRT-5s	8/31/92	1101	0.8	Ebb	3.7	115	12.7	177	35.2	493	79	2229	5.0	155	71	987	3.63	0.94	32.33	27.0	7.97	6.54	12.8	<1	10
SRT-5s	9/23/92	1138	1.5	Flood	12.9	400	17.1	240	91.6	1283	79	2218	13.3	412	122	1704	4.81	4.3	34.12	26.7	8.00	5.76	0.6	431	<1
SRT-5s	10/28/92	1156	0.6	Low														9.9	27.18	25.8	7.76	1.40	0.6	11	TNTC
SRT-5s	11/18/92	1212	1.5	High	13.0	403	31.7	443	36.5	511	169	4746	16.3	505	155	2167	5.88	4.2	29.78	26.8	8.24	9.98	22.6	<1	TNTC
SRT-5s	12/9/92	1047	0.4	Low	4.5	140	63.9	895	22.5	315	39	1104	6.3	196	62	866	3.65	7.3	34.80	23.5	7.94	4.30	11.9	<1	141
SRT-5s	1/27/93				NO SAMPLES TAKEN, UNFILTERABLE																				
SRT-5s	2/24/93				NO SAMPLES TAKEN, UNFILTERABLE																				
SRT-5s	3/22/93	1312	0.8	Flood	1.9	59	3.2	45	5.21	73	53	1480	3.8	118	77	1083	6.46	4.1	34.62	27.6	8.26	3.45	60.9		
SRT-5s	4/28/93	1027	0.5	High	3.7	113	11.4	159	10.6	148	59	1650	4.8	149	51	708	2.80	2.0	32.90	24.3	8.30	7.25	22.0	<1	<1
SRT-5s	5/26/93	1041	0.9	Flood	NO SAMPLES TAKEN, UNFILTERABLE													3.0	34.08	25.8	8.70	11.21	31.1	<1	<1
SRT-5s	6/29/93	1036	1.3	Flood	NO SAMPLES TAKEN, UNFILTERABLE													2.1	30.22	24.2	8.39	9.70	83.2	<1	<1
SRT-5s	9/20/93	822	2.1	High	4.7	144	106.0	1485	36.0	504	54	1512	6.1	190	215	3011	4.44	3.2	33.83	19.9	7.67	7.71	78.4	<1	<1
SRT-5s	10/27/93	1034	0.7	Flood	3.7	114	26.5	371	0.96	13	129	3623	4.6	142	63	884	2.42	2.5	30.09	25.0	8.14	7.45	2.0	<1	<1
SRT-5s	2/8/94	1057	0.2	Low	3.6	112	68.7	962	12.6	176	151	4241	4.9	152	115	1610	2.52	16.9	29.25	20.7	8.03	8.77	20.7	<1	<1
SRT-5s	6/22/94	1026	0.0	Flood	1.3	39	63.5	889	1.87	26	30	840	8.0	248	236	3311	NS	3.9	34.31	22.9	8.38	10.69	126.3	<1	<1
SRT-5s	8/24/94	1009	0.8	Ebb	4.9	151	77.3	1082	12.5	176	101	2840	6.0	184	118	1649	2.37	1.22	30.37	24.5	8.08	10.02	12.1	<1	1
SRT-5s	10/26/94	944	1.8	High	2.3	72	303.8	4255	34.3	480	86	2429	6.2	192	368	5158	4.90	3.9	33.06	23.1	8.22	10.98	179.5	<1	1
SRT-5s	3/29/95	1124	0.2	Flood	15.0	465	454.8	6370	32.9	461	76	2126	16.2	502	494	6918	3.34	1.07	33.34	21.9	7.88	8.59	42.6	<1	3
SRT-5s	5/10/95	724	-0.2	Low	4.7	146	68.5	959	44.7	626	23	652	8.0	248	161	2259	6.81	6.5	34.72	22.4	7.82	3.05	152.5	<1	3
SRT-5s	9/13/95	732	1.8	High	1.0	32	10.9	152	26.5	371	45	1264	3.7	115	102	1427	5.41	8.1	34.35	23.2	7.74	2.56	134.6	2	64
SRT-5s	11/6/95	1003	0.4	Low	5.8	181	166.0	2326	40.2	564	48	1361	8.6	265	250	3508	5.58	5.1	32.91	23.2	7.94	7.74	147.0	<1	10
SRT-5s	1/31/96	1013	0.5	Flood	7.7	238	42.3	592	33.5	469	34	964	8.7	271	45	623	2.31	3.6	31.13	20.8	7.83	6.73	26.9	14	10
SRT-5s	6/17/96	1330	1.0	Flood	3.0	92	46.0	645	5.06	71	150	4223	3.4	107	106	1490	2.17	1.56	24.91	24.4	8.22	7.08	4.1	<1	102
SRT-5s	8/5/96	1253	1.2	Ebb	2.8	86	28.3	396	2.12	30	105	2953	3.2	100	34	477	1.24	1.20	30.88	25.0	8.49	10.57	10.6	2	21
SRT-5s	10/7/96	1153	1.7	Flood	6.3	195	309.8	4339	4.43	62	44	1246	6.6	206	311	4357	1.64	1.64	34.50	22.4	8.31	7.36	87.7	<1	<1
SRT-5s	1/15/97	940	1.3	High	15.5	480	361.7	5066	24.2	339	48	1348	17.0	527	405	5676	3.38	5.5	34.41	21.9	8.03	7.26	207.0	2	14
SRT-5s	4/30/97	1008	0.7	Flood	0.5	15	0.3	5	0.40	6	68	1904	3.1	96	42	590	3.46	8.6	24.71	26.5	8.59	10.06	216.0	2	70
SRT-5s	7/14/97	1120	1.6	Flood	0.0	1	0.3	4	0.65	9	12	333	0.9	28	23	326	2.26	4.1	34.45	27.4	8.66	8.15	172.2	1	67
SRT-5s	10/13/97	1215	1.5	Flood	0.2	6	0.3	4	0.85	12	114	3202	1.3	40	38	535	4.22	4.7	34.72	27.6	8.90	9.15	218.5	2	29
SRT-5s					NO SAMPLES TAKEN DUE TO SITE QUARANTINE																				
SRT-5s	4/15/98	1118	0.0	Low	1.1	33	5.6	79	6.15	86	49	1387	2.1	65	36	510	1.50	0.44	33.50	24.6	8.14	6.29	0.8	2	22
SRT-5s	7/15/98	1128	1.2	High	5.0	154	19.2	268	4.82	68	89	2505	6.7	207	59	825	3.00	3.1	32.22	25.0	8.39	7.54	24.4	<1	2
SRT-5s	10/14/98	1105	1.8	Flood	2.4	74	4.0	55	0.37	5	21	598	5.2	161	31	439	2.87	1.67	34.89	26.4	8.35	8.41	22.7	<1	<1
SRT-5s	3/3/99	1045	0.1	Ebb	4.0	123	1.1	16	0.30	4	12	339	4.8	150	23	327	2.20	2.4	35.12	23.3	8.30	10.99	84.2	<1	1
SRT-5s	4/14/99	1028	-0.1	Flood	6.6	204	32.8	459	0.65	9	262	7358	14.6	452	151	2114	11.4	4.3	24.10	25.0	8.17	8.20	12.8	<1	<1
SRT-5s	8/24/99	1044	1.0	Flood	1.4	42	2.2	31	1.96	27	11	320	2.7	84	32	452	2.64	1.86	35.03	27.9	8.31	8.35	10.1	24	<1
SRT-5s	10/12/99	1040	0.8	Ebb	1.4	44	0.1	1	0.35	5	21	594	5.9	182	33	457	3.13	2.1	35.16	25.8	8.32	8.50	10.1	<1	6
SRT-5s	3/1/00	1040	0.4	Flood	0.3	8	0.1	1	0.40	6	52	1466	2.0	62	22	303	2.34	4.4	33.56	23.1	8.29	8.30	10.4	<1	<1
SRT-5s	4/24/00	1109	0.3	Ebb	0.6	20	0.2	2	0.12	2	47	1306	1.7	51	19	262	1.92	4.7	33.52	22.6	8.36	8.73	70.4	1	6
SRT-5s	8/1/00	1031	0.0	Low	3.7	116	4.7	66	1.08	15	44	1241	5.5	172	32	453	2.86	6.4	34.00	25.3	8.08	5.71	107.0	89	2
SRT-5s	12/20/00	1005	1.0	Flood	3.7	114	9.3	130	4.52	63	42	1174	6.8	211	54	762	3.75	9.2	33.54	22.0	7.89	3.78	201.0	3	105
SRT-5s	2/27/01	1037	0.4	Ebb	3.8	119	11.8	165	5.38	75	56	1570	5.9	183	44	622	2.82	2.6	33.21	22.5	8.07	7.11	40.0	<1	5
SRT-5s	5/9/01	1038	-0.2	Low	3.7	115	8.3	117	0.43	6	75	2106	6.1	189	45	633	4.08	6.9	32.44	23.5	8.14	8.45	135.9	1	12
SRT-5s	9/11/01	1100	2.1	High	3.3	103	0.1	1	0.08	1	27	768	4.8	149	34	476	2.76	7.4	34.48	26.0	8.37	6.53	76.5	<1	22
SRT-5s	10/31/01	1137	0.7	Flood	8.8	271	4.4	61	6.21	87	31	857	10.8	335	56	783	3.18	3.3	34.62	27.3	8.10	7.13	59.2	<1	10
SRT-5s	1/15/02	1056	0.4	Ebb	4.0	125	1.9	27	32.0	448	33	913	7.7	238	45	626	3.01	3.6	34.23	21.8	8.08	6.57	98.0	3	27
SRT-5s	5/28/02	1041	-0.2	Low	6.9	212	5.5	77	0.43	6	58	1632	9.1	282	50	698	4.01	13.2	33.26	25.8	7.77	2.31	169.4	149	19
SRT-5s	9/17/02	1113	1.6	Flood	3.3	103	10.5	147	7.30	102	46	1292	4.7	144	44	610	2.32	5.7	33.66	21.6	8.03	7.54	143.1	2	1
SRT-5s	12/16/02	1129	0.6	Flood	2.2	69	6.4	89	3.53	49	58	1623	4.0	123	42	588	2.84	6.10	33.59	23.8	8.07	9.45	34.2	40	21
SRT-5s	1/30/03	1130	0.2	Flood	0.6	19	0.6	9	1.10	15	61	1713	1.5	45	20	281	2.21	7.60	33.61	23.9	8.29	8.64	117.0	82	24
SRT-5s	5/28/03	1035	0.4	Flood	1.0	30	1.0	14	0.20	3	44	1230	3.7	115	33	463		10.5	34.02	21.8	8.12	6.53	98.8	3	54

NELHA Water Quality Laboratory

Seawater Return Trench 5

June 1992 - December 2014

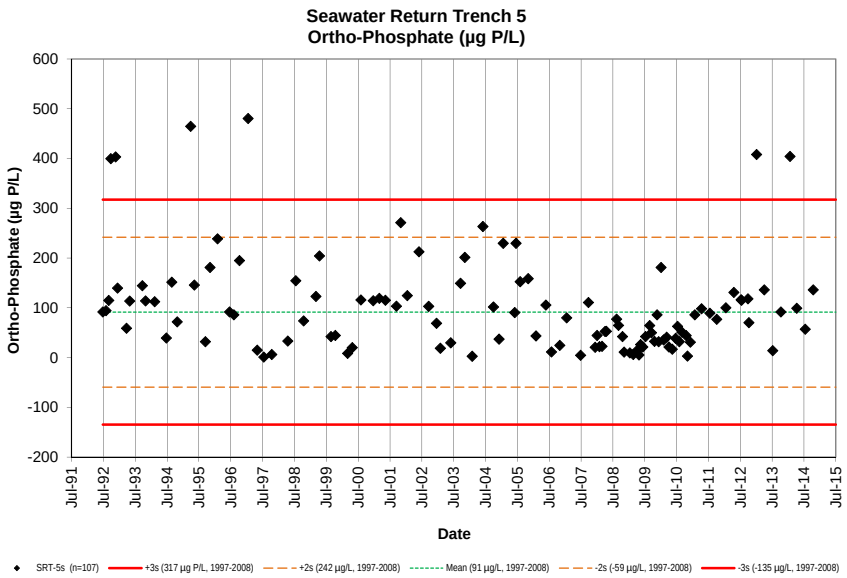
SITE ID	DATE	TIME	TIDE		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	TEMP	pH	DO	Chl a	Fecal Col.	Entero.
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(˚C)		(ppm)	(µg/L)	CFU/100ml	CFU/100ml
SRT-5s	9/18/03	1047	1.7	Ebb	4.8	149	13.9	195	7.35	103	32	899	6.2	191	41	576	3.61	1.01	34.49	23.8	8.07	7.65	13.0	2	6
SRT-5s	11/6/03	1035	0.7	Flood	6.5	201	10.0	140	12.4	173	38	1061	8.3	258	53	741	3.80	2.20	34.03	24.2	7.78		22.0	<1	2
SRT-5s	11/14/03	1355	0.6	Ebb																24.2		9.42			
SRT-5s	1/29/04	1019	0.9	Ebb	0.1	2	0.0	1	0.20	3	38	1080	1.0	30	16	224	2.67	7.70	33.53	22.6	8.23	7.18	128.2	UTC	33
SRT-5s	6/1/04	959	-0.1	Flood	8.5	263	24.6	344	3.65	51	80	2255	11.0	339	55	770	4.57	5.80	31.32	26.2	7.85	5.43	7.5	<1	5
SRT-5s	9/29/04	958	0.5	Ebb	3.3	102	6.7	94	10.5	147	31	868	4.7	146	36	507	2.31	3.76	33.33	24.9	8.13	6.12	45.3	4	4
SRT-5s	12/2/04	1045	1.6	Ebb	1.2	37	1.8	25	0.71	10	32	896	2.5	77	18	258	2.48	11.2	33.06	22.7	8.12	4.71	68.1	2	5
SRT-5s	1/19/05	1020	0.6	Flood	7.4	230	17.3	242	9.1	127	55	1532	8.7	271	45	624	2.25	4.56	33.52	20.6	7.92	5.63	22.6	2	9
SRT-5s	5/31/05	1015	0.9	Flood	2.9	90	14.8	207	9.8	137	97	2713	4.3	134	46	641	2.22	4.8+/-	31.51	23.5	8.18		0.2	1	8
SRT-5s	6/16/05	1000	1.0	Flood	7.4	230	17.3	242	9.1	127	55	1532	8.7	271	44	616				24.2		6.97		25	35
SRT-5s	8/2/05	945	0.4	Flood	4.9	152	15.4	215	12.3	173	96	2688	6.7	209	52	731	2.94	4.54+/-	31.58	25.2	8.08	7.12	26.3	25	35
SRT-5s	8/8/05	1010																		25.0				3	7
SRT-5s	11/1/05	939	0.9	Flood	5.1	159	6.3	88	38.6	540	23	652	8.1	251	72	1012	4.86	12.8	34.70	24.0	7.42	2.45	40.3	5	25
SRT-5s	1/30/06	938	0.5	Ebb	1.4	43	12.1	170	1.90	27	28	772	1.8	56	18	248	0.93	1.33	34.78	19.9	8.08	7.39	3.7	<1	3
SRT-5s	5/25/06	950	0.0	Flood	3.4	106	7.3	102	1.81	25	23	652	5.1	158	33	465	2.69	7.29	34.42	25.2	8.07	5.71	110.0	4	17
SRT-5s	7/27/06	1104	0.2	Low	0.4	11	0.2	3	0.32	4	20	565	1.3	39	12	170	1.54	2.52	34.50	25.7	8.29	8.55	27.0	2	46
SRT-5s	10/31/06	940	1.6	Flood	0.8	24	18.8	263	0.49	7	72	2011	2.1	64	39	549	2.21	6.00	32.86	23.0	7.86	5.50	16.5	350	4
SRT-5s	1/17/07	1138	0.3	Flood	2.6	80	16.3	228	8.2	115	40	1118	3.6	110	36	504	2.12	3.10	34.12	22.1	8.03	7.24	14.3	15	5
SRT-5s	6/26/07	1111	1.6	Flood	0.1	5	12.1	170	4.39	61	45	1261	0.7	23	n/a	n/a		5.76	34.17	22.3	7.95	6.85	35.3	1	27
SRT-5s	9/24/07	1307	1.8	Flood	3.6	111	15.7	219	10.07	141	45	1275	4.6	141	50	704		4.53	34.71	21.2	8.02	8.00	8.2		
SRT-5s	12/11/07	1105	0.8	Ebb	0.7	21	8.6	120	13.59	190	18	500	2.3	71	44	618		4.23	34.46	21.2	8.04	5.62	35.5		
SRT-5s	1/29/08	1339	0.2	Ebb	0.7	22	4.5	64	3.57	50	17	466	2.5	78	41	573		3.37	34.75	18.7	7.98	8.83	85.4		
SRT-5s	2/28/08	1023	0.4	Ebb	0.7	23	10.8	152	5.64	79	45	1255	1.8	57	40	562		3.12	34.88	18.6	7.81	6.16	114.8		
SRT-5s	4/2/08	1345	1.1	High	1.7	52	10.2	143	0.18	3	41	1147	2.7	84	113	1588		1.59	34.86	20.7	8.10	8.40	28.2		
SRT-5s	4/16/08	1415	1.3	Flood	1.7	53	19.5	273	0.18	3	46	1283	2.3	70	48	676		2.19	34.77	18.2	7.97	9.15	34.9		
SRT-5s	5/23/08	1050	Trench Dry																						
SRT-5s	6/12/08	1100	Trench Dry																						
SRT-5s	7/18/08	958	Trench Dry																						
SRT-5s	8/13/08	1101	1.2	Flood	2.5	77	33	464	4.2	59	81	2274	0.0		0			1.09	34.85	23.6	7.97	5.08	7.0		
SRT-5s	9/4/08	1151	1.0	Ebb	2.1	65	31	440	4.1	57	76	2138	1.6	51	22	314		1.22	34.67	13.8	7.67	8.15	6.9		
SRT-5s	10/20/08	1144	1.8	Ebb	1.4	42	7	105	10.6	148	21	600	0.0		0			1.76	35.06	24.9	7.83	7.10	38.0		
SRT-5s	11/6/08	1055	1.8	High	0.4	11	7	95	0.1	2	22	622	0.8	24	26	369		1.37	35.25	22.6	8.27	7.21	6.8		
SRT-5s	1/2/08	1115	0.7	Ebb	1.4	44	2	27	21.3	299	7	185	4.0	125	60	835		4.63	35.34	25.7	8.12	4.75	89.3		
SRT-5s	1/12/09	1057	0.6	Ebb	0.3	9	1	13	13.5	189	2	67	0.3	8	42	584		2.13	34.82	25.3	8.34	5.94	28.7		
SRT-5s	2/20/09	1005	0.3	Low	0.2	6	38	526	3.2	46	4	101	1.2	38	42	591		5.20	35.83	22.3	8.17	6.86	17.7		
SRT-5s	3/30/09	1412	0.1	Flood	0.4	13	2	31	8.2	115	16	440	23.8	736	29	403		1.97	34.83	25.0	8.12	6.26	19.9		
SRT-5s	4/27/09	1441	0.3	Flood	0.2	5	4	58	3.9	54	30	854	1.6	51	44	614		4.12	35.42	28.0	8.61	5.92	20.9		
SRT-5s	5/14/09	1048	0.4	Flood	0.8	26	2	25	6.2	86	6	173	1.3	40	25	347		0.31	35.26	26.2	8.15	4.82	2.1		
SRT-5s	6/10/09	912	0.2	Ebb	0.7	21	10	142	5.7	80	7	204	1.5	47	31	428		3.08	35.39	27.5	9.09	4.33	4.6		
SRT-5s	7/10/09	845	0.5	Ebb	1.4	42	1	13	11.1	155	8	214	2.5	76	20	278		6.36	35.61	26.4	8.16	5.33	2.3		
SRT-5s	8/27/09	1036	1.8	Flood	2.1	64	2	26	1.4	20	21	583	4.3	132	45	626		8.47	35.50	28.1	8.32	7.50	3.9		
SRT-5s	9/17/09	1043	0.3	Flood	1.6	50	10	134	0.3	5	40	1128	2.9	90	42	591		5.98	35.45	22.2	7.73	6.73	6.3		
SRT-5s	10/22/09	940	1.6	Ebb	1.0	32	24	332	1.6	22	47	1309	1.6	49	34	472		3.64	35.19	17.5	7.75	7.48	33.7		
SRT-5s	11/19/09	918	1.7	Ebb	2.8	86	23	321	23.6	330	54	1529	3.0	93	59	824		5.72	34.98	17.9	7.62	6.55	4.9		
SRT-5s	12/7/09	810	2.0	High	1.0	32	22	308	12.4	174	68	1923	1.8	55	48	666		2.92	34.88	17.4	7.83	6.41	135.4		
SRT-5s	1/4/10	1353	0.0	Low	5.8	181	26	365	25.4	356	58	1637	6.7	207	66	923		19.90	34.70	15.9	7.91	8.19	137.0		
SRT-5s	2/2/10	1310	-0.2	Low	1.1	35	27	375	9.4	132	51	1419	1.6	49	43	599		3.50	34.62	20.3	7.92	9.31	134.6		
SRT-5s	3/10/10	1230	0.7	High	1.3	41	7	93	13.4	188	16	446	1.9	60	36	503		4.49	35.34	24.7	8.16	6.95	89.8		
SRT-5s	4/5/10	930	0.4	High	0.7	21	9	125	9.7	136	43	1212	1.2	38	31	435		3.45	35.17	22.1	8.10	4.95	92.8		
SRT-5s	5/12/10	1210	1.5	Flood	0.5	17	10	141	11.7	164	41	1143	2.1	66	45	632		6.63	34.63	25.2	8.29	6.94	77.0		
SRT-5s	6/21/10	930	1.3	Flood	1.2	39	14	203	15.8	221	82	2315	2.6	80	49	686		6.42	32.75	23.0	7.94	5.56	101.8		

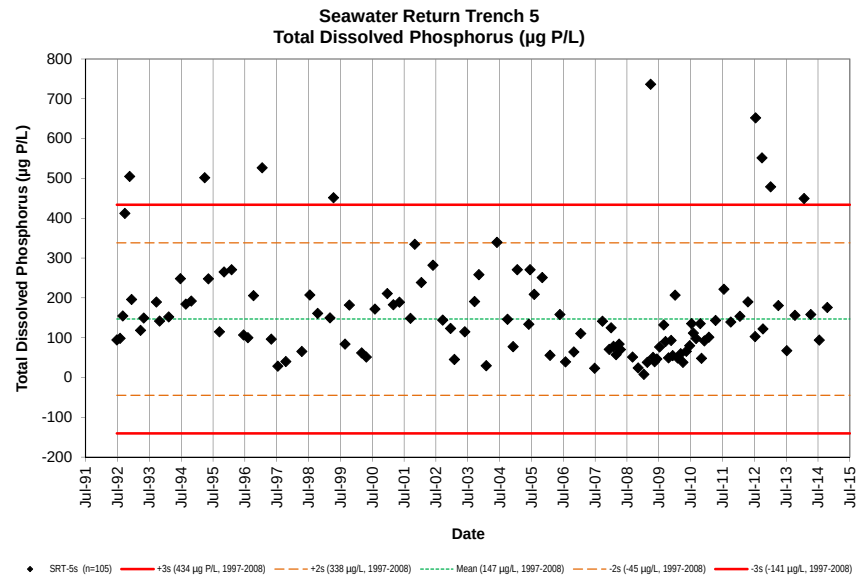
NELHA Water Quality Laboratory

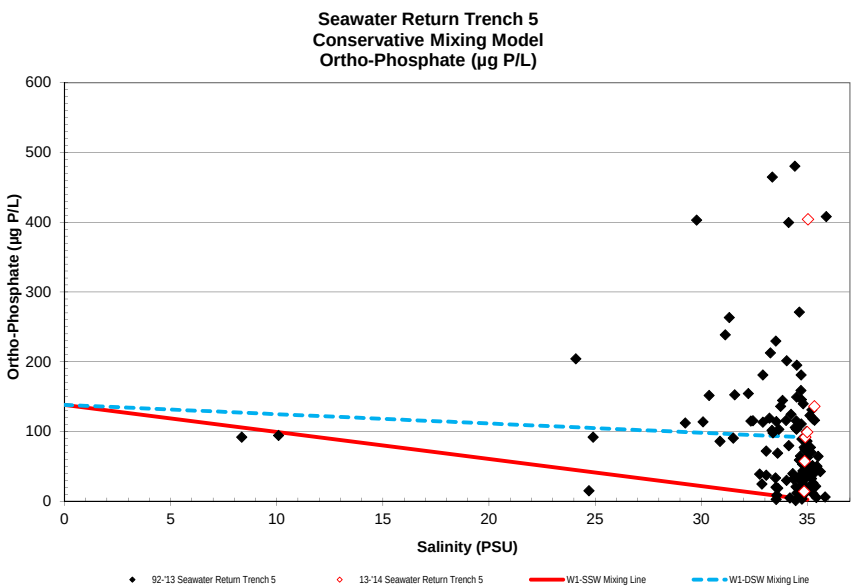
Seawater Return Trench 5

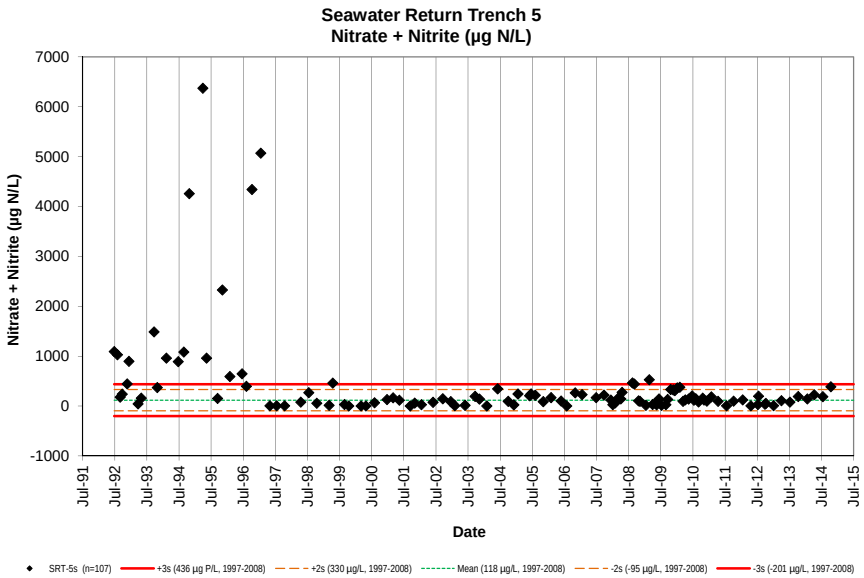
June 1992 - December 2014

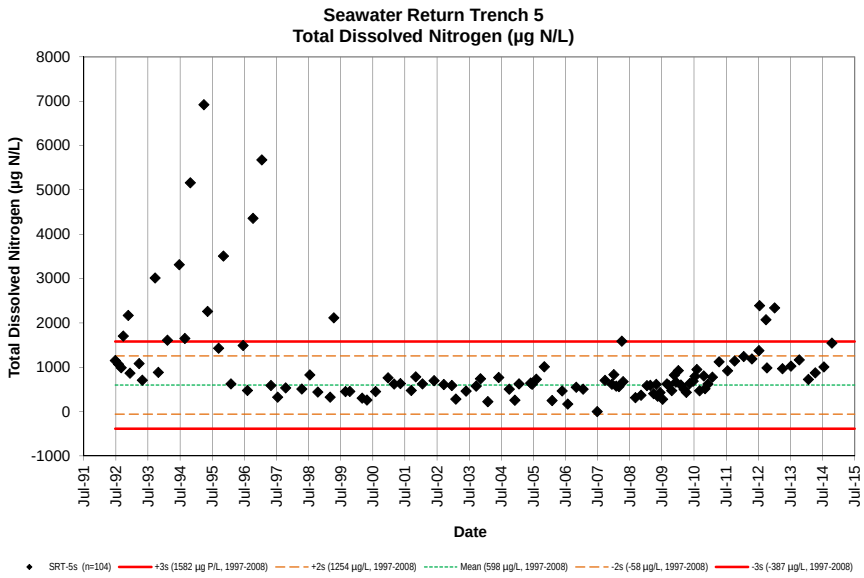
SITE ID	DATE	TIME	TIDE		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	TEMP	pH	DO	Chl a	Fecal Col.	Entero.
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(˚C)		(ppm)	(µg/L)	CFU/100ml	CFU/100ml
SRT-5s	7/12/10	917	-0.1	Low	2.0	63	8.4	118	19.6	274	23	644	4.4	135	57	794		7.86	35.00	23.8	7.53	3.72	114.4		
SRT-5s	8/2/10	1150	1.3	Ebb	1.0	32	10	146	26.6	372	39	1103	3.6	112	68	949		7.13	34.84	24.5	7.74	6.94	132.9		
SRT-5s	9/2/10	1028	1.7	Flood	1.6	51	6	81	0.7	10	25	703	3.2	98	34	469		8.15	35.24	25.6	7.99	3.81	93.0		
SRT-5s	10/19/10	1039	1.0	Flood	1.4	44	11	160	13.6	190	30	834	4.4	135	57	804		6.04	34.96	23.0	7.81	7.07	40.1		
SRT-5s	11/3/10	919	0.5	Low	0.1	3	9	120	11.4	160	33	913	1.6	48	37	517		5.55	34.74	21.2	7.78	6.56	93.1		
SRT-5s	12/6/10	907	0.9	Ebb	1.0	31	7	97	15.8	221	31	861	3.0	92	44	622		3.13	34.64	21.4	8.05	6.89	63.0		
SRT-5s	1/26/11	931	0.9	High	2.8	86	13	183	27.3	383	31	858	3.3	101	56	778		4.10	34.96	27.0	7.71	5.07	29.8		
SRT-5s	4/13/11	955	0.3	Flood	3.2	98	7	95	55.5	777	47	1308	4.6	143	80	1123		5.31	33.38	26.4	7.59	0.53	18.8		
SRT-5s	7/18/11	842	0.8	Ebb	2.9	89	0	6	24.7	347	38	1078	7.2	222	66	921		6.81	34.74	22.6	7.15	0.11	27.9		
SRT-5s	10/5/11	930	1.4	Flood	2.5	77	7	98	50.4	707	38	1059	4.5	139	82	1142		5.71	35.14	22.6	7.14	1.01	46.2		
SRT-5s	1/17/12	803	0.7	Flood	3.2	100	9	122	55.8	782	25	712	5.0	154	89	1243		4.66	34.95	23.2	7.52	0.05	49.0		
SRT-5s	4/19/12	1019	0.3	Flood	4.2	131	0	6	60.5	847	16	446	6.1	190	85	1189		6.32	35.21	26.2	7.45	0.02	71.6		
SRT-5s	7/9/12	1140	1.1	Ebb	3.7	116	2	32	39.0	547	32	906	3.3	103	98	1376		9.67	35.34	26.7	7.54	0.09	32.8		
SRT-5s	7/16/12	1354	2.1	Flood	3.7	115	14	197	46.7	654	42	1180	21.1	652	170	2388		36.20	34.48	27.9	7.76	5.42	50.1		
SRT-5s	9/26/12	1103	1.2	Flood	3.8	118	3	38	47.0	659	17	485	17.8	551	148	2073		9.93	35.25	25.2	7.47	5.32	53.0		
SRT-5s	10/8/12	1018	1.7	Flood	2.3	70	4	52	47.1	660	23	644	3.9	122	70	984		7.76	35.17	25.0	7.55	7.98	98.1		
SRT-5s	1/3/13	1020	1.2	Ebb	13.2	408	0.5	7	136.6	1913	10	284	15.5	479	167	2337		14.40	35.89	24.5	7.07	0.51	53.7		
SRT-5s	4/1/13	1002	0.4	Ebb	4.4	136	7.6	106	31.6	443	61	1716	5.8	181	69	966		12.90	33.74	23.3	7.51	6.76	81.6		
SRT-5s	7/8/13	926	-0.1	Low	0.5	14	5.6	78	19.2	269	41	1165	2.2	68	73	1024		9.63	34.85	23.9	7.60	7.06	52.7		
SRT-5s	10/10/13	1030	1.8	Ebb	3.0	92	13.6	191	39.3	551	42	1166	5.0	156	83	1165		6.06	34.90	21.8	7.64	7.12	64.0		
SRT-5s	1/22/14	838	0.7	High	13.0	404	10.2	143	26.5	371	37	1028	14.5	449	52	724		1.36	35.03	20.2	7.38	6.90	67.3		
SRT-5s	4/9/14	1031	0.7	Flood	3.2	99	16.2	227	33.0	462	34	960	5.1	158	62	875		7.01	34.99	21.7	7.37	6.62	48.8		
SRT-5s	7/16/14	1035	0.5	Ebb	1.8	57	13.4	187	47.8	669	34	953	3.0	94	72	1008		2.83	34.87	23.1	7.41	6.54	38.5		
SRT-5s	10/15/14	1203	1.5	Ebb	4.4	136	27.6	386	67.8	949	371	10430	5.7	176	110	1545		3.60	35.33	24.5	7.40	5.93	41.2		
SRT-5s	1/1/15																								
SRT-5s	4/1/15																								

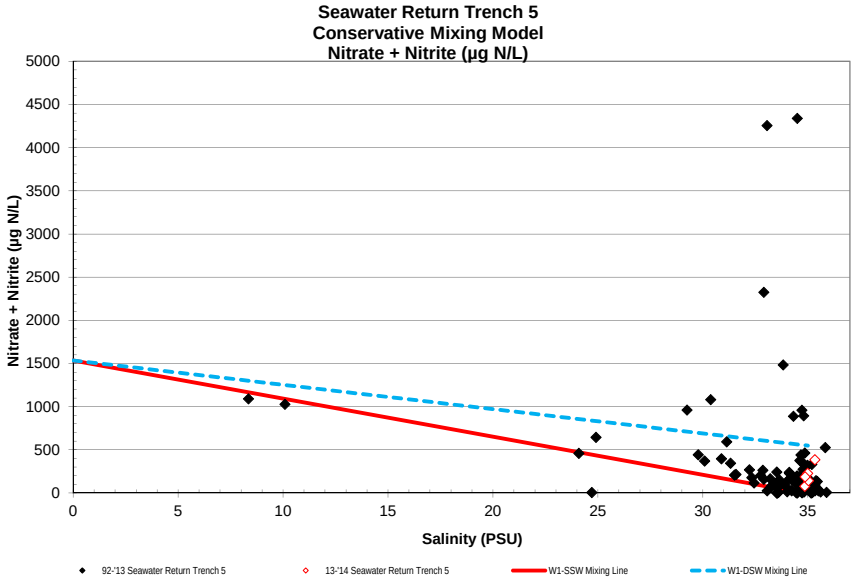

Seawater Return Trench 5
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
600
500
400
300
200
100
0
-100
-200
Jul-91
Jul-92
Jul-93
Jul-94
Jul-95
Jul-96
Jul-97
Jul-98
Jul-99
Jul-00
Jul-01
Jul-02
Jul-03
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Jul-12
Jul-13
Jul-14
Jul-15
Date
SRT-5s (n=107)
+3s (317 µg P/L, 1997-2008)
+2s (242 µg/L, 1997-2008)
Mean (91 µg/L, 1997-2008)
-2s (-59 µg/L, 1997-2008)
-3s (-135 µg/L, 1997-2008)

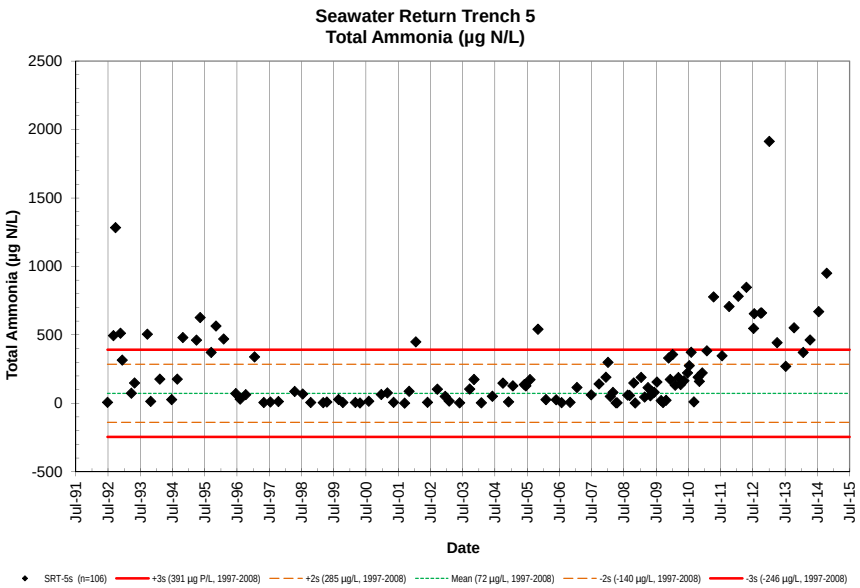

Seawater Return Trench 5
Total Dissolved Phosphorus (µg P/L)
Total Dissolved Phosphorus (µg P/L)
800
700
600
500
400
300
200
100
0
-100
-200
Jul-91
Jul-92
Jul-93
Jul-94
Jul-95
Jul-96
Jul-97
Jul-98
Jul-99
Jul-00
Jul-01
Jul-02
Jul-03
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Jul-12
Jul-13
Jul-14
Jul-15
Date
SRT-5s (n=105)
+3s (434 µg P/L, 1997-2008)
+2s (338 µg/L, 1997-2008)
Mean (147 µg/L, 1997-2008)
-2s (-45 µg/L, 1997-2008)
-3s (-141 µg/L, 1997-2008)

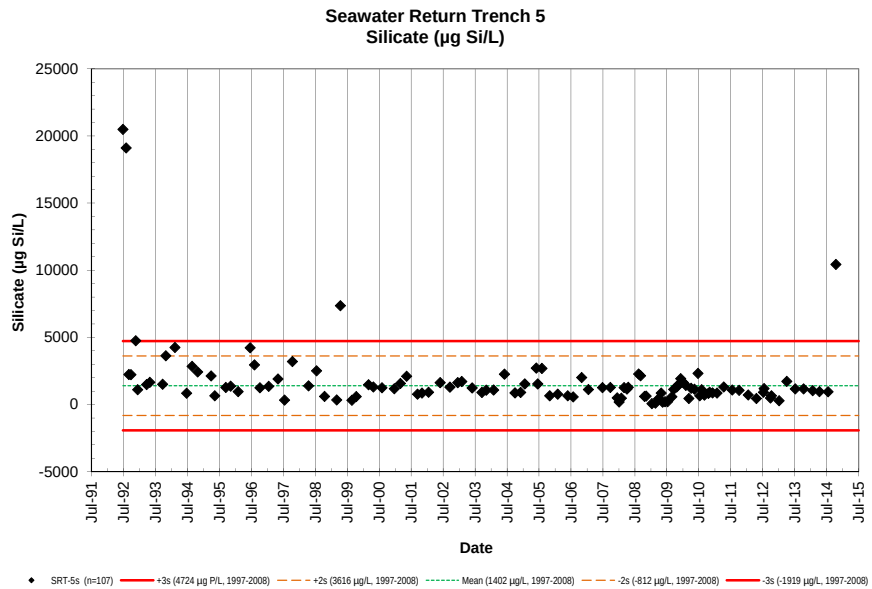

Seawater Return Trench 5
Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
600
500
400
300
200
100
0
0
5
10
15
20
25
30
35
Salinity (PSU)
92-'13 Seawater Return Trench 5
13-'14 Seawater Return Trench 5
W1-SSW Mixing Line
W1-DSW Mixing Line

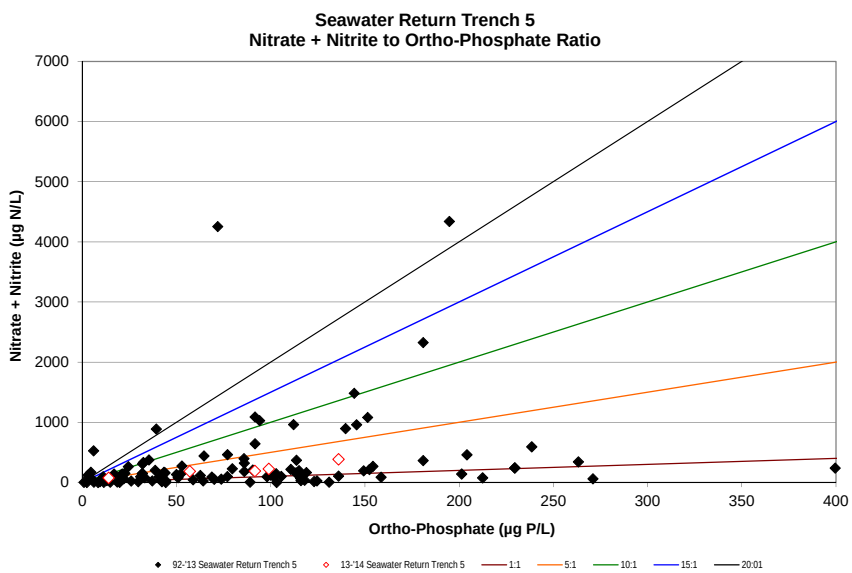

Seawater Return Trench 5
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
SRT-5s (n=107)
+3s (436 µg P/L, 1997-2008)
+2s (330 µg/L, 1997-2008)
Mean (118 µg/L, 1997-2008)
-2s (-95 µg/L, 1997-2008)
-3s (-201 µg/L, 1997-2008)

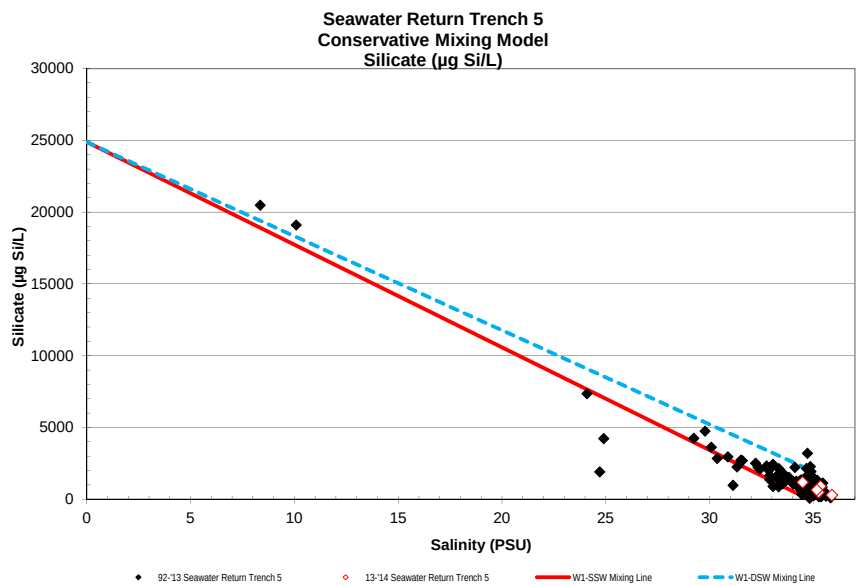

Seawater Return Trench 5
Total Dissolved Nitrogen (µg N/L)
Total Dissolved Nitrogen (µg N/L)
Date
SRT-5s (n=104)
+3s (1582 µg P/L, 1997-2008)
+2s (1254 µg/L, 1997-2008)
Mean (598 µg/L, 1997-2008)
-2s (-58 µg/L, 1997-2008)
-3s (-387 µg/L, 1997-2008)

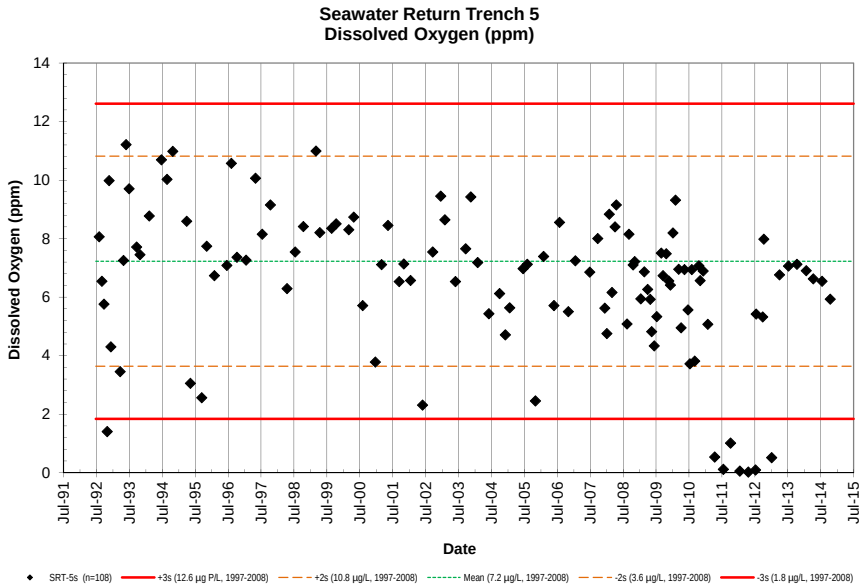

Seawater Return Trench 5
Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
92-'13 Seawater Return Trench 5
13-'14 Seawater Return Trench 5
W1-SSW Mixing Line
W1-DSW Mixing Line

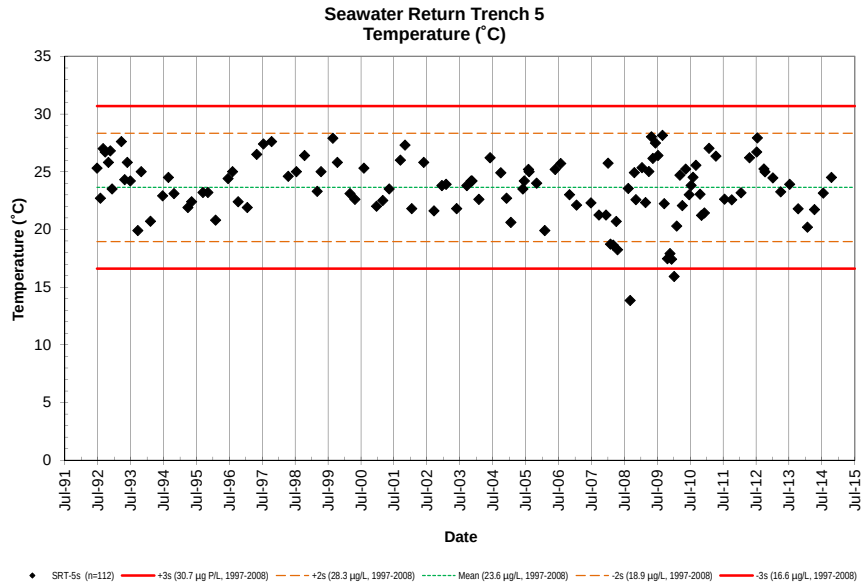

Seawater Return Trench 5
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
SRT-5s (n=106)
+3s (391 µg P/L, 1997-2008)
+2s (285 µg/L, 1997-2008)
Mean (72 µg/L, 1997-2008)
-2s (-140 µg/L, 1997-2008)
-3s (-246 µg/L, 1997-2008)

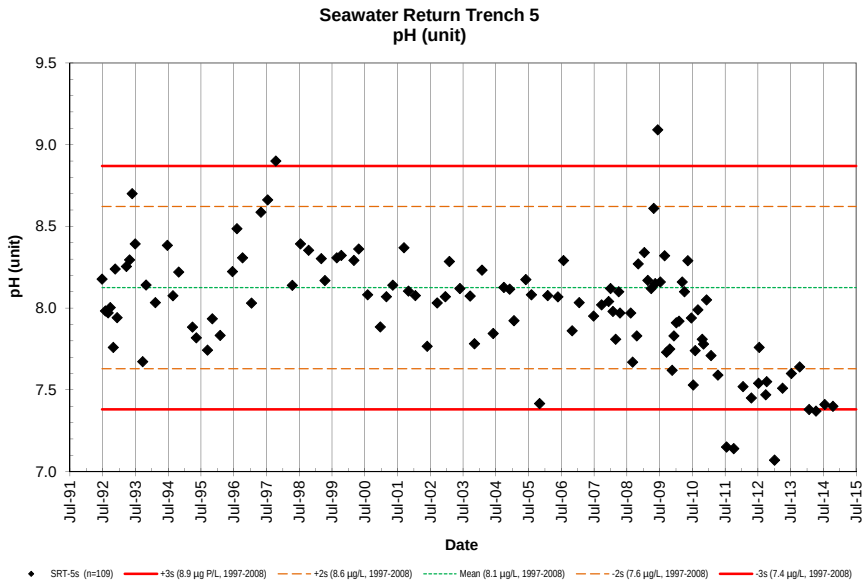

Seawater Return Trench 5
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
SRT-5s (n=107)
+3s (4724 µg P/L, 1997-2008)
+2s (3616 µg/L, 1997-2008)
Mean (1402 µg/L, 1997-2008)
-2s (-812 µg/L, 1997-2008)
-3s (-1919 µg/L, 1997-2008)

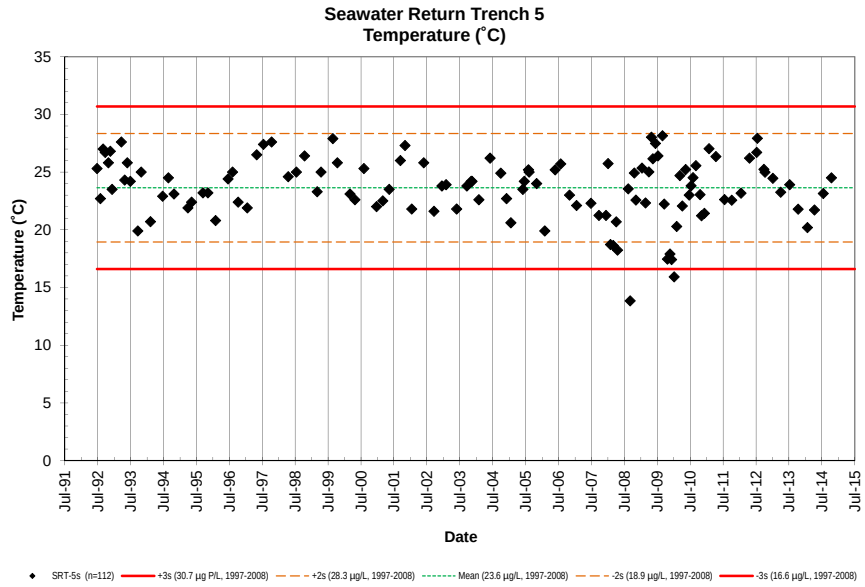

Seawater Return Trench 5
Nitrate + Nitrite to Ortho-Phosphate Ratio
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
92-'13 Seawater Return Trench 5
13-'14 Seawater Return Trench 5
1:1
5:1
10:1
15:1
20:01

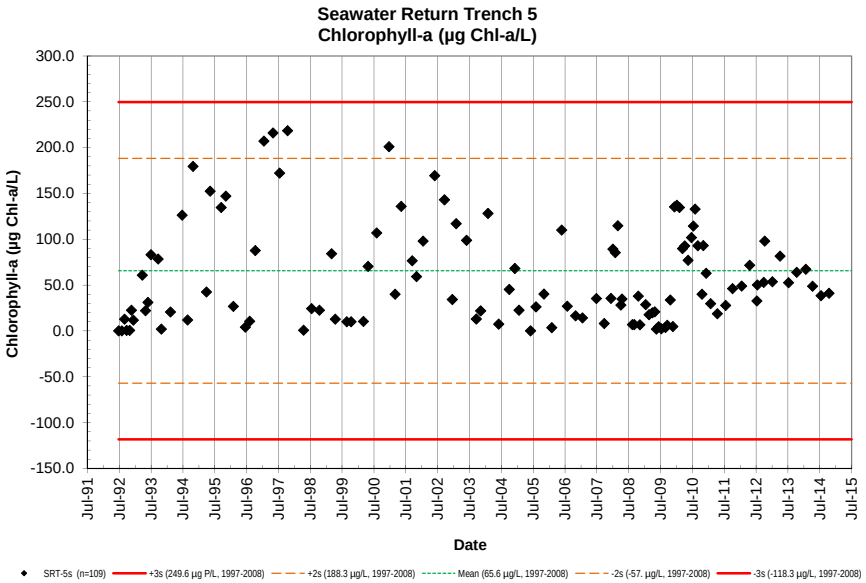

Seawater Return Trench 5
Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
92-'13 Seawater Return Trench 5
13-'14 Seawater Return Trench 5
W1-SSW Mixing Line
W1-DSW Mixing Line

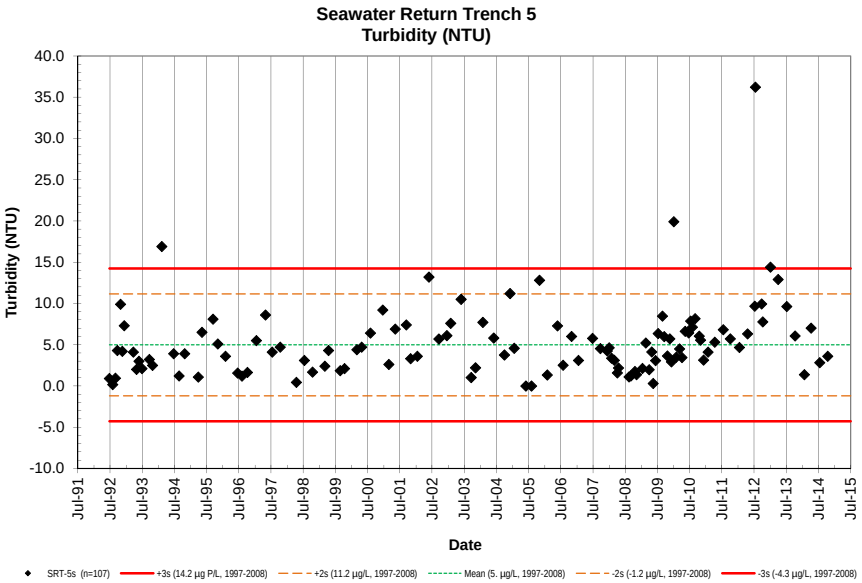

Seawater Return Trench 5
Dissolved Oxygen (ppm)
Dissolved Oxygen (ppm)
Date
SRT-5s (n=108)
+3s (12.6 µg P/L, 1997-2008)
+2s (10.8 µg/L, 1997-2008)
Mean (7.2 µg/L, 1997-2008)
-2s (3.6 µg/L, 1997-2008)
-3s (1.8 µg/L, 1997-2008)


Seawater Return Trench 5
Temperature (˚C)
Temperature (˚C)
Date
SRT-5s (n=112)
+3s (30.7 µg P/L, 1997-2008)
+2s (28.3 µg/L, 1997-2008)
Mean (23.6 µg/L, 1997-2008)
-2s (18.9 µg/L, 1997-2008)
-3s (16.6 µg/L, 1997-2008)


Seawater Return Trench 5
pH (unit)
pH (unit)
Date
SRT-5s (n=109)
+3s (8.9 µg P/L, 1997-2008)
+2s (8.6 µg/L, 1997-2008)
Mean (8.1 µg/L, 1997-2008)
-2s (7.6 µg/L, 1997-2008)
-3s (7.4 µg/L, 1997-2008)


Seawater Return Trench 5
Temperature (˚C)
Temperature (˚C)
Date
SRT-5s (n=112)
+3s (30.7 µg P/L, 1997-2008)
+2s (28.3 µg/L, 1997-2008)
Mean (23.6 µg/L, 1997-2008)
-2s (18.9 µg/L, 1997-2008)
-3s (16.6 µg/L, 1997-2008)


Seawater Return Trench 5
Chlorophyll-a (µg Chl-a/L)
Chlorophyll-a (µg Chl-a/L)
300.0
250.0
200.0
150.0
100.0
50.0
0.0
-50.0
-100.0
-150.0
Jul-91
Jul-92
Jul-93
Jul-94
Jul-95
Jul-96
Jul-97
Jul-98
Jul-99
Jul-00
Jul-01
Jul-02
Jul-03
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Jul-12
Jul-13
Jul-14
Jul-15
Date
SRT-5s (n=109)
+3s (249.6 µg P/L, 1997-2008)
+2s (188.3 µg/L, 1997-2008)
Mean (65.6 µg/L, 1997-2008)
-2s (-57. µg/L, 1997-2008)
-3s (-118.3 µg/L, 1997-2008)


Seawater Return Trench 5
Turbidity (NTU)
Turbidity (NTU)
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
Jul-91
Jul-92
Jul-93
Jul-94
Jul-95
Jul-96
Jul-97
Jul-98
Jul-99
Jul-00
Jul-01
Jul-02
Jul-03
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Jul-12
Jul-13
Jul-14
Jul-15
Date
SRT-5s (n=107)
+3s (14.2 µg P/L, 1997-2008)
+2s (11.2 µg/L, 1997-2008)
Mean (5. µg/L, 1997-2008)
-2s (-1.2 µg/L, 1997-2008)
-3s (-4.3 µg/L, 1997-2008)

NELHA Water Quality Laboratory

Anchialine Pond A1

June 1993 - December 2014

SITE ID	DATE	TIME	TIDE		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TP		TDN		TOC	Turbidity	Salinity	TEMP	pH	DO	Chl a	Fecal Col.	Entero.
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(˚C)		(ppm)	(µg/L)	CFU/100ml	CFU/100ml
A1	8/31/93	1017	0.4	Low	1.7	53	28.5	399	9.6	134	717	20137	2.8	86	2.9	90	63	888	1.84	0.77	12.74	23.9	7.41	2.11	1.93	18	13
A1	10/26/93	1013	0.8	Flood	3.2	98	107.9	1511	1.9	27	666	18705	3.5	107	3.4	105	132	1843	2.93	0.31	10.29	22.7	7.55	6.13	0.11	246	211
A1	2/8/94	919	0.2	Low	1.9	57	24.1	338	4.3	60	533	14970	2.0	61	2.1	64	47	653	2.04	0.28	15.70	22.0	8.07	10.94	1.07	54	164
A1	6/27/94	844	0.8	High	2.6	80	52.6	737	2.2	31	666	18705	2.6	80	2.6	81	62	874	0.71	0.42	11.42	23.2	7.65	7.53	0.63	39	44
A1	7/26/94	1017	0.7	Ebb	2.3	72	52.7	738	1.1	15	569	15982	2.5	78	2.6	80	61	856	0.71	0.21	12.51	23.9	7.68	7.35	0.34	14	9
A1	10/17/94	1101	0.7	Ebb	2.6	79	50.4	706	2.0	28	634	17817	2.7	82	2.8	86	57	797	0.74	0.34	10.95	23.0	7.51	6.85	0.89	<1	9
A1	3/29/95	1019	0.0	Low	2.7	83	51.1	716	2.1	30	618	17354	2.7	85	2.9	90	55	766	0.87	2.70	11.49	22.5	7.46	5.58	21.8	1	169
A1	4/26/95	1155	0.7	Flood	2.5	77	83.9	1175	2.0	28	619	17371	2.7	83	2.8	87	95	1337	2.05	0.74	10.46	26.6	7.92	10.25	1.39	128	34
A1	8/23/95	1129	1.1	Flood	2.4	75	47.1	660	2.2	31	629	17655	2.7	84	2.7	84	54	763	0.84	0.56	11.37	25.4	7.82	10.17	1.36	3	<1
A1	10/17/95	1128	1.7	High	2.7	83	60.9	853	2.5	35	645	18126	2.7	84	2.8	85	58	809	1.08	0.59	10.13	24.2	7.90	6.23	2.06	22	8
A1	2/27/96	1144	0.8	High	3.4	106	82.9	1161	3.4	48	610	17121	3.4	106	3.5	107	79	1103	1.35	0.69	10.68	24.3	7.65	6.80	1.89	7	14
A1	5/8/96	1040	0.4	Ebb	3.3	102	52.8	740	11.8	165	575	16160	3.6	111	4.3	132	71	998	1.67	1.94	11.02	26.8	7.73	9.30	8.57	15	<1
A1	7/17/96	1212	0.5	Flood	2.8	86	30.3	424	1.0	14	582	16342	3.3	103	3.5	108	49	693	2.15	1.62	12.41	31.6	8.17	13.72	2.71	14	5
A1	10/9/96	1111	1.2	Flood	2.8	86	33.3	467	1.2	16	619	17391	3.4	106	3.9	122	53	737	1.62	1.96	11.09	26.5	8.19	13.26	9.97	108	66
A1	1/15/97	1030	1.2	Ebb	2.6	80	80.7	1130	1.6	22	578	16233	2.6	81	2.7	83	90	1266	1.02	0.35	10.42	24.2	8.22	11.77	1.41	9	120
A1	4/30/97	854	0.4	Flood	5.6	172	100.7	1410	4.5	63	502	14098	5.7	178	5.75	0	104	1459	1.25	0.90	10.44	23.0	7.57	5.78	0.57	6	82
A1	7/14/97	1022	1.2	Flood	2.9	88	89.7	1256	2.0	28	590	16570	3.2	99	3.2	100	95	1328	0.52	1.30	10.26	25.4	7.91	9.02	0.44	54	1
A1	10/13/97	1238	1.7	Flood	2.9	89	94.0	1317	2.5	35	594	16694	3.0	94	3.1	96	98	1374	1.23	0.38	10.64	26.0	7.97	8.54	0.49	10	15
A1	3/11/98	1246	0.8	Flood	3.0	94	72.3	1013	2.6	37	597	16775	3.2	100	3.4	104	79	1102	0.77	0.40	11.81	25.4	7.63	7.36	0.63	7	66
A1	6/3/98	1120	1.0	Flood	2.8	86	58.3	817	3.3	46	607	17042	2.9	90	3.0	92	67	944	0.86	0.32	11.26	24.8	7.94	10.55	1.70	33	54
A1	7/15/98	926	1.2	High	3.0	93	58.8	824	2.1	30	594	16682	3.1	97	3.2	99	65	909	0.80	0.56	13.03	23.6	7.87	9.54	0.79	2	9
A1	10/14/98	1006	1.7	Flood	3.3	103	62.0	868	0.1	1	611	17160	3.7	114	3.8	119	75	1044	0.91	0.50	12.43	23.7	7.57	6.18	1.03	6	7
A1	3/3/99	925	0.4	Ebb	2.8	86	34.7	486	7.8	109	510	14324	3.1	95	3.1	97	52	733	1.21	0.55	15.75	22.9	7.76	7.77	0.74	6	11
A1	4/14/99	1138	0.5	Flood	2.8	86	49.9	699	0.8	11	585	16430	2.8	86	2.8	88	52	729	0.84	0.21	13.16	23.1	7.87	9.43	1.32	<1	1
A1	8/24/99	1004	0.7	Flood	2.6	79	42.2	591	19.0	265	732	20556	2.8	87	3.0	94	59	829	0.96	1.36	12.18	23.2	7.37	3.00	2.00	13	5
A1	10/12/99	945	1.0	Ebb	2.7	83	51.6	723	3.0	42	565	15868	2.9	90	2.9	91	58	806	0.80	0.20	13.27	23.0	7.78	7.18	0.27	9	25
A1	3/1/00	948	0.4	Flood	3.6	112	20.1	282	6.2	86	615	17267	4.4	137	4.4	135	37	513	2.00	0.56	13.14	23.0	7.44	3.70	0.21	16	164
A1	4/24/00	1020	0.3	Ebb	3.3	103	23.4	328	8.4	118	584	16413	3.5	109	3.8	116	41	570	1.47	0.96	13.24	26.4	8.06	14.59	0.88	34	1
A1	9/6/00	953	1.7	Flood	2.7	83	57.4	804	1.5	21	610	17124	3.0	92	3.0	93	60	840	0.87	0.20	12.46	24.0	7.77	7.82	0.37	2	11
A1	12/20/00	924	0.8	Flood	3.0	93	61.9	867	2.6	37	622	17466	3.2	99	3.2	98	66	929	1.13	0.20	11.21	22.0	7.59	6.05	0.23	14	10
A1	2/27/01	935	0.7	Ebb	2.7	84	60.6	849	1.6	23	588	16526	2.8	88	2.8	87	64	897	0.90	0.18	12.65	22.1	7.58	5.52	0.13	183	417
A1	5/14/01	1107	0.5	High	3.7	114	37.8	529	3.0	42	599	16823	3.9	119	3.9	119	46	642	1.35	0.61	12.16	27.2	8.03	13.35	2.58	47	12
A1	9/11/01	1025	2.1	High	2.6	81	63.5	889	0.7	9	596	16731	2.8	87	2.9	90	72	1013	0.92	0.24	12.42	23.9	7.73	6.21	0.27	9	11
A1	10/31/01	930	0.4	Low	3.2	99	43.2	605	5.4	76	565	15857	3.5	110	3.7	115	54	763	1.59	0.34	13.86	23.1	7.62	4.93	0.87	27	26
A1	1/15/02	935	0.9	Ebb	2.6	81	62.5	875	1.9	27	538	15096	2.8	86	2.8	85	68	955	1.62	0.22	14.28	22.0	7.65	5.41	0.37	132	74
A1	5/28/02	1355	0.8	Flood	2.8	88	57.5	805	3.7	52	604	16964	3.1	97	3.1	97	63	889	1.26	0.85	12.26	25.3	7.76	8.62	1.15	1	8
A1	9/17/02	1040	1.3	Flood	2.7	84	64.4	903	2.2	30	626	17567	3.0	93	3.0	94	64	892	1.10	0.52	11.29	23.8	7.77	8.71	0.52	1	5
A1	12/16/02	1040	0.6	Flood	2.9	90	47.8	670	0.1	1	582	16349	3.0	94	3.1	95	57	793	0.97	0.28	13.27	23.3	7.68	7.73	0.35	13	10
A1	1/30/03	1350	0.5	Flood	2.7	84	72.5	1015	6.4	90	571	16042	3.0	94	3.0	94	99	1381	1.57	0.54	13.96	25.6	7.74	6.66	1.83	35	158
A1	5/28/03	1105	0.6	Flood	3.2	100	60.7	850	1.9	26	598	16784	3.5	108	3.5	108	76	1062		0.22	11.66	24.2	7.59	6.82	0.68	<100 spreaders	609
A1	6/4/03																									22	175
A1	9/18/03	949	1.7	Flood	2.8	87	65.9	923	1.3	18	611	17157	3.2	98	3.2	98	71	1000	2.15	0.17	11.91	23.7	7.73	7.26	1.51	26	18
A1	11/6/03	1008	0.6	Flood	3.7	113	46.2	647	4.9	69	619	17379	3.9	122	4.1	126	59	832	1.59	0.22	12.23	22.9	7.55		0.58	142	119
A1	11/14/03	1026	1.6	Ebb																		23.9		6.10			
A1	1/29/04	945	0.9	Ebb	3.0	93	80.7	1131	3.3	47	591	16584	3.2	98	3.2	98	84	1181	1.38	0.21	11.52	22.0	7.66	5.69	0.53	2	197
A1	6/1/04	1021	0.2	Flood	3.3	103	74.5	1043	2.0	29	595	16697	3.6	110	3.9	120	83	1158	1.92	0.50	11.20	24.0	7.66	6.45	0.17	6	7
A1	9/29/04	849	0.7	Ebb	2.9	90	57.4	803	1.7	23	563	15804	3.2	100	3.3	103	60	833	0.95	0.21	12.95	23.2	7.76	7.68	0.73	7	237
A1	12/2/04	850	1.9	Ebb	3.2	99	101.4	1420	1.0	15	593	16643	3.3	103	3.3	103	135	1888	0.83	0.20	11.91	22.4	7.86	6.23	0.10	2	87
A1	1/19/05	900	0.5	Low	3.5	107	106.5	1492	2.4	33	585	16424	3.7	113	3.6	112	118	1647	1.34	0.18	12.63	23.0	7.69	5.54	0.26	15	139
A1	5/31/05	854	0.5	Flood	3.4	107	69.6	975	2.8	39	602	16902	3.6	112	3.7	115	75	1046	1.22	0.25	11.18	22.0	7.73	6.70	0.45	1	143

NELHA Water Quality Laboratory

Anchialine Pond A1

June 1993 - December 2014

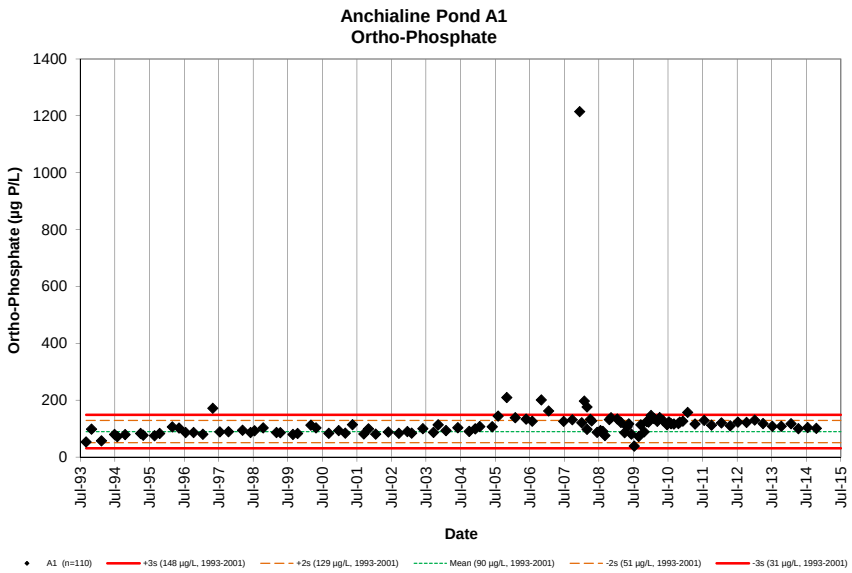
SITE ID	DATE	TIME	TIDE		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TP		TDN		TOC	Turbidity	Salinity	TEMP	pH	DO	Chl a	Fecal Col.	Entero.
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(˚C)		(ppm)	(µg/L)	CFU/100ml	CFU/100ml
A1	8/2/05	1029	0.7	Flood	4.7	144	1.7	24	69.1	968	430	12071	5.6	174	5.8	180	88	1238	4.66	1.27	10.86	23.9	8.60	3.86	4.39	6	54
A1	8/8/05	854																				23.5				3	53
A1	11/1/05	817	0.8	Ebb	6.8	209	56.2	787	4.7	65	538	15116	7.2	222	7.3	227	67	944	1.49	0.34	12.72	22.9	7.87	3.17	0.93	76	350
A1	1/30/06	832	1.0	Ebb	4.5	139	64.5	903	1.0	14	479	13453	4.7	145	4.7	147	72	1014	1.13	0.37	15.82	22.2	7.84	4.65	0.08	27	256
A1	5/25/06	1107	0.5	Flood	4.3	134	70.3	985	3.6	51	591	16599	4.6	143	4.7	146	68	949	0.81	1.09	11.84	22.5	7.70	3.97	1.51	4	3
A1	7/27/06	949	0.3	Ebb	4.1	126	36.8	515	3.3	46	567	15924	4.4	136	4.4	136	41	572	1.32	0.38	13.39	23.0	7.82	5.58	0.42	21	19
A1	10/31/06	1015	1.7	Flood	6.5	201	97.3	1363	0.5	8	531	14913	6.8	209	7.0	218	103	1445	0.94	0.25	11.86	23.2	7.86	3.59	0.30	3	15
A1	1/17/07	957	0.2	Low	5.2	162	81.3	1139	4.5	64	515	14464	5.6	173	5.6	173	84	1170	1.45	0.41	13.84	21.8	7.74	4.12	0.57	13	69
A1	6/26/07	1004	0.8	Flood	4.1	126	78.2	1096	1.1	15	364	10236	4.9	152			86	1210		0.20	12.46	23.1	7.62	7.81	0.15	2	21
A1	9/24/07	1403	2.0	Flood	4.2	131	84.8	1188	1.5	21	657	18466	4.1	127			90	1261		0.11	16.27	24.6	8.25	6.91	0.15		
A1	12/11/07	1038	0.8	Ebb	39.2	1215	611.4	8563	73.9	1035	361	10151	42.1	1305			942	13199		2.27	8.57	22.8	9.25	2.46	7.56		
A1	1/29/08	1049	0.6	Ebb	6.4	197	48.2	676	3.0	42	329	9246	7.3	227			63	889		n/a	11.52	20.4	8.01	8.30	3.26		
A1	2/28/08	1005	0.4	Ebb	3.1	98	42.5	596	3.0	42	298	8377	4.9	152			80	1120		3.81	11.31	21.6	8.08	4.76	4.69		
A1	2/28/08	2312	1.6	High	5.7	177	102.5	1436	1.4	20	559	15711	5.2	161			104	1451		0.31	10.83	21.7	7.97	4.21	0.85		
A1	4/2/08	1010	0.2	Flood	4.3	133	58.0	812	2.3	32	577	16201	2.6	80			125	1752		0.98	11.93	22.0	6.75	3.91	1.61		
A1	4/16/08	1340	1.3	Flood	4.1	127	73.8	1033	0.2	3	565	15867	3.5	110			80	1118		0.33	12.95	22.5	7.75	5.86	1.97		
A1	5/23/08	1012	No Water																								
A1	6/12/08	1009	0.9	Flood	2.8	87	83.4	1168	0.7	10	762	21400	2.8	86			87	1224			11.07	22.5	7.41	6.22	0.67		
A1	7/18/08	1002	-0.1	Low	3.0	93	68.6	961	2.8	40	606	17024	3.6	112			97	1357			11.67	22.1	7.36	2.15			
A1	8/13/08	1039	0.8	Flood	2.9	90	64.4	902	1.8	26	531	14903	0.0				0			0.80	11.46	23.0	7.48	6.06	2.48		
A1	9/4/08	1119	1.1	Ebb	2.4	76	61.1	856	1.7	24	499	14013	3.2	99			91	1277		2.59	12.89	23.7	7.69	4.56	3.69		
A1	10/20/08	955	2.2	High	4.3	132	124.6	1746	0.3	4	496	13934	0.0				0			0.21	13.36	22.7	7.58		10.71		
A1	11/6/08	1022	1.8	High	4.5	139	120.7	1690	1.8	25	523	14696	4.8	149			132	1852		0.74	11.38	22.4	7.86	4.16	1.13		
A1	1/2/08	1032	1.0	Ebb	3.9	120	119.2	1669	2.9	40	524	14718	4.4	135			108	1518		0.21	12.91	22.9	7.94	6.85	2.38		
A1	1/12/09	1013	0.6	Ebb	4.3	134	158.8	2224	2.5	35	566	15896	0.6	18			160	2245		2.17	12.59	21.7	7.80	4.07	1.99		
A1	2/20/09	921	0.3	Low	3.9	122	79.9	1120	5.5	76	539	15127	2.9	90			95	1330		2.95	12.29	21.4	7.35	2.64	1.28		
A1	3/30/09	1428	0.3	Flood	2.8	86	92.4	1294	0.4	6	424	11910	4.0	123			102	1424		0.49	11.7	22.7	7.78	6.13	0.48		
A1	4/27/09	1504	1.0	Flood	3.4	107	95.7	1340	1.0	14	539	15127	4.3	134			92	1295		0.54	13.58	23.0	7.87	5.96	0.05		
A1	5/14/09	1401	0.6	Flood	3.8	117	70.6	989	4.1	58	538	15120	4.0	125			71	997		2.19	12.02	27.8	8.30	9.03	1.10		
A1	6/10/09	808	0.3	Ebb	2.6	81	31.5	441	6.2	87	471	13238	2.8	87			51	719		3.3	13.28	23.3	7.50	7.48	0.31		
A1	7/10/09	749	0.6	Ebb	1.2	39	21.6	303	3.8	54	266	7477	2.3	71			31	431		3.93	12.69	22.6	7.41	8.84	0.64		
A1	8/27/09	923	1.7	Flood	2.3	73	52.4	734	0.9	13	282	7913	3.0	93			52	731		0.10	12.94	22.9	7.88	5.20	0.29		
A1	9/17/09	1102	1.0	Flood	3.7	113	95.5	1338	1.3	18	370	10393	3.4	107			101	1415		0.46	11.94	22.8	7.35	5.25	1.05		
A1	10/22/09	840	2.0	Ebb	2.9	89	55.3	775	0.7	10	106	2975	2.7	83			58	807		5.1	13.25	22.8	7.76	5.37	1.04		
A1	11/19/09	829	1.7	Ebb	4.0	125	92.2	1292	1.7	24	406	11407	3.8	118			97	1362		0.96	14.2	22.3	7.54	5.25	0.72		
A1	12/7/09	842	2.0	High	4.0	123	104.0	1456	0.9	12	435	12210	3.8	118			107	1502		0.14	13.13	22.1	7.95	6.31	0.60		
A1	1/4/10	1451	0.0	Low	4.7	147	107.9	1512	0.8	12	525	14745	4.3	134			114	1590		0.24	14.27	22.8	8.20	8.21	0.15		
A1	2/2/10	1407	-0.2	Low	4.4	136	129.5	1814	1.5	21	469	13172	4.7	147			131	1828		0.27	15.83	22.3	8.29	5.53	0.28		
A1	3/10/10	1325	0.7	High	4.1	126	100.3	1405	0.6	9	375	10534	4.0	124			104	1461		0.26	12.41	22.6	8.11	8.10	0.48		
A1	4/5/10	1010	0.4	High	4.5	139	99.4	1393	0.9	13	598	16807	4.2	129			102	1423		0.13	12.42	23.1	8.24	7.10	0.11		
A1	5/12/10	1309	1.5	Flood	4.1	128	95.7	1340	0.4	5	578	16222	3.7	116			93	1307		0.24	14.22	26.5	8.44	7.40	0.04		
A1	6/21/10	1032	1.3	Flood	3.7	114	97.4	1365	1.5	21	605	16988	4.0	123			104	1459		0.18	12.36	24.9	8.23	7.50	0.23		
A1	7/12/10	1023	-0.1	Low	4.0	124	111.6	1563	0.9	13	575	16147	3.9	122			117	1636		0.31	15.57	24.2	8.01	5.93	0.22		
A1	8/2/10	1231	1.3	Ebb	3.8	117	105.7	1481	2.0	27	605	16985	3.7	116			113	1579		0.54	12.78	26.5	8.17	7.50	0.21		
A1	9/2/10	1158	1.9	Flood	3.7	116	108.0	1512	1.7	23	574	16126	3.6	111			114	1598		0.25	12.69	27.0	8.30	7.28	0.12		
A1	10/19/10	1132	1.2	Flood	3.8	118	119.9	1679	1.1	15	593	16661	3.8	119			121	1693		0.27	12.56	25.3	8.31	7.01	0.10		
A1	11/3/10	1011	0.7	Flood	4.0	123	118.0	1653	1.2	18	555	15577	4.0	124			127	1778		0.39	13.66	24.1	8.36	6.97	0.34		
A1	12/6/10	953	0.3	Ebb	4.1	126	100.9	1413	1.2	18	563	15806	3.8	119			107	1503		0.18	15.79	22.3	8.01	5.48	0.17		
A1	1/26/11	1028	0.8	Ebb	5.1	157	137.3	1923	1.5	21	551	15462	4.8	149			140	1955		0.14	12.33	22.4	8.15	6.11	0.25		
A1	4/13/11	1030	0.4	Flood	3.7	116	104.0	1457	1.0	14	612	17177	3.7	115			106	1488		0.43	12.43	24.4	8.45	7.55	0.27		
A1	7/18/11	952	0.5	Ebb	4.2	129	94.7	1327	0.7	10	584	16413	4.5	141			99	1387		0.11	13.85	22.7	7.76	6.69	0.02		
A1	10/5/11	1003	1.6	Flood	3.6	112	89.7	1256	1.0	15	585	16429	3.7	115			92	1289		0.09	12.31	23.6	8.04	6.70	0.10		
A1	1/17/12	838	0.7	Flood	3.9	120	97.0	1359	0.8	11	602	16905	3.7	114			100	1404		0.20	12.84	22.4	7.95	6.88	0.10		
A1	4/19/12	1053	0.3	Flood	3.6	110	81.9	1147	1.1	16	605	16994	3.7	115			89	1249		0.13	13.3	23.6	8.20	7.51	0.10		

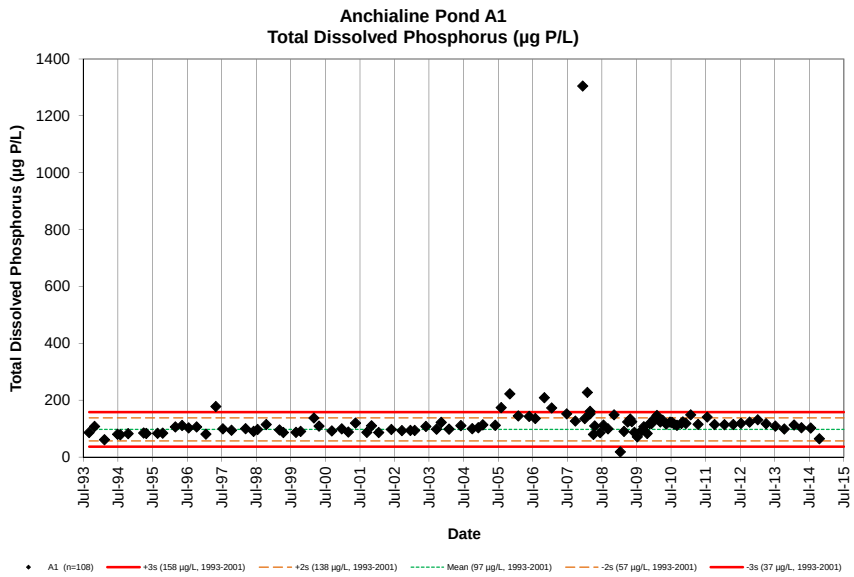
NELHA Water Quality Laboratory

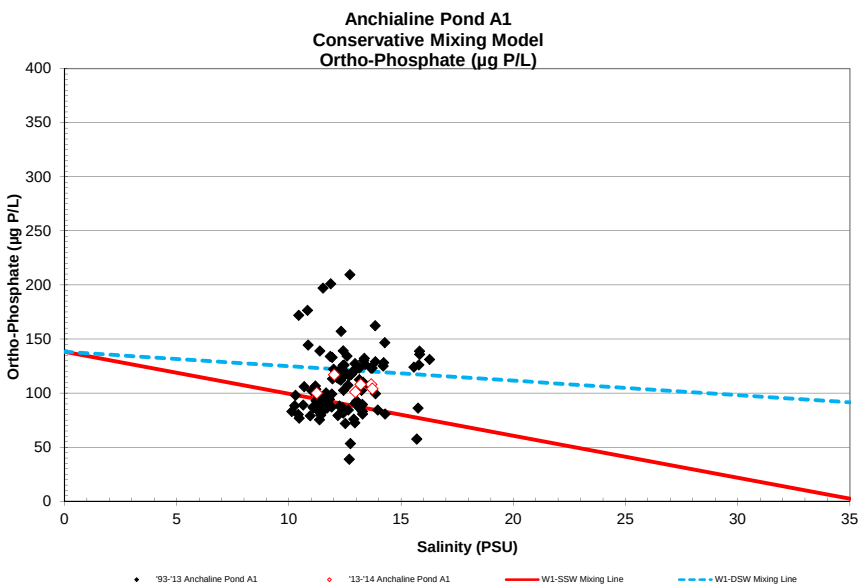
Anchialine Pond A1

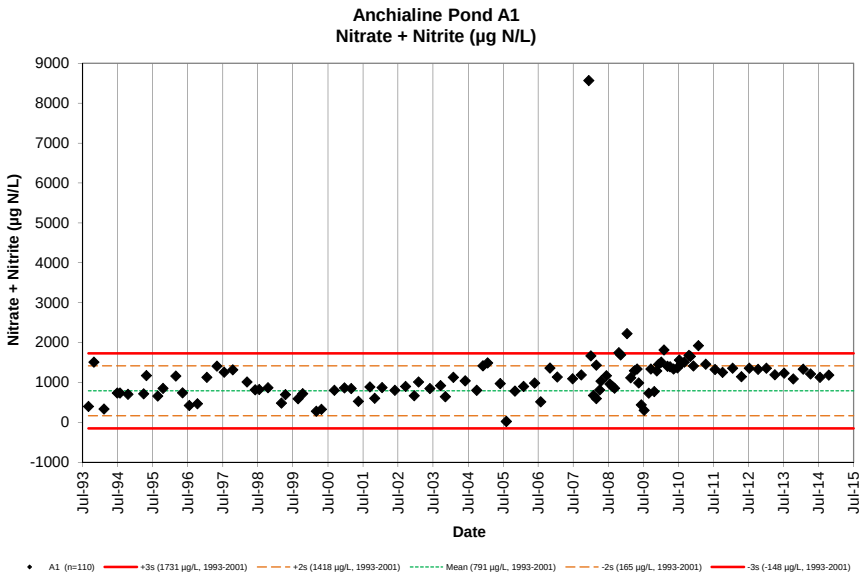
June 1993 - December 2014

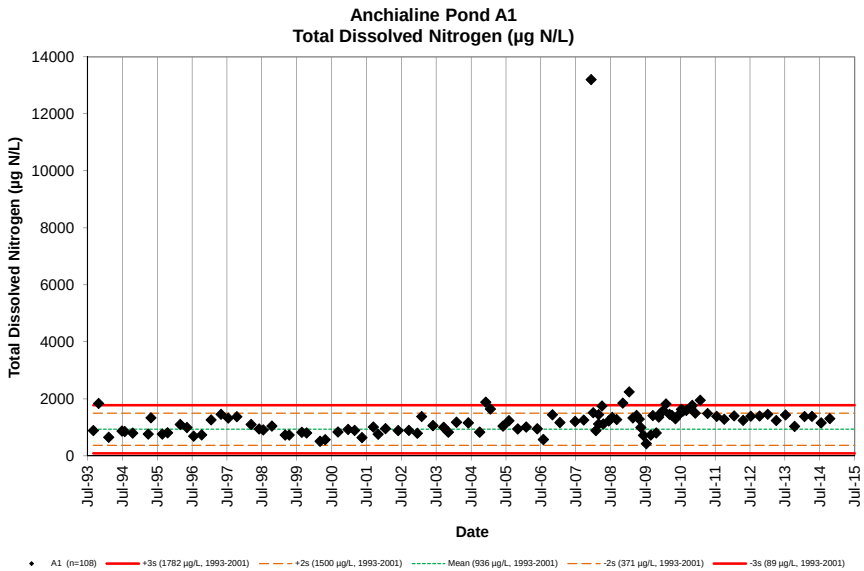
SITE ID	DATE	TIME	TIDE		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TP		TDN		TOC	Turbidity	Salinity	TEMP	pH	DO	Chl a	Fecal Col.	Entero.
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(˚C)		(ppm)	(µg/L)	CFU/100ml	CFU/100ml
A1	7/9/12	1128	1.1	Ebb	4.0	123	97.1	1360	0.7	10	575	16152	3.8	119			99	1392		0.05	13.71	23.2	7.91	7.84	0.01		
A1	10/8/12	1055	1.8	High	3.9	122	94.9	1329	1.0	14	600	16841	4.0	123			100	1402		0.18	11.99	24.6	8.00	7.60	0.14		
A1	1/3/13	1051	1.0	Ebb	4.2	130	97.0	1358	1.5	22	576	16173	4.2	131			104	1461		0.13	13.33	22.4	8.07	6.05	0.06		
A1	4/1/13	1039	0.4	Ebb	3.8	118	85.4	1196	1.0	14	557	15649	3.8	117			89	1241		0.27	12.28	22.8	8.12	7.65	0.05		
A1	7/8/13	1004	-0.1	low	3.5	108	88.2	1236	2.5	36	579	16255	3.5	109			103	1441		0.17	13.67	23.7	8.25	9.05	0.03		
A1	10/10/13	1126	1.6	Ebb	3.5	108	77.8	1090	1.0	15	559	15695	3.2	99			74	1035		0.12	13.2	25.2	8.15	9.61	0.10		
A1	1/22/14	916	0.7	High	3.8	117	95.3	1335	1.4	20	596	16746	3.6	113			99	1380		0.02	12.02	22.0	8.01	6.23	0.62		
A1	4/9/14	1126	0.7	Flood	3.2	100	86.7	1214	2.3	32	511	14352	3.3	103			99	1390		0.47	11.24	24.5	8.59	9.92	0.90		
A1	7/16/14	1118	0.5	Ebb	3.4	104	80.6	1129	0.9	13	504	14160	3.3	102			83	1158		0.53	13.72	23.7	8.10	7.75	0.41		
A1	10/15/14	1134	1.5	Ebb	3.3	101	84.7	1187	0.9	13	529	14856	2.1	64			94	1311		0.3	12.96	25.3	8.04	6.85	0.12		
A1	1/1/15																										
A1	4/1/15																										

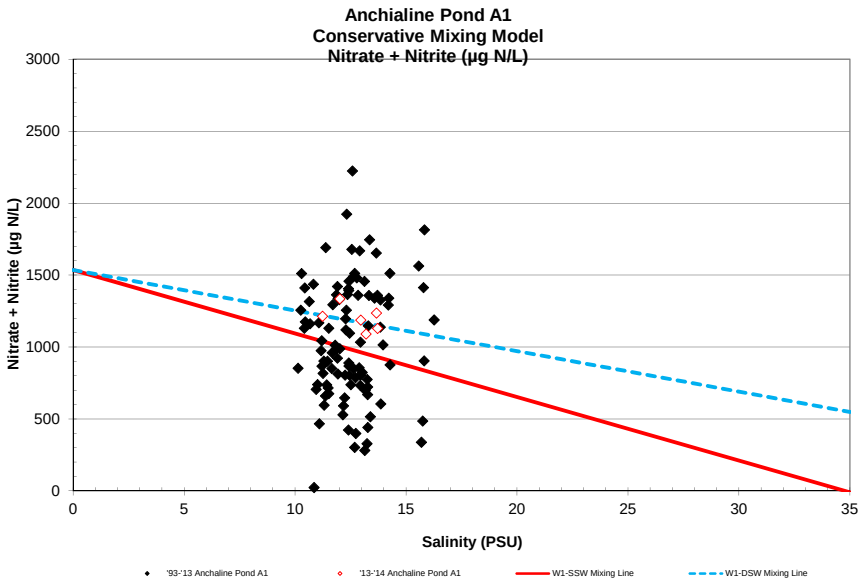

Anchialine Pond A1
Ortho-Phosphate
Ortho-Phosphate (µg P/L)
Date
A1 (n=110)
+3s (148 µg/L, 1993-2001)
+2s (129 µg/L, 1993-2001)
Mean (90 µg/L, 1993-2001)
-2s (51 µg/L, 1993-2001)
-3s (31 µg/L, 1993-2001)

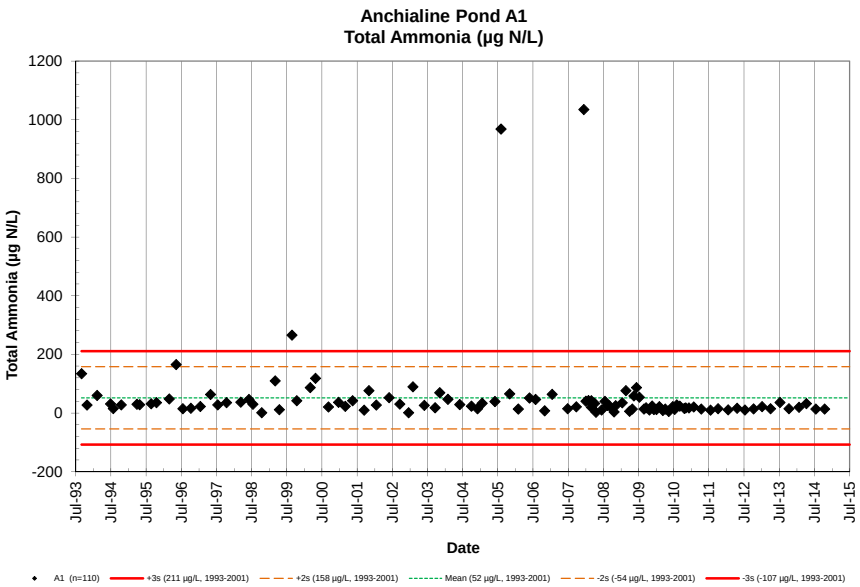

Anchialine Pond A1
Total Dissolved Phosphorus (µg P/L)
Total Dissolved Phosphorus (µg P/L)
Date
A1 (n=108)
+3s (158 µg/L, 1993-2001)
+2s (138 µg/L, 1993-2001)
Mean (97 µg/L, 1993-2001)
-2s (57 µg/L, 1993-2001)
-3s (37 µg/L, 1993-2001)

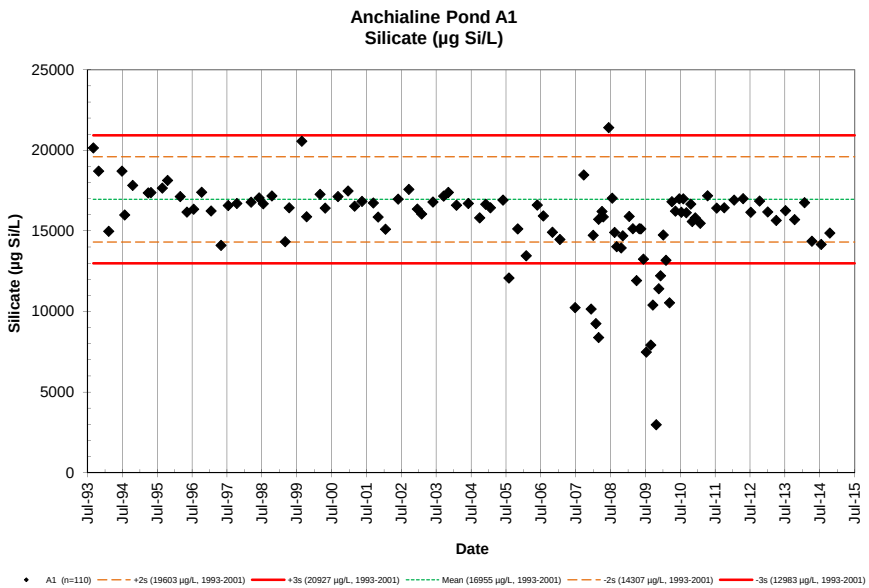

Anchialine Pond A1
Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
'93-'13 Anchaline Pond A1
'13-'14 Anchaline Pond A1
W1-SSW Mixing Line
W1-DSW Mixing Line

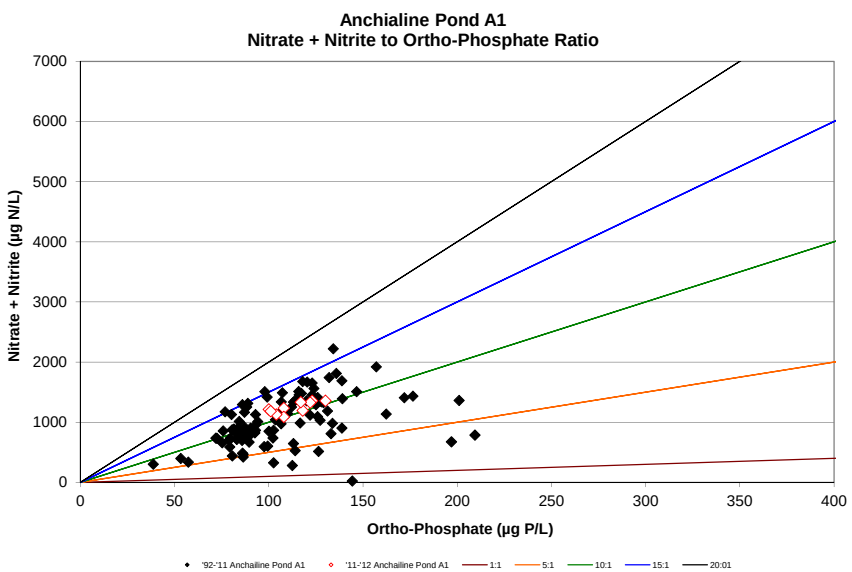

Anchialine Pond A1
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
A1 (n=110)
+3s (1731 µg/L, 1993-2001)
+2s (1418 µg/L, 1993-2001)
Mean (791 µg/L, 1993-2001)
-2s (165 µg/L, 1993-2001)
-3s (-148 µg/L, 1993-2001)

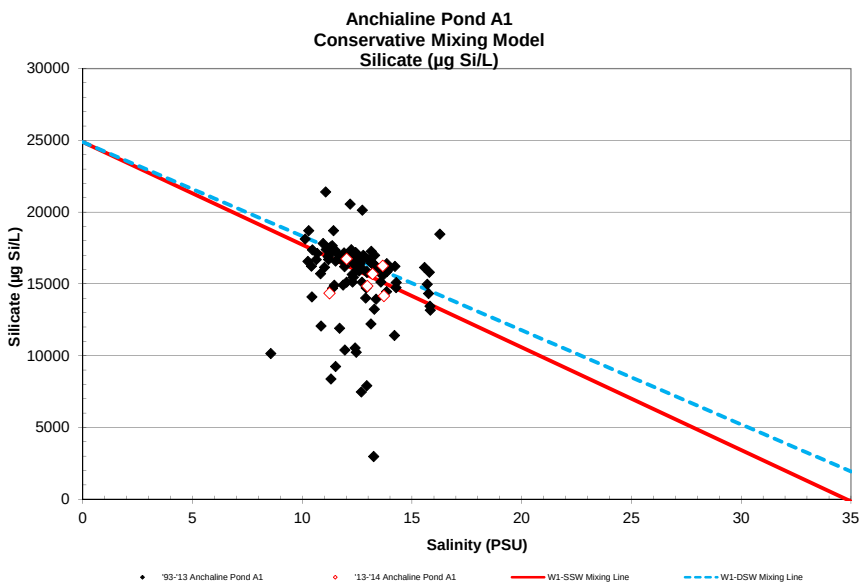

Anchialine Pond A1
Total Dissolved Nitrogen (µg N/L)
Total Dissolved Nitrogen (µg N/L)
Date
A1 (n=108)
+3s (1782 µg/L, 1993-2001)
+2s (1500 µg/L, 1993-2001)
Mean (936 µg/L, 1993-2001)
-2s (371 µg/L, 1993-2001)
-3s (89 µg/L, 1993-2001)

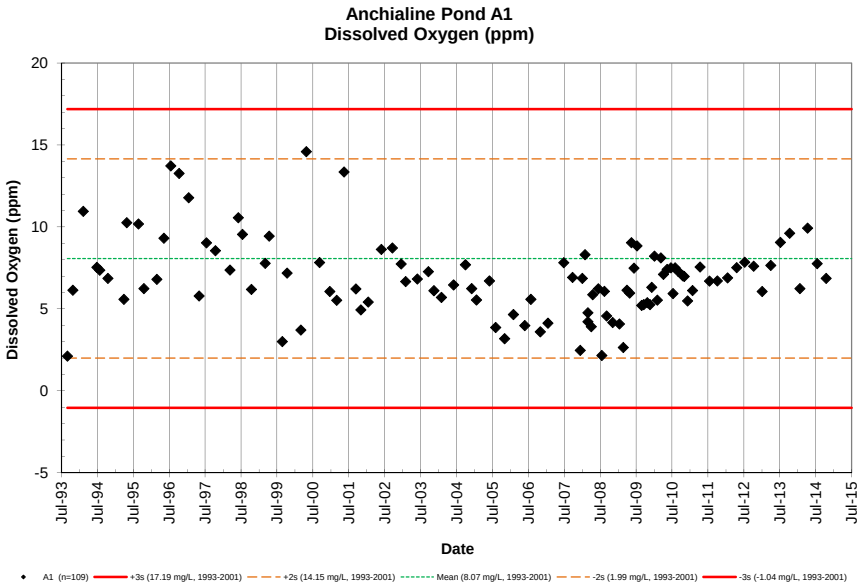

Anchialine Pond A1
Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
'93-'13 Anchaline Pond A1
'13-'14 Anchaline Pond A1
W1-SSW Mixing Line
W1-DSW Mixing Line

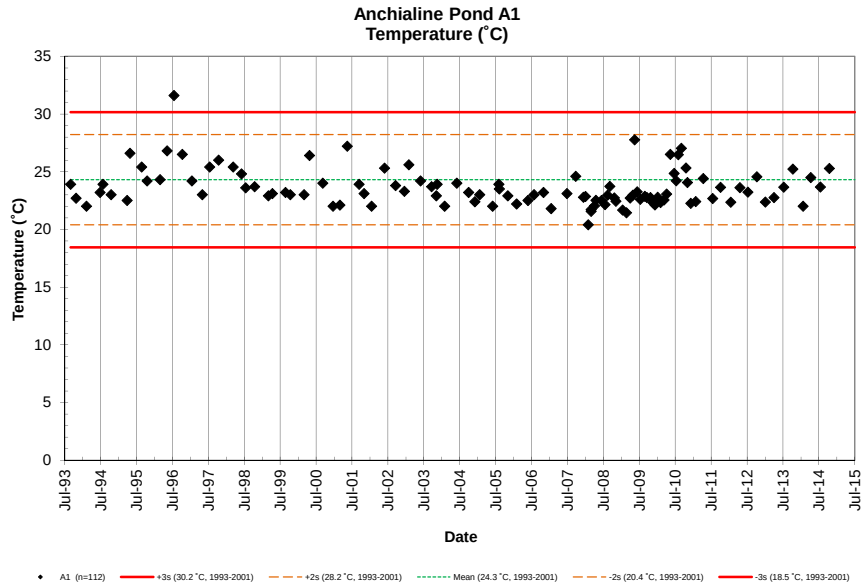

Anchialine Pond A1
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
A1 (n=110)
+3s (211 µg/L, 1993-2001)
+2s (158 µg/L, 1993-2001)
Mean (52 µg/L, 1993-2001)
-2s (-54 µg/L, 1993-2001)
-3s (-107 µg/L, 1993-2001)

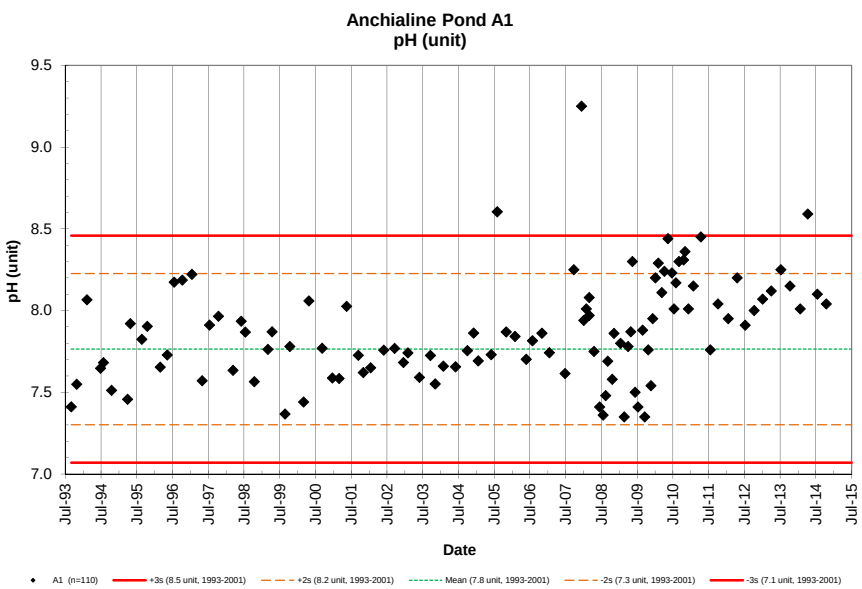

Anchialine Pond A1
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
A1 (n=110)
+2s (19603 µg/L, 1993-2001)
+3s (20927 µg/L, 1993-2001)
Mean (16955 µg/L, 1993-2001)
-2s (14307 µg/L, 1993-2001)
-3s (12983 µg/L, 1993-2001)

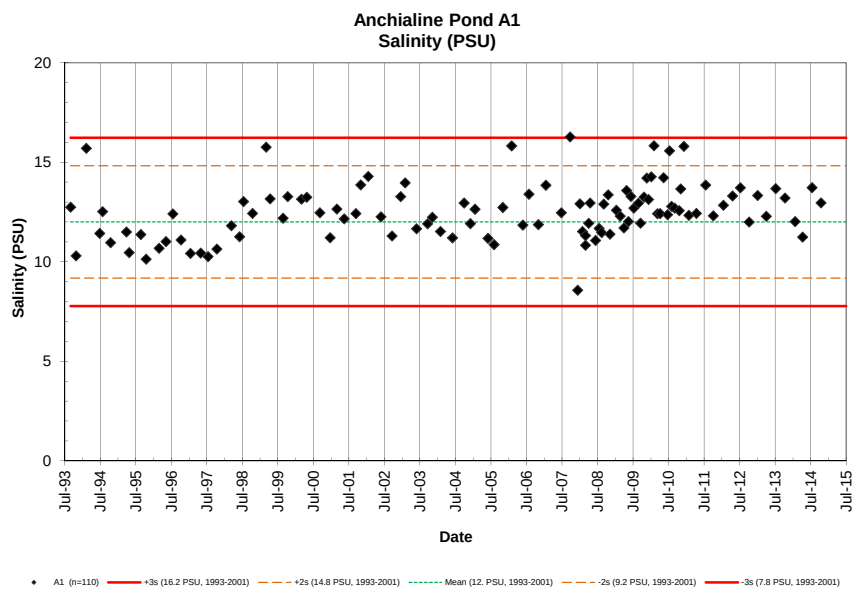

Anchialine Pond A1
Nitrate + Nitrite to Ortho-Phosphate Ratio
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
'92-'11 Anchailine Pond A1
'11-'12 Anchailine Pond A1
1:1
5:1
10:1
15:1
20:01

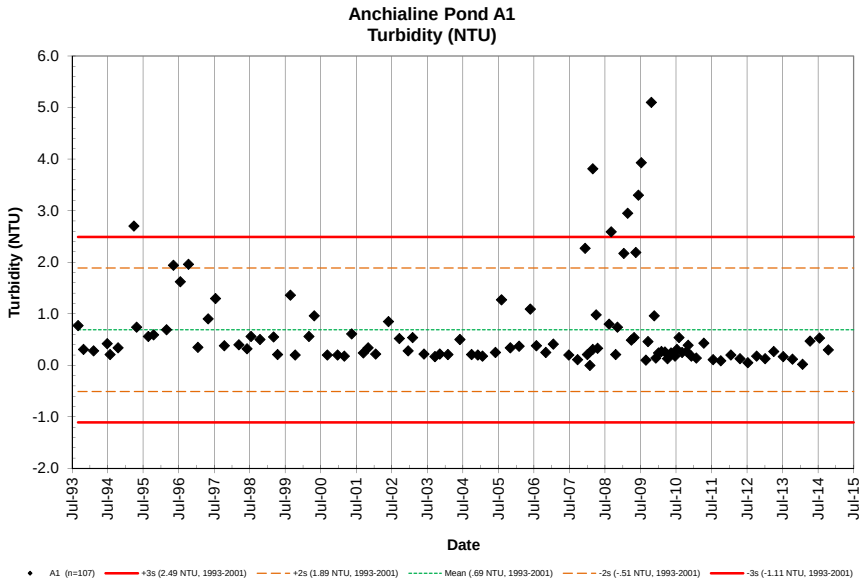

Anchialine Pond A1
Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
'93-'13 Anchaline Pond A1
'13-'14 Anchaline Pond A1
W1-SSW Mixing Line
W1-DSW Mixing Line

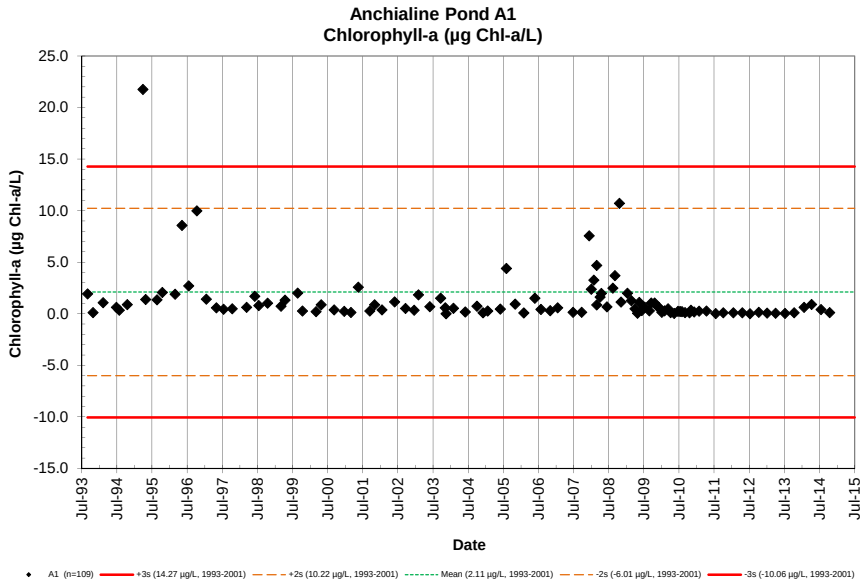

Anchialine Pond A1
Dissolved Oxygen (ppm)
Dissolved Oxygen (ppm)
Date
A1 (n=109)
+3s (17.19 mg/L, 1993-2001)
+2s (14.15 mg/L, 1993-2001)
Mean (8.07 mg/L, 1993-2001)
-2s (1.99 mg/L, 1993-2001)
-3s (-1.04 mg/L, 1993-2001)


Anchialine Pond A1
Temperature (˚C)
Temperature (˚C)
Date
A1 (n=112)
+3s (30.2 ˚C, 1993-2001)
+2s (28.2 ˚C, 1993-2001)
Mean (24.3 ˚C, 1993-2001)
-2s (20.4 ˚C, 1993-2001)
-3s (18.5 ˚C, 1993-2001)


Anchialine Pond A1
pH (unit)
pH (unit)
Date
A1 (n=110)
+3s (8.5 unit, 1993-2001)
+2s (8.2 unit, 1993-2001)
Mean (7.8 unit, 1993-2001)
-2s (7.3 unit, 1993-2001)
-3s (7.1 unit, 1993-2001)


Anchialine Pond A1
Salinity (PSU)
Salinity (PSU)
Date
A1 (n=110)
+3s (16.2 PSU, 1993-2001)
+2s (14.8 PSU, 1993-2001)
Mean (12. PSU, 1993-2001)
-2s (9.2 PSU, 1993-2001)
-3s (7.8 PSU, 1993-2001)


Anchialine Pond A1
Turbidity (NTU)
Turbidity (NTU)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
Jul-93
Jul-94
Jul-95
Jul-96
Jul-97
Jul-98
Jul-99
Jul-00
Jul-01
Jul-02
Jul-03
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Jul-12
Jul-13
Jul-14
Jul-15
Date
A1 (n=107)
+3s (2.49 NTU, 1993-2001)
+2s (1.89 NTU, 1993-2001)
Mean (.69 NTU, 1993-2001)
-2s (-.51 NTU, 1993-2001)
-3s (-1.11 NTU, 1993-2001)


Anchialine Pond A1
Chlorophyll-a (µg Chl-a/L)
Chlorophyll-a (µg Chl-a/L)
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
-15.0
Jul-93
Jul-94
Jul-95
Jul-96
Jul-97
Jul-98
Jul-99
Jul-00
Jul-01
Jul-02
Jul-03
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Jul-12
Jul-13
Jul-14
Jul-15
Date
A1 (n=109)
+3s (14.27 µg/L, 1993-2001)
+2s (10.22 µg/L, 1993-2001)
Mean (2.11 µg/L, 1993-2001)
-2s (-6.01 µg/L, 1993-2001)
-3s (-10.06 µg/L, 1993-2001)

NELHA Water Quality Laboratory

Anchialine Pond A2

June 1993 - December 2014

SITE ID	DATE	TIME	TIDE		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TP		TDN		TOC	Turbidity	Salinity	TEMP	pH	DO	Chl a	Fecal Col.	Entero.
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(˚C)		(ppm)	(µg/L)	CFU/100ml	CFU/100ml
A2	8/31/93	950	0.3	Low	3.4	105	10.0	140	0.05	0.7	731	20519	3.39	105	3.43	106	137	1919	0.63	0.04	7.453	21.4	8.01	8.06	0.00	10	21
A2	10/26/93	939	0.7	Flood	3.8	118	113	1579	0.31	4.3	663	18621	3.82	118	3.91	121	126	1769	2.55	0.37	6.742	21.5	8.02	7.98	0.01	361	370
A2	2/8/94	818	0.4	Ebb	3.4	106	101	1417	0.01	0.1	658	18480	3.44	107	3.46	107	112	1575	0.70	0.06	7.712	20.6	8.01	8.24	0.00	1	7
A2	6/27/94	816	0.8	High	3.4	105	103	1439	0.22	3.1	704	19772	3.40	105	3.40	105	110	1534	0.64	0.09	7.773	21.0	8.01	8.20	0.00	<1	<1
A2	7/26/94	938	0.8	Ebb	3.4	105	106	1484	0.10	1.4	618	17357	3.41	106	3.42	106	116	1631	0.74	0.05	7.667	21.3	7.99	8.25	0.00	3	6
A2	10/17/94	1021	0.6	Low	3.4	106	110	1546	0.25	3.5	664	18643	3.45	107	3.48	108	64.0	897	0.46	0.08	7.306	21.4	8.03	8.42	0.03	<1	<1
A2	2/15/95	1023	0.1	Low	3.4	104	116	1621	0.07	1.0	664	18643	3.37	104	3.47	107	106	1489	0.68	0.06	7.826	20.8	8.06	8.27	0.01	5	1
A2	4/26/95	1117	0.5	Flood	3.5	109	108	1514	0.27	3.8	659	18511	3.51	109	3.59	111	117	1640	1.53	0.05	6.917	22.6	8.05	8.40	0.01	<1	<1
A2	8/23/95	1100	1.0	Flood	3.3	101	103	1448	0.38	5.3	674	18941	3.32	103	3.33	103	110	1548	0.51	0.06	7.407	21.9	8.03	8.46	0.02	<1	<1
A2	10/16/95	1002	1.8	High	3.4	106	104	1457	0.38	5.3	669	18795	3.45	107	3.45	107	98.9	1385	0.68	0.03	7.808	21.7	8.05	5.03	0.00	<1	9
A2	2/26/96	1102	0.7	Ebb	3.4	104	100	1407	0.21	2.9	655	18403	3.36	104	3.37	104	105	1468	0.66	0.09	7.522	21.1	8.00	8.15	0.00	<1	<1
A2	4/1/96	1040	0.3	Flood	3.4	106	106	1483	0.33	4.6	659	18494	3.43	106	3.45	107	106	1485	0.58	0.04	7.301	21.7	7.99	8.37	0.00	<1	<1
A2	7/16/96	1010	0.2	Low	3.4	106	110	1537	0.26	3.6	697	19571	3.50	108	3.52	109	116	1630	0.61	0.07	7.102	21.8	8.03	8.28	0.00	28	1
A2	10/8/96	1054	1.3	Flood	3.5	107	112	1562	0.38	5.3	657	18451	3.53	109	3.53	109	89.9	1260	0.61	0.06	7.102	22.1	8.01	7.81	0.75	10	31
A2	1/15/97	919	1.3	High	3.4	104	95.2	1333	0.12	1.7	650	18264	3.35	104	3.36	104	112	1567	0.79	0.06	6.351	21.2	8.02	8.21	0.00	<1	<1
A2	4/30/97	947	0.6	Flood	5.7	176	107	1497	0.20	2.8	528	14835	5.72	177	5.88	182	111	1550	0.88	0.09	6.904	21.4	8.03	8.03	0.00	<1	<1
A2	7/14/97	1155	1.6	Flood	3.5	107	112	1569	0.19	2.7	660	18548	3.58	111	3.61	112	120	1680	0.67	0.07	6.735	21.6	8.05	8.48	0.00	7	212
A2	10/13/97	1159	1.5	Flood	3.5	108	117	1632	0.18	2.5	666	18716	3.50	108	3.50	108	124	1731	0.73	0.06	6.594	22.7	8.16	8.52	0.00	<1	3
A2	3/11/98	920	0.2	Low	3.6	111	116	1628	0.15	2.1	668	18761	3.70	115	3.70	115	119	1665	0.46	0.06	7.584	21.0	8.01	8.28	0.00	17	63
A2	4/15/98	1101	0.1	Low	3.6	110	121	1691	0.21	2.9	666	18699	3.63	112	3.68	114	123	1718	0.53	0.06	7.419	21.5	8.04	8.43	0.00	<1	<1
A2	7/15/98	751	1.0	Flood	3.6	110	118	1658	0.10	1.4	670	18806	3.56	110	3.69	114	123	1729	0.59	0.07	7.638	20.8	8.00	8.24	0.00	<1	2
A2	10/14/98	1038	1.8	Flood	3.6	111	127	1776	0.04	0.6	684	19213	3.60	112	3.60	112	134	1883	0.60	0.07	7.132	22.5	8.01	8.92	0.03	1	2
A2	3/3/99	905	0.6	Ebb	3.4	104	113	1583	0.17	2.4	651	18284	3.36	104	3.38	105	123	1729	0.56	0.08	8.498	20.9	7.98	8.80	0.05	<1	3
A2	4/14/99	903	-0.3	Low	3.5	108	129	1804	0.15	2.1	665	18677	3.52	109	3.52	109	131	1828	0.74	0.07	7.456	21.2	8.01	8.34	0.03	1	5
A2	8/24/99	917	0.5	Flood	3.4	105	114	1590	0.26	3.6	771	21657	3.39	105	3.44	107	117	1642	0.57	0.09	7.716	21.4	8.03	8.27	0.06	<1	1
A2	10/12/99	921	1.2	Ebb	3.3	102	113	1587	0.25	3.5	639	17941	3.38	105	3.35	104	120	1686	0.65	0.07	7.809	22.1	8.06	8.14	0.03	3	6
A2	3/1/00	925	0.3	Low	3.4	107	112	1569	0.17	2.4	670	18809	3.04	94	3.11	96	114	1597	0.63	0.05	7.926	21.0	8.03	8.08	0.02	<1	<1
A2	4/24/00	955	0.3	Ebb	3.4	106	119	1660	0.16	2.2	662	18595	3.29	102	3.31	103	118	1659	0.62	0.04	8.044	21.4	8.04	8.10	0.02	1	1
A2	8/1/00	933	0.1	Ebb	3.3	102	109	1527	0.16	2.2	662	18593	3.39	105	3.36	104	113	1577	0.65	0.05	8.565	21.4	7.98	8.02	0.01	62	13
A2	12/20/00	900	0.8	Flood	3.5	108	114	1597	0.19	2.7	675	18958	3.48	108	3.48	108	115	1611	0.74	0.06	7.979	21.1	8.02	7.71	0.05	<1	1
A2	2/27/01	915	0.8	Ebb	3.4	104	112	1566	0.09	1.3	667	18733	3.38	105	3.33	103	113	1589	0.70	0.07	8.240	21.1	7.96	7.57	0.03	<1	1
A2	5/9/01	917	-0.1	Ebb	3.2	100	110	1542	0.18	2.5	641	17994	3.38	105	3.34	103	111	1556	0.64	0.04	8.235	21.4	8.00	8.22	0.02	<1	1
A2	9/11/01	1000	2.0	Flood	3.3	103	122	1705	0.26	3.6	647	18166	3.20	99	3.12	97	129	1803	0.78	0.09	7.613	22.5	8.01	8.21	0.15	928	34
A2	10/31/01	1054	0.5	Flood	3.6	112	119	1665	0.38	5.3	667	18719	3.62	112	3.60	112	116	1624	0.61	0.06	7.827	21.7	7.98	8.19	0.09	2	2
A2	1/15/02	910	1.0	Ebb	3.4	105	116	1629	0.13	1.8	668	18761	3.30	102	3.42	106	115	1609	0.62	0.04	8.157	21.0	7.98	7.65	0.02	1	7
A2	5/28/02	927	0.9	Ebb	3.4	105	118	1646	0.12	1.7	673	18887	3.39	105	3.42	106	113	1576	0.61	0.05	8.386	21.3	7.99	8.22	0.03	<1	<1
A2	9/17/02	940	0.9	Flood	3.5	109	130	1814	0.11	1.5	675	18958	3.33	103	3.45	107	117	1640	0.67	0.05	7.836	21.9	8.02	8.14	0.06	<1	1
A2	12/16/02	955	0.6	Flood	3.3	102	126	1768	0.19	2.7	675	18966	3.55	110	3.53	109	113	1576	0.59	0.06	7.994	21.3	7.97	8.35	0.06	2	9
A2	1/30/03	950	0.2	Ebb	3.3	102	134	1881	0.73	10.2	687	19298	3.52	109	3.48	108	167	2336	0.57	0.05	8.143	21.1	8.00	8.16	0.04	1	8
A2	5/28/03	907	0.0	Flood	3.6	112	127	1784	0.23	3.2	653	18343	3.72	115	3.72	115	148	2067		0.07	8.099	21.4	8.04	8.47	0.11	<1	<1
A2	9/18/03	915	1.6	Flood	3.4	104	126	1762	0.40	5.6	666	18705	3.61	112	3.66	113	129	1805	1.35	0.05	8.152	22.7	7.97	8.26	0.01	4	11
A2	11/6/03	856	0.5	Ebb	3.7	113	127	1776	0.80	11.2	664	18649	3.66	113	3.64	113	153	2147	1.80	0.04	8.294	21.2	7.99		0.05	<1	2
A2	11/14/03	1407	0.6	Ebb																		21.4		8.12			
										0.0		0		0		0		0									
A2	1/29/04	853	0.9	Ebb	3.3	102	115	1607	1.71	24.0	704	19758	3.30	102	3.32	103	128	1787	1.20	0.07	8.927	20.8	7.96	7.70	0.05	<1	<1
A2	6/1/04	927	-0.1	Flood	3.4	104	125	1748	0.39	5.5	655	18399	3.48	108	4.02	125	129	1808	1.87	0.37	8.37	22.1	8.00	8.28	0.01	<1	1
A2	9/29/04	936	0.5	Ebb	3.3	102	127	1776	0.29	4.1	637	17885	3.32	103	3.34	103	131	1835	0.69	0.04	8.71	21.9	7.99	8.07	0.04	<1	2
A2	12/2/04	1010	1.7	Ebb	3.3	102	127	1784	0.45	6.3	642	18022	3.34	103	3.32	103	135	1888	0.73	0.13	9.16	22.2	8.12	8.92	0.12	9	48
A2	1/19/05	955	0.6	Flood	3.4	107	128	1793	0.34	4.8	680	19098	3.62	112	3.62	112	142	1989	0.74	0.55	8.382	21.2	8.05	8.24	0.10	<1	1
A2	5/31/05	948	0.8	Flood	3.2	99	129	1812	0.25	3.5	631	17719	3.22	100	3.23	100	133	1861	0.68	0.06	9.781	20.6	7.99	8.65	0.02	<1	<1

NELHA Water Quality Laboratory

Anchialine Pond A2

June 1993 - December 2014

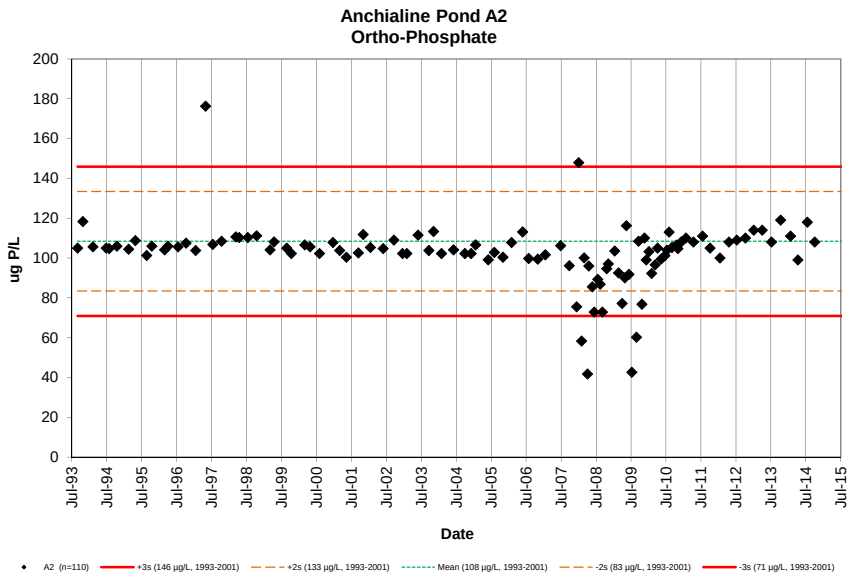
SITE ID	DATE	TIME	TIDE		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TP		TDN		TOC	Turbidity	Salinity	TEMP	pH	DO	Chl a	Fecal Col.	Entero.
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(˚C)		(ppm)	(µg/L)	CFU/100ml	CFU/100ml
A2	8/2/05	920	0.3	Flood	3.3	103	128	1791	2.97	41.6	637	17888	3.48	108	3.50	108	136	1909	0.65	0.05	8.982	25.2	8.08	8.06	0.02	60	5
A2	8/8/05	933	0.6	Ebb																		22.0				12	62
A2	11/1/05	912	0.5	Ebb	3.2	100	126	1759	0.27	3.8	630	17694	3.36	104	3.34	103	127	1779	0.56	0.06	10.225	21.8	7.99	7.89	0.12	18	9
A2	1/30/06	919	1.0	Ebb	3.5	108	122	1710	3.14	44.0	613	17222	3.56	110	3.78	117	125	1754	0.55	0.12	10.619	21.5	7.98	7.86	0.04	56	26
A2	5/25/06	930	-0.2	Flood	3.7	113	129	1807	0.28	3.9	607	17048	3.84	119	3.83	119	125	1753	0.68	0.14	10.835	21.9	7.99	8.20	0.12	884	<1
A2	7/27/06	1047	0.2	Low	3.2	100	126	1765	0.38	5.3	606	17020	3.39	105	3.31	103	111	1561	0.66	0.10	11.103	22.2	7.96	8.33	0.11	42	<1
A2	10/31/06	920	0.4	Flood	3.2	99	135	1891	0.23	3.2	627	17610	3.25	101	3.30	102	140	1965	0.65	0.07	9.333	21.6	7.96	7.95	0.06	6	33
A2	1/17/07	1120	0.3	Flood	3.3	102	146	2045	0.29	4.1	618	17357	3.29	102	3.25	101	127	1781	0.61	0.04	10.608	21.4	7.99	8.47	0.03	4	2
A2	6/26/07	910	0.6	Flood	3.4	106	116	1631	0.78	11.0	371	10421	3.43	106			119	1672		0.08	10.301	21.7	8.03	9.55	0.05	4	1
A2	9/24/07	1333	2.0	Flood	3.1	96	125	1757	1.51	21.1	680	19102	3.1	95			131	1838		0.10	9.78	22.4	8.16	9.00	0.37		
A2	12/11/07	1116	0.5	Ebb	2.4	76	86	1206	0.47	6.6	317	8899	3.1	95			98	1369		0.30	6.84	21.4	8.33	6.67	0.19		
A2	1/31/08	1314	0.4	Ebb	1.9	58	89	1244	0.98	13.7	230	6450	2.8	87			120	1678		0.20	9.73	21.1	7.64	6.49	0.30		
A2	2/28/08	1055	0.3	Ebb	3.2	100	132	1855	0.43	6.0	577	16207	2.9	89			130	1815		0.09	10.17	21.0	7.94	6.31	0.10		
A2	4/2/08	1357	1.2	High	1.3	42	59	821	0.73	10.2	309	8677	2.7	84			124	1733		0.13	9.71	21.3	8.08	7.03	0.18		
A2	4/16/08	1428	1.3	Flood	3.1	96	128	1796	0.18	2.5	601	16878	2.6	80			125	1753		0.09	9.88	21.5	8.02	7.95	0.17		
A2	5/23/08	1137	-0.1	Low	2.8	86	130	1820	0.69	9.7	962	27017	2.4	74			139	1951		0.56	10.44	22.4	8.05	7.17			
A2	6/12/08	1009	0.9	Flood	2.4	73	127	1783	0.26	3.6	630	17689	2.4	73			127	1783		0.08	10.43	21.1	8.14	6.43	0.13		
A2	7/18/08	958	-0.1	Low	2.9	89	129.0	1807	0.5	7	623	17503	2.4	74			89	1240		0.03	10.07	21.1	8.07	6.29	0.09		
A2	8/13/08	1129	1.2	Flood	2.8	87	132.2	1852	0.3	4	579	16264	0.0				0			0.22	9.86	22.1	7.96	9.90	0.11		
A2	9/4/08	1151	1.0	Ebb	2.4	73	125.5	1757	0.1	2	545	15294	2.8	88			136	1903		0.06	10.55	21.7	7.90	6.46	0.28		
A2	10/20/08	1144	1.8	Ebb	3.1	95	136.9	1918	0.1	2	569	15974	0.0				0			0.07	10.16	23.3	7.86	7.84	0.15		
A2	11/6/08	1106	1.8	High	3.1	97	130.4	1827	0.2	3	587	16479	2.9	90			136	1909		0.10	10.00	21.3	8.44	7.05	0.59		
A2	1/2/08	1133	0.7	Ebb	4.8	148	155.0	2172	0.1	1	583	16362	3.4	107			133	1858		0.42	10.31	22.3	8.08	7.45	0.04		
A2	1/12/09	1113	0.6	Ebb	3.3	104	146.9	2057	0.1	2	603	16931	0.4	13			132	1852		0.11	9.72	21.9	8.13	7.46	0.35		
A2	2/20/09	1031	0.3	Low	3.0	93	47.0	659	0.2	2	552	15514	2.3	72			144	2022		0.67	10.28	21.5	7.85	7.38	0.25		
A2	3/30/09	1355	0.1	Flood	2.5	77	110.8	1552	0.3	5	387	10877	2.8	86			112	1571		0.12	10.91	22.2	7.81	7.69	0.11		
A2	4/27/09	1340	0.3	Flood	2.9	90	135.6	1900	0.7	10	566	15889	3.6	111			134	1870		0.27	10.69	21.4	8.16	7.57	0.25		
A2	5/14/09	1031	0.4	Flood	3.8	116	131.4	1840	1.0	14	576	16186	3.5	108			128	1788		0.16	10.19	21.4	8.01	7.03	0.02		
A2	6/10/09	931	0.2	Ebb	3.0	92	126.7	1774	0.2	3	527	14808	2.9	89			164	2303		0.06	10.20	22.6	8.70	6.93	0.04		
A2	7/10/09	1020	0.3	Ebb	1.4	43	60.5	847	0.7	11	246	6915	2.1	65			62	871		0.08	10.67	21.6	8.02	7.11	0.03		
A2	8/27/09	1113	1.8	High	1.9	60	74.0	1036	0.6	9	424	11904	2.1	64			77	1080		0.23	9.83	22.3	7.96	7.28	0.24		
A2	9/17/09	1015	0.2	Flood	3.5	108	139.2	1950	0.4	6	387	10872	3.1	97			153	2140		0.37	10.19	22.2	7.62	7.05	0.09		
A2	10/22/09	956	1.9	Ebb	2.5	77	99.1	1389	0.2	3	78	2180	2.4	74			100	1398		0.16	11.26	22.5	7.82	7.40	0.06		
A2	11/19/09	950	1.7	Ebb	3.6	110	79.0	1107	3.2	45	439	12331	3.4	106			87	1216		0.13	11.17	22.3	7.89	6.37	0.02		
A2	12/7/09	758	2.0	High	3.2	99	120.2	1683	0.7	10	452	12692	3.0	93			124	1735		0.02	11.91	21.3	7.84	6.60	0.07		
A2	1/4/10	1338	0.0	Low	3.3	103	116.2	1627	0.5	7	489	13723	3.0	93			118	1652		0.07	11.3	22.0	8.01	7.03	0.20		
A2	2/2/10	1335	-0.2	Low	3.0	92	112.7	1579	0.8	11	556	15620	2.9	89			115	1610		0.08	10.97	22.0	8.00	7.26	0.24		
A2	3/10/10	1251	0.7	High	3.1	97	117.3	1643	0.3	4	353	9906	2.8	88			117	1634		0.11	11.06	22.4	8.08	7.72	0.53		
A2	4/5/10	942	0.4	High	3.4	105	113.2	1586	0.6	9	608	17082	3.2	100			114	1599		0.05	11.53	21.5	8.03	7.99	0.06		
A2	5/12/10	1234	1.5	Flood	3.2	100	120.4	1686	0.5	7	606	17019	3.1	96			121	1691		0.07	10.45	21.5	7.99	8.10	0.02		
A2	6/21/10	950	1.3	Flood	3.3	101	129.7	1817	1.3	19	651	18279	3.3	102			135	1897		0.08	10.65	21.9	7.96	6.36	0.08		
A2	7/12/10	936	-0.1	Low	3.4	104	125.2	1754	1.1	16	623	17488	3.3	103			137	1918		0.23	11.28	23.1	7.82	7.22	0.07		
A2	8/2/10	1231	1.3	Ebb	3.6	113	141.6	1983	0.6	8	651	18272	3.3	101			141	1979		0.13	10.18	22.2	8.02	7.23	0.06		
A2	9/2/10	1044	1.8	Flood	3.4	105	143.7	2013	0.5	7	622	17458	3.3	102			145	2038		0.05	10.58	22.0	7.98	6.40	0.04		
A2	10/19/10	1055	1.1	Flood	3.4	107	140.7	1970	0.8	12	647	18166	3.2	98			137	1913		0.25	10.43	22.5	7.96	6.94	0.08		
A2	11/3/10	944	0.4	Low	3.4	105	130.6	1829	0.4	6	624	17523	3.3	104			135	1896		0.19	10.44	22.2	8.00	6.22	0.09		
A2	12/6/10	923	0.8	Ebb	3.5	108	131.9	1847	0.6	9	668	18766	3.2	98			133	1869		0.07	10.74	21.7	7.91	7.23	0.09		
A2	1/26/11	957	0.8	Ebb	3.6	110	131.1	1836	1.0	14	583	16365	3.3	101			132	1844		0.11	10.90	21.4	7.88	6.64	0.09		
A2	4/13/11	941	0.3	Flood	3.5	108	143.2	2006	0.5	7	666	18707	3.1	95			139	1943		0.12	10.48	22.0	7.94	6.74	0.14		
A2	7/18/11	908	0.7	Ebb	3.6	111	123.6	1731	0.5	7	612	17178	3.4	106			128	1789		0.14	11.34	21.6	7.93	6.22	0.01		
A2	10/5/11	940	1.5	Flood	3.4	105	120.6	1689	1.1	16	594	16673	3.4	105			125	1746		0.02	11.20	22.1	7.84	6.72	0.02		
A2	1/17/12	814	0.7	Flood	3.2	100	119.9	1679	0.5	7	598	16799	3.0	94			125	1745		0.08	11.89	21.3	7.85	7.03	0.00		
A2	4/19/12	1032	0.3	Flood	3.5	108	128.9	1805	0.7	10	614	17241	3.5	108			133	1865		0.03	11.34	21.7	7.90	6.35	0.01		

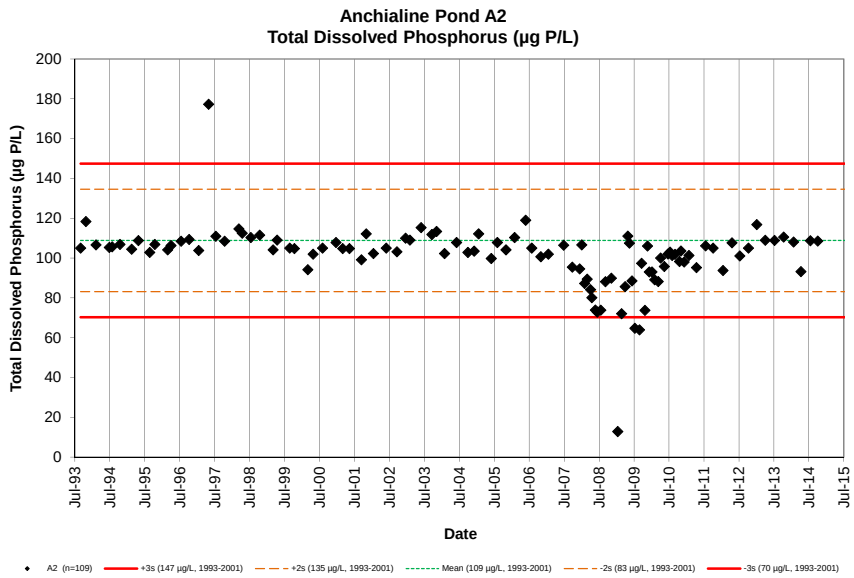
NELHA Water Quality Laboratory

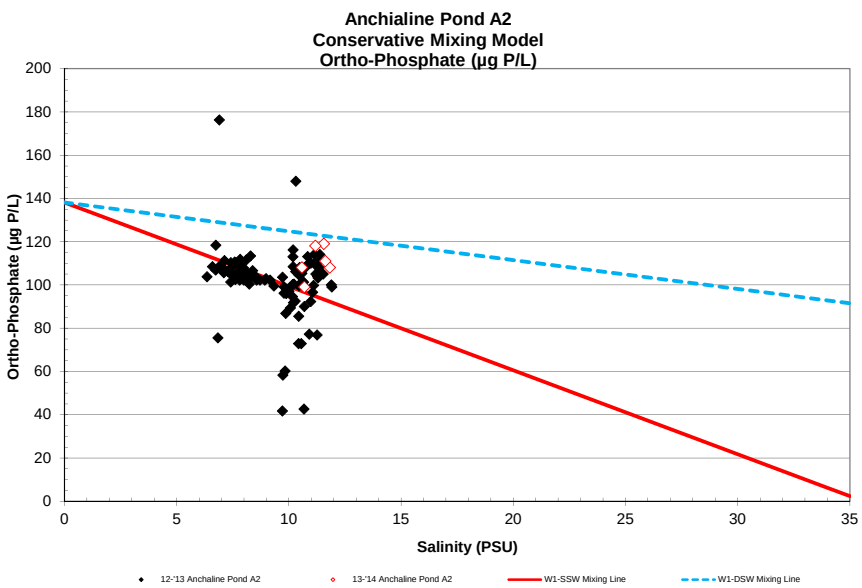
Anchialine Pond A2

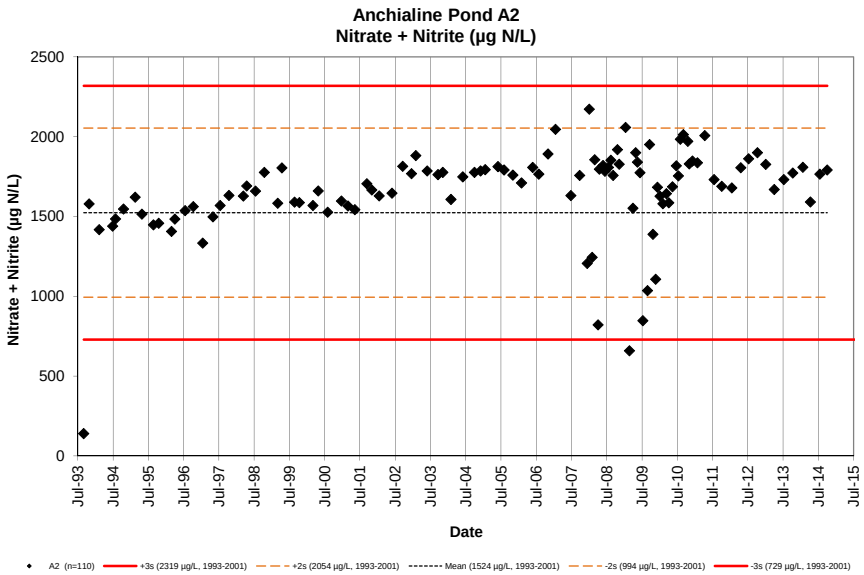
June 1993 - December 2014

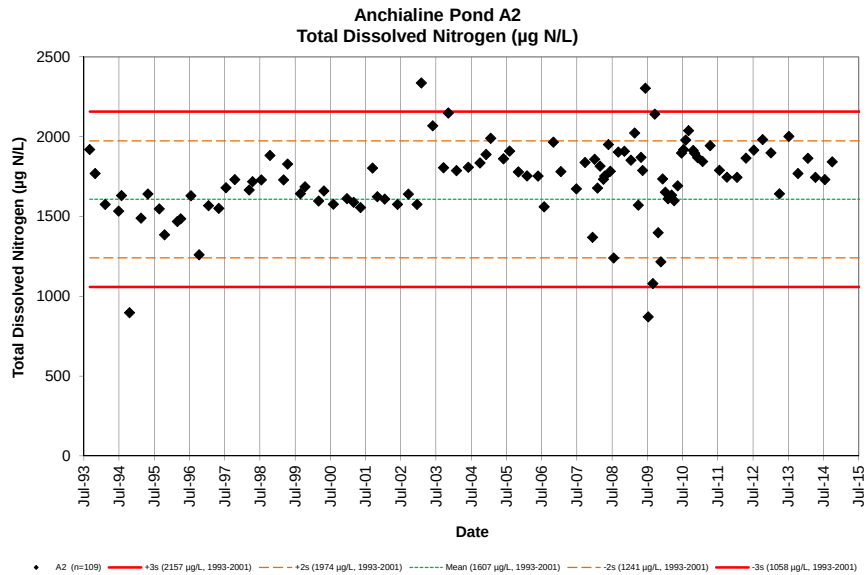
SITE ID	DATE	TIME	TIDE		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TP		TDN		TOC	Turbidity	Salinity	TEMP	pH	DO	Chl a	Fecal Col.	Entero.
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(˚C)		(ppm)	(µg/L)	CFU/100ml	CFU/100ml
A2	7/9/12	1103	1.2	Ebb	3.5	109	132.9	1861	1.0	14	607	17043	3.3	101			137	1915		0.02	11.21	22.0	7.94	8.67	0.02		
A2	10/8/12	1030	1.8	High	3.6	110	135.6	1899	0.9	12	624	17520	3.4	105			141	1982		0.07	10.98	22.8	7.91	7.48	0.12		
A2	1/3/13	1033	1.2	Ebb	3.7	114	130.4	1826	0.6	9	590	16561	3.8	117			136	1898		0.02	11.13	21.9	7.98	7.19	0.01		
A2	4/1/13	1013	0.4	Ebb	3.7	114	119.2	1669	1.0	14	587	16480	3.5	109			117	1641		0.03	11.38	21.7	7.86	6.67	0.02		
A2	7/8/13	943	-0.1	Low	3.5	108	123.6	1731	1.4	20	572	16068	3.5	109			143	2002		0.10	11.82	23.2	7.78	7.10	0.00		
A2	10/10/13	1040	1.7	Ebb	3.8	119	126.5	1772	0.8	11	590	16561	3.6	111			126	1769		0.02	11.56	22.7	7.89	6.78	0.08		
A2	1/22/14	849	0.7	High	3.6	111	129.1	1808	0.8	11	591	16597	3.5	108			133	1864		0.02	11.62	21.7	7.91	6.62	0.00		
A2	4/9/14	1025	0.7	Flood	3.2	99	113.6	1591	2.4	34	539	15143	3.0	93			125	1745		0.08	10.69	22.7	7.83	7.19	0.12		
A2	7/16/14	1052	0.5	Ebb	3.8	118	126.0	1765	0.7	10	550	15451	3.5	109			124	1731		0.07	11.18	22.5	7.90	6.94	0.03		
A2	10/1/14	1209	1.5	Ebb	3.5	108	127.9	1791	1.2	17	553	15542	3.5	109			131	1842		0.13	10.58	23.0	7.99	6.83	0.03		
A2	1/1/15																										
A2	4/1/15																										

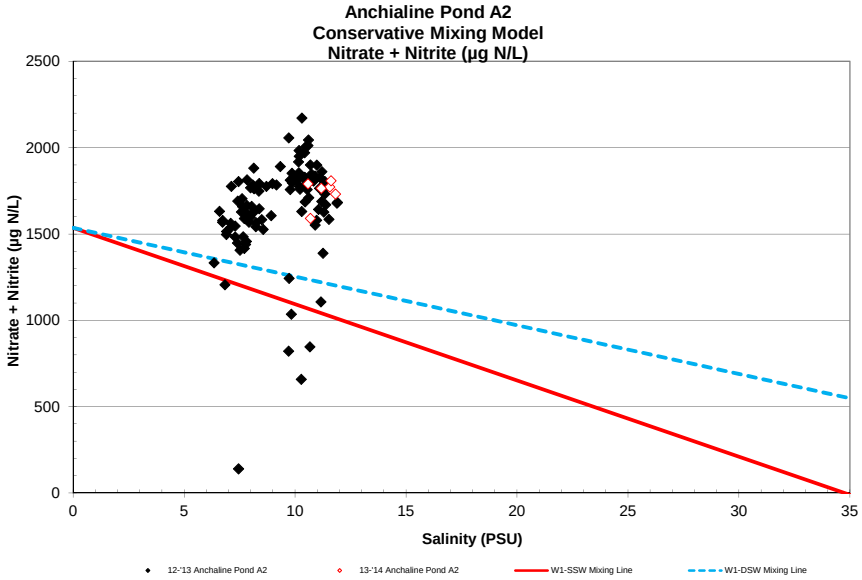

Anchialine Pond A2
Ortho-Phosphate
ug P/L
Date
A2 (n=110)
+3s (146 µg/L, 1993-2001)
+2s (133 µg/L, 1993-2001)
Mean (108 µg/L, 1993-2001)
-2s (83 µg/L, 1993-2001)
-3s (71 µg/L, 1993-2001)

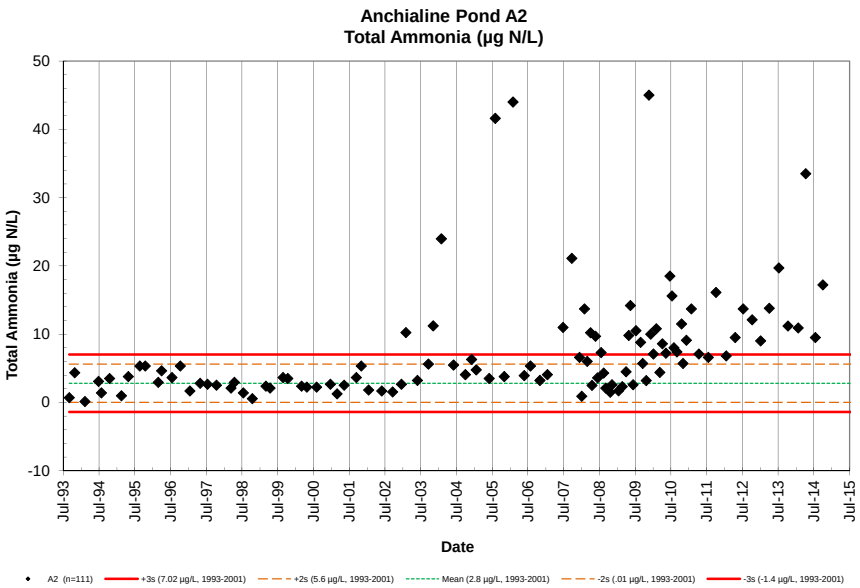

Anchialine Pond A2
Total Dissolved Phosphorus (µg P/L)
Total Dissolved Phosphorus (µg P/L)
Date
A2 (n=109)
+3s (147 µg/L, 1993-2001)
+2s (135 µg/L, 1993-2001)
Mean (109 µg/L, 1993-2001)
-2s (83 µg/L, 1993-2001)
-3s (70 µg/L, 1993-2001)

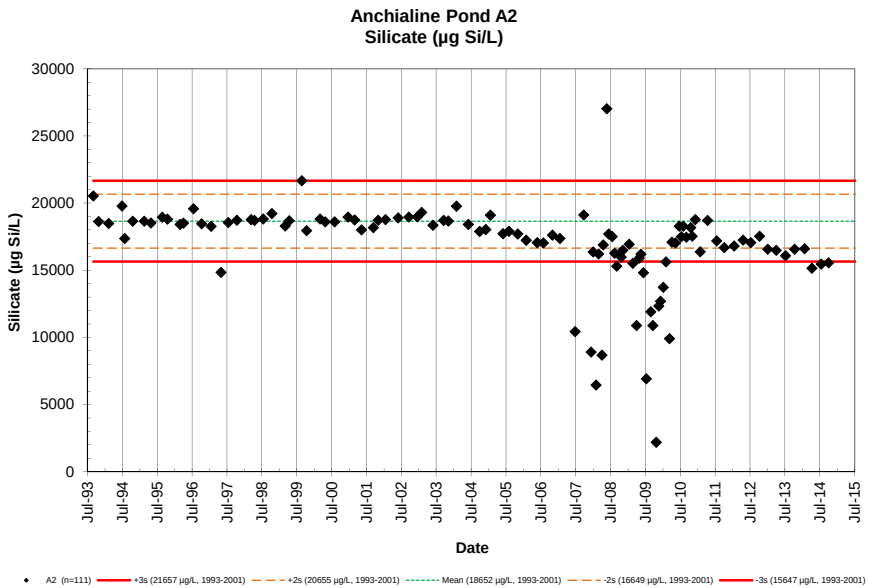

Anchialine Pond A2
Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
12-'13 Anchaline Pond A2
13-'14 Anchaline Pond A2
W1-SSW Mixing Line
W1-DSW Mixing Line

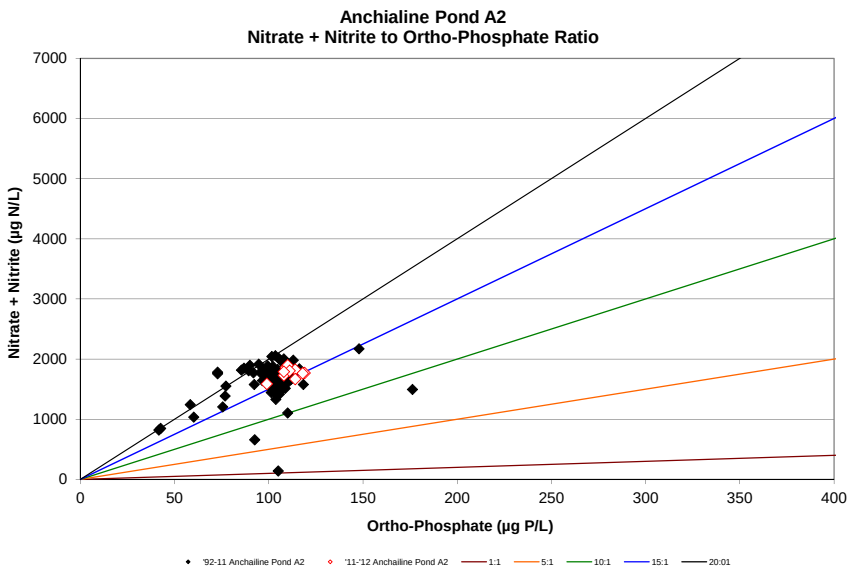

Anchialine Pond A2
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
A2 (n=110)
+3s (2319 µg/L, 1993-2001)
+2s (2054 µg/L, 1993-2001)
Mean (1524 µg/L, 1993-2001)
-2s (994 µg/L, 1993-2001)
-3s (729 µg/L, 1993-2001)

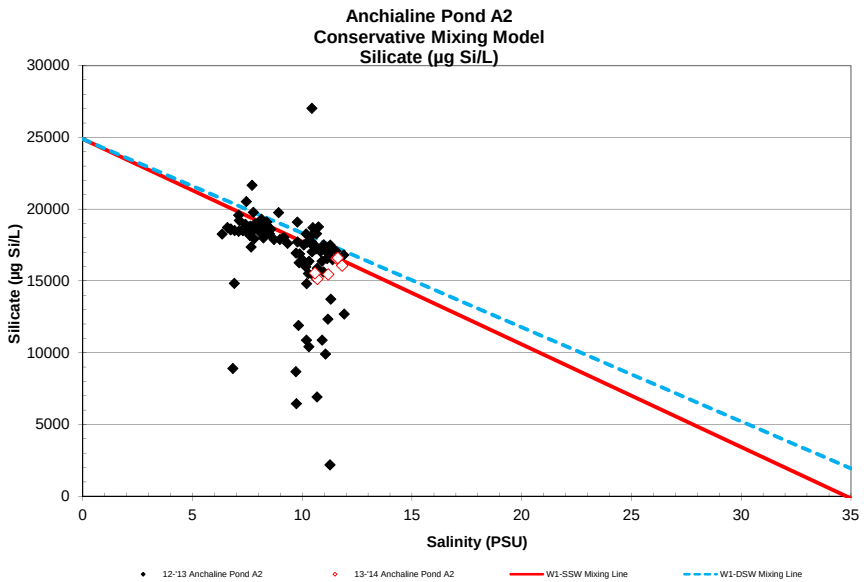

Anchialine Pond A2
Total Dissolved Nitrogen (µg N/L)
Total Dissolved Nitrogen (µg N/L)
Date
A2 (n=109)
+3s (2157 µg/L, 1993-2001)
+2s (1974 µg/L, 1993-2001)
Mean (1607 µg/L, 1993-2001)
-2s (1241 µg/L, 1993-2001)
-3s (1058 µg/L, 1993-2001)

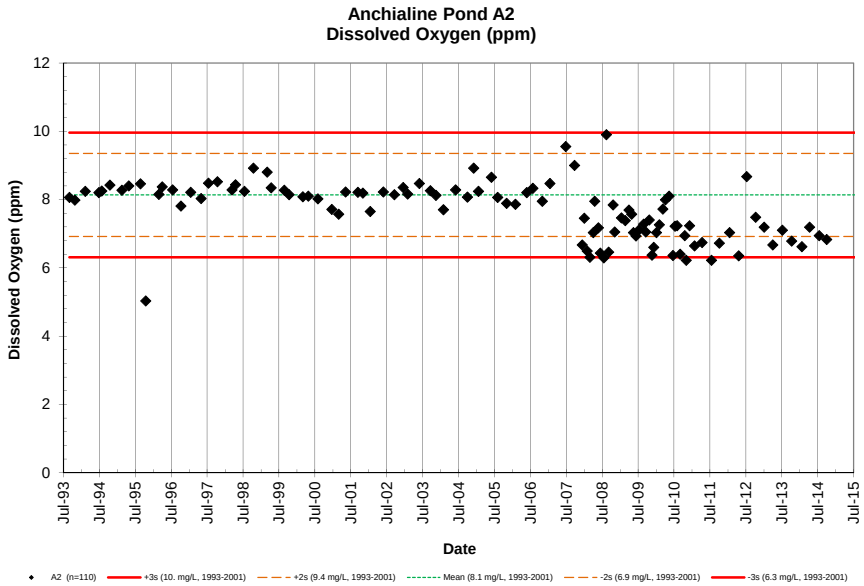

Anchialine Pond A2
Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
12-'13 Anchaline Pond A2
13-'14 Anchaline Pond A2
W1-SSW Mixing Line
W1-DSW Mixing Line

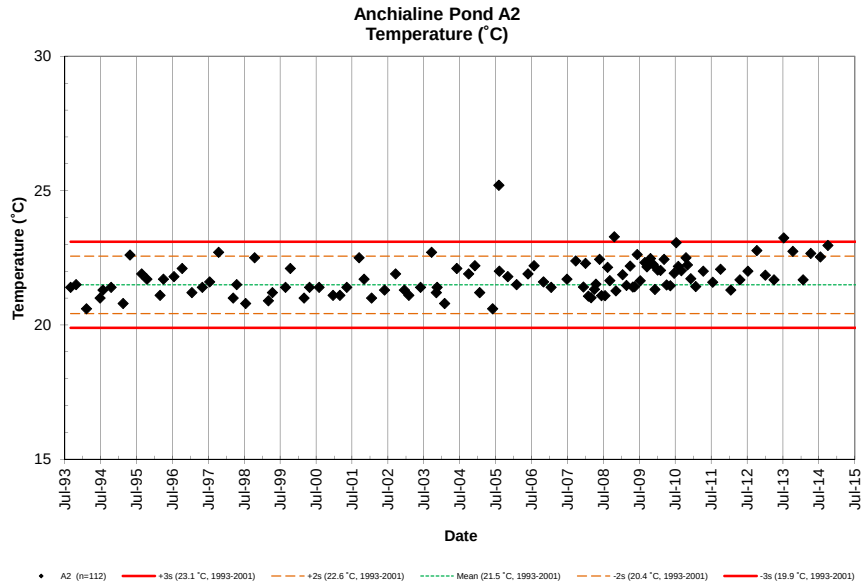

Anchialine Pond A2
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
A2 (n=111)
+3s (7.02 µg/L, 1993-2001)
+2s (5.6 µg/L, 1993-2001)
Mean (2.8 µg/L, 1993-2001)
-2s (.01 µg/L, 1993-2001)
-3s (-1.4 µg/L, 1993-2001)

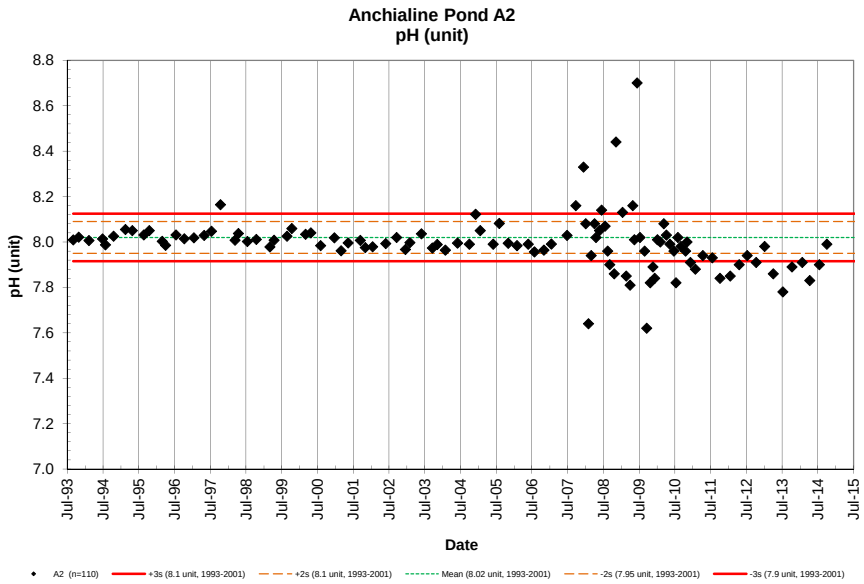

Anchialine Pond A2
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
A2 (n=111)
+3s (21657 µg/L, 1993-2001)
+2s (20655 µg/L, 1993-2001)
Mean (18652 µg/L, 1993-2001)
-2s (16649 µg/L, 1993-2001)
-3s (15647 µg/L, 1993-2001)

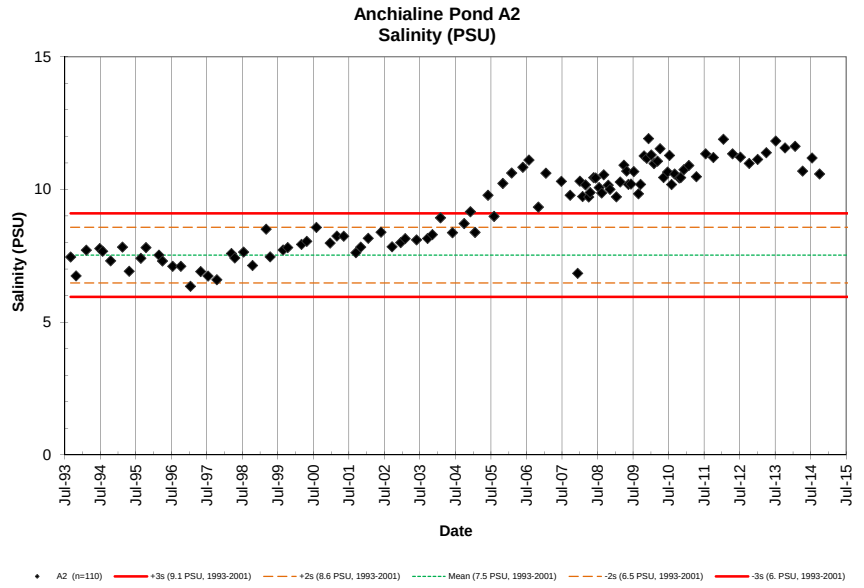

Anchialine Pond A2
Nitrate + Nitrite to Ortho-Phosphate Ratio
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
'92-11 Anchailine Pond A2
'11-'12 Anchailine Pond A2
1:1
5:1
10:1
15:1
20:01

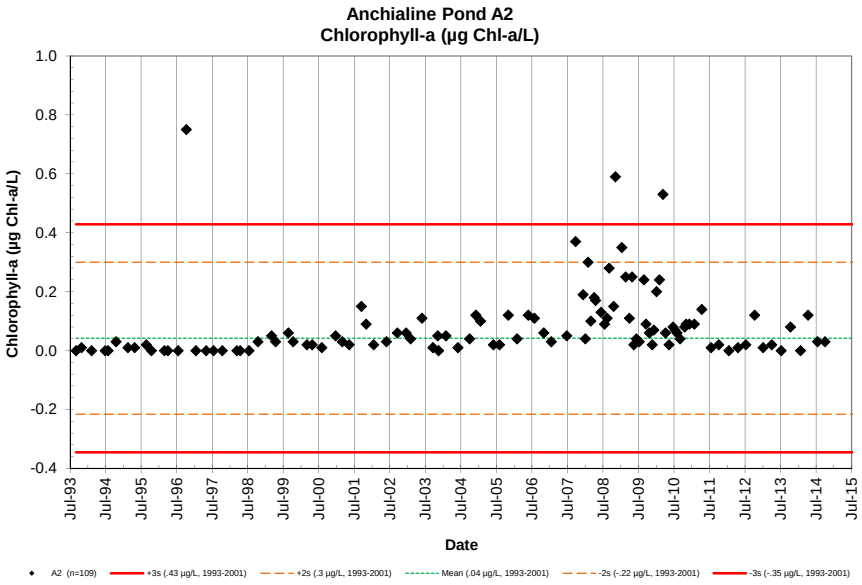

Anchialine Pond A2
Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
12-'13 Anchaline Pond A2
13-'14 Anchaline Pond A2
W1-SSW Mixing Line
W1-DSW Mixing Line

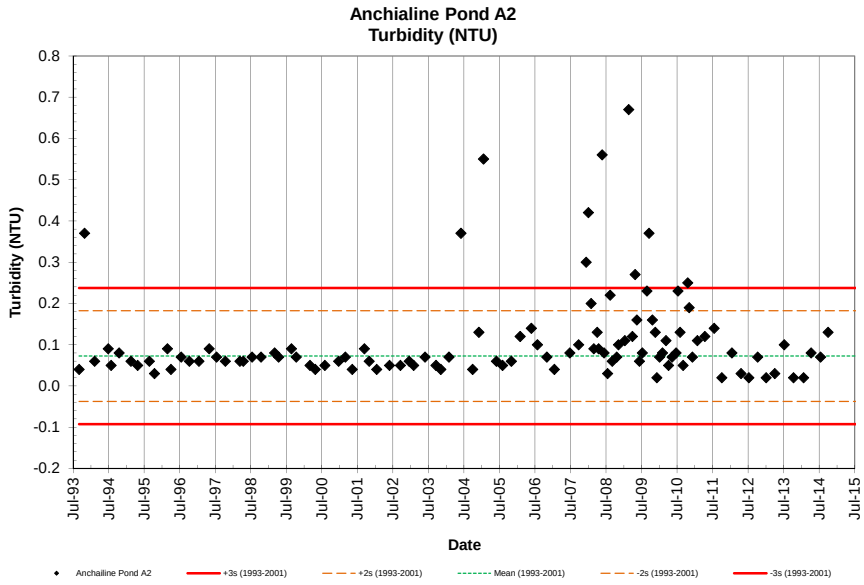

Anchialine Pond A2
Dissolved Oxygen (ppm)
Dissolved Oxygen (ppm)
Date
A2 (n=110)
+3s (10. mg/L, 1993-2001)
+2s (9.4 mg/L, 1993-2001)
Mean (8.1 mg/L, 1993-2001)
-2s (6.9 mg/L, 1993-2001)
-3s (6.3 mg/L, 1993-2001)


Anchialine Pond A2
Temperature (˚C)
Temperature (˚C)
Date
A2 (n=112)
+3s (23.1 ˚C, 1993-2001)
+2s (22.6 ˚C, 1993-2001)
Mean (21.5 ˚C, 1993-2001)
-2s (20.4 ˚C, 1993-2001)
-3s (19.9 ˚C, 1993-2001)


Anchialine Pond A2
pH (unit)
pH (unit)
Date
A2 (n=110)
+3s (8.1 unit, 1993-2001)
+2s (8.1 unit, 1993-2001)
Mean (8.02 unit, 1993-2001)
-2s (7.95 unit, 1993-2001)
-3s (7.9 unit, 1993-2001)


Anchialine Pond A2
Salinity (PSU)
Salinity (PSU)
Date
A2 (n=110)
+3s (9.1 PSU, 1993-2001)
+2s (8.6 PSU, 1993-2001)
Mean (7.5 PSU, 1993-2001)
-2s (6.5 PSU, 1993-2001)
-3s (6. PSU, 1993-2001)


Anchialine Pond A2
Chlorophyll-a (µg Chl-a/L)
Chlorophyll-a (µg Chl-a/L)
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
Jul-93
Jul-94
Jul-95
Jul-96
Jul-97
Jul-98
Jul-99
Jul-00
Jul-01
Jul-02
Jul-03
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Jul-12
Jul-13
Jul-14
Jul-15
Date
A2 (n=109)
+3s (.43 µg/L, 1993-2001)
+2s (.3 µg/L, 1993-2001)
Mean (.04 µg/L, 1993-2001)
-2s (-.22 µg/L, 1993-2001)
-3s (-.35 µg/L, 1993-2001)

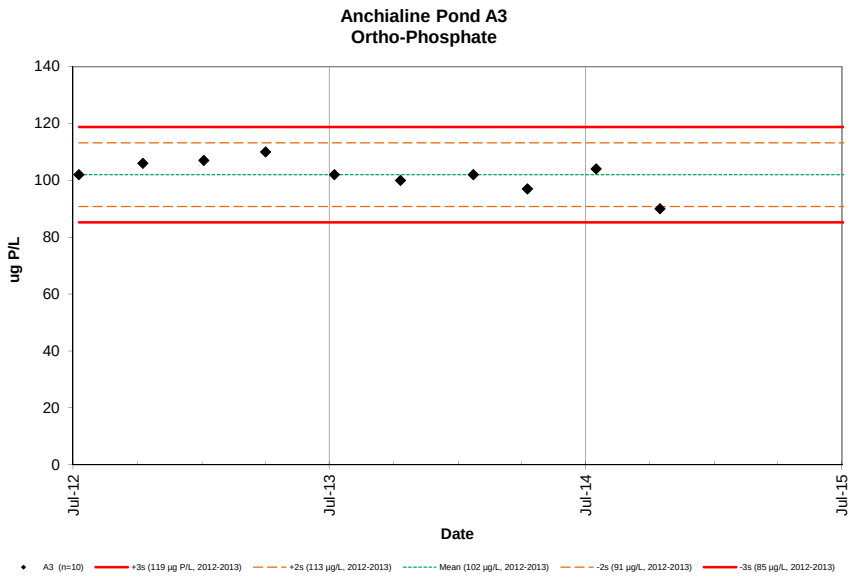

Anchialine Pond A2
Turbidity (NTU)
Turbidity (NTU)
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
-0.2
Jul-93
Jul-94
Jul-95
Jul-96
Jul-97
Jul-98
Jul-99
Jul-00
Jul-01
Jul-02
Jul-03
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Jul-12
Jul-13
Jul-14
Jul-15
Date
Anchialine Pond A2
+3s (1993-2001)
+2s (1993-2001)
Mean (1993-2001)
-2s (1993-2001)
-3s (1993-2001)

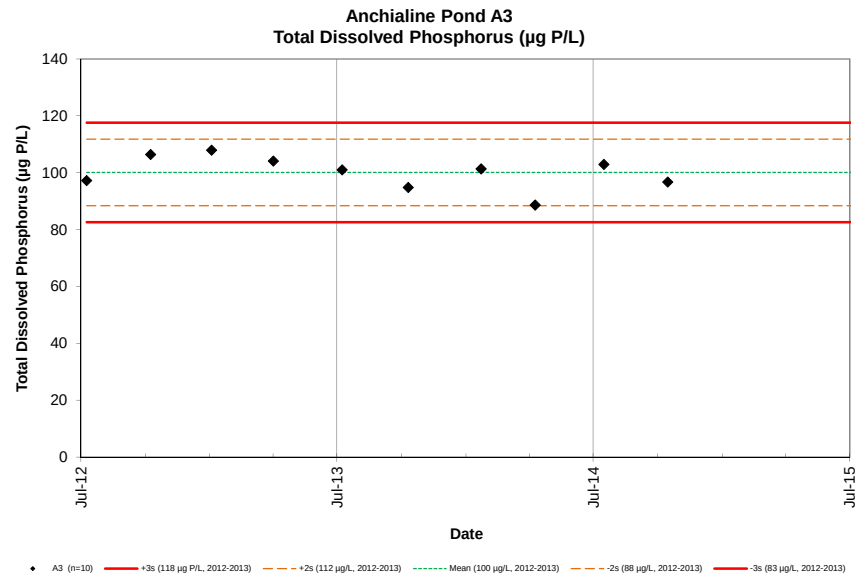
NELHA Water Quality Laboratory

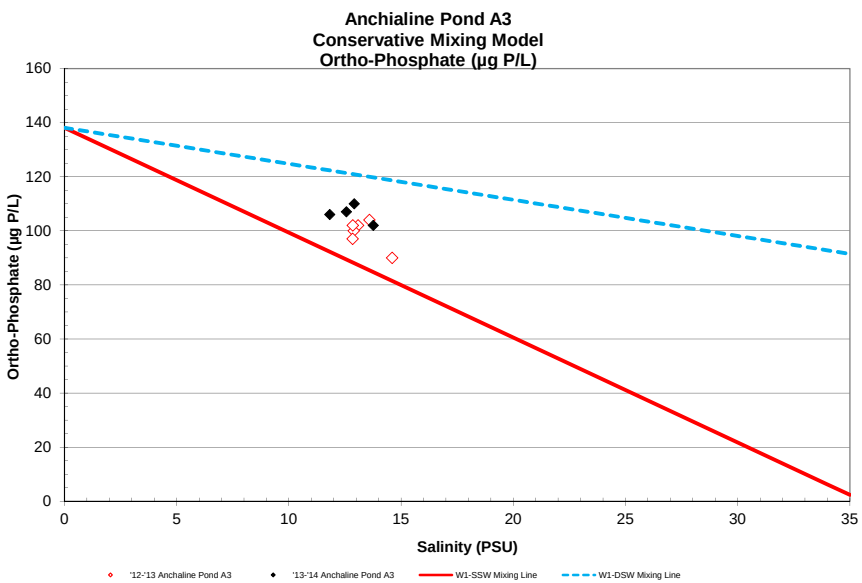
Anchialine Pond A3

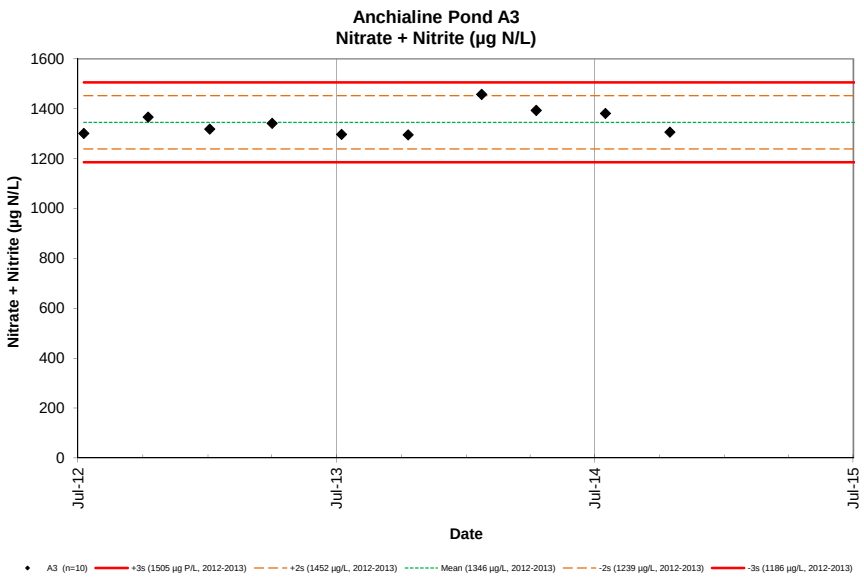
June 2012 - December 2014

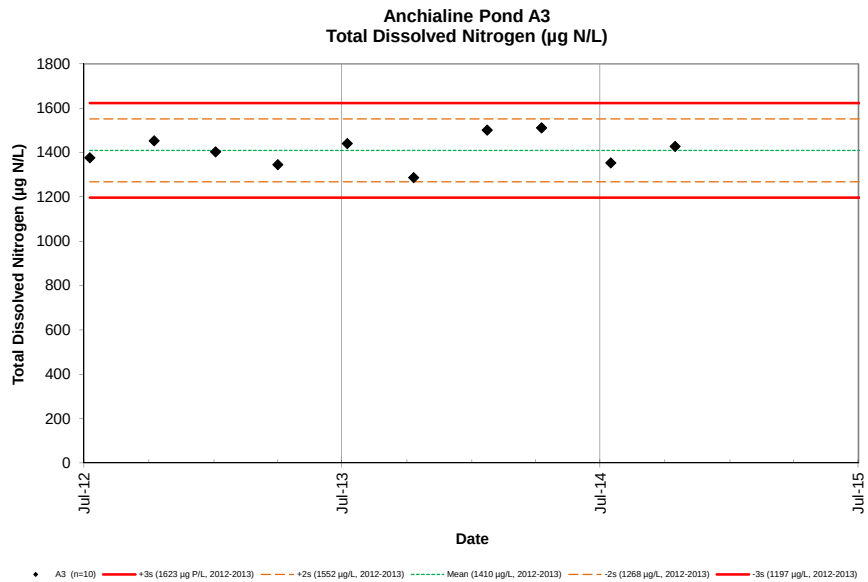
SITE ID	DATE	TIME	TIDE		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		Turbidity	Salinity	TEMP	pH	DO	Chl a
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)
A3	7/9/12	1111	1.2	Ebb	3.3	102	92.9	1301	0.8	10.7	562	15780	3.1	97	98.2	1376	0.39	13.76	22.0	7.97	7.83	0.07
A3	10/8/12	1035	1.8	High	3.4	106	97.5	1366	2.4	34.3	589	16537	3.4	106	103.7	1453	0.6	11.82	22.0	7.94	7.30	0.32
A3	1/3/13	1039	1.2	Ebb	3.5	107	94.1	1318	1.3	17.7	553	15523	3.5	108	100.2	1403	0.1	12.56	20.9	7.99	7.90	0.04
A3	4/1/13	1019	0.4	Ebb	3.6	110	95.7	1341	1.2	17.1	549	15431	3.4	104	96.0	1345	2.79	12.91	20.9	7.84	6.90	0.12
A3	7/8/13	950	-0.1	Low	3.3	102	92.6	1297	1.61	22.5	565	15859	3.26	101	103	1441	5.62	13.08	22.6	7.68	7.44	1.21
A3	10/10/13	1047	1.7	Ebb	3.2	100	92.5	1295	1.20	16.8	529	14871	3.06	95	92	1287	0.31	12.89	23.6	7.94	7.85	0.19
A3	1/22/14	855	0.7	High	3.3	102	104.0	1457	0.9	12	552	15512	3.3	101	107	1501	0.02	12.85	21.0	7.97	7.04	0.03
A3	4/9/14	1014	0.7	Flood	3.1	97	99.5	1393	2.3	32	513	14415	2.9	89	108	1511	0.05	12.84	21.0	7.85	7.30	0.02
A3	7/16/14	1058	0.5	Ebb	3.4	104	98.6	1381	1.58	22.1	503	14121	3.32	103	97	1353	0.18	13.59	21.9	7.86	7.59	0.07
A3	10/15/14	1218	1.5	Ebb	2.9	90	93.2	1306	0.79	11.1	494	13861	3.12	97	102	1428	0.41	14.60	25.4	7.87	6.61	0.09
A3	1/1/15																					
A3	4/1/15																					

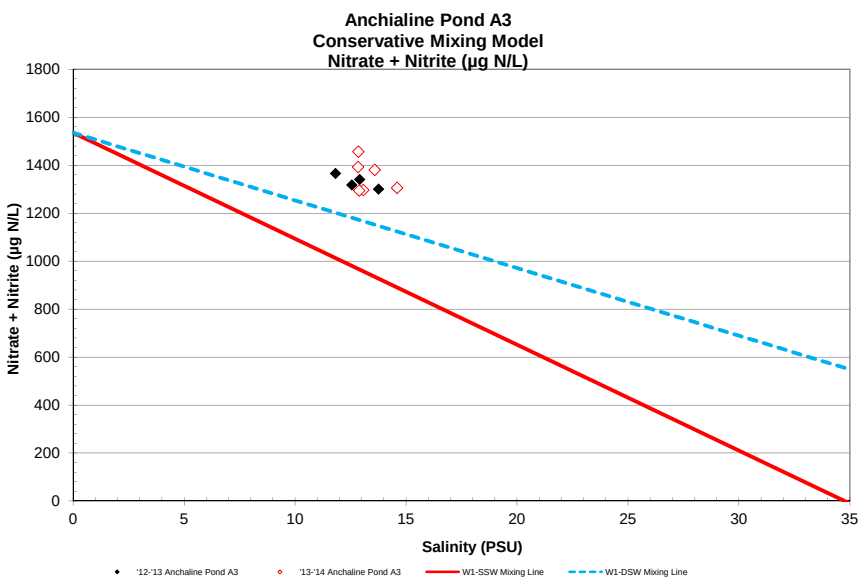

Anchialine Pond A3
Ortho-Phosphate
ug P/L
Date
Jul-12
Jul-13
Jul-14
Jul-15
A3 (n=10)
+3s (119 µg P/L, 2012-2013)
+2s (113 µg/L, 2012-2013)
Mean (102 µg/L, 2012-2013)
-2s (91 µg/L, 2012-2013)
-3s (85 µg/L, 2012-2013)

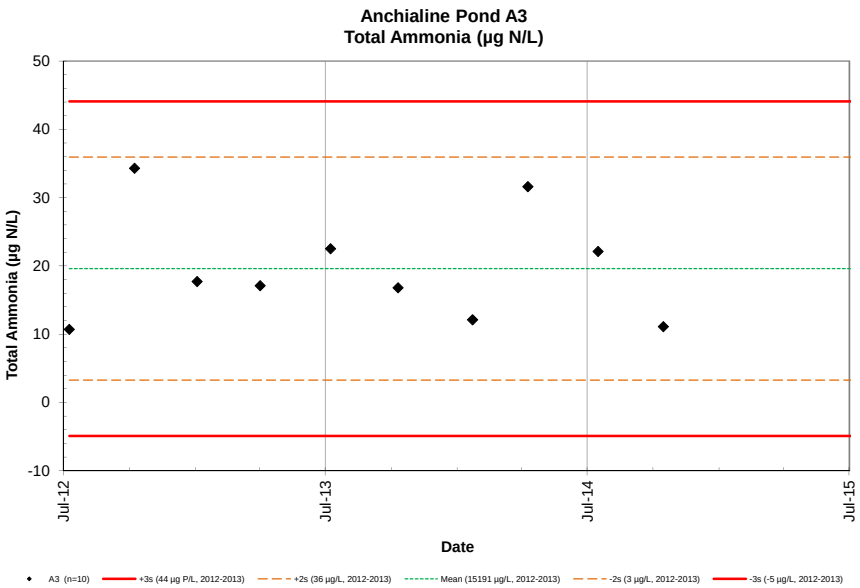

Anchialine Pond A3
Total Dissolved Phosphorus (µg P/L)
Total Dissolved Phosphorus (µg P/L)
Date
Jul-12
Jul-13
Jul-14
Jul-15
A3 (n=10)
+3s (118 µg P/L, 2012-2013)
+2s (112 µg/L, 2012-2013)
Mean (100 µg/L, 2012-2013)
-2s (88 µg/L, 2012-2013)
-3s (83 µg/L, 2012-2013)

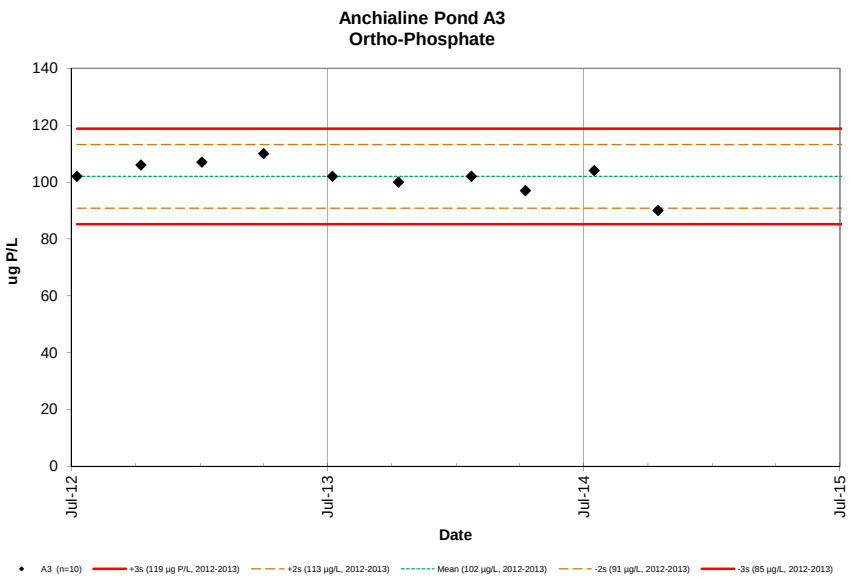

Anchialine Pond A3
Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
'12-'13 Anchaline Pond A3
'13-'14 Anchaline Pond A3
W1-SSW Mixing Line
W1-DSW Mixing Line

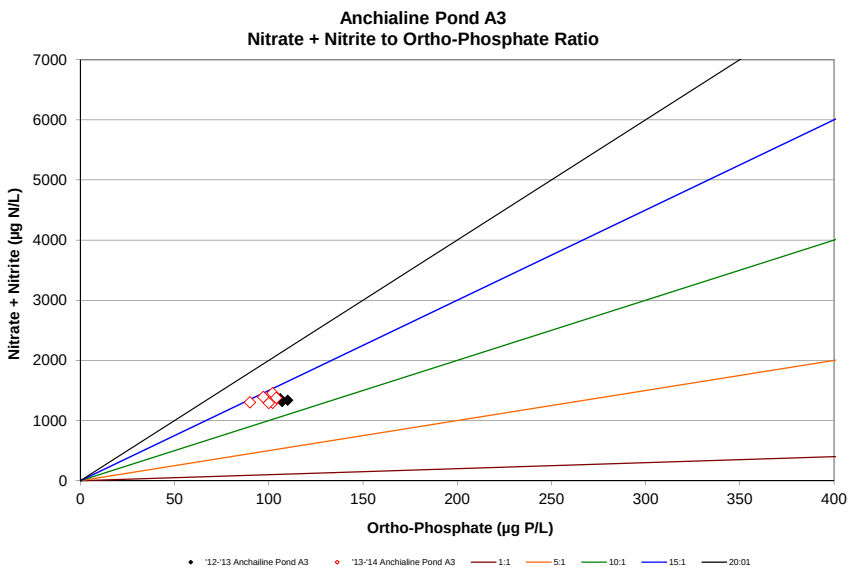

Anchialine Pond A3
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
1600
1400
1200
1000
800
600
400
200
0
Jul-12
Jul-13
Jul-14
Jul-15
Date
A3 (n=10)
+3s (1505 µg P/L, 2012-2013)
+2s (1452 µg/L, 2012-2013)
Mean (1346 µg/L, 2012-2013)
-2s (1239 µg/L, 2012-2013)
-3s (1186 µg/L, 2012-2013)

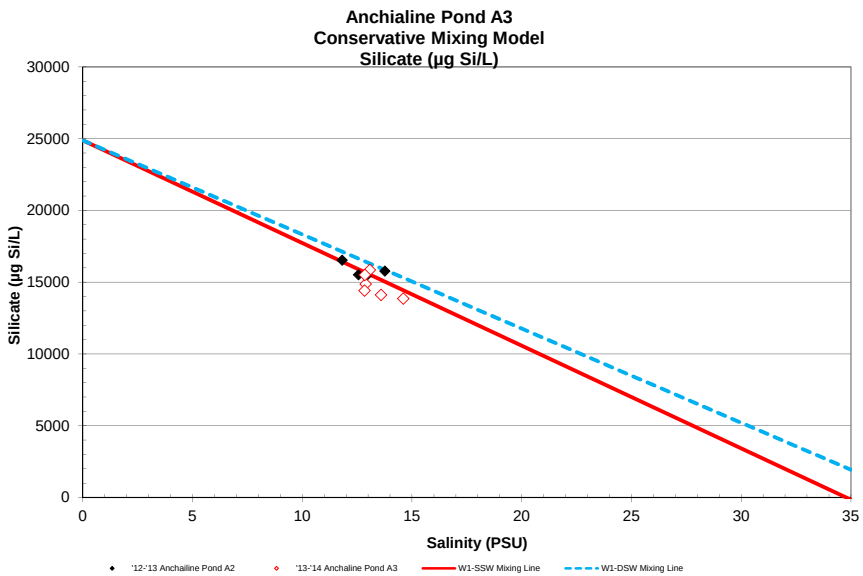

Anchialine Pond A3
Total Dissolved Nitrogen (µg N/L)
Total Dissolved Nitrogen (µg N/L)
1800
1600
1400
1200
1000
800
600
400
200
0
Jul-12
Jul-13
Jul-14
Jul-15
Date
A3 (n=10)
+3s (1623 µg P/L, 2012-2013)
+2s (1552 µg/L, 2012-2013)
Mean (1410 µg/L, 2012-2013)
-2s (1268 µg/L, 2012-2013)
-3s (1197 µg/L, 2012-2013)

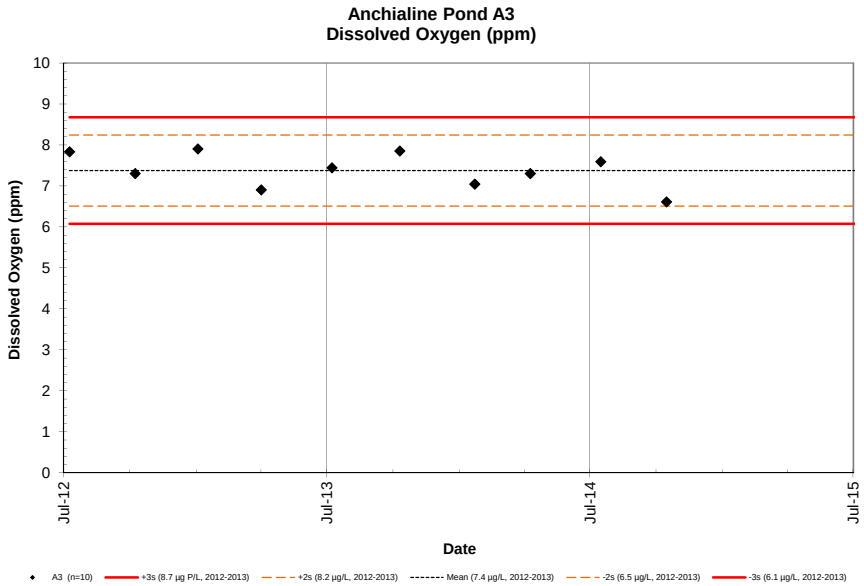

Anchialine Pond A3
Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
1800
1600
1400
1200
1000
800
600
400
200
0
0
5
10
15
20
25
30
35
Salinity (PSU)
'12-'13 Anchaline Pond A3
'13-'14 Anchaline Pond A3
W1-SSW Mixing Line
W1-DSW Mixing Line

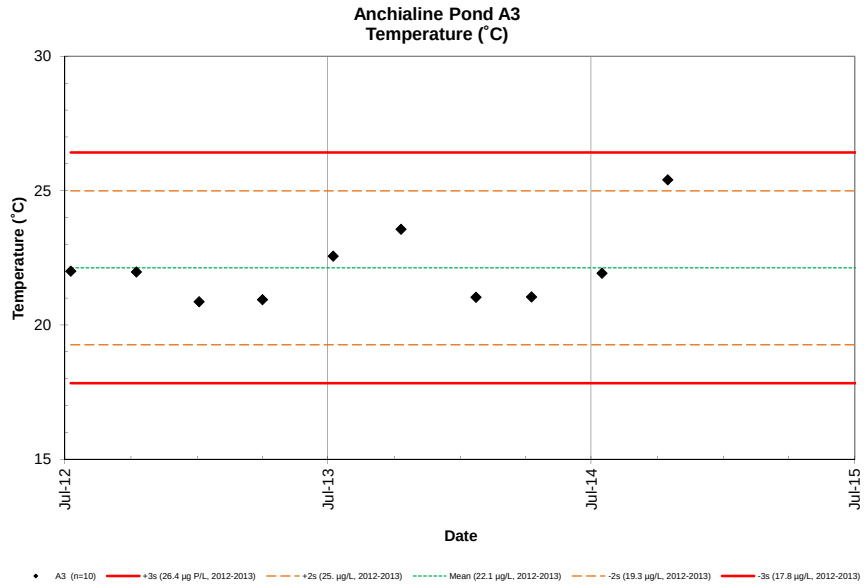

Anchialine Pond A3
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
50
40
30
20
10
0
-10
Jul-12
Jul-13
Jul-14
Jul-15
Date
A3 (n=10)
+3s (44 µg P/L, 2012-2013)
+2s (36 µg/L, 2012-2013)
Mean (15191 µg/L, 2012-2013)
-2s (3 µg/L, 2012-2013)
-3s (-5 µg/L, 2012-2013)

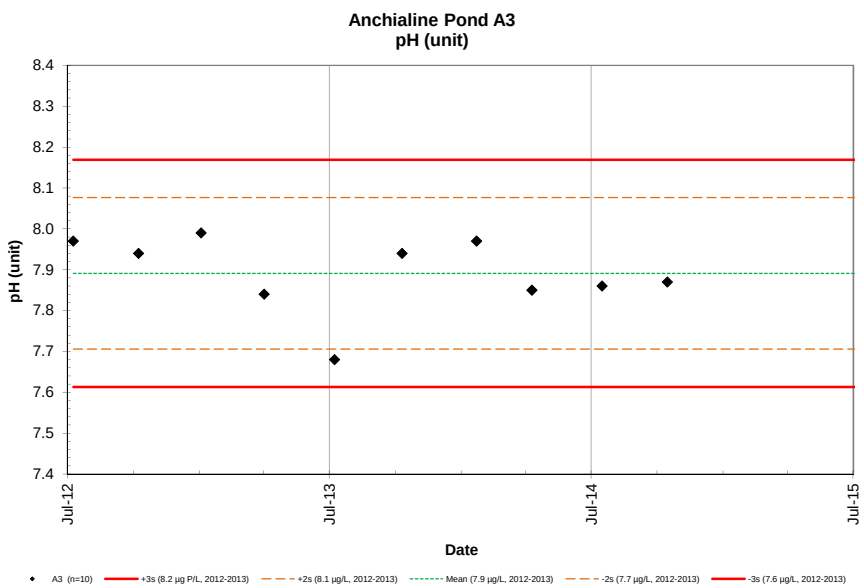

Anchialine Pond A3
Ortho-Phosphate
ug P/L
140
120
100
80
60
40
20
0
Jul-12
Jul-13
Jul-14
Jul-15
Date
A3 (n=10)
+3s (119 µg P/L, 2012-2013)
+2s (113 µg/L, 2012-2013)
Mean (102 µg/L, 2012-2013)
-2s (91 µg/L, 2012-2013)
-3s (85 µg/L, 2012-2013)

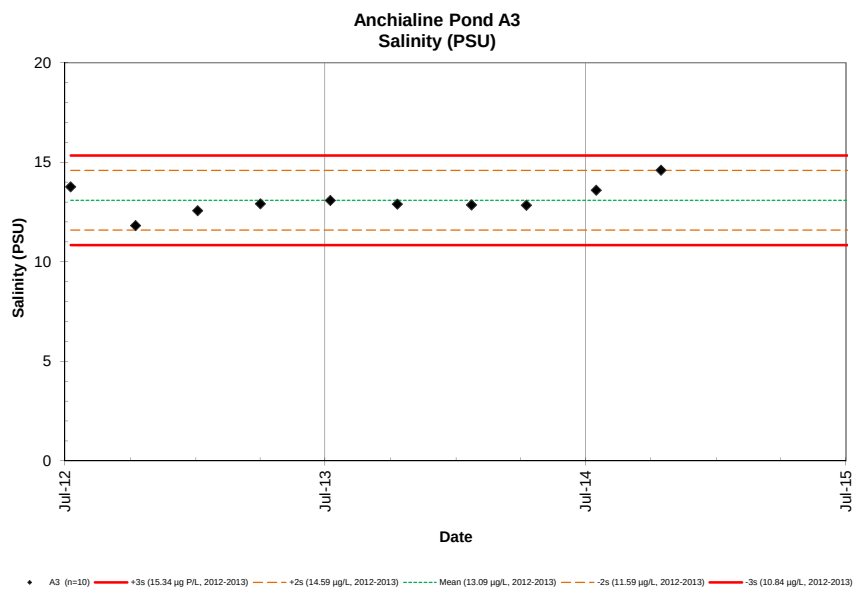

Anchialine Pond A3
Nitrate + Nitrite to Ortho-Phosphate Ratio
Nitrate + Nitrite (µg N/L)
7000
6000
5000
4000
3000
2000
1000
0
0
50
100
150
200
250
300
350
400
Ortho-Phosphate (µg P/L)
'12-'13 Anchailine Pond A3
'13-'14 Anchialine Pond A3
1:1
5:1
10:1
15:1
20:01

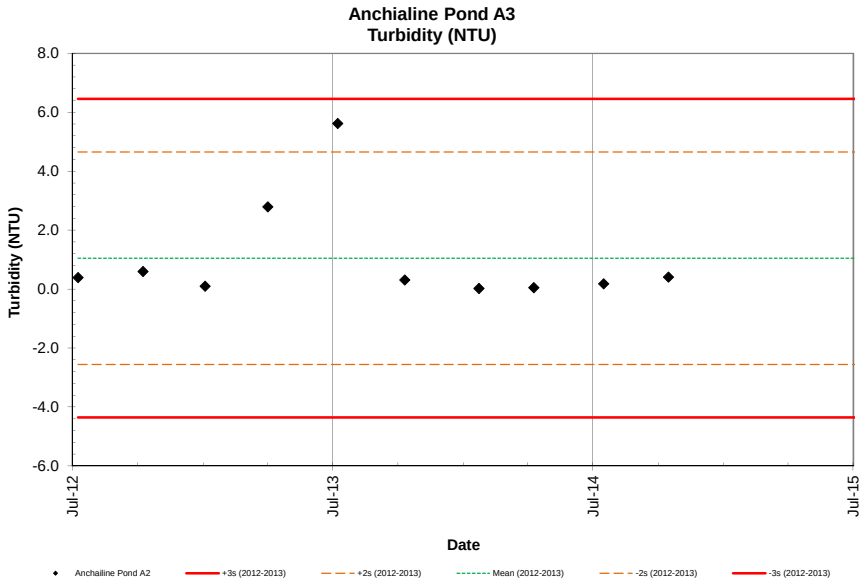

Anchialine Pond A3
Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
30000
25000
20000
15000
10000
5000
0
0
5
10
15
20
25
30
35
Salinity (PSU)
'12-'13 Anchailine Pond A2
'13-'14 Anchaline Pond A3
W1-SSW Mixing Line
W1-DSW Mixing Line

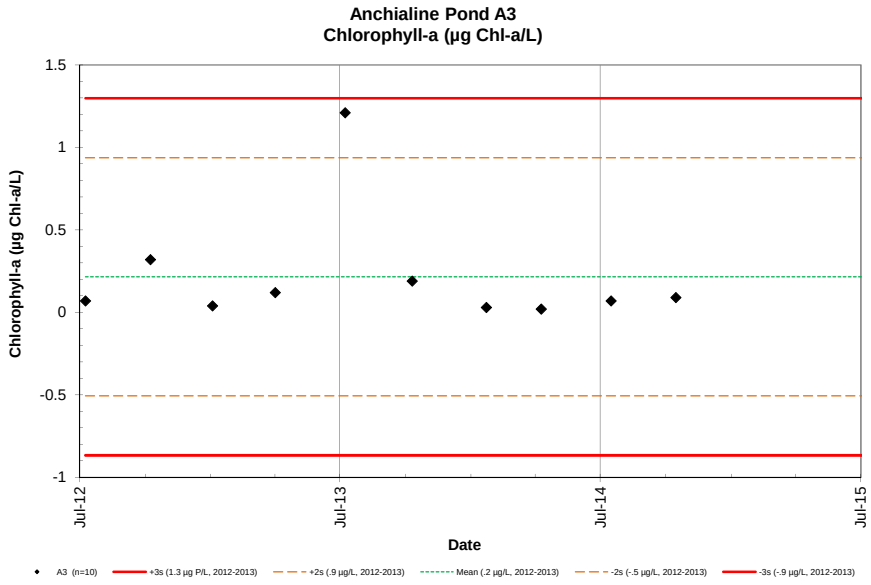

Anchialine Pond A3
Dissolved Oxygen (ppm)
Dissolved Oxygen (ppm)
10
9
8
7
6
5
4
3
2
1
0
Jul-12
Jul-13
Jul-14
Jul-15
Date
A3 (n=10)
+3s (8.7 µg P/L, 2012-2013)
+2s (8.2 µg/L, 2012-2013)
Mean (7.4 µg/L, 2012-2013)
-2s (6.5 µg/L, 2012-2013)
-3s (6.1 µg/L, 2012-2013)


Anchialine Pond A3
Temperature (˚C)
Temperature (˚C)
30
25
20
15
Jul-12
Jul-13
Jul-14
Jul-15
Date
A3 (n=10)
+3s (26.4 µg P/L, 2012-2013)
+2s (25. µg/L, 2012-2013)
Mean (22.1 µg/L, 2012-2013)
-2s (19.3 µg/L, 2012-2013)
-3s (17.8 µg/L, 2012-2013)


Anchialine Pond A3
pH (unit)
pH (unit)
8.4
8.3
8.2
8.1
8.0
7.9
7.8
7.7
7.6
7.5
7.4
Jul-12
Jul-13
Jul-14
Jul-15
Date
A3 (n=10)
+3s (8.2 µg P/L, 2012-2013)
+2s (8.1 µg/L, 2012-2013)
Mean (7.9 µg/L, 2012-2013)
-2s (7.7 µg/L, 2012-2013)
-3s (7.6 µg/L, 2012-2013)


Anchialine Pond A3
Salinity (PSU)
Salinity (PSU)
20
15
10
5
0
Jul-12
Jul-13
Jul-14
Jul-15
Date
A3 (n=10)
+3s (15.34 µg P/L, 2012-2013)
+2s (14.59 µg/L, 2012-2013)
Mean (13.09 µg/L, 2012-2013)
-2s (11.59 µg/L, 2012-2013)
-3s (10.84 µg/L, 2012-2013)


Anchialine Pond A3
Turbidity (NTU)
8.0
6.0
4.0
2.0
0.0
-2.0
-4.0
-6.0
Turbidity (NTU)
Jul-12
Jul-13
Jul-14
Jul-15
Date
Anchailine Pond A2
+3s (2012-2013)
+2s (2012-2013)
Mean (2012-2013)
-2s (2012-2013)
-3s (2012-2013)


Anchialine Pond A3
Chlorophyll-a (µg Chl-a/L)
1.5
1
0.5
0
-0.5
-1
Chlorophyll-a (µg Chl-a/L)
Jul-12
Jul-13
Jul-14
Jul-15
Date
A3 (n=10)
+3s (1.3 µg P/L, 2012-2013)
+2s (.9 µg/L, 2012-2013)
Mean (.2 µg/L, 2012-2013)
-2s (-.5 µg/L, 2012-2013)
-3s (-.9 µg/L, 2012-2013)

NELHA Water Quality Laboratory

Coastal Site C24

October 1989 - December 2014

SITE ID	DATE	TIME	TIDE		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	TEMP	pH	DO	Chl a	Fecal Col.	Entero.
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	CFU/100ml	CFU/100ml
C24	10/6/89	825	1.7	Ebb	1.87	58	4.43	62	0.28	3.9	327	9184						*8/93 STAR	22.80	26.1	8.20	7.10		NA	7
C24	11/7/89	1330	0.8	Ebb	3.68	114	88.8	1244	0.16	2.2	651	18284	3.75	116	92.4	1294	0.83	RBIDITY (N	11.92	22.5	8.15	6.89		NA	35
C24	12/4/89	1057	0.9	Ebb	3.30	102	89.3	1251	0.07	1.0	663	18621	3.49	108	22.2	311	0.93	0.56	9.75	22.4	8.11	7.97		NA	3
C24	1/29/90	1115	0.3	Ebb	3.40	105	76.3	1069	0.16	2.2	687	19295	3.50	108	79.3	1111	1.35	12.57	9.97	21.2	8.09	7.40		NA	23
C24	2/7/90	1305	0.4	Flood	3.40	105	80.8	1132	1.55	21.7	519	14576	3.55	110	83.1	1165	0.96	0.00	10.33	21.1	8.12	7.39		NA	13
C24	3/12/90	1350	0.5	Flood	2.18	68	54.8	768	0.07	1.0	187	5244	2.39	74	57.1	800	0.67	1.33	17.48	22.0	8.18	7.75		NA	4
C24	4/3/90	1115	0.5	Flood	3.45	107	93.8	1314	0.07	1.0	660	18536	3.53	109	100	1401	0.50	1.06	8.58	21.0	8.01	7.52		NA	10
C24	5/8/90	1045	0.3	Flood	2.82	87	86.7	1214	0.07	1.0	629	17666	3.03	94	94.7	1326	2.33	1.00	10.13	22.3	8.02	7.29		NA	15
C24	5/30/90	1415	0.7	Low	2.89	90	84.2	1179	0.07	1.0	635	17834	3.12	97	92.9	1301	1.52	0.02	10.46	21.1	8.01	7.12		NA	2
C24	7/9/90	930	0.6	Ebb	2.88	89	76.0	1065	0.07	1.0	365	10251	4.44	138	96.0	1345	2.12	0.11	10.03	21.4	8.03	7.27		NA	<1
C24	8/1/90	1045	1.4	Flood	2.49	77	59.5	833	0.07	1.0	512	14380	2.49	77	63.3	887	1.98	0.62	16.87	24.2	8.29	7.80		NA	<1
C24	9/11/90	1045	2.0	High	0.27	8	1.06	15	0.37	5.2	16.2	455	0.93	29	6.35	89	1.63	1.96	34.25	27.9	8.34	6.89		NA	9
C24	10/2/90	1120	0.8	Flood	2.30	71	58.5	819	0.07	1.0	620	17415	2.76	85	66.0	925	0.95	0.82	16.55	24.1	8.28	7.23		NA	7
C24	11/7/90	935	1.8	Ebb	0.72	22	30.9	433	0.20	2.8	242	6805	1.38	43	41.5	581	0.68	1.14	25.02	25.5	8.24	6.61		NA	<1
C24	12/4/90	1130	0.6	Ebb	2.47	77	70.5	987	0.22	3.1	924	25951	2.85	88	72.7	1018	0.49	0.61	14.11	21.3	8.02	6.60		NA	<1
C24	1/8/91	1015	0.9	Ebb	2.91	90	95.1	1332	0.05	0.7	631	17722	3.16	98	99.2	1389	0.65	1.26	8.81	21.0	8.04	7.50		NA	6
C24	2/12/91	1045	0.2	Low	2.00	62	82.0	1149	0.07	1.0	367	10293	2.05	63	84.5	1184	0.82	0.97	9.48	21.6	8.16	7.44		NA	8
C24	3/12/91	1049	0.4	Flood	0.77	24	13.7	192	0.33	4.6	124	3485	0.96	30	17.3	242	0.92	0.73	30.21	24.5	8.28	7.69	0.08	NA	<1
C24	4/9/91	1114	0.6	Flood	3.09	96	77.8	1090	0.07	1.0	765	21485	3.13	97	82.4	1154	0.67	0.00	10.63	20.9	7.97	7.02		NA	<1
C24	5/14/91	1023	-0.4	Low	2.63	81	74.6	1045	0.07	1.0	534	14998	3.09	96	83.8	1174	0.70	0.20	10.10	21.1	8.03	7.45	0.04	NA	10
C24	6/3/91	1252	0.4	Low	2.79	86	81.6	1143	0.07	1.0	641	18008	3.18	98	90.1	1262	0.97	0.27	9.13	21.5	8.07	7.39	0.03	107	4
C24	7/8/91	1059	1.2	Flood	0.80	25	23.3	326	0.40	5.6	98.0	2752	1.01	31	26.0	364	0.86	0.40	27.28	25.6	8.36	8.53	0.03	1	<1
C24	8/7/91	919	0.2	Flood	2.40	74	49.0	686	0.07	1.0	440	12358	2.48	77	54.7	766	0.68	0.11	9.90	21.3	7.99	6.92	0.06	91	68
C24	9/4/91	1046	1.5	Flood	0.92	28	24.7	346	0.93	13.0	233	6544	1.13	35	29.3	410	0.92	0.22	26.73	26.0	8.32	8.55	0.09	64	<1
C24	10/7/91	1151	0.5	Low	2.80	87	89.2	1249	0.02	0.3	579	16262	2.84	88	91.7	1284	0.59	0.14	11.77	21.4	7.95	7.15	0.06	3	2
C24	11/5/91	1006	0.5	Low	2.12	66	83.6	1171	0.07	1.0	535	15026	2.14	66	84.7	1186	1.10	0.71	13.26	22.4	8.12	7.39	0.03	1	3
C24	12/2/91	1020	0.6	Low	1.82	56	77.1	1080	0.07	1.0	481	13509	1.95	60	80.4	1126	0.70	0.71	14.81	22.7	8.16	7.54	0.29	22	16
C24	1/6/92	1017	0.6	Ebb	2.39	74	95.1	1332	0.07	1.0	451	12667	2.39	74	99.2	1389	0.80	0.28	12.62	21.2	8.04	7.12	0.07	4	2
C24	2/24/92	1232	0.3	Ebb	0.53	16	34.7	486	0.17	2.4	216	6066	0.68	21	38.1	534	0.96	1.01	25.61	24.4	8.32	7.49	0.19	<1	1
C24	3/23/92	1100	0.2	Ebb	3.12	97	73.4	1028	0.04	0.6	742	20839	3.31	103	97.7	1369	0.67	0.23	9.69	21.1	8.05	7.68	0.20	<1	2
C24	4/20/92	1022	-0.1	Low	2.69	83	45.8	642	0.11	1.5	864	24266	2.79	86	101	1421	0.62	0.42	10.04	21.3	8.05	7.66	0.07	27	1
C24	5/18/92	1206	0.2	Flood	2.74	85	87.5	1225	0.23	3.2	779	21879	2.78	86	88.5	1240	1.31	0.50	12.21	22.4	8.11	8.09	0.19	5	2
C24	6/16/92	1231	0.4	Flood	2.68	83	93.5	1310	0.02	0.3	648	18199	2.78	86	94.0	1316	0.81	0.22	10.74	22.0	8.08	7.93	0.16	3	2
C24	7/22/92	1102	1.5	High	1.55	48	48.6	680	0.84	11.8	393	11038	1.72	53	53.5	749	0.81	2.47	21.99	25.4	8.28	8.05	0.13	5	2
C24	8/17/92	940	1.1	Ebb	3.09	96	44.8	628	0.07	1.0	190	5336	3.09	96	76.3	1068	0.90	0.20	10.74	21.8	8.00	7.66	0.03	1	<1
C24	9/8/92	1059	1.0	Flood	0.66	20	1.08	15	0.66	9.2	11.0	309	0.75	23	7.49	105	1.03	0.24	18.51	24.3	8.25	8.44	0.21	36	1
C24	10/19/92	1057	2.0	High	1.98	61	63.3	886	0.62	8.7	73.7	2070	2.35	73	63.6	891	1.33	2.60	34.32	28.8	8.31	7.47	0.08	67	1
C24	11/23/92	1124	0.4	Low	1.88	58	22.2	312	0.38	5.3	35.4	995	2.56	79	65.9	923	0.95	0.94	18.37	23.7	8.24	7.86	0.06	2	2
C24	12/21/92	1055	0.4	Low	2.17	67	63.2	885	0.34	4.8	649	18227	3.28	102	72.0	1008	0.77	1.02	15.89	22.5	8.23	8.02	0.10	<1	1
C24	1/19/93	1016	0.3	Low	2.47	77	94.7	1327	0.54	7.6	221	6204	2.61	81	105	1466	0.66	1.02	11.16	21.4	8.13	7.73	0.00	8	10
C24	2/17/93	1041	0.3	Low	0.63	20	39.4	552	0.33	4.6	435	12217	0.63	20	41.0	575	0.97	0.19	24.36	23.5	8.33	7.89	0.08	1	<1
C24	3/22/93	952	0.0	Low	2.16	67	96.8	1356	0.03	0.4	631	17719	2.17	67	217	3044	0.64	0.50	10.36	21.3	8.16	7.81	0.13	<1	<1
C24	4/19/93	1040	0.3	Flood	1.62	50	71.1	995	0.25	3.5	566	15888	1.86	58	72.7	1019	0.64	0.33	16.10	22.7	8.30	8.70	0.20	<1	<1
C24	5/17/93	939	0.3	Flood	1.83	57	74.5	1043	0.31	4.3	593	16649	2.13	66	81.4	1141	0.68	0.22	14.75	22.0	8.22	8.22	0.08	3	<1
C24	6/14/93	1013	1.0	Flood	0.69	21	15.6	219	0.60	8.4	109	3050	0.81	25	18.7	262	1.19		30.09	25.9	8.33	7.97	0.36	2	2
C24	8/17/93	1040	0.2	Flood	2.78	86	92.2	1291	0.15	2.1	237	6659	2.78	86	98.4	1379	0.65	0.54	11.37	22.0	8.10	7.76	0.15	2	6
C24	12/21/93	1102	1.0	Ebb	0.46	14	33.7	471	0.44	6.2	204	5734	0.62	19	39.6	554	0.94	0.12	25.96	24.0	8.24	7.70	0.11	<1	<1
C24	2/23/94	1117	0.3	Flood	1.73	54	55.4	776	0.33	4.6	389	10925	1.93	60	85.9	1204	0.75	0.51	18.72	22.9	8.26	7.88	0.09	1	<1
C24	5/24/94	1028	-0.2	Flood	2.02	63	69.7	976	0.33	4.6	460	12917	2.05	63	73.9	1035	0.65	0.29	17.08	23.1	8.26	8.64	0.27	24	35
C24	7/25/94	1120	0.3	Low	2.74	85	51.4	719	0.43	6.0	105	2939	2.66	82	103	1439	0.68	0.29	11.74	22.5	8.11	7.92	0.00	1	1
C24	10/18/94	1116	0.6	Low	2.78	86	90.2	1264	0.09	1.3	593	16649	2.75	85	88.9	1245	0.76	0.50	11.86	22.3	8.13	8.29	0.18	1	1
C24	2/21/95	1137	0.5	Ebb	2.68	83	91.7	1284	0.20	2.8	712	19988	2.68	83	97.7	1369	0.62	0.10	10.97	21.5	8.13	7.96	0.11	<1	13
C24	4/19/95	1125	0.1	Low	2.67	83	93.3	1307	0.49	6.9	707	19856	2.66	82	100	1403	0.77	0.24	10.93	22.0	8.15	8.02	0.13	1	1

NELHA Water Quality Laboratory

Coastal Site C24

October 1989 - December 2014

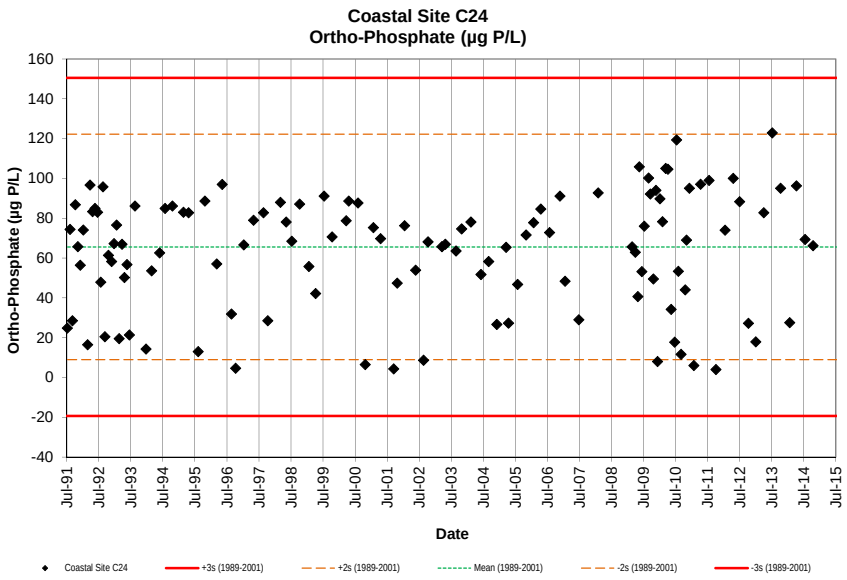
SITE ID	DATE	TIME	TIDE		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	TEMP	pH	DO	Chl a	Fecal Col.	Entero.
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	CFU/100ml	CFU/100ml
C24	8/8/95	1146	1.1	Flood	0.42	13	4.60	64	0.92	12.9	53.7	1507	0.63	20	11.6	162	0.89	0.66	32.63	27.4	8.35	8.04	0.22	1	<1
C24	10/23/95	1027	0.3	Low	2.86	89	90.0	1260	0.64	9.0	58.6	1646	2.87	89	99.6	1395	0.82	0.19	11.81	21.9	8.08	7.80	0.29	1	<1
C24	3/6/96	1115	0.0	Low	1.84	57	95.1	1332	0.36	5.0	600	16851	2.00	62	93.3	1307	0.87	0.20	10.13	22.0	8.17	7.61	0.05	5	1
C24	5/7/96	1129	0.0	Low	3.13	97	95.9	1343	0.23	3.2	614	17250	3.10	96	102	1426	0.70	0.64	10.52	22.4	8.01	7.56	0.05	3	3
C24	8/21/96	1110	1.6	Ebb	1.03	32	36.5	511	1.27	17.8	225	6313	1.18	37	39.7	556	0.90	0.34	25.56	27.6	8.30	7.93	0.17	1	1
C24	10/7/96	1116	1.6	Flood	0.15	5	0.80	11	1.00	14.0	22.5	633	0.37	11	7.29	102	1.20	0.22	34.24	29.0	8.34	7.43	0.24	<1	1
C24	1/8/97	1045	0.1	Low	2.15	67	70.0	980	0.22	3.1	469	13178	2.19	68	76.0	1064	0.77	0.54	13.40	22.6	8.21	7.78	0.42	<1	1
C24	4/29/97	1051	0.6	High	2.55	79	42.1	590	0.78	10.9	307	8619	2.70	84	39.9	559	0.85	0.22	23.62	24.8	8.35	7.90	0.10	5	<1
C24	8/20/97	1147	0.2	Low	2.67	83	93.7	1313	0.75	10.5	552	15503	2.70	84	104	1460	0.73	1.21	11.78	22.5	8.29	7.82	0.16	5	2
C24	10/8/97	1028	1.8	Ebb	0.92	28	30.4	426	0.72	10.1	193	5421	1.11	34	33.3	466	0.94	0.15	27.08	26.9	8.50	7.54	0.26	<1	1
C24	3/2/98	1131	0.3	Ebb	2.84	88	103	1447	0.29	4.1	643	18051	3.02	94	110	1535	0.58	0.27	10.40	21.5	8.26	7.75	0.00	1	1
C24	5/6/98	1118	0.6	Flood	2.52	78	83.6	1171	0.51	7.1	489	13742	2.59	80	87.7	1228	0.60	0.14	14.95	21.7	8.21	8.30	0.10	<1	<1
C24	7/8/98	1141	0.9	Flood	2.21	68	69.8	978	0.82	11.5	442	12411	2.22	69	78.6	1101	0.72	0.25	17.49	23.7	8.28	8.91	0.14	2	<1
C24	10/7/98	1045	0.4	Ebb	2.81	87	99.7	1397	0.42	5.9	559	15711	2.92	90	104	1453	0.71	0.15	12.88	22.8	8.04	7.87	0.11	9	<1
C24	1/20/99	1110	0.6	Ebb	1.80	56	86.9	1217	0.26	3.6	462	12978	1.89	59	87.4	1224	0.79	0.31	15.98	22.5	8.16	7.80	0.12	1	<1
C24	4/7/99	1142	0.4	Ebb	1.36	42	75.8	1062	0.31	4.3	378	10628	1.46	45	78.3	1097	0.72	0.29	18.26	23.1	8.30	8.54	0.24	<1	1
C24	7/12/99	1035	0.2	Flood	2.94	91	105	1476	0.46	6.4	598	16781	3.01	93	110	1534	0.65	0.31	11.15	21.9	8.05	7.83	0.24	6	9
C24	10/11/99	1103	0.5	Low	2.28	71	96.6	1353	0.43	6.0	557	15644	2.46	76	103	1443	0.72	0.27	12.32	22.2	8.17	8.02	0.20	1	5
C24	3/20/00	1130	0.0	Flood	2.54	79	22.0	308	0.33	4.6	547	15368	2.30	71	112	1572	0.59	0.27	11.29	21.5	8.13	7.97	0.30	<1	<1
C24	4/18/00	1127	0.2	Flood	2.86	89	98.6	1381	0.43	6.0	559	15694	2.30	71	105	1466	0.65	0.23	12.44	23.4	8.17	8.22	0.20	2	2
C24	8/2/00	1048	0.2	Low	2.83	88	81.8	1146	0.24	3.4	560	15731	2.95	91	90.8	1272	0.53	0.27	13.00	21.6	7.97	7.08	0.13	2	15
C24	10/23/00	1126	1.7	Flood	0.21	7	0.77	11	0.52	7.3	37.6	1056	0.48	15	7.04	99	1.06	0.20	34.54	26.9	8.36	7.54	0.26	<1	<1
C24	1/23/01	1118	0.3	Low	2.43	75	95.7	1340	0.32	4.5	572	16073	2.45	76	101	1408	0.66	0.26	12.39	25.2	8.13	7.47	0.13	<1	5
C24	4/16/01	1105	0.5	Flood	2.25	70	50.3	705	0.33	4.6	503	14119	2.48	77	89.1	1248	0.76	0.09	14.97	22.9	8.20	8.54	0.18	<1	<1
C24	9/12/01	1125	2.1	Flood	0.14	4	0.38	5	0.35	4.9	14.6	411	0.30	9	6.25	88	1.11	0.25	34.76	28.2	8.30	7.65	0.42	1	1
C24	10/23/01	1135	1.7	Ebb	1.53	47	56.6	793	0.58	8.1	334	9383	1.63	50	58.3	817	0.80	0.11	22.07	25.0	8.23	8.08	0.32	1	1
C24	1/14/02	1153	0.2	Low	2.46	76	96.7	1354	0.20	2.8	587	16492	2.28	71	88.2	1236	0.61	0.23	11.97	21.8	8.05	6.40	0.06	10	5
C24	5/20/02	1150	0.9	High	1.74	54	67.3	943	0.70	9.8	412	11580	1.88	58	60.2	843	0.69	0.13	18.95	24.1	8.25	8.66	0.16	1	1
C24	8/19/02	1153	1.7	Flood	0.28	9	2.63	37	0.47	6.6	29.2	820	0.52	16	8.68	122	1.09	0.14	33.75	27.9	8.32	7.76	0.10	<1	<1
C24	10/10/02	1134	1.1	Ebb	2.20	68	77.9	1091	0.77	10.8	475	13327	2.39	74	78.0	1093	0.81	0.36	16.24	23.8	8.15	7.52	0.13	34	9
C24	3/17/03	1112	-0.1	Flood	2.12	66	93.6	1311	0.60	8.4	562	15778	2.24	69	109	1527	0.47	0.60	12.34	22.6	8.18	8.17	0.50	11	1
C24	4/24/03	1142	0.5	Flood	2.16	67	92.6	1297	0.75	10.5	517	14520	2.28	71	99.7	1396	0.95	0.18	14.61	23.2	8.30	8.54	0.09	1	1
C24	8/25/03	1050	0.9	Flood	2.05	63	78.3	1097	0.75	10.5	467	13102	2.15	67	107	1496	1.23	0.20	17.02	24.0	8.25	8.77	0.41	1	2
C24	10/27/03	1208	0.4	Ebb	2.41	75	50.4	706	0.54	7.6	278	7819	2.71	84	72.7	1018	2.10	0.23	13.68	23.3	8.10		0.14	1	1
C24	12/5/03	1052	0.8	Flood												0						8.12			
C24	2/9/04	1155	0.0	Ebb	2.52	78	108	1511	0.24	3.4	584	16405	2.49	77	115	1611	1.52	0.52	12.08	22.1	8.05	7.84	0.13	14	1
C24	6/3/04	1145	0.1	Flood	1.67	52	65.6	919	0.94	13.2	367	10296	1.77	55	81.7	1145	1.42	0.54	19.45	25.1	8.31	8.64	0.02	5	1
C24	8/31/04	1106	0.2	Low	1.88	58	79.9	1119	0.58	8.1	423	11891	1.82	56	80.6	1129		0.19	17.30	24.3	8.26	8.00	0.16	4	1
C24	12/1/04	1032	1.6	Ebb	0.86	27	36.3	508	0.68	9.5	180	5044	1.08	33	43.7	612	1.06	0.26	26.98	25.6	8.32	7.40	0.21	<1	<1
C24	3/17/05	1112	0.3	Ebb	2.11	65	105	1468	0.53	7.4	566	15899	2.24	69	111	1548		0.14	11.33	24.7	8.35	8.82	0.18	1	<1
C24	4/14/05	1154	0.2	Ebb	0.88	27	27.6	386	0.78	10.9	162	4553	1.08	33	33.1	463	1.10	0.31	28.20	25.7	8.42	8.18	0.25	1	2
C24	7/26/05	1132	1.1	Ebb	1.51	47	60.6	849	0.50	7.0	298	8375	1.59	49	76.4	1070	1.02	0.22	22.89	25.6	8.34	7.93	0.06	2	<1
C24	8/8/05	926	0.7	Ebb												0			16.13	22.7				1	2
C24	10/31/05	1043	0.6	Flood	2.31	72	98.2	1375	0.93	13.0	454	12742	2.42	75	105	1471	0.69	0.25	13.37	23.5	8.25	8.14	0.27	10	1
C24	1/25/06	1126	0.4	Flood	2.51	78	115	1615	0.52	7.3	545	15307	2.53	78	110	1539	0.59	0.22		22.4	8.23	8.44	0.27	2	1
C24	4/17/06	1115	-0.2	Low	2.73	85	124	1737	0.33	4.6	561	15756	2.94	91	121	1688	0.63	0.35	12.59	24.9	8.13	8.37	0.30	3	2
C24	7/26/06	1233	0.6	Flood	2.35	73	78.7	1102	0.88	12.3	430	12077	2.40	74	72.6	1016	0.83	0.97	18.43	23.8	8.24	9.17	0.22	5	2
C24	11/21/06	1123	0.4	Low	2.94	91	122	1709	0.44	6.2	543	15250	2.95	91	108	1517	0.58	0.22	13.48	22.4	8.06	7.82	0.27	3	2
C24	1/18/07	1201	0.2	Flood	1.56	48	80.0	1121	0.78	10.9	368	10335	1.64	51	81.6	1143	0.87	0.39	20.12	23.8	8.32	8.64	0.26	1	<1
C24	6/25/07	1127	1.5	Flood	0.93	29	29.45	413	0.92	12.9	140	3931	1.95	60	31.01	434		0.29	28.73	26.7	8.44	9.71	0.31	4	<1
C24	2/1/08	1334	0.5	High	3.0	93	107	1497	0.5	7	605	16989	2.5	77	102	1425		0.41	10.76	21.7	7.99	8.30			
C24	2/20/09	1105	0.3	Flood	2.1	66	55.3	775	0.4	6	222	6239	2.4	74	131	1832		0.19	14.96	22.5	8.00	7.63	0.02		
C24	3/30/09	1000	0.3	Ebb	2.0	63	93	1297	1.2	17	321	9028	3.4	104	97	1353		0.65	13.79	22.4	7.78	6.62	0.05		
C24	4/27/09	1356	0.3	Flood	1.3	41	55	777	3.1	44	221	6199	1.9	58	80	1117		0.48	25.09	25.0	8.42	6.21	0.05		
C24	5/14/09	946	0.4	Ebb	3.4	106	125	1747	1.0	14	504	14154	3.2	100	119	1671		0.34	13.45	22.7	7.94	6.75	0.13		
C24	6/12/09	816	0.6	High	1.7	53	108	1513	1.0	14	408	11447	2.1	66	122	1705		0.34	15.76	23.3	8.06	6.48	0.18		
C24	7/10/09	901	0.3	Ebb	2.5	76	84	1182	0.7	10	375	10536	6.3	196	87	1222		1.35	12.61	22.3	8.01	6.54	0.09		

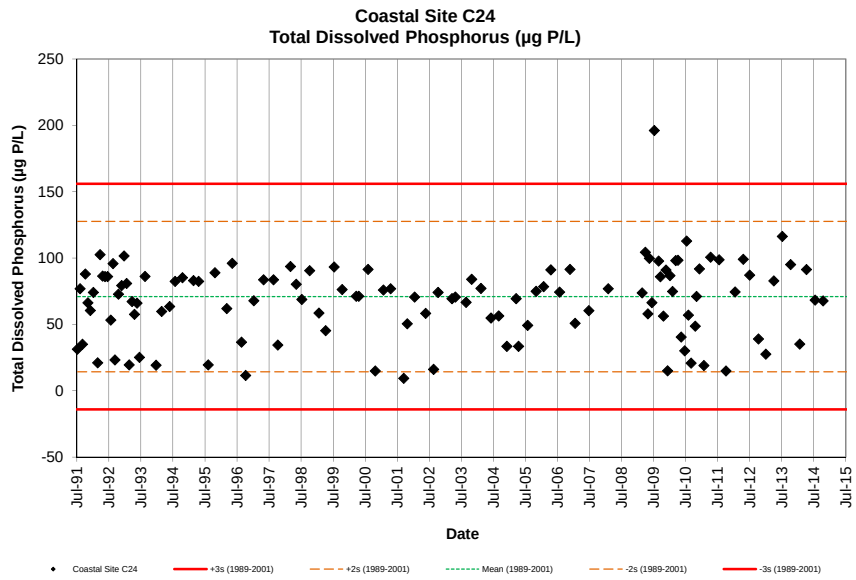
NELHA Water Quality Laboratory

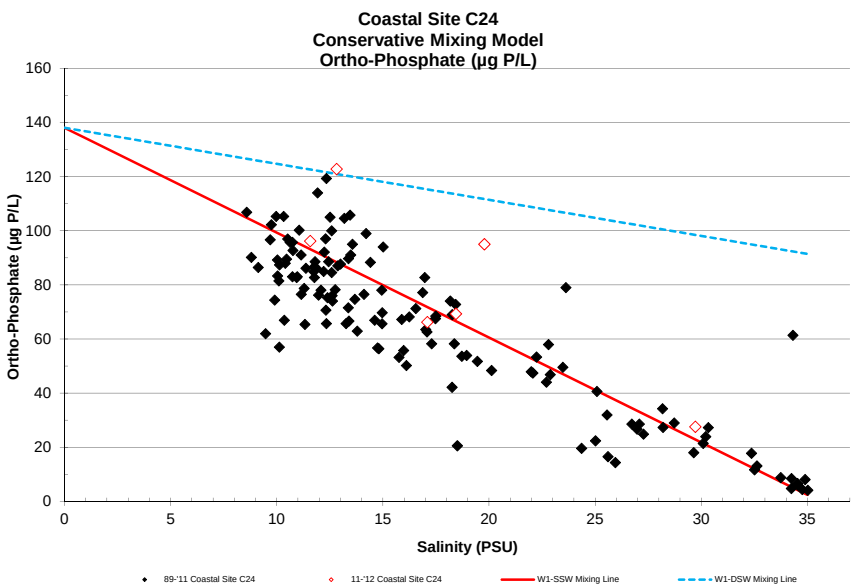
Coastal Site C24

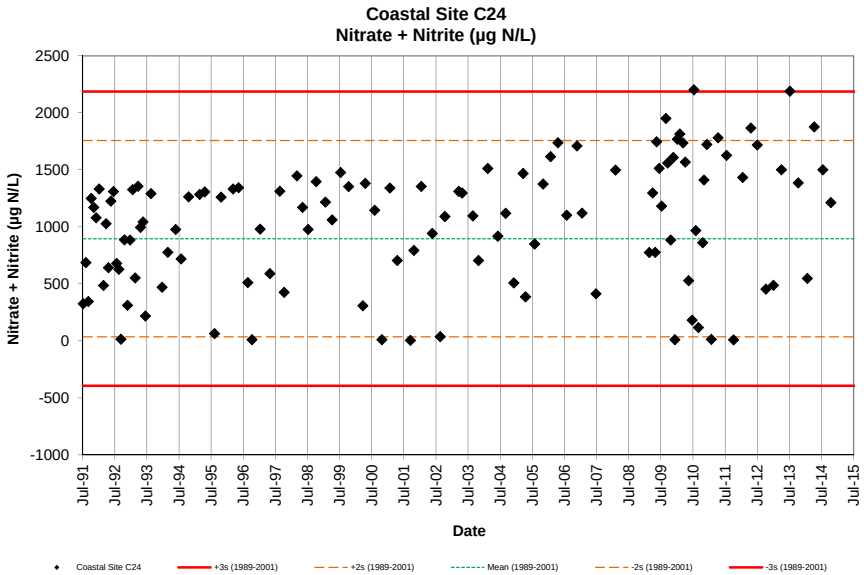
October 1989 - December 2014

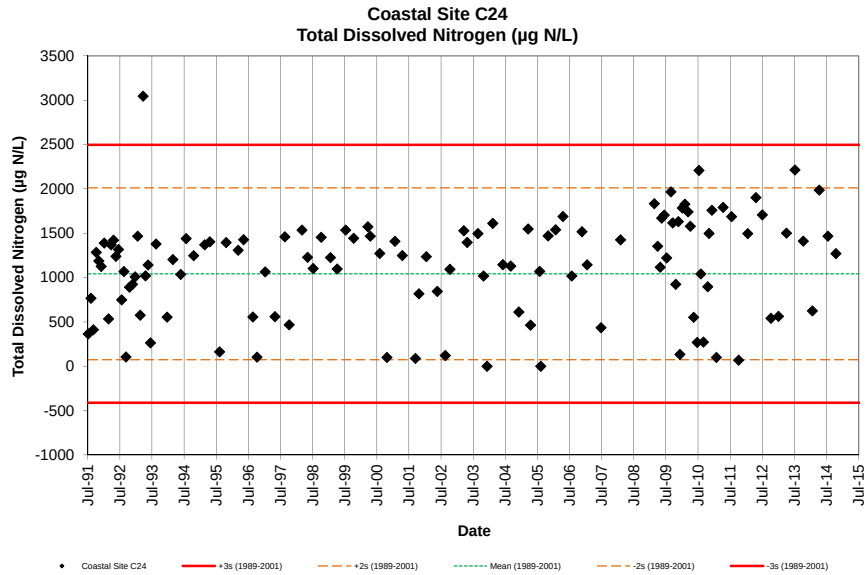
SITE ID	DATE	TIME	TIDE		PO_4^{3-}		NO_3^- & NO_2^-		NH_4^+ & NH_3		Si		TDP		TDN		TOC	Turbidity	Salinity	TEMP	pH	DO	Chl a	Fecal Col.	Entero.
	M/D/Y	(2400)	(ft)	cycle	(µM)	(µg P/L)	(µM)	(µg N/L)	(µM)	(µg N/L)	(µM)	(µg Si/L)	(µM)	(µg P/L)	(µM)	(µg N/L)	(mgC/L)	(NTU)	(PSU)	(˚C)	(unit)	(ppm)	(µg/L)	CFU/100ml	CFU/100ml
C24	8/27/09	822	1.8	High	3.2	100	139	1951	0.5	7	493	13854	3.2	98	140	1966		0.22	11.06	22.3	8.16	6.11	0.08		
C24	9/17/09	906	0.2	Flood	3.0	92	111	1559	0.5	7	384	10788	2.8	86	115	1615		0.29	12.24	22.5	8.32	6.03	0.23		
C24	10/22/09	908	1.9	Ebb	1.6	50	63	885	2.4	34	120	3368	1.8	56	66	924		0.54	23.48	23.8	7.96	6.42	1.57		
C24	11/19/09	1010	1.7	Ebb	3.0	94	115	1608	0.8	11	410	11515	2.9	91	116	1630		0.21	15.01	22.4	7.89	5.62	0.51		
C24	12/7/09	754	2.0	High	0.3	8	1	10	1.1	15	24	688	0.5	15	9	133		0.24	34.89	24.8	8.19	6.52	0.76		
C24	1/4/10	1343	0.0	Low	2.9	90	126	1768	0.5	7	505	14189	2.8	87	127	1784		0.50	13.38	21.9	7.70	7.18	1.26		
C24	2/2/10	1329	-0.2	Low	2.5	78	130	1814	1.4	19	524	14707	2.4	75	130	1827		0.55	12.75	21.9	7.79	6.91	0.55		
C24	3/10/10	1245	0.7	High	3.4	105	124	1736	0.2	3	417	11703	3.2	98	124	1740		0.44	12.51	21.8	7.99	6.50	0.64		
C24	4/5/10	947	0.4	High	3.4	105	112.0	1568	0.7	10	564	15850	3.2	98	113	1578		0.11	13.18	21.8	8.10	7.53	0.06		
C24	5/12/10	1224	1.5	Flood	1.1	34	37.7	528	2.8	40	200	5605	1.3	40	39	553		0.17	28.18	26.1	8.20	6.40	0.07		
C24	6/21/10	959	1.3	Flood	0.6	18	13.0	182	0.9	12	84	2369	1.0	30	19	268		0.25	32.37	25.7	8.29	7.58	0.45		
C24	7/12/10	951	-0.1	Low	3.9	119	157.2	2201	2.1	30	622	17471	3.6	113	158	2207		0.42	12.34	22.6	7.94	6.07	0.08		
C24	8/2/10	1205	1.3	Ebb	1.7	53	69.1	967	0.8	12	326	9160	1.8	57	74	1041		0.91	22.24	26.3	8.20	7.40	0.26		
C24	9/1/10	1038	1.8	Flood	0.4	12	8.4	117	0.9	12	68	1910	0.7	21	19	272		0.16	32.51	27.2	8.31	8.25	0.18		
C24	10/19/10	1100	1.1	Flood	1.4	44	61.4	860	0.9	13	303	8510	1.6	49	64	896		0.20	22.71	24.6	8.28	8.22	0.18		
C24	11/3/10	935	0.5	Low	2.2	69	100.7	1411	0.8	11	472	13259	2.3	71	107	1497		0.64	18.27	23.4	8.16	7.45	0.12		
C24	12/6/10	918	0.8	Ebb	3.1	95	122.9	1722	0.6	9	587	16477	3.0	92	125	1758		0.06	13.57	21.9	7.94	6.68	0.09		
C24	1/26/11	953	0.8	Ebb	0.2	6	0.9	13	0.3	4	11	313	0.6	19	7	99		0.46	34.53	25.3	8.23	6.36	0.17		
C24	4/13/11	936	0.3	Flood	3.1	97	127.2	1781	0.4	6	587	16493	3.2	101	128	1791		0.48	12.30	22.1	8.07	7.60	0.17		
C24	7/18/11	900	0.7	Ebb	3.2	99	116.2	1627	0.6	8	545	15293	3.2	99	120	1686		0.27	14.21	21.9	7.89	7.23	0.12		
C24	10/5/11	936	1.4	Flood	0.1	4	0.6	9	1.6	22	9	248	0.5	15	5	68		0.07	35.02	27.0	8.17	6.82	0.21		
C24	1/17/12	810	0.7	Flood	2.4	74	102.3	1433	0.5	7	455	12771	2.4	74	107	1494		0.23	18.18	21.8	7.94	7.09	0.06		
C24	4/19/12	1028	0.3	Flood	3.2	100	133.2	1866	0.7	10	587	16487	3.2	99	136	1900		0.07	12.59	21.7	7.97	7.23	0.02		
C24	7/1/12	1058	1.2	Ebb	2.9	88	122.6	1718	0.8	11	516	14484	2.8	87	122	1706		0.10	14.41	22.4	8.03	8.01	0.03		
C24	10/8/12	1026	1.8	High	0.9	27	32.4	454	1.3	19	139	3917	1.3	39	39	542		0.20	30.33	26.7	8.24	7.64	0.10		
C24	1/1/13	1028	1.2	Ebb	0.6	18	34.8	488	1.7	23	125	3498	0.9	28	40	563		0.09	29.65	24.8	8.24	6.63	0.17		
C24	4/1/13	1008	0.4	Ebb	2.7	83	107.1	1500	0.7	10	421	11837	2.7	83	107	1501		1.26	16.97	22.4	8.11	8.12	0.11		
C24	7/8/13	937	-0.1	Low	4.0	123	156.3	2189	1.3	18	575	16139	3.8	116	158	2212		0.84	12.82	21.9	7.83	6.63	0.02		
C24	10/10/13	1036	1.8	Ebb	3.1	95	99.0	1386	0.7	10	433	12161	3.1	95	101	1411		0.13	19.78	23.8	8.08	7.47	0.07		
C24	1/22/14	845	0.7	High	0.9	28	39.1	548	0.7	10	142	3989	1.1	35	45	624		0.02	29.72	23.9	8.02	6.35	0.12		
C24	4/9/14	1024	0.7	Flood	3.1	96	133.9	1876	1.0	14	534	15012	2.9	91	142	1985		0.40	11.58	22.6	7.92	7.25	0.06		
C24	7/16/14	1042	0.5	Ebb	2.2	69	107.1	1501	1.5	21	388	10899	2.2	68	105	1466		0.17	18.44	24.5	8.05	7.29	0.25		
C24	10/15/14	1213	1.5	Ebb	2.1	66	86.6	1213	0.9	13	371	10431	2.2	68	91	1271		0.10	17.09	25.0	8.17	7.49	0.06		
C24	1/1/15																								
C24	4/1/15																								

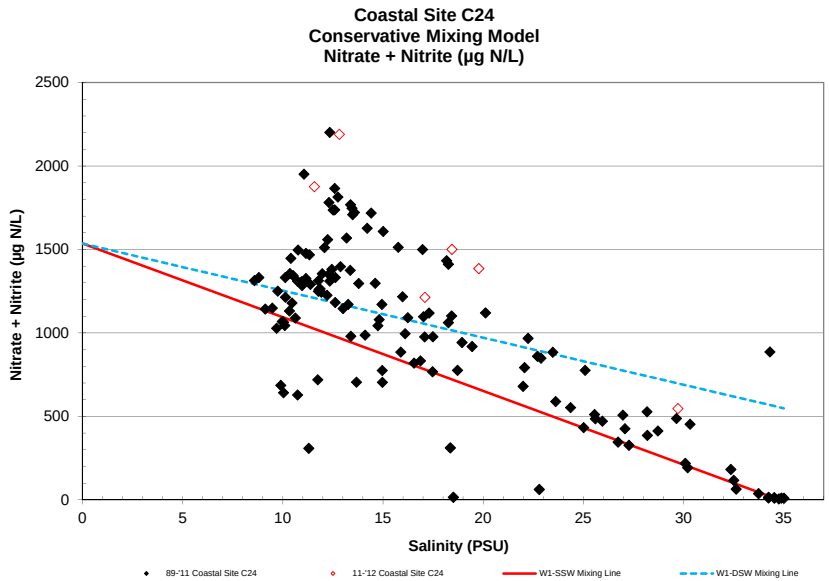

Coastal Site C24
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Date
Coastal Site C24
+3s (1989-2001)
+2s (1989-2001)
Mean (1989-2001)
-2s (1989-2001)
-3s (1989-2001)

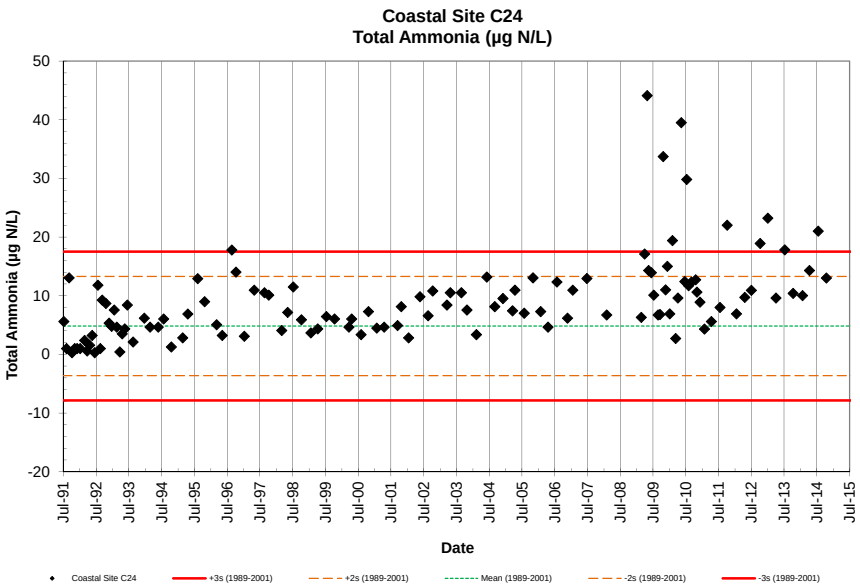

Coastal Site C24
Total Dissolved Phosphorus (µg P/L)
Total Dissolved Phosphorus (µg P/L)
Date
Coastal Site C24
+3s (1989-2001)
+2s (1989-2001)
Mean (1989-2001)
-2s (1989-2001)
-3s (1989-2001)

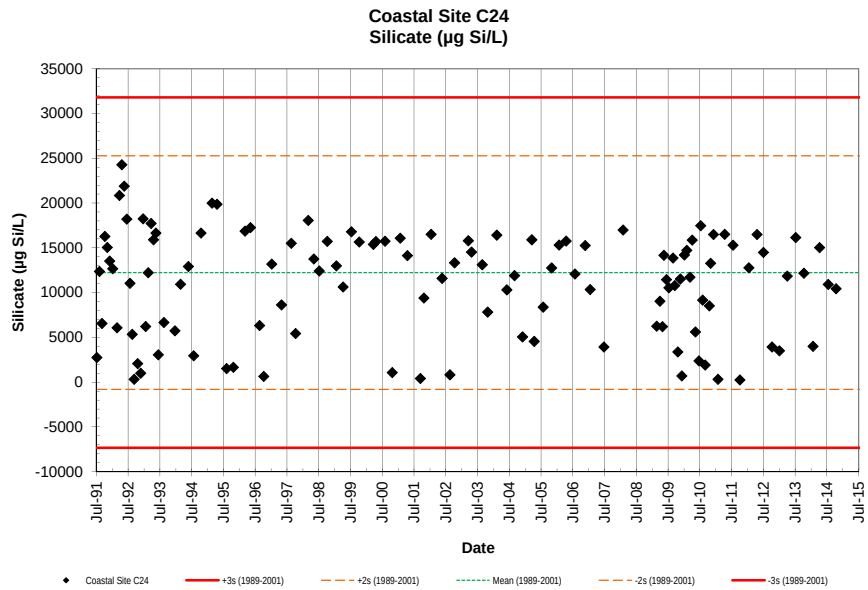

Coastal Site C24
Conservative Mixing Model
Ortho-Phosphate (µg P/L)
Ortho-Phosphate (µg P/L)
Salinity (PSU)
89-'11 Coastal Site C24
11-'12 Coastal Site C24
W1-SSW Mixing Line
W1-DSW Mixing Line

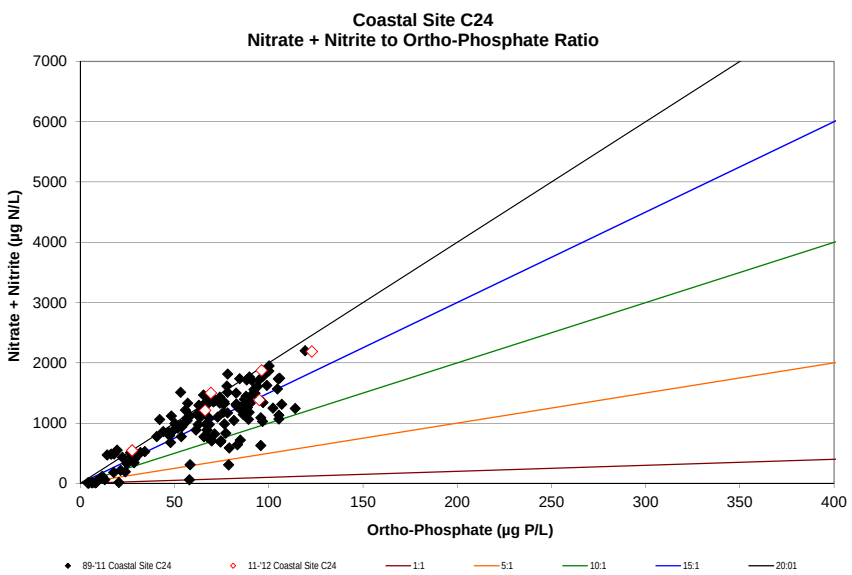

Coastal Site C24
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Date
Coastal Site C24
+3s (1989-2001)
+2s (1989-2001)
Mean (1989-2001)
-2s (1989-2001)
-3s (1989-2001)

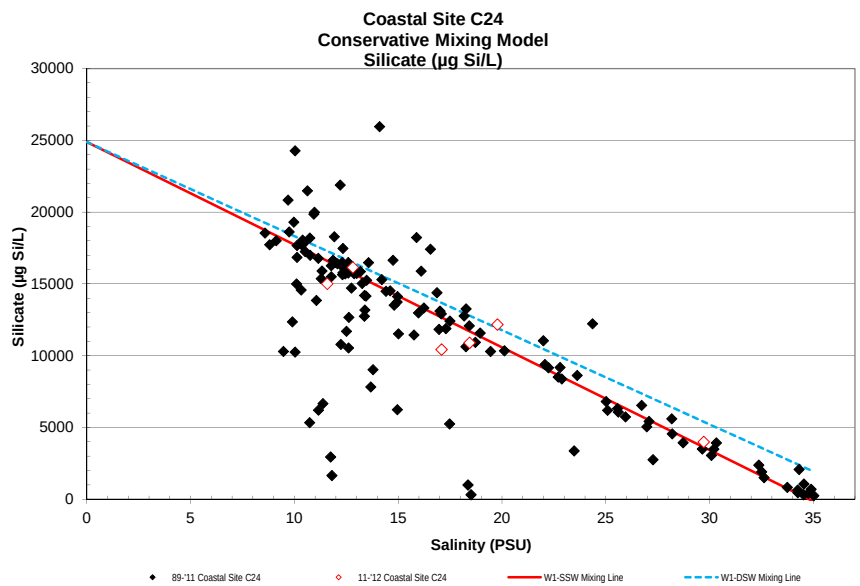

Coastal Site C24
Total Dissolved Nitrogen (µg N/L)
Total Dissolved Nitrogen (µg N/L)
Date
Coastal Site C24
+3s (1989-2001)
+2s (1989-2001)
Mean (1989-2001)
-2s (1989-2001)
-3s (1989-2001)

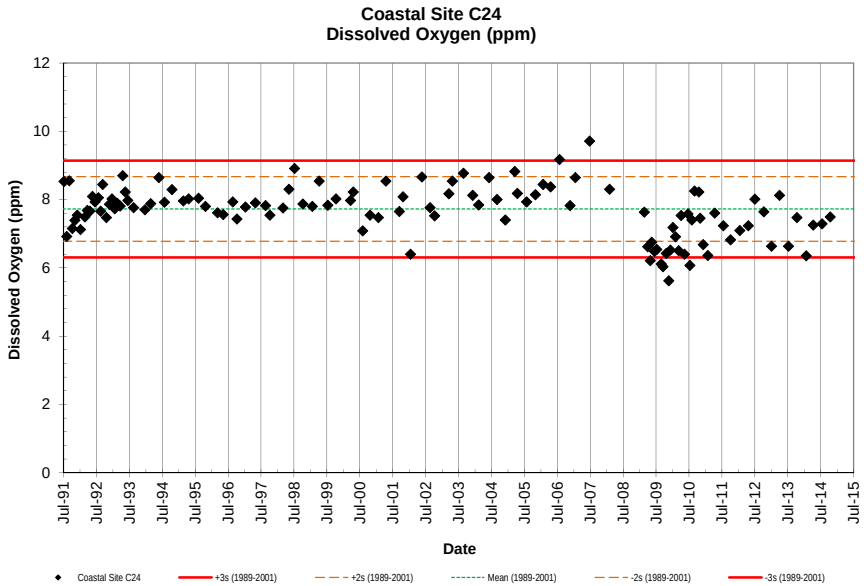

Coastal Site C24
Conservative Mixing Model
Nitrate + Nitrite (µg N/L)
Nitrate + Nitrite (µg N/L)
Salinity (PSU)
89-'11 Coastal Site C24
11-'12 Coastal Site C24
W1-SSW Mixing Line
W1-DSW Mixing Line

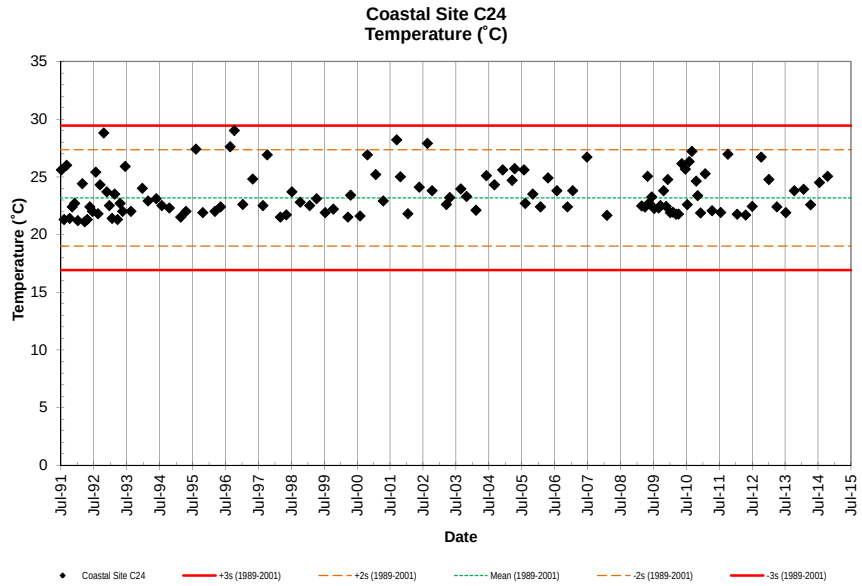

Coastal Site C24
Total Ammonia (µg N/L)
Total Ammonia (µg N/L)
Date
Coastal Site C24
+3s (1989-2001)
+2s (1989-2001)
Mean (1989-2001)
-2s (1989-2001)
-3s (1989-2001)

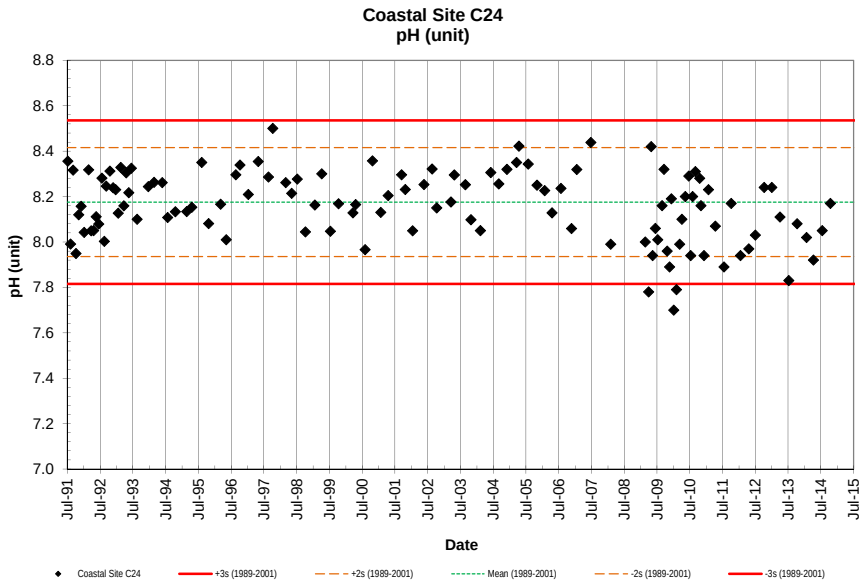

Coastal Site C24
Silicate (µg Si/L)
Silicate (µg Si/L)
Date
Coastal Site C24
+3s (1989-2001)
+2s (1989-2001)
Mean (1989-2001)
-2s (1989-2001)
-3s (1989-2001)

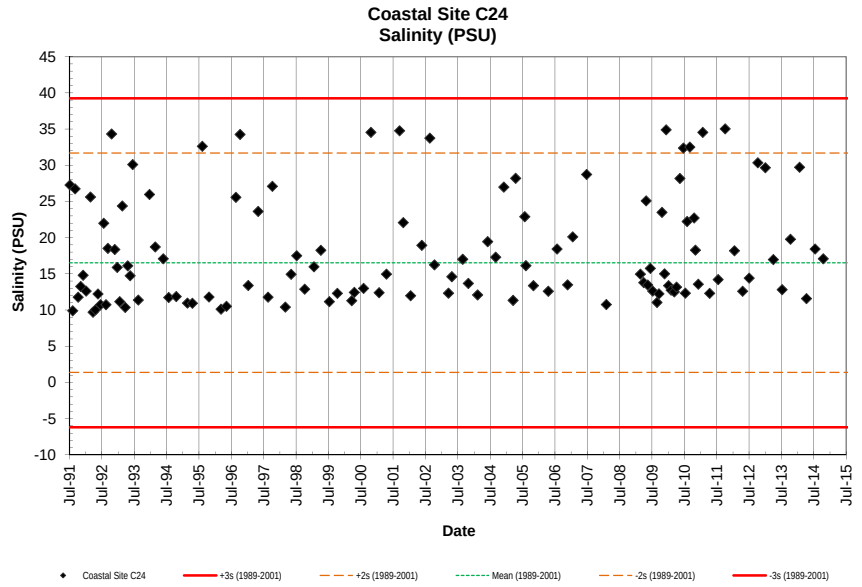

Coastal Site C24
Nitrate + Nitrite to Ortho-Phosphate Ratio
Nitrate + Nitrite (µg N/L)
Ortho-Phosphate (µg P/L)
89-'11 Coastal Site C24
11-'12 Coastal Site C24
1:1
5:1
10:1
15:1
20:01

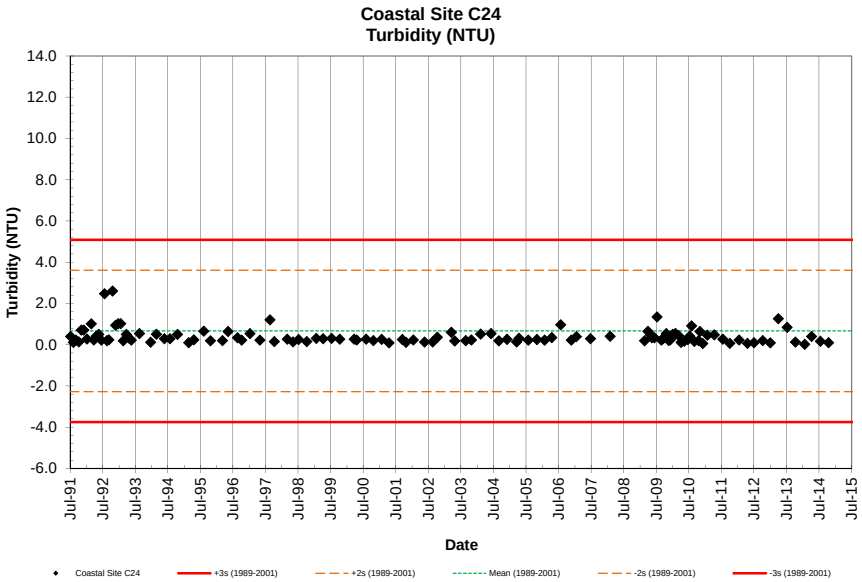

Coastal Site C24
Conservative Mixing Model
Silicate (µg Si/L)
Silicate (µg Si/L)
Salinity (PSU)
89-'11 Coastal Site C24
11-'12 Coastal Site C24
W1-SSW Mixing Line
W1-DSW Mixing Line

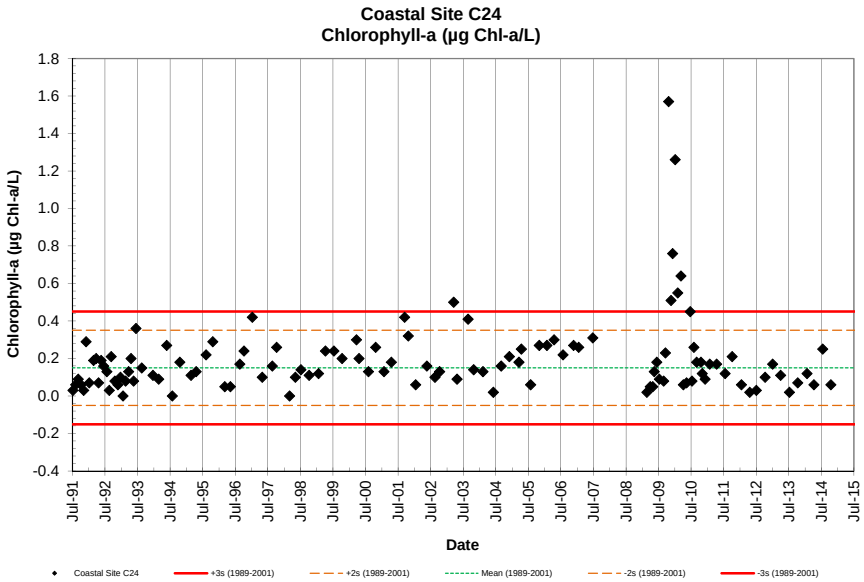

Coastal Site C24
Dissolved Oxygen (ppm)
Dissolved Oxygen (ppm)
Date
Coastal Site C24
+3s (1989-2001)
+2s (1989-2001)
Mean (1989-2001)
-2s (1989-2001)
-3s (1989-2001)


Coastal Site C24
Temperature (˚C)
Temperature (˚C)
Date
Coastal Site C24
+3s (1989-2001)
+2s (1989-2001)
Mean (1989-2001)
-2s (1989-2001)
-3s (1989-2001)


Coastal Site C24
pH (unit)
pH (unit)
Date
Coastal Site C24
+3s (1989-2001)
+2s (1989-2001)
Mean (1989-2001)
-2s (1989-2001)
-3s (1989-2001)


Coastal Site C24
Salinity (PSU)
Salinity (PSU)
Date
Coastal Site C24
+3s (1989-2001)
+2s (1989-2001)
Mean (1989-2001)
-2s (1989-2001)
-3s (1989-2001)


Coastal Site C24
Turbidity (NTU)
Turbidity (NTU)
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
-2.0
-4.0
-6.0
Jul-91
Jul-92
Jul-93
Jul-94
Jul-95
Jul-96
Jul-97
Jul-98
Jul-99
Jul-00
Jul-01
Jul-02
Jul-03
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Jul-12
Jul-13
Jul-14
Jul-15
Date
Coastal Site C24
+3s (1989-2001)
+2s (1989-2001)
Mean (1989-2001)
-2s (1989-2001)
-3s (1989-2001)


Coastal Site C24
Chlorophyll-a (µg Chl-a/L)
Chlorophyll-a (µg Chl-a/L)
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
Jul-91
Jul-92
Jul-93
Jul-94
Jul-95
Jul-96
Jul-97
Jul-98
Jul-99
Jul-00
Jul-01
Jul-02
Jul-03
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Jul-12
Jul-13
Jul-14
Jul-15
Date
Coastal Site C24
+3s (1989-2001)
+2s (1989-2001)
Mean (1989-2001)
-2s (1989-2001)
-3s (1989-2001)