

FPL Turkey Point Uprate Monitoring Project
 March 2015 Semiannual Sampling Event
 SDG: Qtr 1 2015 SW

Method	Parameter	Units	TPBBSW-3B		030415-Dup		TPBBSW-4B		TPBBSW-5B		TPSWC-1T		TPSWC-1B	
			03/04/2015		03/04/2015		03/04/2015		03/04/2015		03/11/2015		03/11/2015	
Field - FT1400	Temperature	°C	25.18				24.90		24.69		28.41		26.48	
Field - FT1100	pH	SU	8.24				8.09		7.99		7.99		7.42	
Field - FT1500	Dissolved Oxygen	mg/L	6.67				6.18		6.60		7.30		2.94	
Field - FT1200	Specific Conductance	µS/cm	52557				53121		53022	J	1129		1175	
Field - FT1600	Turbidity	NTU	0.66				1.37		2.11		2.77		6.94	
200.7	Silica, dissolved	mg/L												
6010B	Calcium	mg/L	420		421		427		422		83.3		85	
6010B	Magnesium	mg/L	1320		1320		1340		1310		16.5		16.9	
6010B	Potassium	mg/L	407		410		420		413		5.4		5.45	
6010B	Sodium	mg/L	10100		10100		10100		9960		116	J	118	J
	Boron	mg/L	4.61	I	4.61	I	4.69	I	4.67	I	0.0701		0.0704	
	Strontium	mg/L	7.68		7.75		7.85		7.75		0.797		0.81	
300.0_28D	Bromide	mg/L	70.9		70.4		73.4		72.5	J	0.562		0.625	
300.0_28D	Chloride	mg/L	19700		19900		19700		20300	J	241		250	
SM4500 F C	Fluoride	mg/L	0.93		0.91		0.93		0.93	J	0.032	U	0.032	U
300.0_28D	Sulfate	mg/L	2600		2590		2030		2650	J	11.7		12.7	
SM4500 NH3 G	Total Ammonia	mg/L as N	0.225	J	0.178	I J	0.155	I J	0.264	J	0.367	J	0.446	J
DEP SOP - calc	Ammonium ion (NH ₄ ⁺)	mg/L	0.267	J			0.187	J	0.323	J	0.442	J	0.565	J
DEP SOP - calc	Unionized NH ₃	mg/L	0.023	J			0.013	J	0.017	J	0.030	J	0.008	J
353.2	Nitrate/Nitrite	mg/L as N	0.025	U	0.025	U	0.025	U	0.025	U	0.0361	I J	0.0376	I J
351.2	TKN	mg/L	0.418		0.38	I	0.424		0.257		0.822		0.99	
calc	TN	mg/L	0.443		0.405	J	0.449		0.282		0.858	J	1.028	J
SM4500 P E	ortho-Phosphate	mg/L	0.0021	U	0.0021	U	0.0021	U	0.0021	U	0.0021	U J	0.0021	U J
365.1	Total Phosphorus (P)	mg/L	0.003	U	0.003	U	0.003	U	0.003	U	0.0153	J	0.0262	J
2320B	Alkalinity	mg/L	141		142		142		147	J	194		205	
2320B	Bicarbonate Alkalinity	mg/L as HCO ₃	153		162		173		179	J	237		250	
SM4500 S2 F	Sulfide	mg/L	0.36	U Q	0.36	U Q	0.387	I Q J	0.575	I Q	0.0446	I	0.036	U
2540C	Total Dissolved Solids	mg/L												
PSS-78	Salinity	*	34.6				35.0		35.0	J	0.6	J	0.6	J
USGS	Tritium	pCi/L	-0.2 (5.1)	UJ	-1.7 (5.0)	UJ	6.4 (2.7)		10.7 (2.7)		78.3 (7.6)		61.9 (7.4)	

NOTE: Laboratory results are reported with 3 digits although only the first 2 are significant figures.

The results in blue represent data values that were not available at time of publication of the prior annual report.

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		TPSWC-2T		031115-Dup		TPSWC-2B		TPSWC-3T		TPSWC-3B		TPSWC-4T		TPSWC-4B		TPSWC-5T		TPSWC-5B	
Parameter	Units	03/11/2015		03/11/2015		03/11/2015		03/11/2015		03/11/2015		03/03/2015		03/03/2015		03/03/2015		03/03/2015	
Temperature	°C	27.31				26.60		25.52		25.75		25.54		26.59		25.40		25.27	
pH	SU	8.35				8.35		8.18		7.62		7.75		7.81		8.04		8.04	
Dissolved Oxygen	mg/L	9.43				8.86		7.61		4.64		5.74		5.29		5.54		5.81	
Specific Conductance	µS/cm	1475				1825		2074		7269		46010		48292		52697	J	51860	J
Turbidity	NTU	0.99				0.83		1.6		3.33		1.08		2.14		0.43		0.82	
Silica, dissolved	mg/L																		
Calcium	mg/L	70.7		72.5		77.8		86.6		125		398		408		414		427	
Magnesium	mg/L	19.8		20.4		26		29.2		112		1010		1060		1150		1190	
Potassium	mg/L	6.91		7.01		8.65		9.78		38.7		361		377		414		429	
Sodium	mg/L	156	J	170	J	212	J	247	J-	1040	J	9180		9570		9870		9680	
Boron	mg/L	0.0744		0.0692		0.0867		0.0924		0.402		3.84		4.05		4.57		4.72	
Strontium	mg/L	0.805		0.825		0.894		0.994		1.62		6.92		7.11		7.56		7.86	
Bromide	mg/L	0.951		0.949		1.28		1.55		6.45		59.5		62.9		71.2	J	70.2	J
Chloride	mg/L	380		377		479		551		2060	L	17700		18300		20600	J	19900	J
Fluoride	mg/L	0.032	U	0.032	U	0.032	U	0.032	U	0.16		0.86		0.91		1.02	J	1	J
Sulfate	mg/L	25.3		25.2		35.9		44.2		229		2220		2380		2580	J	2610	J
Total Ammonia	mg/L as N	0.163	IJ	0.193	IJ	0.328	J	0.364	J	0.114	IJ	0.392	J	0.29	J	0.183	IJ	0.349	J
Ammonium ion (NH ₄ ⁺)	mg/L	0.181	J			0.367	J	0.431	J	0.143	J	0.487	J	0.359	J	0.223	J	0.425	J
Unionized NH ₃	mg/L	0.029	J			0.055	J	0.037	J	0.003	J	0.017	J	0.014	J	0.012	J	0.024	J
Nitrate/Nitrite	mg/L as N	0.0303	IJ	0.0304	IJ	0.0321	IJ	0.0311	IJ	0.0388	IJ	0.0685		0.0511		0.0511		0.0491	I
TKN	mg/L	0.938	J	0.894		0.986		0.918		0.974		0.65		0.726		0.454		0.612	
TN	mg/L	0.968	J	0.924	J	1.018	J	0.949	J	1.013	J	0.719	J	0.777	J	0.505	J	0.661	J
ortho-Phosphate	mg/L	0.0021	UJ	0.0021	UJ	0.0021	UJ	0.0021	UJ-	0.0021	UJ	0.0021	U	0.0021	U	0.0021	U	0.0021	U
Total Phosphorus (P)	mg/L	0.0111	J	0.0111	J	0.0101	J	0.0117	J+	0.049	J	0.00628	I	0.00585	I	0.00338	I	0.003	U
Alkalinity	mg/L	146		146		150		163		179		184		183		146	J	147	J
Bicarbonate Alkalinity	mg/L as HCO ₃	176		178		175		199		218		224		223		178	J	179	J
Sulfide	mg/L	0.036	U	0.036	U	0.036	U	0.036	U	0.036	U	0.036	U	0.036	U	0.036	U	0.036	U
Total Dissolved Solids	mg/L																		
Salinity	*	0.7	J			0.9	J	1.1	J	4.0		29.8		31.5		34.7	J	34.1	J
Tritium	pCi/L	60.6 (7.0)		69.8 (7.6)		68.2 (7.3)		44.4 (6.8)		45.4 (6.8)		53.4 (4.7)		45.9 (3.9)		17.6 (3.5)		18.6 (3.0)	

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Parameter	Units	TPSWC-6T		TPSWC-6B		TPSWID-1T		TPSWID-1B		TPSWID-2T		TPSWID-2B		TPSWID-3T		TPSWID-3B		TPSWCCS-1B	
		03/10/2015		03/10/2015		03/06/2015		03/06/2015		03/06/2015		03/06/2015		03/06/2015		03/06/2015		03/06/2015	
Temperature	°C	26.04		25.34		29.30		29.50		28.28		27.23		27.67		26.76		34.07	
pH	SU	7.28		7.25		7.15	J	5.39	J	6.92	J	6.72	J	7.14	J	6.77	J	7.82	J
Dissolved Oxygen	mg/L	1.65		2.00		6.61		1.24		4.01		1.02		5.92		2.09		3.48	
Specific Conductance	µS/cm	743		740		8401		18458		4219		8425		5746		25982		113081	J
Turbidity	NTU	0.32		0.80		0.76		24.10		0.70		5.80		0.77		0.87		126.00	
Silica, dissolved	mg/L																	8.84	J-
Calcium	mg/L	82.2		83.4		171		238		145		216		163		307		1130	
Magnesium	mg/L	8.84		9.09		159		368		63.3		146		95.5		533		3200	
Potassium	mg/L	11.6		11.8		51.6		123		21.6		45.3		30.9		175		1030	
Sodium	mg/L	49.5		51.7		1250		2530		552		1240		847		3480		22800	J-
Boron	mg/L	0.0826		0.0834		0.0535		1.29		0.23	I	0.459	I	0.318	I	1.7		12.1	
Strontium	mg/L	1.06		1.07		2.26		3.58		1.63		2.76		1.87		4.73		23.9	
Bromide	mg/L	0.487		0.496		8.42		0.258		3.93		8.55		5.67		30.5		171	J
Chloride	mg/L	93.2		95.1		2550		6180		1190		2610		1710		9210		50200	J
Fluoride	mg/L	0.12		0.12		0.16		0.24		0.13		0.15		0.13		0.24		1.00	J-
Sulfate	mg/L	62.5		62.2		269		605		109		258		149		1030		6970	J
Total Ammonia	mg/L as N	0.234	J	0.131	IJ	0.333	J	1.36		0.621	J	0.572	J	0.408	J	0.263	J	1.84	J
Ammonium ion (NH ₄ ⁺)	mg/L	0.297	J	0.167	J	0.423	J	1.747		0.794	J	0.733	J	0.520	J	0.337	J	2.258	J
Unionized NH ₃	mg/L	0.003	J	0.001	J	0.005	J	0.001		0.004	J	0.002	J	0.004	J	0.001	J	0.108	J
Nitrate/Nitrite	mg/L as N	0.0544	J	0.147		0.0688		0.0369	I	0.0564		0.025	U	0.171		0.0668		0.025	U
TKN	mg/L	0.248		0.396	I	1.13		1.98		0.934		0.888		0.814		0.798		4.44	
TN	mg/L	0.302	J	0.543		1.199		2.017	J	0.990	J	0.913		0.985		0.865		4.465	J
ortho-Phosphate	mg/L	0.0021	U	0.0021	U J-	0.00637	IJ	0.01	I	0.0042	UJ	0.0042	U	0.0042	U	0.0042	U	0.0106	I
Total Phosphorus (P)	mg/L	0.003	U	0.003	U	0.00349	IJ	0.0111		0.00322	IJ	0.00782	I	0.00472	I	0.0108		0.0559	
Alkalinity	mg/L	169		170		295		419		269		305		261		265		208	J
Bicarbonate Alkalinity	mg/L as HCO ₃	207		207		359		511		329		372		318		323		254	J
Sulfide	mg/L	0.036	U	0.036	U	0.0717	IJ	0.54	I	0.337	J	4.64		0.0517	IJ	0.0611	IJ	0.36	U
Total Dissolved Solids	mg/L																		
Salinity	*	0.4	J	0.4	J	4.6		10.9		2.2		4.7		3.1		15.8		83.8	J
Tritium	pCi/L	15.5 (3.9)		12.7 (4.0)		218.1 (10.4)		498.2 (18.1)		83.5 (7.0)		126.1 (8.1)		99.8 (7.5)		167.0 (9.3)		3583.0 (115.8)	

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Parameter	Units	TPSWCCS-2B		TPSWCCS-3B		TPSWCCS-4T		TPSWCCS-5T		TPSWCCS-7B		030215-EB	
		03/09/2015		03/06/2015		03/09/2015		03/09/2015		03/06/2015		03/02/2015	
Temperature	°C	30.26		32.98		28.03		27.80		33.22			
pH	SU	7.83		7.84	J	7.83		7.86		7.86	J		
Dissolved Oxygen	mg/L	2.58		4.62		3.13		3.47		3.44			
Specific Conductance	µS/cm	110404	J	112924	J	114270	J	112000	J	114070	J		
Turbidity	NTU	127.60		127.70		126.00		144.30		127.50			
Silica, dissolved	mg/L	12.4		9	J	12		12.3		9.01	J	0.05	U
Calcium	mg/L	1150		1090		1160		1170		1100		0.100	U
Magnesium	mg/L	3140		3070		3040		3130		3090		0.0200	U
Potassium	mg/L	1030		993		1040		1050		1000		0.190	U
Sodium	mg/L	20900		21100	J	22000		21900		21200	J	0.310	U
Boron	mg/L	11.9		12.3		12		12.2		13		0.01	U
Strontium	mg/L	23.2		23.2		23.5		23.6		23.6		0.001	U
Bromide	mg/L	252	J	189	J	172	J	249	J	175	J	0.0130	U
Chloride	mg/L	50000	J	50700	J	51300	J	45200	J	50800	J	0.200	U
Fluoride	mg/L	1.00	J	1.00	J	0.98	J	1.00	J	1.00	J	0.0240	U
Sulfate	mg/L	6220	J	6940	J	7020	J	6990	J	7110	J	0.400	U
Total Ammonia	mg/L as N	1.09		1.23	IJ	1.91		0.355		4.42	J	0.1400	I
Ammonium ion (NH ₄ ⁺)	mg/L	1.337		1.509	J	2.357		0.434		5.360	J		
Unionized NH ₃	mg/L	0.064		0.072	J	0.098		0.023		0.323	J		
Nitrate/Nitrite	mg/L as N	0.025	U	0.0299	I	0.0445	IJ	0.053	J	0.025	U	0.005	UQ
TKN	mg/L	3.12		4.68		3.96		4.26		4.34		0.228	I
TN	mg/L	3.145		4.710	J	4.005	J	4.313	J	4.365	J		
ortho-Phosphate	mg/L	0.0105	U Q J-	0.0042	U	0.0105	U	0.0105	U	0.0042	U	0.0021	U
Total Phosphorus (P)	mg/L	0.0619		0.0561		0.0626		0.0613		0.0574		0.0030	U
Alkalinity	mg/L	210	J	208	J	210	J	207	J	209	J	1.00	U
Bicarbonate Alkalinity	mg/L as HCO ₃	256	J	254	J	257	J	253	J	255	J	1.00	U
Sulfide	mg/L	0.36	U	0.0564	IJ	0.0611	IJ	0.611	I	0.375	IJ	0.04	U
Total Dissolved Solids	mg/L											5.00	U
Salinity	*	81.6	J	83.7	J	82.6	J	83.2	J	84.7	J		
Tritium	pCi/L	3644.1 (129.3)		3883.8 (139.1)		3770.5 (132.5)		3754.4 (132.0)		4250.9 (152.1)		6.0 (5.3)	

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		030315-FB		030415-FB		030615-FB1		030615-FB2		030915-FB1		030915-FB2		031015-FB1		031015-FB2		031115-FB1		031115-FB2	
Parameter	Units	03/03/2015		03/04/2015		03/06/2015		03/06/2015		03/09/2015		03/09/2015		03/10/2015		03/10/2015		03/11/2015		03/11/2015	
Temperature	°C																				
pH	SU																				
Dissolved Oxygen	mg/L																				
Specific Conductance	µS/cm																				
Turbidity	NTU																				
Silica, dissolved	mg/L	0.05	U	0.05	U	0.05	U			0.0521	I			0.05	U			0.05	U		
Calcium	mg/L	0.1	U	0.1	U	0.1	U			0.1	U			0.1	U			0.1	U		
Magnesium	mg/L	0.02	U	0.02	U	0.02	U			0.02	U			0.02	U			0.02	U		
Potassium	mg/L	0.19	U	0.19	U	0.19	U			0.19	U			0.19	U			0.19	U		
Sodium	mg/L	0.31	U	0.31	U	0.31	U			0.31	U			0.31	U			0.31	U		
Boron	mg/L	0.01	U	0.01	U	0.01	U			0.01	U			0.01	U			0.01	U		
Strontium	mg/L	0.001	U	0.001	U	0.001	U			0.001	U			0.001	U			0.001	U		
Bromide	mg/L	0.013	U	0.025	U	0.025	U			0.025	U			0.025	U			0.025	U		
Chloride	mg/L	0.2	U	0.2	U	0.2	U			0.2	U			0.2	U			0.2	U		
Fluoride	mg/L	0.032	U	0.032	U	0.032	U			0.032	U			0.032	U			0.032	U		
Sulfate	mg/L	0.4	U	0.4	U	0.4	U			0.4	U			0.4	U			0.4	U		
Total Ammonia	mg/L as N	0.157	I	0.195	I	0.116	I	0.1	U	0.1	U	0.1	U	0.123	I	0.1	U	0.251			0.1
Ammonium ion (NH ₄ ⁺)	mg/L																				
Unionized NH ₃	mg/L																				
Nitrate/Nitrite	mg/L as N	0.005	U	0.00551	I	0.005	U			0.0105				0.00573	I			0.0152			
TKN	mg/L	0.2	U	0.2	U	0.1	U			0.1	U			0.2	U			0.1	U		
TN	mg/L																				
ortho-Phosphate	mg/L	0.0021	U	0.0021	U	0.0021	U			0.0021	U			0.0021	U			0.0021	U		
Total Phosphorus (P)	mg/L	0.003	U	0.003	U	0.003	U			0.003	U			0.003	U			0.003	U		
Alkalinity	mg/L	1.00	U	1.00	U	1.00	U			1.00	U			1.00	U			1.00	U		
Bicarbonate Alkalinity	mg/L as HCO ₃	1.00	U	1.00	U	1.00	U			1.00	U			1.00	U			1.00	U		
Sulfide	mg/L	0.036	U	0.0481	I Q	0.0469	I			0.0564	I			0.243				0.036	U		
Total Dissolved Solids	mg/L	5.00	U	5.00	U	5.00	U			5.00	U			5.00	U			5.00	U		
Salinity	*																				
Tritium	pCi/L	4.6 (2.6)		5.0 (2.6)		-6.2 (5.5)	UJ			-0.1 (3.6)	UJ			0.5 (3.8)	UJ			0.8 (6.1)	UJ		

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		5-FB2
Parameter	Units	/2015
Temperature	°C	
pH	SU	
Dissolved Oxygen	mg/L	
Specific Conductance	µS/cm	
Turbidity	NTU	
Silica, dissolved	mg/L	
Calcium	mg/L	
Magnesium	mg/L	
Potassium	mg/L	
Sodium	mg/L	
Boron	mg/L	
Strontium	mg/L	
Bromide	mg/L	
Chloride	mg/L	
Fluoride	mg/L	
Sulfate	mg/L	
Total Ammonia	mg/L as N	
Ammonium ion (NH ₄ ⁺)	mg/L	
Unionized NH ₃	mg/L	
Nitrate/Nitrite	mg/L as N	
TKN	mg/L	
TN	mg/L	
ortho-Phosphate	mg/L	
Total Phosphorus (P)	mg/L	
Alkalinity	mg/L	
Bicarbonate Alkalinity	mg/L as HCO ₃	
Sulfide	mg/L	
Total Dissolved Solids	mg/L	
Salinity	*	
Tritium	pCi/L	

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Notes

Laboratory results are reported with 3 digits although only the first 2 are significant figures.

* PSS-78 salinity is unitless.

** Schemel, L.E., 2001. Simplified conversions between specific conductance and salinity units for use with data from monitoring stations. Interagency Ecological Program for the San Francisco Estuary Newsletter. 14(1):17-18.

Sample 030415-Dup is a duplicate of TPBBSW-3B.

Sample 031115-Dup is a duplicate of TPSWC-2T.

Key

°C = Degrees Celsius.

µg/L = Microgram(s) per liter.

µmho/cm = Micromho(s) per centimeter.

µS/cm = MicroSiemen(s) per centimeter.

ABS = Absolute value.

HCO₃ = Bicarbonate ion.

DEP SOP = Department of Environmental Protection Standard Operating Procedure.

mg/L = Milligram(s) per liter.

N.A. = Not applicable.

NH₃ = Ammonia.

NH₄⁺ = Ammonium ion.

NTU = Nephelometric Turbidity Units(s).

pCi/L = PicoCuries per liter.

ppt = Parts per thousand.

PQL = Practical Quantitation Limit.

PSS-78 = Practical Salinity Scale of 1978.

RPD = Relative Percent Difference.

SC = Specific conductance.

SDG = Sample Delivery Group.

SU = Standard Unit(s).

TDS = Total Dissolved Solids.

TKN = Total Kjeldahl nitrogen.

TN = Total nitrogen.

TPBBSW = Turkey Point Biscayne Bay Surface Water

TPSWC = Turkey Point Surface Water Canal

TPSWID = Turkey Point Surface Water Interceptor Ditch

TPSWCCS = Turkey Point Surface Water Cooling Canal System

FPL Turkey Point Uprate Monitoring Project
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Summary of Table Modifications					
Date of Original Document	Old Value	New Value	Reason	Date of Revision	Revision by
6/6/2015			added Tritium results	1/17/2016	JR