

FPL Turkey Point Uprate Monitoring Project
September 2014 Semiannual Sampling Event
SDG: Qtr 3 2014 GW

Parameter	Units	TPGW-1S		090914-DUP		TPGW-1M		TPGW-1D		TPGW-2S		TPGW-2M		TPGW-2D	
		09/09/2014		09/09/2014		09/09/2014		09/09/2014		09/10/2014		09/10/2014		09/10/2014	
Temperature	°C	26.95				26.70		26.58		26.33		26.95		26.96	
pH	SU	6.99				7.07		6.89		7.12		6.87		6.80	
Dissolved Oxygen	mg/L	0.16				0.10		0.07		0.07		0.11		0.11	
Specific Conductance	µS/cm	40311				70703		71440		65036		74336		75644	
Turbidity	NTU	0.00	J			0.01	J	0.33		0.00	J	0.01	J	0.01	J
Silica, dissolved	mg/L														
Calcium	mg/L	404		407		566		580		716		638		659	
Magnesium	mg/L	764		766		1430		1460		1290	J	1560	J	1610	J-
Potassium	mg/L	303		300		655		675		595	J	717	J	751	J+
Sodium	mg/L	6840		6770		13400		13400		13000		15500		15800	
Boron	mg/L	2.57		2.52		5.65		5.82		5.13		6.24		6.52	
Strontium	mg/L	6.74		6.66		10.50		10.80		12.10		13.70		13.80	
Bromide	mg/L	50.5		51.0		95.2	J	94.8	J	88.0		103.0		103.0	J
Chloride	mg/L	13800		14500		28100	J	28400	J	25400		29800		36900	Q J
Fluoride	mg/L	0.200		0.200		0.260	J	0.280	J	0.180		0.240		0.230	J-
Sulfate	mg/L	1820		1810		3650	J	3650	J	3350		3840		4680	Q J
Total Ammonia	mg/L as N	1.260		1.400		1.900		2.040		2.050		2.460		2.380	
Ammonium ion (NH ₄ ⁺)	mg/L	1.61				2.42		2.61		2.61		3.15		3.05	
Unionized NH ₃	mg/L	0.00970				0.01730		0.01220		0.02030		0.01440		0.01190	
Nitrate/Nitrite	mg/L as N	0.5000	U	0.5000	U	0.5000	U	0.5000	U	0.5000	U	0.5000	U J	0.5000	U J-
TKN	mg/L	1.27		1.40		2.04		2.16		1.82		2.26		2.48	
TN	mg/L	1.77				2.54		2.66		2.32		2.76	J	2.98	J
ortho-Phosphate	mg/L	0.0264		0.0277		0.0159	J	0.0458	J+	0.0101	J	0.0335	J	0.0398	J+
Total Phosphorus (P)	mg/L	0.0362		0.0374		0.0368		0.0439		0.0190		0.0362		0.0497	
Alkalinity	mg/L	282		284		194	J	191	J	155		208		204	J
Bicarbonate Alkalinity	mg/L as HCO ₃	345		346		237	J	232	J	189		254		248	J
Sulfide	mg/L	0.05	I	0.02	I	0.01	I	0.16		0.10	U	0.10	U	0.10	U J
Total Dissolved Solids	mg/L	25000		24600		49700		50400		44000		51600		52200	
Salinity	*	25.7				48.44		49.02		44.03		51.3		52.34	
Tritium	pCi/L (1σ)	606.8 (20.1)		605.7 (20.0)		2090.7 (61.0)		2368.6 (68.4)		2255.6 (74.3)		2834.0 (93.7)		3273.9 (108.0)	

NOTES:

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

* PSS-78 salinity is unitless.

Sample 090814-Dup is a duplicate of TPGW-9M.

Sample 090914-Dup is a duplicate of TPGW-1S.

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

FPL Turkey Point Uprate Monitoring P1
September 2014 Semiannual Sampling E
SDG: Qtr 3 2014 GW

Parameter	Units	TPGW-3S		TPGW-3M		TPGW-3D		TPGW-4S		TPGW-4M		TPGW-4D		TPGW-5S		TPGW-5M		TPGW-5D	
		09/10/2014		09/10/2014		09/10/2014		09/09/2014		09/09/2014		09/09/2014		09/09/2014		09/09/2014		09/09/2014	
Temperature	°C	26.64		26.61		26.88		26.60		26.54		27.20		24.79		25.38		25.64	
pH	SU	6.50		6.86		6.89		6.88		6.89		6.80		7.16		6.85		6.78	
Dissolved Oxygen	mg/L	0.20		0.07		0.08		0.15		0.09		0.09		0.15		0.18		0.09	
Specific Conductance	µS/cm	61593		67519		68637		2033		38945		43027		942		32232		34807	
Turbidity	NTU	0.00	J	0.00	J	0.00	J	0.10		0.18		0.08		0.52		0.00	J	0.00	J
Silica, dissolved	mg/L																		
Calcium	mg/L	622		596		615		143		534	J	509	J	105		536	J	515	J
Magnesium	mg/L	1290		1410	J	1450	J	21.4		766	J	834	J	6.89		591	J	638	J
Potassium	mg/L	569		644	J	660	J	4.8	J+	220	J	282	J	5.63		149	J	178	J
Sodium	mg/L	12200		13700		13900		225		6620	J	7540	J	71		5360	J	5540	J
Boron	mg/L	4.77		5.56		5.61		0.08		1.42		1.99		0.05		0.91		1.20	
Strontium	mg/L	10.00		11.60		11.80		1.34		7.22		7.39		1.02		6.60		6.80	
Bromide	mg/L	83.5		92.2		94.3		1.6		49.8	J	52.0	J	0.5		39.4	J	43.5	J
Chloride	mg/L	23400		25900		26300		422		13800	J	15300	J	142		11700	J	13800	J
Fluoride	mg/L	0.180		0.170		0.170		0.024	U	0.110	J	0.130	J	0.100		0.110	J	0.130	J
Sulfate	mg/L	3130		3410		3500		15		1660	J	1920	J	14		1200	J	1390	J
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	528		261		252		333		228	J	221	J	247		243	J	236	J
Bicarbonate Alkalinity	mg/L as HCO ₃	645		319		308		407		279	J	269	J	301		296	J	288	J
Sulfide	mg/L	22.00		0.04	I	0.10	U	0.17		0.10	U	0.10	U	0.04	I	0.10	U	0.10	U
Total Dissolved Solids	mg/L	40800		44500		45900		1100		25200		27200		487		20700		22400	
Salinity	*	41.38		45.95		46.81		1.03	J	24.75		27.64		0.46	J	20.09		21.86	
Tritium	pCi/L (1σ)	208.6 (9.8)		1557.0 (52.2)		1778.1 (60.2)		16.1 (4.9)	J	305.3 (11.9)		444.6 (15.9)		8.0 (4.7)	J	252.3 (10.7)		310.6 (12.3)	

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Parameter	Units	TPGW-6S		TPGW-6M		TPGW-6D		TPGW-7S		TPGW-7M		TPGW-7D		TPGW-8S	
		09/08/2014		09/08/2014		09/08/2014		09/08/2014		09/08/2014		09/08/2014		09/08/2014	
Temperature	°C	24.78		26.60		25.44		25.61		25.68		26.00		25.65	
pH	SU	6.99		6.80		6.87		7.20		7.21		6.78		10.78	
Dissolved Oxygen	mg/L	0.15		0.22		0.08		0.08		0.09		0.11		0.10	
Specific Conductance	µS/cm	1254		22722		23590		539		546		4610		498	
Turbidity	NTU	0.16		0.13		0.30		0.32		0.06		0.28		11.30	
Silica, dissolved	mg/L														
Calcium	mg/L	122		452	Q	459	Q J	81		81		337		72	J
Magnesium	mg/L	12.1		412	Q	424	Q J	4.09		3.87		16.2		1.96	J
Potassium	mg/L	4.88		97.5	Q	99.7	Q J	8.48		7.19		8.99		9.1	J
Sodium	mg/L	106		3630	Q	3680	Q J	20		19		518		16	J
Boron	mg/L	0.06		0.799	Q	0.808	Q	0.05		0.05		0.06		0.07	
Strontium	mg/L	1.24		8.05	Q	8.13	Q	0.82		0.81		3.60		0.68	
Bromide	mg/L	0.8		26.0		27.3	J	0.1		0.2		5.0		0.2	J
Chloride	mg/L	223		7510		7940	J	35		35		1450		32	J
Fluoride	mg/L	0.110		0.120		0.140	J	0.120		0.110		0.024	U	0.024	U J
Sulfate	mg/L	7		777		820	J	22		23		19		61	J
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	289		217		224	J	203		204		174		57	J
Bicarbonate Alkalinity	mg/L as HCO ₃	353		265		273	J	248		249		213		1	U J
Sulfide	mg/L	0.09	I	0.10	U	0.10	U	0.10	U	0.10	U	0.06	I	0.01	I
Total Dissolved Solids	mg/L	640		14100		15100		252		252		3280		210	
Salinity	*	0.62	J	13.67		14.26		0.26	J	0.26	J	2.46		0.24	J
Tritium	pCi/L (1σ)	10.5 (4.9)		8.3 (4.7)		19.2 (5.1)		8.4 (6.3)		14.9 (6.8)		0.5 (7.1)	UJ	-2.5 (6.8)	UJ

FPL Turkey Point Uprate Monitoring P1
September 2014 Semiannual Sampling E
SDG: Qtr 3 2014 GW

Parameter	Units	TPGW-8M		TPGW-8D		TPGW-9S		TPGW-9M		090814-DUP		TPGW-9D		TPGW-10S		TPGW-10M		TPGW-10D	
		09/08/2014		09/08/2014		09/08/2014		09/08/2014		09/08/2014		09/08/2014		09/11/2014		09/11/2014		09/11/2014	
Temperature	°C	25.35		25.50		26.32		25.40				25.22		27.93		27.70		27.42	
pH	SU	7.02		7.03		6.88		6.84				6.92		7.18		7.22		7.06	
Dissolved Oxygen	mg/L	0.12		0.13		0.20		0.16				0.22		0.20		0.17		0.18	
Specific Conductance	µS/cm	643		662		604		637				631		53220		55680		67011	
Turbidity	NTU	0.00	J	0.00	J	0.00	J	0.23				0.01	J	0.01		0.00	J	0.00	J
Silica, dissolved	mg/L																		
Calcium	mg/L	100		99		114		114		111		107		393		411		531	
Magnesium	mg/L	3.9		5.49		2.33		3.02		2.93		3.38		1060	J	1100	J	1370	J
Potassium	mg/L	10.4		9.09		3.28		5.78		5.59		3.79		484	J	503	J	646	J
Sodium	mg/L	16		23		8		12		12		14		10400		11100		13800	
Boron	mg/L	0.07		0.07		0.03	I	0.06		0.05	I	0.05		4.35		4.54		5.76	
Strontium	mg/L	1.04		1.03		0.83		0.94		0.92		1.10		7.34		7.93		10.10	
Bromide	mg/L	0.2		0.2		0.1		0.2		0.2		0.3		68.0	J	72.0		91.7	
Chloride	mg/L	31		40		15		21		21		26		20300	J	21900		26400	
Fluoride	mg/L	0.100		0.024	U	0.024	U	0.024	U	0.024	U	0.024	U	0.760	J-	0.570		0.240	
Sulfate	mg/L	63		57		2		13		14		27		2710	J	2870		3530	
Total Ammonia	mg/L as N													0.922	J	0.771	J	1.410	
Ammonium ion (NH ₄ ⁺)	mg/L													1.17	J	0.98	J	1.80	
Unionized NH ₃	mg/L													0.01170	J	0.01060	J	0.01320	
Nitrate/Nitrite	mg/L as N													0.5000	U	0.5000	U	0.5000	U
TKN	mg/L													0.60	J	0.45	J	1.44	
TN	mg/L													1.10	J	0.95	J	1.94	
ortho-Phosphate	mg/L													0.0169		0.0158		0.0387	
Total Phosphorus (P)	mg/L													0.0192		0.0183		0.0387	
Alkalinity	mg/L	222		229		305		290		293		273		134	J	116		173	
Bicarbonate Alkalinity	mg/L as HCO ₃	271		279		372		353		357		333		163	J	142		211	
Sulfide	mg/L	0.03	I	0.07	I	0.49		0.15		0.18		0.05	I	4.00		0.52		3.30	
Total Dissolved Solids	mg/L	336		356		288		336		312		336		34600		36100		44700	
Salinity	*	0.31	J	0.32	J	0.29	J	0.31	J			0.31	J	35.03		36.87		45.53	
Tritium	pCi/L (1σ)	-2.6 (6.6)	UJ	-0.9 (6.7)	UJ	18.2 (5.9)		34.4 (6.3)		8.5 (5.1)		7.8 (5.7)		11.8 (5.6)		12.3 (5.9)		1582.6 (51.6)	

FPL Turkey Point Uprate Monitoring P1
September 2014 Semiannual Sampling E
SDG: Qtr 3 2014 GW

Parameter	Units	TPGW-11S		TPGW-11M		TPGW-11D		TPGW-12S		TPGW-12M		TPGW-12D		TPGW-13S		TPGW-13M		TPGW-13D	
		09/11/2014		09/11/2014		09/11/2014		09/05/2014		09/05/2014		09/05/2014		09/05/2014		09/05/2014		09/05/2014	
Temperature	°C	27.43		27.66		27.32		27.84		28.34		28.28		30.34		30.00		30.20	
pH	SU	6.84		6.75		6.71		6.62		6.74		7.12		6.76		6.94		6.80	
Dissolved Oxygen	mg/L	0.19		0.21		0.31		0.04		0.12		0.05		0.12		0.08		0.09	
Specific Conductance	µS/cm	55625		57583		63106		45351		61206		65009		82466		78442		79773	
Turbidity	NTU	0.06		0.09		0.01	J	0.17		0.00	J	0.00	J	0.00	J	0.00	J	0.00	
Silica, dissolved	mg/L																		
Calcium	mg/L	479		500		559	J	460		547	J	574	J	668	J	662	J	671	J
Magnesium	mg/L	1180	J	1150	J-	1310	J	909		1270	J	1370	J	1730	J-	1670	J	1700	J
Potassium	mg/L	528	J	532	J+	595	J	400		573	J	624	J	833	J+	788	J	812	J
Sodium	mg/L	11100		11700		12900	J	8830		12400	J	13300	J	17700	J+	16900	J	17100	J
Boron	mg/L	4.95		4.82		5.00		3.66		5.00		5.21		7.59		6.94		7.35	
Strontium	mg/L	8.34		8.91		10.00		7.44		10.10		10.60		14.20		14.30		14.50	
Bromide	mg/L	71.9		75.1		84.0	J	54.6		79.1	J	86.5	J	117.0	J	108.0	J	110.0	J
Chloride	mg/L	21400		21500		25300	J	16900		24400	J	26300	J	34500	J	33100	J	33400	J
Fluoride	mg/L	0.780		0.570	J-	0.620	J	0.450		0.250	J	0.230	J	0.350	J-	0.190	J	0.220	J
Sulfate	mg/L	2830		2880		3260	J	2070		3150	J	3370	J	4500	J	4190	J	4280	J
Total Ammonia	mg/L as N													1.720	J+	2.590		2.420	
Ammonium ion (NH ₄ ⁺)	mg/L													2.20	J	3.31		3.10	
Unionized NH ₃	mg/L													0.00986	J	0.02190		0.01510	
Nitrate/Nitrite	mg/L as N													0.1000	U J-	0.5000	U J	0.5000	U J
TKN	mg/L													3.40		2.32		2.96	
TN	mg/L													3.50	J	2.82	J	3.46	J
ortho-Phosphate	mg/L													0.0439		0.0014	U	0.0028	I
Total Phosphorus (P)	mg/L													0.0495		0.0494		0.0602	
Alkalinity	mg/L	314		350		284	J	567		276	J	200	J	232	J	203	J	211	J
Bicarbonate Alkalinity	mg/L as HCO ₃	383		428		347	J	692		337	J	244	J	283	J	248	J	257	J
Sulfide	mg/L	12.00		8.60		4.40		16.00		2.80		0.34		8.80		0.10	U	0.24	
Total Dissolved Solids	mg/L	36000		38400		41700		29600		42000		43800		61800		56900		58600	
Salinity	*	36.84		38.31		42.51		29.28		41.04		43.96		57.72		54.47		55.54	
Tritium	pCi/L (1σ)	60.9 (68)		182.2 (9.7)		851.1 (29.0)		112.2 (7.9)		1332.4 (44.8)		1495.0 (48.8)		3568.3 (114.2)		3102.6 (98.3)		3747.0 (118.2)	

FPL Turkey Point Uprate Monitoring P1
September 2014 Semiannual Sampling E
SDG: Qtr 3 2014 GW

Parameter	Units	TPGW-14S		TPGW-14M		TPGW-14D		090214-EB		090514-FB1		090814-FB1		090914-FB		091014-FB1		091114-FB1	
		09/11/2014		09/11/2014		09/11/2014		09/02/2014		09/05/2014		09/08/2014		09/09/2014		09/10/2014		09/11/2014	
Temperature	°C	28.02		27.77		27.99													
pH	SU	6.87		6.70		6.88													
Dissolved Oxygen	mg/L	0.18		0.20		0.14													
Specific Conductance	µS/cm	57222		61555		73070													
Turbidity	NTU	0.00	J	0.00	J	0.00	J												
Silica, dissolved	mg/L							0.05	U	0.05	U	0.05	U	0.05	U	0.050	U	0.050	U
Calcium	mg/L	478		608		540		0.100	U	0.100	U	0.181		0.100	U	0.100	U	0.100	U
Magnesium	mg/L	1190	J	1540	J	1270	J	0.0200	U	0.0200	U	0.0200	U	0.0200	U	0.020	U	0.020	U
Potassium	mg/L	520	J	712	J	580	J	0.190	U	0.190	U	0.190	U	0.190	U	0.190	U	0.190	U
Sodium	mg/L	11200		15300		12400	J	0.310	U	0.310	U	0.310	U	0.310	U	0.310	U	0.310	U
Boron	mg/L	4.59		6.36		5.07		0.01	U	0.01	U	0.01	U	0.01	U	0.010	U	0.010	U
Strontium	mg/L	8.45		12.00		9.60		0.00	U	0.00	U	0.00	U	0.00	U	0.001	U	0.001	U
Bromide	mg/L	74.2		82.4		102.0	J	0.0130	U	0.0130	U	0.0130	U	0.0130	U	0.013	U	0.013	U
Chloride	mg/L	21300		24500		29100	J	0.250	U	0.575		0.250	U	0.250	U	0.250	U	0.250	U
Fluoride	mg/L	0.490		0.410		0.360	J	0.0240	U	0.0240	U	0.0240	U	0.0240	U	0.024	U	0.024	U
Sulfate	mg/L	2980		3250		3980	J	0.250	U	1.960		0.250	U	0.250	U	0.250	U	0.250	U
Total Ammonia	mg/L as N	1.150	J	1.550	J	2.420		0.0677		0.2230		0.0647		0.0704		0.0554		0.0524	
Ammonium ion (NH ₄ ⁺)	mg/L	1.47	J	1.99	J	3.09													
Unionized NH ₃	mg/L	0.00724	J	0.00649	J	0.01560													
Nitrate/Nitrite	mg/L as N	0.5000	U	0.5000	U	0.5000	U	0.10000	U	0.50000	U	0.50000	U	0.50000	U	0.50000	U	0.50000	U
TKN	mg/L	0.82	J	1.22	J	2.86		0.150	U	0.150	U	0.150	U	0.150	U	0.15	U	0.15	U
TN	mg/L	1.32	J	1.72	J	3.36													
ortho-Phosphate	mg/L	0.0398		0.0548		0.0527		0.00140	U	0.00140	U	0.00140	U	0.00140	U	0.00140	U	0.00210	U
Total Phosphorus (P)	mg/L	0.0400		0.0527		0.0500		0.00220	U	0.00220	U	0.00220	U	0.00220	U	0.00220	U	0.00300	U
Alkalinity	mg/L	244		290		232	J	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	298		354		283	J	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00	U
Sulfide	mg/L	3.70		5.90		3.50		0.10	U	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U
Total Dissolved Solids	mg/L	37000		42200		49200		5	U	5	U	5	U	5	U	5	U	5	U
Salinity	*	38.02		41.31		50.26													
Tritium	pCi/L (1σ)	135.0 (8.6)		457.1 (17.7)		2262.1 (72.3)		6.5 (3.6)		7.8 (5.9)		-7.5 (6.7)	UJ	14.0 (5.1)		2.3 (5.0)	UJ	2.1 (5.5)	UJ

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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 unit for use with data from monitoring stations. Interagency Ecological Program for the San Francisco Estuary Newsletter. 14(1):17-18.

*** Calculated cation and anion conductivities not reported in ADaPT so all cations/anions are qualified.

The results in blue represent data values that were not available at time of publication of the pr
Sample 090814-Dup is a duplicate of TPGW-9M.

Sample 090914-Dup is a duplicate of TPGW-1S.

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.

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.

TPGW = Turkey Point Ground Water

Qualifiers

I = Value between the MDL and PQL.

J = Estimated (+/- indicate bias).

Q = Holding time exceeded.

U = Analyzed for but not detected at the reported value.

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Summary of Table Modifications

Date of Original Document	Old Value	New Value	Reason	Date of Revision	Revision by
1/12/2015	Ca - 4430	452	TPGW-6M - revised due to lab error.	8/18/2015	SE
	Mg - 3900	412			
	K - 1040	97.5			
	Na - 35200	3630	Revised Tech Const. section - no J flag with		
	B - 7.78	0.799			
	Sr - 76.6	8.05			
	Ca - 4540	459			
	Mg - 4050	424	TPGW-6M - revised due to lab error.		
	K - 1080	99.7			
	Na - 36800	3680			
	B - 7.7	0.808			
Sr - 77.9	8.13	Const. section - still J flag with			
1/12/2015			removed J from Anions after recalculation of TPGW-6M.	8/18/2015	SE
8/18/2015			added Tritium res	1/18/2016	JR