Notes:

Not Treated for Barium Removal

Post = Post Treatment

Post (#) refers to test results in a series of results.

All units in ppm (mg/L) unless other wise specified

Pre = Pre-Treatment

Ecolotron, Inc.

The Electrocoagulation Specialists

Location/ Parameter	Haynesville Sh. Louisiana		Cotton Valley Fm. Louisiana		Marcellus Fm. Pennsylvania		Haynesville Sh. Louisiana		Barnett Sh. Texas		Julia Swain Texas		Magnolia / Julia Swain Texas/Louisiana			Barnett Basin Flow-Back, TX		Barnett Basin Produce, TX		Cotton Valley Formation, LA		Cotton Valley Formation, LA		Haynesville, LA 2		Haynesville, LA		Marcellas Shell, PA		Marcellas Shell, PA				Marcellas Shell, PA		Marcellas Shell, PA			Barnett Formation TX		Barnett Formation TX		Oil Sands, Canada		Hanesville Shell		Tar Sands, Canada		Waste Tank Water	
	PRE	*POST*	*PRE*	*POST*	*PRE*	*POST*	*PRE*	*POST*	*PRE*	*POST*	*PRE*	*POST*	*PRE*	*POST 1*	*POST 2*	*PRE*	*POST*	*PRE*	*POST*	*PRE*	*POST*	*PRE*	*POST*	*PRE*	*POST*	*PRE*	*POST*	*PRE*	*POST*	*PRE*	*POST*	*POST 2*	*POST 3*	*PRE*	*POST*	*PRE*	*POST*	*POST*	*PRE*	*POST*	*PRE*	*POST*	*PRE*	*POST*	*PRE*	*POST*	*PRE*	*POST*	*PRE*	*POST*
Aluminum																*0.921*	*0.27*	*0.317*	*0.122*																													0.22	0.44
Ammonia																																																128	110
APB (cfu/100ml)											BRL	BRL	100	700	18	BRL	BRL	159	1																															
Aerobic B. (cfu/100ml)											BRL	BRL	16200	1760	6	9100	BRL																																			
Barium	-	-	282	254	258	38	1090	1.0	28	1	BRL	BRL	27.8	16.52	16.02	0.771	0.308			1138	1058	568	456	282	254	1138	1058		BRL	3495	2714	1657	509.3			412.4	174.1	1.356	7.377	8.293	2.379	4.261								
BOD	102	81.2	26,022	208	-	-	-	-												102	81.2	668568	180	26022	208	102	81.2																		258	255		
BTEX Total	-	-	3533.9	2.745	-	-	-	-	0.2402	0.025										0.0585	0.0585	0.664	0.109	3533.9	2.745	0.0585	0.986																		3.431	1.381	14.639	2.79
Calcium	-	-	7585	7124	437	250	6930	3650			9528	7994	3844	3898	4238	538	208	231	43.1	5560	5167	6905	6303	7585	7124	5560	5167			1837	1513	795.2	1389			354.1	204.7	139.3			1021	682.2					1.699	46.67		
Chloride																				43294	38416	79995	74316	86384	85518	43294	38416																		82.3	211		
CO_3											BRL	192	BRL	235	216					BRL	84	BRL	218	BRL	163	BRL	84																		BRL	BRL		
COD																													35																	1960	682	1305	874
HCO_3											268	BRL	539	BRL	BRL					159	BRL	193	BRL	78	115	159	BRL																		222	63.5		
Iron	78.69	BRL	61.8	BRL	50.0	1.0	160	<1.0			350	BRL	148.1	0.06	0.06	1.707	BRL			78.69	BRL	80.9	0.429	61.8	BRL	78.69	BRL			30.65	0.078	0.0874	0.176			72.83	0.4792	0.2315	51.34	2.907	5.125	0.2661					3.696	2.425	0.22	0.09
Magnesium	-	-	669	101	39	17	360	280			553	39.9	243.3	228.6	0.43	92.86	4.167	25.33	3.422	303.5	274.1	526	517	669	101	303.5	274.1			179.8	130.7	122.4	123.4			21.19	11.47	9.397	258.9	220.9	134.4	96.65					0.2558	2.588		
Manganese																0.081	BRL	0.026	0.01																															
Potassium																33.93	32.98	16.56	16.5	BRL	BRL	1024	986	1096	1059	BRL	BRL																							
Si	17.02	3.286	40.8	0.273	-	-					60.6	0.785	51.44	2.96	1.27					17.02	3.286	41.9	4.5	40.8	0.273	17.02	3.286			34.48	1.2624	1.6922	0.9094			12.08	1.882	0.6816	83.54	6.038	48.46	0.646					55.52	33.27	36.75	12.41
SRB (cfu/100ml)	-	-	-	-	450,000	4,200							9600	BRL	BRL	100	BRL																				450000	4200						yes	no						
Strontium	-	-	1307	1270	108	72	2000	417			2660	1700				127	71.2			1505	1352	1461	1416	1307	1270	1505	1352			904.9	670.4	458.1	612.7	187.5	74.23				287.5	335.1	110.7	90.81								
Sulfate											6	2.84	260	323	215					1.52	2.07	11.9	12.6	8.78	59.4	1.52	2.07																		64.8	443		
Sulfide																																														28.8	4.96		
TDS																				55250	56550	109100	105500	116200	124500	55250	56550																							
TOC																																														798	125		
TPH c6-35	18.97	1.66	11,506	2.67	22.18	5.54	49.5	5.93	285.8	BRL	145.1	3.49	40.05	BRL	2.12					18.97	1.66			11506	2.67	18.97	1.66	84.1	BRL							22.18	5.54		204.2	4.6			26.14	BRL	49.5	5.93	4315	24.7	144.5	11.28
TSS	-	-	382	46	300	8.0	1326	154					5498	17.8	104																														1326	339	560	20.6		