

Andrews, Jeff

From: palmeag@nu.com
Sent: Wednesday, September 29, 2010 11:59 AM
To: Andrews, Jeff
Cc: royrr@nu.com; ken.braunstein@wgint.com
Subject: Last River Round

Jeff, Here is Ken's revised sheet with the last round of river sampling incorporated. Please let me know if you have any questions, Allan.

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CHEMICAL NAME	RIVER DISCHARGE CONCENTRATION (AVERAGE OF VALUES LISTED FOR 4 SAMPLES) mg/l	RIVER DISCHARGE CONCENTRATION (DISSOLVED) (CORRECTED FOR FUTURE UPSTREAM LOADING AS CALCULATED BY NHDES)	MULTIPLIER FOR CORRECTING FROM DISSOLVED TOTAL CONCENTRATION	1		2		Correction Multiplier (Hardness = 25)	Total Metals River Discharge Concentration	Correction Multiplier (Hardness = 25)	Total Metals River Discharge Concentration	3		Correction Multiplier (Hardness = 25)	Total Metals River Discharge Concentration	
				RIVER DISCHARGE CONCENTRATION (TOTAL) (DISSOLVED CORRECTED BY MULTIPLIER) (CORRECTED FOR FUTURE UPSTREAM LOADING AS CALCULATED BY NHDES) mg/l	7/16/2009 RIVER DISCHARGE CONCENTRATION (4860 CFS) mg/l	7/16/2009 RIVER DISCHARGE CONCENTRATION (4860 CFS)	7/16/2009 RIVER DISCHARGE CONCENTRATION (4860 CFS)					8/17/2009 RIVER DISCHARGE CONCENTRATION (3530 CFS) mg/l	8/17/2009 RIVER DISCHARGE CONCENTRATION (3530 CFS)			8/17/2009 RIVER DISCHARGE CONCENTRATION (3530 CFS)
METALS																
Aluminum	0.049150	0.050007	1.000	0.050007	0.060000	1.000	0.060000	0.060000	1.000	0.060000	0.043200	1.000	0.043200	0.033400	1.000	0.033400
Antimony	0.000047	0.000140	1.000	0.000140	0.000053	1.000	0.000053	0.000043	1.000	0.000043	0.000044	1.000	0.000044	0.000047	1.000	0.000047
Arsenic (Human)	0.000360	0.000410	1.000	0.000410	0.000290	1.000	0.000290	0.000470	1.000	0.000470	0.000360	1.000	0.000360	0.000320	1.000	0.000320
Arsenic (Aquatic)	0.000360	0.000410	1.000	0.000410	0.000290	1.000	0.000290	0.000470	1.000	0.000470	0.000360	1.000	0.000360	0.000320	1.000	0.000320
Beryllium	0.000060	0.000109	1.000	0.000109	0.000060	1.000	0.000060	0.000060	1.000	0.000060	0.000060	1.000	0.000060	0.000060	1.000	0.000060
Cadmium	0.000021	0.000044	0.967	0.000044	0.000020	0.967	0.000020	0.000020	0.967	0.000021	0.000020	0.967	0.000021	0.000020	0.967	0.000021
Chromium III	0.000227	0.000251	0.860	0.000291	0.000110	0.860	0.000128	0.000100	0.860	0.000116	0.000100	0.860	0.000116	0.000070	0.860	0.000070
Copper	0.000529	0.001144	0.960	0.001192	0.000540	0.960	0.000563	0.000560	0.960	0.000583	0.000500	0.960	0.000583	0.000430	0.960	0.000430
Iron	0.297500	0.297500	1.000	0.297500	0.300000	1.000	0.300000	0.300000	1.000	0.300000	0.300000	1.000	0.300000	0.290000	1.000	0.290000
Lead	0.000132	0.000189	0.993	0.000190	0.000134	0.993	0.000135	0.000147	0.993	0.000148	0.000121	0.993	0.000148	0.000121	0.993	0.000121
Manganese	0.023750	0.023750	1.000	0.023750	0.025000	1.000	0.025000	0.021000	1.000	0.021000	0.025000	1.000	0.025000	0.024000	1.000	0.024000
Mercury	0.000001	0.000014	1.000	0.000014	0.000011	1.000	0.000011	0.000013	1.000	0.000013	0.000023	1.000	0.000023	0.000014	1.000	0.000014
Nickel	0.000275	0.000400	0.997	0.000401	0.000300	1.000	0.000300	0.000200	1.000	0.000200	0.000300	1.000	0.000300	0.000300	1.000	0.000300
Selenium	0.000525	0.000618	1.000	0.000618	0.000600	1.000	0.000600	0.000500	1.000	0.000500	0.000500	1.000	0.000500	0.000500	1.000	0.000500
Silver	0.000024	0.000161	0.850	0.000190	0.000020	0.850	0.000024	0.000020	0.850	0.000024	0.000020	0.850	0.000024	0.000020	0.850	0.000024
Thallium	0.000009	0.000044	1.000	0.000044	0.000006	1.000	0.000006	0.000012	1.000	0.000012	0.000010	1.000	0.000012	0.000006	1.000	0.000006
Zinc	0.002037	0.003546	0.978	0.003626	0.002000	0.978	0.002045	0.002100	0.978	0.002147	0.002800	0.978	0.002863	0.001070	0.978	0.001084
Chlorides	18.250000	18.250000	1.000	18.250000	14.000000	1.000	14.000000	17.000000	1.000	17.000000	19.000000	1.000	19.000000	23.000000	1.000	23.000000
Ammonia (as N)	0.082500	0.651385	1.000	0.651385	0.050000	1.000	0.050000	0.050000	1.000	0.050000	0.090000	1.000	0.090000	0.140000	1.000	0.140000
Nitrates (as N)	0.500000	0.510074	1.000	0.510074	previous maximum 12/06/05 - 7/24/07											

NOTE:
BOLD = NON-DETECTED RESULT

1 WWVTS
Based on Criteria of Net Mass Increase
Assimilative Capacity in River

Calculation No. 21-05-300-006
Rev P
9/17/2010

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Site River Large Location	9/17/2009 RIVER DISCHARGE CONCENTRATION (1850 CFS)	Correction Multiplier (Hardness = 25)	9/17/2009 RIVER DISCHARGE CONCENTRATION (1850 CFS)	9/25/2009 RIVER DISCHARGE CONCENTRATION (1590 CFS)	Correction Multiplier (Hardness = 25)	9/25/2009 RIVER DISCHARGE CONCENTRATION (1590 CFS)	7/15/2010 RIVER DISCHARGE CONCENTRATION	Correction Multiplier (Hardness = 25)	7/15/2010 RIVER DISCHARGE CONCENTRATION
003	0.043200	1.000	0.043200	0.033400	1.000	0.033400	0.030200	1.000	0.030200
	0.000044	1.000	0.000044	0.000047	1.000	0.000047	0.000044	1.000	0.000044
	0.000360	1.000	0.000360	0.000320	1.000	0.000320	0.000382	1.000	0.000382
	0.000360	1.000	0.000360	0.000320	1.000	0.000320	0.000382	1.000	0.000382
	0.000050	1.000	0.000050	0.000050	1.000	0.000050	0.000050	1.000	0.000050
	0.000020	0.957	0.000021	0.000020	0.957	0.000020	0.000020	0.957	0.000021
	0.000100	0.950	0.000116	0.000110	0.950	0.000110	0.000130	0.950	0.000131
	0.000300	1.000	0.000300	0.000340	1.000	0.000340	0.000350	1.000	0.000350
	0.000121	0.993	0.000122	0.000121	0.993	0.000122	0.000071	0.993	0.000072
	0.025000	1.000	0.025000	0.024000	1.000	0.024000	0.041000	1.000	0.041000
	0.000002	1.000	0.000002	0.000014	1.000	0.000014	0.000001	1.000	0.000001
	0.000300	1.000	0.000300	0.000300	1.000	0.000300	0.000200	1.000	0.000200
	0.000500	1.000	0.000500	0.000500	1.000	0.000500	0.000500	1.000	0.000500
	0.000020	0.850	0.000024	0.000020	0.850	0.000024	0.000020	0.850	0.000024
	0.000010	1.000	0.000010	0.000005	1.000	0.000005	0.000012	1.000	0.000012
	0.002800	0.978	0.002863	0.001070	0.978	0.001094	0.001490	0.978	0.001524
0000001	19.000000	1.000	19.000000	23.000000	1.000	23.000000	18.000000	1.000	18.000000
0500000	0.090000	1.000	0.090000	0.140000	1.000	0.140000	0.075000	1.000	0.075000

5th Round

1050

315-8168

Sl. No.	Chemical Name	Treatment	Pond Discharge Concentration	Max of Reported Values Listed for Pond Samples	Unit	Aluminum	Antimony	Arsenic (Human)	Arsenic (Aquatic)	Beryllium	Cadmium	Chromium III	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Zinc	Chlorides	Ammonia (as N)	Nitrates (as N)	
5		TREATMENT POND (TREATMENT POND EFFLUENT SAMPLES)			mg/l	0.650000	0.000119	0.001111	0.001900	0.000677	0.000192	0.000800	0.002700	1.000000	0.000985	0.039000	0.000036	0.002200	0.001500	0.000400	0.000289	0.019000	27.000000	2.600000	0.500000	
6		TREATMENT POND / EFFLUENT			mg/l	0.110000	0.000119	0.001900	0.001620	0.000677	0.000192	0.000800	0.002700	1.000000	0.000985	0.039000	0.000036	0.002200	0.001500	0.000400	0.000289	0.019000	21.000000	0.060000	previous maximum	
7		TREATMENT POND / EFFLUENT			mg/l	0.650000	0.000111	0.001900	0.001620	0.000677	0.000192	0.000800	0.002700	1.000000	0.000985	0.039000	0.000036	0.002200	0.001500	0.000400	0.000289	0.019000	13.000000	0.040000	4/26/06 - 7/24/07	
		TREATMENT POND / EFFLUENT			mg/l	0.150000	0.000158	0.001500	0.001700	0.000660	0.000100	0.000250	0.000730	1.000000	0.000753	0.042000	0.000024	0.001300	0.001600	0.000200	0.000289	0.004800	27.000000	2.600000	27.000000	
		TREATMENT POND / EFFLUENT			mg/l	0.580000	0.000099	0.001200	0.001500	0.000660	0.000430	0.000830	0.001000	1.000000	0.000753	0.034000	0.000029	0.001300	0.001600	0.000500	0.000200	0.000850	0.002580	16.000000	0.430000	16.000000
		TREATMENT POND / EFFLUENT			mg/l	0.320000	0.000133	0.001600	0.001600	0.000108	0.000430	0.000830	0.001000	1.000000	0.000753	0.034000	0.000029	0.001300	0.001600	0.000500	0.000200	0.000850	0.002580	20.000000	1.500000	20.000000
10		SPECIFIED FGD WWT	DISCHARGE CONCENTRATIONS		mg/l	2.0000	0.5000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	1.0000	0.1000	3.0000	0.00100000	1.0000	9.0000	0.000500	0.000200	0.6000	0.1000	18.000.0000	350.0000	350.0000
12		CRITERIA USED																								
13		NEW HAMPSHIRE DES SURFACE WATER QUALITY REGULATIONS Table 1703.1 (as provided by PSNH)			mg/l																					

Ammonia and Nitrate are not WWT's Performance Values. These are worst case values based on all ammonia slip reporting to WWT's as ammonia or nitrate, which were acceptable for meeting WQC at station outfall.

ATTACHMENT A Calculation 21-05-300-006

CHEMICAL NAME	RIVER DISCHARGE CONCENTRATION (AVERAGE OF VALUES LISTED FOR 5 SAMPLES) mg/l	RIVER DISCHARGE CONCENTRATION (DISSOLVED) (CORRECTED FOR FUTURE UPSTREAM LOADING AS CALCULATED BY NHDES, EXCLUDING SAMPLE DONE BY 7/15/2010)	MULTIPLIER FOR CORRECTING FROM DISSOLVED TOTAL CONCENTRATION	1		2		Correction Multiplier (Hardness = 25)	Total Metals River Discharge Concentration	Correction Multiplier (Hardness = 25)	Total Metals River Discharge Concentration	Correction Multiplier (Hardness = 25)	Total Metals River Discharge Concentration	Correction Multiplier (Hardness = 25)	Total Metals River Discharge Concentration	Correction Multiplier (Hardness = 25)	Total Metals River Discharge Concentration	Correction Multiplier (Hardness = 25)	Total Metals River Discharge Concentration	Correction Multiplier (Hardness = 25)	Total Metals River Discharge Concentration		
				RIVER DISCHARGE CONCENTRATION (TOTAL) (DISSOLVED CORRECTED BY MULTIPLIER) (CORRECTED FOR FUTURE UPSTREAM LOADING AS CALCULATED BY NHDES, EXCLUDING SAMPLE DONE BY 7/15/2010) mg/l	7/16/2009 RIVER DISCHARGE CONCENTRATION (4860 CFS) mg/l	7/16/2009 RIVER DISCHARGE CONCENTRATION (4860 CFS) mg/l	7/16/2009 RIVER DISCHARGE CONCENTRATION (4860 CFS) mg/l															8/17/2009 RIVER DISCHARGE CONCENTRATION (3530 CFS) mg/l	8/17/2009 RIVER DISCHARGE CONCENTRATION (3530 CFS) mg/l
METALS																							
Aluminum	0.045360	0.050070	1.000	0.050070	0.060000	1.000	0.060000	0.060000	0.060000	1.000	0.060000	0.043200	1.000	0.043200	0.033400	1.000	0.033400	0.030200	1.000	0.030200	0.00044	1.000	0.00044
Antimony	0.000046	0.000140	1.000	0.000140	0.000053	1.000	0.000053	0.000043	1.000	0.000043	0.000044	1.000	0.000044	0.000047	1.000	0.000047	0.000044	1.000	0.000044	0.00044	1.000	0.00044	
Arsenic (Human)	0.000364	0.000410	1.000	0.000410	0.000290	1.000	0.000290	0.000470	1.000	0.000470	0.000360	1.000	0.000360	0.000320	1.000	0.000320	0.000380	1.000	0.000380	0.000380	1.000	0.000380	
Arsenic (Aquatic)	0.000364	0.000410	1.000	0.000410	0.000290	1.000	0.000290	0.000470	1.000	0.000470	0.000360	1.000	0.000360	0.000320	1.000	0.000320	0.000380	1.000	0.000380	0.000380	1.000	0.000380	
Beryllium	0.000060	0.000109	1.000	0.000109	0.000060	1.000	0.000060	0.000060	1.000	0.000060	0.000060	1.000	0.000060	0.000060	1.000	0.000060	0.000060	1.000	0.000060	0.000060	1.000	0.000060	
Cadmium	0.000021	0.000044	0.967	0.000046	0.000020	0.967	0.000021	0.000020	0.967	0.000021	0.000020	0.967	0.000021	0.000020	0.967	0.000020	0.000021	0.967	0.000021	0.000020	0.967	0.000020	
Chromium III	0.000212	0.000251	0.860	0.000291	0.000110	0.860	0.000128	0.000100	0.860	0.000116	0.000108	0.860	0.000116	0.000111	0.860	0.000111	0.000116	0.860	0.000116	0.000130	0.860	0.000130	
Copper	0.000560	0.001144	0.960	0.001192	0.000540	0.960	0.000563	0.000560	0.960	0.000563	0.000560	0.960	0.000563	0.000560	0.960	0.000560	0.000567	0.960	0.000567	0.000130	0.960	0.000130	
Iron	0.272000	0.297500	1.000	0.297500	0.300000	1.000	0.300000	0.300000	1.000	0.300000	0.300000	1.000	0.300000	0.300000	1.000	0.300000	0.300000	1.000	0.300000	0.000448	1.000	0.000448	
Lead	0.000120	0.000189	0.993	0.000190	0.000134	0.993	0.000135	0.000147	0.993	0.000148	0.000147	0.993	0.000148	0.000121	0.993	0.000121	0.000122	0.993	0.000122	0.000071	0.993	0.000071	
Manganese	0.027200	0.023750	1.000	0.023750	0.025000	1.000	0.025000	0.021000	1.000	0.021000	0.021000	1.000	0.021000	0.025000	1.000	0.025000	0.024000	1.000	0.024000	0.041000	1.000	0.041000	
Mercury	0.000001	0.000014	1.000	0.000014	0.000011	1.000	0.000011	0.000013	1.000	0.000013	0.000011	1.000	0.000011	0.000023	1.000	0.000023	0.000014	1.000	0.000014	0.000001	1.000	0.000001	
Nickel	0.000260	0.000400	0.997	0.000401	0.000390	0.997	0.000390	0.000200	0.997	0.000200	0.000200	0.997	0.000200	0.000300	0.997	0.000300	0.000300	0.997	0.000300	0.000001	0.997	0.000001	
Selenium	0.000520	0.000618	1.000	0.000618	0.000600	1.000	0.000600	0.000500	1.000	0.000500	0.000500	1.000	0.000500	0.000500	1.000	0.000500	0.000500	1.000	0.000500	0.000200	1.000	0.000200	
Silver	0.000024	0.000181	0.850	0.000190	0.000024	0.850	0.000024	0.000028	0.850	0.000024	0.000028	0.850	0.000024	0.000024	0.850	0.000024	0.000024	0.850	0.000024	0.000024	0.850	0.000024	
Thallium	0.000009	0.000044	1.000	0.000044	0.000006	1.000	0.000006	0.000012	1.000	0.000012	0.000010	1.000	0.000010	0.000008	1.000	0.000008	0.000008	1.000	0.000008	0.000012	1.000	0.000012	
Zinc	0.001935	0.003546	0.978	0.003628	0.002900	0.978	0.002900	0.002045	0.978	0.002045	0.002147	0.978	0.002147	0.002800	0.978	0.002800	0.001870	0.978	0.001870	0.001490	0.978	0.001490	
Chlorides	18.200000	18.250000	1.000	18.250000	14.000000	1.000	14.000000	17.000000	1.000	17.000000	19.000000	1.000	19.000000	23.000000	1.000	23.000000	18.000000	1.000	18.000000	18.000000	1.000	18.000000	
Ammonia (as N)	0.500000	0.651385	1.000	0.651385	0.050000	1.000	0.050000	0.050000	1.000	0.050000	0.090000	1.000	0.090000	0.090000	1.000	0.090000	0.070000	1.000	0.070000	0.070000	1.000	0.070000	
Nitrates (as N)	0.500000	0.510074	1.000	0.510074	previous maximum 12/06/05 ~ 7/24/07	1.000	0.050000	0.050000	1.000	0.050000	0.090000	1.000	0.090000	0.090000	1.000	0.090000	0.070000	1.000	0.070000	0.070000	1.000	0.070000	

gave
a 6 samples
including 3/31/10 ⇒ 11 mg/l
↓
17 mg/l