Pennichuck Water Works, Inc.
PWW-MVD Emergency Contract
DW 21-134
Reconcilation of Final expenses
1/30/23
Revised 3/21/2023 per Final Audit Report

PWW Core Plant Finished Water Pumpage -		6,685,020,000	MG	between Oct 1, 2021 and Dec 31, 2022
		8,937,193	CCF	between Oct 1, 2021 and Dec 31, 2022
MVD Purchased Water -		409,325	CCF	between Oct 1, 2021 and Dec 31, 2022
Percentage of PWW water used by MVD -		4.58%	during the emergency contract period	

Total Variable Expenses during Contract period -

Total Actual Electric Expense -	$	1,526,667.87	
Total Actual Chemical Expense -	$	2,396,613.76	
Total Actual Cost of Carbon -	$	1,791,153.00	Based on 15 months usage of beds of carbon that are projected to last 18 months
Total Actual Variable Expenses -	$	5,714,434.63	between Oct 1, 2021 and Dec 31, 2022
MVD's share of actual Variable Expenses -	$	261,722.12	between Oct 1, 2021 and Dec 31, 2022
MVD's Total Volumetric Payment -	$	308,603.75	between Oct 1, 2021 and Dec 31, 2023
PWW owes MVD -	$	46,881.63	

Pennichuck Water Works, Inc.
PWW-MVD Emergency Contract
DW 21-134
Reconcilation of Final expenses
Summation of PWW Bills during emergency contract period.
Revised 3/21/2023 per Final Audit Report

Read Dates						
From	**To**	**Previous Reading**	**Current Reading**	**Consumption (CCF)**	**Current Charges**	**MVD Usage Charges**[1]
10/6/21	10/29/21	60,480	70,705	10,225	$42,545.03	$41,206.75
10/29/21	11/29/21	70,705	101,160	30,455	$21,839.22	$20,404.85
11/29/21	1/2/22	101,160	139,625	38,465	$28,253.85	$25,771.55
1/2/22	1/28/22	139,625	170,895	31,270	$23,951.75	$20,950.90
1/28/22	2/26/22	170,895	204,610	33,715	$25,653.78	$22,589.05
2/26/22	4/1/22	204,610	241,460	36,850	$27,836.15	$24,689.50
4/1/22	4/29/22	241,460	271,585	30,125	$24,413.34	$20,183.75
4/29/22	5/27/22	271,585	287,175	15,590	$14,143.17	$10,445.30
5/27/22	7/1/22	287,175	326,080	38,905	$30,617.13	$26,066.35
7/1/22	7/29/22	326,080	357,845	31,765	$24,496.11	$21,282.55
7/29/22	9/2/22	357,845	398,665	40,820	$30,894.21	$27,349.40
9/2/22	9/30/22	398,665	422,570	23,905	$18,942.37	$16,016.35
9/30/22	10/28/22	422,570	453,475	30,905	$24,278.76	$20,706.35
10/28/22	12/2/22	453,475	468,470	14,995	$12,504.32	$10,046.65
12/2/22	12/30/22	468,470	469,805	1,335	$3,341.27	$894.45
	Total Amount of CCF's billed to MVD during Emergency Contract Period -			409,325	$353,710.46	$308,603.75

1. Charge for volumetric usage.

Pennichuck Water Works, Inc
DW21-134
Projected WTP Variable Production Expenses
Attachment DOE 2-1
10/25/21
Revised 3/3/2023 per AR's

	21-Oct	21-Nov	21-Dec	**Jan. 2022**	**Feb. 22**	**Var**
Actual WTP finished water production per month in millions of gallons -	383.99	346.81	358.57	374.06	324.88	
Actual 2022 Electric Costs per million gallons -	$ 150.98	$ 152.18	$ 190.25	$ 155.28	$ 144.35	
Actual 2022 Chemical Costs (including residuals disposal) per million gallons -	$ 295.10	$ 321.89	$ 306.34	$ 304.71	$ 303.12	
Total Variable Costs (not including Merrimack River station electricity) per MG -	$ 446.08	$ 474.07	$ 496.59	$ 459.99	$ 447.47	
Merrimack River Electric cost/mg of finished water -	$ 36	$ 25	$ 43	$ 62	$ 13	
Total Variable Costs w/ Merrimack River per MG before GAC consideration -	$ 482	$ 499	$ 539	$ 522	$ 461	
Variable Cost/CCF w/ Merrimack River before GAC consideration -	$ 0.36	$ 0.37	$ 0.40	$ 0.39	$ 0.34	

GAC Analysis

Cost/dual filter bed with virgin GAC -	$ 358,231	Based on 2022 Ca
Cost for 6 dual bed filters virgin GAC -	$ 2,149,384	

iable Costs of Production:

	22-Mar		22-Apr		22-May		22-Jun		22-Jul		22-Aug		22-Sep		22-Oct		22-Nov
	354.80		369.98		517.97		618.03		709.75		692.62		515.39		432.57		340.51
$	132.40	$	151.15	$	150.97	$	143.08	$	150.93	$	130.11	$	140.95	$	130.60	$	134.97
$	405.80	$	311.08	$	368.61	$	386.11	$	385.25	$	385.99	$	357.84	$	359.58	$	381.42
$	538.21	$	462.23	$	519.57	$	529.18	$	536.18	$	516.10	$	498.80	$	490.18	$	516.39
$	52	$	51	$	50	$	60	$	53	$	57	$	68	$	83	$	86
$	590	$	514	$	570	$	589	$	589	$	573	$	567	$	573	$	602
$	0.44	$	0.38	$	0.43	$	0.44	$	0.44	$	0.43	$	0.42	$	0.43	$	0.45

ılgon Bills

22-Dec	Totals
345.09	6685.02
$ 141.04	
$ 414.45	
$ 555.49	
$ 48	
$ 604	
$ 0.45	

Pennichuck Water Works, Inc
DW21-134
Projected Electrical Production Expenses
Attachment DOE 2-1
10/25/21
Revised 3/21/2023 per Final Audit Report

	2021				
	Oct	**Nov**	**Dec**	**Jan**	**Feb**
Actual Gallons Pumped in millions of gallons -	383.99	346.81	358.57	374.06	324.88
Actual KWH consumed per month @ WTP -	474,547	440,160	462,512	392,017	333,559
actual KW Demand (peak value per month) -	787			759	609
Actual Total Electric cost/month	**$ 57,974.25**	**$ 52,778.58**	**68,218.46**	**$ 58,083.91**	**$ 46,897.35**
Electric cost/MG	**$ 150.98**	**$ 152.18**	**$ 190.25**	**$ 155.28**	**$ 144.35**
Merrimack River Pumps station:				**Jan**	**Feb**
Actual Merimack River Electrical C Delivery	$ 9,884.50	$ 8,379.39	$ 11,600.97	$ 11,794.72	$ 7,408.78
Supply	$ 13,816.60	$ 8,645.78	$ 15,317.80	$ 23,135.65	$ 4,293.52
Estimated Merrimack River 2022 Electric cost/mg -	**$ 35.98**	**$ 24.93**	**$ 42.72**	**$ 61.85**	**$ 13.22**

2022

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
354.80	369.98	517.97	618.03	709.75	692.62	535.20	432.57	340.51
336,997	393,737	543,322	627,572	802,948	679,153	557,077	412,650	323,242
505	750	1083	1153	1176	1188	1061	807	688
$ 46,977.13	**$ 55,922.59**	**$ 78,196.42**	**$ 88,425.61**	**$ 107,124.02**	**$ 90,114.26**	**$ 75,438.43**	**$ 56,491.95**	**$ 45,958.52**
$ 132.40	**$ 151.15**	**$ 150.97**	**$ 143.08**	**$ 150.93**	**$ 130.11**	**$ 140.95**	**$ 130.60**	**$ 134.97**

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
$ 9,448.58	$ 9,403.18	$ 15,552.16	$ 17,618.64	$ 17,828.25	$ 16,495.34	$ 15,241.56	$ 15,431.84	$ 14,219.40
$ 18,472.96	$ 18,978.08	$ 26,013.68	$ 36,982.00	$ 37,451.04	$ 39,724.08	$ 36,512.96	$ 35,971.76	$ 29,116.60
$ 52.07	**$ 51.29**	**$ 50.22**	**$ 59.84**	**$ 52.77**	**$ 57.35**	**$ 68.22**	**$ 83.16**	**$ 85.51**

	Dec		Total
	345.09		**5,615**
	350,752		**5,753,026**
	519		
$	**48,670.12**	**$**	**977,271.60**
$	**141.04**	**$**	**146.62**
Rate per KWH -		$	0.1699
	Dec		
$	8,059.65		188,366.96
$	16,596.80		361,029.31
$	**48.09**	**$**	**52.48**

Pennichuck Water Works, Inc
DW21-134
Projected Chemcial Production Expenses
Attachment DOE 2-1
10/25/21

	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22
						Chemical Quantities (lbs)	
Actual WTP Pumpage in millions of gallons	383.99	346.81	358.57	374.1	324.9	354.8	370.0
Actual Variable chemical costs:							
CHLORINE: TREATMENT PLANT	$ 3,822.16	$ 3,615.97	$ 4,622.66	$ 4,743.81	$ 3,713.55	$ 5,096.68	$ 4,354.88
FERRIC CHLORIDE	$ 38,757.02	$ 34,921.19	$ 36,044.63	$ 42,725.76	$ 37,866.53	$ 48,195.30	$ 38,587.02
TKPP DRY	$ 2,363.80	$ 2,111.26	$ 2,239.22	$ 2,239.22	$ 1,727.40	$ 2,175.24	$ 4,405.01
SODIUM HYDROXIDE	$ 24,055.16	$ 20,938.33	$ 20,930.67	$ 23,587.60	$ 21,715.90	$ 50,818.92	$ 29,683.38
CORROSION INHIBITOR	$ 4,879.86	$ 4,024.83	$ 4,476.98	$ 4,840.18	$ 4,254.61	$ 4,721.58	$ 4,321.32
POLYMERS	$ 1,476.75	$ 1,181.40	$ 1,279.85	$ 1,582.82	$ 989.26	$ 1,187.11	$ 1,187.11
MAINT PROC EQ: TP SLUDGE REMOV	$ 37,959.82	$ 44,841.95	$ 40,251.48	$ 34,261.55	$ 28,209.41	$ 31,784.15	$ 32,554.05
Total monthly variable chemical cost:	$ 113,314.57	$ 111,634.93	$ 109,845.49	$ 113,980.94	$ 98,476.66	$ 143,978.98	$ 115,092.77
Actual total Chemical cost/MG	$ 295.10	$ 321.89	$ 306.34	$ 304.71	$ 303.12	$ 405.80	$ 311.08

May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	
518.0	618.0	709.8	692.6	535.2	432.6	340.5	345.1	6705
								Total
$ 7,394.93	$ 9,935.89	$ 11,793.01	$ 12,845.45	$ 8,252.05	$ 6,692.02	$ 6,935.46	$ 8,205.20	$ 102,023.72
$ 64,297.08	$ 77,569.88	$ 86,570.34	$ 85,609.54	$ 58,982.31	$ 50,305.53	$ 38,584.10	$ 41,784.66	$ 780,800.89
$ 6,118.07	$ 7,464.05	$ 9,084.06	$ 8,950.47	$ 6,679.46	$ 5,480.16	$ 4,521.13	$ 4,932.14	$ 70,490.69
$ 60,781.07	$ 77,699.21	$ 93,250.21	$ 78,324.12	$ 53,990.41	$ 43,176.99	$ 37,429.65	$ 37,559.62	$ 673,941.24
$ 5,396.10	$ 11,552.34	$ 9,980.21	$ 13,152.54	$ 9,180.11	$ 7,118.18	$ 5,950.48	$ 7,774.01	$ 101,623.33
$ 1,582.82	$ 2,077.45	$ 1,780.67	$ 2,671.00	$ 1,932.82	$ 1,478.04	$ 1,364.34	$ 1,250.65	$ 23,022.09
$ 45,357.40	$ 52,326.24	$ 60,970.82	$ 65,792.73	$ 52,500.01	$ 41,293.81	$ 35,090.92	$ 41,517.46	$ 644,711.80
$ 190,927.47	$ 238,625.06	$ 273,429.32	$ 267,345.85	$ 191,517.17	$ 155,544.73	$ 129,876.08	$ 143,023.74	$ 2,396,613.76
$ 368.61	$ 386.11	$ 385.25	$ 385.99	$ 357.84	$ 359.58	$ 381.42	$ 414.45	**$ 357.45**
							average:	$ 352.49