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APPENDIX

Part 1

Run code A

Run No. A - 1		Raw	Treated	Remark
Dimension	Unit			
pH	-	9.0	6.8	
Conductivity	micro-mho	0.85×10^3	0.78×10^3	
Temperature	C	32	52	
TS	mg/l	2050	12*4	
SS	"	48	-	
BOD	"	1100	460	
COD	"	1665	765	
Alk. as CaCO_3	"	1480	1500	
Acid. as CaCO_3	"	0	176	
Amonia - N	"	0	0	
Organic - N	"	8.9	6.7	
Nitrate - N	"	0	0	
Chloefide	"	28	0	

Part 1

Run No. A - 1

Electricity dosage

Current, amp.	=	5
Voltage, volt.	=	14.5
Time, minute	=	30
Electrical charge, coulomb	=	9000
Power, watt - hour	=	36.24
kwh/1000 gal.	=	203.1
Treatment cost/1000 gal., baht	=	101.5

Electricity loss in cell

Resistance in cell	=	1.53
IR drop, volt	=	7.67
Power drop, watt - hour	=	19.17
kwh/1000 gal.	=	107.4
Power loss/1000 gal., baht	=	53.7

Part 1

Run code A

Run No. A - N		Raw	Treated	Remark
Dimension	Unit			
pH	-	9.0	6.6	
Conductivity	micro-mho	0.85×10^3	0.7×10^3	
Temperature	°C	32	49	
TS	mg/l	2050	1256	
SS	"	48	-	
BOD	"	1100	551	
COD	"	1665	863	
Alk. as CaCO_3	"	1480	1360	
Acid, as CaCO_3	"	0	280	
Amonia - N	"	0	0	
Organic - N	"	8.9	6.0	
Nitrate - N	"	0	-	
Orthophosphate	"	0	0	
Chloride	"	28	0	

Part 1

Run No. A - 2

Electricity dosage

Current, amp.	= 4.5
Voltage, volt	= 13.1
Time, minute	= 30
Electrical charge, coulomb	= 8100
Power, watt-hour	= 29.47
kwh/1000 gal.	= 165.2
Treatment cost/1000 gal., baht	= 82.6

Electricity loss in cell

Resistance in cell	= 1.61
IR drop, voly	= 7.25
Power drop, matt-hour	= 16.33
kwh/1000 gal	= 91.56
Power loss/1000 gal, daht	= 45.7

Part 1

Run code A

Run NO. A-3		Raw	Treated	Remark
Dimension	Unit			
PH	-	9.0	6.5	
Conductivity		micro-mho	0.85×10^3	
Temperature	°C	32	45	
T.S	mg/l	2050	1288	
SS	"	48	-	
BOD	"	1100	620	
COD	"	1665	992	
Alk. as CaCO_3	"	1480	1400	
Acid. as CaCO_3	"	0	288	
Amonio - N	"	0	0	
Organic - N	"	8.9	6.7	
Nitrate - N	"	0	-	
Orthophophote	"	0	0	
Chloride	"	28	0	

Part 1

Run No. A - 3

Electricity dosage

Current, amp.	=	4
Voltage, volt.	=	12.15
Time, minute	=	30
Electrical charge, coulomb	=	7200
Power, watt - hour	=	24.3
kwh/1000 gal.	=	136.2
Treatment cost/1000 gal., baht	=	68.1

Electricity loss in cell

Resistance in cell	=	1.61
IR drop, volt	=	6.45
Power drop, watt - hour	=	12.9
kwh/1000 gal.	=	72.3
Power loss/1000 gal., baht	=	36.1

Part 1

Run code A

Run No. A-4		Raw	Treated	Remark
Dimension	Unit			
pH	-	9.0	6.4	
Conductivity	micro-mho	0.85×10^3	0.7×10^3	
Temperature	C	32	43	
TS	mg/l	2050	1356	
SS	"	48	-	
BOD	"	1100	690	
COD	"	1665	1053	
Alk.as CaCO_3	"	1480	1332	
Acid.as CaCO_3	"	0	272	
Amonia - N	"	0	0	
Organic- N	"	8.9	6.2	
Nitrate - N	"	0	-	
Orthophosphate	"	0	0	
Chloride	"	28	0	

Part 1

Run No. A - 4

Electricity dosage

Current, amp.	=	3.5
Voltage, volt.	=	10.84
Time, minute	=	30
Electrical charge, coulomb	=	6300
Power, watt - hour	=	18.97
kwh/1000 gal.	=	106.3
Treatment cost/1000 gal., baht	=	53.1

Electricity loss in cell

Resistance in cell	=	1.61
IR drop, volt	=	5.64
Power drop, watt - hour	=	9.88
kwh/1000 gal.	=	55.39
Power loss/1000 gal., baht	=	27.6

Part 1

Run code A

Run No. A - 5		Raw	treated	Remark
Dimension	Unit			
pH	-	9.0	6.3	
Conductivity	micro-mho	0.85×10^3	0.72×10^3	
Temperature	C	32	38	
TS	mg/l	2050	1478	
SS	"	48	-	
BOD	"	1100	760	
COD	"	1665	1216	
Alk.as CaCO_3	"	1480	1348	
Acd.as CaCO_3	"	0	260	
Amonia - N	"	0	0	
Organic - N	"	8.9	5.05	
Nitrate - N	"	0	0.4	
Orthophosphat	"	0	0	
Chloride	"	28	0	

Part 1

Run No. A - 5

Electricity dosage

Current, amp.	=	3
Voltage, volt.	=	9.09
Time, minute	=	30
Electrical charge, coulomb	=	5400
Power, watt - hour	=	13.64
kwh/1000 gal.	=	76.4
Treatment cost/1000 gal., baht	=	38.2

Electricity loss in cell

Resistance in cell	=	1.61
IR drop, volt	=	4.83
Power drop, watt - hour	=	7.25
kwh/1000 gal.	=	40.6
Power loss/1000 gal., baht	=	20.3

Part 1

Run code B

Run No. B-1		Raw	Treated	Remark
Dimension	Unit			
pH	-	9.0	6.7	
Conductivity	micro-mho	0.85×10^3	0.67×10^3	
Temperature	°C	31	54	
TS	mg/l	2050	1050	
SS	"	48	-	
BOD	"	1100	255	
COD	"	1665	600	
Alk.as CaCO ₃	#	1480	1288	
Acd.as CaCO ₃	"	0	220	
Amonia - N	"	0	0	
Organic - N	"	8.9	8.4	
Nitrate - N	"	0	-	
Orthophosphate	"	0	0	
Chloride	"	28	0	

Part 1

Run No. B - 1

Electricity dosage

Current, amp.	= 4.5
Voltage, volt.	= 12.25
Time, minute	= 45
Electrical charge, coulomb	= 12150
Power, watt - hour	= 41.34
Kwh/1000 gal.	= 231.7
Treatment cost / 1000 gal., baht	= 115.8

Electricity loss in cell

Resistance in cell	= 1.64
IR drop, volt	= 7.26
Power drop, watt - hour	= 24.98
kwh/1000 gal.	= 140.0
Power loss / 1000 gal., baht	= 70

Part 1

Run code B

Run No. B - 2		Raw	Treated	Remark
Dimension	Unit			
pH	-	9.0	6.6	
Conductivity	micro-mho	0.85×10^3	0.7×10^3	
Temperature	C	31	48	
TS	mg/l	2050	1158	
SS	"	48	-	
BOD	"	1100	310	
COD	"	1665	680	
Alk.as CaCO ₃	"	1480	1450	
Acd.as CaCO ₃	"	0	260	
Amonia - N	"	0	0	
Organic - N	"	8.9	8.4	
Nitrate - N	"	0	0.05	
Orthophosphat	"	0	0	
Chloride	"	28	0	

Part 1

Run No. B - 2

Electricity dosage

Current, amp.	= 4
Voltage, volt.	= 12
Time, minute	= 45
Electrical charge, coulomb	= 10800
Power, watt - hour	= 36
kwh/1000 gal.	= 201.8
Treatment cost / 1000 gal., baht	= 100.9

Electricity loss in cell

Resistance in cell	= 1.61
IR drop, volt	= 6.45
Power drop, watt - hour	= 19.35
kwh/1000 gal.	= 108.4
Power loss / 1000 gal., baht	= 54.2

Part 1

Run code B

Run No. B - 3		Raw	Treated	Remark
Dimension	Unit			
pH	-	9.0	6.5	
Conductivity	micro-mho	0.85×10^3	0.7×10^3	
Temperature	°C	31	46	
T.S	mg/l	2050	1228	
SS	"	48	-	
BOD	"	1100 ⁷	430	
COD	"	1665	757	
Alk.as CaCO ₃	"	1480	1520	
Acid.as CaCO ₃	"	0	280	
Amonia - N	"	0	0	
Organic - N	"	8.9	7.85	
Nitrate - N	"	0	-	
Orthophophate	"	0	0	
Chloride	"	28	0	

Part 1

Run No. B - 3

Electricity dosage

Current, amp.	= 3.5
Voltage, volt.	= 11.5
Time, minute	= 45
Electrical charge, coulomb	= 9450
Power, watt - hour	= 30.19
kwh/1000 gal.	= 169.2
Treatment cost / 1000 gal, baht	= 84.6

Electricity loss in cell

Resistance in cell	= 1.61
IR drop, volt	= 5.64
Power drop, watt - hour	= 14.82
kwh/1000 gal.	= 83.0
Power loss / 1000 gal., baht	= 41.5

Part 1

Run code B

Run No. B - 4		Raw	Treated	Remark
Dimension	Unit			
pH	-	9.0	6.4	
Conductivity	micro-mho	0.85×10^3	0.7×10^3	
Temperature	C	31	43	
TS	mg/l	2050	1140	
SS	"	48	-	
BOD	"	1100	530	
COD	"	1165	821	
Alk.as CaCO_3	"	1480	1440	
Acd.as CaCO_3	"	0	332	
Amonia - N	"	0	0	
Organic - N	"	8.9	8.4	
Nitrate - N	"	10	-	
Orthophosphate	"	0	0	
Chloride	"	28	0	

Part 1

Run No. B - 4

Electricity dosage

Current, amp.	=	3
Voltage, volt	=	10.47
Time, minute	=	45
Electrical charge, coulomb	=	8100
Power, watt - hour	=	23.57
kwh/1000 gal.	=	132.1
Treatment cost / 1000 gal., baht	=	66.0

Electricity loss in cell

Resistance in cell	=	1.61
IR drop, volt	=	4.83
Power drop, watt - hour	=	10.89
kwh/1000 gal.	=	61.0
Power loss / 1000 gal., baht	=	30.5

Part 1

Run code B

Run No. B - 5		Raw	Treated	Remark
Dimension	Unit			
pH	-	9.0	6.5	
Conductivity	micro-mho	0.85×10^3	0.75×10^3	
Temperature	°C	31	40	
Ts	mg/l	2050	1270	
SS	"	48	-	
BOD	"	1100	635	
COD	"	1665	978	
Alk. as CaCO ₃	"	1480	1480	
Acid. as CaCO ₃	"	0	288	
Amonia - N	"	0	0	
Organic - N	"	8.9	8.25	
Nitrate - N	"	0	-	
Orthophosphate	"	0	0	
Chloride	"	28	0	

Part 1

Run No. B - 5

Electricity dosage

Current, amp.	=	2.5
Voltage, volt.	=	9.16
Time, minute	=	45
Electrical charge, coulomb	=	6750
Power, watt - hour	=	17.18
kwh/1000 gal.	=	96.3
Treatment cost / 1000 gal., baht	=	48

Electricity loss in cell

Resistance in cell, ohm	=	1.56
IR drop. volt	=	3.9
Power drop. watt - hour	=	7.32
kwh/1000 gal.	=	41.0
Power loss / 1000 gal., baht	=	20.5

Part 1

Run code C

Run No C - 1		Raw	Treated	Remark
Dimension	Unit			
pH	-	9.0	6.6	
Conductivity	micro-mho	0.85×10^3	0.7×10^3	
Temperature	°C	31	49	
TS	mg/l	2050	936	
SS	"	48	-	
BOD	"	1100	200	
COD	"	1665	323	
Alk.as CaCO_3	"	1480	1520	
Acid.as CaCO_3	"	0	120	
Amonia - N	"	0	0	
Organic - N	"	8.9	6.72	
Nitrate - N	"	0	-	
Orthophosphate	"	0	0	
Chlovide	"	28	0	
Chlovide	"	28	0	

Part 1

Run No. C - 5

Electricity dosage

Current, amp.	=	4
Voltage, volt.	=	10.66
Time, minute	=	60
Electrical charge, coulomb	=	14400
Power, watt-hour	=	42.65
Kwh / 1000 gal.	=	239.1
Treatment cost / 1000 gal., baht	=	119.5

Electricity loss in cell

Resistance in cell	=	1.61
IR drop, volt	=	6.45
Power drop, watt .. hour	=	25.80
Kwh / 1000 gal.	=	144.6
Power loss / 1000 gal., baht	=	72.3

Part 1

Run code C

Run NO.	C - 2	Raw	Treated	Remark
Dimension	Unit			
PH	-	9.0	6.3	
Conductivity	micro-mho	0.85×10^3	0.7×10^3	
Temperature	°C	-	45	
TS	mg / l	2050	1040	
SS	"	48	-	
BOD	"	1100	310	
COD	"	1665	533	
ALK. as CaCO_3	"	1480	1240	
Acid. as CaCO_3	"	0	0	
Amonia = N	"	.0	.0	
Organic - N	"	8.9	6.9	
Nitrate - N	"	0	-	
Orthophosphate	"	0	0	
Chloride	"	28	0	

Part 1

Run No. C - 2

Electricity dosage

Current, amp	=	3.5
Voltage, volt	=	9.56
Time, minute	=	60
Electrical charge, coulomb	=	12600
Power, watt-hour	=	33.46
Kwh/1000 gal.	=	187.6
Treatment Cost/1000 gal., baht	=	93.8

Electricity loss in cell

Resistance in cell	=	1.61
IR drop, volt	=	5.64
Power drop, watt-hour	=	19.76
Kwh/1000 gal.	=	110.7
Power loss/1000 gal., baht	=	55.3

Part 1

Run code C

Run No. C - 3		Raw	Treated	Remark
Dimension	Unit			
pH	-	9.0	6.1	
Conductivity	micro-mho	0.85×10^3	0.7×10^3	
Temperature	°C		43	
TS	mg/l	2050	1100	
SS	"	48	-	
BOD	"	1100	400	
COD	"	1665	662	
Alk.as CaCO ₃	"	1480	1080	
Acid.as CaCO ₃	"	0	380	
Amonia - N	"	0	0	
Organic - N	"	8.9	7.25	
Nitrate - N	"	0	-	
Orthophosphate	"	0	0	
Chloride	"	28	0	

Part 1

Run No. C-3

Electricity dosage

Current, amp.	=	3.0
Voltage, volt.	=	8.4
Time, minute	=	60
Electrical charge, coulomb	=	10800
Power, watt - hour	=	25.21
kwh/1000 gal.	=	141.3
Treatment cost/1000 gal., baht	=	70.6

Electricity loss in cell

Resistance in cell	=	1.61
IR drop, volt	=	4.83
Power drop, watt - hour	=	14.52
kwh/1000 gal.	=	81.4
Power loss/1000 gal., baht	=	40.7

Part 1

Run code C

Run No. C - 4		Raw	Treated	Remark
Dimension	Unit			
pH	-	9.0	6.1	
Conductivity	micro-mho	0.85×10^3	0.73×10^3	
Temperature	°C	32	39	
TS	mg/l	2050	1160	
SS	"	48	-	
BOD	"	1100	520	
COD	"	1665	793	
Alk.as CaCO ₃	"	1480	1080	
Acd.as CaCO ₃	"	0	304	
Amonia - N	"	0	0	
Organic - N	"	8.9	7.7	
Nitrate - N	"	0	-	
Orthophosphate	"	0	0	
Chloride	"	28	0	

Part 1

Run No. C - 4

Electricity dosage

Current, amp.	= 2.5
Voltage, volt.	= 7.6
Time, minute	= 60
Electrical charge, coulomb	= 9000
Power, watt - hour	= 19
kwh/1000 gal	= 106.5
Treatment cost/1000 gal., baht	= 53.2

Electricity loss in cell

Resistance in cell	= 1.58
IR drop, volt	= 3.95
Power drop, watt - hour	= 9.89
kwh/1000 gal.	= 55.4
Power loss/1000 gal., baht	= 27.7

Part 1

Run code C

Run No. 3 - 5		Raw	Treated	Remark
Dimension	Unit			
pH	-	9.0	6.1	
Conducivity	micro-mho	0.85×10^3	0.75×10^3	
Temperature	°C	32	36	
TS	mg/l	2050	1512	
SS	"	48	-	
BOD	"	1100	600	
COD	"	1665	937	
Alk.as CaCO_3	"	1480	1160	
Acid.as CaCO_3	"	0	408	
Amonia - N	"	0	0	
Organic - N	"	8.9	8.35	
Nitrate - N	"	0	-	
Orthophosphate	"	0	0	
Choride	"	28	0	

Part 1

Run No. C - 5

Electricity dosage

Current, amp.	=	2
Voltage, volt	=	6.94
Time, minute	=	60
Electrical charge, coulomb	=	7200
Power, watt - hour	=	13.88
kwh/1000 gal.	=	77.8
Treatment cost / 1000 gal., baht	=	38.9

Electricity loss in cell

Resistance in cell, ohm	=	1.56
IR drop. volt	=	3.12
Power drop. watt - hour	=	6.25
kwh/1000 gal.	=	35.0
Power loss / 1000 gal., baht	=	17.5

Part 1

Run code D

Run No.	D - 1	Raw	Treated	Remark
Dimension	Unit			
pH	-	9.5	7.8	
Conductivity	micro - mho	1.45 10^3	1.37 10^3	
Temperature	c	32	44	
T.S	mg/e	1756	1318	
SS	"	32	-	
BOD	"	960	151	
COD	"	1150	198.5	
Alk. as CaCO_3	"	920	920	
Acid. as CaCO_3	"	0	40	
Amonia - N	"	0	0	
Organic - N	"	5.88	3.64	
Nitrate - N	"	0.05	-	
Orthophosphate	"	0	0	
Chloride	"	76	0	

Part 1

Run No. D - 1

Electricity dosage

Current, amp.	=	3.5
Voltage, volt	=	8.6
Time, minute	=	75
Electrical charge, coulomb	=	15750
Power, watt - hour	=	37.61
kwh/1000 gal.	=	210.8
Treatment cost / 1000 gal., baht	=	105.4

Electricity loss in cell

Resistance in cell	=	0.886
IR drop, watt - hour	=	3.10
Power drop, watt - hour	=	13.57
kwh/1000 gal.	=	76.0
Power loss / 1000 gal., baht	=	38.0



Part 1

Run code D

Run No.	D - 2	Raw	Treated	Remark
Dimension	Unit			
pH	-	9.5	7.6	
Conductivity	micro-mho	1.45×10^3	1.22×10^3	
Temperature	°c	32	40	
T.S.	mg/l	1756	1276	
S.S.	"	32	-	
BOD	"	960	225	
COD	"	1150	244.5	
Alk. as CaCO ₃	"	920	760	
Acd. as CaCO ₃	"	0	60	
Amonia - N	"	0	0	
Organic- N	"	5.88	4.06	
Nitrate - N	"	0.05	-	
Orthophosphate	"	0	0	
Chloride	"	76	0	

Part 1

Run No. D - 2

Electricity dosage

Current, amp.	=	3
Voltage, volt.	=	7.96
Time in minute	=	75
Electrical charge in coulomb	=	13500
Power, watt - hour	=	29.87
kwh/1000 gal.	=	167.4
Treatment cost/1000 gal., baht	=	83.7

Electricity loss in cell

Resistance in cell	=	0.94
IR drop, volt	=	2.83
Power drop, watt - hour	=	10.61
kwh/1000 gal.	=	59.4
Power loss/1000 gal., baht	=	29.7

Part 1

Run code D

Run No. D-3		Raw	Treated	Remark
Dimension	Unit			
PH	-	9.5	7.3	
Conductivity	micro-mho	1.45×10^3	1.2×10^3	
Temperature	°C	32	37	
T.S.	mg/e	1756	1280	
S.S	"	32	37	
BOD	"	960	275	
COD	"	1150	293.5	
Alk. as CaAO_3	"	920	760	
Acid. as CaCO_3	"	0	100	
Amonia - N	"	0	0	
Organic - N	"	5.88	2.52	
Nittrate - N	"	0.05	-	
Orthophosphate	"	0	0	
Chloride	"	76	0	

Part 1

Run No. D - 3

Electricity dosage

Current, amp.	=	2.5
Voltage, volt	=	7.34
Time, minute	=	75
Electrical charge, coulomb	=	11,250
Power, watt-hour	=	22.95
kwh/100 gal.	=	128.6
Treatment cost/1000 gal., baht	=	64.3

Electricity loss in cell

Resistance in cell	=	0.94
IR drop, volt	=	2.36
Power drop, watt-hour	=	7.37
kwh/1000 gal.	=	41.3
Power loss/1000 gal., baht	=	20.6

Part 1

Run code D

Run No. D - 4		Raw	Treated	Remark
Dimension	Unit			
pH	-	9.5	7	
Conductivity	micro-mho	1.45×10^3	1.2×10^3	
Temperature	C	32	35	
TS	mg/l	1756	1284	
SS	"	32	-	
BOD	"	960	320	
COD	"	1150	345	
Alk.as CaCO_3	"	920	760	
Acid.as CaCO_3	"	0	100	
Amonia - N	"	0	0	
Organic - N	"	5.88	2.24	
Nitrae - N	"	0.05	-	
Orthophosphate	"	0	0	
Chloride	"	76	0	



Part 1

Run No. D - 4

Electricity dosage

Current, amp.	= 2
Voltage, volt	= 7
Time, minute	= 75
Electrical charge, coulomb	= 9000
Power, watt-hour	= 17.5
kwh/1000 gal	= 98.1
Treatment cost/1000 gal., baht	= 49.0

Electricity loss in cell

Resistance in cell, ohm	= 0.94
IR drop. volt	= 1.88
Power drop. watt-hour	= 4.71
kwh/1000 gal.	= 26.4
Power loss/1000 gal., baht	= 13.2

Part 1
Run code D

Run No. D - 5		Raw	Treated	Remark
Dimension	Unit			
pH	-	9.5	6.8	
Conductivity	micro-mho	1.45×10^3	12×10^3	
Temperature	C	32	34	
TS	mg/l	1756	1322	
SS	"	32	-	
BOD	"	960	397	
COD	"	1150	425	
Alk.as CaCO_3	"	920	760	
Acd.as CaCO_3	"	0	100	
Amonia - N	"	0	0	
Organic - N	"	5.88	3.64	
Nitrate - N	"	0.05	-	
Orthophosphate	"	0	0	
Chloride	"	76	5	

Part 1

Run No. D - 5

Electricity dosage

Current, amp	=	1.5
Voltage, volt	=	6.2
Time, minute	=	75
Electrical charge, coulomb	=	6750
Power, watt-hour	=	11.62
kwh/1000 gal.	=	65.1
Treatment cost/1000 gal., baht	=	32.5

Electricity loss in cell

Resistance in cell, ohm	=	0.94
IR drop, volt	=	1.41
Power drop, watt-hour	=	2.65
kwh/1000 gal.	=	14.8
Power loss/1000 gal., baht	=	7.4

Part 2

Run code E

Run No. E - 1		Raw	treated	Remark
Dimension	Unit			
pH	-	11.7	8.3	
Conductivity	micro-mho	6.0×10^3	3.5×10^3	pH was
Temperature	C	32	42	adjusted
TS	mg/l	2110	1480	by NaOH
SS	"	60	-	30%
BOD	"	1525	270	
COD	"	1890	541	
Alk.as CaCO_3	"	1408	1144	
Acid.as CaCO_3	"	0	0	
Amonia - N	"	0	0	
Organic - N	"	9.95	7.3	
Nitrate - N	"	0	0.64	
Orthophosphate	"	0	0	
Chlovide	"	41	0	

Part 2

Run No. E - 1

Electricity dosage

Current, amp	=	4
Voltage, volt.	=	7.28
Time, minute	=	60
Electrical charge, coulomb	=	14400
Power, watt-hour	=	29.13
kwh/1000 gal.	=	163.3
Treatment cost/1000 gal., baht	=	81.6

Electricity loss in cell

Resistance in cell, ohm	=	0.26
IR drop, Volt	=	1.05
Power drop, watt-hour	=	4.21
Kwh/1000 gal.	=	23.60
Power loss/1000 gal., baht	=	11.8

* Electricity cost/kwh = 0.5 baht

Part 2

Run code E

Run No. E - 2		Raw	Treated	Remark
Dimension	Unit			
pH	-	8.4	6.9	
Conductivity	micro-mho	0.97×10^3	0.85×10^3	
Temperature	C	32	50	
TS	mg/l	2096	1584	
SS	"	60	-	
BOD	"	1525	440	
COD	"	1890	655	
Alk.as CaCO_3	"	1200	1120	
Acid.as CaCO_3	"	0	40	
Amonia -N	"	0	0	
Organic - N	"	9.95	6.84	
Nitrate - N	"	0	1.0	
Orthophosphate	"	0	0	
Chloride	"	41	0	

Part 2

Run No. E - 2

Electricity dosage

Current, amp.	=	4
Voltage, volt.	=	11.5
Time, minute	=	60
Electrical charge, coulomb	=	14400
Power, watt-hour	=	46
kwh/1000 gal.	=	257.9
Treatment cost/1000 gal., baht	=	128.9

Electricity loss in cell

Resistance in cell, ohm	=	1.32
IR drop, volt	=	5.29
Power drop, watt-hour	=	21.16
Kwh/1000 gal.	=	118.6
Power loss/1000 gal., baht	=	59.3

Part 2

Run code E

Run No. E - 3		Raw	Treated	Remark
Dimension	Unit			
pH	-	7	6.5	pH was adjusted by H ₂ SO ₄ 20%
Conductivity	micro-mho	0.97 x 10 ³	0.86 x 10 ³	
Temperature	°C	32	48	
TS	mg/l	2096	1730	
SS	"	60	-	
BOD	"	1525	500	
COD	"	1890	778	
Alk.as CaCO ₃	"	1200	680	
Acid.as CaCO ₃	"	0	360	
Amonia - N	"	0	0	
Organic - N	"	9.95	7.8	
Nitrate - N	"	0	1.85	
Orthophosphate	"	0	0	
Chloride	"	41	0	

Part 2

Run No. E - 3

Electricity dosage

Current, amp.	=	4
Voltage, volt.	=	10.9
Time, minute	=	60
Electrical charge, coulomb	=	14400
Power, watt-hour	=	43.6
kwh/1000 gal.	=	244.4
Treatment cost/1000 gal., baht	=	122.2

Electricity loss in cell

Resistance in cell, ohm	=	1.366
IR drop, volt	=	5.46
Power drop, watt-hour	=	21.86
kwh/1000 gal.	=	122.5
Power loss/1000 gal., baht	=	61.2

Part 2

Run code E

Run No. E - 4		Raw	Treated	Remark
Dimension	Unit			
pH	-	5	4.2	pH was adjusted by H_2SO_4 20 %
Conductivity	micro-mho	1.1×10^3	1.0×10^3	
Temperature	$^{\circ}C$	32	44	
TS	mg/l	2096	1878	
SS	"	60	-	
BOD	"	1525	660	
COD	"	1890	870	
Alk. as $CaCO_3$	"	160	0	
Acid. as $CaCO_3$	"	380	720	
Amonia - N	"	0	0	
Organic - N	"	9.95	7.8	
Nitrate - N	"	0	1.15	
Orthophosphate	"	0	0	
Chloride	"	41	0	

Part 2

Run No. E - 4

Electricity dosage

Current, amp	=	4
Voltage, volt	=	9.66
Time, minute	=	60
Electrical charge, coulomb	=	14400
Power, watt-hour	=	38.65
Kwh/1000 gal.	=	216.7
Treatment cost/1000 gal., baht	=	108.3

Electricity loss in cell

Resistance in cell, ohm	=	1.19
IR drop, volt	=	4.76
Power drop, watt-hour	=	19.0
kwh/1000 gal.	=	106.5
Power loss/1000 gal., baht	=	53.2

Part 3

Run code F

Run No. F - 1		Raw	Treated	Remark
Dimension	Unit			
pH	-	9.4	7.9	
Conductivity	micro-mho	0.9×10^3	0.85×10^3	
Temperature	°C	32	50	
TS	mg/l	1670	904	
SS	"	40	-	
BOD	"	700	135	
COD	"	1150	234	
Alk.as CaCO ₃	"	1620	1620	
Acd.as CaCO ₃	"	0	0	
Amonia - N	"	0	0	
Organic - N	"	6.7	5.6	
Nitrate - N	"	0.9	-	
Orthophosphate	"	0	0	
Chloride	"	29.2	0	

Part 3

Run No. F - 1

Electricity dosage

Current, amp.	=	4
Voltage, volt.	=	10.87
Time, minute	=	60
Electrical charge, coulomb	=	14400
Power, watt - hour	=	43.47
kwh/1000 gal.	=	243.7
Treatment cost/1000 gal., baht	=	121.8

Electricity loss in cell

Resistance in cell, ohm	=	1.42
IR drop, Volt	=	5.7
Power drop, watt - hour	=	22.86
kwh/1000 gal.	=	128.2
Power loss / 1000 gal., baht	=	64.0

Part 3

Run code F

Run No. F - 2		Raw	Treated	Remark
Dimension	Unit			
pH	-	9.4	7	
Conduetivity	micro-mho	1.2×10^3	0.99×10^3	NaCl was
Temperature	°C	32	45	added
TS	mg/l	1828	946	0.1578gm/l
SS	"	40	-	
BOD	"	700	170	
COD	"	1150	291	
Alk.as CaCO ₃	"	1620	1640	
Acd.as CaCO ₃	"	0	80	
Amonia - N	"	0	0	
Organic - N	"	6.7	2.1	
Nitrate - N	"	0.9	-	
Orthophosphate	"	0	0	
Choride	"	142	12	

Part 3

Run No. F - 2

Electricity dosage

Current, amp.	=	4
Voltage, volt.	=	10.07
Time, minute	=	60
Electrical charge, coulomb	=	14400
Power, watt - hour	=	40.28
kwh/1000 gal.	=	225.8
Treatment cost / 1000 gal., baht	=	112.9

Electricity loss in cell

Resistance in cell, ohm	=	1.14
IR drop, volt	=	4.56
Power drop, watt - hour	=	18.26
kwh/1000 gal.	=	102.4
Power loss / 1000 gal., baht	=	51.2

Part 3

Run code F

Run No. F - 3		Raw	Treated	Remark
Dimension	Unit			
pH	-	9.4	6.8	NaCl was added 0.266 gm/
Conductivity	micro-mho	1.5×10^3	1.25×10^3	
Temperature	°C	32	43	
TS	mg/l	1936	1418	
SS	"	40	-	
BOD	"	700	185	
COD	"	1150	335	
Alk. as CaCO ₃	"	1620	1600	
Acid. as CaCO ₃	"	0	92	
Amonia - N	"	0	0	
Organic - N	"	6.7	0	
Nitrate - N	"	0.9	-	
Orthophosphate	"	0	0	
Chloride	"	244	36	

Part 3

Run No. F - 3

Electricity dosage

Current, amp.	=	4
Voltage, volt	=	9.616
Time, minute	=	60
Electrical charge, coulomb	=	14400
Power, watt - hour	=	38.46
kwh/1000 gal.	=	215.6
Treatment cost / 1000 gal., baht	=	107.8

Electricity loss in cell

Resistance in cell, ohm	=	0.909
IR drop, volt	=	3.63
Power drop, watt - hour	=	14.54
kwh/1000 gal.	=	81.52
Power loss / 1000 gal., baht	=	40.7

Part 3

Run code F

Run No. F - 4		Raw	Treated	Remark
Dimension	Unit			
pH	-	9.4	6.6	
Conduetivity	micro-mho	2.3×10^3	1.58×10^3	NaCl was
Temperature	°C	32	40	added
TS	mg/l	2372	1910	0.7022 gm/l
SS	"	40	-	
BOD	"	700	205	
COD	"	1150	366	
Alk.as CaCO ₃	"	1620	1560	
Acid.as CaCO ₃	"	0	176	
Amonia - N	"	0	0	
Organic - N	"	6.7	0	
Nitrate - N	"	0.9	-	
Orthophophate	"	0	0	
Chloride	"	502	130	

Part 3

Run No. F - 4

Electricity dosage

Current, amp.	= 4
Voltage, volt	= 8.16
Time, minute	= 60
Electrical charge, coulomb	= 14400
Power, watt - hour	= 32.63
kwh/1000 gal.	= 182.9
Treatment cost / 1000 gal., baht	= 91.4

Electricity loss in cell

Resistance in cell, ohm	= 0.64
IR drop, volt	= 2.57
Power drop, watt - hour	= 10.30
kwh/1000 gal.	= 57.7
Power loss / 1000 gal., baht	= 28.8

Part 3

Run code F

Run No. F - 5		Raw	Treated	Remark
Dimension	Unit			
pH	-	9.4	6.5	
Conductivity	micro-mho	3.4×10^3	2.95×10^3	NaCl was
Temperature	°C	32	38	added
TS	mg/l	2568	2410	1.33gm/l
SS	"	40	-	
BOD	"	700	221	
COD	"	1150	381	
Alk.as CaCO ₃	"	1620	1560	
Acid.as CaCO ₃	"	0	512	
Amonia - N	"	0	0	
Organic - N	"	6.7	0	
Nitrate - N	"	0.9	-	
Orthophosphate	"	0	0	
Chloride	"	868	348	

Run No. F - 5

Electricity dosage

Current, amp.	= 4
Voltage, volt.	= 7.13
Time, minute	= 60
Electricaleharge, coulamb	= 14400
Power, watt-hour	= 28.53
kwh/1000 gal.	= 159.9
Treatment cost/1000 gal, baht	= 79.9

Electricity loss in cell

Resistance in cell, ohm	= 0.39
IR drop, volt	= 1.57
Power drop, volt	= 6.3
kwh/1000 gal	= 35.3
Power loss/1000 gal, baht	= 17.6

VITA

The author, VICHAI PRATEEPPECHA, was born on December 17, 1944 in Sukhotai, Thailand. He received a Bachelor's Degree in Civil Engineering from Khon Kaen University in 1968.

At the time of writing this thesis, he is serving as a government official of the Department of Aviation, The Ministry of Communication.