AB6.2 Analysis for Canal Closing and Raw Water Storage Reservoir

Appendix AB6.4 is composed of Basic Conditions for analysis on Consumption level, Canal closing period, Production capacity and water demand of each Water Supply Zone (WSZ), System Configulation for analysi and Volum of raw water storage reservoir at WSZ 2 and 5.

AB6.2.1 Basic Condition for Analysis

1. **Consumption and Period of Canal Closing**

   Percapita consumption of Maximum day, Averafe day and Minimum day consumptions are:

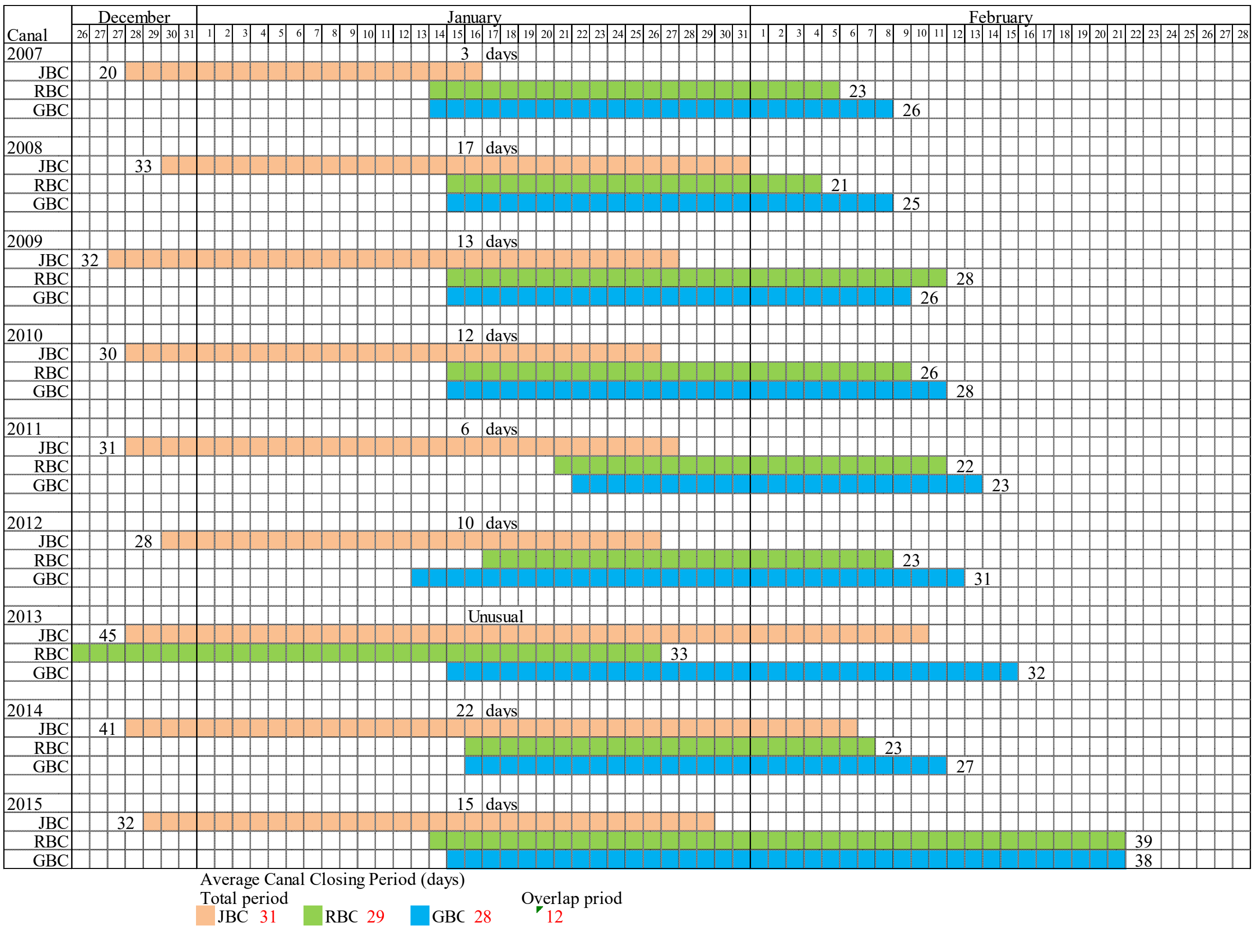
Design Consumption	Maximum	Average	Minimum
Percapita consumption (lpcd)	166.8	145.0	123.3

Consumption levels applied for analysis during canal closingare:

% of Day Average	100%	90%	85%	80%	70%	60%	50%
Percapita (lpcd)	145.0	130.5	123.3	116.0	101.5	87.0	72.5

Canal Closing Period is set up for the analysis from the past records (2007~2015) of Jhang Branch Canal (JBC) and Rhak and Gugera Branch Canals (RBC & GBC) as follows:
(refer to Table below).

Canal	Canal Closing Period	Overiup Period
JBC	30 days	12 days
RBC & GBC	30 days	



AB6.2.2 Production Capacity and Water Demand (Day Maximum)

Production capacity (ground water and Surface water) and Day maximum water demand of each Water Supply Zone (WSZ) is presented in Table AB6.4-1.

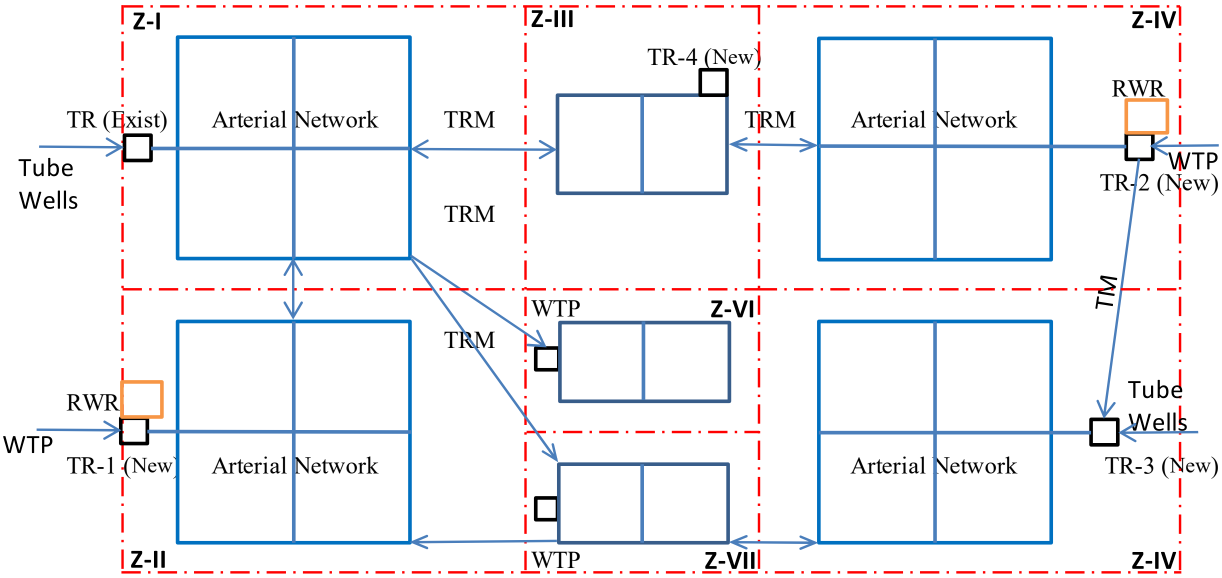
Table AB6.4-1

Supply Zone	Water Source	2023		2028		2033		2038	
		m^3/d	mgd	m^3/d	mgd	m^3/d	mgd	m^3/d	mgd
I									
Production	GW	295,500	65.0	341,000	75.0	386,400	85.0	386,400	85.0
	SW	11,400	2.5	11,400	2.5	11,400	2.5	11,400	2.5
	Total	306,900	67.5	352,400	77.5	397,800	87.5	397,800	87.5
Demand	-	218,700	48.1	285,500	62.8	357,800	78.7	409,600	90.1
II									
Production	GW	0	0.0	0	0.0	0	0.0	0	0.0
	SW	0	0.0	90,900	20.0	181,800	40.0	272,800	60.0
	Total	0	0.0	90,900	20.0	181,800	40.0	272,800	60.0
Demand	-	166,800	36.7	214,600	47.2	264,100	58.1	291,400	64.1
III									
Production	GW	81,800	18.0	81,800	18.0	81,800	18.0	81,800	18.0
	SW	0	0.0	0	0.0	0	0.0	0	0.0
	Total	81,800	18.0	81,800	18.0	81,800	18.0	81,800	18.0
Demand	-	39,100	8.6	50,000	11.0	61,800	13.6	64,600	14.2
IV									
Production	GW	22,700	5.0	0.526	10.0	0.526	10.0	0.526	10.0
	SW	0	0.0	1.315	25.0	2.631	50.0	2.631	50.0
	Total	22,700	5.0	1.842	35.0	3.157	60.0	3.157	60.0
Demand	-	138,200	30.4	187,300	41.2	235,900	51.9	270,500	59.5
V									
Production	GW	0	0.0	0	0.0	0	0.0	0	0.0
	SW	113,700	25.0	113,700	25.0	113,700	25.0	113,700	25.0
	Total	113,700	25.0	113,700	25.0	113,700	25.0	113,700	25.0
Demand	-	30,900	6.8	50,500	11.1	62,300	13.7	100,900	22.2
VI									
Production	GW	0	0.0	0	0.0	0	0.0	0	0.0
	SW	22,700	5.0	45,500	10.0	45,500	10.0	45,500	10.0
	Total	22,700	5.0	45,500	10.0	45,500	10.0	45,500	10.0
Demand	-	27,700	6.1	35,500	7.8	44,100	9.7	46,400	10.2
VII									
Production	GW	0	0.0	0	0.0	0	0.0	0	0.0
	SW	75,000	16.5	75,000	16.5	75,000	16.5	75,000	16.5
	Total	75,000	16.5	75,000	16.5	75,000	16.5	75,000	16.5
Demand	-	41,400	9.1	53,200	11.7	65,900	14.5	69,100	15.2
Total Demand (m^3/d)		662,800	145.8	876,600	192.8	1,091,900	240.2	1,252,500	275.5

AB6.2.3 Analysis for Volume of Raw Water Storage Reservoir

1. Configulation for Analysis

Figure below shows the configulation of analysis.



note: TR: Terminal Reservoir RWR: Raw Water Storage Reservoir
TRM: Transfer Main TM: Transmission Main

2. Volume and Area of Raw Water Storage Reservoir

Table AB6.4-2 shows volume of raw water storage (RWS) reservoirs at WSZ II and V for levels of consumption and key years as the results of analysis which presented in attached figures.

Table AB6.4-2 Summary of Volume and Area of RWR

RWR Volume		2023			2028			2033			2038		
% of	WSZ	Volume*1		Area*2	Volume*1		Area*2	Volume*1		Area*2	Volume*1		Area*2
Demand		MGD	'000m3	ha	MGD	'000m3	ha	MGD	'000m3	ha	MGD	'000m3	ha
100	WSZ-2	0	0	0	260	1,182	30	910	4,137	104	1,210	5,501	138
	WSZ-5	800	3,637	91	1,310	5,955	149	1,670	7,592	190	2,070	9,410	236
	Total	800	3,637	91	1,570	7,137	179	2,580	11,729	294	3,280	14,911	374
90	WSZ-2	0	0	0	260	1,182	30	510	2,318	58	690	3,137	79
	WSZ-5	780	3,546	89	790	3,591	90	510	2,318	58	1,400	6,364	160
	Total	780	3,546	89	1,050	4,773	120	1,020	4,636	116	2,090	9,501	239
85	WSZ-2	0	0	0	260	1,182	30	510	2,318	58	600	2,728	69
	WSZ-5	580	2,637	66	500	2,273	57	680	3,091	78	1,020	4,637	116
	Total	580	2,637	66	760	3,455	87	1,190	5,409	136	1,620	7,365	185
80	WSZ-2	0	0	0	260	1,182	30	510	2,318	58	570	2,591	65
	WSZ-5	380	1,727	44	260	1,182	30	330	1,500	38	690	3,137	79
	Total	380	1,727	44	520	2,364	60	840	3,818	96	1,260	5,728	144
70	WSZ-2	0	0	0	60	273	7	180	818	21	300	1,364	35
	WSZ-5	0	0	0	80	364	10	230	1,046	27	380	1,727	44
	Total	0	0	0	140	637	17	410	1,864	48	680	3,091	79
60	WSZ-2	0	0	0	0	0	0	50	227	6	170	773	20
	WSZ-5	0	0	0	0	0	0	60	273	7	210	955	24
	Total	0	0	0	0	0	0	110	500	13	380	1,728	44
50	WSZ-2	0	0	0	0	0	0	0	0	0	30	136	4
	WSZ-5	0	0	0	0	0	0	0	0	0	40	182	5
	Total	0	0	0	0	0	0	0	0	0	70	318	9

note *1: volume included 5% of loss for treatment *2: area is net area as effective water depth is 4.0m

Attached Figures 1-1

ANALYSIS OF RWR REQUIREMENT - 100% of Day Average Demand

1) Year 2023

Case 1 Both Canals Closed

demand total 126.78 defisit total -12.12 unit: MGD

Z-I
- GW : 65.0 transfer : 37.54
- SW : 0.0 receive : 11.20
- Qp : 65.0 balance : -3.17
- Qd : 41.83
- RWR : - 11.20
- excess : 23.17

Z-III
- GW : 18.0
- SW : 0.0 transfer : 11.20
- Qp : 18.0 receive : 0.11
- Qd : 7.48 balance : -0.57
- excess : 10.52

Z-V
- 19.5 : tranfer 0.0 : GW
- 0.00 : receive 0.0 : SW
- -0.45 : balance 0.0 : Qp
- 5.91 : Qd
- 0.11 -5.91 : excess
- 19.09 25.00 : RWR

29.49 3.24 19.43 4.81

Z-VI
- GW : 0.0
- SW : 0.0
- Qp : 0.0 trandfer : 0.00
- Qd : 5.30 receive : 3.24
- excess : -4.64 balance : -1.40
- RWR : 0.67

Z-II
- RWR : 0.00
- excess : -31.91
- Qd : 31.91
- Qp : 0.0 balance : -2.42
- SW : 0.0 receive : 29.5
- GW : 0.0 transfer : 0

Z-VII
- RWR : 1.00 balance : -2.10
- excess : -6.91 receive : 4.81
- Qd : 7.91 transfer : 0.00
- Qp : 0.0
- SW : 0.0 0.00
- GW : 0.0

Z-IV
- - : RWR
- -21.43 : excess
- 26.43 : Qd
- -2.00 : balance 5.0 : Qp
- 0.00 : tranfer 0.0 : SW
- 19.43 : receive 5.0 : GW

Balance bewteen Qp and Qd -37.12 MGD
RWR 37.12

Existing RWR Closing 30 days
WSZ-VI 20 MG 0.67 MGD WSZ-VII 30 MG 1.00 MGD
New RWR WSZ II 0.00 MGD WSZ V 25.00 MGD

Case 2 JBC Closed

Z-I
- GW : 65.0 transfer : 32.21
- SW : 0.0 receive : 9.04
- Qp : 65.0 balance : 0.00
- Qd : 41.83
- RWR : - 9.04
- excess : 23.17

Z-III
- GW : 18.0
- SW : 0.0 transfer : 10.5
- Qp : 18.0 receive : 0.0
- Qd : 7.48 balance : 0.00
- excess : 10.5

Z-V
- 20.6 : tranfer 0.0 : GW
- 1.5 : receive 25.0 : SW
- -0.00 : balance 25.0 : Qp
- 5.91 : Qd
- 1.48 19.09 : excess
- 0.0 : RWR

31.91 0.3 20.57 0.0

Z-VI
- GW : 0.0
- SW : 5.0
- Qp : 5.0 trandfer : 0.00
- Qd : 5.30 receive : 0.30
- excess : -0.30 balance : 0.97
- RWR : 0.67

Z-II
- RWR : 0.00
- excess : -31.91
- Qd : 31.91
- Qp : 0.0 balance : -0.00
- SW : 0.0 receive : 31.91
- GW : 0.0 transfer : 0

Z-VII
- RWR : 1.00 balance : 7.73
- excess : 8.59 receive : 0.00
- Qd : 7.91 transfer : 0.86
- Qp : 16.5
- SW : 16.5
- GW : 0.0 0.86

Z-IV
- 0 : RWR
- -21.43 : excess
- 26.43 : Qd
- -0.00 : balance 5.0 : Qp
- 0.00 : tranfer 0.0 : SW
- 21.43 : receive 5.0 : GW

Balance bewteen Qp and Qd 8.69 MGD
RWR 0
check 8.69

Existing RWR Closing 30 days
WSZ-VI 20 MG 0.67 MGD WSZ-VII 30 MG 1.00 MGD
New RW WSZ II 0.00 MGD WSZ V 0.00 MGD

Case 3 RBC&GBC Closed

demand total 126.78 defisit total -12.12

Z-I
- GW : 65.0 transfer : 38.44
- SW : 2.5 receive : 11.64
- Qp : 65.0 balance : -3.63
- Qd : 41.83
- RWR : - 11.64
- excess : 23.2

Z-III
- GW : 18.0
- SW : 0.0 transfer : 11.64
- Qp : 18.0 receive : 0.47
- Qd : 7.48 balance : -0.65
- excess : 10.5

Z-V
- 19.61 : tranfer 0.0 : GW
- 0.00 : receive 0.0 : SW
- -0.52 : balance 0.0 : Qp
- 5.91 : Qd
- 0.47 -5.91 : excess
- 25.00 : RWR

29.14 3.74 19.14 5.56

Z-VI
- GW : 0.0
- SW : 0.0
- Qp : 0.0 trandfer : 0.00
- Qd : 5.30 receive : 3.74
- excess : -4.6 balance : -0.90
- RWR : 0.67

Z-II
- RWR : 0.00
- excess : -31.91
- Qd : 31.91
- Qp : 0.0 balance : -2.77
- SW : 0.0 receive : 29.14
- GW : 0.0 transfer : 0.0

Z-VII
- RWR : 1.00 balance : -1.35
- excess : -6.91 receive : 5.56
- Qd : 7.91 transfer : 0.00
- Qp : 0.0
- SW : 0.0 0.00
- GW : 0.0

Z-IV
- 0 : RWR
- -21.43 : excess
- 26.43 : Qd
- -2.29 : balance 5.0 : Qp
- 0.00 : tranfer 0.0 : SW
- 19.14 : receive 5.0 : GW

Balance bewteen Qp and Qd -37.12 MGD
RWR 37.12

Existing RWR Closing 30 days
WSZ-VI 20 MG 0.67 MGD WSZ-VII 30 MG 1.00 MGD
New RW WSZ II 0.00 MGD WSZ V 25.00 MGD

Year 2023

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1] WSZ II:	WSZ V:	Total
Both canal cloused	12	0.00	300	0	320	320
JCB cloused	18	0.00	0.00	0	0	0
RBC & GBC closed	18	0.00	450.00	0	480	480
Total volume	30	**0.00**	**750.00** mgd	0	800	800

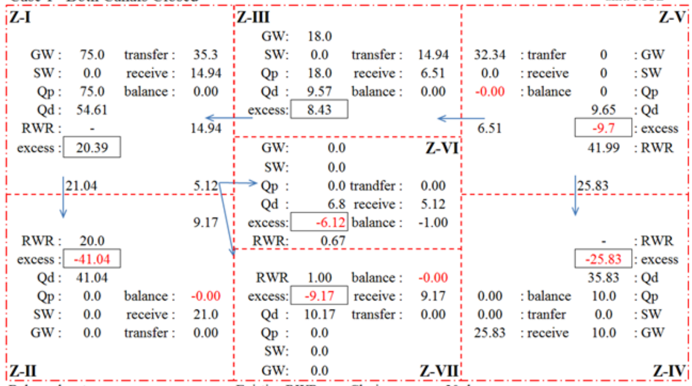
note *1: volume included 5% of treatment capacity

Attached Figures 1-2

ANALYSIS OF RWR REQUIREMENT - 100% of Day Average Demand

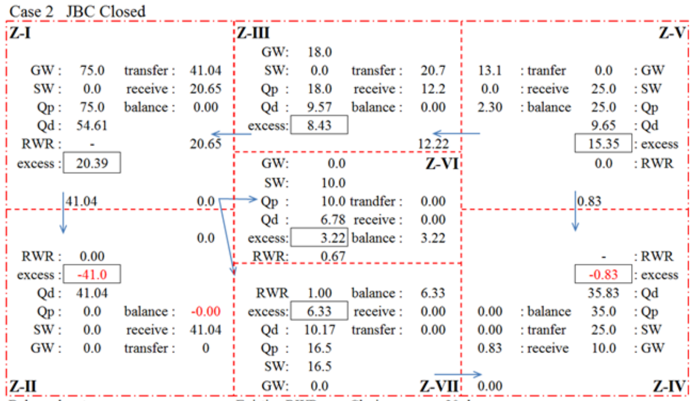
2) Year 2028

Case 1 Both Canals Closed unit: MGD



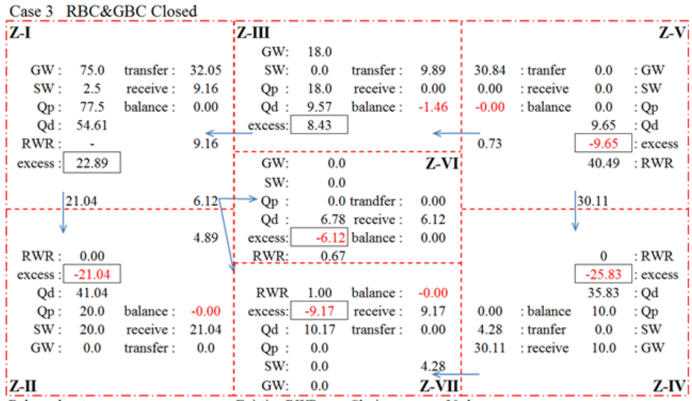
Balance bewteen		Existing RWR		Closing	30 days	
Qp and Qd	-62.99 MGD		WSZ-VI	20 MG	WSZ-VII	30 MG
RWR	62.99			0.67 MGD		1.00 MGD
		New RWR	WSZ II	20.00 MGD	WSZ V	41.99 MGD

Case 2 JBC Closed



Balance bewteen		Existing RWR		Closing	30 days	
Qp and Qd	11.85 MGD		WSZ-VI	20 MG	WSZ-VII	30 MG
RWR	0			0.67 MGD		1.00 MGD
check	11.85	New RW	WSZ II	0.00 MGD	WSZ V	0.00 MGD

Case 3 RBC&GBC Closed



Balance bewteen		Existing RWR		Closing	30 days	
Qp and Qd	-40.49 MGD		WSZ-VI	20 MG	WSZ-VII	30 MG
RWR	40.49			0.67 MGD		1.00 MGD
		New RW	WSZ II	0.00 MGD	WSZ V	40.49 MGD

Year 2028

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1] WSZ II:	WSZ V:	Total
Both canal cloused	12	240.00	503.88	260	540	800
JCB cloused	18	0.00	0.00	0	0	0
RBC & GBC closed	18	0.00	728.82	0	770	770
Total volume	30	**240.00**	**1,232.70**	260	1,310	1,570

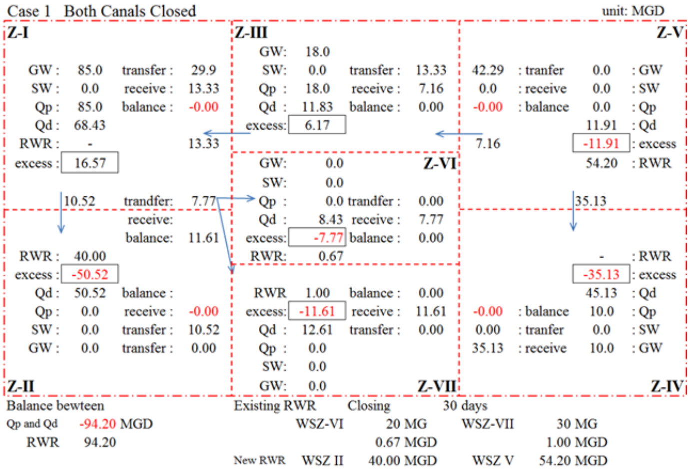
note *1: volume included 5% of treatment capacity

Attached Figures 1-3

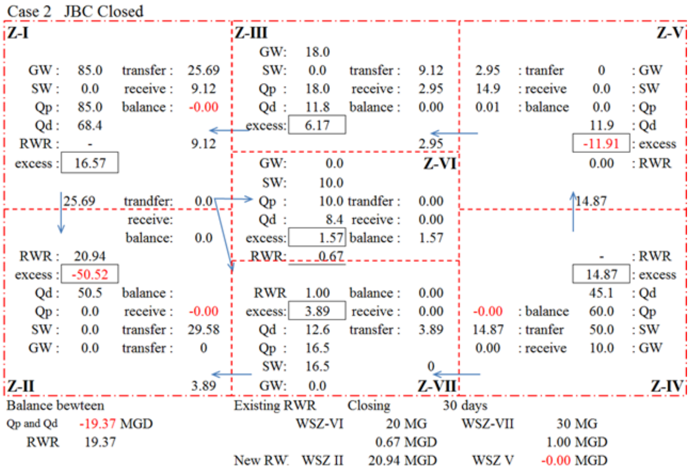
ANALYSIS OF RWR REQUIREMENT - 100% of Day Average Demand

3) Year 2033

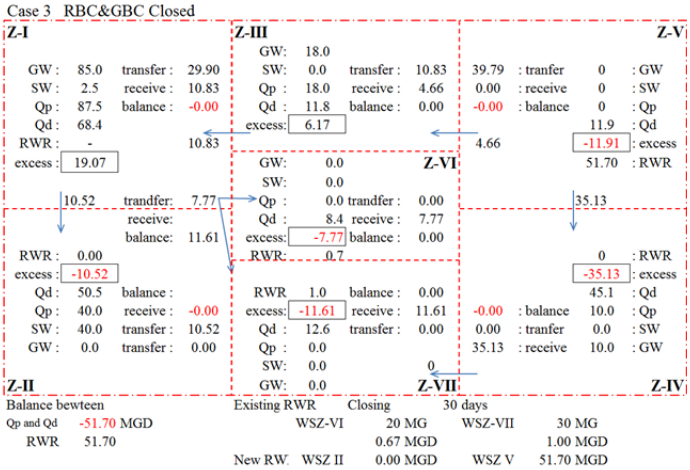
Case 1 Both Canals Closed unit: MGD



Case 2 JBC Closed



Case 3 RBC&GBC Closed



Year 2033

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1] WSZ II:	WSZ V:	Total
Both canal cloused	12	480.00	650.40	510	690	1,200
JCB cloused	18	376.92	0.00	400	0	400
RBC & GBC closed	18	0.00	930.60	0	980	980
Total volume	30	**856.92**	**1,581.00**	910	1,670	2,580

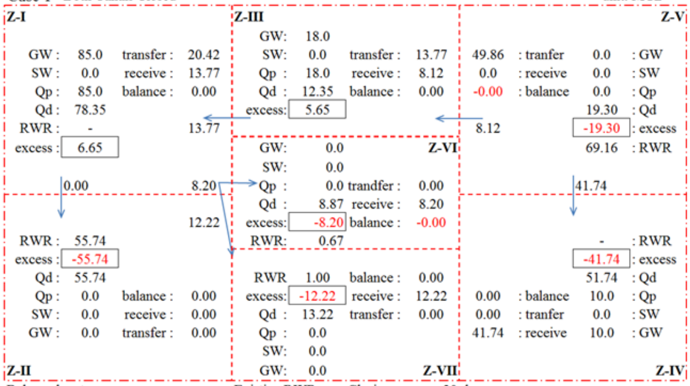
note *1: volume included 5% of treatment capacity

Attached Figures 1-4

ANALYSIS OF RWR REQUIREMENT - 100% of Day Average Demand

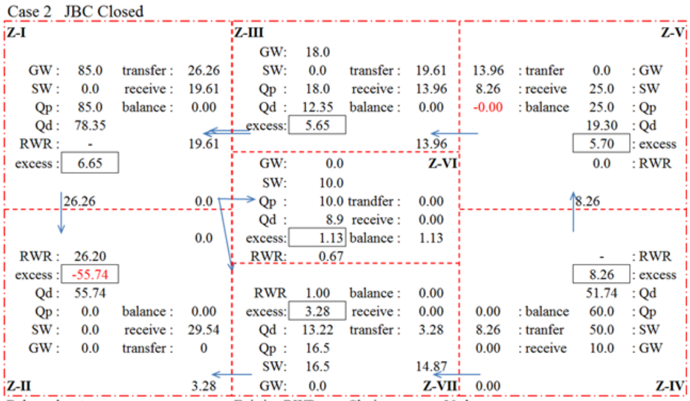
4) Year 2038

Case 1 Both Canals Closed unit: MGD



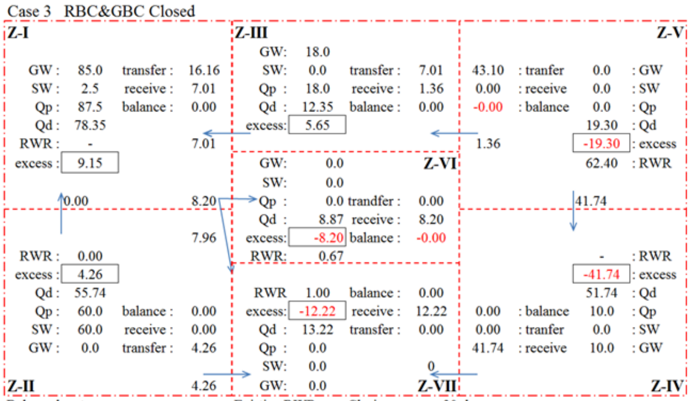
Balance bewteen		Existing RWR	Closing	30 days		
Qp and Qd	-124.90 MGD		WSZ-VI	20 MG	WSZ-VII	30 MG
RWR	124.90			0.67 MGD		1.00 MGD
		New RWR	WSZ II	55.74 MGD	WSZ V	69.16 MGD

Case 2 JBC Closed



Balance bewteen		Existing RWR	Closing	30 days		
Qp and Qd	-25.07 MGD		WSZ-VI	20 MG	WSZ-VII	30 MG
RWR	25.07			0.67 MGD		1.00 MGD
		New RW	WSZ II	26.20 MGD	WSZ V	0.00 MGD

Case 3 RBC&GBC Closed



Balance bewteen		Existing RWR	Closing	30 days		
Qp and Qd	-62.40 MGD		WSZ-VI	20 MG	WSZ-VII	30 MG
RWR	62.40			0.67 MGD		1.00 MGD
		New RW	WSZ II	0.00 MGD	WSZ V	62.40 MGD

Year 2038

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1] WSZ II:	WSZ V:	Total
Both canal cloused	12	668.88	829.9	710	880	1,590
JCB closed	18	471.61	0.00	500	0	500
RBC & GBC closed	18	0.00	1123.20	0	1,190	1,190
Total volume	30	**1,140.49**	**1,953.12**	1,210	2,070	3,280

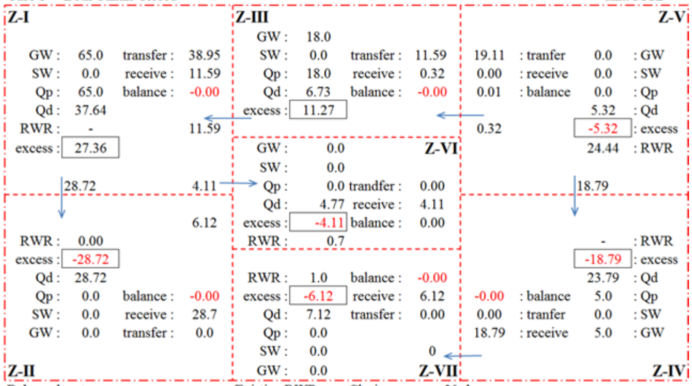
note *1: volume included 5% of treatment capacity

Attached Figures 2-1

ANALYSIS OF RWR REQUIREMENT - 90% of Day Average Demand

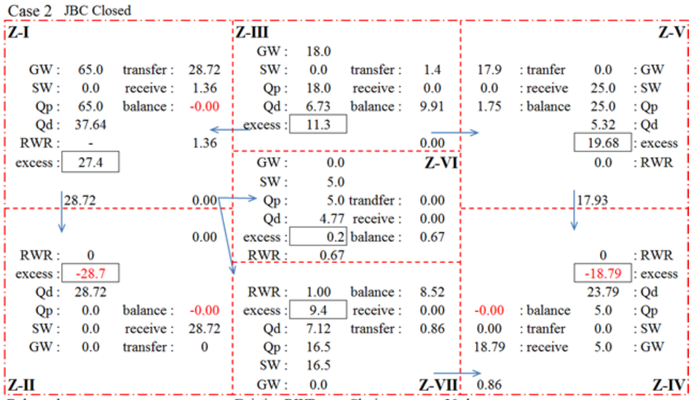
1) Year 2023

Case 1 Both Canals Closed unit: MGD



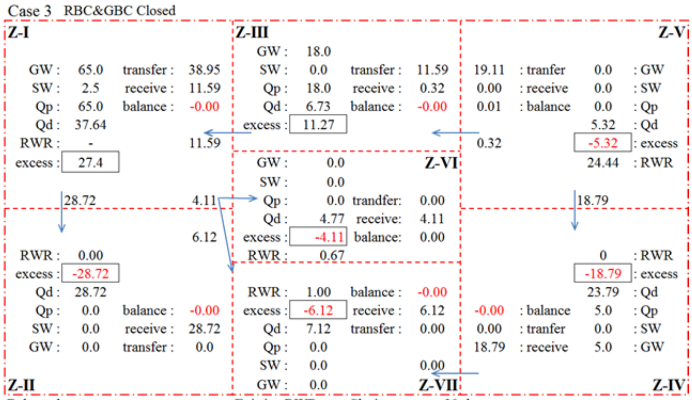
Balance bewteen			Existing RWR		Closing	30 days	
Qp and Qd	-24.44	MGD		WSZ-VI	20 MG	WSZ-VII	30 MG
RWR	24.44				0.67 MGD		1.00 MGD
			New RW	WSZ II	0.00 MGD	WSZ V	24.44 MGD

Case 2 JBC Closed



Balance bewteen			Existing RWR		Closing	30 days	
Qp and Qd	20.84	MGD		WSZ-VI	20 MG	WSZ-VII	30 MG
RWR	0.00				0.67 MGD		1.00 MGD
check	20.84		New RW	WSZ II	0.00 MGD	WSZ V	0.00 MGD

Case 3 RBC&GBC Closed



Balance bewteen			Existing RWR		Closing	30 days	
Qp and Qd	-24.44	MGD		WSZ-VI	20 MG	WSZ-VII	30 MG
RWR	24.44				0.67 MGD		1.00 MGD
			New RW	WSZ II	0.00 MGD	WSZ V	24.44 MGD

Year 2023

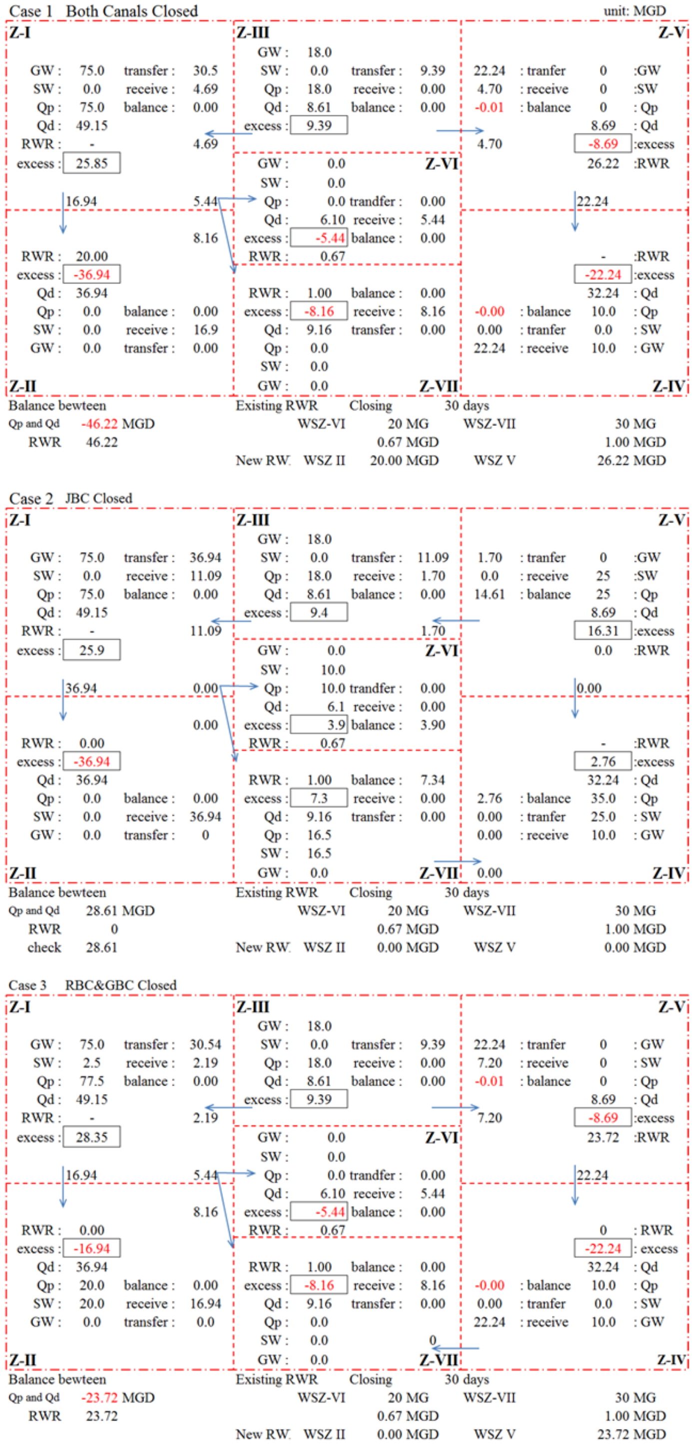
Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1]	WSZ II:	WSZ V:	Total
Both canal cloused	12	0.00	293.28		0	310	310
JCB cloused	18	0.00	0.00		0	0	0
RBC & GBC closed	18	0.00	439.92		0	470	470
Total volume	30	**0.00**	**733.20** mgd		0	780	780

note *1: volume included 5% of treatment capacity

Attached Figures 2-2

ANALYSIS OF RWR REQUIREMENT - 90% of Day Average Demand

2) Year 2028



Year 2028

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1] WSZ II:	WSZ V:	Total
Both canal cloused	12	240.00	314.64	260	340	600
JCB cloused	18	0.00	0.00	0	0	0
RBC & GBC closed	18	0.00	426.96	0	450	450
Total volume	30	**240.00**	**741.60**	260	790	1,050

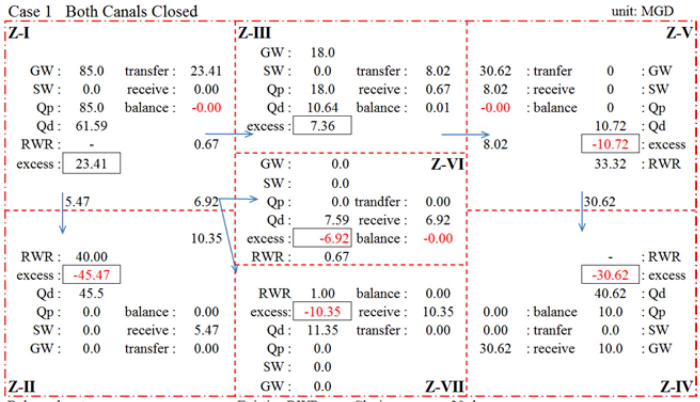
note *1: volume included 5% of treatment capacity

Attached Figures 2-3

ANALYSIS OF RWR REQUIREMENT - 90% of Day Average Demand

3) Year 2033

Case 1 Both Canals Closed unit: MGD



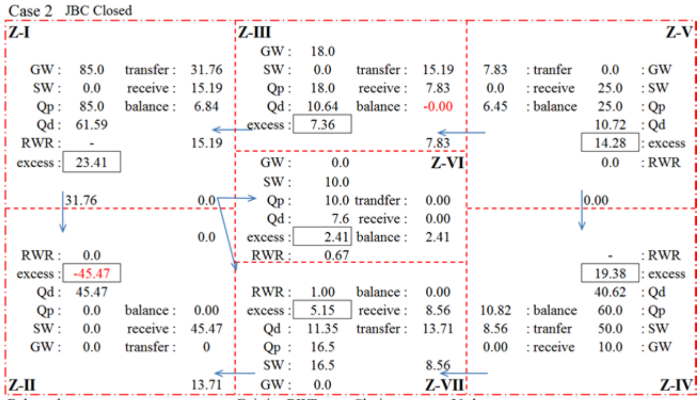
Balance bewteen Existing RWR Closing 30 days

Qp and Qd -73.32 MGD WSZ-VI 20 MG WSZ-VII 30 MG

RWR 73.32 0.67 MGD 1.00 MGD

New RWI WSZ II 40.00 MGD WSZ V 33.32 MGD

Case 2 JBC Closed



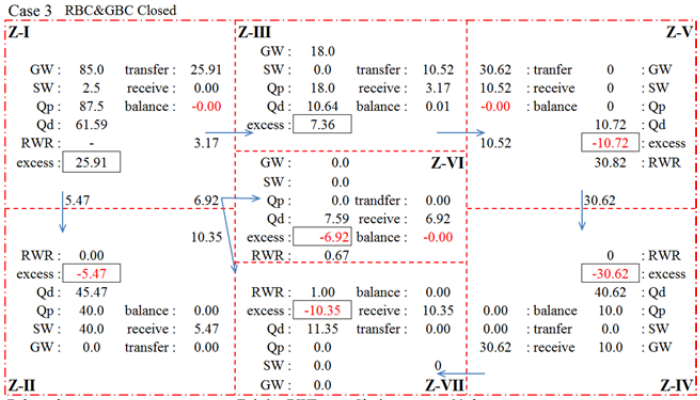
Balance bewteen Existing RWR Closing 30 days

Qp and Qd 26.52 MGD WSZ-VI 20 MG WSZ-VII 30 MG

RWR 0 0.67 MGD 1.00 MGD

check 26.52 New RWI WSZ II 0.00 MGD WSZ V 0.00 MGD

Case 3 RBC&GBC Closed



Balance bewteen Existing RWR Closing 30 days

Qp and Qd -30.82 MGD WSZ-VI 20 MG WSZ-VII 30 MG

RWR 30.82 0.67 MGD 1.00 MGD

New RWI WSZ II 0.00 MGD WSZ V 30.82 MGD

Year 2033

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1] WSZ II:	WSZ V:	Total
Both canal cloused	12	480.00	399.8	510	430	940
JCB cloused	18	0.00	18.00	0	20	20
RBC & GBC closed	18	0.00	48.82	0	60	60
Total volume	30	**480.00**	**466.66**	510	510	1,020

note *1: volume included 5% of treatment capacity

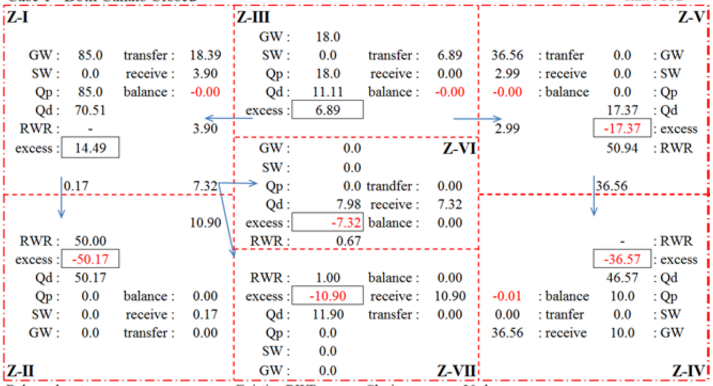
Attached Figures 2-4

ANALYSIS OF RWR REQUIREMENT - 90% of Day Average Demand

4) Year 2038

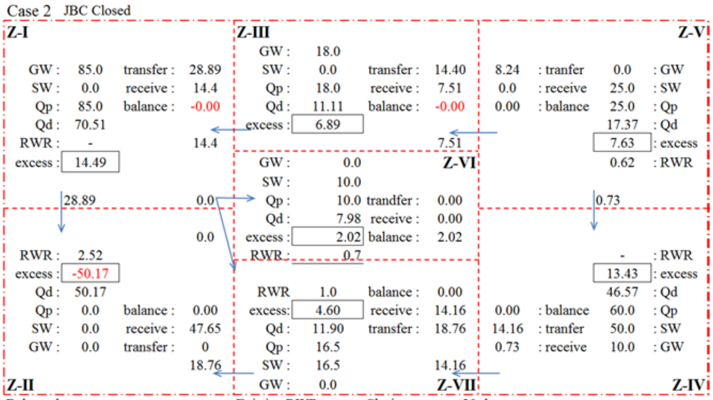
Case 1 Both Canals Closed

unit: MGD



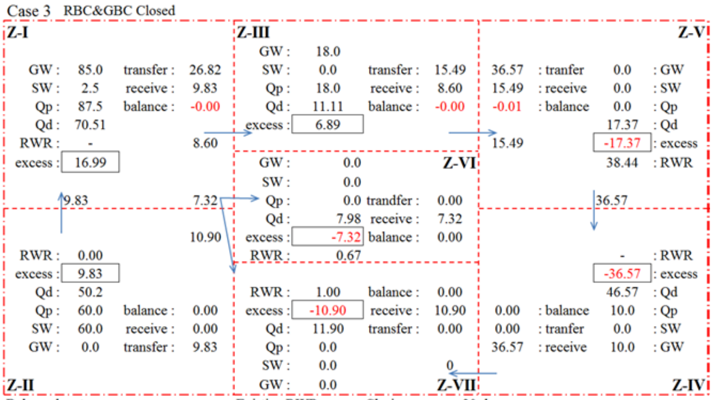
Balance bewteen Existing RWR Closing 30 days
Qp and Qd -100.94 MGD WSZ-VI 20 MG WSZ-VII 30 MG
RWR 100.94 0.67 MGD 1.00 MGD
New RWI WSZ II 50.00 MGD WSZ V 50.94 MGD

Case 2 JBC Closed



Balance bewteen Existing RWR Closing 30 days
Qp and Qd -1.11 MGD WSZ-VI 20 MG WSZ-VII 30 MG
RWR 1.11 0.67 MGD 1.00 MGD
New RWI WSZ II 2.52 MGD WSZ V 0.62 MGD

Case 3 RBC&GBC Closed



Balance bewteen Existing RWR Closing 30 days
Qp and Qd -38.44 MGD WSZ-VI 20 MG WSZ-VII 30 MG
RWR 38.44 0.67 MGD 1.00 MGD
New RWI WSZ II 0.00 MGD WSZ V 38.44 MGD

Year 2038

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1] WSZ II:	WSZ V:	Total
Both canal closed	12	600.00	611.3	640	650	1,290
JCB closed	18	45.36	11.10	50	20	70
RBC & GBC closed	18	0.00	691.92	0	730	730
Total volume	30	**645.36**	**1,314.30**	690	1,400	2,090

note *1: volume included 5% of treatment capacity

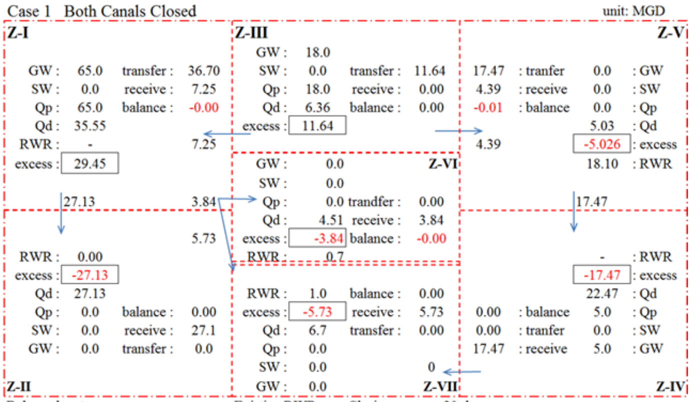
Attached Figures 3-1

ANALYSIS OF RWR REQUIREMENT - 85% of Day Average Demand

1) Year 2023

Case 1 Both Canals Closed

unit: MGD



Balance bewteen

Qp and Qd -18.10 MGD

RWR 18.10

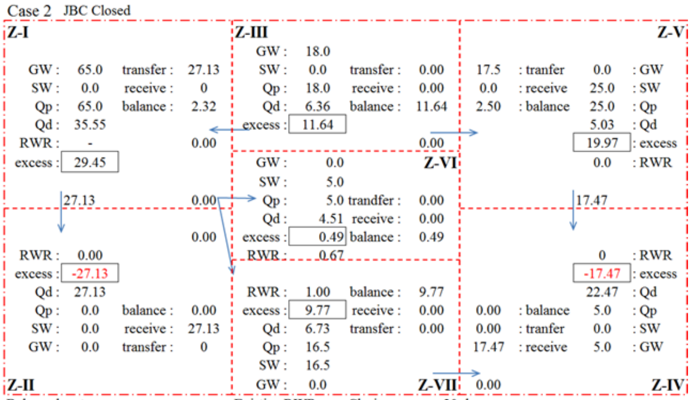
Existing RWR Closing 30 days

WSZ-VI 20 MG 0.67 MGD

WSZ-VII 30 MG 1.00 MGD

New RW. WSZ II 0.00 MGD WSZ V 18.10 MGD

Case 2 JBC Closed



Balance bewteen

Qp and Qd 26.73 MGD

RWR 0.00

check 26.73

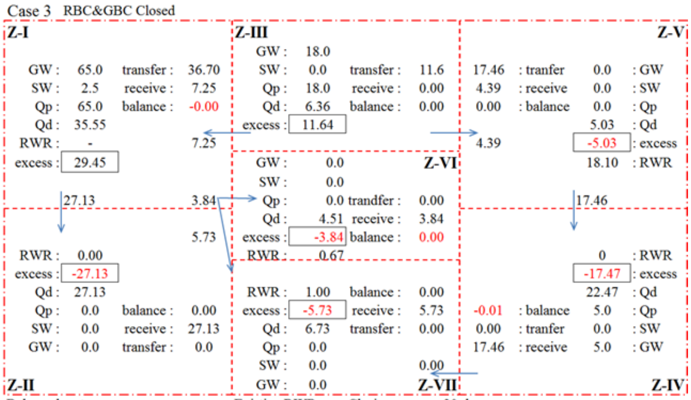
Existing RWR Closing 30 days

WSZ-VI 20 MG 0.67 MGD

WSZ-VII 30 MG 1.00 MGD

New RW. WSZ II 0.00 MGD WSZ V 0.00 MGD

Case 3 RBC&GBC Closed



Balance bewteen

Qp and Qd -18.10 MGD

RWR 18.10

Existing RWR Closing 30 days

WSZ-VI 20 MG 0.67 MGD

WSZ-VII 30 MG 1.00 MGD

New RW. WSZ II 0.00 MGD WSZ V 18.10 MGD

Year 2023

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume*1	WSZ II:	WSZ V:	Total
Both canal clousesd	12	0.00	217.20		0	230	230
JCB cloused	18	0.00	0.00		0	0	0
RBC & GBC closed	18	0.00	325.80		0	350	350
Total volume	30	**0.00**	**543.00**	mgd	0	580	580

note *1: volume included 5% of treatment capacity

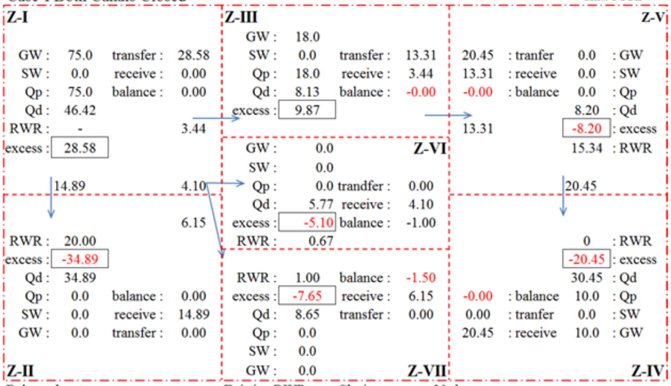
Attached Figures 3-2

ANALYSIS OF RWR REQUIREMENT - 85% of Day Average Demand

2) Year 2028

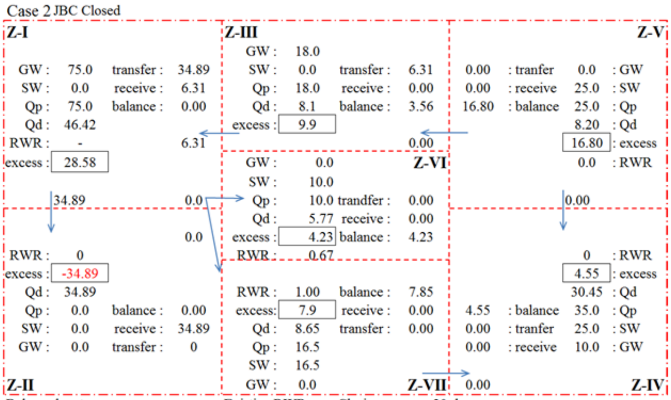
Case 1 Both Canals Closed

unit: MGD



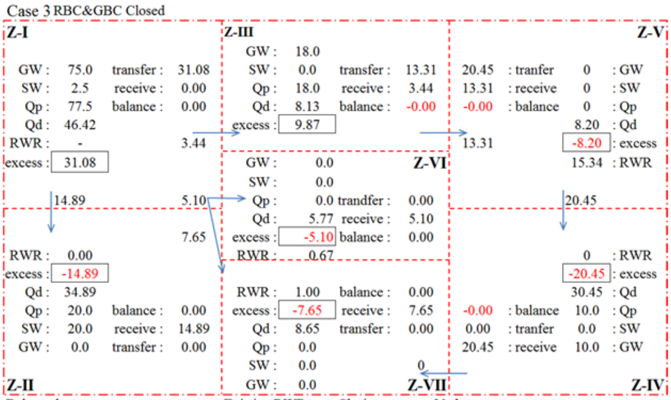
Balance bewteen		Existing RWR		Closing	30 days			
Qp and Qd	-37.84 MGD		WSZ-VI	20 MG		WSZ-VII	30 MG	
RWR	35.34			0.67 MGD			1.00 MGD	
		New RW.	WSZ II	20.00 MGD		WSZ V	15.34 MGD	

Case 2 JBC Closed



Balance bewteen		Existing RWR		Closing	30 days			
Qp and Qd	37.00 MGD		WSZ-VI	20 MG		WSZ-VII	30 MG	
RWR	0			0.67 MGD			1.00 MGD	
check	37.00	New RW.	WSZ II	0.00 MGD		WSZ V	0.00 MGD	

Case 3 RBC&GBC Closed



Balance bewteen		Existing RWR		Closing	30 days			
Qp and Qd	-15.34 MGD		WSZ-VI	20 MG		WSZ-VII	30 MG	
RWR	15.34			0.67 MGD			1.00 MGD	
		New RW.	WSZ II	0.00 MGD		WSZ V	15.34 MGD	

Year 2028

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume*1	WSZ II:	WSZ V:	Total
Both canal clousesd	12	240.00	184.08		260	200	460
JCB cloused	18	0.00	0.00		0	0	0
RBC & GBC closed	18	0.00	276.12		0	300	300
Total volume	30	**240.00**	**460.20**		260	500	760

note *1: volume included 5% of treatment capacity

Attached Figures 3-3

ANALYSIS OF RWR REQUIREMENT - 85% of Day Average Demand

3) Year 2033

Case 1 Both Canals Closed — unit: MGD

Z-I
GW : 85.0 transfer : 26.83
SW : 0.0 receive : 0.00
Qp : 85.0 balance : 0.00
Qd : 58.17
RWR : - 7.67
excess : 26.83
2.94 6.50 9.72

Z-III
GW : 18.0
SW : 0.0 transfer : 15.62
Qp : 18.0 receive : 7.67
Qd : 10.05 balance : -0.00
excess : 7.95

Z-V
28.36 : tranfer 0 : GW
15.62 : receive 0 : SW
0.00 : balance 0 : Qp
10.13 : Qd
15.62 -10.13 : excess
22.87 : RWR
28.36

Z-VI
GW : 0.0
SW : 0.0
Qp : 0.0 trandfer : 0.00
Qd : 7.2 receive : 6.50
excess : -6.50 balance : -0.00
RWR : 0.67

Z-II
RWR : 40.00
excess : -42.94
Qd : 42.94
Qp : 0.0 balance : -0.00
SW : 0.0 receive : 2.94
GW : 0.0 transfer : 0.00

Z-VII
RWR : 1.00 balance : 0.00
excess : -9.72 receive : 9.72
Qd : 10.72 transfer : 0.00
Qp : 0.0
SW : 0.0
GW : 0.0

Z-IV
- : RWR
-28.36 : excess
38.36 : Qd
-0.00 : balance 10.0 : Qp
0.00 : tranfer 0.0 : SW
28.36 : receive 10.0 : GW

Balance bewteen Qp and Qd -62.87 MGD
RWR 62.87

Existing RWR Closing 30 days
WSZ-VI 20 MG 0.67 MGD
WSZ-VII 30 MG 1.00 MGD
New RW. WSZ II 40.00 MGD WSZ V 22.87 MGD

Case 2 JBC Closed

Z-I
GW : 85.0 transfer : 31.76
SW : 0.0 receive : 4.93
Qp : 85.0 balance : 0.00
Qd : 58.17
RWR : - 4.93
excess : 26.83
31.76 0.0 0.0

Z-III
GW : 18.0
SW : 0.0 transfer : 4.93
Qp : 18.0 receive : 0.00
Qd : 10.05 balance : 3.02
excess : 7.95
0.00

Z-V
0.00 : tranfer 0 : GW
0.0 : receive 25.0 : SW
14.87 : balance 25.0 : Qp
10.13 : Qd
14.87 : excess
0.0 : RWR
0.00

Z-VI
GW : 0.0
SW : 10.0
Qp : 10.0 trandfer : 0.00
Qd : 7.17 receive : 0.00
excess : 2.83 balance : 2.83
RWR : 0.67

Z-II
RWR : 0.00
excess : -42.94
Qd : 42.94
Qp : 0.0 balance : -0.00
SW : 0.0 receive : 42.94
GW : 0.0 transfer : 0
11.18

Z-VII
RWR : 1.00 balance : 0.00
excess : 5.78 receive : 5.40
Qd : 10.72 transfer : 11.18
Qp : 16.5
SW : 16.5 5.40
GW : 0.0

Z-IV
- : RWR
21.64 : excess
38.36 : Qd
16.24 : balance 60.0 : Qp
5.40 : tranfer 50.0 : SW
0.00 : receive 10.0 : GW

Balance bewteen Qp and Qd 36.96 MGD
RWR 0
check 36.96

Existing RWR Closing 30 days
WSZ-VI 20 MG 0.67 MGD
WSZ-VII 30 MG 1.00 MGD
New RW. WSZ II 0.00 MGD WSZ V 0.00 MGD

Case 3 RBC&GBC Closed

Z-I
GW : 85.0 transfer : 29.33
SW : 2.5 receive : 0.00
Qp : 87.5 balance : 0.00
Qd : 58.17
RWR : - 10.17
excess : 29.33
2.94 6.50 9.72

Z-III
GW : 18.0
SW : 0.0 transfer : 18.12
Qp : 18.0 receive : 10.17
Qd : 10.05 balance : -0.00
excess : 7.95

Z-V
28.36 : tranfer 0 : GW
18.12 : receive 0 : SW
0.00 : balance 0 : Qp
10.13 : Qd
18.12 -10.13 : excess
20.37 : RWR
28.36

Z-VI
GW : 0.0
SW : 0.0
Qp : 0.0 trandfer : 0.00
Qd : 7.17 receive : 6.50
excess : -6.50 balance : -0.00
RWR : 0.67

Z-II
RWR : 0.00
excess : -2.94
Qd : 42.94
Qp : 40.0 balance : -0.00
SW : 40.0 receive : 2.94
GW : 0.0 transfer : 0.00

Z-VII
RWR : 1.00 balance : 0.00
excess : -9.72 receive : 9.72
Qd : 10.72 transfer : 0.00
Qp : 0.0
SW : 0.0 0
GW : 0.0

Z-IV
0 : RWR
-28.36 : excess
38.36 : Qd
-0.00 : balance 10.0 : Qp
0.00 : tranfer 0.0 : SW
28.36 : receive 10.0 : GW

Balance bewteen Qp and Qd -20.37 MGD
RWR 20.37

Existing RWR Closing 30 days
WSZ-VI 20 MG 0.67 MGD
WSZ-VII 30 MG 1.00 MGD
New RW. WSZ II 0.00 MGD WSZ V 20.37 MGD

Year 2033

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1] WSZ II:	WSZ V:	Total
Both canal cloused	12	480.00	274.4	510	290	800
JCB closed	18	0.00	0.00	0	0	0
RBC & GBC closed	18	0.00	366.66	0	390	390
Total volume	30	**480.00**	**641.10**	510	680	1,190

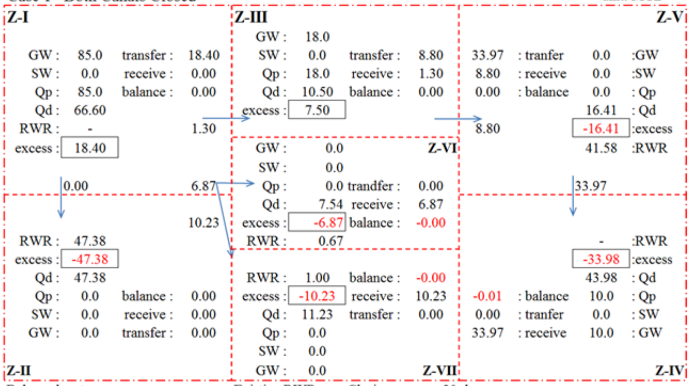
note *1: volume included 5% of treatment capacity

Attached Figures 3-4

ANALYSIS OF RWR REQUIREMENT - 85% of Day Average Demand

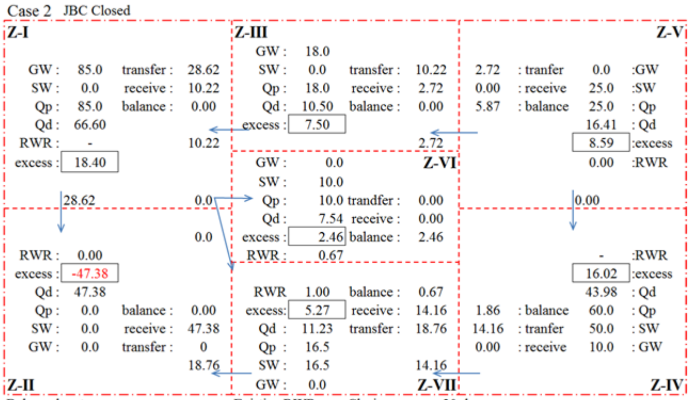
4) Year 2038

Case 1 Both Canals Closed unit: MGD



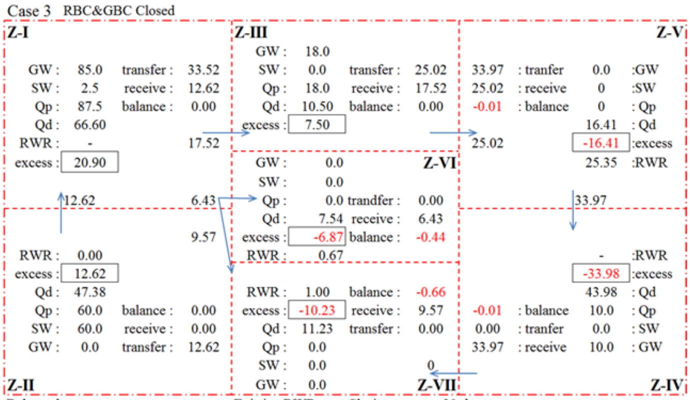
Balance bewteen		Existing RWR	Closing	30 days		
Qp and Qd	-88.96 MGD	WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	88.96		0.67 MGD			1.00 MGD
		New RW. WSZ II	47.38 MGD	WSZ V		41.58 MGD

Case 2 JBC Closed



Balance bewteen		Existing RWR	Closing	30 days		
Qp and Qd	10.87 MGD	WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	0.00		0.67 MGD			1.00 MGD
check	10.87	New RW. WSZ II	0.00 MGD	WSZ V		0.00 MGD

Case 3 RBC&GBC Closed



Balance bewteen		Existing RWR	Closing	30 days		
Qp and Qd	-26.46 MGD	WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	25.35		0.67 MGD			1.00 MGD
		New RW. WSZ II	0.00 MGD	WSZ V		25.35 MGD

Year 2033

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1] WSZ II:	WSZ V:	Total
Both canal cloused	12	568.56	499.0	600	530	1,130
JCB closed	18	0.00	0.00	0	0	0
RBC & GBC closed	18	0.00	456.30	0	490	490
Total volume	30	**568.56**	**955.26**	600	1,020	1,620

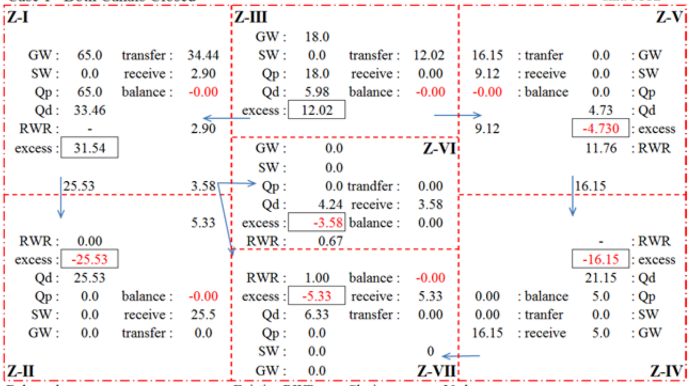
note *1: volume included 5% of treatment capacity

Attached Figures 4-1

ANALYSIS OF RWR REQUIREMENT - 80% of Day Average Demand

1) Year 2023

Case 1 Both Canals Closed unit: MGD



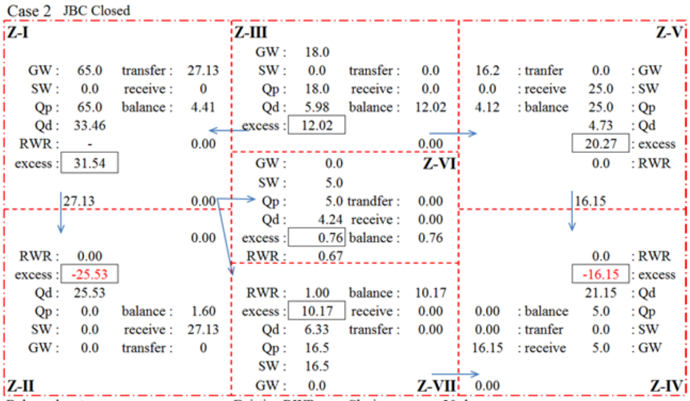
Balance bewteen Existing RWR Closing 30 days

Qp and Qd -11.76 MGD WSZ-VI 20 MG WSZ-VII 30 MG

RWR 11.76 0.67 MGD 1.00 MGD

New RW. WSZ II 0.00 MGD WSZ V 11.76 MGD

Case 2 JBC Closed



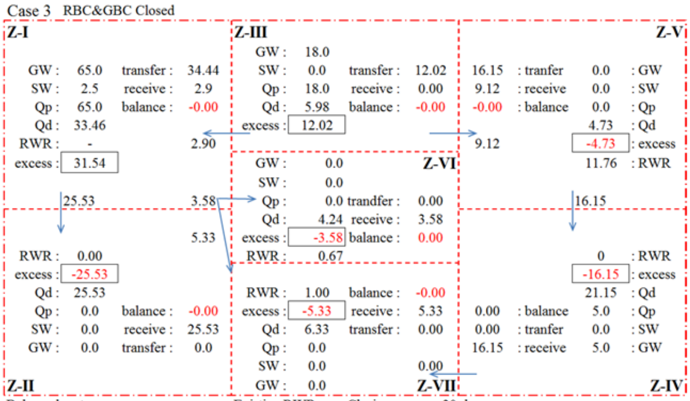
Balance bewteen Existing RWR Closing 30 days

Qp and Qd 33.07 MGD WSZ-VI 20 MG WSZ-VII 30 MG

RWR 0.00 0.67 MGD 1.00 MGD

check 33.07 New RW. WSZ II 0.00 MGD WSZ V 0.00 MGD

Case 3 RBC&GBC Closed



Balance bewteen Existing RWR Closing 30 days

Qp and Qd -11.76 MGD WSZ-VI 20 MG WSZ-VII 30 MG

RWR 11.76 0.67 MGD 1.00 MGD

New RW. WSZ II 0.00 MGD WSZ V 11.76 MGD

Year 2023

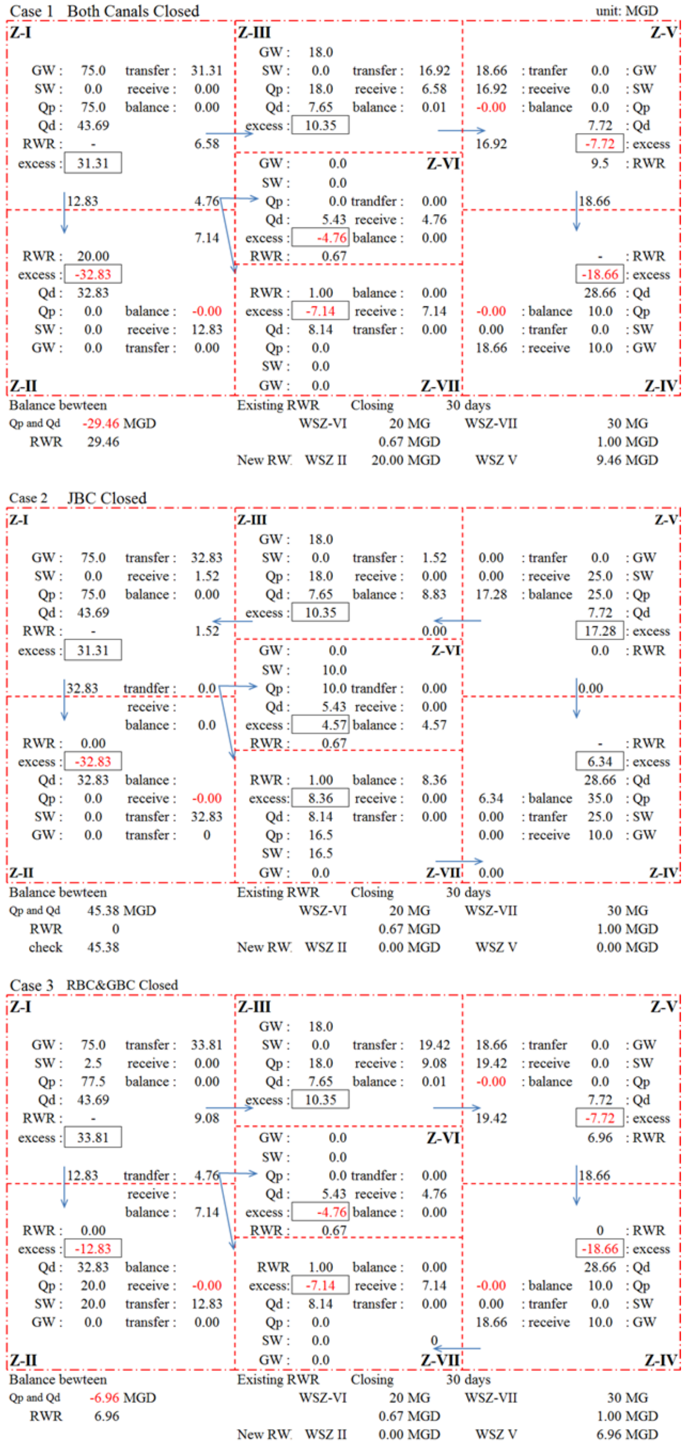
Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1]	WSZ II:	WSZ V:	Total
Both canal cloused	12	0.00	141.12		0	150	150
JCB cloused	18	0.00	0.00		0	0	0
RBC & GBC closed	18	0.00	211.68		0	230	230
Total volume	30	**0.00**	**352.80** mgd		0	380	380

note *1: volume included 5% of treatment capacity

Attached Figures 4-2

ANALYSIS OF RWR REQUIREMENT - 80% of Day Average Demand

2) Year 2028



Year 2028

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1]	WSZ II:	WSZ V:	Total
Both canal cloused	12	240.00	113.52		260	120	380
JCB closued	18	0.00	0.00		0	0	0
RBC & GBC closed	18	0.00	125.28		0	140	140
Total volume	30	**240.00**	**238.80**		260	260	520

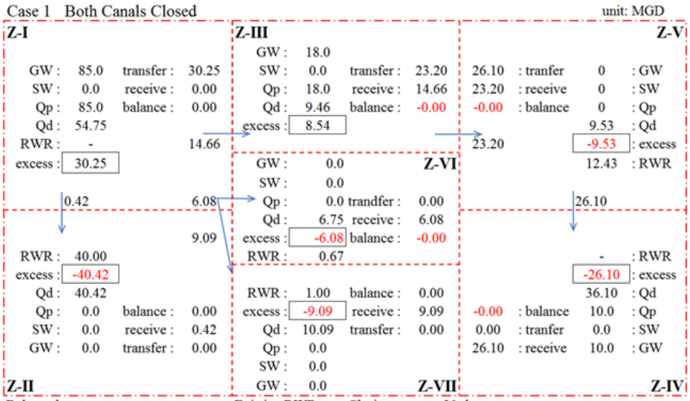
note *1: volume included 5% of treatment capacity

Attached Figures 4-3

ANALYSIS OF RWR REQUIREMENT - 80% of Day Average Demand

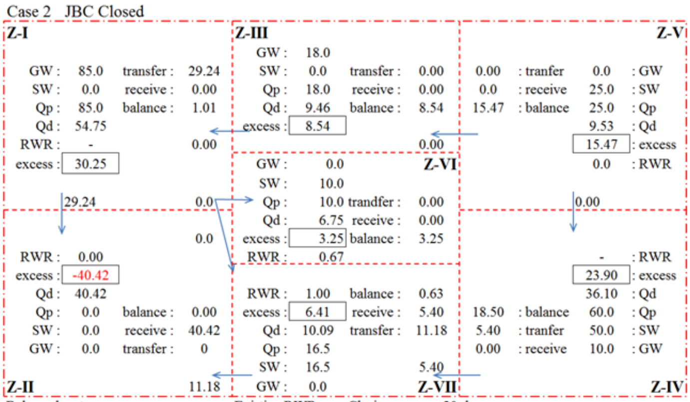
3) Year 2033

Case 1 Both Canals Closed unit: MGD



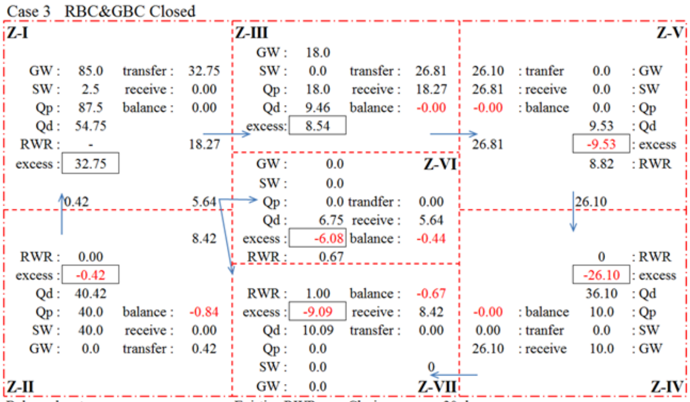
Balance bewteen		Existing RWR	Closing	30 days		
Qp and Qd	-52.43 MGD	WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	52.43		0.67 MGD			1.00 MGD
		New RW. WSZ II	40.00 MGD	WSZ V		12.43 MGD

Case 2 JBC Closed



Balance bewteen		Existing RWR	Closing	30 days		
Qp and Qd	47.40 MGD	WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	0		0.67 MGD			1.00 MGD
check	47.40	New RW. WSZ II	0.00 MGD	WSZ V		0.00 MGD

Case 3 RBC&GBC Closed



Balance bewteen		Existing RWR	Closing	30 days		
Qp and Qd	-9.93 MGD	WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	8.82		0.67 MGD			1.00 MGD
		New RW. WSZ II	0.00 MGD	WSZ V		8.82 MGD

Year 2033

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1]	WSZ II:	WSZ V:	Total
Both canal cloused	12	480.00	149.16		510	160	670
JCB closued	18	0.00	0.00		0	0	0
RBC & GBC closed	18	0.00	158.76		0	170	170
Total volume	30	**480.00**	**307.92**		510	330	840

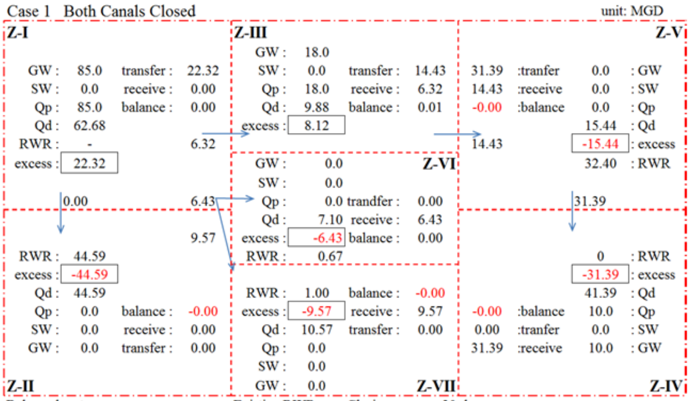
note *1: volume included 5% of treatment capacity

Attached Figures 4-4

ANALYSIS OF RWR REQUIREMENT - 80% of Day Average Demand

4) Year 2038

Case 1 Both Canals Closed unit: MGD



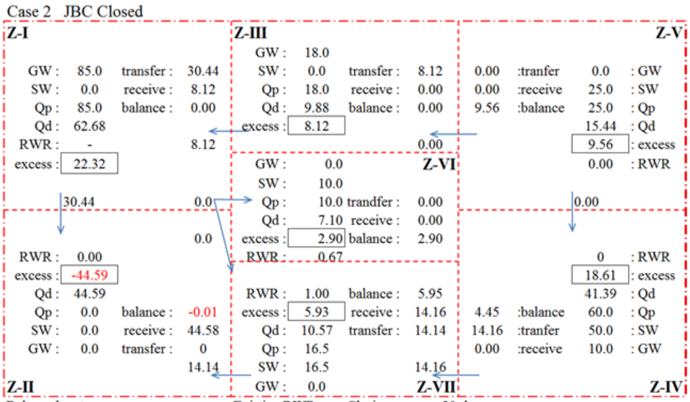
Balance bewteen Existing RWR Closing 30 days

Qp and Qd -76.99 MGD WSZ-VI 20 MG WSZ-VII 30 MG

RWR 76.99 0.67 MGD 1.00 MGD

New RW. WSZ II 44.59 MGD WSZ V 32.40 MGD

Case 2 JBC Closed



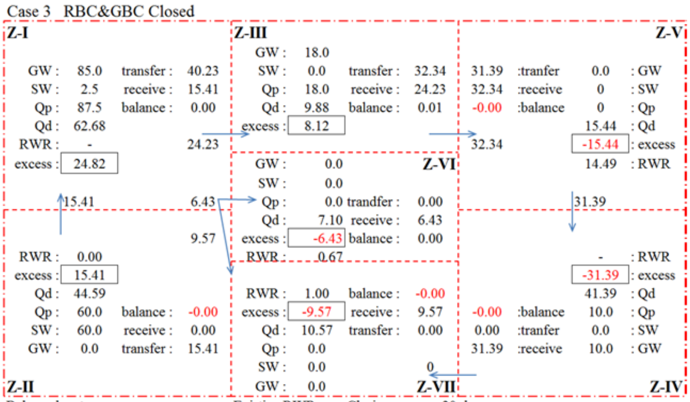
Balance bewteen Existing RWR Closing 30 days

Qp and Qd 22.85 MGD WSZ-VI 20 MG WSZ-VII 30 MG

RWR 0.00 0.67 MGD 1.00 MGD

check 22.85 New RW. WSZ II 0.00 MGD WSZ V 0.00 MGD

Case 3 RBC&GBC Closed



Balance bewteen Existing RWR Closing 30 days

Qp and Qd -14.49 MGD WSZ-VI 20 MG WSZ-VII 30 MG

RWR 14.49 0.67 MGD 1.00 MGD

New RW. WSZ II 0.00 MGD WSZ V 14.49 MGD

Year 2033

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume*1	WSZ II:	WSZ V:	Total
Both canal cloused	12	535.08	388.80		570	410	980
JCB cloused	18	0.00	0.00		0	0	0
RBC & GBC closed	18	0.00	260.82		0	280	280
Total volume	30	**535.08**	**649.62**		570	690	1,260

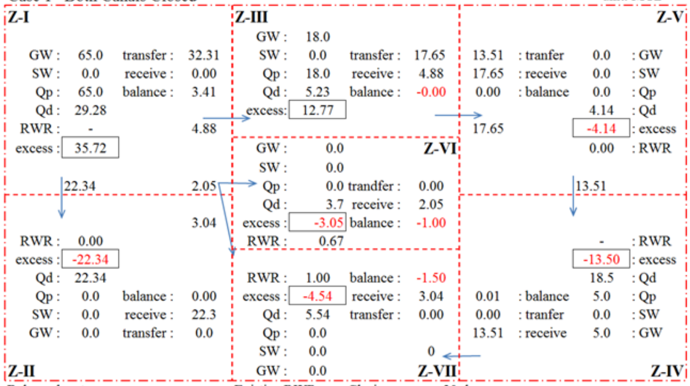
note *1: volume included 5% of treatment capacity

Attached Figures 5-1

ANALYSIS OF RWR REQUIREMENT - 70% of Day Average Demand

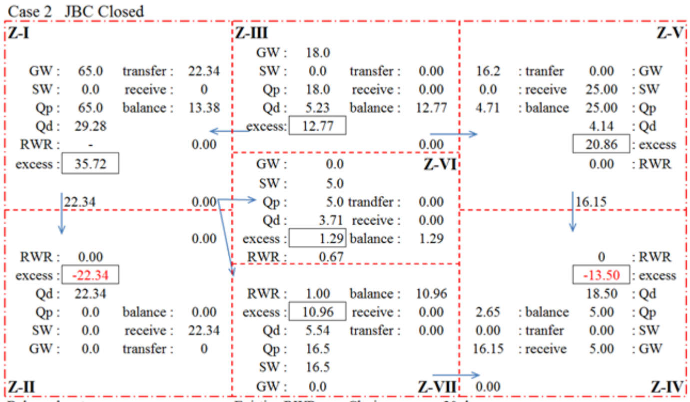
1) Year 2023

Case 1 Both Canals Closed unit: MGD



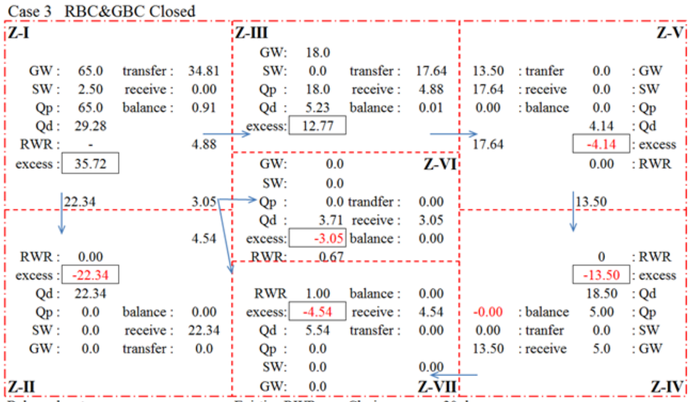
Balance bewteen		Existing RWR		Closing		30 days		
Qp and Qd	0.92 MGD		WSZ-VI	20 MG		WSZ-VII	30 MG	
RWR	0.00			0.67 MGD			1.00 MGD	
check	0.92	New RW	WSZ II	0.00 MGD		WSZ V	0.00 MGD	

Case 2 JBC Closed



Balance bewteen		Existing RWR		Closing		30 days	
Qp and Qd	45.75 MGD		WSZ-VI	20 MG		WSZ-VII	30 MG
RWR	0.00			0.67 MGD			1.00 MGD
check	45.75	New RW	WSZ II	0.00 MGD		WSZ V	0.00 MGD

Case 3 RBC&GBC Closed



Balance bewteen		Existing RWR		Closing		30 days	
Qp and Qd	0.92 MGD		WSZ-VI	20 MG		WSZ-VII	30 MG
RWR	0.00			0.67 MGD			1.00 MGD
check	0.92	New RW	WSZ II	0.00 MGD		WSZ V	0.00 MGD

Year 2023

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1] WSZ II:	WSZ V:	Total
Both canal cloused	12	0.00	0.00	0	0	0
JCB cloused	18	0.00	0.00	0	0	0
RBC & GBC closed	18	0.00	0.00	0	0	0
Total volume	30	**0.00**	**0.00** mgd	0	0	0

note *1: volume included 5% of treatment capacity

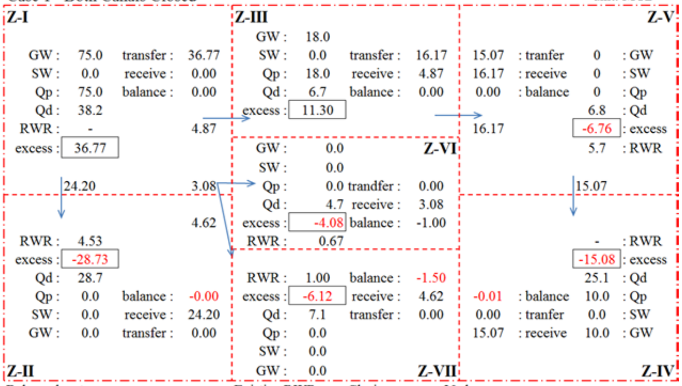
Attached Figures 5-2

ANALYSIS OF RWR REQUIREMENT - 70% of Day Average Demand

2) Year 2028

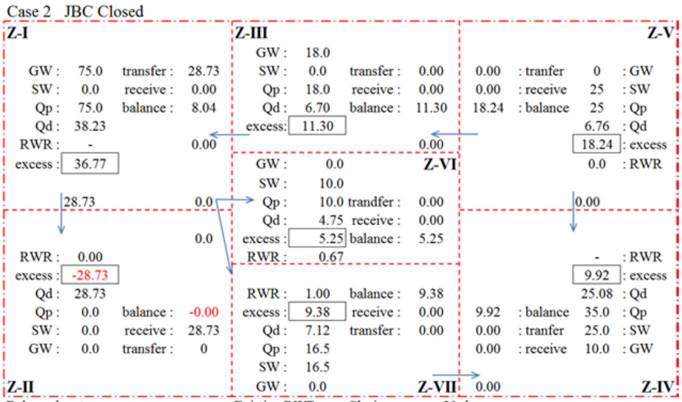
Case 1 Both Canals Closed

unit: MGD



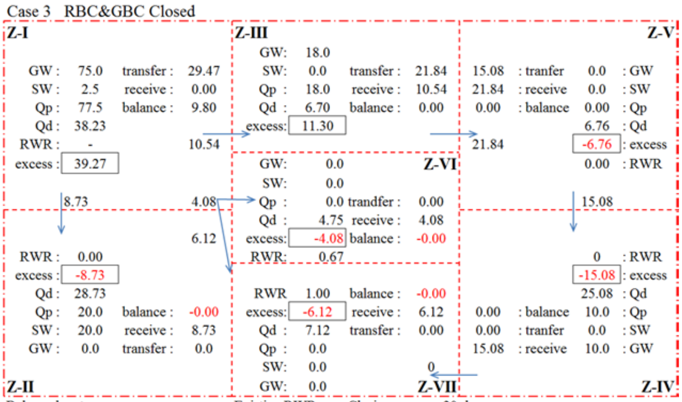
Balance bewteen Existing RWR Closing 30 days
Qp and Qd -12.69 MGD WSZ-VI 20 MG WSZ-VII 30 MG
RWR 10.19 0.67 MGD 1.00 MGD
New RW. WSZ II 4.53 MGD WSZ V 5.66 MGD

Case 2 JBC Closed



Balance bewteen Existing RWR Closing 30 days
Qp and Qd 62.14 MGD WSZ-VI 20 MG WSZ-VII 30 MG
RWR 0 0.67 MGD 1.00 MGD
check 62.14 New RW. WSZ II 0.00 MGD WSZ V 0.00 MGD

Case 3 RBC&GBC Closed



Balance bewteen Existing RWR Closing 30 days
Qp and Qd 9.81 MGD WSZ-VI 20 MG WSZ-VII 30 MG
RWR 0.00 0.67 MGD 1.00 MGD
check 9.81 New RW. WSZ II 0.00 MGD WSZ V 0.00 MGD

Year 2028

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1] WSZ II:	WSZ V:	Total
Both canal cloused	12	54.35	67.93	60	80	140
JCB cloused	18	0.00	0.00	0	0	0
RBC & GBC closed	18	0.00	0.00	0	0	0
Total volume	30	**54.35**	**67.93**	60	80	140

note *1: volume included 5% of treatment capacity

Attached Figures 5-3

ANALYSIS OF RWR REQUIREMENT - 70% of Day Average Demand

3) Year 2033

Case 1 Both Canals Closed — unit: MGD

Z-I / Z-II	Z-III / Z-VI / Z-VII	Z-V / Z-IV
Z-I	**Z-III**	**Z-V**
	GW : 18.0	
GW : 85.0 transfer : 37.1	SW : 0.0 transfer : 12.40	21.59 : tranfer 0.0 : GW
SW : 0.0 receive : 0.00	Qp : 18.0 receive : 2.68	12.40 : receive 0.0 : SW
Qp : 85.0 balance : -0.00	Qd : 8.28 balance : 0.00	-0.01 : balance 0.0 : Qp
Qd : 47.90	excess : 9.72	8.34 : Qd
RWR : - 2.68		12.40 -8.34 : excess
excess : 37.10	GW : 0.0 **Z-VI**	17.5 : RWR
	SW : 0.0	
21.35 5.24	Qp : 0.0 trandfer : 0.00	21.59
	Qd : 5.9 receive : 5.24	
7.83	excess : -5.24 balance : 0.00	
RWR : 14.02	RWR : 0.67	- : RWR
excess : -35.37		-21.59 : excess
Qd : 35.37	RWR : 1.00 balance : 0.00	31.59 : Qd
Qp : 0.0 balance : 0.00	excess : -7.83 receive : 7.83	-0.00 : balance 10.0 : Qp
SW : 0.0 receive : 21.35	Qd : 8.83 transfer : 0.00	0.00 : tranfer 0.0 : SW
GW : 0.0 transfer : 0.00	Qp : 0.0	21.59 : receive 10.0 : GW
	SW : 0.0	
Z-II	GW : 0.0 **Z-VII**	**Z-IV**

Balance bewteen		Existing RWR	Closing	30 days	
Qp and Qd	-31.54 MGD	WSZ-VI	20 MG	WSZ-VII	30 MG
RWR	31.54		0.67 MGD		1.00 MGD
		New RW WSZ II	14.02 MGD	WSZ V	17.52 MGD

Case 2 JBC Closed

Z-I / Z-II	Z-III / Z-VI / Z-VII	Z-V / Z-IV
Z-I	**Z-III**	**Z-V**
	GW: 18.0	
GW : 85.0 transfer : 29.24	SW: 0.0 transfer : 0.00	0.00 : tranfer 0.0 : GW
SW : 0.0 receive : 0.00	Qp : 18.0 receive : 0.00	0.0 : receive 25.0 : SW
Qp : 85.0 balance : 7.86	Qd : 8.28 balance : 9.72	16.66 : balance 25.0 : Qp
Qd : 47.90	excess: 9.72	8.34 : Qd
RWR : - 0.00	0.00	16.66 : excess
excess : 37.10	GW: 0.0 **Z-VI**	0.00 : RWR
	SW: 10.0	
29.24 0.0	Qp : 10.0 trandfer : 0.00	0.00
	Qd : 5.90 receive : 0.00	
0.0	excess: 4.10 balance : 4.10	
RWR : 0.00	RWR: 0.67	- : RWR
excess : -35.37		28.41 : excess
Qd : 35.37	RWR 1.00 balance : 6.94	31.59 : Qd
Qp : 0.0 balance : 0.00	excess: 7.67 receive : 5.40	23.01 : balance 60.0 : Qp
SW : 0.0 receive : 35.37	Qd : 8.83 transfer : 6.13	5.40 : tranfer 50.0 : SW
GW : 0.0 transfer : 0	Qp : 16.5	0.00 : receive 10.0 : GW
	SW: 16.5 5.40	
Z-II 6.13	GW: 0.0 **Z-VII**	**Z-IV**

Balance bewteen		Existing RWR	Closing	30 days	
Qp and Qd	68.29 MGD	WSZ-VI	20 MG	WSZ-VII	30 MG
RWR	0		0.67 MGD		1.00 MGD
check	68.29	New RW WSZ II	0.00 MGD	WSZ V	0.00 MGD

Case 3 RBC&GBC Closed

Z-I / Z-II	Z-III / Z-VI / Z-VII	Z-V / Z-IV
Z-I	**Z-III**	**Z-V**
	GW: 18.0	
GW : 85.0 transfer : 35.26	SW: 0.0 transfer : 29.93	21.59 : tranfer 0.0 : GW
SW : 2.5 receive : 0.00	Qp : 18.0 receive : 22.19	29.93 : receive 0.0 : SW
Qp : 87.5 balance : 4.34	Qd : 8.28 balance : 1.98	0.00 : balance 0.00 : Qp
Qd : 47.90	excess: 9.72	8.34 : Qd
RWR : - 22.19		29.93 -8.34 : excess
excess : 39.60	GW: 0.0 **Z-VI**	0.00 : RWR
	SW: 0.0	
0.00 5.24	Qp : 0.0 trandfer : 0.00	21.59
	Qd : 5.90 receive : 5.24	
7.83	excess: -5.24 balance : 0.00	
RWR : 0.00	RWR: 0.67	0 : RWR
excess : 4.63		-21.59 : excess
Qd : 35.37	RWR 1.00 balance : 0.00	31.59 : Qd
Qp : 40.0 balance : 4.63	excess: -7.83 receive : 7.83	-0.00 : balance 10.0 : Qp
SW : 40.0 receive : 0.00	Qd : 8.83 transfer : 0.00	0.00 : tranfer 0.0 : SW
GW : 0.0 transfer : 0.00	Qp : 0.0	21.59 : receive 10.0 : GW
	SW: 0.0 0	
Z-II	GW: 0.0 **Z-VII**	**Z-IV**

Balance bewteen		Existing RWR	Closing	30 days	
Qp and Qd	10.96 MGD	WSZ-VI	20 MG	WSZ-VII	30 MG
RWR	0.00		0.67 MGD		1.00 MGD
check	10.96	New RW WSZ II	0.00 MGD	WSZ V	0.00 MGD

Year 2033

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1] WSZ II:	WSZ V:	Total
Both canal cloused	12	168.21	210.3	180	230	410
JCB cloused	18	0.00	0.00	0	0	0
RBC & GBC closed	18	0.00	0.00	0	0	0
Total volume	30	**168.21**	**210.27**	180	230	410

note *1: volume included 5% of treatment capacity

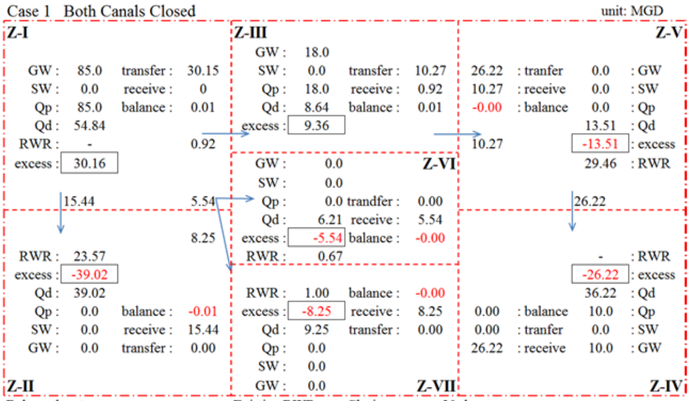
Attached Figures 5-4

ANALYSIS OF RWR REQUIREMENT - 70% of Day Average Demand

4) Year 2038

Case 1 Both Canals Closed

unit: MGD



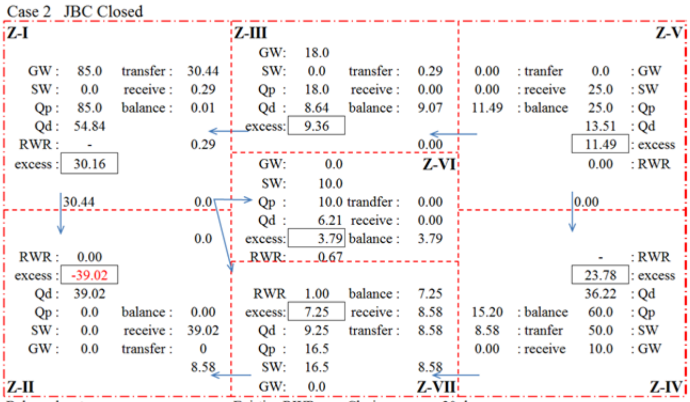
Balance bewteen — Existing RWR — Closing — 30 days

Qp and Qd -53.03 MGD — WSZ-VI 20 MG — WSZ-VII 30 MG

RWR 53.03 — 0.67 MGD — 1.00 MGD

New RW. WSZ II 23.57 MGD — WSZ V 29.46 MGD

Case 2 JBC Closed



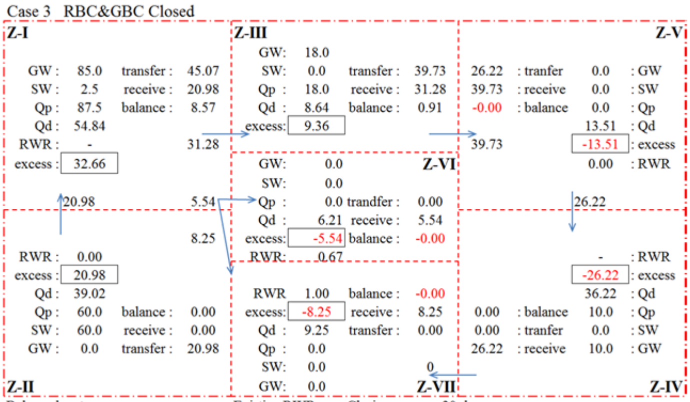
Balance bewteen — Existing RWR — Closing — 30 days

Qp and Qd 46.80 MGD — WSZ-VI 20 MG — WSZ-VII 30 MG

RWR 0.00 — 0.67 MGD — 1.00 MGD

check 46.80 — New RW. WSZ II 0.00 MGD — WSZ V 0.00 MGD

Case 3 RBC&GBC Closed



Balance bewteen — Existing RWR — Closing — 30 days

Qp and Qd 9.47 MGD — WSZ-VI 20 MG — WSZ-VII 30 MG

RWR 0.00 — 0.67 MGD — 1.00 MGD

check 9.47 — New RW. WSZ II 0.00 MGD — WSZ V 0.00 MGD

Year 2033

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume*1 WSZ II:	WSZ V:	Total
Both canal cloused	12	282.83	353.53	300	380	680
JCB cloused	18	0.00	0.00	0	0	0
RBC & GBC closed	18	0.00	0.00	0	0	0
Total volume	30	**282.83**	**353.53**	300	380	680

note *1: volume included 5% of treatment capacity

Attached Figures 6-1

ANALYSIS OF RWR REQUIREMENT - 60% of Day Average Demand

1) Year 2023

Case 1 Both Canals Closed

unit: MGD

Z-I

GW :	65.0	transfer :	30.30
SW :	0.0	receive :	0.00
Qp :	65.0	balance :	9.60
Qd :	25.10		
RWR :	-		4.88
excess :	39.90		
	19.15		2.52
			3.75

Z-III

GW :	18.0		
SW :	0.0	transfer :	14.41
Qp :	18.0	receive :	4.88
Qd :	4.49	balance :	3.98
excess :	13.51		

Z-V

10.86	: tranfer	0.0	: GW
14.41	: receive	0.0	: SW
0.00	: balance	0.0	: Qp
		3.55	: Qd
14.41		-3.55	: excess
		0.00	: RWR
		10.86	

Z-VI

GW :	0.0		
SW :	0.0		
Qp :	0.0	trandfer :	0.00
Qd :	3.18	receive :	2.52
excess :	-2.52	balance :	0.00
RWR :	0.67		

Z-II

RWR :	0.00		
excess :	-19.15		
Qd :	19.15		
Qp :	0.0	balance :	0.00
SW :	0.0	receive :	19.2
GW :	0.0	transfer :	0.0

Z-VII

RWR :	1.00	balance :	0.00
excess :	-3.75	receive :	3.75
Qd :	4.75	transfer :	0.00
Qp :	0.0		
SW :	0.0		0
GW :	0.0		

Z-IV

		-	: RWR
		-10.86	: excess
		15.86	: Qd
-0.00	: balance	5.0	: Qp
0.00	: tranfer	0.0	: SW
10.86	: receive	5.0	: GW

Balance bewteen		Existing RWR		Closing	30 days		
Qp and Qd	13.60 MGD		WSZ-VI	20 MG	WSZ-VII	30 MG	
RWR	0.00			0.67 MGD		1.00 MGD	
check	13.60	New RW	WSZ II	0.00 MGD	WSZ V	0.00 MGD	

Case 2 JBC Closed

Z-I

GW :	65.0	transfer :	19.15
SW :	0.0	receive :	0
Qp :	65.0	balance :	20.75
Qd :	25.10		
RWR :	-		0.00
excess :	39.90		
	19.15		0.00
			0.00

Z-III

GW :	18.0		
SW :	0.0	transfer :	0.0
Qp :	18.0	receive :	0.0
Qd :	4.49	balance :	13.51
excess :	13.51		0.00

Z-V

10.9	: tranfer	0.0	: GW
0.0	: receive	25.0	: SW
10.59	: balance	25.0	: Qp
		3.55	: Qd
		21.45	: excess
		0.0	: RWR
		10.86	

Z-VI

GW :	0.0		
SW :	5.0		
Qp :	5.0	trandfer :	0.00
Qd :	3.18	receive :	0.00
excess :	1.82	balance :	1.82
RWR :	0.67		

Z-II

RWR :	0.00		
excess :	-19.15		
Qd :	19.15		
Qp :	0.0	balance :	0.00
SW :	0.0	receive :	19.15
GW :	0.0	transfer :	0

Z-VII

RWR :	1.00	balance :	11.75
excess :	11.75	receive :	0.00
Qd :	4.75	transfer :	0.00
Qp :	16.5		
SW :	16.5		
GW :	0.0		0.00

Z-IV

		0	: RWR
		-10.86	: excess
		15.86	: Qd
-0.00	: balance	5.0	: Qp
0.00	: tranfer	0.0	: SW
10.86	: receive	5.0	: GW

Balance bewteen		Existing RWR		Closing	30 days		
Qp and Qd	58.43 MGD		WSZ-VI	20 MG	WSZ-VII	30 MG	
RWR	0.00			0.67 MGD		1.00 MGD	
check	58.43	New RW	WSZ II	0.00 MGD	WSZ V	0.00 MGD	

Case 3 RBC&GBC Closed

Z-I

GW :	65.0	transfer :	26.32
SW :	2.5	receive :	0.00
Qp :	65.0	balance :	13.58
Qd :	25.10		
RWR :	-		0.9
excess :	39.90		
	19.15		2.52
			3.75

Z-III

GW :	18.0		
SW :	0.0	transfer :	14.41
Qp :	18.0	receive :	0.90
Qd :	4.49	balance :	0.00
excess :	13.51		

Z-V

10.86	: tranfer	0	: GW
14.41	: receive	0	: SW
0.00	: balance	0	: Qp
		3.55	: Qd
14.41		-3.55	: excess
		0.00	: RWR
		10.86	

Z-VI

GW :	0.0		
SW :	0.0		
Qp :	0.0	trandfer :	0.00
Qd :	3.18	receive :	2.52
excess :	-2.52	balance :	0.00
RWR :	0.67		

Z-II

RWR :	0.00		
excess :	-19.15		
Qd :	19.15		
Qp :	0.0	balance :	0.00
SW :	0.0	receive :	19.15
GW :	0.0	transfer :	0.0

Z-VII

RWR :	1.00	balance :	0.00
excess :	-3.75	receive :	3.75
Qd :	4.75	transfer :	0.00
Qp :	0.0		
SW :	0.0		0.00
GW :	0.0		

Z-IV

		0	: RWR
		-10.86	: excess
		15.86	: Qd
-0.00	: balance	5.0	: Qp
0.00	: tranfer	0.0	: SW
10.86	: receive	5.0	: GW

Balance bewteen		Existing RWR		Closing	30 days		
Qp and Qd	13.60 MGD		WSZ-VI	20 MG	WSZ-VII	30 MG	
RWR	0.00			0.67 MGD		1.00 MGD	
check	13.60	New RW	WSZ II	0.00 MGD	WSZ V	0.00 MGD	

Year 2023

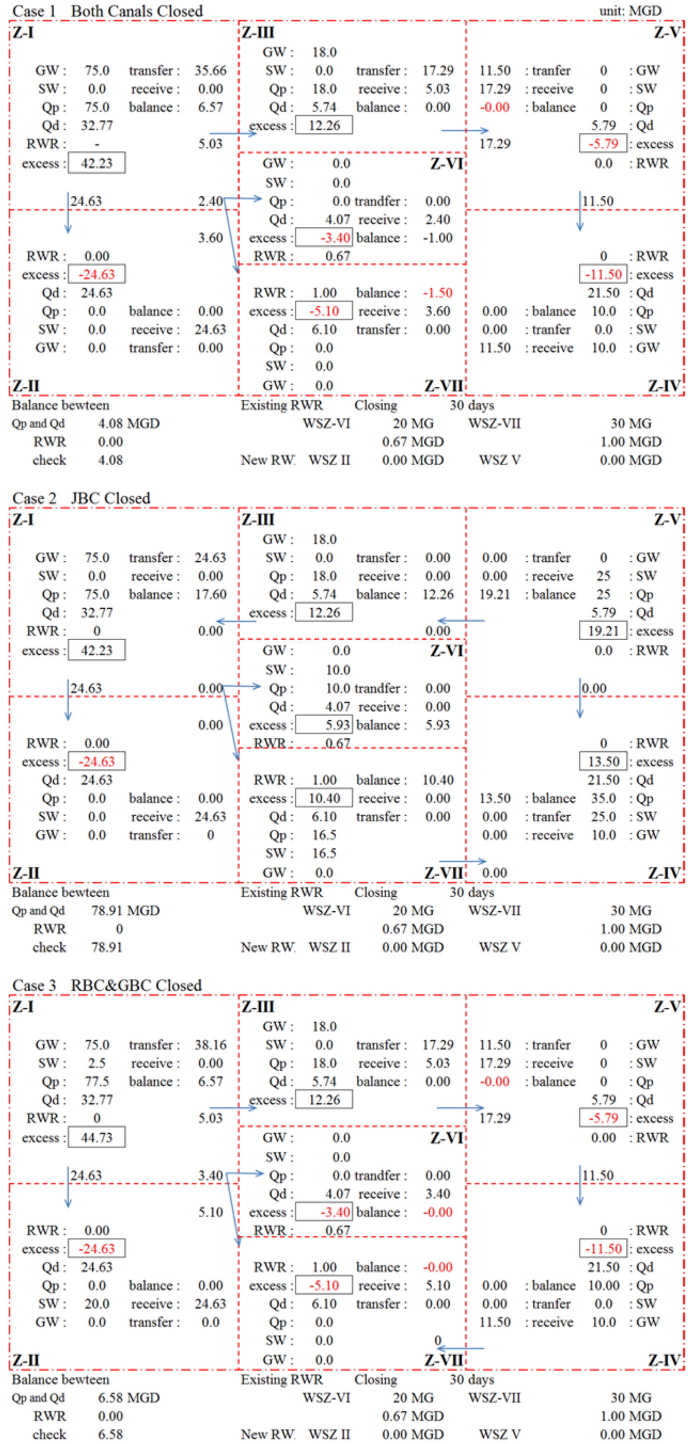
Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1] WSZ II:	WSZ V:	Total
Both canal cloused	12	0.00	0.00	0	0	0
JCB cloused	18	0.00	0.00	0	0	0
RBC & GBC closed	18	0.00	0.00	0	0	0
Total volume	30	**0.00**	**0.00**	0	0	0

note *1: volume included 5% of treatment capacity

Attached Figures 6-2

ANALYSIS OF RWR REQUIREMENT - 60% of Day Average Demand

2) Year 2028



Year 2028

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1]	WSZ II:	WSZ V:	Total
Both canal cloused	12	0.00	0.00		0	0	0
JCB cloused	18	0.00	0.00		0	0	0
RBC & GBC closed	18	0.00	0.00		0	0	0
Total volume	30	**0.00**	**0.00**		0	0	0

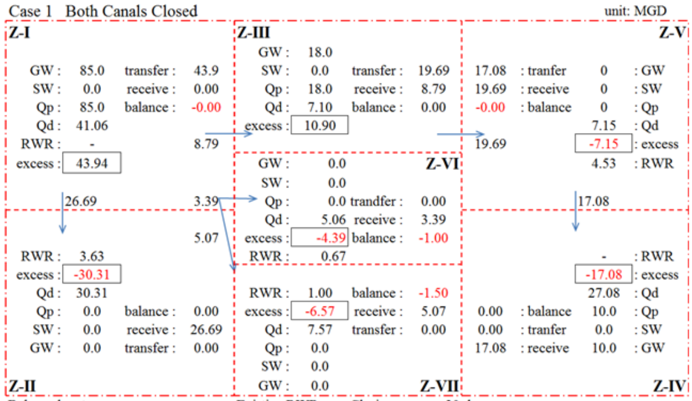
note *1: volume included 5% of treatment capacity

Attached Figures 6-3

ANALYSIS OF RWR REQUIREMENT - 60% of Day Average Demand

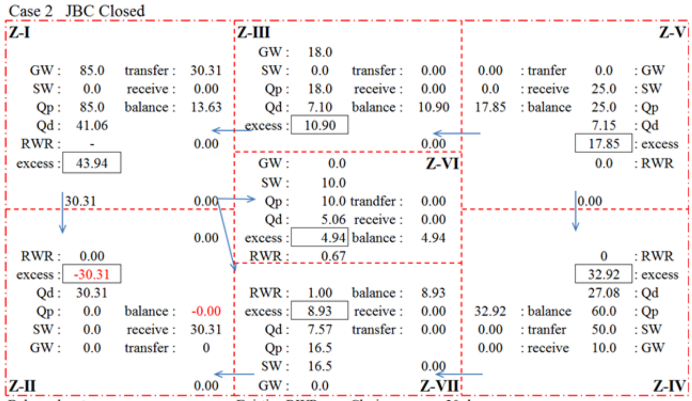
3) Year 2033

Case 1 Both Canals Closed unit: MGD



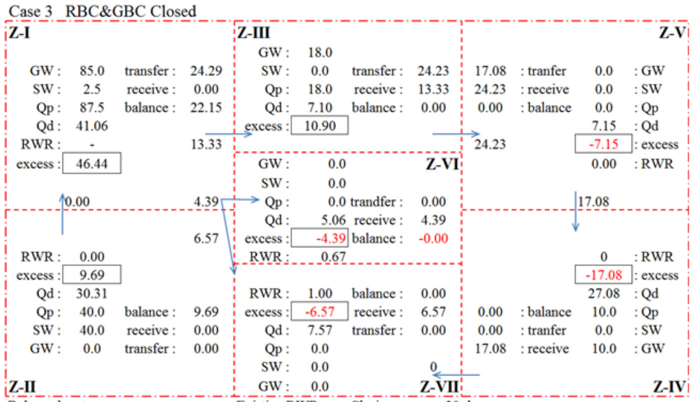
Balance bewteen			Existing RWR		Closing	30 days		
Qp and Qd	-10.66	MGD		WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	8.16				0.67 MGD			1.00 MGD
			New RW	WSZ II	3.63 MGD	WSZ V		4.53 MGD

Case 2 JBC Closed



Balance bewteen			Existing RWR		Closing	30 days		
Qp and Qd	89.18	MGD		WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	0				0.67 MGD			1.00 MGD
check	89.18		New RW	WSZ II	0.00 MGD	WSZ V		0.00 MGD

Case 3 RBC&GBC Closed



Balance bewteen			Existing RWR		Closing	30 days		
Qp and Qd	31.84	MGD		WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	0.00				0.67 MGD			1.00 MGD
check	31.84		New RW	WSZ II	0.00 MGD	WSZ V		0.00 MGD

Year 2033

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1] WSZ II:	WSZ V:	Total
Both canal cloused	12	43.52	54.4	50	60	110
JCB cloused	18	0.00	0.00	0	0	0
RBC & GBC closed	18	0.00	0.00	0	0	0
Total volume	30	**43.52**	**54.40**	50	60	110

note *1: volume included 5% of treatment capacity

Attached Figures 6-4

ANALYSIS OF RWR REQUIREMENT - 60% of Day Average Demand

4) Year 2038

Case 1 Both Canals Closed

unit: MGD

Z-I				**Z-III**							**Z-V**
				GW :	18.0						
GW :	85.0	transfer :	37.99	SW :	0.0	transfer :	16.47	21.04	: tranfer	0.0	: GW
SW :	0.0	receive :	0.00	Qp :	18.0	receive :	5.88	16.47	: receive	0.0	: SW
Qp :	85.0	balance :	0.00	Qd :	7.41	balance :	0.00	-0.00	: balance	0.0	: Qp
Qd :	47.01			excess :	10.59					11.58	: Qd
RWR :	0		5.88					16.47		-11.58	: excess
excess :	37.99			GW :	0.0		**Z-VI**			16.15	: RWR
				SW :	0.0						
	20.52		4.66	Qp :	0.0	trandfer :	0.00			21.04	
				Qd :	5.32	receive :	4.66				
			6.93	excess :	-4.66	balance :	0.00				
RWR :	12.92			RWR :	0.67					-	: RWR
excess :	-33.44									-21.04	: excess
Qd :	33.44			RWR :	1.00	balance :	-0.00			31.04	: Qd
Qp :	0.0	balance :	-0.00	excess :	-6.93	receive :	6.93	-0.00	: balance	10.0	: Qp
SW :	0.0	receive :	20.52	Qd :	7.93	transfer :	0.00	0.00	: tranfer	0.0	: SW
GW :	0.0	transfer :	0.00	Qp :	0.0			21.04	: receive	10.0	: GW
				SW :	0.0						
Z-II				GW :	0.0		**Z-VII**				**Z-IV**

Balance bewteen		Existing RWR	Closing	30 days		
Qp and Qd	-29.07 MGD	WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	29.07		0.67 MGD			1.00 MGD
		New RW. WSZ II	12.92 MGD	WSZ V		16.15 MGD

Case 2 JBC Closed

Z-I				**Z-III**							**Z-V**
				GW :	18.0						
GW :	85.0	transfer :	33.44	SW :	0.0	transfer :	0.00	0.00	: tranfer	0.0	: GW
SW :	0.0	receive :	0.00	Qp :	18.0	receive :	0.00	0.00	: receive	25.0	: SW
Qp :	85.0	balance :	4.55	Qd :	7.41	balance :	10.59	13.42	: balance	25.0	: Qp
Qd :	47.01			excess :	10.59					11.58	: Qd
RWR :	0.0		0.00				0.00			13.42	: excess
excess :	37.99			GW :	0.0		**Z-VI**			0.00	: RWR
				SW :	10.0						
	33.44		0.00	Qp :	10.0	trandfer :	0.00			0.00	
				Qd :	5.3	receive :	0.00				
			0.00	excess :	4.68	balance :	4.68				
RWR :	0.00			RWR :	0.67					-	: RWR
excess :	-33.44									28.96	: excess
Qd :	33.44			RWR :	1.00	balance :	8.57			31.04	: Qd
Qp :	0.0	balance :	-0.00	excess :	8.57	receive :	0.00	28.96	: balance	60.0	: Qp
SW :	0.0	receive :	33.44	Qd :	7.93	transfer :	0.00	0.00	: tranfer	50.0	: SW
GW :	0.0	transfer :	0	Qp :	16.5			0.00	: receive	10.0	: GW
			0.00	SW :	16.5		0.00				
Z-II				GW :	0.0		**Z-VII**				**Z-IV**

Balance bewteen		Existing RWR	Closing	30 days		
Qp and Qd	70.76 MGD	WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	0.00		0.67 MGD			1.00 MGD
check	70.76	New RW. WSZ II	0.00 MGD	WSZ V		0.00 MGD

Case 3 RBC&GBC Closed

Z-I				**Z-III**							**Z-V**
				GW :	18.0						
GW :	85.0	transfer :	38.80	SW :	0.0	transfer :	37.80	26.22	: tranfer	0.0	: GW
SW :	2.5	receive :	12.65	Qp :	18.0	receive :	27.21	37.80	: receive	0.0	: SW
Qp :	87.5	balance :	14.34	Qd :	7.41	balance :	0.00	-0.00	: balance	0.0	: Qp
Qd :	47.01			excess :	10.59					11.58	: Qd
RWR :	0.0		27.21					37.80		-11.58	: excess
excess :	40.49			GW :	0.0		**Z-VI**			0.00	: RWR
				SW :	0.0						
	12.65		4.66	Qp :	0.0	trandfer :	0.00			26.22	
				Qd :	5.32	receive :	4.66				
			6.93	excess :	-4.66	balance :	0.00				
RWR :	0.00			RWR :	0.67					-	: RWR
excess :	26.56									-21.04	: excess
Qd :	33.44			RWR :	1.00	balance :	-0.00			31.04	: Qd
Qp :	60.0	balance :	13.91	excess :	-6.93	receive :	6.93	5.18	: balance	10.0	: Qp
SW :	60.0	receive :	0.00	Qd :	7.93	transfer :	0.00	0.00	: tranfer	0.0	: SW
GW :	0.0	transfer :	12.65	Qp :	0.0			26.22	: receive	10.0	: GW
				SW :	0.0		0				
Z-II				GW :	0.0		**Z-VII**				**Z-IV**

Balance bewteen		Existing RWR	Closing	30 days		
Qp and Qd	33.43 MGD	WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	0.00		0.67 MGD			1.00 MGD
check	33.43	New RW. WSZ II	0.00 MGD	WSZ V		0.00 MGD

Year 2038

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1]	WSZ II:	WSZ V:	Total
Both canal cloused	12	155.04	193.80		170	210	380
JCB closued	18	0.00	0.00		0	0	0
RBC & GBC closed	18	0.00	0.00		0	0	0
Total volume	30	**155.04**	**193.80**		170	210	380

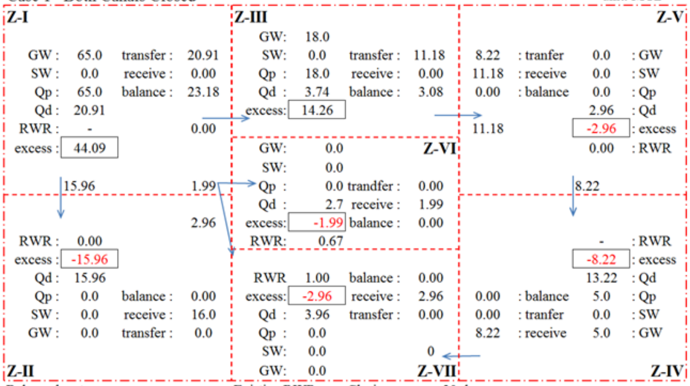
note *1: volume included 5% of treatment capacity

Attached Figures 7-1

ANALYSIS OF RWR REQUIREMENT - 50% of Day Average Demand

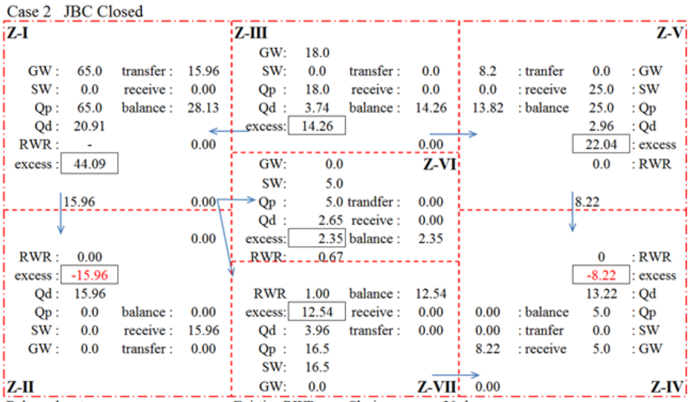
1) Year 2023

Case 1 Both Canals Closed unit: MGD



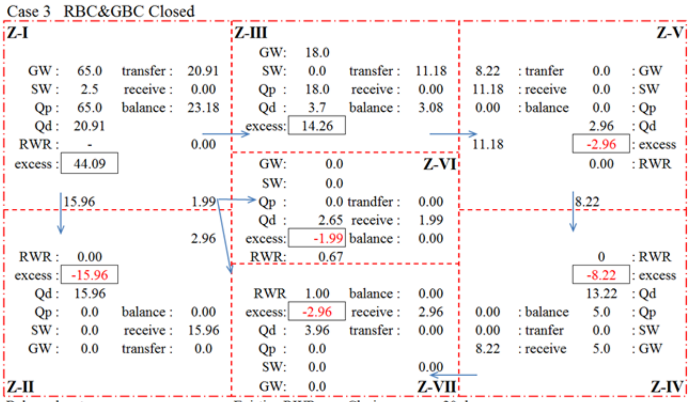
Balance bewteen		Existing RWR		Closing	30 days		
Qp and Qd	26.28 MGD		WSZ-VI	20 MG	WSZ-VII	30 MG	
RWR	0.00			0.67 MGD		1.00 MGD	
check	26.28	New RW	WSZ II	0.00 MGD	WSZ V	0.00 MGD	

Case 2 JBC Closed



Balance bewteen		Existing RWR		Closing	30 days		
Qp and Qd	71.11 MGD		WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	0.00			0.67 MGD			1.00 MGD
check	71.11	New RW	WSZ II	0.00 MGD	WSZ V		0.00 MGD

Case 3 RBC&GBC Closed



Balance bewteen		Existing RWR		Closing	30 days		
Qp and Qd	26.28 MGD		WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	0.00			0.67 MGD			1.00 MGD
check	26.28	New RW	WSZ II	0.00 MGD	WSZ V		0.00 MGD

Year 2023

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1] WSZ II:	WSZ V:	Total
Both canal cloused	12	0.00	0.00	0	0	0
JCB cloused	18	0.00	0.00	0	0	0
RBC & GBC closed	18	0.00	0.00	0	0	0
Total volume	30	**0.00**	**0.00**	0	0	0

note *1: volume included 5% of treatment capacity

Attached Figures 7-2

ANALYSIS OF RWR REQUIREMENT - 50% of Day Average Demand

2) Year 2028

Case 1 Both Canals Closed

unit: MGD

Z-I				**Z-III**							**Z-V**
				GW:	18.0						
GW :	75.0	transfer :	24.83	SW:	0.0	transfer :	12.74	7.91	: tranfer	0	: GW
SW :	0.0	receive :	0.00	Qp :	18.0	receive :	0.00	12.74	: receive	0	: SW
Qp :	75.0	balance :	22.87	Qd :	4.8	balance :	0.48	0.00	: balance	0	: Qp
Qd :	27.3			excess:	13.22					4.8	: Qd
RWR :	-		0.00					12.74		-4.83	: excess
excess :	47.70			GW:	0.0		**Z-VI**			0.0	: RWR
				SW:	0.0						
	20.52		1.72	Qp :	0.0	trandfer :	0.00			7.91	
				Qd :	3.4	receive :	1.72				
			2.59	excess:	-2.72	balance :	-1.00				
RWR :	0.00			RWR:	0.67					-	: RWR
excess :	-20.52									-7.91	: excess
Qd :	20.5			RWR	1.00	balance :	-1.50			17.9	: Qd
Qp :	0.0	balance :	-0.00	excess:	-4.09	receive :	2.59	-0.00	: balance	10.0	: Qp
SW :	0.0	receive :	20.52	Qd :	5.1	transfer :	0.00	0.00	: tranfer	0.0	: SW
GW :	0.0	transfer :	0.00	Qp :	0.0			7.91	: receive	10.0	: GW
				SW:	0.0						
Z-II				GW:	0.0		**Z-VII**				**Z-IV**

Balance bewteen		Existing RWR		Closing	30 days		
Qp and Qd	20.84 MGD		WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	0.00			0.67 MGD			1.00 MGD
check	20.84	New RW.	WSZ II	0.00 MGD	WSZ V		0.00 MGD

Case 2 JBC Closed

Z-I				**Z-III**							**Z-V**
				GW:	18.0						
GW :	75.0	transfer :	20.52	SW:	0.0	transfer :	0.00	0.00	: tranfer	0	: GW
SW :	0.0	receive :	0.00	Qp :	18.0	receive :	0.00	0.00	: receive	25	: SW
Qp :	75.0	balance :	27.18	Qd :	4.8	balance :	13.22	20.17	: balance	25	: Qp
Qd :	27.3			excess:	13.22					4.8	: Qd
RWR :	-		0.00				0.00			20.17	: excess
excess :	47.70			GW:	0.0		**Z-VI**			0.0	: RWR
				SW:	10.0						
	20.52		0.00	Qp :	10.0	trandfer :	0.00			0.00	
				Qd :	3.4	receive :	0.00				
			0.00	excess:	6.61	balance :	6.61				
RWR :	0			RWR:	0.7					-	: RWR
excess :	-20.52									17.09	: excess
Qd :	20.5			RWR	1.0	balance :	11.41			17.9	: Qd
Qp :	0.0	balance :	-0.00	excess:	11.41	receive :	0.00	17.09	: balance	35.0	: Qp
SW :	0.0	receive :	20.52	Qd :	5.1	transfer :	0.00	0.00	: tranfer	25.0	: SW
GW :	0.0	transfer :	0	Qp :	16.5			0.00	: receive	10.0	: GW
				SW:	16.5						
Z-II				GW:	0.0		**Z-VII**	0.00			**Z-IV**

Balance bewteen		Existing RWR		Closing	30 days		
Qp and Qd	95.67 MGD		WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	0			0.67 MGD			1.00 MGD
check	95.67	New RW.	WSZ II	0.00 MGD	WSZ V		0.00 MGD

Case 3 RBC&GBC Closed

Z-I				**Z-III**							**Z-V**
				GW:	18.0						
GW :	75.0	transfer :	27.33	SW:	0.0	transfer :	12.74	7.91	: tranfer	0	: GW
SW :	2.5	receive :	0.00	Qp :	18.0	receive :	0.00	12.74	: receive	0	: SW
Qp :	77.5	balance :	22.87	Qd :	4.78	balance :	0.48	0.00	: balance	0	: Qp
Qd :	27.30			excess:	13.22					4.83	: Qd
RWR :	-		0.00					12.74		-4.83	: excess
excess :	50.20			GW:	0.0		**Z-VI**			0.00	: RWR
				SW:	0.0						
	20.52		2.72	Qp :	0.0	trandfer :	0.00			7.91	
				Qd :	3.4	receive :	2.72				
			4.09	excess:	-2.72	balance :	-0.00				
RWR :	0.00			RWR:	0.67					0	: RWR
excess :	-20.52									-7.91	: excess
Qd :	20.52			RWR	1.00	balance :	0.00			17.91	: Qd
Qp :	0.0	balance :	-0.00	excess:	-4.09	receive :	4.09	-0.00	: balance	10.0	: Qp
SW :	20.0	receive :	20.52	Qd :	5.09	transfer :	0.00	0.00	: tranfer	0.0	: SW
GW :	0.0	transfer :	0.0	Qp :	0.0			7.91	: receive	10.0	: GW
				SW:	0.0		0				
Z-II				GW:	0.0		**Z-VII**				**Z-IV**

Balance bewteen		Existing RWR		Closing	30 days		
Qp and Qd	23.34 MGD		WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	0.00			0.67 MGD			1.00 MGD
check	23.34	New RW.	WSZ II	0.00 MGD	WSZ V		0.00 MGD

Year 2028

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume*1	WSZ II:	WSZ V:	Total
Both canal cloused	12	0.00	0.00		0	0	0
JCB cloused	18	0.00	0.00		0	0	0
RBC & GBC closed	18	0.00	0.00		0	0	0
Total volume	30	**0.00**	**0.00**		0	0	0

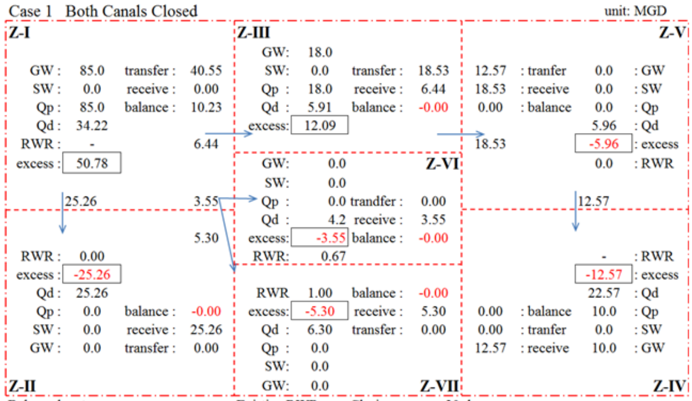
note *1: volume included 5% of treatment capacity

Attached Figures 7-3

ANALYSIS OF RWR REQUIREMENT - 50% of Day Average Demand

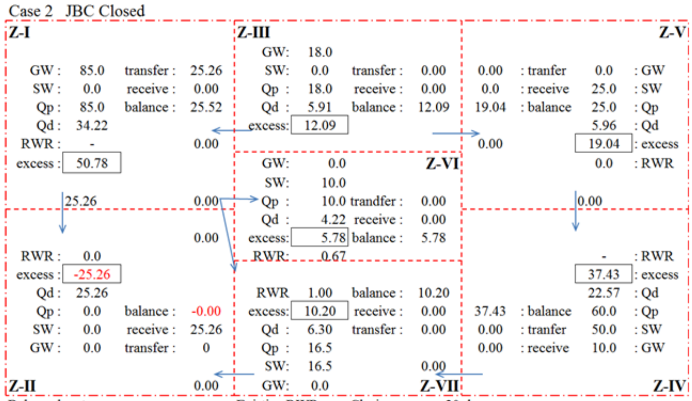
3) Year 2033

Case 1 Both Canals Closed unit: MGD



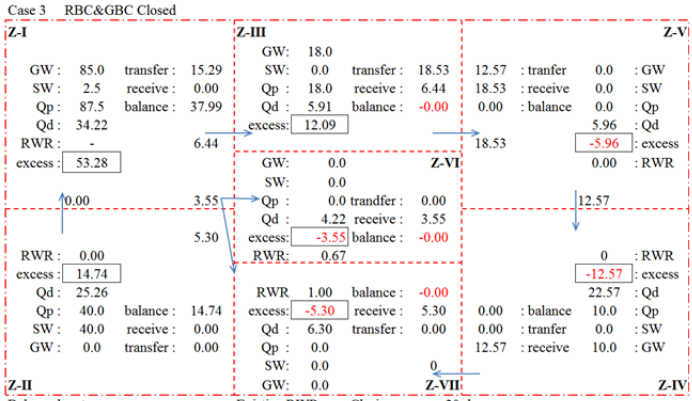
Balance bewteen		Existing RWR		Closing	30 days		
Qp and Qd	10.23 MGD		WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	0.00			0.67 MGD			1.00 MGD
check	10.23	New RW	WSZ II	0.00 MGD	WSZ V		0.00 MGD

Case 2 JBC Closed



Balance bewteen		Existing RWR		Closing	30 days		
Qp and Qd	110.07 MGD		WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	0			0.67 MGD			1.00 MGD
check	110.07	New RW	WSZ II	0.00 MGD	WSZ V		0.00 MGD

Case 3 RBC&GBC Closed



Balance bewteen		Existing RWR		Closing	30 days		
Qp and Qd	52.73 MGD		WSZ-VI	20 MG	WSZ-VII		30 MG
RWR	0.00			0.67 MGD			1.00 MGD
check	52.73	New RW	WSZ II	0.00 MGD	WSZ V		0.00 MGD

Year 2033

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1] WSZ II:	WSZ V:	Total
Both canal cloused	12	0.00	0.0	0	0	0
JCB cloused	18	0.00	0.00	0	0	0
RBC & GBC closed	18	0.00	0.00	0	0	0
Total volume	30	**0.00**	**0.00**	0	0	0

note *1: volume included 5% of treatment capacity

Attached Figures 7-4

ANALYSIS OF RWR REQUIREMENT - 50% of Day Average Demand

4) Year 2038

Case 1 Both Canals Closed — unit: MGD

Z-I	Z-III	Z-V
	GW: 18.0	
GW: 85.0 transfer: 45.83	SW: 0.0 transfer: 22.68	15.87 : tranfer 0.0 : GW
SW: 0.0 receive: 0	Qp: 18.0 receive: 10.86	22.68 : receive 0.0 : SW
Qp: 85.0 balance: -0.00	Qd: 6.17 balance: 0.01	0.00 : balance 0.0 : Qp
Qd: 39.17	excess: 11.83	9.65 : Qd
RWR: - 10.86		22.68 -9.65 : excess
excess: 45.83	GW: 0.0 Z-VI	2.84 : RWR
	SW: 0.0	
25.59 3.77	Qp: 0.0 trandfer: 0.00	15.87
	Qd: 4.43 receive: 3.77	
5.61	excess: -3.77 balance: 0.00	
RWR: 2.28	RWR: 0.67	- : RWR
excess: -27.87		-15.87 : excess
Qd: 27.87	RWR 1.00 balance: 0.00	25.87 : Qd
Qp: 0.0 balance: -0.00	excess: -5.61 receive: 5.61	0.00 : balance 10.0 : Qp
SW: 0.0 receive: 25.59	Qd: 6.61 transfer: 0.00	0.00 : tranfer 0.0 : SW
GW: 0.0 transfer: 0.00	Qp: 0.0	15.87 : receive 10.0 : GW
	SW: 0.0	
Z-II	GW: 0.0 Z-VII	Z-IV

Balance bewteen Qp and Qd -5.12 MGD
RWR 5.12

Existing RWR	Closing	30 days			
	WSZ-VI	20 MG	WSZ-VII	30 MG	
		0.67 MGD		1.00 MGD	
New RW	WSZ II	2.28 MGD	WSZ V	2.84 MGD	

Case 2 JBC Closed

Z-I	Z-III	Z-V
	GW: 18.0	
GW: 85.0 transfer: 27.87	SW: 0.0 transfer: 0.00	0.00 : tranfer 0.0 : GW
SW: 0.0 receive: 0	Qp: 18.0 receive: 0.00	0.00 : receive 25.0 : SW
Qp: 85.0 balance: 17.96	Qd: 6.17 balance: 11.83	15.35 : balance 25.0 : Qp
Qd: 39.17	excess: 11.83	9.65 : Qd
RWR: - 0.00	0.00	15.35 : excess
excess: 45.83	GW: 0.0 Z-VI	0.00 : RWR
	SW: 10.0	
27.87 0.00	Qp: 10.0 trandfer: 0.00	0.00
	Qd: 4.4 receive: 0.00	
0.00	excess: 5.57 balance: 5.57	
RWR: 0.00	RWR: 0.67	- : RWR
excess: -27.87		34.13 : excess
Qd: 27.87	RWR 1.00 balance: 9.89	25.87 : Qd
Qp: 0.0 balance: 0.00	excess: 9.89 receive: 0.00	34.13 : balance 60.0 : Qp
SW: 0.0 receive: 27.87	Qd: 6.61 transfer: 0.00	0.00 : tranfer 50.0 : SW
GW: 0.0 transfer: 0	Qp: 16.5	0.00 : receive 10.0 : GW
0.00	SW: 16.5 0.00	
Z-II	GW: 0.0 Z-VII	Z-IV

Balance bewteen Qp and Qd 94.72 MGD
RWR 0.00
check 94.72

Existing RWR	Closing	30 days			
	WSZ-VI	20 MG	WSZ-VII	30 MG	
		0.67 MGD		1.00 MGD	
New RW	WSZ II	0.00 MGD	WSZ V	0.00 MGD	

Case 3 RBC&GBC Closed

Z-I	Z-III	Z-V
	GW: 18.0	
GW: 85.0 transfer: 23.07	SW: 0.0 transfer: 25.52	15.87 : tranfer 0.0 : GW
SW: 2.5 receive: 0.00	Qp: 18.0 receive: 13.69	25.52 : receive 0.0 : SW
Qp: 87.5 balance: 25.26	Qd: 6.17 balance: -0.00	-0.00 : balance 0.0 : Qp
Qd: 39.17	excess: 11.83	9.65 : Qd
RWR: - 13.69		25.52 -9.65 : excess
excess: 48.33	GW: 0.0 Z-VI	0.00 : RWR
	SW: 0.0	
0.00 3.77	Qp: 0.0 trandfer: 0.00	15.87
	Qd: 4.43 receive: 3.77	
5.61	excess: -3.77 balance: 0.00	
RWR: 0.00	RWR: 0.67	- : RWR
excess: 32.13		-15.87 : excess
Qd: 27.87	RWR 1.00 balance: 0.00	25.87 : Qd
Qp: 60.0 balance: 32.13	excess: -5.61 receive: 5.61	0.00 : balance 10.0 : Qp
SW: 60.0 receive: 0.00	Qd: 6.61 transfer: 0.00	0.00 : tranfer 0.0 : SW
GW: 0.0 transfer: 0.00	Qp: 0.0	15.87 : receive 10.0 : GW
	SW: 0.0 0	
Z-II	GW: 0.0 Z-VII	Z-IV

Balance bewteen Qp and Qd 57.38 MGD
RWR 0.00
check 57.38

Existing RWR	Closing	30 days			
	WSZ-VI	20 MG	WSZ-VII	30 MG	
		0.67 MGD		1.00 MGD	
New RW	WSZ II	0.00 MGD	WSZ V	0.00 MGD	

Year 2038

Volume of New RWR:	clousure days	WSZ II:	WSZ V:	rounded volume[*1]	WSZ II:	WSZ V:	Total
Both canal cloused	12	27.31	34.13		30	40	70
JCB cloused	18	0.00	0.00		0	0	0
RBC & GBC closed	18	0.00	0.00		0	0	0
Total volume	30	**27.31**	**34.13**		30	40	70

note *1: volume included 5% of treatment capacity

AB6.3 Cost Estimation for Master Plan

1. Cost function used for cost estimation

Category	Item	Value	Unit	Note
WTP	Unit cost for WTP - all	159,250,000	Rs./MGD	Source:PC-I for French Project Phase II
	Unit cost for WTP - civil & architectural	86,220,000	Rs./MGD	Source:PC-I for French Project Phase II
	Unit cost for WTP - mechanical & electric	73,030,000	Rs./MGD	Source:PC-I for French Project Phase II
Raw Water Reservoir	Unit cost for Raw Water Reservoir	1,000	Rs./m3	
Well	Unit cost for Well - all	34,835,983	Rs./MGD	Source:PC-I for French Project Phase I
	Unit cost for Well - civil & architectural	22,886,163	Rs./MGD	Source:PC-I for French Project Phase I
	Unit cost for Well - mechanical & electric	11,949,820	Rs./MGD	Source:PC-I for French Project Phase I
Water right	Unit cost for water right	4,132,813	Rs./MGD	Source:PC-I for French Project Phase II
Land purchase	Unit area for WTP	0.24	acre/MGD	Source:PC-I for French Project Phase II
	Unit cost for land purchase	100,000,000	Rs./acre	Source:PC-I for French Project Phase II
	Unit cost for land purchase	24,000,000	Rs./MGD	
Fee, etc	Ratio of overhead/management cost	5	%	
	Tax rate	16	%	
	Ratio of consulting fee (Design & SV)	10	%	
	Contingency	2	%	
Pipe	DIP250	19,091	Rs./m	
	DIP300	21,311	Rs./m	
	DIP350	23,789	Rs./m	
	DIP400	26,555	Rs./m	
	DIP450	29,643	Rs./m	
	DIP500	33,090	Rs./m	
	DIP600	41,233	Rs./m	
	DIP700	51,380	Rs./m	
	DIP800	64,024	Rs./m	
	DIP900	79,779	Rs./m	
	DIP1000	99,411	Rs./m	
	DIP1200	135,247	Rs./m	
	DIP1400	209,999	Rs./m	
	DIP1600	326,067	Rs./m	
	HDPE75	1,105	Rs./m	
	HDPE100	2,054	Rs./m	
	HDPE150	3,817	Rs./m	
	HDPE200	5,724	Rs./m	
	HDPE250	13,092	Rs./m	
	HDPE300	15,710	Rs./m	
	HDPE350	18,328	Rs./m	
	HDPE400	22,637	Rs./m	
	HDPE450	25,269	Rs./m	
	HDPE500	28,030	Rs./m	
Reservoir	GR	17,582	Rs./m3	
	OHR	38,462	Rs./m3	
	DC	93,000,000	Rs./unit	
Pump	Transmission pump	280,000	Rs./kW	
	Distribution pump	360,000	Rs./kW	
	Booster pump	200,000	Rs./kW	
Service connection	Domestic	10,000	Rs./connection	
	Non-Domestic	20,000	Rs./connection	

2. Deflator (Source: World Economic Outlook, IMF)

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Developed countries	1	1.017	1.036	1.055	1.074	1.094	1.112	1.131	1.15	1.169	1.189
Pakistan	1	1.052	1.105	1.162	1.221	1.283	1.345	1.41	1.479	1.551	1.626

	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Developed countries	1.208	1.229	1.249	1.27	1.291	1.313	1.335	1.357	1.38	1.403	1.427
Pakistan	1.705	1.788	1.875	1.966	2.061	2.162	2.267	2.377	2.492	2.613	2.74

3. Estimated ratio for local/foreign cost distribution by types of facilities

Item	Ratio	
	Local	Foreign
WTP	0.5	0.5
Well	0.4	0.6
Transmission Main	0.2	0.8
Arterial Main	0.2	0.8
Distribution Main	0.2	0.8
TR	0.4	0.6
DC	0.4	0.6
Distribution Pipe Secondary & Tertiary	0.5	0.5
District Meter	0.2	0.8
Service Connection	0.5	0.5
Replacement	0.4	0.6

4. Unit costs used for estimating O&M cost

Item	Value	Unit	Source
Electricity Consumption (WTP, Well)	0.3	kWh/m3	Data from New JK WTP, Energy Audit
Electricity Consumption (DC)	0.2	kWh/m3	Data from New JK WTP, Energy Audit
Electricity Cost	15	PKR/kWh	Data from New JK WTP
Chemical Cost (WTP)	3.7	PKR/m3	Data from New JK WTP
Chemical Cost (Well)	0.6	PKR/m3	Data from New JK WTP
Other Cost for O&M	20% of sum of above		WASA-F expenditure

Labour cost (variable portion)	1.3	PKR/m3	

B6.4 Long-term Financing Plan

Profit Loss Statement (PKR mill)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
	1,000																					
Sales	479.2	545.6	615.9	700.7	785.5	2,859.7	3,332.9	3,810.7	4,274.8	4,761.7	5,225.8	5,621.4	6,012.5	8,971.4	9,538.1	10,072.9	10,562.9	11,072.1	11,562.2	12,039.4	12,621.7	125,467.4
Sales Volume Domestic Existing (mill m3)	66.8	72.6	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	1,630.5
Collection rate (Current)	77.0%	78.0%	79.1%	80.1%	81.2%	82.2%	83.3%	84.3%	85.4%	86.4%	87.5%	88.5%	89.5%	90.6%	91.6%	92.7%	93.7%	94.8%	95.8%	96.9%	100%	
Sales Domestic: Existing (PKR mill)	432.0	476.2	521.4	528.3	535.1	1,613.2	1,633.7	1,654.2	1,674.7	1,695.2	1,715.7	1,736.3	1,756.8	2,488.2	2,516.9	2,545.6	2,574.3	2,603.1	2,631.8	2,660.5	2,746.6	36,739.8
Sales Volume Non-Domestic: Existing (m3)	7.3	10.6	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	288.4
Sales Non-Domestic: Existing (PKR mill)	47.2	69.4	94.6	95.8	97.1	438.9	444.5	450.1	455.7	461.3	466.8	472.4	478.0	677.0	684.8	692.6	700.5	708.3	716.1	723.9	747.3	9,722.4
Unit tariff Domestic-New/Existing (PKR/m3)	8.4	8.4	8.4	8.4	8.4	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	
Sales Volume Domestic-New (m3 mill)	0.0	0.0	0.0	5.8	11.7	17.5	25.6	33.2	40.9	48.9	56.6	65.3	74.5	83.2	92.3	101.1	109.1	117.2	125.2	132.9	140.9	1,281.9
Collection rate (new)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Sales Domestic-New (PKR mill)	0.0	0.0	0.0	49.1	98.1	438.0	638.8	830.4	1,022.0	1,222.8	1,414.4	1,633.4	1,861.5	2,912.7	3,232.1	3,538.7	3,819.7	4,100.8	4,381.8	4,650.1	4,931.2	40,775.3
Unit tariff Non-Domestic, New (PKR/m3)	8.4	8.4	8.4	8.4	8.4	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	
Sales Volume Non-Domestic: New (mill m3)	0.0	0.0	0.0	3.3	6.6	9.9	16.4	23.4	29.9	36.9	43.4	47.5	51.1	55.1	59.1	62.8	66.1	69.7	73.0	76.3	79.9	810.3
Sales Non-Domestic: New (PKR mill)	0.0	0.0	0.0	27.6	55.2	369.6	615.9	876.0	1,122.4	1,382.4	1,628.8	1,779.4	1,916.3	2,893.5	3,104.3	3,296.0	3,468.4	3,660.0	3,832.5	4,005.0	4,196.6	38,229.8
Operating Cost	2,063.3	3,639.0	4,322.7	4,795.0	4,890.0	4,900.7	5,119.1	5,534.3	5,741.5	6,007.4	6,065.3	6,090.4	6,286.2	6,478.9	6,846.2	6,906.4	6,902.6	6,970.6	7,051.6	7,195.8	7,186.1	120,993.2
OM	1,084.0	1,186.0	1,323.0	1,577.0	1,710.0	1,825.0	1,973.0	2,191.0	2,321.0	2,498.0	2,628.0	2,746.0	2,865.0	2,981.0	3,219.0	3,340.0	3,433.0	3,524.0	3,614.0	3,767.0	3,862.0	53,667.0
Depreciation																						
Existing Facilities	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	87.1	87.0	86.9	86.7	54.5	54.1	52.1	2,568.8
New Facilities	35.5	202.3	587.1	800.8	885.3	904.4	1,096.1	1,412.7	1,611.3	1,821.0	1,871.9	1,902.2	2,100.5	2,298.8	2,608.0	2,670.2	2,697.0	2,797.0	2,942.9	3,056.4	3,077.4	37,379.0
Interset Payments	776.2	2,067.5	2,222.5	2,222.5	2,099.1	1,975.6	1,852.1	1,728.6	1,605.2	1,481.7	1,358.2	1,234.7	1,111.3	987.8	864.3	740.8	617.4	493.9	370.4	246.9	123.5	26,180.4
Others (1% of all the above	20.4	36.0	42.8	47.5	48.4	48.5	50.7	54.8	56.8	59.5	60.1	60.3	62.2	64.1	67.8	68.4	68.3	69.0	69.8	71.2	71.1	1,198.0
Budgetary Expenditure (WASA-F)	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	11,112.7
Net revenue	-2,113.2	-3,622.6	-4,235.9	-4,623.4	-4,633.6	-2,570.2	-2,315.3	-2,252.8	-1,995.9	-1,774.9	-1,368.7	-998.2	-802.9	1,963.4	2,162.7	2,637.3	3,131.2	3,572.3	3,981.4	4,314.5	4,906.4	-7,836.4
Principal Repayment				2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	44,450.8
Retained Earnings	-2,113.2	-3,622.6	-4,235.9	-7,092.9	-7,103.1	-5,039.7	-4,784.8	-4,722.3	-4,465.4	-4,244.4	-3,838.2	-3,467.7	-3,272.3	-506.1	-306.8	167.8	661.7	1,102.9	1,511.9	1,845.0	2,436.9	-51,089.3
PL Accounts Reserve	-1,930.6	-3,273.1	-3,501.6	-6,145.0	-6,070.6	-3,988.1	-3,541.6	-3,162.4	-2,706.9	-2,276.1	-1,819.2	-1,418.3	-1,024.6	1,939.8	2,388.4	2,925.0	3,445.6	3,986.6	4,509.3	4,955.6	5,566.4	-11,141.5

Profit Loss Statement (PKR bill)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
	1,000																					
Sales	479.2	545.6	615.9	700.7	785.5	2,859.7	3,332.9	3,810.7	4,274.8	4,761.7	5,225.8	5,621.4	6,012.5	8,971.4	9,538.1	10,072.9	10,562.9	11,072.1	11,562.2	12,039.4	12,621.7	125,467.4
Sales Volume Domestic Existing (bill m3)	66.8	72.6	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	1,630.5
Collection rate (Current)	77.0%	78.0%	79.1%	80.1%	81.2%	82.2%	83.3%	84.3%	85.4%	86.4%	87.5%	88.5%	89.5%	90.6%	91.6%	92.7%	93.7%	94.8%	95.8%	96.9%	100%	
Sales Domestic: Existing (PKR mill)	432.0	476.2	521.4	528.3	535.1	1,613.2	1,633.7	1,654.2	1,674.7	1,695.2	1,715.7	1,736.3	1,756.8	2,488.2	2,516.9	2,545.6	2,574.3	2,603.1	2,631.8	2,660.5	2,746.6	36,739.8
Sales Volume Non-Domestic: Existing (m3)	7.3	10.6	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	288.4
Sales Non-Domestic: Existing (PKR mill)	47.2	69.4	94.6	95.8	97.1	438.9	444.5	450.1	455.7	461.3	466.8	472.4	478.0	677.0	684.8	692.6	700.5	708.3	716.1	723.9	747.3	9,722.4
Unit tariff Domestic-New/Existing (PKR/m3)	8.4	8.4	8.4	8.4	8.4	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	
Sales Volume Domestic-New (m3 mill)	0.0	0.0	0.0	5.8	11.7	17.5	25.6	33.2	40.9	48.9	56.6	65.3	74.5	83.2	92.3	101.1	109.1	117.2	125.2	132.9	140.9	1,281.9
Collection rate (new)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Sales Domestic-New (PKR mill)	0.0	0.0	0.0	49.1	98.1	438.0	638.8	830.4	1,022.0	1,222.8	1,414.4	1,633.4	1,861.5	2,912.7	3,232.1	3,538.7	3,819.7	4,100.8	4,381.8	4,650.1	4,931.2	40,775.3
Unit tariff Non-Domestic, New (PKR/m3)	8.4	8.4	8.4	8.4	8.4	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	
Sales Volume Non-Domestic: New (mill m3)	0.0	0.0	0.0	3.3	6.6	9.9	16.4	23.4	29.9	36.9	43.4	47.5	51.1	55.1	59.1	62.8	66.1	69.7	73.0	76.3	79.9	810.3
Sales Non-Domestic: New (PKR mill)	0.0	0.0	0.0	27.6	55.2	369.6	615.9	876.0	1,122.4	1,382.4	1,628.8	1,779.4	1,916.3	2,893.5	3,104.3	3,296.0	3,468.4	3,660.0	3,832.5	4,005.0	4,196.6	38,229.8
Operating Cost	1,749.7	2,803.7	3,424.8	3,897.0	4,042.0	4,102.6	4,370.8	4,836.0	5,093.1	5,408.8	5,516.6	5,591.6	5,837.2	6,079.9	6,497.0	6,607.1	6,653.2	6,771.1	6,902.0	7,096.0	7,136.2	110,416.3
OM	1,084.0	1,186.0	1,323.0	1,577.0	1,710.0	1,825.0	1,973.0	2,191.0	2,321.0	2,498.0	2,628.0	2,746.0	2,865.0	2,981.0	3,219.0	3,340.0	3,433.0	3,524.0	3,614.0	3,767.0	3,862.0	53,667.0
Depreciation																						
Existing Facilities	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	87.1	87.0	86.9	86.7	54.5	54.1	52.1	2,568.8
New Facilities	35.5	202.3	587.1	800.8	885.3	904.4	1,096.1	1,412.7	1,611.3	1,821.0	1,871.9	1,902.2	2,100.5	2,298.8	2,608.0	2,670.2	2,697.0	2,797.0	2,942.9	3,056.4	3,077.4	37,379.0
Interset Payments	465.7	1,240.5	1,333.5	1,333.5	1,259.4	1,185.4	1,111.3	1,037.2	963.1	889.0	814.9	740.8	666.8	592.7	518.6	444.5	370.4	296.3	222.3	148.2	74.1	15,708.2
Others (1% of all the above)	17.3	27.8	33.9	38.6	40.0	40.6	43.3	47.9	50.4	53.6	54.6	55.4	57.8	60.2	64.3	65.4	65.9	67.0	68.3	70.3	70.7	1,093.2
Budgetary Expenditure (WASA-F)	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	11,112.7
Net revenue	-1,799.6	-2,787.4	-3,338.0	-3,725.5	-3,785.6	-1,772.1	-1,567.1	-1,554.4	-1,347.4	-1,176.3	-820.0	-499.3	-353.9	2,362.4	2,511.9	2,936.6	3,380.6	3,771.9	4,131.0	4,414.3	4,956.3	2,845.2
Principal Repayment				2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	44,450.8
Retained Earnings	-1,799.6	-2,787.4	-3,338.0	-6,195.0	-6,255.1	-4,241.6	-4,036.6	-4,023.9	-3,816.9	-3,645.8	-3,289.5	-2,968.8	-2,823.4	-107.1	42.4	467.1	911.1	1,302.4	1,661.6	1,944.8	2,486.8	-40,512.4
PL Accounts Reserve	-1,617.0	-2,437.9	-2,603.7	-5,247.1	-5,222.6	-3,189.9	-2,793.3	-2,464.0	-2,058.4	-1,677.5	-1,270.4	-919.4	-575.7	2,338.9	2,737.6	3,224.3	3,695.0	4,186.1	4,658.9	5,055.3	5,616.3	-564.6

Profit Loss Statement (PKR bill)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
	1,000																					
Sales	479.2	545.6	615.9	700.7	785.5	2,859.7	3,332.9	3,810.7	4,274.8	4,761.7	5,225.8	0.0	0.0	8,971.4	9,538.1	10,072.9	10,562.9	11,072.1	11,562.2	12,039.4	12,621.7	113,833.4
Sales Volume Domestic Existing (bill m3)	66.8	72.6	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	1,630.5
Collection rate (Current)	77.0%	78.0%	79.1%	80.1%	81.2%	82.2%	83.3%	84.3%	85.4%	86.4%	87.5%	88.5%	89.5%	90.6%	91.6%	92.7%	93.7%	94.8%	95.8%	96.9%	100%	
Sales Domestic: Existing (PKR mill)	432.0	476.2	521.4	528.3	535.1	1,613.2	1,633.7	1,654.2	1,674.7	1,695.2	1,715.7	0.0	0.0	2,488.2	2,516.9	2,545.6	2,574.3	2,603.1	2,631.8	2,660.5	2,746.6	33,246.8
Sales Volume Non-Domestic: Existing (m3)	7.3	10.6	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	288.4
Sales Non-Domestic: Existing (PKR mill)	47.2	69.4	94.6	95.8	97.1	438.9	444.5	450.1	455.7	461.3	466.8	0.0	0.0	677.0	684.8	692.6	700.5	708.3	716.1	723.9	747.3	8,772.0
Unit tariff Domestic-New/Existing (PKR/m3)	8.4	8.4	8.4	8.4	8.4	25.0	25.0	25.0	25.0	25.0	25.0		0.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	
Sales Volume Domestic-New (m3 mill)	0.0	0.0	0.0	5.8	11.7	17.5	25.6	33.2	40.9	48.9	56.6	65.3	74.5	83.2	92.3	101.1	109.1	117.2	125.2	132.9	140.9	1,281.9
Collection rate (new)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Sales Domestic-New (PKR mill)	0.0	0.0	0.0	49.1	98.1	438.0	638.8	830.4	1,022.0	1,222.8	1,414.4	0.0	0.0	2,912.7	3,232.1	3,538.7	3,819.7	4,100.8	4,381.8	4,650.1	4,931.2	37,280.4
Unit tariff Non-Domestic, New (PKR/m3)	8.4	8.4	8.4	8.4	8.4	37.5	37.5	37.5	37.5	37.5	37.5	0.0	0.0	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	
Sales Volume Non-Domestic: New (mill m3)	0.0	0.0	0.0	3.3	6.6	9.9	16.4	23.4	29.9	36.9	43.4	47.5	51.1	55.1	59.1	62.8	66.1	69.7	73.0	76.3	79.9	810.3
Sales Non-Domestic: New (PKR mill)	0.0	0.0	0.0	27.6	55.2	369.6	615.9	876.0	1,122.4	1,382.4	1,628.8	0.0	0.0	2,893.5	3,104.3	3,296.0	3,468.4	3,660.0	3,832.5	4,005.0	4,196.6	34,534.2
Operating Cost	1,436.1	1,968.5	2,526.9	2,999.1	3,193.9	3,304.5	3,622.5	4,137.6	4,444.6	4,810.2	4,967.9	5,092.8	5,388.3	5,680.8	6,147.9	6,307.8	6,403.8	6,571.5	6,752.3	6,996.2	7,086.3	99,839.4
OM	1,084.0	1,186.0	1,323.0	1,577.0	1,710.0	1,825.0	1,973.0	2,191.0	2,321.0	2,498.0	2,628.0	2,746.0	2,865.0	2,981.0	3,219.0	3,340.0	3,433.0	3,524.0	3,614.0	3,767.0	3,862.0	53,667.0
Depreciation																						
Existing Facilities	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	147.2	87.1	87.0	86.9	86.7	54.5	54.1	52.1	2,568.8
New Facilities	35.5	202.3	587.1	800.8	885.3	904.4	1,096.1	1,412.7	1,611.3	1,821.0	1,871.9	1,902.2	2,100.5	2,298.8	2,608.0	2,670.2	2,697.0	2,797.0	2,942.9	3,056.4	3,077.4	37,379.0
Interset Payments	155.2	413.5	444.5	444.5	419.8	395.1	370.4	345.7	321.0	296.3	271.6	246.9	222.3	197.6	172.9	148.2	123.5	98.8	74.1	49.4	24.7	5,236.1
Others (1% of all the above	14.2	19.5	25.0	29.7	31.6	32.7	35.9	41.0	44.0	47.6	49.2	50.4	53.3	56.2	60.9	62.5	63.4	65.1	66.9	69.3	70.2	988.5
Budgetary Expenditure (WASA-F)	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	529.2	11,112.7
Net revenue	-1,486.1	-1,952.1	-2,440.1	-2,827.6	-2,937.6	-973.9	-818.8	-856.1	-699.0	-577.7	-271.3	-5,621.9	-5,917.5	2,761.5	2,861.1	3,235.9	3,630.0	3,971.4	4,280.7	4,514.0	5,006.2	1,892.8
Principal Repayment				2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	2,469.5	44,450.8
Retained Earnings	-1,486.1	-1,952.1	-2,440.1	-5,297.1	-5,407.1	-3,443.4	-3,288.3	-3,325.6	-3,168.4	-3,047.2	-2,740.8	-8,091.4	-8,387.0	292.0	391.6	766.4	1,160.5	1,501.9	1,811.2	2,044.5	2,536.7	-41,569.5
PL Accounts Reserve (Retained Earnings + Depreciation)	-1,303.4	-1,602.6	-1,705.8	-4,349.1	-4,374.6	-2,391.8	-2,045.0	-1,765.7	-1,409.9	-1,078.9	-721.7	-6,042.0	-6,139.3	2,738.0	3,086.7	3,523.6	3,944.4	4,385.6	4,808.6	5,155.1	5,666.2	-1,621.7
Depreciation	182.7	349.5	734.3	947.9	1,032.5	1,051.6	1,243.3	1,559.9	1,758.5	1,968.2	2,019.0	2,049.4	2,247.7	2,446.0	2,695.1	2,757.2	2,783.9	2,883.7	2,997.4	3,110.6	3,129.5	39,947.8

Revenue Base Data

Loan	To be calculated
Subsidy	To be calculated

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Construction Cost	1,124,133,333	6,946,640,000	12,824,586,667	9,201,573,333	3,484,346,667	471,360,000	6,999,200,000	12,935,946,667	8,045,466,667	8,561,226,667	1,451,840,000	436,880,000	7,188,240,000	7,188,240,000	10,254,800,000	1,920,880,000	401,880,000	3,035,373,333	3,953,773,333	3,667,053,333	1,033,560,000	111,127,000,000
Repayment	To be calculated																					
	1.0%	6.3%	11.5%	8.3%	3.1%	0.4%	6.3%	11.6%	7.2%	7.7%	1.3%	0.4%	6.5%	6.5%	9.2%	1.7%	0.4%	2.7%	3.6%	3.3%	0.9%	100.0%

Revenue Base Data

Loan	44,450.8	
Subsidy	55,563.5	
WASA-F resource	11,112.7	
Total	111,127.0	PKR million

Expenditure Base Data 1,000,000

P=p, i=1%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Construction Cost	1,124.13	6,946.64	12,824.59	9,201.57	3,484.35	471.36	6,999.20	12,935.95	8,045.47	8,561.23	1,451.84	436.88	7,188.24	7,188.24	10,254.80	1,920.88	401.88	3,035.37	3,953.77	3,667.05	1,033.56	111,127.0
Principal Repayment				2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	44,450.80
Total	1,124.13	6,946.64	12,824.59	11,671.06	5,953.84	2,940.85	9,468.69	15,405.44	10,514.96	11,030.72	3,921.33	2,906.37	9,657.73	9,657.73	12,724.29	4,390.37	2,871.37	5,504.86	6,423.26	6,136.54	3,503.05	155,577.80

P=p, i=3%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Construction Cost	1,124.13	6,946.64	12,824.59	9,201.57	3,484.35	471.36	6,999.20	12,935.95	8,045.47	8,561.23	1,451.84	436.88	7,188.24	7,188.24	10,254.80	1,920.88	401.88	3,035.37	3,953.77	3,667.05	1,033.56	111,127.0
Principal Repayment				2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	44,450.8
Total	1,124.13	6,946.64	12,824.59	11,671.06	5,953.84	2,940.85	9,468.69	15,405.44	10,514.96	11,030.72	3,921.33	2,906.37	9,657.73	9,657.73	12,724.29	4,390.37	2,871.37	5,504.86	6,423.26	6,136.54	3,503.05	155,577.80

P=p, i=5%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Construction Cost	1,124.13	6,946.64	12,824.59	9,201.57	3,484.35	471.36	6,999.20	12,935.95	8,045.47	8,561.23	1,451.84	436.88	7,188.24	7,188.24	10,254.80	1,920.88	401.88	3,035.37	3,953.77	3,667.05	1,033.56	111,127.0
Principal Repayment				2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	44,450.8
Total	1,124.13	6,946.64	12,824.59	11,671.06	5,953.84	2,940.85	9,468.69	15,405.44	10,514.96	11,030.72	3,921.33	2,906.37	9,657.73	9,657.73	12,724.29	4,390.37	2,871.37	5,504.86	6,423.26	6,136.54	3,503.05	155,577.80

P=△ (35), i=1%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Construction Cost	1,124.13	6,946.64	12,824.59	9,201.57	3,484.35	471.36	6,999.20	12,935.95	8,045.47	8,561.23	1,451.84	436.88	7,188.24	7,188.24	10,254.80	1,920.88	401.88	3,035.37	3,953.77	3,667.05	1,033.56	111,127.0
Principal Repayment				2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	44,450.8
Total	1,124.13	6,946.64	12,824.59	11,671.06	5,953.84	2,940.85	9,468.69	15,405.44	10,514.96	11,030.72	3,921.33	2,906.37	9,657.73	9,657.73	12,724.29	4,390.37	2,871.37	5,504.86	6,423.26	6,136.54	3,503.05	155,577.80

P=△ (35), i=3%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Construction Cost	1,124.13	6,946.64	12,824.59	9,201.57	3,484.35	471.36	6,999.20	12,935.95	8,045.47	8,561.23	1,451.84	436.88	7,188.24	7,188.24	10,254.80	1,920.88	401.88	3,035.37	3,953.77	3,667.05	1,033.56	111,127.0
Principal Repayment				2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	44,450.8
Total	1,124.13	6,946.64	12,824.59	11,671.06	5,953.84	2,940.85	9,468.69	15,405.44	10,514.96	11,030.72	3,921.33	2,906.37	9,657.73	9,657.73	12,724.29	4,390.37	2,871.37	5,504.86	6,423.26	6,136.54	3,503.05	155,577.80

P=△ (35), i=5%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Construction Cost	1,124.13	6,946.64	12,824.59	9,201.57	3,484.35	471.36	6,999.20	12,935.95	8,045.47	8,561.23	1,451.84	436.88	7,188.24	7,188.24	10,254.80	1,920.88	401.88	3,035.37	3,953.77	3,667.05	1,033.56	111,127.0
Principal Repayment				2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	44,450.8
Total	1,124.13	6,946.64	12,824.59	11,671.06	5,953.84	2,940.85	9,468.69	15,405.44	10,514.96	11,030.72	3,921.33	2,906.37	9,657.73	9,657.73	12,724.29	4,390.37	2,871.37	5,504.86	6,423.26	6,136.54	3,503.05	155,577.80

P=△ (30), i=1%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Construction Cost	1,124.13	6,946.64	12,824.59	9,201.57	3,484.35	471.36	6,999.20	12,935.95	8,045.47	8,561.23	1,451.84	436.88	7,188.24	7,188.24	10,254.80	1,920.88	401.88	3,035.37	3,953.77	3,667.05	1,033.56	111,127.0
Principal Repayment	0.00	0.00	0.00	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	44,450.8
Total	1,124.13	6,946.64	12,824.59	11,671.06	5,953.84	2,940.85	9,468.69	15,405.44	10,514.96	11,030.72	3,921.33	2,906.37	9,657.73	9,657.73	12,724.29	4,390.37	2,871.37	5,504.86	6,423.26	6,136.54	3,503.05	155,577.80

P=△ (30), i=3%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Construction Cost	1,124.13	6,946.64	12,824.59	9,201.57	3,484.35	471.36	6,999.20	12,935.95	8,045.47	8,561.23	1,451.84	436.88	7,188.24	7,188.24	10,254.80	1,920.88	401.88	3,035.37	3,953.77	3,667.05	1,033.56	111,127.0
Principal Repayment				2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	44,450.8
Total	1,124.13	6,946.64	12,824.59	11,671.06	5,953.84	2,940.85	9,468.69	15,405.44	10,514.96	11,030.72	3,921.33	2,906.37	9,657.73	9,657.73	12,724.29	4,390.37	2,871.37	5,504.86	6,423.26	6,136.54	3,503.05	155,577.80

P=△ (30), i=5%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Construction Cost	1,124.13	6,946.64	12,824.59	9,201.57	3,484.35	471.36	6,999.20	12,935.95	8,045.47	8,561.23	1,451.84	436.88	7,188.24	7,188.24	10,254.80	1,920.88	401.88	3,035.37	3,953.77	3,667.05	1,033.56	111,127.0
Principal Repayment				2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	2,469.49	44,450.8
Total	1,124.13	6,946.64	12,824.59	11,671.06	5,953.84	2,940.85	9,468.69	15,405.44	10,514.96	11,030.72	3,921.33	2,906.37	9,657.73	9,657.73	12,724.29	4,390.37	2,871.37	5,504.86	6,423.26	6,136.54	3,503.05	155,577.80

Revenue Base Data

P=p, i=1%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Loan	449.7	2,778.7	5,129.8	3,680.6	1,393.7	188.5	2,799.7	5,174.4	3,218.2	3,424.5	580.7	174.8	2,875.3	2,875.3	4,101.9	768.4	160.8	1,214.1	1,581.5	1,466.8	413.4	44,450.8
Subsidy	562.1	3,473.3	6,412.3	4,600.8	1,742.2	235.7	3,499.6	6,468.0	4,022.7	4,280.6	725.9	218.4	3,594.1	3,594.1	5,127.4	960.4	200.9	1,517.7	1,976.9	1,833.5	516.8	55,563.5
WASA-F resource	112.4	694.7	1,282.5	920.2	348.4	47.1	699.9	1,293.6	804.5	856.1	145.2	43.7	718.8	718.8	1,025.5	192.1	40.2	303.5	395.4	366.7	103.4	11,112.7
Total	1,124.1	6,946.6	12,824.6	9,201.6	3,484.3	471.4	6,999.2	12,935.9	8,045.5	8,561.2	1,451.8	436.9	7,188.2	7,188.2	10,254.8	1,920.9	401.9	3,035.4	3,953.8	3,667.1	1,033.6	111,127.0

P=p, i=3%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Loan	449.7	2,778.7	5,129.8	3,680.6	1,393.7	188.5	2,799.7	5,174.4	3,218.2	3,424.5	580.7	174.8	2,875.3	2,875.3	4,101.9	768.4	160.8	1,214.1	1,581.5	1,466.8	413.4	44,450.8
Subsidy	562.1	3,473.3	6,412.3	4,600.8	1,742.2	235.7	3,499.6	6,468.0	4,022.7	4,280.6	725.9	218.4	3,594.1	3,594.1	5,127.4	960.4	200.9	1,517.7	1,976.9	1,833.5	516.8	55,563.5
WASA-F resource	112.4	694.7	1,282.5	920.2	348.4	47.1	699.9	1,293.6	804.5	856.1	145.2	43.7	718.8	718.8	1,025.5	192.1	40.2	303.5	395.4	366.7	103.4	11,112.7
Total	1,124.1	6,946.6	12,824.6	9,201.6	3,484.3	471.4	6,999.2	12,935.9	8,045.5	8,561.2	1,451.8	436.9	7,188.2	7,188.2	10,254.8	1,920.9	401.9	3,035.4	3,953.8	3,667.1	1,033.6	111,127.0

P=p, i=5%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Loan	449.7	2,778.7	5,129.8	3,680.6	1,393.7	188.5	2,799.7	5,174.4	3,218.2	3,424.5	580.7	174.8	2,875.3	2,875.3	4,101.9	768.4	160.8	1,214.1	1,581.5	1,466.8	413.4	44,450.8
Subsidy	562.1	3,473.3	6,412.3	4,600.8	1,742.2	235.7	3,499.6	6,468.0	4,022.7	4,280.6	725.9	218.4	3,594.1	3,594.1	5,127.4	960.4	200.9	1,517.7	1,976.9	1,833.5	516.8	55,563.5
WASA-F resource	112.4	694.7	1,282.5	920.2	348.4	47.1	699.9	1,293.6	804.5	856.1	145.2	43.7	718.8	718.8	1,025.5	192.1	40.2	303.5	395.4	366.7	103.4	11,112.7
Total	1,124.1	6,946.6	12,824.6	9,201.6	3,484.3	471.4	6,999.2	12,935.9	8,045.5	8,561.2	1,451.8	436.9	7,188.2	7,188.2	10,254.8	1,920.9	401.9	3,035.4	3,953.8	3,667.1	1,033.6	111,127.0

P=△ (35), i=1%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Loan	449.7	2,778.7	5,129.8	3,680.6	1,393.7	188.5	2,799.7	5,174.4	3,218.2	3,424.5	580.7	174.8	2,875.3	2,875.3	4,101.9	768.4	160.8	1,214.1	1,581.5	1,466.8	413.4	44,450.8
Subsidy	562.1	3,473.3	6,412.3	4,600.8	1,742.2	235.7	3,499.6	6,468.0	4,022.7	4,280.6	725.9	218.4	3,594.1	3,594.1	5,127.4	960.4	200.9	1,517.7	1,976.9	1,833.5	516.8	55,563.5
WASA-F resource	112.4	694.7	1,282.5	920.2	348.4	47.1	699.9	1,293.6	804.5	856.1	145.2	43.7	718.8	718.8	1,025.5	192.1	40.2	303.5	395.4	366.7	103.4	11,112.7
Total	1,124.1	6,946.6	12,824.6	9,201.6	3,484.3	471.4	6,999.2	12,935.9	8,045.5	8,561.2	1,451.8	436.9	7,188.2	7,188.2	10,254.8	1,920.9	401.9	3,035.4	3,953.8	3,667.1	1,033.6	111,127.0

P=△ (35), i=3%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Loan	449.7	2,778.7	5,129.8	3,680.6	1,393.7	188.5	2,799.7	5,174.4	3,218.2	3,424.5	580.7	174.8	2,875.3	2,875.3	4,101.9	768.4	160.8	1,214.1	1,581.5	1,466.8	413.4	44,450.8
Subsidy	562.1	3,473.3	6,412.3	4,600.8	1,742.2	235.7	3,499.6	6,468.0	4,022.7	4,280.6	725.9	218.4	3,594.1	3,594.1	5,127.4	960.4	200.9	1,517.7	1,976.9	1,833.5	516.8	55,563.5
WASA-F resource	112.4	694.7	1,282.5	920.2	348.4	47.1	699.9	1,293.6	804.5	856.1	145.2	43.7	718.8	718.8	1,025.5	192.1	40.2	303.5	395.4	366.7	103.4	11,112.7
Total	1,124.1	6,946.6	12,824.6	9,201.6	3,484.3	471.4	6,999.2	12,935.9	8,045.5	8,561.2	1,451.8	436.9	7,188.2	7,188.2	10,254.8	1,920.9	401.9	3,035.4	3,953.8	3,667.1	1,033.6	111,127.0

P=△ (35), i=5%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Loan	449.7	2,778.7	5,129.8	3,680.6	1,393.7	188.5	2,799.7	5,174.4	3,218.2	3,424.5	580.7	174.8	2,875.3	2,875.3	4,101.9	768.4	160.8	1,214.1	1,581.5	1,466.8	413.4	44,450.8
Subsidy	562.1	3,473.3	6,412.3	4,600.8	1,742.2	235.7	3,499.6	6,468.0	4,022.7	4,280.6	725.9	218.4	3,594.1	3,594.1	5,127.4	960.4	200.9	1,517.7	1,976.9	1,833.5	516.8	55,563.5
WASA-F resource	112.4	694.7	1,282.5	920.2	348.4	47.1	699.9	1,293.6	804.5	856.1	145.2	43.7	718.8	718.8	1,025.5	192.1	40.2	303.5	395.4	366.7	103.4	11,112.7
Total	1,124.1	6,946.6	12,824.6	9,201.6	3,484.3	471.4	6,999.2	12,935.9	8,045.5	8,561.2	1,451.8	436.9	7,188.2	7,188.2	10,254.8	1,920.9	401.9	3,035.4	3,953.8	3,667.1	1,033.6	111,127.0

P=△ (30), i=1%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Loan	449.7	2,778.7	5,129.8	3,680.6	1,393.7	188.5	2,799.7	5,174.4	3,218.2	3,424.5	580.7	174.8	2,875.3	2,875.3	4,101.9	768.4	160.8	1,214.1	1,581.5	1,466.8	413.4	44,450.8
Subsidy	562.1	3,473.3	6,412.3	4,600.8	1,742.2	235.7	3,499.6	6,468.0	4,022.7	4,280.6	725.9	218.4	3,594.1	3,594.1	5,127.4	960.4	200.9	1,517.7	1,976.9	1,833.5	516.8	55,563.5
WASA-F resource	112.4	694.7	1,282.5	920.2	348.4	47.1	699.9	1,293.6	804.5	856.1	145.2	43.7	718.8	718.8	1,025.5	192.1	40.2	303.5	395.4	366.7	103.4	11,112.7
Total	1,124.1	6,946.6	12,824.6	9,201.6	3,484.3	471.4	6,999.2	12,935.9	8,045.5	8,561.2	1,451.8	436.9	7,188.2	7,188.2	10,254.8	1,920.9	401.9	3,035.4	3,953.8	3,667.1	1,033.6	111,127.0

P=△ (30), i=3%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Loan	449.7	2,778.7	5,129.8	3,680.6	1,393.7	188.5	2,799.7	5,174.4	3,218.2	3,424.5	580.7	174.8	2,875.3	2,875.3	4,101.9	768.4	160.8	1,214.1	1,581.5	1,466.8	413.4	44,450.8
Subsidy	562.1	3,473.3	6,412.3	4,600.8	1,742.2	235.7	3,499.6	6,468.0	4,022.7	4,280.6	725.9	218.4	3,594.1	3,594.1	5,127.4	960.4	200.9	1,517.7	1,976.9	1,833.5	516.8	55,563.5
WASA-F resource	112.4	694.7	1,282.5	920.2	348.4	47.1	699.9	1,293.6	804.5	856.1	145.2	43.7	718.8	718.8	1,025.5	192.1	40.2	303.5	395.4	366.7	103.4	11,112.7
Total	1,124.1	6,946.6	12,824.6	9,201.6	3,484.3	471.4	6,999.2	12,935.9	8,045.5	8,561.2	1,451.8	436.9	7,188.2	7,188.2	10,254.8	1,920.9	401.9	3,035.4	3,953.8	3,667.1	1,033.6	111,127.0

P=△ (30), i=5%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Loan	449.7	2,778.7	5,129.8	3,680.6	1,393.7	188.5	2,799.7	5,174.4	3,218.2	3,424.5	580.7	174.8	2,875.3	2,875.3	4,101.9	768.4	160.8	1,214.1	1,581.5	1,466.8	413.4	44,450.8
Subsidy	562.1	3,473.3	6,412.3	4,600.8	1,742.2	235.7	3,499.6	6,468.0	4,022.7	4,280.6	725.9	218.4	3,594.1	3,594.1	5,127.4	960.4	200.9	1,517.7	1,976.9	1,833.5	516.8	55,563.5
WASA-F resource	112.4	694.7	1,282.5	920.2	348.4	47.1	699.9	1,293.6	804.5	856.1	145.2	43.7	718.8	718.8	1,025.5	192.1	40.2	303.5	395.4	366.7	103.4	11,112.7
Total	1,124.1	6,946.6	12,824.6	9,201.6	3,484.3	471.4	6,999.2	12,935.9	8,045.5	8,561.2	1,451.8	436.9	7,188.2	7,188.2	10,254.8	1,920.9	401.9	3,035.4	3,953.8	3,667.1	1,033.6	111,127.0

Capital Account Net Transaction

P=p, i=1%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Expenditure-basis	1,124.1	6,946.6	12,824.6	11,671.1	5,953.8	2,940.8	9,468.7	15,405.4	10,515.0	11,030.7	3,921.3	2,906.4	9,657.7	9,657.7	12,724.3	4,390.4	2,871.4	5,504.9	6,423.3	6,136.5	3,503.0	155,577.8
Revenue-Basis	1,124.1	6,946.6	12,824.6	9,201.6	3,484.3	471.4	6,999.2	12,935.9	8,045.5	8,561.2	1,451.8	436.9	7,188.2	7,188.2	10,254.8	1,920.9	401.9	3,035.4	3,953.8	3,667.1	1,033.6	111,127.0
Recurrent Transactio	0.0	0.0	0.0	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-44,450.8
Retained Earnings	-1,486.1	-1,932.6	-2,415.1	-5,267.4	-5,375.5	-5,400.1	-5,584.3	-5,963.4	-6,139.6	-6,367.8	-6,396.2	-6,404.4	-6,581.6	-6,755.7	-7,099.6	-7,145.6	-7,137.4	-7,197.3	-7,273.1	-7,414.5	-7,381.1	-122,718.3
Net Transaction	-1,486.1	-1,932.6	-2,415.1	-7,736.9	-7,844.9	-7,869.6	-8,053.7	-8,432.9	-8,609.1	-8,837.3	-8,865.7	-8,873.9	-9,051.0	-9,225.2	-9,569.1	-9,615.1	-9,606.9	-9,666.8	-9,742.6	-9,884.0	-9,850.6	-167,169.1

P=p, i=3%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Expenditure-basis	1,124.1	6,946.6	12,824.6	11,671.1	5,953.8	2,940.8	9,468.7	15,405.4	10,515.0	11,030.7	3,921.3	2,906.4	9,657.7	9,657.7	12,724.3	4,390.4	2,871.4	5,504.9	6,423.3	6,136.5	3,503.0	155,577.8
Revenue-Basist	1,124.1	6,946.6	12,824.6	9,201.6	3,484.3	471.4	6,999.2	12,935.9	8,045.5	8,561.2	1,451.8	436.9	7,188.2	7,188.2	10,254.8	1,920.9	401.9	3,035.4	3,953.8	3,667.1	1,033.6	111,127.0
Recurrent Transactio	0.0	0.0	0.0	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-44,450.8
Retained Earnings	-1,799.6	-2,759.6	-3,304.1	-6,156.4	-6,215.1	-6,190.3	-6,325.1	-6,654.9	-6,781.7	-6,960.5	-6,939.5	-6,898.3	-7,026.1	-7,150.8	-7,445.4	-7,441.9	-7,384.4	-7,394.9	-7,421.3	-7,513.3	-7,430.5	-133,193.5
Net Transaction	-1,799.6	-2,759.6	-3,304.1	-8,625.9	-8,684.6	-8,659.8	-8,794.6	-9,124.4	-9,251.2	-9,429.9	-9,409.0	-9,367.8	-9,495.6	-9,620.3	-9,914.8	-9,911.4	-9,853.9	-9,864.3	-9,890.7	-9,982.7	-9,900.0	-177,644.3

P=p, i=5%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Expenditure-basis	1,124.1	6,946.6	12,824.6	11,671.1	5,953.8	2,940.8	9,468.7	15,405.4	10,515.0	11,030.7	3,921.3	2,906.4	9,657.7	9,657.7	12,724.3	4,390.4	2,871.4	5,504.9	6,423.3	6,136.5	3,503.0	155,577.8
Revenue-Basist	1,124.1	6,946.6	12,824.6	9,201.6	3,484.3	471.4	6,999.2	12,935.9	8,045.5	8,561.2	1,451.8	436.9	7,188.2	7,188.2	10,254.8	1,920.9	401.9	3,035.4	3,953.8	3,667.1	1,033.6	111,127.0
Recurrent Transactio	0.0	0.0	0.0	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-44,450.8
Retained Earnings	-2,113.2	-3,586.6	-4,193.1	-7,045.4	-7,054.7	-6,980.6	-7,066.0	-7,346.3	-7,423.8	-7,553.1	-7,482.8	-7,392.2	-7,470.6	-7,545.9	-7,791.1	-7,738.3	-7,631.3	-7,592.4	-7,569.4	-7,612.0	-7,479.9	-143,668.8
Net Transaction	-2,113.2	-3,586.6	-4,193.1	-9,514.9	-9,524.2	-9,450.1	-9,535.4	-9,815.8	-9,893.3	-10,022.6	-9,952.3	-9,861.7	-9,940.1	-10,015.4	-10,260.6	-10,207.8	-10,100.8	-10,061.9	-10,038.9	-10,081.5	-9,949.4	-188,119.6

P△, i=1%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Expenditure-basis	1,124.1	6,946.6	12,824.6	11,671.1	5,953.8	2,940.8	9,468.7	15,405.4	10,515.0	11,030.7	3,921.3	2,906.4	9,657.7	9,657.7	12,724.3	4,390.4	2,871.4	5,504.9	6,423.3	6,136.5	3,503.0	155,577.8
Revenue-Basist	1,124.1	6,946.6	12,824.6	9,201.6	3,484.3	471.4	6,999.2	12,935.9	8,045.5	8,561.2	1,451.8	436.9	7,188.2	7,188.2	10,254.8	1,920.9	401.9	3,035.4	3,953.8	3,667.1	1,033.6	111,127.0
Recurrent Transactio	0.0	0.0	0.0	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-44,450.8
Retained Earnings	-1,486.1	-1,952.1	-2,440.1	-5,297.1	-5,407.1	-3,443.4	-3,288.3	-3,325.6	-3,168.4	-3,047.2	-4,308.5	-4,156.4	-4,178.2	-4,193.7	-4,377.4	-4,270.0	-4,121.0	-4,034.1	-3,969.9	-3,975.2	-3,774.1	-78,213.9
Net Transaction	-1,486.1	-1,952.1	-2,440.1	-7,766.6	-7,876.6	-5,912.9	-5,757.8	-5,795.0	-5,637.9	-5,516.6	-6,778.0	-6,625.9	-6,647.7	-6,663.2	-6,846.9	-6,739.5	-6,590.5	-6,503.6	-6,439.4	-6,444.7	-6,243.6	-122,664.7

P△, i=3%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Expenditure-basis	1,124.1	6,946.6	12,824.6	11,671.1	5,953.8	2,940.8	9,468.7	15,405.4	10,515.0	11,030.7	3,921.3	2,906.4	9,657.7	9,657.7	12,724.3	4,390.4	2,871.4	5,504.9	6,423.3	6,136.5	3,503.0	155,577.8
Revenue-Basist	1,124.1	6,946.6	12,824.6	9,201.6	3,484.3	471.4	6,999.2	12,935.9	8,045.5	8,561.2	1,451.8	436.9	7,188.2	7,188.2	10,254.8	1,920.9	401.9	3,035.4	3,953.8	3,667.1	1,033.6	111,127.0
Recurrent Transactio	0.0	0.0	0.0	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-44,450.8
Retained Earnings	-1,799.6	-2,759.6	-3,304.1	-6,156.4	-6,215.1	-4,201.0	-3,993.3	-3,976.0	-3,766.5	-3,592.2	-1,144.6	-664.9	-360.6	-46.9	106.8	532.5	977.0	1,369.4	1,729.9	2,015.0	2,557.5	-32,692.6
Net Transaction	-1,799.6	-2,759.6	-3,304.1	-8,625.9	-8,684.6	-6,670.4	-6,462.8	-6,445.5	-6,236.0	-6,061.7	-3,614.0	-3,134.4	-2,830.1	-2,516.4	-2,362.7	-1,936.9	-1,492.5	-1,100.1	-739.6	-454.5	88.0	-77,143.4

P△, i=5%	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Expenditure-basis	1,124.1	6,946.6	12,824.6	11,671.1	5,953.8	2,940.8	9,468.7	15,405.4	10,515.0	11,030.7	3,921.3	2,906.4	9,657.7	9,657.7	12,724.3	4,390.4	2,871.4	5,504.9	6,423.3	6,136.5	3,503.0	155,577.8
Revenue-Basist	1,124.1	6,946.6	12,824.6	9,201.6	3,484.3	471.4	6,999.2	12,935.9	8,045.5	8,561.2	1,451.8	436.9	7,188.2	7,188.2	10,254.8	1,920.9	401.9	3,035.4	3,953.8	3,667.1	1,033.6	111,127.0
Recurrent Transactio	0.0	0.0	0.0	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-2,469.5	-44,450.8
Retained Earnings	-2,113.2	-3,586.6	-4,193.1	-7,045.4	-7,054.7	-4,991.2	-4,734.1	-4,667.5	-4,408.6	-4,184.9	-1,687.8	-1,158.8	-805.1	-442.0	-239.0	236.2	730.0	1,171.9	1,581.7	1,916.2	2,508.1	-43,167.9
Net Transaction	-2,113.2	-3,586.6	-4,193.1	-9,514.9	-9,524.2	-7,460.7	-7,203.6	-7,137.0	-6,878.1	-6,654.4	-4,157.3	-3,628.3	-3,274.6	-2,911.5	-2,708.5	-2,233.3	-1,739.5	-1,297.6	-887.8	-553.2	38.6	-87,618.7

B6.5 IRR Analysis

GBC Tubewell-1 EIRR/ FIRR

	Year	Cost (million PKR)									Served water (million m3/ year)		
		Construction			O&M			Total					
		Local	Foreign	Sub Total	Local	Foreign	Sub Total	Local	Foreign	Total	Domestic	Non-Domestic	Total
1	2020	346.8	1,163.4	1,510.1				346.8	1,163.4	1,510.1			
2	2021	346.8	1,163.4	1,510.1				346.8	1,163.4	1,510.1			
3	2022	386.2	1,205.2	1,591.3				386.2	1,205.2	1,591.3			
4	2023	39.4	41.8	81.2	30.5		30.5	69.9	41.8	111.7	2.9	1.2	4.1
5	2024				61.0		61.0	61.0	0.0	61.0	5.8	2.5	8.3
6	2025				61.0		61.0	61.0	0.0	61.0	5.8	2.5	8.3
7	2026				61.0		61.0	61.0	0.0	61.0	5.8	2.5	8.3
8	2027				61.0		61.0	61.0	0.0	61.0	5.8	2.5	8.3
9	2028				61.0		61.0	61.0	0.0	61.0	5.8	2.5	8.3
10	2029				61.0		61.0	61.0	0.0	61.0	5.8	2.5	8.3
11	2030				61.0		61.0	61.0	0.0	61.0	5.8	2.5	8.3
12	2031				61.0		61.0	61.0	0.0	61.0	5.8	2.5	8.3
13	2032				61.0		61.0	61.0	0.0	61.0	5.8	2.5	8.3
14	2033				61.0		61.0	61.0	0.0	61.0	5.8	2.5	8.3
15	2034				61.0		61.0	61.0	0.0	61.0	5.8	2.5	8.3
16	2035				61.0		61.0	61.0	0.0	61.0	5.8	2.5	8.3
17	2036				61.0		61.0	61.0	0.0	61.0	5.8	2.5	8.3
18	2037				61.0		61.0	61.0	0.0	61.0	5.8	2.5	8.3
19	2038				61.0		61.0	61.0	0.0	61.0	5.8	2.5	8.3
20	2039				61.0		61.0	61.0	0.0	61.0	5.8	2.5	8.3
	Total 20years	1,119.1	3,573.7	**4,692.8**	1,006.2	0.0	**1,006.2**	2,125.3	3,573.7	**5,699.0**	95.7	41.0	136.7
											0.70	0.30	

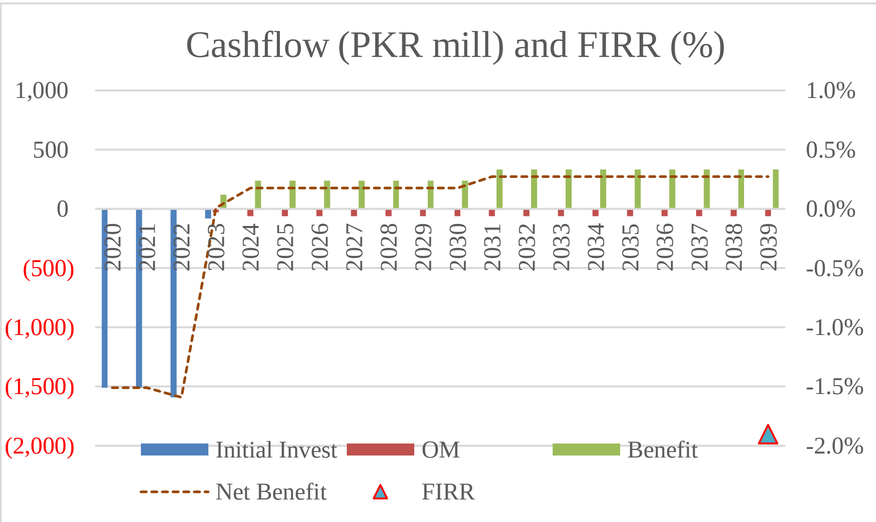
FIRR **FNPV** -2,351.2 PKR mill DR 6.1%

PKR/m3 1.5

	Year	Initial Investment	OM	Cost Total	Benefit	Net Benefit	FIRR	Weighed Ave Tariff	Tariff Dom	Tariff Non-Dom	Served water (mill PKR) Domestic	Non-Domestic	Total
1	2020	1,510.1		1,510.1		-1,510.1			8.4	12.6			
2	2021	1,510.1		1,510.1		-1,510.1			8.4	12.6			
3	2022	1,591.3		1,591.3		-1,591.3			8.4	12.6			
4	2023	81.2	30.5	111.7	119.1	7.4		28.8	25.0	37.5	72.5	46.6	119.1
5	2024		61.0	61.0	238.2	177.2		28.8	25.0	37.5	145.0	93.2	238.2
6	2025		61.0	61.0	238.2	177.2		28.8	25.0	37.5	145.0	93.2	238.2
7	2026		61.0	61.0	238.2	177.2		28.8	25.0	37.5	145.0	93.2	238.2
8	2027		61.0	61.0	238.2	177.2		28.8	25.0	37.5	145.0	93.2	238.2
9	2028		61.0	61.0	238.2	177.2	-27.2%	28.8	25.0	37.5	145.0	93.2	238.2
10	2029		61.0	61.0	238.2	177.2	-22.4%	28.8	25.0	37.5	145.0	93.2	238.2
11	2030		61.0	61.0	238.2	177.2	-18.7%	28.8	25.0	37.5	145.0	93.2	238.2
12	2031		61.0	61.0	333.5	272.5	-14.5%	40.3	35.0	52.5	203.0	130.5	333.5
13	2032		61.0	61.0	333.5	272.5	-11.5%	40.3	35.0	52.5	203.0	130.5	333.5
14	2033		61.0	61.0	333.5	272.5	-9.2%	40.3	35.0	52.5	203.0	130.5	333.5
15	2034		61.0	61.0	333.5	272.5	-7.4%	40.3	35.0	52.5	203.0	130.5	333.5
16	2035		61.0	61.0	333.5	272.5	-5.9%	40.3	35.0	52.5	203.0	130.5	333.5
17	2036		61.0	61.0	333.5	272.5	-4.6%	40.3	35.0	52.5	203.0	130.5	333.5
18	2037		61.0	61.0	333.5	272.5	-3.6%	40.3	35.0	52.5	203.0	130.5	333.5
19	2038		61.0	61.0	333.5	272.5	-2.7%	40.3	35.0	52.5	203.0	130.5	333.5
20	2039		61.0	61.0	333.5	272.5	-1.9%	40.3	35.0	52.5	203.0	130.5	333.5
	Total	4,692.8	1,006.2	**5,699.0**	4,788.0	-911.0		**34.8**			2,914.4	1,873.6	4,788.0

FIRR **1 year-Delay Simulation**

	Year	Initial Invest	OM	Benefit	Net Benefit	FIRR	Cost Total	Initial Invest	OM	Total Cost
1	2020	-1,510.1			-1,510.1		-1,510.1	1,132.6		1,132.6
2	2021	-1,510.1			-1,510.1		-1,510.1	1,132.6		1,132.6
3	2022	-1,591.3			-1,591.3		-1,591.3	1,186.7		1,186.7
4	2023	-81.2	-30.5	119.1	7.4		-111.7	1,186.7		1,186.7
5	2024		-61.0	238.2	177.2		-61.0	54.1	30.5	84.6
6	2025		-61.0	238.2	177.2		-61.0		61.0	61.0
7	2026		-61.0	238.2	177.2		-61.0		61.0	61.0
8	2027		-61.0	238.2	177.2		-61.0		61.0	61.0
9	2028		-61.0	238.2	177.2		-61.0		61.0	61.0
10	2029		-61.0	238.2	177.2		-61.0		61.0	61.0
11	2030		-61.0	238.2	177.2		-61.0		61.0	61.0
12	2031		-61.0	333.5	272.5		-61.0		61.0	61.0
13	2032		-61.0	333.5	272.5		-61.0		61.0	61.0
14	2033		-61.0	333.5	272.5		-61.0		61.0	61.0
15	2034		-61.0	333.5	272.5		-61.0		61.0	61.0
16	2035		-61.0	333.5	272.5		-61.0		61.0	61.0
17	2036		-61.0	333.5	272.5		-61.0		61.0	61.0
18	2037		-61.0	333.5	272.5		-61.0		61.0	61.0
19	2038		-61.0	333.5	272.5		-61.0		61.0	61.0
20	2039		-61.0	333.5	272.5	-1.9%	-61.0		61.0	61.0
	Total	-4,692.8	-1,006.2	4,788.0	-911.0		-5,699.0			



Year	Initial Investment	OM	Cost Total	Benefit	Net Benefit
2020	1,510.1		1,510.1		-1,510.1
2021	1,510.1		1,510.1		-1,510.1
2022	1,591.3		1,591.3		-1,591.3
2023	81.2	30.5	111.7	119.1	7.4
2024		61.0	61.0	238.2	177.2
2025		61.0	61.0	238.2	177.2
⋮		⋮	⋮	⋮	⋮
2037		61.0	61.0	333.5	272.5
2038		61.0	61.0	333.5	272.5
2039		61.0	61.0	333.5	272.5
Total	4,692.8	1,006.2	5,699.0	4,788.0	-911.0

EIRR SCF **0.9**

	Year	Cost (million PKR)									Served water (million m3/ year)		
		Construction			O&M			Total					
		Local	Foreign	Sub Total	Local	Foreign	Sub Total	Local	Foreign	Total	Domestic	Non-Domestic	Total
1	2020	312.1	1,163.4	1,475.5				312.1	1,163.4	1,475.5			
2	2021	312.1	1,163.4	1,475.5				312.1	1,163.4	1,475.5			
3	2022	347.6	1,205.2	1,552.7				347.6	1,205.2	1,552.7			
4	2023	35.5	41.8	77.3	27.4		27.4	62.9	41.8	104.7	2.9	1.2	4.1
5	2024				54.9		54.9	54.9	0.0	54.9	5.8	2.5	8.3
6	2025				54.9		54.9	54.9	0.0	54.9	5.8	2.5	8.3
7	2026				54.9		54.9	54.9	0.0	54.9	5.8	2.5	8.3
8	2027				54.9		54.9	54.9	0.0	54.9	5.8	2.5	8.3
9	2028				54.9		54.9	54.9	0.0	54.9	5.8	2.5	8.3
10	2029				54.9		54.9	54.9	0.0	54.9	5.8	2.5	8.3
11	2030				54.9		54.9	54.9	0.0	54.9	5.8	2.5	8.3
12	2031				54.9		54.9	54.9	0.0	54.9	5.8	2.5	8.3
13	2032				54.9		54.9	54.9	0.0	54.9	5.8	2.5	8.3
14	2033				54.9		54.9	54.9	0.0	54.9	5.8	2.5	8.3
15	2034				54.9		54.9	54.9	0.0	54.9	5.8	2.5	8.3
16	2035				54.9		54.9	54.9	0.0	54.9	5.8	2.5	8.3
17	2036				54.9		54.9	54.9	0.0	54.9	5.8	2.5	8.3
18	2037				54.9		54.9	54.9	0.0	54.9	5.8	2.5	8.3
19	2038				54.9		54.9	54.9	0.0	54.9	5.8	2.5	8.3
20	2039				54.9		54.9	54.9	0.0	54.9	5.8	2.5	8.3
	Total 20years	1,007.2	3,573.7	4,580.9	905.6	0.0	905.6	1,912.8	3,573.7	5,486.5	95.7	41.0	136.7
									65.1%				

WTP 12 months 30 days

Parameters

WTP PKR/HH/month	1,050	**1,500**	Alternative method (power cost of ground water pumping)
WT PKR/HH/year	18,000		
water consumption pcpd	135.0	WTP-Non-Dome	1.0
number of HH members	7.2	WTP-Non-Dome	48.6
water concumption lit/HH/day	972		
water concumption lit/HH/month	29,160		
water litter/ m3	1,000		
water concumption m3/HH/month	29.2		
water concumption m3/HH/year	349.9		
WTP PKR/m3	**51.4**		

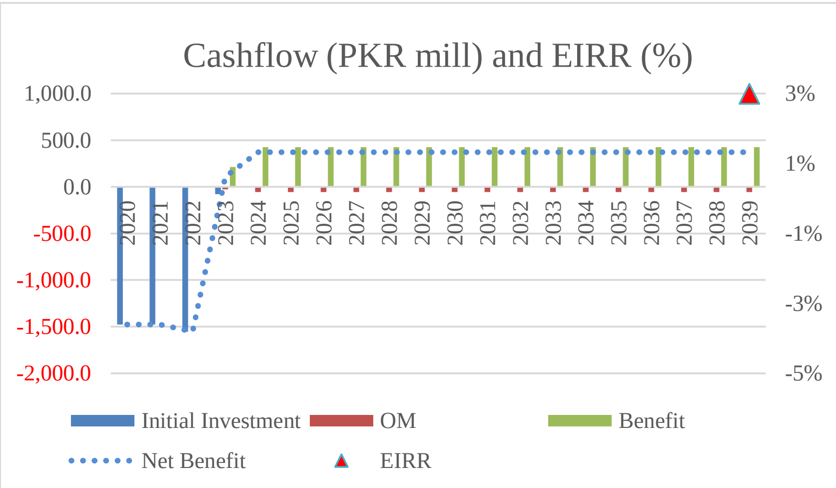
ENPV -1,669.0 DR 10%

	Year	Initial Investment	OM	Cost Total	Benefit	Net Benefit	EIRR
1	2020	1,475.5		1,475.5		-1,475.5	
2	2021	1,475.5		1,475.5		-1,475.5	
3	2022	1,552.7		1,552.7		-1,552.7	
4	2023	77.3	27.4	104.7	213.1	108.4	
5	2024		54.9	54.9	426.2	371.3	
6	2025		54.9	54.9	426.2	371.3	
7	2026		54.9	54.9	426.2	371.3	
8	2027		54.9	54.9	426.2	371.3	-21.0%
9	2028		54.9	54.9	426.2	371.3	-15.4%
10	2029		54.9	54.9	426.2	371.3	-11.3%
11	2030		54.9	54.9	426.2	371.3	-8.2%
12	2031		54.9	54.9	426.2	371.3	-5.7%
13	2032		54.9	54.9	426.2	371.3	-3.8%
14	2033		54.9	54.9	426.2	371.3	-2.2%
15	2034		54.9	54.9	426.2	371.3	-0.9%
16	2035		54.9	54.9	426.2	371.3	0.2%
17	2036		54.9	54.9	426.2	371.3	1.1%
18	2037		54.9	54.9	426.2	371.3	1.8%
19	2038		54.9	54.9	426.2	371.3	2.4%
20	2039		54.9	54.9	426.2	371.3	3.0%
	Total	4,580.9	905.6	5,486.5	7,032.4	1,546.0	

	Year	Initial Investment	OM	Benefit	Net Benefit	EIRR	Cost Total
1	2020	-1,475.5			-1,475.5		-1,475.5
2	2021	-1,475.5			-1,475.5		-1,475.5
3	2022	-1,552.7			-1,552.7		-1,552.7
4	2023	-77.3	-27.4	213.1	108.4		-104.7
5	2024		-54.9	426.2	371.3		-54.9
6	2025		-54.9	426.2	371.3		-54.9
7	2026		-54.9	426.2	371.3		-54.9
8	2027		-54.9	426.2	371.3		-54.9
9	2028		-54.9	426.2	371.3		-54.9
10	2029		-54.9	426.2	371.3		-54.9
11	2030		-54.9	426.2	371.3		-54.9
12	2031		-54.9	426.2	371.3		-54.9
13	2032		-54.9	426.2	371.3		-54.9
14	2033		-54.9	426.2	371.3		-54.9
15	2034		-54.9	426.2	371.3		-54.9
16	2035		-54.9	426.2	371.3		-54.9
17	2036		-54.9	426.2	371.3		-54.9
18	2037		-54.9	426.2	371.3		-54.9
19	2038		-54.9	426.2	371.3		-54.9
20	2039		-54.9	426.2	371.3	3.0%	-54.9
	Total	-4,580.9	-905.6	7,032.4	1,546.0		-5,486.5

1 year-Delay Simulation

Initial Invest	OM	Total Cost	BEN	NB	EIRR
1,105.6		1,105.6		-1,105.6	
1,105.6		1,105.6		-1,105.6	
1,158.4		1,158.4		-1,158.4	
1,158.4		1,158.4		-1,158.4	
52.8	27.4	80.3	213.1	132.8	
	54.9	54.9	426.2	158.2	
	54.9	54.9	426.2	371.3	
	54.9	54.9	426.2	371.3	-29%
	54.9	54.9	426.2	371.3	-21%
	54.9	54.9	426.2	371.3	-15%
	54.9	54.9	426.2	371.3	-11%
	54.9	54.9	426.2	371.3	-8%
	54.9	54.9	426.2	371.3	-6%
	54.9	54.9	426.2	371.3	-4%
	54.9	54.9	426.2	371.3	-2.7%
	54.9	54.9	426.2	371.3	-1.4%
	54.9	54.9	426.2	371.3	-0.4%
	54.9	54.9	426.2	371.3	0.5%
	54.9	54.9	426.2	371.3	1.2%
4,580.9	795.8	5,376.7	6,180.0	803.3	



Year	Initial Investment	OM	Cost Total	Benefit	Net Benefit
2020	1,475.5		1,475.5		-1,475.5
2021	1,475.5		1,475.5		-1,475.5
2022	1,552.7		1,552.7		-1,552.7
2023	77.3	27.4	104.7	213.1	108.4
2024		54.9	54.9	426.2	371.3
2025		54.9	54.9	426.2	371.3
2026		54.9	54.9	426.2	371.3
⋮		⋮	⋮	⋮	⋮
2037		54.9	54.9	426.2	371.3
2038		54.9	54.9	426.2	371.3
2039		54.9	54.9	426.2	371.3
Total	4,580.9	905.6	5,486.5	7,032.4	1,546.0

Jhang WTP-1 EIRR/ FIRR

	Year	Cost (million PKR)									Served water (million m3/ year)		
		Construction			O&M			Total					
		Local	Foreign	Sub Total	Local	Foreign	Sub Total	Local	Foreign	Total	Domestic	Non-Domesti	Total
1	2023	1,685.8	3,075.9	4,761.7				1,685.8	3,075.9	4,761.7			
2	2024	1,936.0	3,340.9	5,276.9				1,936.0	3,340.9	5,276.9			
3	2025	250.2	265.0	515.2				250.2	265.0	515.2			
4	2026				362.0		362.0	362.0		362.0	23.2	10.0	33.2
5	2027				362.0		362.0	362.0		362.0	23.2	10.0	33.2
6	2028				362.0		362.0	362.0		362.0	23.2	10.0	33.2
7	2029				362.0		362.0	362.0		362.0	23.2	10.0	33.2
8	2030				362.0		362.0	362.0		362.0	23.2	10.0	33.2
9	2031				362.0		362.0	362.0		362.0	23.2	10.0	33.2
10	2032				362.0		362.0	362.0		362.0	23.2	10.0	33.2
11	2033				362.0		362.0	362.0		362.0	23.2	10.0	33.2
12	2034				362.0		362.0	362.0		362.0	23.2	10.0	33.2
13	2035				362.0		362.0	362.0		362.0	23.2	10.0	33.2
14	2036				362.0		362.0	362.0		362.0	23.2	10.0	33.2
15	2037				362.0		362.0	362.0		362.0	23.2	10.0	33.2
16	2038				362.0		362.0	362.0		362.0	23.2	10.0	33.2
17	2039				362.0		362.0	362.0		362.0	23.2	10.0	33.2
18	2040				362.0		362.0	362.0		362.0	23.2	10.0	33.2
19	2041				362.0		362.0	362.0		362.0	23.2	10.0	33.2
20	2042				362.0		362.0	362.0		362.0	23.2	10.0	33.2
	Total 20years	3,872.0	6,681.8	**10,553.8**	6,154.0	0.0	**6,154.0**	10,026.0	6,681.8	**16,707.8**	394.8	169.2	564.0
											0.70	0.30	

FIRR

FNPV -3,104.8 DR 6.1%

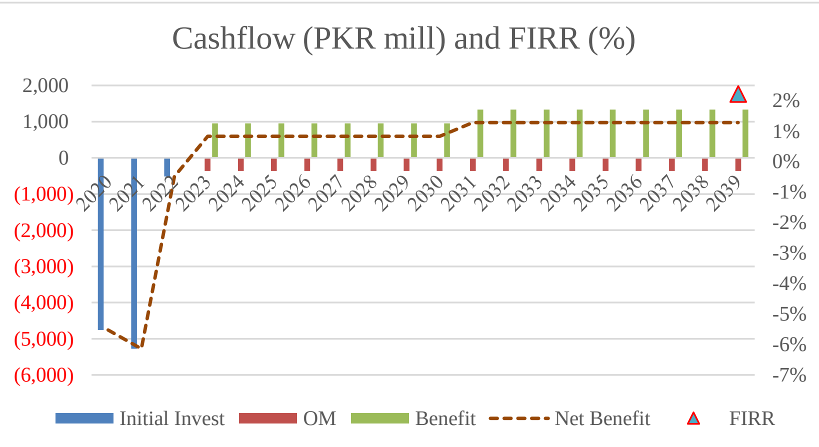
PKR/m3 1.5

Served water **(mill PKR)**

	Year	Initial Investment	OM	Cost Total	Benefit	Net Benefit	FIRR	Weighed Ave Tariff	Tariff Dom	Tariff Non-Dom	Domestic	Non-Domestic	Total
1	2020	4,761.7		4,761.7		-4,761.7			8.4	12.6			
2	2021	5,276.9		5,276.9		-5,276.9			8.4	12.6			
3	2022	515.2		515.2		-515.2			8.4	12.6			
4	2023		362.0	362.0	953.9	591.9		28.8	25.0	37.5	580.6	373.3	953.9
5	2024		362.0	362.0	953.9	591.9		28.8	25.0	37.5	580.6	373.3	953.9
6	2025		362.0	362.0	953.9	591.9		28.8	25.0	37.5	580.6	373.3	953.9
7	2026		362.0	362.0	953.9	591.9		28.8	25.0	37.5	580.6	373.3	953.9
8	2027		362.0	362.0	953.9	591.9		28.8	25.0	37.5	580.6	373.3	953.9
9	2028		362.0	362.0	953.9	591.9	-19.0%	28.8	25.0	37.5	580.6	373.3	953.9
10	2029		362.0	362.0	953.9	591.9	-15.1%	28.8	25.0	37.5	580.6	373.3	953.9
11	2030		362.0	362.0	953.9	591.9	-12.1%	28.8	25.0	37.5	580.6	373.3	953.9
12	2031		362.0	362.0	1,335.4	973.4	-8.4%	40.3	35.0	52.5	812.9	522.6	1,335.4
13	2032		362.0	362.0	1,335.4	973.4	-5.8%	40.3	35.0	52.5	812.9	522.6	1,335.4
14	2033		362.0	362.0	1,335.4	973.4	-3.8%	40.3	35.0	52.5	812.9	522.6	1,335.4
15	2034		362.0	362.0	1,335.4	973.4	-2.3%	40.3	35.0	52.5	812.9	522.6	1,335.4
16	2035		362.0	362.0	1,335.4	973.4	-1.0%	40.3	35.0	52.5	812.9	522.6	1,335.4
17	2036		362.0	362.0	1,335.4	973.4	0.0%	40.3	35.0	52.5	812.9	522.6	1,335.4
18	2037		362.0	362.0	1,335.4	973.4	0.9%	40.3	35.0	52.5	812.9	522.6	1,335.4
19	2038		362.0	362.0	1,335.4	973.4	1.6%	40.3	35.0	52.5	812.9	522.6	1,335.4
20	2039		362.0	362.0	1,335.4	973.4	2.2%	40.3	35.0	52.5	812.9	522.6	1,335.4
	Total	10,553.8	6,154.0	**16,707.8**	19,650.0	2,942.2		**34.8**			11,960.8	7,689.1	19,650.0

FIRR **1 year-Delay Simulation**

Year	Initial Invest	OM	Benefit	Net Benefit	FIRR	Cost Total	Initial Invest	OM	Total Cost	BEN	NB	FIRR
2020	-4,761.7			-4,761.7		-4,761.7	2,547.1		2,547.1		-2,547.1	
2021	-5,276.9			-5,276.9		-5,276.9	2,547.1		2,547.1		-2,547.1	
2022	-515.2			-515.2		-515.2	2,668.9		2,668.9		-2,668.9	
2023		-362.0	953.9	591.9		-362.0	2,668.9		2,668.9		-2,668.9	
2024		-362.0	953.9	591.9		-362.0		362.0	362.0	953.9	591.9	
2025		-362.0	953.9	591.9		-362.0		362.0	362.0	953.9	591.9	
2026		-362.0	953.9	591.9		-362.0		362.0	362.0	953.9	591.9	
2027		-362.0	953.9	591.9		-362.0		362.0	362.0	953.9	591.9	-31%
2028		-362.0	953.9	591.9		-362.0		362.0	362.0	953.9	591.9	-24%
2029		-362.0	953.9	591.9		-362.0		362.0	362.0	953.9	591.9	-18.9%
2030		-362.0	953.9	591.9		-362.0		362.0	362.0	953.9	591.9	-15.0%
2031		-362.0	1,335.4	973.4		-362.0		362.0	362.0	953.9	591.9	-11.9%
2032		-362.0	1,335.4	973.4		-362.0		362.0	362.0	1,335.4	973.4	-8.3%
2033		-362.0	1,335.4	973.4		-362.0		362.0	362.0	1,335.4	973.4	-5.7%
2034		-362.0	1,335.4	973.4		-362.0		362.0	362.0	1,335.4	973.4	-3.7%
2035		-362.0	1,335.4	973.4		-362.0		362.0	362.0	1,335.4	973.4	-2.1%
2036		-362.0	1,335.4	973.4		-362.0		362.0	362.0	1,335.4	973.4	-0.9%
2037		-362.0	1,335.4	973.4		-362.0		362.0	362.0	1,335.4	973.4	0.1%
2038		-362.0	1,335.4	973.4		-362.0		362.0	362.0	1,335.4	973.4	1.0%
2039		-362.0	1,335.4	973.4	2.2%	-362.0		362.0	362.0	1,335.4	973.4	1.7%
Total	-10,553.8	-6,154.0	19,650.0	2,942.2		**-16,707.8**						



Year	Initial Investmen	OM	Cost Total	Benefit	Net Benefit
2020	4,761.7		4,761.7		-4,761.7
2021	5,276.9		5,276.9		-5,276.9
2022	515.2		515.2		-515.2
2023	0.0	362.0	362.0	953.9	591.9
2024		362.0	362.0	953.9	591.9
2025		362.0	362.0	953.9	591.9
⋮		⋮	⋮	⋮	⋮
2037		362.0	362.0	1,335.4	973.4
2038		362.0	362.0	1,335.4	973.4
2039		362.0	362.0	1,335.4	973.4
Total	10,553.8	6,154.0	16,707.8	19,650.0	2,942.2

EIRR SCF **0.9**

	Year	Cost (million PKR)									Served water (million m3/ year)		
		Construction			O&M			Total					
		Local	Foreign	Sub Total	Local	Foreign	Sub Total	Local	Foreign	Total	Domestic	Non-Domesti	Total
1	2020	1,517.2	3,075.9	4,593.1				1,517.2	3,075.9	4,593.1			
2	2021	1,742.4	3,340.9	5,083.3				1,742.4	3,340.9	5,083.3			
3	2022	225.2	265.0	490.2				225.2	265.0	490.2			
4	2023	0.0	0.0	0.0	325.8		325.8	325.8	0.0	325.8	23.2	10.0	33.2
5	2024				325.8		325.8	325.8	0.0	325.8	23.2	10.0	33.2
6	2025				325.8		325.8	325.8	0.0	325.8	23.2	10.0	33.2
7	2026				325.8		325.8	325.8	0.0	325.8	23.2	10.0	33.2
8	2027				325.8		325.8	325.8	0.0	325.8	23.2	10.0	33.2
9	2028				325.8		325.8	325.8	0.0	325.8	23.2	10.0	33.2
10	2029				325.8		325.8	325.8	0.0	325.8	23.2	10.0	33.2
11	2030				325.8		325.8	325.8	0.0	325.8	23.2	10.0	33.2
12	2031				325.8		325.8	325.8	0.0	325.8	23.2	10.0	33.2
13	2032				325.8		325.8	325.8	0.0	325.8	23.2	10.0	33.2
14	2033				325.8		325.8	325.8	0.0	325.8	23.2	10.0	33.2
15	2034				325.8		325.8	325.8	0.0	325.8	23.2	10.0	33.2
16	2035				325.8		325.8	325.8	0.0	325.8	23.2	10.0	33.2
17	2036				325.8		325.8	325.8	0.0	325.8	23.2	10.0	33.2
18	2037				325.8		325.8	325.8	0.0	325.8	23.2	10.0	33.2
19	2038				325.8		325.8	325.8	0.0	325.8	23.2	10.0	33.2
20	2039				325.8		325.8	325.8	0.0	325.8	23.2	10.0	33.2
	Total 20years	3,484.8	6,681.8	10,166.6	5,538.6	0.0	5,538.6	9,023.4	6,681.8	15,705.2	394.8	169.2	564.0
									42.5%				

WTP 12 months 30 days

Parameters

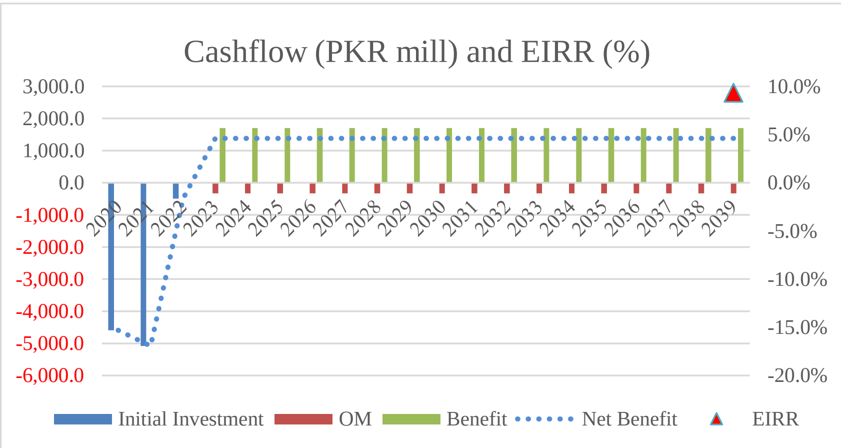
WTP PKR/HH/month	1,050	**1,500**	Alternative method (power cost of ground water pumping)	
WTP PKR/HH/year	18,000			
water consumption pcpd	135		WTP-Non-Domes	1.0
number of HH members	7.2		WTP-Non-Domes	48.6
water concumption lit/HH/day	972			
water concumption lit/HH/month	29,160			
water litter/ m3	1,000			
water concumption m3/HH/month	29.2			
water concumption m3/HH/year	349.9			
WTP PKR/m3	**51.4**			

	Year	Initial Investmen	OM	Cost Total	Benefit	Net Benefit	EIRR
1	2020	4,593.1		4,593.1		-4,593.1	
2	2021	5,083.3		5,083.3		-5,083.3	
3	2022	490.2		490.2		-490.2	
4	2023		325.8	325.8	1,706.7	1,380.9	
5	2024		325.8	325.8	1,706.7	1,380.9	
6	2025		325.8	325.8	1,706.7	1,380.9	
7	2026		325.8	325.8	1,706.7	1,380.9	
8	2027		325.8	325.8	1,706.7	1,380.9	-8.3%
9	2028		325.8	325.8	1,706.7	1,380.9	-4.0%
10	2029		325.8	325.8	1,706.7	1,380.9	-0.9%
11	2030		325.8	325.8	1,706.7	1,380.9	1.4%
12	2031		325.8	325.8	1,706.7	1,380.9	3.2%
13	2032		325.8	325.8	1,706.7	1,380.9	4.7%
14	2033		325.8	325.8	1,706.7	1,380.9	5.8%
15	2034		325.8	325.8	1,706.7	1,380.9	6.7%
16	2035		325.8	325.8	1,706.7	1,380.9	7.4%
17	2036		325.8	325.8	1,706.7	1,380.9	8.1%
18	2037		325.8	325.8	1,706.7	1,380.9	8.6%
19	2038		325.8	325.8	1,706.7	1,380.9	9.0%
20	2039		325.8	325.8	1,706.7	1,380.9	9.3%
	Total	10,166.6	5,538.6	15,705.2	29,014.1	13,309.0	

ENPV (422.5) DR 10.0%

1 year-Delay Simulation

Year	Initial Investmen	OM	Benefit	Net Benefit	EIRR	Cost Total	Initial Invest	OM	Total Cost		BEN	NB	EIRR
2020	-4,593.1			-4,593.1		-4,593.1							
2021	-5,083.3			-5,083.3		-5,083.3	2,541.6		2,541.6			-2,541.6	
2022	-490.2			-490.2		-490.2	2,541.6		2,541.6			-2,541.6	
2023	0.0	-325.8	1,706.7	1,380.9		-325.8	3,050.0		3,050.0			-3,050.0	
2024		-325.8	1,706.7	1,380.9		-325.8	1,525.0		1,525.0			-1,525.0	
2025		-325.8	1,706.7	1,380.9		-325.8	508.3		508.3			-508.3	
2026		-325.8	1,706.7	1,380.9		-325.8		325.8	325.8		1,706.7	1,380.9	
2027		-325.8	1,706.7	1,380.9		-325.8		325.8	325.8		1,706.7	1,380.9	
2028		-325.8	1,706.7	1,380.9		-325.8		325.8	325.8		1,706.7	1,380.9	-18%
2029		-325.8	1,706.7	1,380.9		-325.8		325.8	325.8		1,706.7	1,380.9	-12%
2030		-325.8	1,706.7	1,380.9		-325.8		325.8	325.8		1,706.7	1,380.9	-7%
2031		-325.8	1,706.7	1,380.9		-325.8		325.8	325.8		1,706.7	1,380.9	-3%
2032		-325.8	1,706.7	1,380.9		-325.8		325.8	325.8		1,706.7	1,380.9	-1%
2033		-325.8	1,706.7	1,380.9		-325.8		325.8	325.8		1,706.7	1,380.9	1%
2034		-325.8	1,706.7	1,380.9		-325.8		325.8	325.8		1,706.7	1,380.9	3%
2035		-325.8	1,706.7	1,380.9		-325.8		325.8	325.8		1,706.7	1,380.9	4.0%
2036		-325.8	1,706.7	1,380.9		-325.8		325.8	325.8		1,706.7	1,380.9	5.0%
2037		-325.8	1,706.7	1,380.9		-325.8		325.8	325.8		1,706.7	1,380.9	5.8%
2038		-325.8	1,706.7	1,380.9		-325.8		325.8	325.8		1,706.7	1,380.9	6.4%
2039		-325.8	1,706.7	1,380.9	9.3%	-325.8		325.8	325.8		1,706.7	1,380.9	7.0%
Total	-10,166.6	-5,538.6	29,014.1	13,309.0		-15,705.2	10,166.6	4,561.2	14,727.8		23,894.0	9,166.2	



Year	Initial Investmen	OM	Cost Total	Benefit	Net Benefit
2020	4,593.1		4,593.1		-4,593.1
2021	5,083.3		5,083.3		-5,083.3
2022	490.2		490.2		-490.2
2023	0.0	325.8	325.8	1,706.7	1,380.9
2024		325.8	325.8	1,706.7	1,380.9
2025		325.8	325.8	1,706.7	1,380.9
2026		325.8	325.8	1,706.7	1,380.9
⋮		⋮	⋮	⋮	⋮
2037		325.8	325.8	1,706.7	1,380.9
2038		325.8	325.8	1,706.7	1,380.9
2039		325.8	325.8	1,706.7	1,380.9
Total	10,166.6	5,538.6	15,705.2	29,014.1	13,309.0