

TABLE A-6.3.2(2) Construction Unit Cost

\*\*\* SUMMARY OF UNIT CONSTRUCTION COST \*\*\*

CONSTRUCTION WORK	SPECIFICATION	UNIT	COST(Rs)
<b>A Well</b>			
A-1 Borehole Drilling	Depth 250 meter	1 No	672000
A-2 Borehole Drilling	Depth 300 meter	1 No	801000
A-3 Pump Installation	Installation Work	1 job	10000
A-4 Pump House	10 feet x 10 feet	1 No	30000
A-5 Electrification	from Feeder line only	1 set	30000
A-5-1 Tee-off	500m (frm 11KV line)	1 set	44024
A-5-2 Service & Meter	for 440V	1 set	4120
A-5-3 Transformer	25KVA/Pole mount style	1 set	27900
<b>B On-farm facilities</b>			
B-1 Land Levelling	Only for 10 ha plot	1 set	
B-1 Land Levelling	1 ha/with 100HP dozer	1 job	19792
B-2 Main Canal	Brick/mortal lining/10ha	1 set	68027
B-3 Branch Canal	Earth lining/10ha	1 set	7820
B-4 Off-farm facilities	Turnout/culvert/10ha	1 set	69025
B-5 Farm road	Main/branch /10ha	1 set	84330
B-6 Farm pond(3 types)	on yield (5,10,15 l/sec)		
B-6-1 Farm pond(180 c.m)	for 5.0l/s In&out let	1 set	41958
B-6-2 Farm pond(350 c.m)	for 10.0l/s In&out let	1 set	70092
B-6-3 Farm pond(540 c.m)	for 15.0l/s In&out let	1 set	93031
B-7 Communal tank	400 c.m brick masonry	1 set	7450
B-8 Levee	WT30/WB50/H30 cm /10ha	1 set	7890
<b>C Social Infrastructure</b>			
C-1 Connection road	R.O.W 10m, E.W 5m	/km	4300
C-2 Submersible road	R.O.W 5.5m Bitumes cover	/100 m	61560
C-3 Feeder line to vein	11KV feeder line	/Km	88048
<b>D Land aquisition cost</b>			
		/ha	3707
<b>E Pump price</b>			
E-1 Pump price	Submersible pump		
E-1 Pump price	5.0 l/s, 100m 20HP	1 set	154000
E-2 Pump price	5.0 l/s, 150m 30HP	1 set	220000
E-3 Pump price	10.0 l/s, 100m 25HP	1 set	154000
E-4 Pump price	10.0 l/s, 150m 50HP	1 set	242000
E-5 Pump price	15.0 l/s, 100m 40HP	1 set	209000
E-6 Pump price	15.0 l/s, 150m 60HP	1 set	332000

TABLE A-6.3.3(1) Summary of Construction Cost  
 QT-D Drilling Depth = 200 m

\*\*\*\*\* CONSTRUCTION COST SUMMARY \*\*\*\*\*

Quetta Area, Vein-D. 1/2

	* CASE-1 *	* CASE-2 *	* CASE-3 *
Drilling Depth (m)	200.00	200.00	200.00
Pump Head (m)	100.00	150.00	100.00
Pump Discharge (l/s)	5.00	5.00	10.00
Required Q/10ha(l/s)	10.20	10.20	10.20
Irrigable Area (ha)	4.90	4.90	9.80
Number of Wells(nos)	4.00	4.00	4.00
Well Facilities.	3368176	3632176	3408176
On-farm Facilities.	1129756	1129756	2174417
Social Facilities.	564470	564470	564470
Construction Cost	5062402	5326402	6147063

Quetta Area, Vein-D. 2/2

	* CASE-4 *	* CASE-5 *	* CASE-6 *
Drilling Depth (m)	200.00	200.00	200.00
Pump Head (m)	150.00	100.00	150.00
Pump Discharge (l/s)	10.00	15.00	15.00
Required Q/10ha(l/s)	10.20	10.20	10.20
Irrigable Area (ha)	9.80	14.71	14.71
Number of Wells(nos)	4.00	4.00	4.00
Well Facilities.	3720176	3588176	4080176
On-farm Facilities.	2174417	3119131	3119131
Social Facilities.	564470	564470	564470
Construction Cost	6459063	7271777	7763777

TABLE A-6.3.3(2) Summary of Construction Cost  
 QT-E Drilling Depth = 200 m

\*\*\*\*\* CONSTRUCTION COST SUMMARY \*\*\*\*\*

Quetta Area, Vein-E 1/2

	* CASE-1 *	* CASE-2 *	* CASE-3 *
Drilling Depth (m)	200.00	200.00	200.00
Pump Head (m)	100.00	150.00	100.00
Pump Discharge (l/s)	5.00	5.00	10.00
Required Q/10ha (l/s)	10.20	10.20	10.20
Irrigable Area (ha)	4.90	4.90	9.80
Number of Wells(nos)	5.00	5.00	5.00
Well Facilities.	4210220	4540220	4260220
On-farm Facilities.	1412195	1412195	2718021
Social Facilities.	329668	329668	329668
Construction Cost	5952083	6282083	7307909

Quetta Area, Vein-E 2/2

	* CASE-4 *	* CASE-5 *	* CASE-6 *
Drilling Depth (m)	200.00	200.00	200.00
Pump Head (m)	150.00	100.00	150.00
Pump Discharge (l/s)	10.00	15.00	15.00
Required Q/10ha (l/s)	10.20	10.20	10.20
Irrigable Area (ha)	9.80	14.71	14.71
Number of Wells(nos)	5.00	5.00	5.00
Well Facilities.	4650220	4485220	5100220
On-farm Facilities.	2718021	3898914	3898914
Social Facilities.	329668	329668	329668
Construction Cost	7697909	8713802	9328802

TABLE A-6.3.3(3) Summary of Construction Cost  
 KL-B Drilling Depth = 200 m

\*\*\*\*\* CONSTRUCTION COST SUMMARY \*\*\*\*\*

Kalat Area, Vein-B. 1/2

	* CASE-1 *	* CASE-2 *	* CASE-3 *
Drilling Depth (m)	200.00	200.00	200.00
Pump Head (m)	100.00	150.00	100.00
Pump Discharge (l/s)	5.00	5.00	10.00
Required Q/10ha (l/s)	9.90	9.90	9.90
Irrigable Area (ha)	5.05	5.05	10.10
Number of Wells(nos)	4.00	4.00	4.00
Well Facilities.	3368176	3632176	3408176
On-farm Facilities.	1155603	1155603	2226111
Social Facilities.	1222680	1222680	1222680
Construction Cost	5746459	6010459	6856967

Kalat Area, Vein-B. 2/2

	* CASE-4 *	* CASE-5 *	* CASE-6 *
Drilling Depth (m)	200.00	200.00	200.00
Pump Head (m)	150.00	100.00	150.00
Pump Discharge (l/s)	10.00	15.00	15.00
Required Q/10ha (l/s)	9.90	9.90	9.90
Irrigable Area (ha)	10.10	15.15	15.15
Number of Wells(nos)	4.00	4.00	4.00
Well Facilities.	3720176	3588176	4080176
On-farm Facilities.	2226111	3196673	3196673
Social Facilities.	1222680	1222680	1222680
Construction Cost	7168967	8007529	8499529

TABLE A-6.3.3(4) Summary of Construction Cost  
 KL-C Drilling Depth = 200 m

\*\*\*\*\* CONSTRUCTION COST SUMMARY \*\*\*\*\*

Kalat Area. Vein-C 1/2

	* CASE-1 *	* CASE-2 *	* CASE-3 *
Drilling Depth (m)	200.00	200.00	200.00
Pump Head (m)	100.00	150.00	100.00
Pump Discharge (l/s)	5.00	5.00	10.00
Required Q/10ha(l/s)	9.90	9.90	9.90
Irrigable Area (ha)	5.05	5.05	10.10
Number of Wells(nos)	3.00	3.00	3.00
Well Facilities.	2526132	2724132	2556132
On-farm Facilities.	866703	866703	1669584
Social Facilities.	728878	728878	728878
Construction Cost	4121713	4319713	4954594

Kalat Area. Vein-C 2/2

	* CASE-4 *	* CASE-5 *	* CASE-6 *
Drilling Depth (m)	200.00	200.00	200.00
Pump Head (m)	150.00	100.00	150.00
Pump Discharge (l/s)	10.00	15.00	15.00
Required Q/10ha(l/s)	9.90	9.90	9.90
Irrigable Area (ha)	10.10	15.15	15.15
Number of Wells(nos)	3.00	3.00	3.00
Well Facilities.	2790132	2691132	3060132
On-farm Facilities.	1669584	2397505	2397505
Social Facilities.	728878	728878	728878
Construction Cost	5188594	5817515	6186515

TABLE A-6.3.3(5) Summary of Construction Cost  
 QT-D Drilling Depth = 250 m

\*\*\*\*\* CONSTRUCTION COST SUMMARY \*\*\*\*\*

Quetta Area, Uein-D. 1/2

	* CASE-1 *	* CASE-2 *	* CASE-3 *
Drilling Depth (m)	250.00	250.00	250.00
Pump Head (m)	100.00	150.00	100.00
Pump Discharge (l/s)	5.00	5.00	10.00
Required Q/10ha (l/s)	10.20	10.20	10.20
Irrigable Area (ha)	4.90	4.90	9.80
Number of Wells(nos)	4.00	4.00	4.00
Well Facilities.	3768176	4032176	3908176
On-farm Facilities.	1129756	1129756	2174417
Social Facilities.	564470	564470	564470
Construction Cost	5462402	5726402	6547063

Quetta Area, Uein-D. 2/2

	* CASE-4 *	* CASE-5 *	* CASE-6 *
Drilling Depth (m)	250.00	250.00	250.00
Pump Head (m)	150.00	100.00	150.00
Pump Discharge (l/s)	10.00	15.00	15.00
Required Q/10ha (l/s)	10.20	10.20	10.20
Irrigable Area (ha)	9.80	14.71	14.71
Number of Wells(nos)	4.00	4.00	4.00
Well Facilities.	4120176	3988176	4480176
On-farm Facilities.	2174417	3119131	3119131
Social Facilities.	564470	564470	564470
Construction Cost	6959063	7671777	8163777

TABLE A-6.3.3(6) Summary of Construction Cost  
 QT-E Drilling Depth = 250 m

\*\*\*\*\* CONSTRUCTION COST SUMMARY \*\*\*\*\*

Quetta Area. Uein-E 1/2

	* CASE-1 *	* CASE-2 *	* CASE-3 *
Drilling Depth (m)	250.00	250.00	250.00
Pump Head (m)	100.00	150.00	100.00
Pump Discharge (l/s)	5.00	5.00	10.00
Required Q/10ha (l/s)	10.20	10.20	10.20
Irrigable Area (ha)	4.90	4.90	9.80
Number of Wells(nos)	5.00	5.00	5.00
Well Facilities.	4710220	5040220	4760220
On-farm Facilities.	1412195	1412195	2718021
Social Facilities.	329668	329668	329668
Construction Cost	6452083	6782083	7807909

Quetta Area. Uein-E 2/2

	* CASE-4 *	* CASE-5 *	* CASE-6 *
Drilling Depth (m)	250.00	250.00	250.00
Pump Head (m)	150.00	100.00	150.00
Pump Discharge (l/s)	10.00	15.00	15.00
Required Q/10ha (l/s)	10.20	10.20	10.20
Irrigable Area (ha)	9.80	14.71	14.71
Number of Wells(nos)	5.00	5.00	5.00
Well Facilities.	5150220	4985220	5600220
On-farm Facilities.	2718021	3898914	3898914
Social Facilities.	329668	329668	329668
Construction Cost	8197909	9213802	9828802

TABLE A-6.3.3(7) Summary of Construction Cost  
 KL-B Drilling Depth = 250 m

\*\*\*\*\* CONSTRUCTION COST SUMMARY \*\*\*\*\*

Kalat Area, Vein-B, 1/2			
	* CASE-1 *	* CASE-2 *	* CASE-3 *
Drilling Depth (m)	250.00	250.00	250.00
Pump Head (m)	100.00	150.00	100.00
Pump Discharge (l/s)	5.00	5.00	10.00
Required Q/10ha(l/s)	9.90	9.90	9.90
Irrigable Area (ha)	5.05	5.05	10.10
Number of Wells(nos)	4.00	4.00	4.00
Well Facilities.	3758176	4032176	3808176
On-farm Facilities.	1155603	1155603	2226111
Social Facilities.	1222680	1222680	1222680
Construction Cost	6146459	6410459	7256967

Kalat Area, Vein-B, 2/2			
	* CASE-4 *	* CASE-5 *	* CASE-6 *
Drilling Depth (m)	250.00	250.00	250.00
Pump Head (m)	150.00	100.00	150.00
Pump Discharge (l/s)	10.00	15.00	15.00
Required Q/10ha(l/s)	9.90	9.90	9.90
Irrigable Area (ha)	10.10	15.15	15.15
Number of Wells(nos)	4.00	4.00	4.00
Well Facilities.	4120176	3988176	4480176
On-farm Facilities.	2226111	3196673	3196673
Social Facilities.	1222680	1222680	1222680
Construction Cost	7568967	8407529	8899529



TABLE A-6.3.3(8) Summary of Construction Cost  
 KL-C Drilling Depth = 250 m

\*\*\*\*\* CONSTRUCTION COST SUMMARY \*\*\*\*\*

Kalat Area, Vein-C 1/2			
	* CASE-1 *	* CASE-2 *	* CASE-3 *
Drilling Depth (m)	250.00	250.00	250.00
Pump Head (m)	100.00	150.00	100.00
Pump Discharge (l/s)	5.00	5.00	10.00
Required Q/10ha(l/s)	9.90	9.90	9.90
Irrigable Area (ha)	5.05	5.05	10.10
Number of Wells(nos)	3.00	3.00	3.00
Well Facilities.	2826132	3024132	2856132
On-farm Facilities.	866703	866703	1659584
Social Facilities.	728878	728878	728878
Construction Cost	4421713	4619713	5254594

Kalat Area, Vein-C 2/2			
	* CASE-4 *	* CASE-5 *	* CASE-6 *
Drilling Depth (m)	250.00	250.00	250.00
Pump Head (m)	150.00	100.00	150.00
Pump Discharge (l/s)	10.00	15.00	15.00
Required Q/10ha(l/s)	9.90	9.90	9.90
Irrigable Area (ha)	10.10	15.15	15.15
Number of Wells(nos)	3.00	3.00	3.00
Well Facilities.	3090132	2991132	3360132
On-farm Facilities.	1659584	2397505	2397505
Social Facilities.	728878	728878	728878
Construction Cost	5488594	6117515	6486515

TABLE A-6.3.3(9) Summary of Construction Cost  
 QT-D Drilling Depth = 300 m

\*\*\*\*\* CONSTRUCTION COST SUMMARY \*\*\*\*\*

Quetta Area. Vein-D. 1/2

	* CASE-1 *	* CASE-2 *	* CASE-3 *
Drilling Depth (m)	300.00	300.00	300.00
Pump Head (m)	100.00	150.00	100.00
Pump Discharge (l/s)	5.00	5.00	10.00
Required Q/10ha(l/s)	10.20	10.20	10.20
Irrigable Area (ha)	4.90	4.90	9.80
Number of Wells(nos)	4.00	4.00	4.00
Well Facilities.	4284175	4548176	4324176
On-farm Facilities.	1129755	1129756	2174417
Social Facilities.	564470	564470	564470
Construction Cost	5978402	6242402	7063063

Quetta Area. Vein-D. 2/2

	* CASE-4 *	* CASE-5 *	* CASE-6 *
Drilling Depth (m)	300.00	300.00	300.00
Pump Head (m)	150.00	100.00	150.00
Pump Discharge (l/s)	10.00	15.00	15.00
Required Q/10ha(l/s)	10.20	10.20	10.20
Irrigable Area (ha)	9.80	14.71	14.71
Number of Wells(nos)	4.00	4.00	4.00
Well Facilities.	4636176	4504176	4996176
On-farm Facilities.	2174417	3119131	3119131
Social Facilities.	564470	564470	564470
Construction Cost	7375063	8187777	8679777

TABLE A-6.3.3(10) Summary of Construction Cost  
 QT-E Drilling Depth = 300 m

\*\*\*\*\* CONSTRUCTION COST SUMMARY \*\*\*\*\*

Quetta Area. Vein-E 1/2

	* CASE-1 *	* CASE-2 *	* CASE-3 *
Drilling Depth (m)	300.00	300.00	300.00
Pump Head (m)	100.00	150.00	100.00
Pump Discharge (l/s)	5.00	5.00	10.00
Required Q/10ha (l/s)	10.20	10.20	10.20
Irrigable Area (ha)	4.90	4.90	9.80
Number of Wells(nos)	5.00	5.00	5.00
Well Facilities.	5355220	5685220	5405220
On-farm Facilities.	1412195	1412195	2718021
Social Facilities.	329668	329668	329668
Construction Cost	7097083	7427083	8452909

Quetta Area. Vein-E 2/2

	* CASE-4 *	* CASE-5 *	* CASE-6 *
Drilling Depth (m)	300.00	300.00	300.00
Pump Head (m)	150.00	100.00	150.00
Pump Discharge (l/s)	10.00	15.00	15.00
Required Q/10ha (l/s)	10.20	10.20	10.20
Irrigable Area (ha)	9.80	14.71	14.71
Number of Wells(nos)	5.00	5.00	5.00
Well Facilities.	5795220	5630220	5245220
On-farm Facilities.	2718021	3898914	3898914
Social Facilities.	329668	329668	329668
Construction Cost	8842909	9858802	10473802

TABLE A-6.3.3(11) Summary of Construction Cost  
 KL-D Drilling Depth = 300 m

\*\*\*\*\* CONSTRUCTION COST SUMMARY \*\*\*\*\*

Kalat Area. Vein-B. 1/2

	* CASE-1 *	* CASE-2 *	* CASE-3 *
Drilling Depth (m)	300.00	300.00	300.00
Pump Head (m)	100.00	150.00	100.00
Pump Discharge (l/s)	5.00	5.00	10.00
Required Q/10ha (l/s)	9.90	9.90	9.90
Irrigable Area (ha)	5.05	5.05	10.10
Number of Wells(nos)	4.00	4.00	4.00
Well Facilities.	4284176	4548176	4324176
On-farm Facilities.	1155603	1155603	2226111
Social Facilities.	1222680	1222680	1222680
Construction Cost	6662459	6926459	7772967

Kalat Area. Vein-B. 2/2

	* CASE-4 *	* CASE-5 *	* CASE-6 *
Drilling Depth (m)	300.00	300.00	300.00
Pump Head (m)	150.00	100.00	150.00
Pump Discharge (l/s)	10.00	15.00	15.00
Required Q/10ha (l/s)	9.90	9.90	9.90
Irrigable Area (ha)	10.10	15.15	15.15
Number of Wells(nos)	4.00	4.00	4.00
Well Facilities.	4536176	4504176	4996176
On-farm Facilities.	2226111	3196673	3196673
Social Facilities.	1222680	1222680	1222680
Construction Cost	8084967	8923529	9415529

TABLE A-6.3.3(12) Summary of Construction Cost  
 KL-E Drilling Depth = 300 m

\*\*\*\*\* CONSTRUCTION COST SUMMARY \*\*\*\*\*

	Kalat Area. Uein-C 1/2		
	* CASE-1 *	* CASE-2 *	* CASE-3 *
Drilling Depth (m)	300.00	300.00	300.00
Pump Head (m)	100.00	150.00	100.00
Pump Discharge (l/s)	5.00	5.00	10.00
Required Q/10ha (l/s)	9.90	9.90	9.90
Irrigable Area (ha)	5.05	5.05	10.10
Number of Wells (nos)	3.00	3.00	3.00
Well Facilities.	3213132	3411132	3243132
On-farm Facilities.	866703	866703	1669584
Social Facilities.	728878	728878	728878
Construction Cost	4809713	5006713	5641594

	Kalat Area. Uein-C 2/2		
	* CASE-4 *	* CASE-5 *	* CASE-6 *
Drilling Depth (m)	300.00	300.00	300.00
Pump Head (m)	150.00	100.00	150.00
Pump Discharge (l/s)	10.00	15.00	15.00
Required Q/10ha (l/s)	9.90	9.90	9.90
Irrigable Area (ha)	10.10	15.15	15.15
Number of Wells (nos)	3.00	3.00	3.00
Well Facilities.	3477132	3378132	3747132
On-farm Facilities.	1669584	2397505	2397505
Social Facilities.	728878	728878	728878
Construction Cost	5875594	6504515	6873515

TABLE A-6.3.4(1) Construction Cost Calculation. QT-D, D=200m

Guettea Area, Vein-D. PAGE: 1/2

	CASE-1			CASE-2			CASE-3		
	Drilling Depth (m)	Pump Head (m)	Pump Discharge (l/s)	Drilling Depth (m)	Pump Head (m)	Pump Discharge (l/s)	Drilling Depth (m)	Pump Head (m)	Pump Discharge (l/s)
1. Drilling Cost.	572000	4.00Nos	2286000	572000	4.00Nos	2286000	572000	4.00Nos	2286000
2. Pump Unit Cost.	154000	4.00Nos	516000	220000	4.00Nos	860000	154000	4.00Nos	555000
3. Pump installation	10000	4.00Nos	40000	10000	4.00Nos	40000	10000	4.00Nos	40000
4. Pump House.	30000	4.00Nos	120000	30000	4.00Nos	120000	30000	4.00Nos	120000
5. Tee off.	44024	4.00Nos	176096	44024	4.00Nos	176096	44024	4.00Nos	176096
6. Service & Meter.	4120	4.00Nos	16480	4120	4.00Nos	16480	4120	4.00Nos	16480
7. Transformer.	27900	4.00Nos	111600	27900	4.00Nos	111600	27900	4.00Nos	111600
8. Electrification.	76044	4.00Nos	304176	76044	4.00Nos	304176	76044	4.00Nos	304176
9. SUBTOTAL (1 TO 7)	19792	23.61ha	467239	19792	23.61ha	467239	19792	23.61ha	467239
10. Land Levelling.	7890	19.61ha	15471	7890	19.61ha	15471	7890	19.61ha	15471
11. Levee (/10ha).	68027	19.61ha	133386	68027	19.61ha	133386	68027	19.61ha	133386
12. Main Canal (/10ha).	7820	19.61ha	15333	7820	19.61ha	15333	7820	19.61ha	15333
13. Branch (/10ha).	69025	19.61ha	135343	69025	19.61ha	135343	69025	19.61ha	135343
14. Off-farm. (/10ha)	84330	19.61ha	165353	84330	19.61ha	165353	84330	19.61ha	165353
15. Farm Road (/10ha).	41958	4.00Nos	167832	41958	4.00Nos	167832	41958	4.00Nos	167832
16. Farm Pond.	7450	4.00Nos	29799	7450	4.00Nos	29799	7450	4.00Nos	29799
17. Communal Tank.	4300	8.50km	36550	4300	8.50km	36550	4300	8.50km	36550
18. SUBTOTAL (9 TO 16)	516	500.00m	307800	516	500.00m	307800	516	500.00m	307800
19. Connection Road.	88048	2.50km	220120	88048	2.50km	220120	88048	2.50km	220120
20. Submetrable Road.	564470	564470	564470	564470	564470	564470	564470	564470	564470
21. Electrification.	5052402	5052402	5052402	5052402	5052402	5052402	5052402	5052402	5052402
22. SUBTOTAL (19 TO 21)	5325402	5325402	5325402	5325402	5325402	5325402	5325402	5325402	5325402
23. ** GRAND TOTAL **	5325402	5325402	5325402	5325402	5325402	5325402	5325402	5325402	5325402

CONSTRUCTION COST CALCULATION

	***** CASE-4 *****	***** CASE-5 *****	***** CASE-6 *****
	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)
	Pump Head (m)	Pump Head (m)	Pump Head (m)
	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)
	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)
	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)
	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)
1. Drilling Cost.	572000	4.00Nos 228000	572000 4.00Nos 228000
2. Pump Unit Cost	242000	4.00Nos 96000	332000 4.00Nos 1328000
3. Pump installation	10000	4.00Nos 40000	10000 4.00Nos 40000
4. Pump House.	30000	4.00Nos 120000	30000 4.00Nos 120000
5. Tee-off.	44024	4.00Nos 175096	44024 4.00Nos 175096
6. Service & Meter.	4120	4.00Nos 15480	4120 4.00Nos 15480
7. Transformer.	27900	4.00Nos 111600	27900 4.00Nos 111600
8. Electrification.	75044	4.00Nos 304176	75044 4.00Nos 304176
9. SUBTOTAL(1 TO 7)	*****	*****	*****
10. Land Levelling.	19792	47.22ha 934477	19792 56.82ha 1322549
11. Levee(/10ha).	7690	39.22ha 30941	7690 58.82ha 45412
12. Main Canal(/10ha)	58027	39.22ha 255773	58027 58.82ha 400159
13. Branch (/10ha).	7820	39.22ha 30657	7820 58.82ha 45000
14. Off-farm. (/10ha)	59025	39.22ha 270686	59025 58.82ha 406029
15. Farm Road(/10ha).	84330	39.22ha 330705	84330 58.82ha 495059
16. Farm Pond.	70092	4.00Nos 280368	93031 4.00Nos 372124
17. Communal Tank.	7450	4.00Nos 29799	7450 4.00Nos 29799
18. SUBTOTAL(9 TO 16)	*****	*****	*****
19. Connection Road.	4300	8.50km 35550	4300 8.50km 35550
20. Submergible Road.	515	500.00m 307800	515 500.00m 307800
21. Electrification.	88048	2.50km 220120	88048 2.50km 220120
22. SUBTOTAL(19 TO 21)	*****	*****	*****
23. ** GRAND TOTAL **	*****	*****	*****

TABLE A-6.3.4(2) Construction Cost Calculation. QT-E, D=200m

Quetta Area. Vein-E PAGE: 1/2

CONSTRUCTION COST CALCULATION

	***** CASE-1 *****	***** CASE-2 *****	***** CASE-3 *****
	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)
	Pump Head (m)	Pump Head (m)	Pump Head (m)
	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)
	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)
	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)
	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)
1. Drilling Cost.	572000	572000	572000
2. Pump Unit Cost	154000	220000	154000
3. Pump Installation	10000	10000	10000
4. Pump House.	30000	30000	30000
5. Tee-off.	44024	44024	44024
6. Service & Meter.	4120	4120	4120
7. Transformer.	27900	27900	27900
8. Electrification.	75044	75044	75044
9. SUBTOTAL (1 TO 7)	19792	19792	19792
10. Land levelling.	7890	7890	7890
11. Levee (/10ha).	58027	58027	58027
12. Main Canal (/10ha)	7820	7820	7820
13. Branch (/10ha).	59025	59025	59025
14. Off-farm. (/10ha)	84330	84330	84330
15. Farm Road (/10ha).	41958	41958	41958
16. Farm Pond.	7450	7450	7450
17. Communal Tank.	1412195	1412195	1412195
18. SUBTOTAL (9 TO 16)	4300	4300	4300
19. Connection Road.	515	515	515
20. Submergible Road.	88048	88048	88048
21. Electrification.	329568	329568	329568
22. SUBTOTAL (19 TO 21)	5952083	5952083	5952083
23. ** GRAND TOTAL **	2860000	2860000	2860000



CONSTRUCTION COST CALCULATION

	CASE-4	CASE-5	CASE-5	CASE-5	CASE-5	CASE-5	CASE-5	CASE-5	CASE-5
	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)
1. Drilling Cost.	572000	2860000	572000	5.00Nos	2860000	572000	5.00Nos	2860000	5.00Nos
2. Pump Unit Cost	242000	1210000	209000	5.00Nos	1045000	332000	5.00Nos	1660000	5.00Nos
3. Pump Installation	10000	50000	10000	5.00Nos	50000	10000	5.00Nos	50000	5.00Nos
4. Pump House.	30000	150000	30000	5.00Nos	150000	30000	5.00Nos	150000	5.00Nos
5. Tee-off.	44024	220120	44024	5.00Nos	220120	44024	5.00Nos	220120	5.00Nos
6. Service & Meter.	4120	20500	4120	5.00Nos	20500	4120	5.00Nos	20500	5.00Nos
7. Transformer.	27900	139500	27900	5.00Nos	139500	27900	5.00Nos	139500	5.00Nos
8. Electrification.	76044	380220	76044	5.00Nos	380220	76044	5.00Nos	380220	5.00Nos
9. SUBTOTAL (1 TO 7)	19792	1168096	19792	83.53ha	1553186	19792	83.53ha	1553186	83.53ha
10. Land Levelling.	7890	38676	7890	73.53ha	58015	7890	73.53ha	58015	73.53ha
11. Levee (/10ha).	68027	48027	68027	73.53ha	500199	68027	73.53ha	500199	73.53ha
12. Main Canal (/10ha).	7820	38333	7820	73.53ha	57500	7820	73.53ha	57500	73.53ha
13. Branch (/10ha).	69025	48027	69025	73.53ha	507537	69025	73.53ha	507537	73.53ha
14. Off-farm. (/10ha).	84330	41382	84330	73.53ha	620074	84330	73.53ha	620074	73.53ha
15. Farm Road (/10ha).	70092	350460	93031	5.00Nos	465155	93031	5.00Nos	465155	5.00Nos
16. Farm Pond.	7450	37249	7450	5.00Nos	37249	7450	5.00Nos	37249	5.00Nos
17. Communal Tank.	4300	21500	4300	5.00km	21500	4300	5.00km	21500	5.00km
18. SUBTOTAL (9 TO 16)	515	0	515	0.00m	0	515	0.00m	0	0.00m
19. Connection Road.	88048	308168	88048	3.50km	308168	88048	3.50km	308168	3.50km
20. Submergible Road.	329668	329668	329668	329668	329668	329668	329668	329668	329668
21. Electrification.	7697909	7697909	7697909	7697909	7697909	7697909	7697909	7697909	7697909
22. SUBTOTAL (18 TO 21)	8713802	8713802	8713802	8713802	8713802	8713802	8713802	8713802	8713802
23. ** GRAND TOTAL **									

TABLE A-6.3.4(3) Construction Cost Calculation. KL-8, D=200m

CONSTRUCTION COST CALCULATION									
Kulat Area, Vein-B, PAGE: 1/2									
	CASE-1	CASE-2	CASE-3	CASE-4	CASE-5	CASE-6	CASE-7	CASE-8	CASE-9
	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)
	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)
	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)
	Required @10ha (l/s)	Required @10ha (l/s)	Required @10ha (l/s)	Required @10ha (l/s)	Required @10ha (l/s)	Required @10ha (l/s)	Required @10ha (l/s)	Required @10ha (l/s)	Required @10ha (l/s)
	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)
	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)
1. Drilling Cost.	572000	4.00Nos	2289000	572000	4.00Nos	2289000	572000	4.00Nos	2289000
2. Pump Unit Cost	154000	4.00Nos	616000	220000	4.00Nos	880000	154000	4.00Nos	616000
3. Pump installation	10000	4.00Nos	40000	10000	4.00Nos	40000	10000	4.00Nos	40000
4. Pump House.	30000	4.00Nos	120000	30000	4.00Nos	120000	30000	4.00Nos	120000
5. Tee-off.	44024	4.00Nos	176096	44024	4.00Nos	176096	44024	4.00Nos	176096
5. Service & Meter.	4120	4.00Nos	16480	4120	4.00Nos	16480	4120	4.00Nos	16480
7. Transformer.	27900	4.00Nos	111600	27900	4.00Nos	111600	27900	4.00Nos	111600
8. Electrification.	75044	4.00Nos	304176	75044	4.00Nos	304176	75044	4.00Nos	304176
9. SUBTOTAL(1 TO 7)	*****	*****	3368176	*****	*****	3632176	*****	*****	3408176
10. Land Levelling.	19792	24.20ha	478938	19792	24.20ha	478938	19792	48.40ha	957997
11. Levee (/10ha).	7890	20.20ha	15939	7890	20.20ha	15939	7890	40.40ha	31879
12. Main Canal (/10ha)	58027	20.20ha	137428	58027	20.20ha	137428	58027	40.40ha	274957
13. Branch (/10ha).	7820	20.20ha	15798	7820	20.20ha	15798	7820	40.40ha	31596
14. Off-farm. (/10ha)	59025	20.20ha	139444	59025	20.20ha	139444	59025	40.40ha	278989
15. Farm Road (/10ha).	84330	20.20ha	170354	84330	20.20ha	170354	84330	40.40ha	340727
16. Farm Pond.	41958	4.00Nos	167832	41958	4.00Nos	167832	70092	4.00Nos	280368
17. Communal Tank.	7450	4.00Nos	29799	7450	4.00Nos	29799	7450	4.00Nos	29799
18. SUBTOTAL(9 TO 16)	*****	*****	1155603	*****	*****	1155603	*****	*****	2226111
19. Connection Road.	4300	8.00km	34400	4300	8.00km	34400	4300	8.00km	34400
20. Submergible Road.	516	500.00m	307800	516	500.00m	307800	516	500.00m	307800
21. Electrification.	89048	10.00km	890480	89048	10.00km	890480	89048	10.00km	890480
22. SUBTOTAL(19 TO 21)	*****	*****	1222680	*****	*****	1222680	*****	*****	1222680
23. ** GRAND TOTAL **	*****	*****	5746459	*****	*****	6010459	*****	*****	6856967

CONSTRUCTION COST CALCULATION

	CASE-4	CASE-5	CASE-6
1. Drilling Cost.	572000 4.00Nos 2288000	572000 4.00Nos 2288000	572000 4.00Nos 2288000
2. Pump Unit Cost	242000 4.00Nos 968000	209000 4.00Nos 836000	332000 4.00Nos 1328000
3. Pump installation	10000 4.00Nos 40000	10000 4.00Nos 40000	10000 4.00Nos 40000
4. Pump House.	30000 4.00Nos 120000	30000 4.00Nos 120000	30000 4.00Nos 120000
5. Teag-off.	44024 4.00Nos 176096	44024 4.00Nos 176096	44024 4.00Nos 176096
6. Service & Meter.	4120 4.00Nos 16480	4120 4.00Nos 16480	4120 4.00Nos 16480
7. Transformer.	27900 4.00Nos 111500	27900 4.00Nos 111500	27900 4.00Nos 111500
8. Electrification.	75044 4.00Nos 304176	75044 4.00Nos 304176	75044 4.00Nos 304176
9. SUBTOTAL (1 TO 7)	3720175	3583175	4080175
10. Land Levelling.	19792 48.40ha 957997	19792 50.51ha 1357823	19792 50.51ha 1357823
11. Levee (/10ha).	7890 40.40ha 31879	7890 50.51ha 47818	7890 50.51ha 47818
12. Main Canal (/10ha)	58027 40.40ha 274857	58027 50.51ha 412285	58027 50.51ha 412285
13. Branch (/10ha).	7620 40.40ha 31596	7620 50.51ha 47394	7620 50.51ha 47394
14. Off-farm. (/10ha)	59025 40.40ha 279889	59025 50.51ha 418333	59025 50.51ha 418333
15. Farm Road (/10ha).	84330 40.40ha 340727	84330 50.51ha 511091	84330 50.51ha 511091
16. Farm Pond.	70052 4.00Nos 280368	93031 4.00Nos 372124	93031 4.00Nos 372124
17. Communal Tank.	7450 4.00Nos 29799	7450 4.00Nos 29799	7450 4.00Nos 29799
18. SUBTOTAL (9 TO 16)	2226111	3196673	3196673
19. Connection Road.	4300 8.00km 34400	4300 8.00km 34400	4300 8.00km 34400
20. Submergible Road.	615 500.00m 307800	615 500.00m 307800	615 500.00m 307800
21. Electrification.	88048 10.00km 880480	88048 10.00km 880480	88048 10.00km 880480
22. SUBTOTAL (19 TO 21)	1222580	1222580	1222580
23. ** GRAND TOTAL **	71899571	80075291	849955291

TABLE A-6.3.4(4) Construction Cost Calculation. KL-C.D-200M

CONSTRUCTION COST CALCULATION		Kalat Area. Usin-C		PAGE: 1/2		
	CASE-1	CASE-2	CASE-3	CASE-1	CASE-2	CASE-3
1. Drilling Cost.	572000	3.00Nos	17150000	572000	3.00Nos	17150000
2. Pump Unit Cost	154000	3.00Nos	482000	220000	3.00Nos	560000
3. Pump installation	10000	3.00Nos	30000	10000	3.00Nos	30000
4. Pump House.	30000	3.00Nos	90000	30000	3.00Nos	90000
5. Tie-off.	44024	3.00Nos	132072	44024	3.00Nos	132072
6. Service & Meter.	4120	3.00Nos	12360	4120	3.00Nos	12360
7. Transformer.	27900	3.00Nos	83700	27900	3.00Nos	83700
8. Electrification.	75044	3.00Nos	228132	75044	3.00Nos	228132
9. SUBTOTAL (1 TO 7)	2525132	*****	2525132	2724132	*****	2556132
10. Land Levelling.	19792	18.15ha	359248	19792	18.15ha	359248
11. Levee (/10ha).	7890	15.15ha	11955	7890	15.15ha	11955
12. Main Canal (/10ha)	58027	15.15ha	103071	58027	15.15ha	103071
13. Branch (/10ha).	7820	15.15ha	11848	7820	15.15ha	11848
14. Off-farm. (/10ha)	59025	15.15ha	104583	59025	15.15ha	104583
15. Farm Road (/10ha).	84330	15.15ha	127773	84330	15.15ha	127773
16. Farm Pond.	41958	3.00Nos	125874	41958	3.00Nos	125874
17. Communal Tank.	7450	3.00Nos	22350	7450	3.00Nos	22350
18. SUBTOTAL (9 TO 15)	865703	*****	865703	865703	*****	1559584
19. Connection Road.	4300	3.70km	15910	4300	3.70km	15910
20. Submergible Road.	516	300.00m	184580	516	300.00m	184580
21. Electrification.	88048	5.00km	528268	88048	5.00km	528268
22. SUBTOTAL (19 TO 21)	728878	*****	728878	728878	*****	728878
23. ** GRAND TOTAL **	4121713	*****	4121713	4197131	*****	4954594

CONSTRUCTION COST CALCULATION

	CASE-4	CASE-5	CASE-5	CASE-5
	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)
1. Drilling Cost.	572000	3.00Nos	1715000	572000
2. Pump Unit Cost	242000	3.00Nos	725000	209000
3. Pump installation	10000	3.00Nos	30000	10000
4. Pump House.	30000	3.00Nos	90000	30000
5. Tee-off.	44024	3.00Nos	132072	44024
6. Service & Meter.	4120	3.00Nos	12360	4120
7. Transformer.	27900	3.00Nos	83700	27900
8. Electrification.	76044	3.00Nos	228132	76044
9. SUBTOTAL (1 TO 7)	19792	35.30ha	718497	19792
10. Land Levelling.	7890	30.30ha	23909	7890
11. Levee (/10ha).	58027	30.30ha	206142	58027
12. Main Canal (/10ha)	7820	30.30ha	23697	7820
13. Branch (/10ha).	59025	30.30ha	209167	59025
14. Off-farm. (/10ha)	84330	30.30ha	255545	84330
15. Farm Road (/10ha).	70092	3.00Nos	210276	93031
16. Communal Tank.	7450	3.00Nos	22350	7450
17. SUBTOTAL (9 TO 16)	4300	3.70km	15910	4300
18. Connection Road.	515	300.00m	184590	515
19. Submersible Road.	89048	6.00km	528288	89048
20. Electrification.	728978	*****	728978	728978
21. SUBTOTAL (19 TO 21)	5189594	*****	5189594	5189594
22. GRAND TOTAL				

TABLE A-6.3.4(5) Construction Cost Calculation. QT-D, D=250mm

CONSTRUCTION COST CALCULATION												
	CASE-1			CASE-2			CASE-3			CASE-4		
	Drilling Depth (m)	Pump Head (m)	Pump Discharge (l/s)	Required Q/10ha (l/s)	Irrigable Area (ha)	Number of Meters (nos.)	Drilling Depth (m)	Pump Head (m)	Pump Discharge (l/s)	Required Q/10ha (l/s)	Irrigable Area (ha)	Number of Meters (nos.)
1. Drilling Cost.	672000	4.00Nos	2688000	672000	4.00Nos	2688000	672000	4.00Nos	2688000	672000	4.00Nos	2688000
2. Pump Unit Cost.	154000	4.00Nos	515000	220000	4.00Nos	880000	154000	4.00Nos	515000	220000	4.00Nos	880000
3. Pump installation	10000	4.00Nos	40000	10000	4.00Nos	40000	10000	4.00Nos	40000	10000	4.00Nos	40000
4. Pump House.	30000	4.00Nos	120000	30000	4.00Nos	120000	30000	4.00Nos	120000	30000	4.00Nos	120000
5. Tee-off.	44024	4.00Nos	176096	44024	4.00Nos	176096	44024	4.00Nos	176096	44024	4.00Nos	176096
6. Service & Meter.	4120	4.00Nos	16480	4120	4.00Nos	16480	4120	4.00Nos	16480	4120	4.00Nos	16480
7. Transformer.	27900	4.00Nos	111600	27900	4.00Nos	111600	27900	4.00Nos	111600	27900	4.00Nos	111600
8. Electrification.	75044	4.00Nos	304176	75044	4.00Nos	304176	75044	4.00Nos	304176	75044	4.00Nos	304176
9. SUBTOTAL (1 TO 7)	3758176		15036800	4032176		16128704	3758176		15036800	4032176		16128704
10. Land Levelling.	19792	23.61ha	467239	19792	23.61ha	467239	19792	23.61ha	467239	19792	23.61ha	467239
11. Levee (/10ha).	7890	19.61ha	15471	7890	19.61ha	15471	7890	19.61ha	15471	7890	19.61ha	15471
12. Main Canal (/10ha)	68027	19.61ha	133386	68027	19.61ha	133386	68027	19.61ha	133386	68027	19.61ha	133386
13. Branch (/10ha).	7820	19.61ha	15333	7820	19.61ha	15333	7820	19.61ha	15333	7820	19.61ha	15333
14. Off-farm. (/10ha)	69025	19.61ha	135343	69025	19.61ha	135343	69025	19.61ha	135343	69025	19.61ha	135343
15. Farm Road (/10ha).	84330	19.61ha	165353	84330	19.61ha	165353	84330	19.61ha	165353	84330	19.61ha	165353
16. Farm Pond.	41958	4.00Nos	167832	41958	4.00Nos	167832	41958	4.00Nos	167832	41958	4.00Nos	167832
17. Communal Tank.	7450	4.00Nos	29799	7450	4.00Nos	29799	7450	4.00Nos	29799	7450	4.00Nos	29799
19. SUBTOTAL (9 TO 16)	1129756		4518240	1129756		4518240	1129756		4518240	1129756		4518240
18. Connection Road.	4300	8.50km	36550	4300	8.50km	36550	4300	8.50km	36550	4300	8.50km	36550
20. Submersible Road.	516	500.00m	307800	516	500.00m	307800	516	500.00m	307800	516	500.00m	307800
21. Electrification.	68048	2.50km	220120	68048	2.50km	220120	68048	2.50km	220120	68048	2.50km	220120
22. SUBTOTAL (18 TO 21)	564470		2174417	564470		2174417	564470		2174417	564470		2174417
23. ** GRAND TOTAL **	5482402		21744171	5482402		21744171	5482402		21744171	5482402		21744171

CONSTRUCTION COST CALCULATION

	CASE-4	CASE-5	CASE-6
1. Drilling Cost.	572000	2588000	572000
2. Pump Unit Cost	242000	958000	332000
3. Pump installation	10000	40000	10000
4. Pump House.	30000	120000	30000
5. Tee-off.	44024	175095	44024
6. Service & Meter.	4120	15480	4120
7. Transformer.	27900	111500	27900
8. Electrification.	75044	304175	75044
9. SUBTOTAL(1 TO 7)	19792	534477	19792
10. Land Levelling.	7890	30941	7890
11. Levee(/10ha).	58027	256773	58027
12. Main Canal(/10ha)	7820	30557	7820
13. Branch (/10ha).	59025	270586	59025
14. Off-farm. (/10ha)	84330	330705	84330
15. Farm Road(/10ha).	70092	280358	93031
16. Farm Pond.	7450	29799	7450
17. Communal Tank.	4300	36550	4300
18. SUBTOTAL(9 TO 16)	515	307800	615
19. Connection Road.	88048	220120	88048
20. Submersible Road.			
21. Electrification.			
22. SUBTOTAL(19 TO 21)			
23. ** GRAND TOTAL **			

TABLE A-6.3.4(6) Construction Cost Calculation. QT-E, D=250mm

CONSTRUCTION COST CALCULATION										Guetta Area, Uein-E		PAGE: 1/2		
	***** CASE-1 *****	***** CASE-2 *****	***** CASE-3 *****	***** CASE-3 *****	***** CASE-3 *****	***** CASE-3 *****	***** CASE-3 *****	***** CASE-3 *****	***** CASE-3 *****	***** CASE-3 *****	***** CASE-3 *****	***** CASE-3 *****	***** CASE-3 *****	***** CASE-3 *****
	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)
	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)
	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)
	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)
	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)
	Number of Wells (nos)	Number of Wells (nos)	Number of Wells (nos)	Number of Wells (nos)	Number of Wells (nos)	Number of Wells (nos)	Number of Wells (nos)	Number of Wells (nos)	Number of Wells (nos)	Number of Wells (nos)	Number of Wells (nos)	Number of Wells (nos)	Number of Wells (nos)	Number of Wells (nos)
1. Drilling Cost.	672000	5.00Nos	3360000	672000	5.00Nos	3360000	672000	5.00Nos	3360000	672000	5.00Nos	3360000	672000	5.00Nos
2. Pump Unit Cost	154000	5.00Nos	770000	220000	5.00Nos	1100000	154000	5.00Nos	770000	154000	5.00Nos	770000	154000	5.00Nos
3. Pump installation	10000	5.00Nos	50000	10000	5.00Nos	50000	10000	5.00Nos	50000	10000	5.00Nos	50000	10000	5.00Nos
4. Pump House.	30000	5.00Nos	150000	30000	5.00Nos	150000	30000	5.00Nos	150000	30000	5.00Nos	150000	30000	5.00Nos
5. Tee-off.	44024	5.00Nos	220120	44024	5.00Nos	220120	44024	5.00Nos	220120	44024	5.00Nos	220120	44024	5.00Nos
6. Service & Meter.	4120	5.00Nos	20600	4120	5.00Nos	20600	4120	5.00Nos	20600	4120	5.00Nos	20600	4120	5.00Nos
7. Transformer.	27900	5.00Nos	139500	27900	5.00Nos	139500	27900	5.00Nos	139500	27900	5.00Nos	139500	27900	5.00Nos
8. Electrification.	75044	5.00Nos	380220	75044	5.00Nos	380220	75044	5.00Nos	380220	75044	5.00Nos	380220	75044	5.00Nos
9. SUBTOTAL (1 TO 7)	*****	*****	4710220	*****	*****	5040220	*****	*****	5040220	*****	*****	*****	*****	*****
10. Land Levelling.	19792	29.51ha	584048	19792	29.51ha	584048	19792	29.51ha	584048	19792	29.51ha	584048	19792	29.51ha
11. Levee (/10ha).	7890	24.51ha	19338	7890	24.51ha	19338	7890	24.51ha	19338	7890	24.51ha	19338	7890	24.51ha
12. Main Canal (/10ha).	68027	24.51ha	165733	68027	24.51ha	165733	68027	24.51ha	165733	68027	24.51ha	165733	68027	24.51ha
13. Branch (/10ha).	7820	24.51ha	19157	7820	24.51ha	19157	7820	24.51ha	19157	7820	24.51ha	19157	7820	24.51ha
14. Off-farm. (/10ha).	69025	24.51ha	169179	69025	24.51ha	169179	69025	24.51ha	169179	69025	24.51ha	169179	69025	24.51ha
15. Farm Road (/10ha).	84330	24.51ha	206591	84330	24.51ha	206591	84330	24.51ha	206591	84330	24.51ha	206591	84330	24.51ha
16. Farm Pond.	41958	5.00Nos	209790	41958	5.00Nos	209790	41958	5.00Nos	209790	41958	5.00Nos	209790	41958	5.00Nos
17. Communal Tank.	7450	5.00Nos	37249	7450	5.00Nos	37249	7450	5.00Nos	37249	7450	5.00Nos	37249	7450	5.00Nos
18. SUBTOTAL (9 TO 16)	*****	*****	1412195	*****	*****	1412195	*****	*****	1412195	*****	*****	*****	*****	*****
19. Connection Road.	4300	5.00km	21500	4300	5.00km	21500	4300	5.00km	21500	4300	5.00km	21500	4300	5.00km
20. Submersible Road.	515	0.00m	0	515	0.00m	0	515	0.00m	0	515	0.00m	0	515	0.00m
21. Electrification.	88048	3.50km	308168	88048	3.50km	308168	88048	3.50km	308168	88048	3.50km	308168	88048	3.50km
22. SUBTOTAL (19 TO 21)	*****	*****	329568	*****	*****	329568	*****	*****	329568	*****	*****	*****	*****	*****
23. ** GRAND TOTAL **	*****	*****	5452063	*****	*****	5782063	*****	*****	5782063	*****	*****	*****	*****	*****



CONSTRUCTION COST CALCULATION

	CASE-4	CASE-5	CASE-6
1. Drilling Cost.	572000	5.00Nos	3360000
2. Pump Unit Cost	242000	5.00Nos	1210000
3. Pump installation	10000	5.00Nos	50000
4. Pump House.	30000	5.00Nos	150000
5. Tee-off.	44024	5.00Nos	220120
6. Service & Meter.	4120	5.00Nos	20600
7. Transformer.	27900	5.00Nos	139500
8. Electrification.	76044	5.00Nos	380220
9. SUBTOTAL(1 TO 7)	5150220		4985220
10. Land Levelling.	19792	83.53ha	1653186
11. Levee(/10ha).	7890	49.02ha	38676
12. Main Canal(/10ha)	68027	49.02ha	333466
13. Branch(/10ha).	7820	49.02ha	38333
14. Off-farm.(/10ha)	59025	49.02ha	338398
15. Farm Road(/10ha).	84330	49.02ha	413382
16. Farm Pond.	70092	5.00Nos	350450
17. Communal Tank.	7450	5.00Nos	37249
18. SUBTOTAL(9 TO 16)	2718021		3998914
19. Connection Road.	4300	5.00km	21500
20. Submersible Road.	616	0.00m	0
21. Electrification.	88048	3.50km	308168
22. SUBTOTAL(19 TO 21)	329568		329568
23. ** GRAND TOTAL **	6197909		9213802

TABLE A-6.3.4(7) Construction Cost Calculation. KL-B, D=250m

CONSTRUCTION COST CALCULATION									
	CASE-1		CASE-2		CASE-3		Kulat Area, Uein-B.		
	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	PAGE: 1/2
1. Drilling Cost.	572000	4.00Nos	2688000	4.00Nos	572000	4.00Nos	2688000	4.00Nos	2688000
2. Pump Unit Cost	154000	4.00Nos	616000	4.00Nos	220000	4.00Nos	880000	4.00Nos	656000
3. Pump installation	10000	4.00Nos	40000	4.00Nos	10000	4.00Nos	40000	4.00Nos	40000
4. Pump House.	30000	4.00Nos	120000	4.00Nos	30000	4.00Nos	120000	4.00Nos	120000
5. Tee-off.	44024	4.00Nos	176096	4.00Nos	44024	4.00Nos	176096	4.00Nos	176096
6. Service & Meter.	4120	4.00Nos	16480	4.00Nos	4120	4.00Nos	16480	4.00Nos	16480
7. Transformer.	27900	4.00Nos	111600	4.00Nos	27900	4.00Nos	111600	4.00Nos	111600
8. Electrification.	76044	4.00Nos	304176	4.00Nos	76044	4.00Nos	304176	4.00Nos	304176
9. SUBTOTAL(1 TO 7)	***** 3766176 ***** 4032176 ***** 3808176 *****								
10. Land Levelling.	19792	24.20ha	478998	24.20ha	19792	24.20ha	478998	24.20ha	478998
11. Levee (/10ha).	7890	20.20ha	15939	20.20ha	7890	20.20ha	15939	20.20ha	15939
12. Main Canal (/10ha)	68027	20.20ha	137428	20.20ha	68027	20.20ha	137428	20.20ha	137428
13. Branch (/10ha).	7820	20.20ha	15798	20.20ha	7820	20.20ha	15798	20.20ha	15798
14. Off-farm. (/10ha)	69025	20.20ha	139444	20.20ha	69025	20.20ha	139444	20.20ha	139444
15. Farm Road (/10ha).	84330	20.20ha	170354	20.20ha	84330	20.20ha	170354	20.20ha	170354
16. Farm Pond.	41958	4.00Nos	167832	4.00Nos	41958	4.00Nos	167832	4.00Nos	167832
17. Communal Tank.	7450	4.00Nos	29799	4.00Nos	7450	4.00Nos	29799	4.00Nos	29799
18. SUBTOTAL(9 TO 16)	***** 1155603 ***** 1155603 ***** 1155603 ***** 1155603 *****								
19. Connection Road.	4300	8.00km	34400	8.00km	4300	8.00km	34400	8.00km	34400
20. Submergible Road.	616	500.00m	307800	500.00m	616	500.00m	307800	500.00m	307800
21. Electrification.	88048	10.00km	880480	10.00km	88048	10.00km	880480	10.00km	880480
22. SUBTOTAL(19 TO 21)	***** 1222660 ***** 1222660 ***** 1222660 ***** 1222660 *****								
23. ** GRAND TOTAL **	***** 6410459 ***** 6410459 ***** 6410459 ***** 6410459 *****								

CONSTRUCTION COST CALCULATION

	CASE-4	CASE-5	CASE-6
1. Drilling Cost.	572000	2688000	572000
2. Pump Unit Cost	242000	568000	332000
3. Pump installation	10000	40000	10000
4. Pump House.	30000	120000	30000
5. Tee-off.	44024	176096	44024
6. Service & Meter.	4120	16480	4120
7. Transformer.	27900	111600	27900
8. Electrification.	76044	304176	76044
9. SUBTOTAL(1 TO 7)	4120176	3968176	4480176
10. Land Levelling.	19792	957997	19792
11. Levee(/10ha).	7890	31879	7890
12. Main Canal(/10ha)	68027	274857	68027
13. Branch (/10ha).	7820	31596	7820
14. Off-farm. (/10ha)	69025	278889	69025
15. Farm Road(/10ha).	84330	340727	84330
16. Farm Pond.	70092	280368	93031
17. Communal Tank.	7450	29799	7450
18. SUBTOTAL(9 TO 16)	2226111	2226111	3196673
19. Connection Road.	4300	34400	4300
20. Submersible Road.	615	307800	615
21. Electrification.	88048	880480	88048
22. SUBTOTAL(19 TO 21)	1222680	1222680	1222680
23. ** GRAND TOTAL **	7568957	7568957	8407529

TABLE A-6.3.4(8). Construction Cost Calculation. KL-C, D=250mm

CONSTRUCTION COST CALCULATION												
Kulat Area, Uein-C PAGE: 1/2												
	CASE-1	CASE-2	CASE-3	CASE-1	CASE-2	CASE-3	CASE-1	CASE-2	CASE-3	CASE-1	CASE-2	CASE-3
Drilling Depth (m)	250.00	250.00	250.00	Drilling Depth (m)	150.00	150.00	Drilling Depth (m)	100.00	100.00	Drilling Depth (m)	50.00	50.00
Pump Head (m)	100.00	100.00	100.00	Pump Head (m)	50.00	50.00	Pump Head (m)	25.00	25.00	Pump Head (m)	12.50	12.50
Pump Discharge (L/s)	5.90	5.90	5.90	Pump Discharge (L/s)	5.90	5.90	Pump Discharge (L/s)	5.90	5.90	Pump Discharge (L/s)	5.90	5.90
Required Q/10ha (L/s)	9.90	9.90	9.90	Required Q/10ha (L/s)	9.90	9.90	Required Q/10ha (L/s)	9.90	9.90	Required Q/10ha (L/s)	9.90	9.90
Irrigable Area (ha)	5.05	5.05	5.05	Irrigable Area (ha)	5.05	5.05	Irrigable Area (ha)	5.05	5.05	Irrigable Area (ha)	5.05	5.05
Number of Wells(nos)	3.00	3.00	3.00	Number of Wells(nos)	3.00	3.00	Number of Wells(nos)	3.00	3.00	Number of Wells(nos)	3.00	3.00
1. Drilling Cost.	672000	3.00Nos	2015000	672000	3.00Nos	2015000	672000	3.00Nos	2015000	672000	3.00Nos	2015000
2. Pump Unit Cost	154000	3.00Nos	452000	220000	3.00Nos	660000	154000	3.00Nos	452000	154000	3.00Nos	452000
3. Pump Installation	10000	3.00Nos	30000	10000	3.00Nos	30000	10000	3.00Nos	30000	10000	3.00Nos	30000
4. Pump House.	30000	3.00Nos	90000	30000	3.00Nos	90000	30000	3.00Nos	90000	30000	3.00Nos	90000
5. Tee-off.	44024	3.00Nos	132072	44024	3.00Nos	132072	44024	3.00Nos	132072	44024	3.00Nos	132072
6. Service & Meter.	4120	3.00Nos	12360	4120	3.00Nos	12360	4120	3.00Nos	12360	4120	3.00Nos	12360
7. Transformer.	27500	3.00Nos	82500	27500	3.00Nos	82500	27500	3.00Nos	82500	27500	3.00Nos	82500
8. Electrification.	75044	3.00Nos	225132	75044	3.00Nos	225132	75044	3.00Nos	225132	75044	3.00Nos	225132
9. SUBTOTAL(1 TO 7)	2825132	*****	2825132	2825132	*****	2825132	2825132	*****	2825132	2825132	*****	2825132
10. Land Levelling.	19792	18.15ha	359249	19792	18.15ha	359249	19792	18.15ha	359249	19792	18.15ha	359249
11. Levee (/10ha).	7890	15.15ha	11955	7890	15.15ha	11955	7890	15.15ha	11955	7890	15.15ha	11955
12. Main Canal (/10ha)	58027	15.15ha	103071	58027	15.15ha	103071	58027	15.15ha	103071	58027	15.15ha	103071
13. Branch (/10ha).	7820	15.15ha	11848	7820	15.15ha	11848	7820	15.15ha	11848	7820	15.15ha	11848
14. Off-farm. (/10ha)	59025	15.15ha	104563	59025	15.15ha	104563	59025	15.15ha	104563	59025	15.15ha	104563
15. Farm Road (/10ha).	84330	15.15ha	127773	84330	15.15ha	127773	84330	15.15ha	127773	84330	15.15ha	127773
16. Farm Pond.	41958	3.00Nos	125874	41958	3.00Nos	125874	41958	3.00Nos	125874	41958	3.00Nos	125874
17. Communal Tank.	7450	3.00Nos	22350	7450	3.00Nos	22350	7450	3.00Nos	22350	7450	3.00Nos	22350
18. SUBTOTAL(9 TO 16)	866703	*****	866703	866703	*****	866703	866703	*****	866703	866703	*****	866703
19. Connection Road.	4300	3.70km	15910	4300	3.70km	15910	4300	3.70km	15910	4300	3.70km	15910
20. Submersible Road.	515	300.00m	18480	515	300.00m	18480	515	300.00m	18480	515	300.00m	18480
21. Electrification.	88048	6.00km	528288	88048	6.00km	528288	88048	6.00km	528288	88048	6.00km	528288
22. SUBTOTAL(19 TO 21)	728878	*****	728878	728878	*****	728878	728878	*****	728878	728878	*****	728878
23. ** GRAND TOTAL **	4421713	*****	4421713	4421713	*****	4421713	4421713	*****	4421713	4421713	*****	4421713

CONSTRUCTION COST CALCULATION

	CASE-4	CASE-5	CASE-5	CASE-5	CASE-5	CASE-5	CASE-5	CASE-5	CASE-5
	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)
1. Drilling Cost.	572000	3.00Nos	2016000	572000	3.00Nos	2016000	572000	3.00Nos	2016000
2. Pump Unit Cost	242000	3.00Nos	726000	209000	3.00Nos	627000	332000	3.00Nos	996000
3. Pump Installation	10000	3.00Nos	30000	10000	3.00Nos	30000	10000	3.00Nos	30000
4. Pump House.	30000	3.00Nos	90000	30000	3.00Nos	90000	30000	3.00Nos	90000
5. Tee-off.	44024	3.00Nos	132072	44024	3.00Nos	132072	44024	3.00Nos	132072
5. Service & Meter.	4120	3.00Nos	12360	4120	3.00Nos	12360	4120	3.00Nos	12360
7. Transformer.	27900	3.00Nos	83700	27900	3.00Nos	83700	27900	3.00Nos	83700
8. Electrification.	76044	3.00Nos	228132	76044	3.00Nos	228132	76044	3.00Nos	228132
9. SUBTOTAL(1 TO 7)	3050132		3050132	2991132		2991132	3350132		3350132
10. Land Levelling.	19792	36.30ha	718497	19792	51.45ha	1018371	19792	51.45ha	1018371
11. Levee(10ha).	7890	30.30ha	23909	7890	45.45ha	35864	7890	45.45ha	35864
12. Main Canal(10ha)	68027	30.30ha	206142	68027	45.45ha	309214	68027	45.45ha	309214
13. Branch (10ha).	7820	30.30ha	23597	7820	45.45ha	35545	7820	45.45ha	35545
14. Off-farm. (10ha)	69025	30.30ha	209167	69025	45.45ha	313750	69025	45.45ha	313750
15. Farm Road(10ha).	84330	30.30ha	255545	84330	45.45ha	383318	84330	45.45ha	383318
16. Farm Pond.	70052	3.00Nos	210276	93031	3.00Nos	279093	93031	3.00Nos	279093
17. Communal Tank.	7450	3.00Nos	22350	7450	3.00Nos	22350	7450	3.00Nos	22350
18. SUBTOTAL(9 TO 16)	1669564		1669564	2397505		2397505	2397505		2397505
19. Connection Road.	4300	3.70km	15910	4300	3.70km	15910	4300	3.70km	15910
20. Submergible Road.	615	300.00m	184680	615	300.00m	184680	615	300.00m	184680
21. Electrification.	88049	6.00km	528288	88048	6.00km	528288	88048	6.00km	528288
22. SUBTOTAL(19 TO 21)	728878		728878	728878		728878	728878		728878
23. ** GRAND TOTAL **	5489594		5489594	6117515		6117515	6486515		6486515

TABLE A-6.3.4(9) Construction Cost Calculation. QT-D, D=300m

Guetta Area, Uein-D. PAGE: 1/2

CONSTRUCTION COST CALCULATION												
	CASE-1	CASE-2	CASE-3	CASE-1	CASE-2	CASE-3	CASE-1	CASE-2	CASE-3	CASE-1	CASE-2	CASE-3
	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)
	Irri-gable Area (ha)	Irri-gable Area (ha)	Irri-gable Area (ha)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)
1. Drilling Cost.	801000	4.00Nos	3204000	801000	4.00Nos	3204000	801000	4.00Nos	3204000	801000	4.00Nos	3204000
2. Pump Unit Cost	154000	4.00Nos	515000	220000	4.00Nos	880000	154000	4.00Nos	515000	154000	4.00Nos	515000
3. Pump installation	10000	4.00Nos	40000	10000	4.00Nos	40000	10000	4.00Nos	40000	10000	4.00Nos	40000
4. Pump House.	30000	4.00Nos	120000	30000	4.00Nos	120000	30000	4.00Nos	120000	30000	4.00Nos	120000
5. Tee-off.	44024	4.00Nos	176096	44024	4.00Nos	176096	44024	4.00Nos	176096	44024	4.00Nos	176096
6. Service & Meter.	4120	4.00Nos	15480	4120	4.00Nos	15480	4120	4.00Nos	15480	4120	4.00Nos	15480
7. Transformer.	27900	4.00Nos	111600	27900	4.00Nos	111600	27900	4.00Nos	111600	27900	4.00Nos	111600
8. Electrification.	76044	4.00Nos	304176	76044	4.00Nos	304176	76044	4.00Nos	304176	76044	4.00Nos	304176
9. SUBTOTAL(1 TO 7)	***** 4284176 ***** 4548176 ***** 4324176 *****											
10. Land Levelling.	19792	23.51ha	467239	19792	23.51ha	467239	19792	23.51ha	467239	19792	23.51ha	467239
11. Levee(/10ha).	7890	19.51ha	15471	7890	19.51ha	15471	7890	19.51ha	15471	7890	19.51ha	15471
12. Main Canal(/10ha)	68027	19.51ha	133366	68027	19.51ha	133366	68027	19.51ha	133366	68027	19.51ha	133366
13. Branch (/10ha).	7820	19.51ha	15333	7820	19.51ha	15333	7820	19.51ha	15333	7820	19.51ha	15333
14. Off-farm. (/10ha)	69025	19.51ha	135343	69025	19.51ha	135343	69025	19.51ha	135343	69025	19.51ha	135343
15. Farm Road(/10ha).	84330	19.51ha	165353	84330	19.51ha	165353	84330	19.51ha	165353	84330	19.51ha	165353
16. Farm Pond.	41958	4.00Nos	167832	41958	4.00Nos	167832	41958	4.00Nos	167832	41958	4.00Nos	167832
17. Communal Tank.	7450	4.00Nos	29799	7450	4.00Nos	29799	7450	4.00Nos	29799	7450	4.00Nos	29799
18. SUBTOTAL(9 TO 16)	***** 1129756 ***** 1129756 ***** 2174417 *****											
19. Connection Road.	4300	8.50km	36550	4300	8.50km	36550	4300	8.50km	36550	4300	8.50km	36550
20. Submergible Road.	616	500.00m	307800	616	500.00m	307800	616	500.00m	307800	616	500.00m	307800
21. Electrification.	88048	2.50km	220120	88048	2.50km	220120	88048	2.50km	220120	88048	2.50km	220120
22. SUBTOTAL(19 TO 21)	***** 564470 ***** 564470 ***** 564470 *****											
23. ** GRAND TOTAL **	***** 5978402 ***** 5978402 ***** 5978402 *****											
	***** 7063063 ***** 7063063 ***** 7063063 *****											

CONSTRUCTION COST CALCULATION

	CASE-4	CASE-5	CASE-6
1. Drilling Cost.	801000	4.00Nos	3204000
2. Pump Unit Cost.	242000	4.00Nos	968000
3. Pump installation	10000	4.00Nos	40000
4. Pump House.	30000	4.00Nos	120000
5. Tee-off.	44024	4.00Nos	176096
6. Service & Meter.	4120	4.00Nos	16480
7. Transformer.	27900	4.00Nos	111600
8. Electrification.	76044	4.00Nos	304176
9. SUBTOTAL(1 TO 7)	4535176		4535176
10. Land Levelling.	19792	47.22ha	934477
11. Levee(/10ha).	7890	39.22ha	30941
12. Main Canal(/10ha)	68027	39.22ha	265773
13. Branch (/10ha).	7820	39.22ha	30667
14. Off-farm. (/10ha)	69025	39.22ha	270686
15. Farm Road(/10ha).	84330	39.22ha	330706
16. Farm Pond.	70092	4.00Nos	280368
17. Communal Tank.	7450	4.00Nos	29799
18. SUBTOTAL(9 TO 16)	2174417		2174417
19. Connection Road.	4300	8.50km	36550
20. Submersible Road.	616	500.00m	307800
21. Electrification.	88048	2.50km	220120
22. SUBTOTAL(19 TO 21)	564470		564470
23. ** GRAND TOTAL **	7375063		7375063

TABLE A-6.3.4(10) Construction Cost Calculation. QT-E, D=300m

CONSTRUCTION COST CALCULATION

Guetta Area, Vein-E PAGE: 1/2

	CASE-1	CASE-2	CASE-3	CASE-3
1. Drilling Cost.	801000	5.00Nos	4005000	801000
2. Pump Unit Cost.	154000	5.00Nos	770000	220000
3. Pump Installation	10000	5.00Nos	50000	10000
4. Pump House.	30000	5.00Nos	150000	30000
5. Tee-off.	44024	5.00Nos	220120	44024
6. Service & Meter.	4120	5.00Nos	20600	4120
7. Transformer.	27900	5.00Nos	139500	27900
8. Electrification.	76044	5.00Nos	380220	76044
9. SUBTOTAL(1 TO 7)	5355220		5685220	5685220
10. Land Levelling.	19792	29.51ha	584048	19792
11. Levee(/10ha).	7690	24.51ha	19338	7690
12. Main Canal(/10ha)	68027	24.51ha	165733	68027
13. Branch (/10ha).	7620	24.51ha	19167	7620
14. Off-farm. (/10ha)	69025	24.51ha	169179	69025
15. Farm Road(/10ha).	84330	24.51ha	206591	84330
16. Farm Pond.	41958	5.00Nos	209750	41958
17. Communal Tank.	7450	5.00Nos	37249	7450
18. SUBTOTAL(9 TO 16)	1412195		1412195	1412195
19. Connection Road.	4300	5.00km	21500	4300
20. Submergible Road.	616	0.00m	0	616
21. Electrification.	88048	3.50km	308168	88048
22. SUBTOTAL(19 TO 21)	329668		329668	329668
23. ** GRAND TOTAL **	7097093		7427093	7427093



CONSTRUCTION COST CALCULATION

	***** CASE-4 *****	***** CASE-5 *****	***** CASE-5 *****	***** CASE-5 *****
	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)
	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)
	Pump Discharge (L/s)	Pump Discharge (L/s)	Pump Discharge (L/s)	Pump Discharge (L/s)
	Required G/10ha (L/s)	Required G/10ha (L/s)	Required G/10ha (L/s)	Required G/10ha (L/s)
	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)
	Number of Wells (nos)	Number of Wells (nos)	Number of Wells (nos)	Number of Wells (nos)
1. Drilling Cost.	801000	5.00Nos	40050000	801000
2. Pump Unit Cost	242000	5.00Nos	1210000	209000
3. Pump installation	10000	5.00Nos	50000	10000
4. Pump House.	30000	5.00Nos	150000	30000
5. Tee-off.	44024	5.00Nos	220120	44024
6. Service & Meter.	4120	5.00Nos	20600	4120
7. Transformer.	27900	5.00Nos	139500	27900
8. Electrification.	76044	5.00Nos	380220	76044
9. SUBTOTAL (1 TO 7)	*****	*****	5795220	*****
10. Land Levelling.	19792	59.02ha	1169096	19792
11. Levee (/10ha).	7890	49.02ha	38676	7890
12. Main Canal (/10ha)	68027	49.02ha	333456	68027
13. Branch (/10ha).	7820	49.02ha	38333	7820
14. Off-farm. (/10ha)	59025	49.02ha	338358	59025
15. Farm Road (/10ha).	84330	49.02ha	413382	84330
16. Farm Pond.	70092	5.00Nos	350460	93031
17. Communal Tank.	7450	5.00Nos	37249	7450
18. SUBTOTAL (9 TO 16)	*****	*****	2718021	*****
19. Connection Road.	4300	5.00km	21500	4300
20. Submersible Road.	515	0.00m	0	515
21. Electrification.	88048	3.50km	308168	88048
22. SUBTOTAL (19 TO 21)	*****	*****	329568	*****
23. ** GRAND TOTAL **	*****	*****	8842909	*****

TABLE A-6.3.4(11) Construction Cost Calculation. KL-B, D=300m

CONSTRUCTION COST CALCULATION		Kalat Area, Vein-B.		PAGE: 1/2	
	CASE-1	CASE-2	CASE-3	CASE-3	CASE-3
	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)
1. Drilling Cost.	801000	3204000	801000	4.00Nos	3204000
2. Pump Unit Cost	154000	4.00Nos	618000	220000	4.00Nos
3. Pump installation	10000	4.00Nos	40000	10000	4.00Nos
4. Pump House.	30000	4.00Nos	120000	30000	4.00Nos
5. Tee-off,	44024	4.00Nos	176096	44024	4.00Nos
6. Service & Meter.	4120	4.00Nos	16480	4120	4.00Nos
7. Transformer,	27900	4.00Nos	111600	27900	4.00Nos
8. Electrification.	75044	4.00Nos	304176	75044	4.00Nos
9. SUBTOTAL (1 TO 7)	19792	24.20ha	478998	19792	24.20ha
10. Land Levelling.	7890	20.20ha	15939	7890	20.20ha
11. Levee (/10ha).	58027	20.20ha	137429	58027	20.20ha
12. Main Canal (/10ha).	7820	20.20ha	15798	7820	20.20ha
13. Branch (/10ha).	59025	20.20ha	139444	59025	20.20ha
14. Off-farm. (/10ha)	84330	20.20ha	170364	84330	20.20ha
15. Farm Road (/10ha).	41958	4.00Nos	167832	41958	4.00Nos
16. Farm Pond,	7450	4.00Nos	29799	7450	4.00Nos
17. Communal Tank.					
18. SUBTOTAL (9 TO 16)	1155603	1155603	1155603	1155603	1155603
19. Connection Road,	4300	8.00km	34400	4300	8.00km
20. Submersible Road.	616	500.00m	307800	616	500.00m
21. Electrification.	88048	10.00km	880480	88048	10.00km
22. SUBTOTAL (19 TO 21)	1222680	1222680	1222680	1222680	1222680
23. ** GRAND TOTAL **	5652459	5652459	5652459	5652459	5652459

CONSTRUCTION COST CALCULATION

	CASE-4	CASE-5	CASE-5	CASE-5	CASE-5	CASE-5	CASE-5	CASE-5	CASE-5
	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)
1. Drilling Cost.	801000	4.00Nos	3204000	801000	4.00Nos	3204000	801000	4.00Nos	3204000
2. Pump Unit Cost	242000	4.00Nos	968000	209000	4.00Nos	835000	332000	4.00Nos	1328000
3. Pump installation	10000	4.00Nos	40000	10000	4.00Nos	40000	10000	4.00Nos	40000
4. Pump House.	30000	4.00Nos	120000	30000	4.00Nos	120000	30000	4.00Nos	120000
5. Tee-off.	44024	4.00Nos	175096	44024	4.00Nos	175096	44024	4.00Nos	175096
6. Service & Meter.	4120	4.00Nos	15480	4120	4.00Nos	15480	4120	4.00Nos	15480
7. Transformer.	27900	4.00Nos	111500	27900	4.00Nos	111500	27900	4.00Nos	111500
8. Electrification.	75044	4.00Nos	304176	75044	4.00Nos	304176	75044	4.00Nos	304176
9. SUBTOTAL (1 TO 7)	***** 4536176 *****								
10. Land Levelling.	19792	48.40ha	957997	19792	68.51ha	1357828	19792	68.51ha	1357828
11. Levee (/10ha).	7890	40.40ha	31879	7890	60.51ha	47818	7890	60.51ha	47818
12. Main Canal (/10ha)	58027	40.40ha	274857	58027	60.51ha	412285	58027	60.51ha	412285
13. Branch (/10ha).	7820	40.40ha	31595	7820	60.51ha	47394	7820	60.51ha	47394
14. Off-farm. (/10ha.)	59025	40.40ha	278889	59025	60.51ha	418333	59025	60.51ha	418333
15. Farm Road (/10ha).	84330	40.40ha	340727	84330	60.51ha	511091	84330	60.51ha	511091
16. Farm Pond.	70092	4.00Nos	280368	93031	4.00Nos	372124	93031	4.00Nos	372124
17. Communal Tank.	7450	4.00Nos	29799	7450	4.00Nos	29799	7450	4.00Nos	29799
18. SUBTOTAL (8 TO 15)	***** 2226111 *****								
19. Connection Road.	4300	8.00km	34400	4300	8.00km	34400	4300	8.00km	34400
20. Submersible Road.	515	500.00m	307800	515	500.00m	307800	515	500.00m	307800
21. Electrification.	88048	10.00km	880480	88048	10.00km	880480	88048	10.00km	880480
22. SUBTOTAL (19 TO 21)	***** 1222680 *****								
23. ** GRAND TOTAL **	***** 8094957 *****								
	***** 8923529 *****								
	***** 9415529 *****								

TABLE A-6.3.4(12)Construction Cost Calculation. KL-C, D=300mm

Kalat Area, Vein-C PAGE: 1/2

	CASE-1		CASE-2		CASE-3	
	Drilling Depth (m)	300.00	Drilling Depth (m)	300.00	Drilling Depth (m)	300.00
	Pump Head (m)	100.00	Pump Head (m)	150.00	Pump Head (m)	100.00
	Pump Discharge (l/s)	5.00	Pump Discharge (l/s)	5.00	Pump Discharge (l/s)	10.00
	Required 6/10ha (l/s)	9.90	Required 6/10ha (l/s)	9.90	Required 6/10ha (l/s)	9.90
	Irrigable Area (ha)	5.05	Irrigable Area (ha)	3.00	Irrigable Area (ha)	10.10
	Number of Wells (nos)	3.00	Number of Wells (nos)	3.00	Number of Wells (nos)	3.00
1. Drilling Cost.	801000	3.00Nos	2403000	801000	3.00Nos	2403000
2. Pump Unit Cost.	154000	3.00Nos	452000	220000	3.00Nos	550000
3. Pump installation	10000	3.00Nos	30000	10000	3.00Nos	30000
4. Pump House.	30000	3.00Nos	90000	30000	3.00Nos	90000
5. Tee-off.	44024	3.00Nos	132072	44024	3.00Nos	132072
6. Service & Meter.	4120	3.00Nos	12360	4120	3.00Nos	12360
7. Transformer.	27900	3.00Nos	83700	27900	3.00Nos	83700
8. Electrification.	76044	3.00Nos	228132	76044	3.00Nos	228132
9. SUBTOTAL (1 TO 7)	*****	*****	3233132	*****	*****	3411132
10. Land Levelling.	19792	18.15ha	359249	19792	18.15ha	359249
11. Levee (/10ha).	7890	15.15ha	11955	7890	15.15ha	11955
12. Main Canal (/10ha)	58027	15.15ha	103071	68027	15.15ha	103071
13. Branch (/10ha).	7820	15.15ha	11648	7820	15.15ha	11648
14. Off-farm. (/10ha)	69025	15.15ha	104583	69025	15.15ha	104583
15. Farm Road (/10ha).	84330	15.15ha	127773	84330	15.15ha	127773
16. Farm Pond.	41958	3.00Nos	125874	41958	3.00Nos	125874
17. Communal Tank.	7450	3.00Nos	22350	7450	3.00Nos	22350
18. SUBTOTAL (9 TO 16)	*****	*****	856703	*****	*****	856703
19. Connection Road.	4300	3.70km	15910	4300	3.70km	15910
20. Submersible Road.	616	300.00m	184580	616	300.00m	184580
21. Electrification.	86048	6.00km	528288	86048	6.00km	528288
22. SUBTOTAL (19 TO 21)	*****	*****	728878	*****	*****	728878
23. ** GRAND TOTAL **	*****	*****	4508713	*****	*****	5065713

CONSTRUCTION COST CALCULATION

	CASE-4	CASE-5	CASE-5	CASE-5	CASE-5
	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)
	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)
	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)
	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)
	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)
	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)
1. Drilling Cost.	801000	2403000	801000	2403000	801000
2. Pump Unit Cost	242000	726000	209000	627000	332000
3. Pump installation	10000	30000	10000	30000	10000
4. Pump House.	30000	90000	30000	90000	30000
5. Tee-off.	44024	132072	44024	132072	44024
6. Service & Meter.	4120	12360	4120	12360	4120
7. Transformer.	27900	83700	27900	83700	27900
8. Electrification.	75044	228132	75044	228132	75044
9. SUBTOTAL(1 TO 9)	3477132	10421332	3378132	1018371	3747132
10. Land Levelling.	19792	718497	19792	718497	19792
11. Levee (/10ha).	7890	23909	7890	23909	7890
12. Main Canal (/10ha)	68027	205142	68027	205142	68027
13. Branch (/10ha).	7820	23697	7820	23697	7820
14. Off-farm. (/10ha)	69025	209167	69025	209167	69025
15. Farm Road (/10ha).	84330	255545	84330	255545	84330
16. Farm Pond.	70092	210276	93031	279093	93031
17. Communal Tank.	7450	22350	7450	22350	7450
18. SUBTOTAL(9 TO 16)	1669584	5042132	1669584	5042132	1669584
19. Connection Road.	4300	15910	4300	15910	4300
20. Submersible Road.	515	184680	515	184680	515
21. Electrification.	88048	528288	88048	528288	88048
22. SUBTOTAL(19 TO 21)	726878	726878	726878	726878	726878
23. ** GRAND TOTAL **	5875594	18468000	5875594	18468000	5875594

TABLE A-6.3.5 Cost Estimate of Drilling

(Unit : Rs)

Items	Cases	CASE-1 100m	CASE-2 150m	CASE-3 200m	CASE-4 250m	CASE-5 300m
1. Mobilization, Demobilization		5,000	5,000	5,000	5,000	5,000
2. 7-7/8" test hole drilling		69,000	85,000	100,000	120,000	150,000
3. Air compressor running for water sampling		6,750	6,750	6,750	6,750	6,750
4. Electric well logging & Material test		5,000	5,000	5,000	5,000	5,000
5. 17 1/2" Hole opening		123,000	150,000	200,000	227,000	277,000
6. Tubewell construction		55,000	81,900	108,700	137,000	165,000
7. Initial development		10,000	10,000	10,000	10,000	10,000
8. Develop' g & testing & Pump machinery design		15,000	15,000	15,000	15,000	15,000
9. Accomodation		1,000	1,000	1,000	1,000	1,000
10. Boring material charge		1,000	1,000	1,000	1,000	1,000
11. Rig repairment charge		5,000	5,000	5,000	5,000	5,000
Total		295,750	365,650	457,470	537,750	640,750
Contingencies		14,780	18,283	22,873	26,890	32,040
Authority Overhead		7,764	9,599	12,000	14,116	16,819
Grand-Total		318,000	394,000	492,000	579,000	690,000
Overhead		73,937	91,412	114,367	134,437	160,187
Grand-Total		369,687	457,062	571,837	672,187	800,937
Say		370,000	457,000	572,000	672,000	801,000

TABLE A-6.3.6 Estimated Pump House Construction Cost

Construction Items	Unit	Unit Cost	Qty	Amount	Remarks
1. Excavation in foundation includ g dag bailing dressing refilling ground structure without excavated earth, watering & ramming lead upto one chain & lift upto 5 feet on hard soil.	Rs/c/ft	0.2195	230	50.48	W.S P12 I-18c
2. Cement concrete plain (1:4:8) includ g placing compacting finishing & curing complete includ g screening & washing of stone, aggregate ( without shuttering )	Rs/c.ft	11.198	80	1119.8	W.S P21 I-6
3. Pacca brick work in foundation & plinth in cement sand mortar	Rs/c.ft	10.3662	100	1036.62	W.S P25 I-4-i
4. Pacca brick work in ground floor in cement mortar ( 1:4 )	Rs/c.ft	11.3987	530	6041.31	W.S P26 I-5-i
5. Cement plaster(1:4) upto 20 feet hight 3/4" thick	Rs/s.ft	1.8575	860	1597.45	W.P P49 I-II
6. Reinforced cement concrete work using coarse sand includ ' g all labor & material except the cost of reinforcement & its labor for binding RCC & other structural in all respect ratio(1:2:4)	Rs/c.ft	30.15	200	6030	W.P P22 I-7-ai
7. Fabrication of mild steel reinforcement for cement concrete includ ' g cutting binding laying in position making joint & includ' g cost of binding wire (also includes removal of rust findoor)	Rs/Cwt	405	8	3240	W.P P23 I-8
8. Providing & fixing of steel doors without grill work on outer face of the door as per approved design of Engineer incharge of work	Rs/s.ft	0.275	28	770	W.P P121 I-41
9. Provid' g & laying topping of cement concrete(1:2:4) includ' g surface finishing & dividing into panels 2"	Rs/s.ft	4.205	250	1051.25	W.P P44 I-16
10. Galvanised corrugated steel sheeting fixed complete in all respect with nails screws, clips etc, fixed to gimber ##### or purling with one & half corrugation side lasps and 6 " end laps with screws	Rs/s.ft	-	-	-	Market Rate
11. Plain wood work sawn wrought planned fixed in position includ' g cost of nails & screws etc.	Rs/c.ft	166.87	1.0	166.87	W.P P52 I-1
12. Providing & fitting of steel window plazed openable standard Z section frame as per approved design of Engineer incharge	Rs/s.ft	35	16	560	W.P P121 I-44

Pump House Construction Cost (2/2)

Construction Items	Unit	Unit Cost	Qty	Amount	Remarks
13. Preparing surface & painting sashes fan light, glazed or guazed doors & windows any type (incl'd g edges)	Rs/s. ft	1.33	56.0	74.48	W.S P59 I-5b
14. Providing & fixing windows grills of angle iron as per approved design of Engineer incharge	Rs/s. ft	22.0	16.0	352	W.S P121 I-45
15. Distemping 3 coats	Rs/s. ft	0.7212	850	613.02	W.S P50 I-24
16. Wiring light point in 3/0.29" PVC upto 30 feet length	Rs/point	87.62	2	175.24	W.S P89 I-58
17. H.S. Girdor Heavey duty 14' long	Rs/No	1200	1	1200	
Total				23,911.65	
Add 3% Contingency				717.34	
Total				24,628.99	
Add 20% Premium				4,925.79	
Grand-Total				29,554.78	
Say				Rs. 30,000/-	

TABLE A-6.3.7 Estimated Cost of 11KV Feeder (1 Km)

Items	Qty	Unit	Rate	Amount
1) High Tension Structure	9	Nos	3,025	27,225.0
2) 11Kv wooden cross arms	13	Nos	260	3,380.0
3) 11Kv Cross arm braces	26	Nos	15	390.0
4) 11Kv Pin insulater	27	Nos	37	999.0
5) 11Kv Steel Pins	27	Nos	28	756.0
6) 11Kv Disc insulato	6	Nos	160	960.0
7) Stay set complete	8	Set	136	1,088.0
8) Stay wire 10mm	48	Kg	15.0	720.0
9) Earthing set (welded type)	9	Nos	101	909.0
10) Dead end clamps	6	Nos	50	300.0
11) ACSR Gopher Conductor	3.15	Kg	5200.0	16,380.0
12) 11Kv Danger Plates	9	Nos	25	225.0
13) Barbet wire	18	Kg	21.0	378.0
14) Eye nuts	16	Nos	10	160.0
15) P.G Connector T-155/T15	9	Nos	55	495.0
16) Nut & Bolts 2x5/8 "	13	Nos	7	91.0
17) Nut & Bolts 6x5/8 "	26	Nos	7	182.0
18) Nut & Bolts 14x5/8 "	8	Nos	15	120.0
19) Nut & Bolts 18x5/8 "	4	Nos	20	80.0
20) Double Arming Bolts 20x5/8 "	8	Nos	20	160.0
21) Eye screw Bolts	15	Nos	10	150.0
22) Steel spring washers Bolt 3/8"	52	Nos	5	260.0
23) Steel spring washers Bolt 5/8"	16	Nos	5	80.0
24) Lump sum for any other item	-	-	-	550.0
Total				56,038.0
Installation charges				14,570.0
Total				70,608.0
Contract works				
1) Concert' g of HT Structure	9	Nos	1,100	9,900.0
2) Fixing of Earthing Rod	9	Nos	350	3,150.0
3) Fixing of stay set compl.	8	Nos	280	2,240.0
4) Shifting of Material	1	Job	-	2,150.0
Grand-Total				88,048.0
Say				Rs. 88,000/-



TABLE A-6.3.8 Cost Estimate of 1No 25KVA Transformer

Items	Qty	Unit	Rate	Amount
1) Transformer 25KVA	1	No	15,450.0	15,450.0
2) D. Fuse fitting	3	No	658.0	1,974.0
3) Single Pole Plate Form	1	No	750.0	750.0
4) Earthing set (Welded Low Type )	1	No	90.0	90.0
5) G.S. Wire 10 mm	4	Kg	13.0	13.0
6) Pin Insulator	4	No	33.0	132.0
7) Pin for insulator	4	No	25.0	100.0
8) Wooden X Arem(4' x 5" x4" )	2	No	235.0	470.0
9) A.A.C Conductor	3	Meter	7,000.0	21,000.0
10) Cable conductor clamp	2	No	25.0	50.0
11) Ground conductor clamp	2	No	25.0	50.0
12) P.G. Conductor clamp	12	No	40.0	80.0
13) Nuts & Bolts Washer, Tie Wire etc.	1	L/S	-	500.0
14) Cable 4/c 10/083	25	Meter	65.0	1,625.0
15) Earthing Set	1	No	123.0	123.0
Total				21,867.0
INSTALLATION CHARGE				5,685.42
Total				27,552.42
Contract Work				350.0
Grand-Total				27,902.42
Say				Rs. 28,000/-

TABLE A-6.3.9 Cost Estimate of Service & Meter

Items	Qty	Unit	Rate	Amount
1) Meter 3 Phase	1	No	1,750.0	1,750.0
2) Service Mast	1	No	228.0	228.0
3) Wooden Board	1	No	112.0	112.0
4) RAG Eyebolt	3	No	10.0	30.0
5) G.I Wire	10	Kg	10.0	100.0
6) P.V.C Casle	30	Meter	35.0	1,050.0
Total				3,270.0
Installation charges				850.20
Grand-Total				4,120.20
Say				Rs. 4,120/-

TABLE A-6.3.10 Cost Estimate of Pump Unit

Pump Output	Items	Head		
		50 m	100 m	150 m
5.0 l/s	Cost *	119,000	164,000	230,000
	HP	15	20	30
10.0 l/s	Cost *	122,000	174,000	252,000
	HP	15	25	50
15.0 l/s	Cost *	142,000	219,000	342,000
	HP	25	40	60
20.0 l/s	Cost *	145,000	228,000	-
	HP	25	40	-

Note : \* Cost includes Pump Installation Cost, Rs. 10,000/-

TABLE A-6.3.11 Summary of Cost Estimates for 10ha Irrigation Area

Facilities	Quantity	Unit	Unit Cost	Cost(Rs)
Land Leveling	12	ha	19,792	237,500
Farm Road ( Main )	1,600	m	41.75	66,800
Farm Road ( Branch )	1,000	m	17.53	17,530
Farm Road ( Total )	2,600	m	-	84,330
Levee	3,000	m	2.63	7,890
Main Canal ( 1 )	204.5	m	194.40	39,755
Main Canal ( 2 )	620.0	m	45.60	28,272
Main Canal ( Total )	824.5	m	-	68,027
Secondary Canal	3,400	m	2.30	7,820
Turnouts	20	set	1,846.1	36,922
Culverts	29	set	1,107.0	32,103
On-farm Facilities	-	set	-	69,025
Grand Total				237,092

TABLE A-6.3.13 Farm Pond Construction Cost

I t e m	Case 1	Case 2	Case 3
	Q= 5.0 l/s	Q=10.0 l/s	Q=15.0 l/s
1. Pond itself	28,607.64	49,447.15	66,439.27
2. Inlet Chamber	1,241.51	1,241.51	1,241.51
3. Outlet Works	1,231.00	1,231.51	1,231.00
4. Total	31,080.15	51,919.66	68,911.78
5. TotalX1.08	33,566.56	56,073.23	74,424.72
6. Overhead(25%)	8,391.64	14,018.31	18,606.18
7. Grand Total	41,958.20	70,091.54	93,030.90
say	41,958	70,092	93,031

TABLE A-6.3.12 Unit Cost for On-farm Construction

Items	Qty	Unit	Rate	Costs(Rs.)	Remarks
1. Farm Road(main)					
1-1 Embankment	2	c.m/m	15.45	30.9	P85,3-6,6
1-2 ( x 1.08)				33.4	
1-3 Overhead (x0.25)				8.35	
1-4 Total	1	m		41.75	
2. Farm Road (Branch)					
2-1 Embankment	0.84	c.m/m	15.45	12.98	P85,3-6,6
2-2 ( x 1.08)				14.02	
2-3 Overhead ( x 0.25)				3.51	
2-4 Total	1	m		17.53	
3. Levee					
3-1	1	m	1.95	1.95	P91,3-36
3-2 (x 1.08)				2.11	
3-3 Overhead (x 0.25)				0.53	
3-4 Total	1	m		2.63	
4. Canal					
4-1 Excavation	3.575	c.m/10m	19.20	68.64	P85,3-7
4-2 Brick work	2.025	c.m/10m	675.55	1,367.99	P168,11-3, 6
4-3 Back fill	1.55	c.m/10m	2.05	3,177.00	P89,3-24, b
4-4 Sub-Total				1,439.81	
4-5 ( x 1.08 )				1,554.99	
4-6 Overhead ( x 0.25 )				388.75	
4-7 Total	1	m		194.4	
5. Canal (Main-2)					
5-1 Excavation	1.225	c.m/m	14.65	17.95	P278,18-2
5-2 Lining (side slope)	7.0	s.m/10m	22.85	159.95	P278,18-3
5-3 - ditto - (base)	3.5	s.m/10m	44.55	159.93	P279,18-8a
5-4 Sub-Total				337.83	
5-5 ( x 1.08 )				364.86	
5-6 Overhead ( x 0.25)				91.21	
5-7 Total	1	m		45.6	
6. Canal (Branch)					
6-1 Excavation	0.9	c.m/10m	19.20	17.28	P85,3-7
6-2 ( x 1.08 )				18.66	
6-3 Overhead ( x 0.25)				4.67	
6-4 Total	1	m		2.3	
7. Turn-out					
7-1 Brick work	450	Nos	0.65	292.5	Research
7-2 Gate	3	Nos	300	900.0	Research
7-3 Semiskilled labor	1.5	day	70	105.0	P469, No26
7-4 Unskilled labor	2.0	day	35	70.0	P470, No35
7-5 Sub-Total				1,367.5	
7-6 ( x 1.08 )				1,476.9	
7-7 Overhead (x 0.25 )				369.2	
7-8 Total	1	set		1,846.1	
8. Culvert					
8-1 RCC $\phi$ 450 x 5 m	1	No	820	820.0	P462, No771
8-2 ( x 1.08)				885.6	
8-3 Overhead ( x 0.25 )				221.4	
8-4 Total	1	No		1,107.0	

TABLE A-6.3.14 Farm Pond Construction Volume

Item	Case 1 Q= 5.0 l/s	Case 2 Q=10.0 l/s	Case 3 Q=15.0 l/s
Pond Capacity	180 m <sup>3</sup>	360 m <sup>3</sup>	540 m <sup>3</sup>
Pond Dimensions	14mX14mX1m	20mX20mX1m	24mX24mX1m
Embankment Vol.	294.0 m <sup>3</sup>	456.9 m <sup>3</sup>	586.7 m <sup>3</sup>
Brick Works Vol.	30.50 m <sup>2</sup>	52.76 m <sup>2</sup>	70.80 m <sup>2</sup>
Mortal Vol.	296.85 m <sup>2</sup>	540.79 m <sup>2</sup>	743.42 m <sup>2</sup>
Inlet Chamber	1 set	1 set	1 set
Outlet Works	1 set	1 set	1 set

TABLE A-6.3.15 Farm Pond Construction Direct Cost

	Case-1 Q=5.0 l/s	Case-2 Q=10.0 l/s	Case-3 Q=15.0 l/s
Embankment	294.0 x @ 15.45	456.9 x @15.45	586.7 x @15.45
Brick Work	+30.5 x @517.95	+52.76 x @27.85	+70.80 x@517.95
Cement mortal	296.85x @27.85	+540.79x@27.85	+743.42x@27.85
Total	28,607.64	49,447.15	66,439.27

Source : Composite Schedule of Rate, GOB. 1986  
 Embankment; @15.45  
 Brick work; @517.95  
 Cement mortar; @27.85

TABLE A-6.3.16 Inlet Chamber Cost

Item	/Caluculation	Unit	Rate (Rs/c.m)	Cost (Rs/c.m)
1. Concrete	1.0x0.5x0.25x2 =0.125	c.m	488.3	61.04
2. Brick	a. (2.5+1.5)x1.0/2x0.25x2=1.0 b. 0.25x1.0x0.85 = 0.213 c. (0.75+1.15)x0.4/2x1.0 =0.38 d. 1.0x1.0/2x0.3 =0.15			
	1.743	c.m	675.55	1,177.48
3. Backfill	1x1x1/3+1x1x1/2x2.25 =1.46	c.m	2.05	2.99
4. Total				1,241.51

Source : Composite Schedule of Rate, GOB. 1986

TABLE A-6.3.17 Outlet Works Cost

Item	Quantity	Rate Rs	Cost Rs	*Remarks page/item no.
Steel Pipe ø100	10 m	65.6	656.0	p.445/260
C.I.Sluice Valve ø100	1 set	575.0	575.0	o.445/272
Total			1,231.0	

\* rate quoted in "Composit Schemulr of Rate, GOB, 1986"

TABLE A-6.3.18 Communal Tank Cost

Item/Calculation		Unit	*Rate Rs	Cost Rs
1. Excavation (3.5X3.5+4.5X4.5)/2X0.5	=8.125	m3	19.20	156.0
2. Brick with Mortal 3.4X3.5+(2.5+2.0)X2X0.25X1.0	=8.375	m3	517.95	4,337.83
3. Backfilling 8.125-3.5X3.5X0.5	=2.0	m3	2.05	4.1
4. Conveyance Pipe D=100mm	15	m	29.7	445.5
5. Valbe	1	set	575.0	575.0
6. Total				5,518.43
7. Total X 1.08				5,959.90
8. Overhead ( 25% )				1,489.98
9. Grand Total				7,449.88

Say Rs.7,450

Note : \* Rate quoted in "Composit Schedule of Rate,GOB,1986"

TABLE A-6.3.19 Connection Road Cost

Item	*Rate Rs/Hr	Hour Hr/km	Cost Rs/km
1. Bulldozer Operation	500	2	1,000
2. Moter Grader Operation	300	8	2,400
3. Total			3,400
4. Total X 1.08			3,672
5. Overhead ( 25% )			918
6. Grand Total			4,590

Say 4,600

Note : \* Rate quoted in "Composit Schedule of Rate, GOB, 1986"

TABLE A-6.3.20 Submersible Road Cost

I t e m	Quantity	Unit	Rate(Rs)	Cost(Rs)
1. excavation	1.3X1.0X100X2=260	m3	17.10	4,446
2. Bulldozer Operation	5X100 =500	m2	0.05	25
3. Concrete Works	1.0X0.3X2X100= 60	m3	488.3	29,298
4. Bitumen	5.0X100 =500	m2	23.65	11,825
5. Total				45,594
6. Total X 1.08				49,242
7. Overhead ( 25% )				12,310
8. Grand Total				61,552

Say 61,600

Note : Rates quoted in "Composit Schedule of Rate, GOB, 1986"

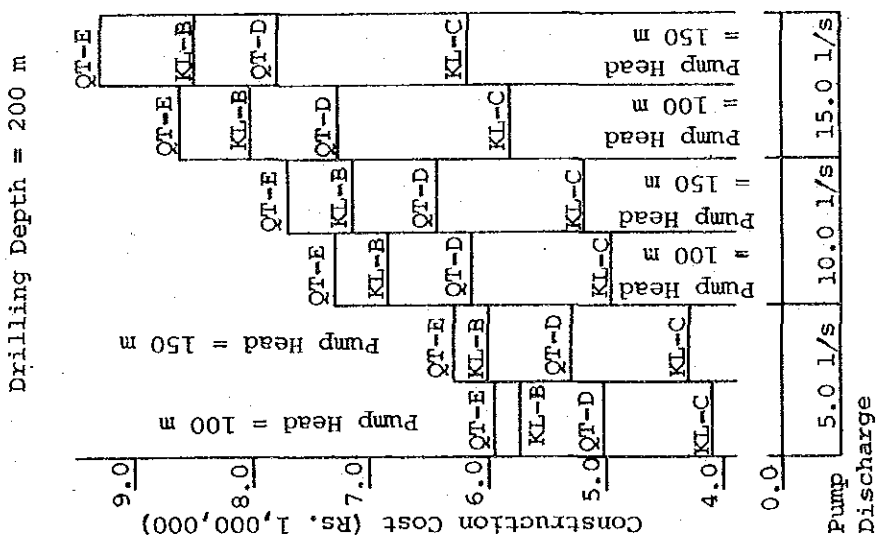
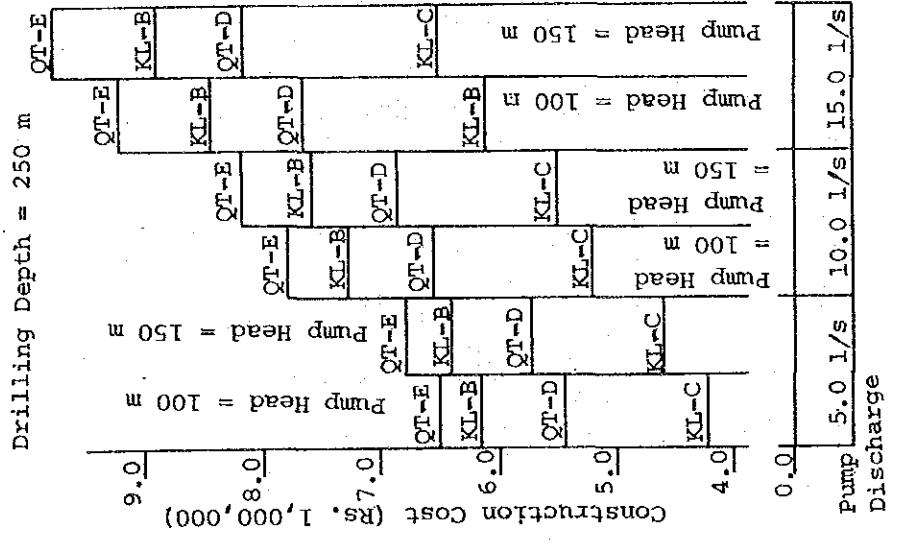
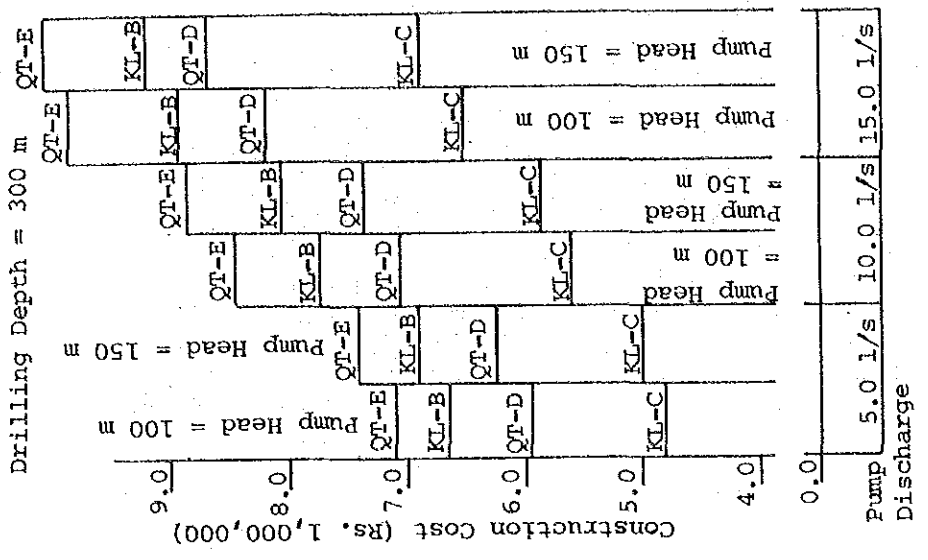


FIG A-6.3.1 Summary of Construction Cost

### 6.3.3 Project Cost

The project costs based on the scenario for each vein are summarized in TABLE A-6.3.21 (1) - A-6.3.21 (8).



TABLE A-6.3.21(1) Project Cost (QT-D, D=200m)

Quetta Area, Vein-D. PAGE: 1/2

***** PROJECT COST *****		***** CASE-1 *****										***** CASE-2 *****										***** CASE-3 *****									
		Drilling Depth (m)	Pump Head (m)	Pump Discharge (L/s)	Required Q/10ha (L/s)	Irrigable Area (ha)	Number of Wells(nos)	Foreign	Domestic	TOTAL	Drilling Depth (m)	Pump Head (m)	Pump Discharge (L/s)	Required Q/10ha (L/s)	Irrigable Area (ha)	Number of Wells(nos)	Foreign	Domestic	TOTAL	Drilling Depth (m)	Pump Head (m)	Pump Discharge (L/s)	Required Q/10ha (L/s)	Irrigable Area (ha)	Number of Wells(nos)	Foreign	Domestic	TOTAL			
11.	Construction Cost	1518721	3543562	5052402	1597921	3728482	5325402	1844119	4302944	6147053																					
12.	Land Acquisition	0	119024	0	119024	0	119024	0	119024	2065538																					
	Sub-Total (1+2)	1518721	3562705	5181425	1597921	3847505	5445425	1844119	4509482	5353501																					
13.	Physical Contingency	151872	356271	518143	159792	384751	544543	184412	450943	535350																					
	Sub-Total (1-3)	1670593	4028976	5699559	1757713	4232256	5989968	2028531	4960430	6888951																					
14.	Economic Contingency	33412	322318	389730	33154	338580	373735	40571	395634	437405																					
	GRAND TOTAL	1704005	4351294	6082298	1792967	4570836	6363703	2069101	5357265	7426355																					

Quetta Area, Vein-D. PAGE: 2/2

***** PROJECT COST *****		***** CASE-4 *****										***** CASE-5 *****										***** CASE-6 *****									
		Drilling Depth (m)	Pump Head (m)	Pump Discharge (L/s)	Required Q/10ha (L/s)	Irrigable Area (ha)	Number of Wells(nos)	Foreign	Domestic	TOTAL	Drilling Depth (m)	Pump Head (m)	Pump Discharge (L/s)	Required Q/10ha (L/s)	Irrigable Area (ha)	Number of Wells(nos)	Foreign	Domestic	TOTAL	Drilling Depth (m)	Pump Head (m)	Pump Discharge (L/s)	Required Q/10ha (L/s)	Irrigable Area (ha)	Number of Wells(nos)	Foreign	Domestic	TOTAL			
11.	Construction Cost	1937719	4521344	6459053	2181533	5090244	7271771	2329133	5434544	7763777																					
12.	Land Acquisition	0	206538	206538	0	279224	279224	0	279224	279224																					
	Sub-Total (1+2)	1937719	4727982	6665601	2181533	5369468	7551002	2329133	5713868	8043002																					
13.	Physical Contingency	193772	472768	666550	218153	536947	755100	232913	571387	804300																					
	Sub-Total (1-3)	2131491	5200670	7332151	2399686	5906415	8306102	2562046	6285255	8847302																					
14.	Economic Contingency	42630	416054	458683	47994	472513	520507	51241	502820	554051																					
	GRAND TOTAL	2174121	5616724	7790845	2447680	6378928	8826609	2613287	6798076	9401353																					

Note: Construction cost is divided into FOREIGN & DOMESTIC with 30% & 70%

TABLE A-6.3.21(2) Project Cost (QT-E, D=200m)

Guetta Area, Vein-E PAGE: 1/2

***** PROJECT COST *****		***** CASE-1 *****		***** CASE-2 *****		***** CASE-3 *****	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic
1. Construction Cost	1785625	4165458	5952083	1884625	4397456	5292083	2192373
2. Land Acquisition	0	127928	127928	0	127928	127928	0
	0	0	0	0	0	0	0
	0	0	0	0	0	0	0
Sub-Total (1+2)	1785625	4294386	5080011	1884625	4525386	5410011	2192373
3. Physical Contingency	1785625	4294339	5080011	1884625	4525339	5410011	2192373
Sub-Total (1-3)	1964187	4723825	5588012	2073087	4977925	7051012	2411610
4. Economic Contingency	39284	377596	417190	41462	398234	439556	40232
GRAND TOTAL	2003471	5101731	7105202	2114549	5376159	7490709	2459842

Guetta Area, Vein-E PAGE: 2/2

***** PROJECT COST *****		***** CASE-4 *****		***** CASE-5 *****		***** CASE-6 *****	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic
1. Construction Cost	2309373	5398537	7679091	2614141	6099661	8713902	530451
2. Land Acquisition	0	237321	237321	0	328179	328179	0
	0	0	0	0	0	0	0
	0	0	0	0	0	0	0
Sub-Total (1+2)	2309373	5625857	7952301	2614141	6427840	9041981	530451
3. Physical Contingency	2309373	562566	7955231	2614141	642784	9041981	530451
Sub-Total (1-3)	2540310	6188443	8720753	2875555	7070624	9946179	530451
4. Economic Contingency	50806	495075	545882	57511	565650	623161	61570
GRAND TOTAL	2591116	6683518	9274635	2933066	7636274	10565340	3140075

Note: Construction cost is divided into FOREIGN & DOMESTIC with 30% & 70%

TABLE A-6.3.21(3) Project Cost (KL-B, D=200m)

Kalat Area, Vein-B. PAGE: 1/2

PROJECT COST		CASE-1		CASE-2		CASE-3		CASE-4		CASE-5		CASE-6	
		Drilling Depth (m)	Pump Head (m)	Pump Discharge (l/s)	Required G/10ha (l/s)	Irrigable Area (ha)	Number of Wells(nos)	Foreign	Domestic	TOTAL	Foreign	Domestic	TOTAL
11. Construction Cost	1723936	4022522	5746459	1803138	4207322	6010459	2057090	4799877	5656967				
12. Land Acquisition	0	119373	119373	0	119373	119373	0	209090	209090				
Sub-Total (1+2)	1723936	4141894	5960192	1803138	5400695	7204232	2057090	6890767	7747057				
13. Physical Contingency	172394	414189	596019	180314	540070	720424	205709	689077	774706				
Sub-Total (1-3)	1896332	4556084	6556311	1983452	5940765	7924656	2262799	7580844	8521763				
14. Economic Contingency	37927	354487	402413	39659	380748	420418	45256	440789	486045				
GRAND TOTAL	1934259	4920571	6954829	2023121	6401113	7153234	2308055	8950653	9259708				

Kalat Area, Vein-B. PAGE: 2/2

PROJECT COST		CASE-4		CASE-5		CASE-6		CASE-7		CASE-8		CASE-9	
		Drilling Depth (m)	Pump Head (m)	Pump Discharge (l/s)	Required G/10ha (l/s)	Irrigable Area (ha)	Number of Wells(nos)	Foreign	Domestic	TOTAL	Foreign	Domestic	TOTAL
11. Construction Cost	2150690	5018277	7169967	2402259	5505270	8007529	2549859	5949570	8499529				
12. Land Acquisition	0	209090	209090	0	283979	283979	0	283979	283979				
Sub-Total (1+2)	2150690	5227367	7379057	2402259	5789249	8291508	2549859	6233649	8783508				
13. Physical Contingency	215069	522737	737906	240226	578925	829151	254986	623365	878351				
Sub-Total (1-3)	2365759	5750104	8116963	2642485	6478174	9120659	2804845	6857014	9661859				
14. Economic Contingency	47315	460008	507323	52950	518254	571104	56097	548561	604658				
GRAND TOTAL	2413074	6210112	8623186	2699334	6996428	9691762	2860941	7405575	10266516				

Note: Construction cost is divided into FOREIGN & DOMESTIC with 30% & 70%

TABLE A-6.3.21(4) Project Cost (KL-C, D=200m)

PROJECT COST		KALAT Area, Vein-C		PAGE: 1/2	
Case	Domestic	Foreign	Domestic	Foreign	Domestic
11. Construction Cost	1235514	2865199	4121713	1215914	3023799
12. Land Acquisition	0	81004	81004	0	81004
Sub-Total (1+2)	1235514	2946203	4202716	1215914	3104802
13. Physical Contingency	123651	295620	420272	129591	310480
Sub-Total (1-3)	1359165	3241823	4622988	1425505	3415283
14. Economic Contingency	27203	261026	288229	28510	273223
GRAND TOTAL	1387368	3523949	4911217	1454015	3688506

PROJECT COST		KALAT Area, Vein-C		PAGE: 2/2	
Case	Domestic	Foreign	Domestic	Foreign	Domestic
11. Construction Cost	1555578	3532016	5188594	1745254	4072250
12. Land Acquisition	0	148291	148291	0	204458
Sub-Total (1+2)	1555578	3780307	5336885	1745254	4276718
13. Physical Contingency	155658	378031	533688	174525	427672
Sub-Total (1-3)	1712236	4158337	5870573	1919780	4704390
14. Economic Contingency	34245	332557	366802	38396	376351
GRAND TOTAL	1746481	4491004	6237465	1958175	5080741

Note: Construction cost is divided into FOREIGN & DOMESTIC with 30% & 70%

TABLE A-6.3.21(5) Project Cost (QT-D, D=250m)

Quetta Area, Vein-D. PAGE: 1/2

PROJECT COST		CASE-1		CASE-2		CASE-3		CASE-4		CASE-5	
		Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)
1.1. Construction Cost	1538721	3823682	5452402	1717921	4008482	5726402	1954119	4982944	5547053	1954119	4982944
1.2. Land Acquisition	0	119024	119024	0	119024	119024	0	206538	206538	0	206538
Sub-Total (1+2)	1538721	3942705	5581425	1717921	4127505	5845425	1954119	4789482	5753591	1954119	4789482
1.3. Physical Contingency	163872	394271	558143	171792	412751	584543	195412	478948	575360	195412	478948
Sub-Total (1-3)	1802593	4336976	6139569	1889713	4540255	6429969	2150531	5268430	7428951	2150531	5268430
1.4. Economic Contingency	36052	346958	383010	37794	363220	401015	43211	421474	464685	43211	421474
GRAND TOTAL	1838645	4683934	6522578	1927507	4903475	6830983	2203741	5689905	7893545	2203741	5689905

Quetta Area, Vein-D. PAGE: 2/2

PROJECT COST		CASE-4		CASE-5		CASE-6		CASE-7		CASE-8	
		Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)
1.1. Construction Cost	2057719	4801344	6859053	2301533	5370244	7571777	2449133	5714644	8163777	2449133	5714644
1.2. Land Acquisition	0	206538	206538	0	279224	279224	0	279224	279224	0	279224
Sub-Total (1+2)	2057719	5007822	7055601	2301533	5649468	7951002	2449133	5993868	8443002	2449133	5993868
1.3. Physical Contingency	205772	500788	705550	230153	564947	795100	244913	599387	844300	244913	599387
Sub-Total (1-3)	2263491	5508610	7772151	2531686	6214415	8746102	2694046	6593255	9287302	2694046	6593255
1.4. Economic Contingency	45270	440694	485953	50634	497153	547787	53681	527450	581341	53681	527450
GRAND TOTAL	2308761	5949364	8258125	2582320	6711568	9293889	2747927	7120716	9866643	2747927	7120716

Note: Construction cost is divided into FOREIGN & DOMESTIC with 30% & 70%

TABLE A-6.3.21(6) Project Cost (QT-E, D=250m)

Quetta Area, Uein-E PAGE: 1/2

\*\*\*\*\* PROJECT COST \*\*\*\*\*

	CASE-1 *****		CASE-2 *****		CASE-3 *****	
	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)
	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)
	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)
	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)
	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)
	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)
	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic
	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
1. Construction Cost	1935625	4515458	6452083	4747458	5782083	5455537
2. Land Acquisition	0	127928	127928	0	127928	237321
	0	0	0	0	0	0
	0	0	0	0	0	0
Sub-Total (1+2)	1935625	4643386	6580011	4747458	5910011	5702857
3. Physical Contingency	193562	464439	593001	203462	691001	570286
Sub-Total (1-3)	2129187	5108825	7238012	4951020	6601012	6273143
4. Economic Contingency	42584	409706	451290	44752	473796	501851
GRAND TOTAL	2171771	5517531	7689302	5391959	8074908	6774994

Quetta Area, Uein-E PAGE: 2/2

\*\*\*\*\* PROJECT COST \*\*\*\*\*

	CASE-4 *****		CASE-5 *****		CASE-6 *****	
	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)	Drilling Depth (m)
	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)	Pump Head (m)
	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)	Pump Discharge (l/s)
	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)	Required G/10ha (l/s)
	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)	Irrigable Area (ha)
	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)	Number of Wells(nos)
	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic
	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
1. Construction Cost	2459373	5739537	8197909	6449651	9213602	5890151
2. Land Acquisition	0	237321	237321	0	328179	328179
	0	0	0	0	0	0
	0	0	0	0	0	0
Sub-Total (1+2)	2459373	5975857	8435230	6449651	9541981	6218330
3. Physical Contingency	245937	597586	643523	276414	954198	294864
Sub-Total (1-3)	2705310	6573443	9278753	3040555	10496179	3243505
4. Economic Contingency	54105	525875	579962	60811	657261	64870
GRAND TOTAL	2759415	7099318	9858715	3101366	11153440	3308375

Note: Construction cost is divided into FOREIGN & DOMESTIC with 30% & 70%

TABLE A-6.3.21(7) Project Cost (KL-B, D=250m)

Kalat Area, Vein-B, PAGE: 1/2

***** PROJECT COST *****												
	CASE-1 *****			CASE-2 *****			CASE-3 *****			CASE-4 *****		
	Drilling Depth (m)	Pump Head (m)	Pump Discharge (L/s)	Drilling Depth (m)	Pump Head (m)	Pump Discharge (L/s)	Drilling Depth (m)	Pump Head (m)	Pump Discharge (L/s)	Drilling Depth (m)	Pump Head (m)	Pump Discharge (L/s)
	Required G/10ha (L/s)	Irrigable Area (ha)	Number of Wells (nos)	Required G/10ha (L/s)	Irrigable Area (ha)	Number of Wells (nos)	Required G/10ha (L/s)	Irrigable Area (ha)	Number of Wells (nos)	Required G/10ha (L/s)	Irrigable Area (ha)	Number of Wells (nos)
	Foreign			Domestic			Foreign			Domestic		
	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
11. Construction Cost	1843938	4302522	61464591	1923138	4487322	64104591	2177090	5079877	72569571	2177090	5079877	72569571
12. Land Acquisition	0	119373	0	119373	0	209090	0	209090	209090	0	209090	209090
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Sub-Total (1+2)	1843938	4421894	62658321	1923138	4506694	65298321	2177090	5288967	74650571	2177090	5288967	74650571
13. Physical Contingency	184394	442189	626583	192314	450669	652983	217709	528897	746606	217709	528897	746606
Sub-Total (1-3)	2028332	4864084	5892416	2115452	5067364	7182816	2394799	5817964	8212663	2394799	5817964	8212663
14. Economic Contingency	40567	389127	429693	42309	405389	447699	47896	465429	513325	47896	465429	513325
GRAND TOTAL	2068898	5253211	73221091	2157761	5472753	76305141	2442695	6283293	87259981	2442695	6283293	87259981

Kalat Area, Vein-B, PAGE: 2/2

***** PROJECT COST *****												
	CASE-4 *****			CASE-5 *****			CASE-6 *****			CASE-7 *****		
	Drilling Depth (m)	Pump Head (m)	Pump Discharge (L/s)	Drilling Depth (m)	Pump Head (m)	Pump Discharge (L/s)	Drilling Depth (m)	Pump Head (m)	Pump Discharge (L/s)	Drilling Depth (m)	Pump Head (m)	Pump Discharge (L/s)
	Required G/10ha (L/s)	Irrigable Area (ha)	Number of Wells (nos)	Required G/10ha (L/s)	Irrigable Area (ha)	Number of Wells (nos)	Required G/10ha (L/s)	Irrigable Area (ha)	Number of Wells (nos)	Required G/10ha (L/s)	Irrigable Area (ha)	Number of Wells (nos)
	Foreign			Domestic			Foreign			Domestic		
	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
11. Construction Cost	2270690	5298277	75689571	2522259	5985270	84075291	2669859	6229570	89995291	2669859	6229570	89995291
12. Land Acquisition	0	209090	0	283979	0	283979	0	283979	283979	0	283979	283979
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Sub-Total (1+2)	2270690	5507367	77780571	2522259	6169249	8691508	2669859	6513649	9183508	2669859	6513649	9183508
13. Physical Contingency	227069	550737	777806	252226	616925	869151	266986	651365	918351	266986	651365	918351
Sub-Total (1-3)	2497759	6058104	8555863	2774485	6786174	9560659	2936845	7165014	10101859	2936845	7165014	10101859
14. Economic Contingency	49955	484648	534603	55490	542894	598384	58737	573201	631938	58737	573201	631938
GRAND TOTAL	2547714	6542752	9090456	2829974	7329068	10159042	2995581	7738215	10733796	2995581	7738215	10733796

Note: Construction cost is divided into FOREIGN & DOMESTIC with 30% & 70%

TABLE A-6.3.21(8) Project Cost (KL-C, D=250m)

		Kalat Area, Vein-C PAGE: 1/2																								
		***** PROJECT COST *****					***** PROJECT COST *****																			
		CASE-1 *****		CASE-2 *****		CASE-3 *****		CASE-4 *****		CASE-5 *****																
		Drilling Depth (m)	Pump Head (m)	Pump Discharge (l/s)	Required G/10ha (l/s)	Irrigable Area (ha)	Number of Wells(nos)	Drilling Depth (m)	Pump Head (m)	Pump Discharge (l/s)	Required G/10ha (l/s)	Irrigable Area (ha)	Number of Wells(nos)	Drilling Depth (m)	Pump Head (m)	Pump Discharge (l/s)	Required G/10ha (l/s)	Irrigable Area (ha)	Number of Wells(nos)	Drilling Depth (m)	Pump Head (m)	Pump Discharge (l/s)	Required G/10ha (l/s)	Irrigable Area (ha)	Number of Wells(nos)	
		Foreign	Domestic	TOTAL	Foreign	Domestic	TOTAL	Foreign	Domestic	TOTAL	Foreign	Domestic	TOTAL	Foreign	Domestic	TOTAL	Foreign	Domestic	TOTAL	Foreign	Domestic	TOTAL	Foreign	Domestic	TOTAL	
11.	Construction Cost	132514	3095159	421713	1365914	3233759	4519713	1575378	3679216	5254594	4519713	1575378	3679216	5254594	4519713	1575378	3679216	5254594	4519713	1575378	3679216	5254594	4519713	1575378	3679216	5254594
12.	Land Acquisition	0	81004	81004	0	81004	81004	0	81004	81004	0	81004	81004	0	81004	81004	0	81004	81004	0	81004	81004	0	81004	81004	0
	Sub-Total (1+2)	132514	3176202	4502716	1365914	3314802	4700715	1575378	3825507	5402395	4519713	1575378	3825507	5402395	4519713	1575378	3825507	5402395	4519713	1575378	3825507	5402395	4519713	1575378	3825507	
13.	Physical Contingency	132514	317620	450272	136591	331480	470072	157538	382551	540288	451971	157538	382551	540288	451971	157538	382551	540288	451971	157538	382551	540288	451971	157538	382551	540288
	Sub-Total (1-3)	1459165	3493823	4952988	1524505	3646283	5170788	1734015	4209157	5943173	4971424	1734015	4209157	5943173	4971424	1734015	4209157	5943173	4971424	1734015	4209157	5943173	4971424	1734015	4209157	5943173
14.	Economic Contingency	29183	279505	308688	30420	291703	322183	34580	336733	371413	322183	34580	336733	371413	322183	34580	336733	371413	322183	34580	336733	371413	322183	34580	336733	371413
	GRAND TOTAL	1480348	3773328	5251677	1554995	3937985	5492980	1768695	4545990	6314586	5251677	1768695	4545990	6314586	5251677	1768695	4545990	6314586	5251677	1768695	4545990	6314586	5251677	1768695	4545990	6314586

		Kalat Area, Vein-C PAGE: 2/2																							
		***** PROJECT COST *****					***** PROJECT COST *****																		
		CASE-4 *****		CASE-5 *****		CASE-6 *****		CASE-7 *****		CASE-8 *****															
		Drilling Depth (m)	Pump Head (m)	Pump Discharge (l/s)	Required G/10ha (l/s)	Irrigable Area (ha)	Number of Wells(nos)	Drilling Depth (m)	Pump Head (m)	Pump Discharge (l/s)	Required G/10ha (l/s)	Irrigable Area (ha)	Number of Wells(nos)	Drilling Depth (m)	Pump Head (m)	Pump Discharge (l/s)	Required G/10ha (l/s)	Irrigable Area (ha)	Number of Wells(nos)	Drilling Depth (m)	Pump Head (m)	Pump Discharge (l/s)	Required G/10ha (l/s)	Irrigable Area (ha)	Number of Wells(nos)
		Foreign	Domestic	TOTAL	Foreign	Domestic	TOTAL	Foreign	Domestic	TOTAL	Foreign	Domestic	TOTAL	Foreign	Domestic	TOTAL	Foreign	Domestic	TOTAL	Foreign	Domestic	TOTAL	Foreign	Domestic	TOTAL
11.	Construction Cost	1546578	3842015	5388593	1835254	4282260	6117515	1945954	4540550	6486515	6117515	1945954	4540550	6486515	6117515	1945954	4540550	6486515	6117515	1945954	4540550	6486515	6117515	1945954	4540550
12.	Land Acquisition	0	148291	148291	0	204458	204458	0	204458	204458	0	204458	204458	0	204458	204458	0	204458	204458	0	204458	204458	0	204458	204458
	Sub-Total (1+2)	1546578	3990307	5636885	1835254	4486718	6321973	1945954	4745018	6690973	6117515	1945954	4745018	6690973	6117515	1945954	4745018	6690973	6117515	1945954	4745018	6690973	6117515	1945954	4745018
13.	Physical Contingency	154658	399031	563689	183525	448672	632197	194595	474502	669097	611751	194595	474502	669097	611751	194595	474502	669097	611751	194595	474502	669097	611751	194595	474502
	Sub-Total (1-3)	1811236	4389337	6200573	2018780	4935390	6954170	2140550	5219520	7360070	6954170	2140550	5219520	7360070	6954170	2140550	5219520	7360070	6954170	2140550	5219520	7360070	6954170	2140550	5219520
14.	Economic Contingency	36225	351147	387372	40376	394831	435207	42811	417562	450373	435207	42811	417562	450373	435207	42811	417562	450373	435207	42811	417562	450373	435207	42811	417562
	GRAND TOTAL	1847461	4740484	6587945	2059156	5330221	7389377	2183361	5637082	7820442	7389377	2183361	5637082	7820442	7389377	2183361	5637082	7820442	7389377	2183361	5637082	7820442	7389377	2183361	5637082

Note: Construction cost is divided into FOREIGN & DOMESTIC with 30% & 70%



TABLE A-6.3.21(9) Project Cost (QT-D, D=300m)

Guetta Area, Vein-D, PAGE: 1/2

\*\*\*\*\* PROJECT COST \*\*\*\*\*

	CASE-1 *****		CASE-2 *****		CASE-3 *****		
	Drilling Depth (m)	300.00	Drilling Depth (m)	300.00	Drilling Depth (m)	300.00	
	Pump Head (m)	100.00	Pump Head (m)	150.00	Pump Head (m)	100.00	
	Pump Discharge (l/s)	5.00	Pump Discharge (l/s)	5.00	Pump Discharge (l/s)	10.00	
	Required G/10ha (l/s)	10.20	Required G/10ha (l/s)	10.20	Required G/10ha (l/s)	10.20	
	Irrigable Area (ha)	4.90	Irrigable Area (ha)	4.90	Irrigable Area (ha)	9.80	
	Number of Wells(nos)	4.00	Number of Wells(nos)	4.00	Number of Wells(nos)	4.00	
	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	
	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	
1. Construction Cost	1793521	4184682	1872721	4359682	6242402	2118919	4944144
2. Land Acquisition	0	119024	0	119024	119024	0	206538
	0	0	0	0	0	0	0
	0	0	0	0	0	0	0
Sub-Total (1+2)	1793521	4303905	1872721	4488705	6361426	2118919	5150682
3. Physical Contingency	179352	430391	187272	448871	636143	211892	515068
Sub-Total (1-3)	1972873	4734296	2059993	4937576	6997569	2330811	5665750
4. Economic Contingency	39457	378744	41200	395006	435206	45616	453260
GRAND TOTAL	2012330	5113040	2101193	5332582	7433774	2377427	6119010

Guetta Area, Vein-D, PAGE: 2/2

\*\*\*\*\* PROJECT COST \*\*\*\*\*

	CASE-4 *****		CASE-5 *****		CASE-6 *****		
	Drilling Depth (m)	300.00	Drilling Depth (m)	300.00	Drilling Depth (m)	300.00	
	Pump Head (m)	150.00	Pump Head (m)	100.00	Pump Head (m)	150.00	
	Pump Discharge (l/s)	10.00	Pump Discharge (l/s)	15.00	Pump Discharge (l/s)	15.00	
	Required G/10ha (l/s)	10.20	Required G/10ha (l/s)	10.20	Required G/10ha (l/s)	10.20	
	Irrigable Area (ha)	9.80	Irrigable Area (ha)	14.71	Irrigable Area (ha)	14.71	
	Number of Wells(nos)	4.00	Number of Wells(nos)	4.00	Number of Wells(nos)	4.00	
	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	
	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	
1. Construction Cost	2212519	5162544	2456333	5731444	8187777	2503933	6079944
2. Land Acquisition	0	206538	0	279224	279224	0	279224
	0	0	0	0	0	0	0
	0	0	0	0	0	0	0
Sub-Total (1+2)	2212519	5369082	2456333	6010668	8467001	2503933	6359068
3. Physical Contingency	221252	536508	245633	601067	846700	260393	635507
Sub-Total (1-3)	2433771	5905990	2701966	6611735	9313702	2864326	6990575
4. Economic Contingency	48675	472479	54039	529939	582978	57287	559246
GRAND TOTAL	2482446	6378470	2756005	7140674	9896680	2921613	7549821

Note: Construction cost is divided into FOREIGN & DOMESTIC with 30% & 70%

TABLE A-6.3.21(10) Project Cost (QT-E, D=300m)

		Guetta Area, Vein-E PAGE: 1/2											
***** PROJECT COST *****		CASE-1 *****		CASE-2 *****		CASE-3 *****		CASE-4 *****		CASE-5 *****			
		Drilling Depth (m)	Pump Head (m)	Pump Discharge (l/s)	Required G/10ha (l/s)	Irrigable Area (ha)	Number of Wells(nos)	Foreign	Domestic	TOTAL	Foreign	Domestic	TOTAL
1.1.	Construction Cost	2129125	4967958	7097083	2228125	5198958	7427083	2535873	5917037	8452909	2535873	5917037	8452909
1.2.	Land Acquisition	0	127928	127928	0	127928	127928	0	237321	237321	0	237321	237321
		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
	Sub-Total (1+2)	2129125	5095886	7225011	2228125	5326886	7555011	2535873	6154357	8690230	2535873	6154357	8690230
3.	Physical Contingency	212912	509589	722501	222812	532689	755501	253587	615436	869023	253587	615436	869023
	Sub-Total (1-3)	2342037	5605475	7947512	2450937	5859575	8310512	2789460	6769793	9559253	2789460	6769793	9559253
4.	Economic Contingency	45341	449439	495279	45019	469766	517785	55789	541583	597373	55789	541583	597373
	GRAND TOTAL	2388878	6053913	8442791	2499955	6328341	8828237	2845249	7311376	10156626	2845249	7311376	10156626

		Guetta Area, Vein-E PAGE: 2/2											
***** PROJECT COST *****		CASE-4 *****		CASE-5 *****		CASE-6 *****		CASE-7 *****		CASE-8 *****			
		Drilling Depth (m)	Pump Head (m)	Pump Discharge (l/s)	Required G/10ha (l/s)	Irrigable Area (ha)	Number of Wells(nos)	Foreign	Domestic	TOTAL	Foreign	Domestic	TOTAL
1.1.	Construction Cost	2652873	6190037	8842909	2957641	6901161	9858802	3142141	7331651	10473902	3142141	7331651	10473902
1.2.	Land Acquisition	0	237321	237321	0	237321	237321	0	328179	328179	0	328179	328179
		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
	Sub-Total (1+2)	2652873	6427357	9080230	2957641	7229340	10186981	3142141	7659840	10801981	3142141	7659840	10801981
3.	Physical Contingency	265287	642736	908023	295764	722934	1018698	314214	765984	1080198	314214	765984	1080198
	Sub-Total (1-3)	2918160	7070093	9988253	3253405	7952274	11205679	3456355	8425624	11882179	3456355	8425624	11882179
4.	Economic Contingency	58353	565607	623971	55058	636182	701250	69127	674056	743193	69127	674056	743193
	GRAND TOTAL	2976523	7635700	10612224	3318473	9588456	11906929	3525482	9099890	12625372	3525482	9099890	12625372

Note: Construction cost is divided into FOREIGN & DOMESTIC with 30% & 70%

TABLE A-6.3.21(11)Project Cost (KL-B, D=300m)

Kalat Area, Uein-B, PAGE: 1/2												
***** PROJECT COST *****												
	CASE-1		CASE-2		CASE-3		CASE-4		CASE-5		CASE-6	
	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)
	Pump Discharge (L/s)	Required G/10ha (L/s)	Pump Discharge (L/s)	Required G/10ha (L/s)	Pump Discharge (L/s)	Required G/10ha (L/s)	Pump Discharge (L/s)	Required G/10ha (L/s)	Pump Discharge (L/s)	Required G/10ha (L/s)	Pump Discharge (L/s)	Required G/10ha (L/s)
	Irrigable Area (ha)	Number of Wells(nos)	Irrigable Area (ha)	Number of Wells(nos)	Irrigable Area (ha)	Number of Wells(nos)	Irrigable Area (ha)	Number of Wells(nos)	Irrigable Area (ha)	Number of Wells(nos)	Irrigable Area (ha)	Number of Wells(nos)
	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic
	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
1. Construction Cost	1958738	4663722	65624581	2077938	4848522	69264591	2331890	5441077	77729671	2331890	5441077	77729671
2. Land Acquisition	0	119373	0	119373	0	119373	0	209090	0	209090	0	209090
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Sub-Total (1+2)	1958738	4783094	65624581	2077938	4967894	7045832	2331890	5650167	7982057	2331890	5650167	7982057
3. Physical Contingency	199874	478309	6781831	207794	496789	704583	233189	568017	798206	233189	568017	798206
Sub-Total (1-3)	2198612	5261404	7460016	2285732	5464684	7750416	2565079	6215184	8780263	2565079	6215184	8780263
4. Economic Contingency	43972	420912	4848861	45715	437175	482899	51302	497215	548516	51302	497215	548516
GRAND TOTAL	2242584	5682316	79249001	2331446	5901959	82333051	2616381	6712398	93287791	2616381	6712398	93287791

Kalat Area, Uein-B, PAGE: 2/2												
***** PROJECT COST *****												
	CASE-4		CASE-5		CASE-6		CASE-7		CASE-8		CASE-9	
	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)
	Pump Discharge (L/s)	Required G/10ha (L/s)	Pump Discharge (L/s)	Required G/10ha (L/s)	Pump Discharge (L/s)	Required G/10ha (L/s)	Pump Discharge (L/s)	Required G/10ha (L/s)	Pump Discharge (L/s)	Required G/10ha (L/s)	Pump Discharge (L/s)	Required G/10ha (L/s)
	Irrigable Area (ha)	Number of Wells(nos)	Irrigable Area (ha)	Number of Wells(nos)	Irrigable Area (ha)	Number of Wells(nos)	Irrigable Area (ha)	Number of Wells(nos)	Irrigable Area (ha)	Number of Wells(nos)	Irrigable Area (ha)	Number of Wells(nos)
	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic
	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
1. Construction Cost	2425490	5559477	60949571	2677059	6246470	89235291	2824659	6590870	94155291	2824659	6590870	94155291
2. Land Acquisition	0	209090	0	283979	0	283979	0	283979	0	283979	0	283979
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Sub-Total (1+2)	2425490	5868567	60949571	2677059	6530449	92075081	2824659	6874849	99995081	2824659	6874849	99995081
3. Physical Contingency	242549	566657	6234081	267706	653045	920751	282466	687485	969951	282466	687485	969951
Sub-Total (1-3)	2668039	6435224	67183653	2944765	7183494	101282591	3107125	7562334	106694591	3107125	7562334	106694591
4. Economic Contingency	53661	516434	5697951	58895	574680	6339751	62142	604987	6671291	62142	604987	6671291
GRAND TOTAL	2721400	6971859	95322581	3003660	7758173	107618331	3169267	8167320	113365871	3169267	8167320	113365871

Note: Construction cost is divided into FOREIGN & DOMESTIC with 30% & 70%

TABLE A-6.3.21(12) Project Cost (KL-C, D=300m)

Kalat Area, Vein-C PAGE: 1/2

\*\*\*\*\* PROJECT COST \*\*\*\*\*

	CASE-1		CASE-2		CASE-3		CASE-4		CASE-5		CASE-6	
	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)
1. Construction Cost	1442614	3366099	488713	1502014	3504599	508713	1692478	3949115	5641594	148291	0	0
2. Land Acquisition	0	81004	81004	0	81004	81004	0	148291	148291	0	0	0
Sub-Total (1+2)	1442614	3447102	488716	1502014	3585602	508716	1692478	4097407	5789885	148291	0	0
3. Physical Contingency	144261	344710	488972	150201	358570	508772	169248	409741	578988	148291	0	0
Sub-Total (1-3)	1586875	3791813	537688	1652215	3944273	5595488	1861726	4507147	6368873	148291	0	0
4. Economic Contingency	31738	303345	335083	33044	315542	348585	37235	350572	397805	0	0	0
GRAND TOTAL	1618613	4095158	5713770	1685259	4259814	5945074	1893960	4857719	6766580	148291	0	0

Kalat Area, Vein-C PAGE: 2/2

\*\*\*\*\* PROJECT COST \*\*\*\*\*

	CASE-4		CASE-5		CASE-6		CASE-7		CASE-8		CASE-9	
	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)	Drilling Depth (m)	Pump Head (m)
1. Construction Cost	1752678	4112915	5875394	1951354	4553160	6504515	2062054	4811450	6873515	204458	0	0
2. Land Acquisition	0	148291	148291	0	204458	204458	0	204458	204458	0	0	0
Sub-Total (1+2)	1752678	4261207	6023685	1951354	4757618	6708973	2062054	5015918	7077973	204458	0	0
3. Physical Contingency	175268	426121	602368	195135	475762	670897	206205	501592	707797	204458	0	0
Sub-Total (1-3)	1927946	4687327	6626053	2146490	5233380	7379870	2268260	5517510	7785770	204458	0	0
4. Economic Contingency	36779	374986	413765	42530	418670	451500	45365	441401	485766	0	0	0
GRAND TOTAL	1977725	5062314	7040038	2189420	5652050	7841470	2313625	5958911	8272536	204458	0	0

Note: Construction cost is divided into FOREIGN & DOMESTIC with 30% & 70%

## 6.4 OPERATION AND MAINTENANCE

Functions of operation and maintenance cost are summarized into three items as follows:

1. Pump running cost
2. Maintenance cost for facilities
3. Pump replacement cost

### 6.4.1 Pump Running Cost

#### (1) Electricity Tariff

##### a. Tariff System for Agriculture

Two electricity tariff systems work for agriculture in Baluchistan. One is Flat Rate system, so called "D-1" and another is Energy Charge's Tariff called "D".

##### b. Flat Rate (called "D-1")

"D-1" is a very simple charge method. The tariff is charged only for pump horse-power, not depending on the amount of consumed electricity. The rate is Rs.58 for 1 HP per month.

##### c. Energy Charge's Tariff (called "D")

"D" system has 3 components as follows:

1. Fixed charge: Charge for motor capacity (based on kW)  
 $C1 = N\text{-HP} \times 0.746 \times 22 \text{ Rs/month}$
2. Energy charge: Charge for consumed electricity  
 $C2 = N\text{-kWH} \times 0.21 \text{ Rs/month}$
3. Fuel adjusting: Charge for Power fuel based on electricity  
 $C3 = N\text{-kWH} \times 0.32 \text{ Rs/month}$

Total monthly charge, consequently, will be  $C1 + C2 + C3$ .

b. Application for Cost Estimate

Those systems are selectable for a farmer. So that, cheaper one is to be applied. "D-1" was adopted for this project.

6.4.2 Maintenance Cost for Facilities

Maintenance would be required to keep the facilities with good conditions. There should be several minor damages and would be happened some parts to be improved for on-farm activities.

It is very hard to estimate the actual cost for the facility maintenance. Consequently, 0.1% of the construction cost would be appropriated based on the general condition and the contents of facilities planned.

6.4.3 Pump Replacement Cost

Durable period of the pump unit is generally said about 10 years. So at every 10 years after the completion of the construction, the pump unit would be envisaged to be replaced.



## 7. PROJECT EVALUATION

7.1 General \*\*\*\*\* ( None )

7.2 Project Benefit \*\*\*\*\* ( None )

7.3 Economic Evaluation

FIG A-7.3.1	EIRR by Pump Discharge, QT-D Area
FIG A-7.3.2	EIRR by Pump Discharge, QT-E Area
FIG A-7.3.3	EIRR by Pump Discharge, KL-B Area
FIG A-7.3.4	EIRR by Pump Discharge, KL-C Area
FIG A-7.3.5	ENPV by Pump Discharge, QT-D Area
FIG A-7.3.6	ENPV by Pump Discharge, QT-E Area
FIG A-7.3.7	ENPV by Pump Discharge, KL-B Area
FIG A-7.3.8	ENPV by Pump Discharge, KL-C Area
FIG A-7.3.9	B/C Ratio by Pump Discharge, QT-D Area
FIG A-7.3.10	B/C Ratio by Pump Discharge, QT-E Area
FIG A-7.3.11	B/C Ratio by Pump Discharge, KL-B Area
FIG A-7.3.12	B/C Ratio by Pump Discharge, KL-C Area
TABLE A-7.3.1	Financial and Economical Prices (Constant, Sept. 1987 currency)
TABLE A-7.3.2	Price Structure of Urea
TABLE A-7.3.3	Price Structure of DAP and KCL
TABLE A-7.3.4	Crop Budget per Hectare (Without Project)
TABLE A-7.3.5	Crop Budget per Hectare (With Project)
TABLE A-7.3.6	Crop Budget per Hectare (With Project)
TABLE A-7.3.7	Crop Budget per Hectare (With Project)
TABLE A-7.3.8	Economic Crop Benefit (With Project)
TABLE A-7.3.9	EIRR, ENPV and B/C Ratio
TABLE A-7.3.10	Project Cost and Benefits Baluchistan Groundwater Irrigation Project, Case QT-D
TABLE A-7.3.11	Project Cost and Benefits Baluchistan Groundwater Irrigation Project, Case QT-E
TABLE A-7.3.12	Project Cost and Benefits Baluchistan Groundwater Irrigation Project, Case KL-B
TABLE A-7.3.13	Project Cost and Benefits Baluchistan Groundwater Irrigation Project, Case KL-C
TABLE A-7.3.14	Project Cost and Benefits Overall Case

7.4 Financial Evaluation

TABLE A-7.4.1 Farm Budget per Farm Unit Financial

7.5 Socio-economic Impact

7.6 Comprehensive Evaluation



### 7.3 ECONOMIC EVALUATION

FIG A-7.3.1 EIRR by Pump Discharge, QT-D Area

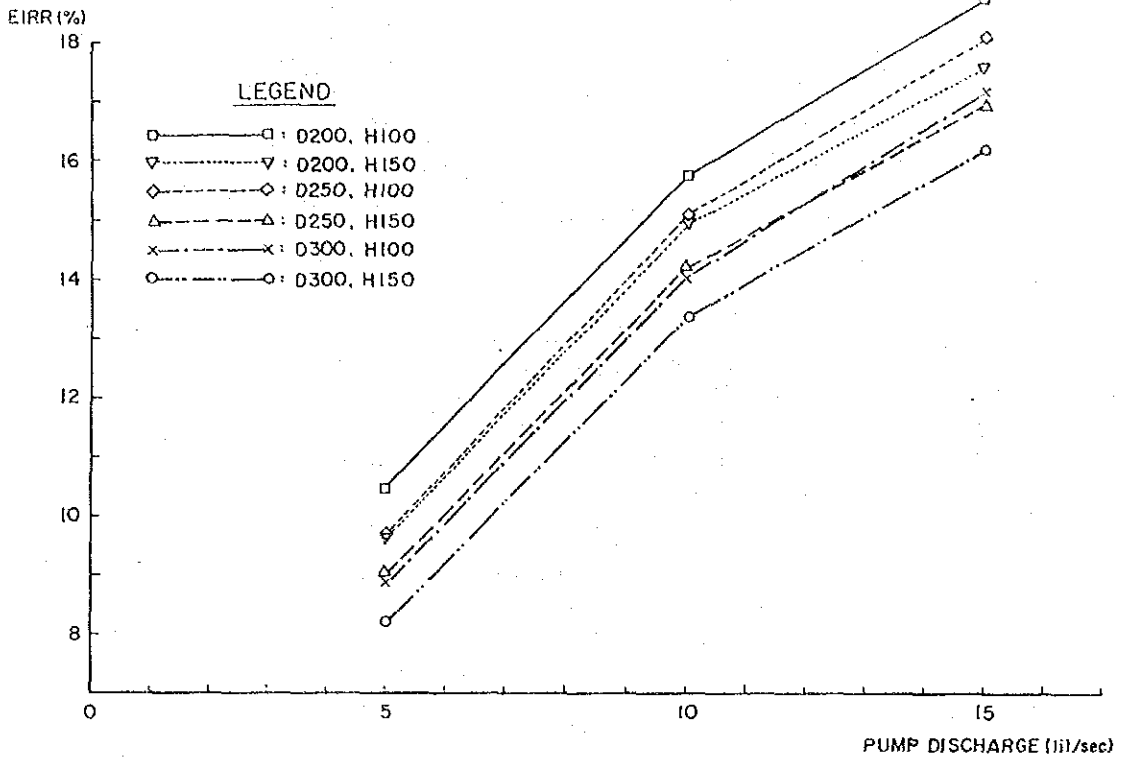
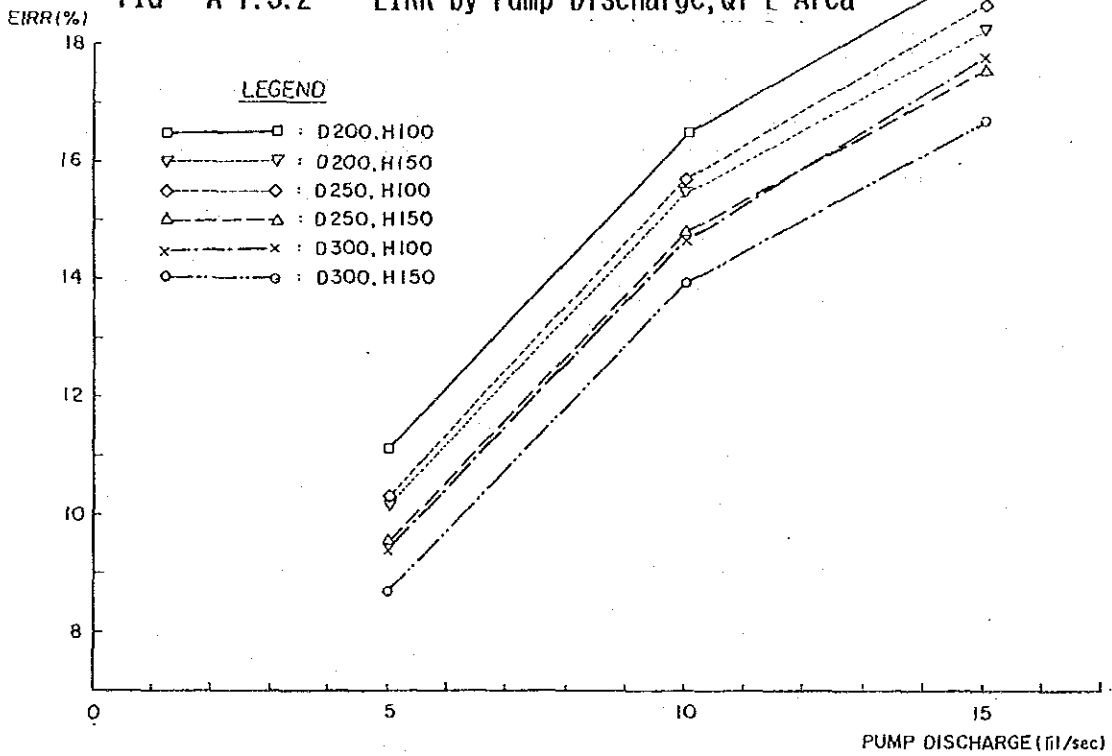


FIG A-7.3.2 EIRR by Pump Discharge, QT-E Area



Note; D:Drilling Depth in Meters

H:Pump Head in Meters

FIG A-7.3.3 EIRR by Pump Discharge, KL-B Area

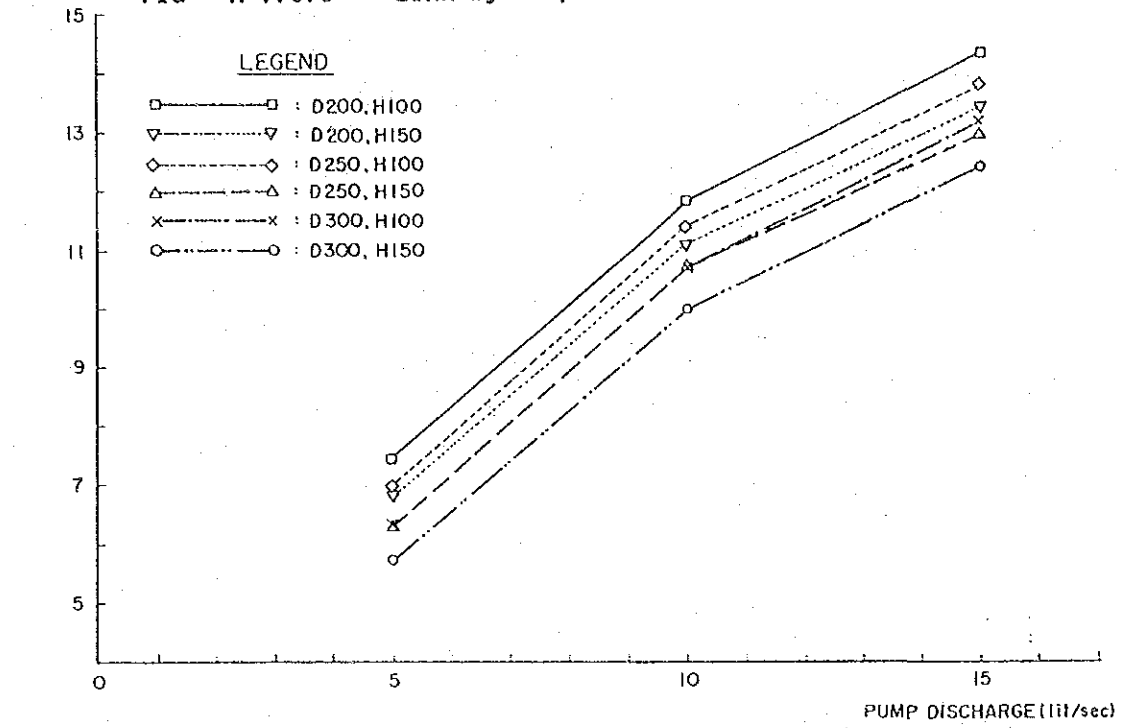
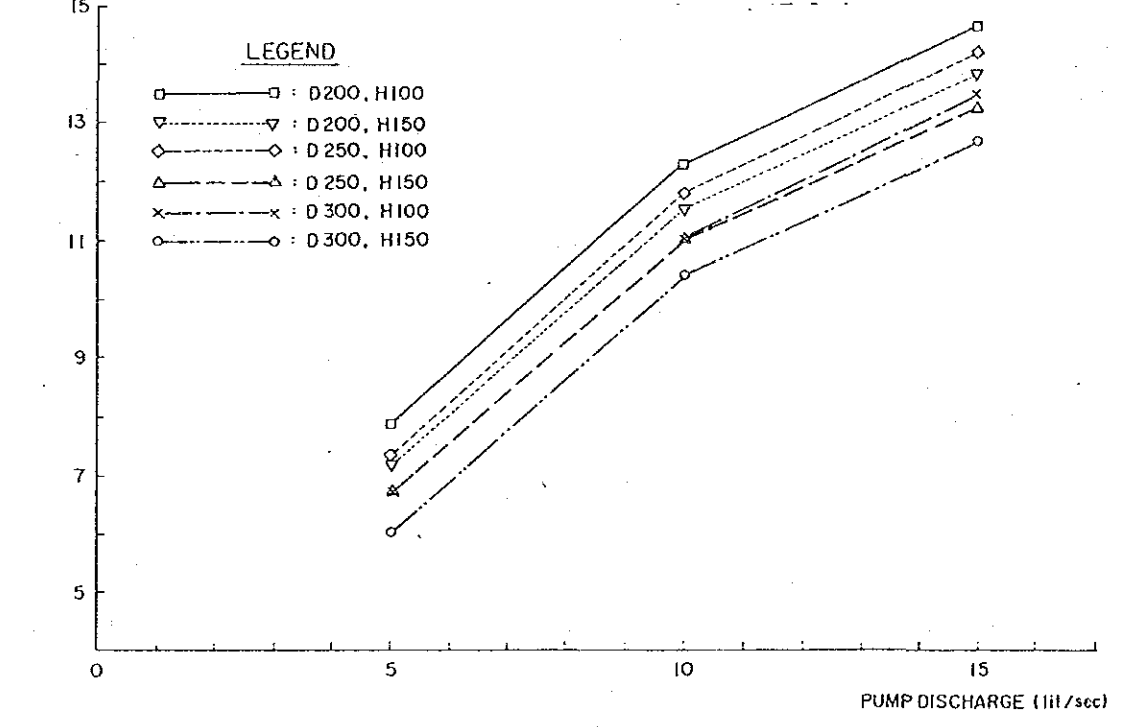


FIG A-7.3.4 EIRR by Pump Discharge, KL-C Area



Note; D:Drilling Depth in Meters  
H:Pump Head in Meters

FIG A-7.3.5 ENPV by Pump Discharge, QT-D Area

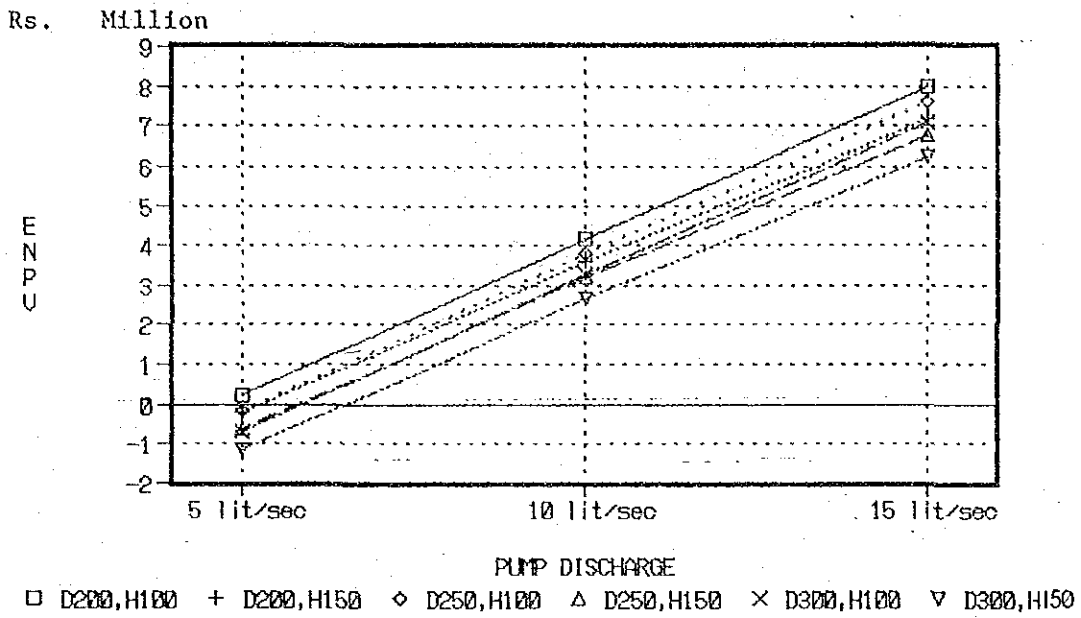
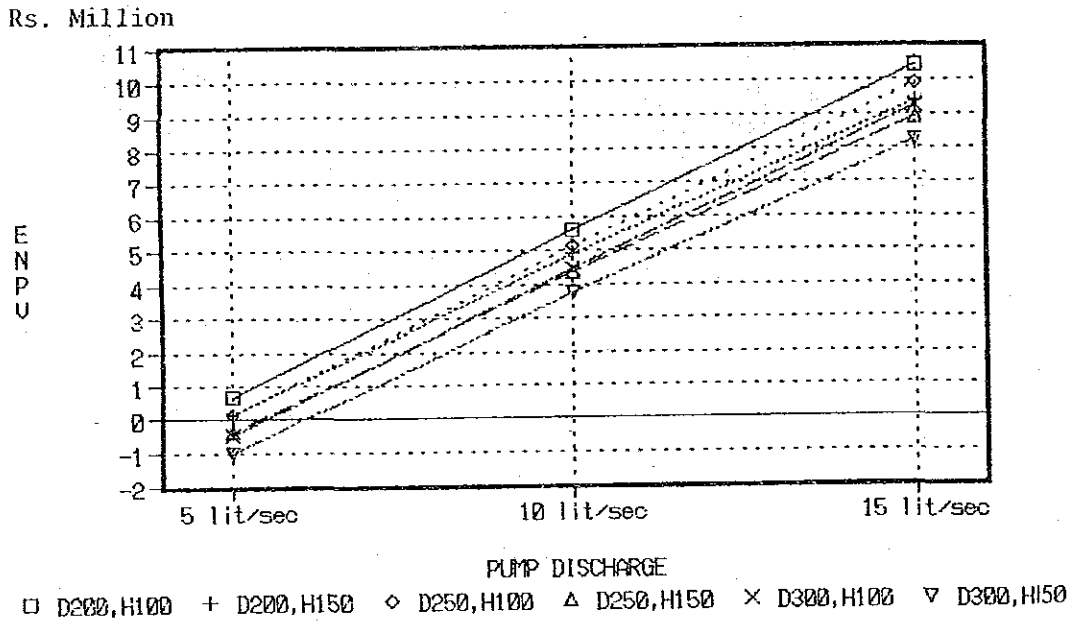


FIG A-7.3.6 ENPV by Pump Discharge, QT-E Area



Note; D:Drilling Depth in Meters  
H:Pump Head in Meters

FIG A-7.3.7 ENPV by Pump Discharge, KL-B Area

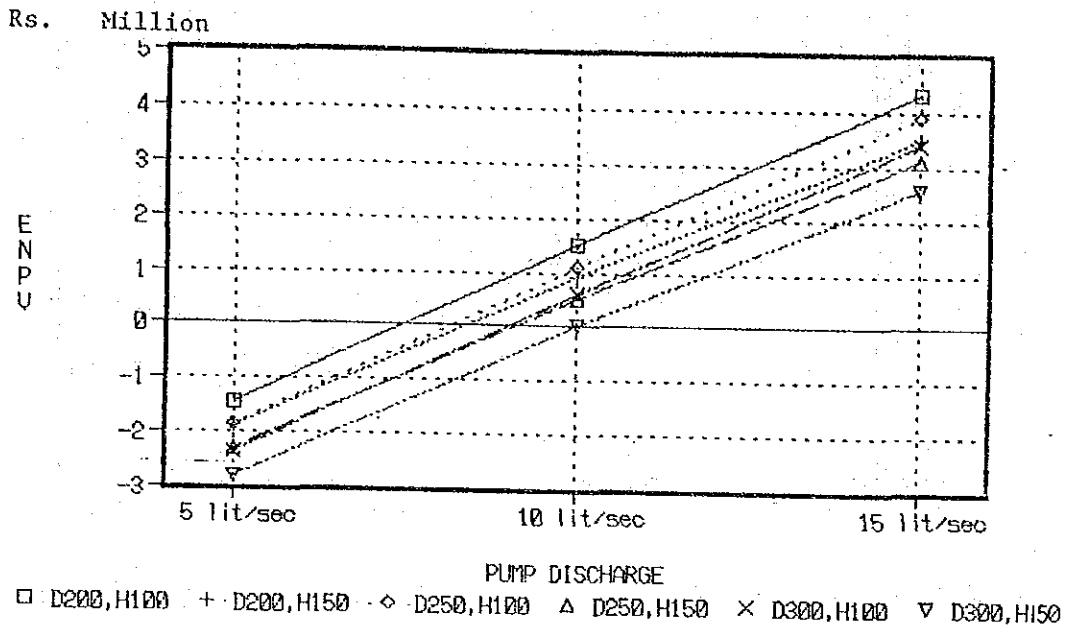
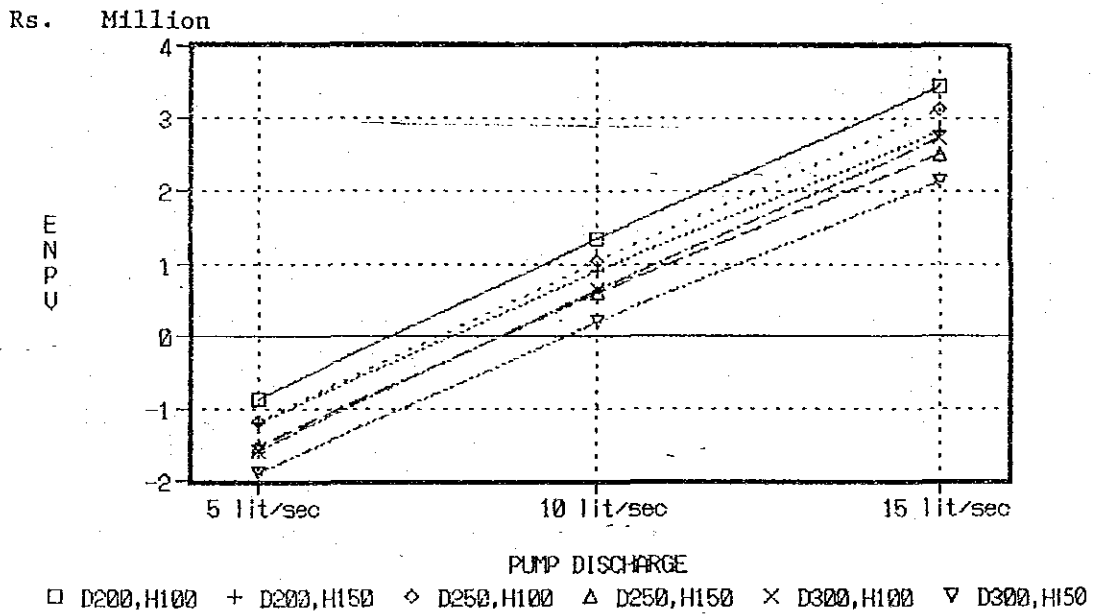


FIG A-7.3.8 ENPV by Pump Discharge, KL-C Area



Note; D:Drilling Depth in Meters  
H:Pump Head in Meters

FIG A-7.3.9 B/C Ratio by Pump Discharge, QT-D Area  
QT-D

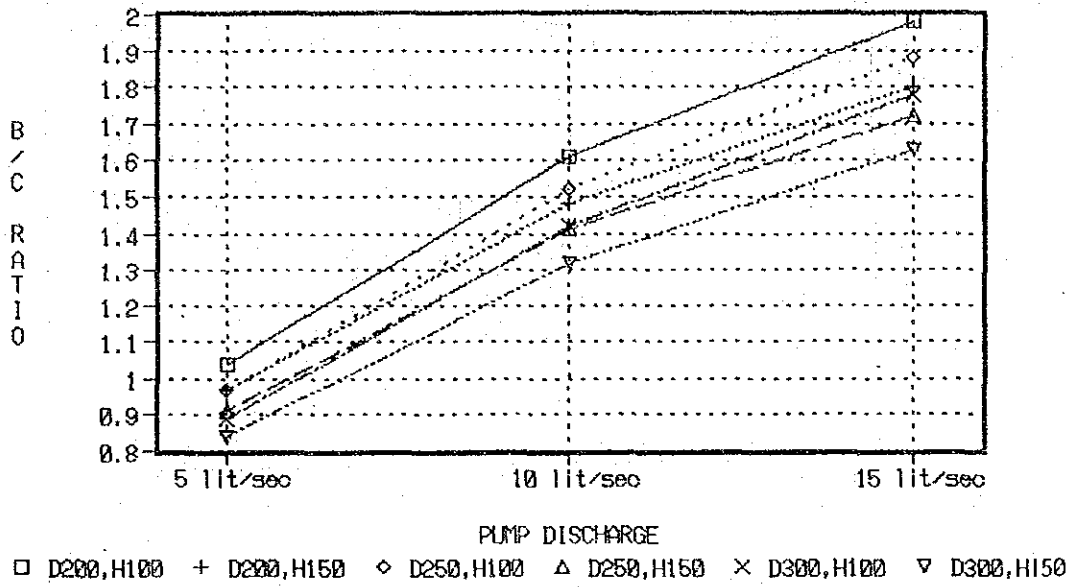
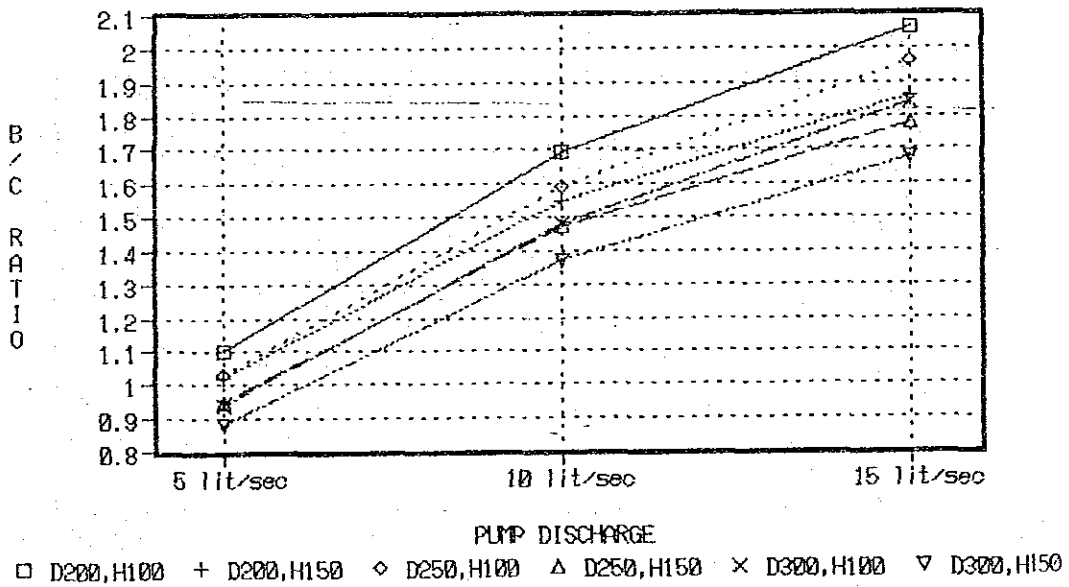


FIG A-7.3.10 B/C Ratio by Pump Discharge, QT-E Area



Note; D:Drilling Depth in Meters  
H:Pump Head in Meters

FIG A-7.3.11 B/C Ratio by Pump Discharge, KL-B Area

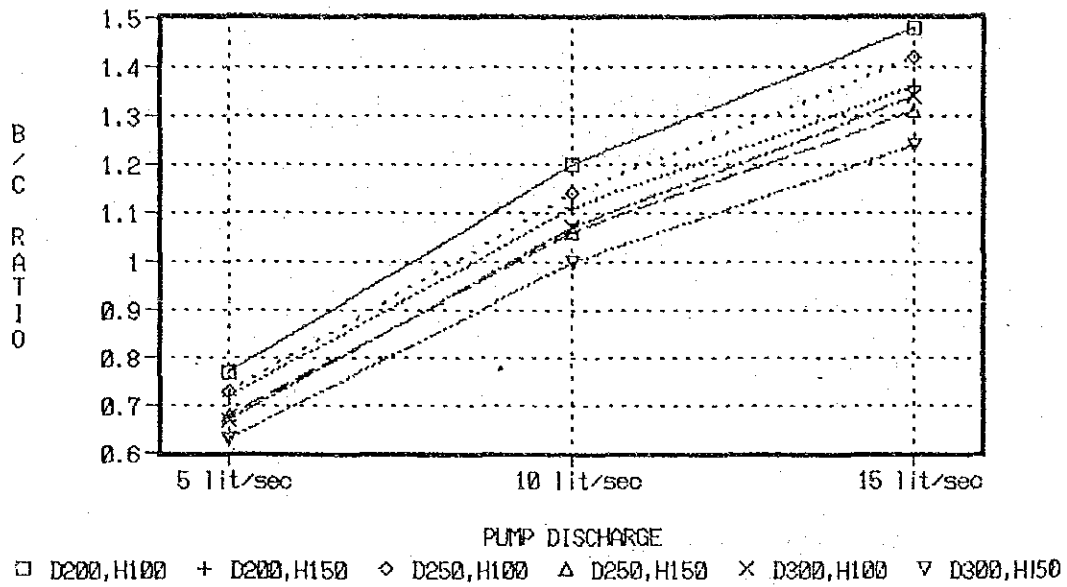
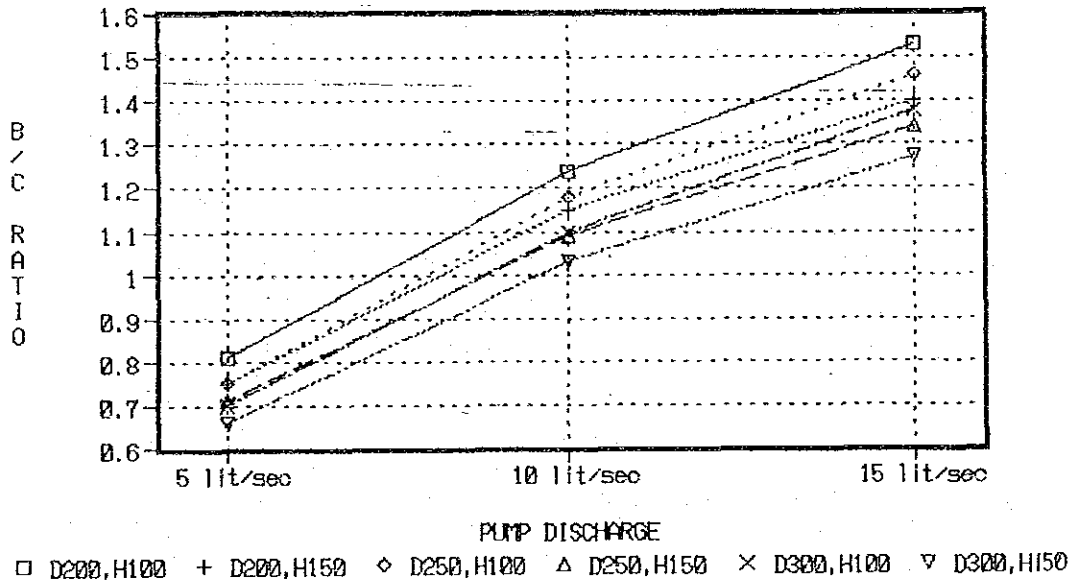


FIG A-7.3.12 B/C Ratio by Pump Discharge, KL-C Area



Note; D:Drilling Depth in Meters  
H:Pump Head in Meters

TABLE A-7.3.1 Financial and Economic Price of  
Agriculture Inputs and Outputs 1/  
( Constant, Sept.1987 Currency)

I t e m	Financial	Economic
<b>I. Input</b>		
<b>A Seeds(Rs.per kg) <u>2/</u></b>		
Onion	120	108
Carrot	25	22.5
Cabbage	55	49.5
Broad Bean	10	9
Chillies	50	45
Potato	4.0	3.6
Tomato	0.1	0.1
Apple(Rs.per seeding)	10	9
Grapes(Rs.per seeding)	5	4.5
<b>B Fertilizers(Rs.per kg)</b>		
Manure	0.5	0.5
Compost	0.5	0.5
DAP	4.3	4.3
Urea	2.9	3.0
Kcl	2.5	2.4
<b>C.Others</b>		
Labour(Rs.per manday) <u>3/</u>	30	24
Camel(Rs.per six hours)	65	65
Tractor(Rs.per hour)	65	65
<b>II. Output(Rs.per mt) <u>4/</u></b>		
Onion	2,016	1,935
Carrot	1,568	1,505
Cabbage	2,016	1,935
Broad Bean	4,480	4,301
Chillies	5,550	5,328
Potato	2,016	1,935
Tomato	1,764	1,693
Apple	5,040	4,838
Grape	4,355	4,181

Notes : 1/ Economic prices for internationally traded commodities (fertilizers) are based on the February 1987 World Bank Commodity Price Forecasts for 1990 prices in 1985 constant US dollar adjusted to 1987 constant US dollar using MUV index of 1.201

2/ Standard Conversion factor of 0.90 is assumed for conversion of the economic prices.

3/ Assumes a labour conversion factor of 0.80.

4/ Assumes a consumption conversion factor of 0.96

TABLE A-7.3.2 Price Structure of Urea

I t e m	Unit	Constant 1987 Price		
		Financial	CIF	Economic
1. Projected 1990 World Market Price <u>1/</u>	US\$/ton	214	-	214
2. Ocean Freight and insurance	US\$/ton	25	-	25
3. Export Price FOB at Karachi	US\$/ton	189	-	189
	Rs/ton	3,308	-	3,308
4. Exporter's Margin <u>2/</u>	Rs/ton	50	0.9	45
5. Transport to the Project area <u>3/</u>	Rs/ton	248	0.78	193
6. Whole Saler's Price	Rs/ton	3,010	-	3,070
7. Retailer's Margin <u>4/</u>	Rs/ton	110	0.78	86
8. Farm Gate Price	Rs/ton	2,900	-	2,984
9. Farm Gate Price of Nutrient <u>5/</u>	Rs/ton	6,304	-	6,487

Notes : 1/February 1987 World Bank Commodity Price Forecast for 1990  
Price in 1985 constant US dollar adjusted to 1987 constant  
US dollar using MUV index of 1.201

Price Basis, bagged FOB NW, Europe

2/includes port charge, handling, administration, warehouse  
charges

3/includes rail road handling charges, freight charges and  
transport to wholesale center.

4/includes transport to retail center and handling charges.

5/N=46%



TABLE A-7.3.3 Price Structure of DAP and KCl

I t e m	Unit	Constant 1987 Price				
		Financial		CIF	Economic	
		DAP	KCl		DAP	KCl
1. Projected 1990 World Market Price <u>1/</u>	US\$/ton	225	88	-	225	88
2. Ocean Freight and insurance	US\$/ton	30	30	-	30	30
3. Export Price FOB at Karachi	US\$/ton	255	118	-	255	118
	Rs/ton	3,938	2,065	-	3,938	2,065
4. Exporter's Margin <u>2/</u>	Rs/ton	50	50	0.90	45	45
5. Transport to the Project area <u>3/</u>	Rs/ton	248	248	0.78	193	193
6. Whole Saler's Price	Rs/ton	4,236	2,363	-	4,176	2,303
7. Retailer's Margin <u>4/</u>	Rs/ton	110	110	0.78	86	86
8. Farm Gate Price	Rs/ton	4,346	2,473	-	4,262	2,389
9. Farm Gate Price of Nutrient <u>5/</u>	Rs/ton	9,448	4,122	-	9,265	3,982

Notes : 1/February 1987 World Bank Commodity Price Forecast for 1990  
 Price in 1985 constant US dollar adjusted to 1987 constant  
 US dollar using MUV index of 1.201  
 Price Basis;

(1) DAP (Diammonium Phosphate), bulk FOB at US, Gulf

(2) KCl (Potassium Chloride), bulk, FOB Vancouver

2/includes port charge, handling, administration, warehouse charges

3/includes rail road handling, freight charges and transport to wholesale center.

4/includes transport to retail market and farm gate, retailing cost

5/DAP=46%, KCl=60%

TABLE A-7.3.4 Crop Budget per Hechare (without Project)

Item	Unit Price		Wheat		Cumin		Sorghum		Barley		
	Fin.	Eco.	Qty.	Fin.	Ecn.	Qty.	Fin.	Eco.	Qty.	Fin.	Eco.
1. Yield (t/ha)	-	-	1.05	-	-	0.284	-	-	0.632	-	-
2. Farm Gate Price (Rs/t)	-	-	-	2,00	1,920	-	18,816	0.475	-	-	-
3. Gross Production Value (Rs/t)	-	-	-	2,100	2,016	-	5,344	-	1,500	1,440	2,000
4. Production Cost (Rs/kg)	-	-	-	-	-	-	-	-	708	680	1,264
a) Seed											
Wheat	2.5	2.3	65.3	163	150	-	-	-	-	-	-
Cumin	30.0	27.0	-	-	-	10.7	306	-	-	-	-
Sorghum	2.5	2.3	-	-	-	-	-	32	80	74	-
Barley	2.5	2.3	-	-	-	-	-	-	-	-	-
b) Labour (man-day)	30.0	24.0	15.0	450	360	107.5	3,225	5	150	120	114
c) Camel (animal-day)	65.0	65.0	2.5	163	163	-	-	2.5	163	163	240
d) Tractor (hour)	65.0	65.0	4.2	273	273	4.2	273	4.2	273	273	163
e) Total Production Cost (Rs)	-	-	-	1,049	946	-	3,804	-	666	630	790
5. Net Production Value (Rs)	-	-	-	1,051	1,070	-	1,762	-	42	50	404

TABLE A-7.3.5 Crop Budget per Hechare (with Project)

Item	Unit Price		Onion		Carrot		Cabbage				
	Fin.	Eco.	Qty.	Fin.	Eco.	Qty.	Fin.	Eco.			
1. Yield (t/ha)	-	-	17.0	-	-	18.0	-	-	17.0	-	-
2. Farm Gate Price(Rs/t)	-	-	-	2,016	1,935	-	1,568	1,505	-	2,016	1,935
3. Gross Production Value(Rs/t)	-	-	-	34,272	32,895	-	28,224	27,090	-	34,272	32,875
4. Production Cost(Rs/kg)											
a) Seed											
Onion	120	108	12.5	1,500	1,350	-	-	-	-	-	-
Carrot	25	22.5	-	-	-	5.0	125	113	-	-	-
Cabbage	55	49.5	-	-	-	-	-	-	1.8	99	89
b) Fertilizer											
150-150-150	6.3/9.4/4.1	4.1	150	2,970	2,955	-	-	-	-	-	-
Manure	0.5	0.5	10,000	5,000	5,000	5,000	2,500	2,500	5,000	2,500	2,500
Urea	2.9	3.0	-	-	-	250	725	750	125	538	538
DAP	4.3	4.3	-	-	-	125	538	538	-	272	245
c) Agro-chemical											
d) Labour (man-day)	30.0	24.0	324	9,720	7,776	354	10,620	8,496	364	10,920	8,736
e) Camel (animal-day)	65.0	65.0	0.3	20	20	2.7	176	176	3.3	215	215
f) Tractor (hour)	65.0	65.0	9.8	637	637	9.6	624	624	9.8	637	637
g) Spraying	-	-	18	1,450	1,305	-	400	360	-	-	-
h) Miscellaneous	-	-	-	-	-	-	-	-	-	-	-
i) Total Production Cost (Rs)	-	-	-	21,297	19,043	-	15,708	13,557	-	15,906	13,710
5. NPV (RS)	-	-	-	12,975	13,852	-	12,516	13,533	-	18,366	19,185

TABLE A-7.3.6 Crop Budget per Hechare (with Project)

Item	Unit Price		Broad Bean		Chillies		Potato	
	Fin.	Eco.	Qty.	Fin.	Eco.	Qty.	Fin.	Eco.
1. Yield (t/ha)	-	-	10.0	-	-	7.5	-	15.0
2. Farm Gate Price(Rs/t)	-	-	-	4,480	4,301	-	5,550	5,328
3. Gross Production Value(Rs/t)	-	-	-	44,800	43,010	-	41,625	39,960
4. Production Cost(Rs/kg)	-	-	-	-	-	-	-	-
a) Seed								
Broad Bean	10	9	10.0	1,000	900	-	-	-
Chillies	50	45	-	-	-	5.4	270	243
Potato	4	3.6	-	-	-	-	-	-
b) Fertilizer								
225-150-113	6.3/9.4/4.1	6.2/4.3/4.0	-	-	-	-	-	-
Manure	0.5	0.5	10,000	5,000	5,000	2,500	2,500	2,500
Urea	2.9	3.0	250	725	750	250	725	750
DAP	4.3	4.3	125	538	538	125	538	538
c) Agro-chemical								
d) Labour(man-day)	30.0	24.0	307	9,210	7,368	410	12,300	9,840
e) Cammel(animal-day)	65.0	65.0	2.7	176	176	2.7	176	176
f) Tractor(hour)	65.0	65.0	9.6	624	624	9.6	624	624
g) Spraying	-	-	-	-	-	-	-	-
h) miscellaneous	-	-	-	-	-	-	-	-
i) Total Production Cost (Rs)	-	-	-	18,136	16,133	-	17,996	15,448
5. Net Production Value(Rs)	-	-	-	26,664	26,877	-	23,629	24,512
	-	-	-	-	-	-	25,354	23,034
	-	-	-	-	-	-	4,886	5,991

TABLE A-7.3.7 Crop Budget per Hectare (With Project)

Item	Unit		Price		Tomato			Apple			Grape		
	Fin	Rs/kg	Eco	Rs/kg	Qty	Fin	Eco	Qty	Fin	Eco	Qty	Fin	Eco
1. Yield (t/ha)	-	-	-	-	17	-	-	18	-	-	13	-	-
2. Farm Gate Price (Rs/t)	-	-	-	-	-	1,764	1,693	-	5,040	4,838	-	4,355	4,181
3. Gross Production Value (Rs/t)	-	-	-	-	-	29,988	28,781	-	90,720	87,084	-	56,615	54,353
4. Production Cost	Rs/kg	Rs/kg											
a). Seed													
- Tomato	0.1	0.1			25,000	2,500	2,500	-	-	-	-	-	-
- Apple	10	9			-	-	-	6	60	54	-	-	-
- Grape	5	4.5			-	-	-	-	-	-	31	155	140
b). Fertilizer													
-225-150-150	6.3/9.4/4.1	6.5/9.3/4.0			525	3,443	3,443	525	3,443	3,443	-	-	-
-Manure	0.5	0.5			5,000	2,500	2,500	10,000	5,000	5,000	10,000	5,000	5,000
-300-225-150.	6.3/9.4/4.1	6.5/9.3/4.0			-	-	-	-	-	-	675	4,620	4,620
c). Agro-chemical													
d). Labor	30	24			441	13,230	10,584	780	23,400	18,720	782	23,460	18,768
e). Camel	65	65			2.7	176	176	-	-	-	-	-	-
f). Tractor	65	65			9.8	637	637	-	-	-	-	-	-
g). Spraying	-	-			-	1,675	1,508	-	2,938	2,644	-	900	810
h). Miscellaneous	-	-			-	-	-	630	5,040	4,536	1,040	4,160	3,744
Total Production Cost	-	-			-	24,161	21,348	-	39,881	34,397	-	38,295	33,082
5. NPV	-	-			-	5,827	7,433	-	50,839	52,687	-	18,320	21,271

TABLE A-7.3.8 Economic Crop Benefit (With Project)

	N.P.V (Rs/ha)	QT-D		QT-E		KL-B		KL-C	
		Planted Area (ha)	N.P.V (Rs.10 <sup>3</sup> Rs)	Planted Area (ha)	N.P.V (Rs.10 <sup>3</sup> Rs)	Planted Area (ha)	N.P.V (Rs.10 <sup>3</sup> Rs)	Planted Area (ha)	N.P.V (Rs.10 <sup>3</sup> Rs)
1. Without Project									
- Wheat	1,070	54.0	57.8	22.5	24.1	18.0	19.3	40.5	43.3
- Cumin	2,216	3.0	6.6	1.25	2.8	1.0	2.2	2.25	5.0
- Sorghum	50	3.0	0.2	1.25	0.1	1.0	0.1	2.25	0.1
- Barley	423	6.0	2.5	2.5	1.1	2.0	0.8	4.5	1.9
Total	-	66.0	67.1	27.5	28.1	22.0	22.4	49.5	50.3
2. With Project									
- Onion	13,852	16.8	232.7	7.0	97.0	7.2	99.7	16.2	224.4
- Carrot	13,533	16.8	227.4	7.0	94.7	3.2	43.3	7.2	97.4
- Cabbage	19,185	18.0	345.3	7.5	143.9	-	-	-	-
- Broad Bean	26,877	16.8	451.5	7.0	188.1	6.8	182.8	15.3	411.2
- Chillies	24,512	16.8	411.8	7.0	171.6	-	-	-	-
- Potato	5,991	-	-	-	-	3.2	19.2	7.2	43.1
- Tomato	7,433	-	-	-	-	3.2	23.8	7.2	53.5
- Apple	52,687	7.2	379.3	3.0	158.1	4.0	210.7	9.0	474.2
- Grape	21,271	7.2	153.2	3.0	63.8	4.0	85.1	9.0	191.4
Total	-	99.6	2,201.2	41.5	917.2	31.6	664.6	71.1	1,495.2
3. Incremental Benefit			2,134.1		889.1		642.2		1,444.9

TABLE A-7.3.9 EIRR, ENPV and B/C Ratio

(Unit: EIRR.- %, ENPV.-  $10^3$ Rs )

Case	Drilling Depth: 200m			Drilling Depth: 250m			Drilling Depth: 300m		
	EIRR	ENPV	B/C	EIRR	ENPV	B/C	EIRR	ENPV	B/C
QT-D-1	10.5	228	1.04	9.7	-174	0.97	8.8	-694	0.89
2	9.6	-208	0.97	8.9	-611	0.91	8.1	-1,130	0.84
3	15.8	4,188	1.61	15.0	3,785	1.52	14.1	3,264	1.42
4	14.9	3,596	1.48	14.1	3,193	1.41	13.3	2,672	1.32
5	18.8	8,002	1.98	18.1	7,600	1.88	17.2	7,080	1.78
6	17.6	7,182	1.80	17.0	6,780	1.72	16.1	6,260	1.63
QT-E-1	11.1	684	1.10	10.3	181	1.03	9.3	-469	0.94
2	10.2	140	1.02	9.5	-364	0.95	8.6	-1,014	0.88
3	16.5	5,633	1.69	15.7	5,129	1.59	14.7	4,479	1.48
4	15.5	4,893	1.55	14.7	4,390	1.47	13.8	3,739	1.37
5	19.5	10,402	2.06	18.7	9,898	1.96	17.7	9,249	1.84
6	18.2	9,377	1.86	17.5	8,873	1.78	16.6	8,222	1.68
KL-B-1	7.5	-1,439	0.77	6.9	-1,842	0.73	6.3	-2,361	0.67
2	6.8	-1,875	0.72	6.3	-2,277	0.68	5.7	-2,797	0.63
3	11.9	1,515	1.20	11.4	1,111	1.14	10.7	592	1.07
4	11.1	923	1.11	10.6	519	1.06	10.0	0	1.00
5	14.4	4,324	1.48	13.8	3,922	1.42	13.2	3,402	1.34
6	13.4	3,504	1.36	12.9	3,101	1.31	12.4	2,581	1.24
KL-C-1	7.9	-881	0.81	7.3	-1,183	0.75	6.6	-1,573	0.70
2	7.2	-1,208	0.75	6.6	-1,510	0.71	6.0	-1,900	0.66
3	12.3	1,334	1.24	11.7	1,032	1.18	11.0	642	1.10
4	11.5	890	1.15	11.0	587	1.09	10.3	198	1.03
5	14.7	3,440	1.53	14.2	3,138	1.46	13.5	2,749	1.38
6	13.8	2,826	1.40	13.2	2,523	1.34	12.6	2,134	1.27

TABLE A-7.3.10 Project Cost and Benefits  
Baluchistan Groundwater Irrigation Project, Case QT-D

( UNIT : 1,000 RS )

YEAR	PROJECT COST			BENEFITS	RETURN	PRESENT WORTH VALUE BY DISCOUNT RATE					
	CAPITAL	O & M	TOTAL			10 X (COST)	10 X (BENEFITS)	15 X (COST)	15 X (BENEFITS)	20 X (COST)	20 X (BENEFITS)
1 1988	7938.2	0.0	7938.2	-67.2	-8005.4	7938.20	-67.20	7938.20	-67.20	7938.20	-67.20
2 1989	0.0	34.1	34.1	1177.2	1143.1	28.18	972.89	25.78	890.13	23.68	817.50
3 1990	0.0	34.1	34.1	1512.0	1477.9	25.82	1135.99	22.42	994.17	19.73	875.00
4 1991	0.0	34.1	34.1	1693.2	1659.1	23.29	1156.48	19.50	968.10	16.44	816.55
5 1992	0.0	34.1	34.1	1724.4	1690.3	21.17	1070.72	16.95	857.33	13.70	693.00
6 1993	0.0	34.1	34.1	1792.8	1758.7	19.25	1011.99	14.74	775.08	11.42	600.41
7 1994	0.0	34.1	34.1	1915.2	1881.1	17.50	982.81	12.82	720.00	9.52	534.50
8 1995	0.0	34.1	34.1	2006.4	1972.3	15.91	936.01	11.15	655.90	7.93	466.63
9 1996	0.0	34.1	34.1	2134.8	2100.7	14.46	905.37	9.69	606.85	6.61	413.74
10 1997	0.0	34.1	34.1	2173.2	2139.1	13.15	837.87	8.43	537.19	5.51	350.99
11 1998	0.0	796.2	796.2	2210.4	2176.3	10.87	704.31	6.37	415.14	3.82	247.91
12 1999	0.0	34.1	34.1	2210.4	2176.3	9.08	640.28	5.54	359.25	3.19	206.59
13 2000	0.0	34.1	34.1	2210.4	2176.3	8.98	582.07	4.82	312.40	2.66	172.16
14 2001	0.0	34.1	34.1	2210.4	2176.3	8.16	529.16	4.19	271.65	2.21	143.47
15 2002	0.0	34.1	34.1	2210.4	2176.3	7.42	481.05	3.64	236.22	1.84	119.56
16 2003	0.0	34.1	34.1	2210.4	2176.3	6.75	437.32	3.17	205.41	1.54	99.63
17 2004	0.0	34.1	34.1	2210.4	2176.3	6.13	397.57	2.76	178.61	1.28	83.03
18 2005	0.0	34.1	34.1	2210.4	2176.3	5.58	361.42	2.40	155.32	1.07	69.19
19 2006	0.0	34.1	34.1	2210.4	2176.3	5.07	328.57	2.08	135.06	0.89	57.66
20 2007	0.0	796.2	796.2	2210.4	2176.3	107.59	298.70	42.30	117.44	17.31	48.05
21 2008	0.0	34.1	34.1	2210.4	2176.3	4.19	271.54	1.58	102.12	0.62	40.04
22 2009	0.0	34.1	34.1	2210.4	2176.3	3.81	246.86	1.37	88.80	0.51	35.37
23 2010	0.0	34.1	34.1	2210.4	2176.3	3.46	224.42	1.19	77.22	0.43	27.81
24 2011	0.0	34.1	34.1	2210.4	2176.3	3.15	204.02	1.04	67.15	0.36	23.17
25 2012	0.0	34.1	34.1	2210.4	2176.3	2.86	185.47	0.90	58.39	0.30	19.31
26 2013	0.0	34.1	34.1	2210.4	2176.3	2.60	168.61	0.78	50.77	0.25	16.09
27 2014	0.0	34.1	34.1	2210.4	2176.3	2.36	153.28	0.68	44.15	0.21	13.41
28 2015	0.0	34.1	34.1	2210.4	2176.3	2.15	139.35	0.59	38.39	0.17	11.17
29 2016	0.0	34.1	34.1	2210.4	2176.3	1.95	126.68	0.52	33.36	0.14	9.31
30 2017	0.0	34.1	34.1	2210.4	2176.3	1.76	115.34	0.46	29.31	0.11	7.81
TOTAL	7938.2	2513.1	10451.3	60270.0	49818.7	8598.76	16198.34	8336.75	10357.53	8198.70	7239.52

BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 1.88 (10X), 1.24 (15X), 0.88 (20X)  
INTERNAL RATE OF RETURN (IRR) = 18.1 X

TABLE A-7.3.11 Project Cost and Benefits  
Baluchistan Groundwater Irrigation Project, Case QT-E

( UNIT : 1,000 RS )

YEAR	PROJECT COST			BENEFITS	RETURN	PRESENT WORTH VALUE BY DISCOUNT RATE					
	CAPITAL	O & M	TOTAL			8 X (COST)	8 X (BENEFITS)	10 X (COST)	10 X (BENEFITS)	12 X (COST)	12 X (BENEFITS)
1 1988	6403.9	0.0	6403.9	-28.0	-6431.9	6403.90	-28.00	6403.90	-28.00	6403.90	-28.00
2 1989	0.0	31.1	31.1	554.5	523.4	26.66	475.39	25.70	458.26	24.79	442.04
3 1990	0.0	31.1	31.1	694.0	662.9	24.69	550.92	23.37	521.41	22.14	493.98
4 1991	0.0	31.1	31.1	769.5	736.4	22.86	565.61	21.24	525.58	19.76	489.03
5 1992	0.0	31.1	31.1	782.5	751.4	21.17	532.56	19.31	485.87	17.65	444.01
6 1993	0.0	31.1	31.1	811.0	779.9	19.60	511.07	17.56	457.79	15.76	410.88
7 1994	0.0	31.1	31.1	862.0	830.9	18.15	502.97	15.96	442.34	14.07	389.93
8 1995	0.0	31.1	31.1	900.0	868.9	16.80	486.24	14.51	419.86	12.56	363.50
9 1996	0.0	31.1	31.1	953.5	922.4	15.56	476.99	13.19	404.38	11.22	343.84
10 1997	0.0	31.1	31.1	969.5	938.4	14.41	449.07	11.99	373.79	10.01	312.15
11 1998	0.0	1031.6	1031.6	985.0	-46.6	442.44	422.45	361.57	345.24	296.56	283.17
12 1999	0.0	31.1	31.1	985.0	953.9	12.35	391.16	9.91	313.85	7.98	252.83
13 2000	0.0	31.1	31.1	985.0	953.9	11.44	362.19	9.01	285.32	7.13	225.74
14 2001	0.0	31.1	31.1	985.0	953.9	10.59	335.36	8.19	259.38	6.36	201.55
15 2002	0.0	31.1	31.1	985.0	953.9	9.80	310.52	7.45	235.80	5.68	179.96
16 2003	0.0	31.1	31.1	985.0	953.9	9.08	287.51	6.77	214.37	5.07	160.48
17 2004	0.0	31.1	31.1	985.0	953.9	8.41	266.22	6.15	194.88	4.53	143.66
18 2005	0.0	31.1	31.1	985.0	953.9	7.78	246.50	5.59	177.16	4.04	128.09
19 2006	0.0	31.1	31.1	985.0	953.9	7.21	228.24	5.09	161.06	3.61	114.37
20 2007	0.0	31.1	31.1	985.0	953.9	6.67	211.33	4.62	146.42	3.22	102.11
21 2008	0.0	1031.6	1031.6	985.0	-46.6	204.94	195.68	139.40	133.11	95.49	91.17
22 2009	0.0	31.1	31.1	985.0	953.9	5.72	181.18	3.82	121.01	2.57	81.40
23 2010	0.0	31.1	31.1	985.0	953.9	5.30	167.66	3.47	110.01	2.29	72.68
24 2011	0.0	31.1	31.1	985.0	953.9	4.90	155.34	3.16	100.00	2.05	64.89
25 2012	0.0	31.1	31.1	985.0	953.9	4.54	143.83	2.87	90.91	1.83	57.94
26 2013	0.0	31.1	31.1	985.0	953.9	4.20	133.18	2.61	82.65	1.63	51.73
27 2014	0.0	31.1	31.1	985.0	953.9	3.89	123.31	2.37	75.14	1.46	46.19
28 2015	0.0	31.1	31.1	985.0	953.9	3.60	114.18	2.16	68.30	1.30	41.24
29 2016	0.0	31.1	31.1	985.0	953.9	3.34	105.72	1.96	62.10	1.16	36.82
30 2017	0.0	31.1	31.1	985.0	953.9	3.09	97.89	1.78	56.45	1.04	32.88
TOTAL	6403.9	2902.9	9306.8	26968.5	17661.7	7353.08	9002.35	7154.68	7294.46	7006.88	6030.26

BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 1.22 (8X), 1.02 (10X), 0.86 (12X)  
INTERNAL RATE OF RETURN (IRR) = 10.2 X



TABLE A-7.3.12

Project Cost and Benefits  
Baluchistan Groundwater Irrigation Project, Case KL-B

(UNIT : 1,000 RS)

YEAR	PROJECT COST			BENEFITS	RETURN	PRESENT WORTH VALUE BY DISCOUNT RATE					
	CAPITAL	O & M	TOTAL			5 % (COST)	5 % (BENEFITS)	8 % (COST)	8 % (BENEFITS)	10 % (COST)	10 % (BENEFITS)
1 1988	6260.1	0.0	6260.1	-22.4	-6282.5	6260.10	-22.40	6260.10	-22.40	6260.10	-22.40
2 1989	0.0	19.1	19.1	312.4	293.3	17.32	283.36	16.38	267.83	15.79	258.18
3 1990	0.0	19.1	19.1	386.4	367.3	16.50	333.79	15.16	306.74	14.35	290.31
4 1991	0.0	19.1	19.1	431.6	412.5	15.71	355.08	14.04	317.24	13.05	294.79
5 1992	0.0	19.1	19.1	448.8	429.7	14.97	351.65	13.00	305.65	11.86	278.67
6 1993	0.0	19.1	19.1	484.8	467.7	14.25	363.26	12.04	306.77	10.78	274.79
7 1994	0.0	19.1	19.1	554.4	535.3	13.57	394.00	11.14	323.49	9.80	284.50
8 1995	0.0	19.1	19.1	605.2	586.1	12.93	409.53	10.32	326.97	8.91	282.33
9 1996	0.0	19.1	19.1	674.8	657.7	12.31	436.28	9.55	338.57	8.10	287.03
10 1997	0.0	19.1	19.1	698.0	678.9	11.73	428.52	8.85	323.31	7.36	269.11
11 1998	0.0	589.8	589.8	719.2	129.4	344.85	420.51	252.96	308.45	206.72	252.08
12 1999	0.0	19.1	19.1	719.2	700.1	10.44	400.46	7.38	285.61	6.09	229.16
13 2000	0.0	19.1	19.1	719.2	700.1	10.13	381.41	7.02	264.45	5.53	208.33
14 2001	0.0	19.1	19.1	719.2	700.1	9.65	363.25	6.50	244.86	5.03	189.39
15 2002	0.0	19.1	19.1	719.2	700.1	9.19	345.95	6.02	226.72	4.57	172.17
16 2003	0.0	19.1	19.1	719.2	700.1	8.75	329.48	5.58	209.93	4.16	154.52
17 2004	0.0	19.1	19.1	719.2	700.1	8.33	313.79	5.16	194.38	3.78	142.28
18 2005	0.0	19.1	19.1	719.2	700.1	7.94	298.85	4.78	179.98	3.44	129.36
19 2006	0.0	19.1	19.1	719.2	700.1	7.56	284.62	4.43	166.65	3.12	117.60
20 2007	0.0	19.1	19.1	719.2	700.1	7.20	271.06	4.10	154.30	2.84	106.91
21 2008	0.0	589.8	589.8	719.2	129.4	211.71	258.16	117.17	142.87	79.70	97.19
22 2009	0.0	19.1	19.1	719.2	700.1	6.53	245.86	3.51	132.29	2.35	88.35
23 2010	0.0	19.1	19.1	719.2	700.1	6.22	234.16	3.25	122.49	2.13	80.32
24 2011	0.0	19.1	19.1	719.2	700.1	5.92	223.01	3.01	113.42	1.94	73.02
25 2012	0.0	19.1	19.1	719.2	700.1	5.64	212.39	2.79	105.02	1.76	66.38
26 2013	0.0	19.1	19.1	719.2	700.1	5.37	202.27	2.58	97.24	1.60	60.35
27 2014	0.0	19.1	19.1	719.2	700.1	5.12	192.64	2.39	90.04	1.46	54.86
28 2015	0.0	19.1	19.1	719.2	700.1	4.87	183.47	2.21	83.37	1.32	49.87
29 2016	0.0	19.1	19.1	719.2	700.1	4.64	174.73	2.05	77.19	1.20	45.34
30 2017	0.0	19.1	19.1	719.2	700.1	4.42	166.41	1.90	71.47	1.09	41.22
TOTAL	6260.1	1695.3	7955.4	18962.0	11006.6	7074.06	8835.65	6815.58	6084.70	6699.94	4858.01

BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 1.25 (5%), 0.89 (8%), 0.73 (10%)  
INTERNAL RATE OF RETURN (IRR) = 6.9 %

TABLE A-7.3.13

Project Cost and Benefits  
Baluchistan Groundwater Irrigation Project, Case KL-C

(UNIT : 1,000 RS)

YEAR	PROJECT COST			BENEFITS	RETURN	PRESENT WORTH VALUE BY DISCOUNT RATE					
	CAPITAL	O & M	TOTAL			10 % (COST)	10 % (BENEFITS)	15 % (COST)	15 % (BENEFITS)	20 % (COST)	20 % (BENEFITS)
1 1988	6699.6	0.0	6699.6	-50.4	-6750.0	6699.60	-50.40	6699.60	-50.40	6699.60	-50.40
2 1989	0.0	26.2	26.2	587.7	561.5	21.63	485.70	19.81	444.39	18.19	408.13
3 1990	0.0	26.2	26.2	754.2	728.0	19.68	566.64	17.23	495.90	15.16	436.46
4 1991	0.0	26.2	26.2	855.9	829.7	17.90	584.59	14.98	489.36	12.64	412.76
5 1992	0.0	26.2	26.2	894.6	868.4	16.27	555.48	13.03	444.78	10.53	359.52
6 1993	0.0	26.2	26.2	980.1	953.9	14.79	553.24	11.33	423.73	8.77	328.23
7 1994	0.0	26.2	26.2	1132.2	1106.0	13.44	581.00	9.85	425.64	7.31	315.98
8 1995	0.0	26.2	26.2	1246.5	1220.3	12.22	581.51	8.56	407.49	6.09	289.90
9 1996	0.0	26.2	26.2	1407.6	1381.4	11.11	596.96	7.45	400.13	5.08	272.80
10 1997	0.0	26.2	26.2	1455.3	1429.1	10.10	561.09	6.48	359.73	4.23	255.04
11 1998	0.0	597.8	597.8	1503.0	905.2	209.53	326.80	128.49	323.06	80.46	202.29
12 1999	0.0	26.2	26.2	1503.0	1476.8	8.35	478.91	4.90	280.92	2.94	168.57
13 2000	0.0	26.2	26.2	1503.0	1476.8	7.59	435.37	4.26	244.28	2.45	140.48
14 2001	0.0	26.2	26.2	1503.0	1476.8	6.90	395.79	3.70	212.42	2.04	117.06
15 2002	0.0	26.2	26.2	1503.0	1476.8	6.27	359.81	3.22	184.71	1.70	97.55
16 2003	0.0	26.2	26.2	1503.0	1476.8	5.70	327.10	2.80	160.62	1.42	81.29
17 2004	0.0	26.2	26.2	1503.0	1476.8	5.18	297.36	2.43	139.67	1.18	67.75
18 2005	0.0	26.2	26.2	1503.0	1476.8	4.71	270.33	2.12	121.45	0.98	56.45
19 2006	0.0	26.2	26.2	1503.0	1476.8	4.28	245.76	1.84	105.61	0.82	47.05
20 2007	0.0	26.2	26.2	1503.0	1476.8	3.89	223.42	1.60	91.84	0.68	39.20
21 2008	0.0	597.8	597.8	1503.0	905.2	80.78	203.10	31.76	79.86	12.99	32.67
22 2009	0.0	26.2	26.2	1503.0	1476.8	3.22	184.64	1.21	69.44	0.47	27.25
23 2010	0.0	26.2	26.2	1503.0	1476.8	2.93	167.66	1.05	60.38	0.40	22.69
24 2011	0.0	26.2	26.2	1503.0	1476.8	2.66	152.60	0.92	52.51	0.35	18.91
25 2012	0.0	26.2	26.2	1503.0	1476.8	2.42	138.72	0.80	45.66	0.27	15.76
26 2013	0.0	26.2	26.2	1503.0	1476.8	2.20	126.11	0.69	39.70	0.23	13.13
27 2014	0.0	26.2	26.2	1503.0	1476.8	2.00	114.65	0.60	34.52	0.19	10.94
28 2015	0.0	26.2	26.2	1503.0	1476.8	1.82	104.23	0.52	30.02	0.16	9.12
29 2016	0.0	26.2	26.2	1503.0	1476.8	1.65	94.75	0.46	26.11	0.13	7.60
30 2017	0.0	26.2	26.2	1503.0	1476.8	1.50	86.14	0.40	22.70	0.11	6.33
TOTAL	6699.6	1903.0	8602.6	39323.7	30721.1	7200.36	9949.26	7002.08	6164.22	6897.57	4190.48

BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 1.38 (10%), 0.88 (15%), 0.61 (20%)  
INTERNAL RATE OF RETURN (IRR) = 13.5 %

TABLE A-7.3.14

Project Cost and Benefits  
Overall Case

( UNIT : 1,000 RS )

YEAR	PROJECT COST			BENEFITS	RETURN	PRESENT WORTH VALUE BY DISCOUNT RATE					
	CAPITAL	O & M	TOTAL			(COST) 5%	(BENEFITS)	(COST) 10%	(BENEFITS)	(COST) 15%	(BENEFITS)
1 1988	27301.8	0.0	27301.8	-168.0	-27469.8	27301.80	-168.00	27301.80	-168.00	27301.80	-168.00
2 1989	0.0	110.5	110.5	2631.8	2521.3	100.23	2387.12	91.32	2195.04	83.55	1990.02
3 1990	0.0	110.5	110.5	3346.6	3236.1	95.45	2890.93	83.02	2514.35	72.66	2200.45
4 1991	0.0	110.5	110.5	3750.2	3639.7	90.91	3085.31	75.47	2561.45	63.18	2144.19
5 1992	0.0	110.5	110.5	3850.3	3739.8	86.58	3016.82	68.61	2390.74	54.94	1914.29
6 1993	0.0	110.5	110.5	4070.7	3960.2	82.46	3037.64	62.37	2297.82	47.77	1759.88
7 1994	0.0	110.5	110.5	4483.8	4353.3	78.53	3172.36	56.70	2290.65	41.54	1678.11
8 1995	0.0	110.5	110.5	4758.1	4647.6	74.79	3220.49	51.55	2219.70	38.12	1555.44
9 1996	0.0	110.5	110.5	5127.7	5017.2	71.23	3305.39	46.86	2174.66	31.41	1437.62
10 1997	0.0	110.5	110.5	5296.0	5185.5	67.84	3251.92	42.60	2041.85	27.31	1309.10
11 1998	0.0	3015.4	3015.4	5417.6	2402.2	1763.06	3167.59	1056.89	1898.85	648.14	1164.49
12 1999	0.0	110.5	110.5	5417.6	5307.1	61.53	3016.76	35.21	1726.23	20.65	1012.60
13 2000	0.0	110.5	110.5	5417.6	5307.1	58.60	2875.10	32.01	1569.30	17.96	880.52
14 2001	0.0	110.5	110.5	5417.6	5307.1	55.81	2736.29	29.10	1426.64	15.62	765.67
15 2002	0.0	110.5	110.5	5417.6	5307.1	53.15	2606.00	26.45	1296.95	13.58	665.80
16 2003	0.0	110.5	110.5	5417.6	5307.1	50.62	2481.90	24.05	1179.04	11.81	578.96
17 2004	0.0	110.5	110.5	5417.6	5307.1	48.21	2365.72	21.86	1071.86	10.27	505.44
18 2005	0.0	110.5	110.5	5417.6	5307.1	45.92	2251.16	19.87	974.42	8.93	437.78
19 2006	0.0	110.5	110.5	5417.6	5307.1	43.73	2143.97	18.07	885.84	7.76	380.67
20 2007	0.0	110.5	110.5	5417.6	5307.1	41.65	2041.88	16.43	805.31	6.75	331.02
21 2008	0.0	3015.4	3015.4	5417.6	2402.2	1082.38	1944.65	407.48	732.10	160.21	287.84
22 2009	0.0	110.5	110.5	5417.6	5307.1	37.78	1852.05	13.57	665.54	5.11	250.30
23 2010	0.0	110.5	110.5	5417.6	5307.1	35.98	1765.86	12.34	605.04	4.44	217.65
24 2011	0.0	110.5	110.5	5417.6	5307.1	34.26	1679.86	11.22	550.04	3.86	189.26
25 2012	0.0	110.5	110.5	5417.6	5307.1	32.63	1599.07	10.20	500.03	3.36	164.58
26 2013	0.0	110.5	110.5	5417.6	5307.1	31.08	1523.69	9.27	454.58	2.92	143.11
27 2014	0.0	110.5	110.5	5417.6	5307.1	29.60	1451.14	8.43	413.25	2.54	124.44
28 2015	0.0	110.5	110.5	5417.6	5307.1	28.19	1382.03	7.66	375.68	2.21	108.21
29 2016	0.0	110.5	110.5	5417.6	5307.1	26.85	1316.22	6.97	341.53	1.92	94.10
30 2017	0.0	110.5	110.5	5417.6	5307.1	25.57	1253.55	6.33	310.48	1.67	81.82
TOTAL	27301.8	9014.3	36316.1	145479.2	109163.1	31636.40	68648.69	29653.73	38280.99	28709.99	24223.37

BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 2.17 (5%), 1.29 (10%), 0.84 (15%)  
INTERNAL RATE OF RETURN (IRR) = 12.9%

7.4 FINANCIAL EVALUATION

TABLE A-7.4.1 Farm Budget per Farm Unit Financial

Item	QT-D		QT-E		KL-B		KL-C	
	w/o	w/	w/o	w/	w/o	w/	w/o	w/
Farm Size (Irrigable Area,ha)	(14.7)	14.7	(4.9)	4.9	(5.1)	5.1	(15.2)	15.2
<u>Planted Area (ha)</u>								
- Wheat	13.5	-	4.5	-	4.5	-	13.5	-
- Field Crops,Fodder	3.0	21.3	1.0	7.1	1.0	5.9	3.0	17.7
- Fruit	-	3.6	-	1.2	-	2.0	-	6.0
- Total	16.5	24.9	5.5	8.3	5.5	7.9	16.5	23.7
<u>Gross Income (Rs.1,000)</u>								
- Wheat	28.4	-	9.5	-	9.5	-	28.4	-
- Field Crops,Fodder	6.6	779.7	2.2	259.9	2.2	208.6	6.6	626.0
- Fruit	-	265.2	-	88.4	-	147.3	-	442.0
- Total	35.0	1,044.9	11.7	348.3	11.7	355.9	35.0	1,068.0
<u>Production Cost (Rs. 1,000)</u>								
- Wheat	14.2	-	4.7	-	4.7	-	14.2	-
-Field Crops,Fodder	4.6	378.8	1.5	126.3	1.5	121.3	4.6	364.0
- Fruit	-	140.7	-	46.9	-	78.2	-	234.5
- Total	18.8	519.5	6.3	173.2	6.3	199.5	18.8	598.5
Net Revenue (Rs 1,000)	16.2	525.4	5.4	175.1	5.4	156.4	16.2	469.5
Incremental Revenue (Rs. 1,000)		509.2		169.7		151.0		453.3

Note : w/o:Without Project,w/ ; With Project

## 8. BIBLIOGRAPHY

### I. GENERAL

1. Federal Bureau of Statistics(FBS), Pakistan Statistical Yearbook 1986
2. FBS, Statistical Pocket Book of Pakistan 1986
3. Government of Pakistan(GOP), Financial Division, Pakistan Economic Survey 1984-85
4. GOP, Planning Commission, The Sixth Five Year Plan 1983-88
5. Government of Baluchistan(GOB), Sixth Five Year Plan 1983-88
6. GOB Bureau of Statistics, Development Statistics of Baluchistan 1984-85
7. GOP, Ministry of Food, Agriculture and Cooperatives, Agricultural Statistics of Pakistan 1982
8. GOB, Directorate Agriculture, Agricultural Statistics of Baluchistan 1984-85
9. Virgar Ahmed, The Management of Pakistan's Economy 1947-82 Oxford University Press, 1984
10. IBRD, World Development Report 1986, Oxford University Press
11. Institute of Policy Studies, Developemnt Strategy for the Sixth Plan 1983-88
12. UNDP/WAPDA, Report on the Hydrometeorology of Baluchistan, UNDP-PAK/73/032, July 1980
13. Population Census Organization Statistic Division, 1981 District Census Report: Quetta, May 1983
14. ditto, 1981 District Census Report : Kalat, may 1983

### II HYDROGEOLOGY

1. UNDP/WAPDA, Groundwater Studies in Selected Areas of Baluchistan, Technical Report No. 4 : Groundwater od Pishin Lora Basin, UNDP/PAK-73-032/4, 1982
2. UNDP/WAPDA, Groundwater Investigation in Selected Area of Baluchistan, Preliminary Hydrogeological Report No. 3 : Reconnaissance Survey , Kalat Area, Jan. 1978
3. UNDP/WAPDA, ditto, Preliminary Hydrogeological Report No.4 : Kalat Area, Jan.1978
4. UNDP/WAPDA, ditto, Geophysical Surveys made in North Baluchistan, TC/PAK/73/032, Nov.1979
5. Government of Canad, Reconnaissance Geology of Part of West Pakistan, 1958, with geological maps No. 20(Surab), No. 24 (Sibi), No. 26(Quetta) at a scale of 1 : 253,440.
6. UNDP/WAPDA, Accumulation of Discharge Measurement of Rivers, Karezes and Springs related to North Baluchistan, TC/PAK-73-032/11, Dec. 1979
7. A.H.Kazumi et.,Water Supply of Quetta Basin, Baluchistan, Records of the Geological Survey of Pakistan, Vol.20, Part 2

8. Quetta Development Authority (QDA), Quetta Water Supply Proposed Well Field, Oct. 1983
9. A.H.Kazmi, The Water Supply of Baluchistan, Record of Geological Survey of Pakistan
10. WAPDA Hydrogeology-Project, Monitoring Studies on Ground-water Levels in Quetta Valley, Pishin Lora Basin, Baluchistan Nov. 1986

### III. IRRIGATION/AGRICULTURAL DEVELOPMENT

1. WAPDA Hydrogeology Quetta, Feasibility Studies of Lorala/ Subbasin (Nari River Basin), 1985
2. WAPDA Hydrogeology Quetta, Feasibility Studies of Badoo Rud (Kharan Area) Sub-basin, Hamum-Mashkhel Basin, June 1986
3. Harza & NESPAK, Baluchistan Groundwater Development Project Qila Saifullah and Zhob Area, June 1985
4. FAO Irrigation and Drainage Paper No. 24, Crop Water Requirments, 1977
5. ditto, No. 25, Effective Rainfall, 1974
6. D.V.Varshneg and L.Narain, Water Resources Engineering, Khanna Publishers, Delhi, 1983









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