

資 料

資料 1 調査団員氏名、所属

1-1 基本設計第 1 次現地調査

名前	担当	所属
大村 良樹	総括	独立行政法人国際協力機構 国際協力専門員
佐藤 公平	計画管理	独立行政法人国際協力機構 無償資金協力部 業務第一課
庭野 哲治	業務主任/地下水開発	日本テクノ株式会社
石井 信行	給水計画/施設計画	日本テクノ株式会社
阿部 暁洋	水文/河川計画	日本テクノ株式会社
平 直貴	掘削技術	日本テクノ株式会社
篠野 俊一	施工調達計画/積算	日本テクノ株式会社

1-2 基本設計第 2 次現地調査

名前	担当	所属
庭野 哲治	業務主任/地下水開発	日本テクノ株式会社
篠野 俊一	給水計画/施設計画	日本テクノ株式会社
永沼 俊道	掘削技術	日本テクノ株式会社
宮内 浩司	施工調達計画/積算	日本テクノ株式会社

1-3 基本設計概要書の現地説明

名前	担当	所属
蔵方 宏	総括	独立行政法人国際協力機構 無償資金協力部 業務第一課 課長
庭野 哲治	業務主任/地下水開発	日本テクノ株式会社
篠野 俊一	給水計画/施設計画	日本テクノ株式会社

資料 2 現地調査行程表

2-1 基本設計第1 次現地調査

No.	日付	宿泊 (主に業務主)	官ベース	業務主任 /地下水開発	掘削技術	給水計画 /施設計画	水文 /河川調査	施工調達計画 /積算	
1	H14.12.9		東京→イスラマハート						
2	H14.12.10	イスラマハート	ITCA 大使館 FAD 表敬・打合せ ラホールへ移動						
3	H14.12.11	ファイサハラート	パシジャブ州政府表敬 ファイサハラートへ移動					東京→カラチ	
4	H14.12.12	ファイサハラート	FDA、WASA 表敬・協議、I/R 説明・協議、再委託業務協議 周辺住民意識調査主導					カラチ→ファイサハラート	
5	H14.12.13	ファイサハラート	FDA WASA 表敬・協議 サイト調査 再委託業務契約					現地市場調査	
6	H14.12.14	ファイサハラート	サイト調査					現地市場調査	
7	H14.12.15	ファイサハラート	団内打合せ					東京→カラチ	
8	H14.12.16	ファイサハラート	FDA WASA ミニッツ調印				カラチ→ファイサハラート	労務関連調査	
9	H14.12.17	ファイサハラート	パシジャブ州政府ミニッツ調印、イスラマハートへ移動		水源地調査	サイト調査	サイト調査	労務関連調査	
10	H14.12.18	ファイサハラート	EAD ミニッツ署名、JICA、大使館報告、 コンサル:イスラマハート→ファイサハラート		水源地調査	サイト調査	水文/河川調査	現地業者に係る 調査	
11	H14.12.19	ファイサハラート	東京着	サイト調査	水源地調査	サイト調査	水文/河川調査	現地業者調査	
12	H14.12.20	ファイサハラート		サイト調査	水源地調査	サイト調査	水文/河川調査	現地業者調査	
13	H14.12.21	ファイサハラート		サイト調査	水源地調査	サイト調査	水文/河川調査	現地業者調査	
14	H14.12.22	ファイサハラート		サイト調査	水源地調査	給水現況調査	水文/河川調査	現地業者調査	
15	H14.12.23	ファイサハラート		サイト調査	水源地調査	給水現況調査	水文/河川調査	建設関連法規調	
16	H14.12.24	ファイサハラート		サイト調査	水源地調査	給水計画調査	水文/河川調査	建設関連法規調	
17	H14.12.25	ファイサハラート		サイト調査	水源地調査	給水計画調査	水文/河川調査	施工計画調査	
18	H14.12.26	ファイサハラート		水源計画調査	水源地調査	施設計画調査	水文/河川調査	施工計画調査	
19	H14.12.27	ファイサハラート		水源計画調査	水源地調査	施設計画調査	水文/河川調査	施工計画調査	
20	H14.12.28	ファイサハラート		水源計画調査	水源地調査	施設計画調査	水文/河川調査	施工計画調査	
21	H14.12.29	ファイサハラート		資料整理 資料解析					
22	H14.12.30	ファイサハラート		水源計画調査	水源地調査	施設計画調査	水文/河川調査	施工計画調査	
23	H14.12.31	ファイサハラート		水源計画調査	水源地調査	施設計画調査	水文/河川調査	施工計画調査	
24	H15.1.1	ファイサハラート		水源計画調査	水源地調査	ファイサハラート	水文/河川調査	施工計画調査	
25	H15.1.2	ファイサハラート		水源計画調査	水源地調査	カラチ→東京	水文/河川調査	施工計画調査	
26	H15.1.3	ファイサハラート		運営・維持管理調査	水源地調査		ファイサハラート →カラチ	施工計画調査	
27	H15.1.4	ファイサハラート		運営・維持管理調査	水源地調査		カラチ→東京	市内施設調査	
28	H15.1.5	ファイサハラート		運営・維持管理調査	水源地調査		ファイサハラート→カラチ		市内施設調査
29	H15.1.6	ファイサハラート		運営・維持管理調査					市内施設調査
30	H15.1.7	ファイサハラート		運営・維持管理調査	カラチ→東京			市内施設調査	
31	H15.1.8	ファイサハラート		運営・維持管理調査				市内施設調査	
32	H15.1.9	ファイサハラート	運営・維持管理調査				市内施設調査		
33	H15.1.10	ファイサハラート	運営・維持管理調査				市内施設調査		
34	H15.1.11	ファイサハラート	運営・維持管理調査				市内施設調査		
35	H15.1.12	ファイサハラート	運営・維持管理調査				市内施設調査		
36	H15.1.13	ファイサハラート	運営・維持管理調査				市内施設調査		
37	H15.1.14	ファイサハラート	給水計画調査				給水計画調査		
38	H15.1.15	ファイサハラート	給水計画調査				給水計画調査		
39	H15.1.16	ファイサハラート	給水計画調査				給水計画調査		
40	H15.1.17	ファイサハラート	給水計画調査				給水計画調査		
41	H15.1.18	ファイサハラート	給水計画調査				給水計画調査		
42	H15.1.19	ファイサハラート	資料整理、資料解析				資料整理、資料		
43	H15.1.20	ファイサハラート	施設計画調査				給水計画調査		
44	H15.1.21	ファイサハラート	施設計画調査				給水計画調査		
45	H15.1.22	ファイサハラート	施設計画調査		ファイサハラート→カラチ				
46	H15.1.23	ファイサハラート	施設計画調査		カラチ				
47	H15.1.24	ファイサハラート	イスラマハート→		カラチ→				
48	H15.1.25	イスラマハート	JICA、大使館報告		→東京				
49	H15.1.26	イスラマハート	イスラマハート→						
50	H15.1.27		→東京						

2-2 基本設計第2次現地調査

No.	日付	宿泊	業務主任 /地下水開発	給水計画 /施設計画	施工調達計画 /積算	掘削技術
1	H15. 8. 2		東京→			
2	H15. 8. 3	イスラマハート	→イスラマハート			
3	H15. 8. 4	イスラマハート	JICA、大使館表敬			
4	H15. 8. 5	ファイサハート	ファイサハート移動、WASA 表敬			
5	H15. 8. 6	ファイサハート	WASA 協議			
6	H15. 8. 7	ファイサハート	既存井調査	用地選定調査		
7	H15. 8. 8	ファイサハート	既存井調査	既存施設調査		
8	H15. 8. 9	ファイサハート	用地選定調査	既存施設調査		
9	H15. 8. 10	ファイサハート	用地選定調査	既存施設調査		
10	H15. 8. 11	ファイサハート	既存施設調査	既存施設調査	東京→	
11	H15. 8. 12	ファイサハート	既存施設調査	既存施設調査	→ファイサハート	
12	H15. 8. 13	ファイサハート	電気探査	既存施設調査	調達/積算調査	
13	H15. 8. 14	ファイサハート	電気探査	既存施設調査	既存施設調査	
14	H15. 8. 15	ファイサハート	電気探査	既存施設調査	既存施設調査	
15	H15. 8. 16	ファイサハート	電気探査/住民調査	既存施設調査	既存施設調査	
16	H15. 8. 17	ファイサハート	電気探査/住民調査	既存施設調査	既存施設調査	
17	H15. 8. 18	ファイサハート	電気探査/住民調査	既存施設調査	既存施設調査	
18	H15. 8. 19	ファイサハート	電気探査/住民調査	既存施設調査	既存施設調査	
19	H15. 8. 20	ファイサハート	電気探査/住民調査	測量調査	既存施設調査	東京→
20	H15. 8. 21	ファイサハート	電気探査/住民調査	測量調査	既存施設調査	→ファイサハート
21	H15. 8. 22	ファイサハート	既存施設調査	測量調査	既存施設調査	試掘調査準備
22	H15. 8. 23	ファイサハート	既存施設調査	測量調査	既存施設調査	試掘調査準備
23	H15. 8. 24	ファイサハート	既存施設調査	測量調査	既存施設調査	試掘調査準備
24	H15. 8. 25	ファイサハート	測量調査 テクニカルノート提出・協議	ファイサハート→	調達/積算調査	試掘調査
25	H15. 8. 26	ファイサハート	測量調査、実施機関協議	→東京	調達/積算調査	試掘調査
26	H15. 8. 27	ファイサハート	測量調査、実施機関協議 市長現場視察		調達/積算調査	試掘調査
27	H15. 8. 28	ファイサハート	テクニカルノート署名 イスラマハートへ異動		調達/積算調査	試掘調査
28	H15. 8. 29	イスラマハート	JICA、大使館報告		調達/積算調査	試掘調査
29	H15. 8. 30	ファイサハート	イスラマハート→		調達/積算調査	試掘調査
30	H15. 8. 31	ファイサハート	→東京		調達/積算調査	試掘調査
31	H15. 9. 1	ファイサハート			調達/積算調査	試掘調査
32	H15. 9. 2	ファイサハート			カチ→	試掘調査
33	H15. 9. 3	ファイサハート			→東京	試掘調査
34	H15. 9. 4	ファイサハート				試掘調査
35	H15. 9. 5	ファイサハート				試掘調査
36	H15. 9. 6	ファイサハート				試掘調査
37	H15. 9. 7	ファイサハート				試掘調査
38	H15. 9. 8	ファイサハート				試掘調査
39	H15. 9. 9	ファイサハート				試掘調査
40	H15. 9. 10	ファイサハート				試掘調査
41	H15. 9. 11	ファイサハート				試掘調査
42	H15. 9. 12	ファイサハート				実施機関協議
43	H15. 9. 13	ファイサハート				実施機関協議
44	H15. 9. 14	ファイサハート				実施機関協議
45	H15. 9. 15	ファイサハート				ファイサハート→
46	H15. 9. 16					→東京

2-3 基本設計概要書の現地説明

No.	日付	宿泊 (主に業務主任)	官ベース	業務主任 /地下水開発	給水計画 /施設計画
1	H16. 3. 16			東京→カラチ	
2	H16. 3. 17	イスラマハート		→ファイサラハート、WASA 表敬、D/F レポート説明、協議	
3	H16. 3. 18	ファイサラハート		WASA 協議	
4	H16. 3. 19	ファイサラハート		WASA 協議	
5	H16. 3. 20	ファイサラハート		WASA 協議	
6	H16. 3. 21	ファイサラハート	東京→ラホール	ラホールへ移動	
7	H16. 3. 22	イスラマハート	パキスタンの州政府表敬、イスラマハートへ移動、JICA・大使館表敬		
8	H16. 3. 23	ファイサラハート	ファイサラハートへ移動、サイト調査		
9	H16. 3. 24	ラホール	ミッツ協議、ラホールへ移動		
10	H16. 3. 25	イスラマハート	パキスタンの州政府、WASA ミッツ調印、イスラマハートへ移動		
11	H16. 3. 26	ファイサラハート	EAD ミッツ調印、JICA・大使館報告		
			イスラマハート→	ファイサラハートへ移動	
12	H16. 3. 27	ファイサラハート	→東京	WASA 協議	
13	H16. 3. 28			ラホールへ移動、ラホール→	
14	H16. 3. 29			→東京	

資料3 相手国関係者リスト

(1) 財務・統計省経済局

Mr. Muhammed Ashraf Khan	Joint Secretary
Miss Yasmin Masood	Deputy Secretary, Japan Desk (第二年次)

(2) パンジャブ州政府計画開発庁

Dr. Shaheen Khan	Chief Economist
Mr. Nazim Riaz	Chief (ECA)
Mr. Nazim Riaz	Chief (ECA)
Mr. Mukhtar Ahmad Chaudry	Section Chief
Mr. M.H. Malik	AC., UD/PPH

(3) パンジャブ州政府住宅・都市開発・公衆衛生局

Mr. Syed Ali Raza Gilani	Minister
Mr. Riaz Ahmed	Secretary
Engr. Ch. Safdar Ali Cheema	Technical Advisor

(4) ファイサラバード郡庁

Mr. Chaudhary Zahid Nazir	Chairman (District Nazim)
Mr. Tahin Hussain	District Coordination Officer
Mr. Waseen Ajmal Ch.	Executive District Officer (Finances & Planning)
Mr. Mian Riaz Ahmed	Executive District Officer (Works & Services Dept.)
Dr. Tariq Sardar	Senior Administrative Officer (Environment Protection Dept.)
Mr. Shoukat Hayat	Deputy District Officer (Revenue Dept.) (Revenue Dept.)
Mr. Muhammad Yaqoob Khan	Deputy District Officer (Revenue Dept.) (Revenue Dept.)
Mr. Rashid Mohamood Putwary	(Revenue Dept.)
Mr. Muhamood Shahid Putwary	(Revenue Dept.)
Mr. Rana Ahmad Qanoonoo	(Revenue Dept.)

(5) ファイサラバード市役所

Mr. Mumtaz Ali Cheema	Nazim Faisalabad City
Dr. Syed Pervaiz Abbas	Senior Administration Officer

(6) ファイサラバード開発庁

Mr. Maqsood Khawaja	Director General (PCS) (第一年次)
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Mr. Safdar Hussain Raja	Director General (第二年次)
Mr. Atta Ullar Khan	Director (Environmental Control Dept)
Mr. Farooq Pall	Deputy Director (Estate Management Dept.)
(7) 上下水道公社	
Lt. Col Engr Syed Chias ud Din	Managing Director (第一年次)
Mr. Rashid Ahmad Chaudry	Managing Director (第二年次)
Mr. Abdul Haleem Chaudhry	Deputy Managing Director
Mr. Asmo Ali Chaudhry	Director(Operation &Maintenance)
Mr. Abdul Majid	Director (Water Resources)
Mr. Saleem Ahmad Awan	Director (Planning & Design)
Mr. Mahammed Ashraf	Deputy Director (Planning & Design)
Mr. Shulam Murtaza Buffa	Director (Administration)
Mr. Ali Sajjad Sheikh	Deputy (Water Resources)
(8) 英国開発庁	
Mr. Stephen Young	Infrastructure Adviser, Western Asia, Middle East & North Africa
Mr. Malick Zulfiqar Ahmad	Programme Officer
(9) 在パキスタン日本国大使館	
Mr. Tamotsu Shinozuka	Minister
Mr. Hiromichi Kitada	First Secretary
Mr. Hideo Murata	Second Secretary (第一年次)
Mr. Takeshi Matsunaga	Head of Economic & Development Section (第二年次)
Mr. Teruo Kobayashi	Second Secretary (第二年次)
(10) 独立行政法人国際協力機構パキスタン事務所	
Mr. Nobuyuki Yamamura	Resident Representative
Mr. Yujiro Ishi	Senior Deputy Resident Representative (第一年次)
Mr. Hidekazu Tanemura	Resident Officer (第一年次)
Mr. Mahmood A. Jirani	Deputy Resident Representative
Ms. Mitsumi Sachiko	Senior Deputy Resident Representative (第二年次)
Mr. Makoto Takahashi	Resident Officer (第二年次)

資料4 当該国の社会経済状況

パキスタン・イスラム共和国
Islamic Republic of Pakistan

一般指標					
政体	連邦共和制	*1	首都	イスラマバード (Islamabad)	*2
元首	大統領／ペルベズ・ムシャラフ (Pervez MUSHARRAF)	*1,3	主要都市名	カラチ、ラホール、ファイザラバード	*3
独立年月日	1947年8月14日	*3,4	労働力総計	51,725 千人 (2000 年)	*6
主要民族／部族名	ハンジャフ系66%, シト系13%, パシュトゥン系	*1,3	義務教育年数	年間 (年)	*13
主要言語	ウルドゥー語、パンジャブ語、シンド語	*1,3	初等教育就学率	86.2 % (1998 年)	*6
宗教	イスラム教97%、ヒンドゥー教1.5%	*1,3	中等教育就学率	37.2 % (1998 年)	*6
国連加盟年	1947年9月30日	*12	成人非識字率	56.8 % (2000 年)	*6
世銀加盟年	1950年7月11日	*7	人口密度	179.12 人/km2 (2000 年)	*6
IMF加盟年	1950年7月11日	*7	人口増加率	2.6 % (1980-2000 年)	*6
国土面積	796.09 千km2	*1,6	平均寿命	平均 60.00 男 60.20 女 59.80	*10
総人口	138,080 千人 (2000 年)	*6	5歳児未満死亡率	110/1000 (2000 年)	*6
			カロリー供給量	2,452.1 cal/日/人 (2000 年)	*17

経済指標					
通貨単位	パキスタン・ルピー (Rupee)	*3	貿易量	(2000 年)	
為替レート	1 US \$ = 58.35 (2002 年 12 月)	*8	商品輸出	8,739 百万ドル	*15
会計年度	Jun. 30	*6	商品輸入	-9,898 百万ドル	*15
国家予算	(2002 年)		輸入カバー率	1.8 (月) (2000 年)	*14
歳入総額	632,799 Millions of Rupees	*9	主要輸出品目	綿花関連製品、皮革製品、合成繊維衣料品	*1
歳出総額	843,081 Millions of Rupees	*9	主要輸入品目	石油製品、機械類、化学品、鉄鋼、食用油	*1
総合収支	-2,624 百万ドル (2000 年)	*15	日本への輸出	222 百万ドル (2001 年)	*16
ODA受取額	702.8 百万ドル (2000 年)	*19	日本からの輸入	503 百万ドル (2001 年)	*16
国内総生産(GDP)	61,638.41 百万ドル (2000 年)	*6			
一人当たりのGNI	440.0ドル (2000 年)	*6	総国際準備	2,459.6 百万ドル (2000 年)	*6
分野別GDP	農業 26.3% (2000 年)	*6	対外債務残高	32,090.9 百万ドル (2000 年)	*6
	鉱工業 22.8% (2000 年)	*6	対外債務返済率(DSR)	26.8 % (2000 年)	*6
	サービス業 50.9% (2000 年)	*6	インフレ率 (消費者価格物価上昇率)	9.7 % (1990-2000 年)	*6
産業別雇用	農業 男 % 女 % (1998-2000 年)	*6			
	鉱工業 % (1998-2000 年)	*6			
	サービス業 % (1998-2000 年)	*6	国家開発計画	パキスタン2010プログラム (1998-2010)	*11
実質GDP成長率	3.7 % (1990-2000 年)	*6			

気象 (1961 年～ 1990 年平均) 観測地: ペシャワール (北緯34度01分、東経71度31分、標高360m)														*4,5
月	1	2	3	4	5	6	7	8	9	10	11	12	平均/計	
降水量	25.5	43.9	84.2	48.0	26.3	7.9	43.1	70.0	17.9	10.8	13.4	22.9	413.9 mm	
平均気温	11.2	13.0	17.4	23.1	28.4	33.0	32.0	30.9	28.9	23.6	17.6	12.6	22.6 °C	

- *1 各国概況(外務省)
- *2 世界の国々一覧表(外務省)
- *3 世界年鑑2002(共同通信社)
- *4 最新世界各国要覧10訂版(東京書籍)
- *5 理科年表2000(国立天文台編)
- *6 World Development Indicators2002(WB)
- *7 BRD Membership List(WB)
- IMF Members' Financial Data by Country(IMF)
- *8 Universal Currency Converter
- *9 Government Finance Statistics Yearbook 2001 (IMF)

- *10 Human Development Report2002(UNDP)
 - *11 Country Profile(EIU), 外務省資料等
 - *12 United Nations Member States
 - *13 Statistical Yearbook 1999(UNESCO)
 - *14 Global Development Finance2002(WB)
 - *15 International Financial Statistics Yearbook 2002(IMF)
 - *16 世界各国経済情報ファイル2002(世界経済情報サービス)
 - *17 FAO Food Balance Sheets 2002年6月 FAO Homepage
- 注: 商品輸入については複式簿記の計上方式を採用しているため
支払い額はマイナス表記になる

	パキスタン・イスラム共和国
	Islamic Republic of Pakistan

我が国におけるODAの実績 (単位:億円) *18					
項目 \ 年度	1996	1997	1998	1999	2000
技術協力	16.84	13.47	11.13	10.99	8.65
無償資金協力	61.07	57.08	5.66	8.56	20.42
有償資金協力	596.51	320.30			726.39
総額	674.42	390.85	16.79	19.55	755.46

当該国に対する我が国ODAの実績 (支出純額、単位:百万ドル) *18					
項目 \ 暦年	1996	1997	1998	1999	2000
技術協力	21.01	15.54	13.61	11.82	13.40
無償資金協力	68.36	42.80	53.47	22.85	1.36
有償資金協力	192.83	33.82	424.46	135.07	265.60
総額	282.20	92.16	491.54	169.74	280.36

OECD 諸国の経済協力実績 (2000 年) (支出純額、単位:百万ドル) *19					
	贈与(1) (無償資金協力・ 技術協力)	有償資金協力 (2)	政府開発援助 (ODA) (1)+(2)=(3)	その他政府資金 及び民間資金(4)	経済協力総額 (3)+(4)
二国間援助 (主要供与国)	128.1	347.0	475.1	-507.9	-32.8
1. Japan	14.8	265.6	280.4	-248.2	32.2
2. United States	2.1	86.4	88.5	-11.0	77.5
3. United Kingdom	23.7	0.0	23.7	-44.6	-20.9
4. France	2.0	17.6	19.6	-92.4	-72.8
多国間援助 (主要援助機関)	77.2	149.6	226.8	-11.4	215.4
1. AsDB			157.0	103.6	260.6
2. IDA			76.9	0.0	76.9
その他	1.2	-0.2	1.0	-6.4	-5.4
合計	206.5	496.3	702.8	-525.6	177.2

援助受入窓口機関	*20
技術協力:大蔵、経済、歳入、統計省経済局 (Ministry of Finance, Revenue, Economic Affairs and Statistics, EAD(Economic Affairs Division)) 無償:大蔵、経済、歳入、統計省経済局 (Ministry of Finance, Revenue, Economic Affairs and Statistics, EAD(Economic Affairs Division)) 協力隊:	

*18 政府開発援助 (ODA) 国別データブック 2001 (国際協力推進協会)

*19 International Development Statistics (CD-ROM) 2002 OECD

*20 JICA資料

資料 5 討 議 議 事 録

- 5-1 基本設計第 1 次現地調査時
- 5-2 基本設計第 2 次現地調査時
- 5-3 基本設計概要説明調査時

Minutes of Discussions
The Basic Design Study on
The Project for Improvement of Water Supply in Faisalabad
in Islamic Republic of Pakistan

In response to the request from the Government of Islamic Republic of Pakistan (hereinafter referred to as 'Pakistan'), the Government of Japan decided to conduct a Basic Design Study on the Project for Improvement of Water Supply in Faisalabad (hereinafter referred to as "the Project"), and entrusted the study to Japan International Cooperation Agency (hereinafter referred to as 'JICA').

JICA sent to Pakistan the Basic Design Study Team (hereinafter referred to as 'the Team'), which was headed by Mr. Yoshiki OMURA, Senior Advisor, Institution for International Cooperation, JICA, and was scheduled to stay in the country from December 9th to 18th, 2002.

The Team held a series of discussions with the concerned officials of the Government of Pakistan and conducted a field survey in the study area.

In the course of discussions and field survey, both parties confirmed the main items described on the attached sheets. The Team will proceed to further work and prepare the Basic Design Study Report.

Lahore, December 17th, 2002



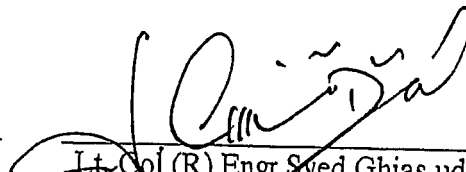
Mr. Yoshiki OMURA
Leader
Basic Design Study Team
Japan International Cooperation Agency



Mr. Riaz Ahmed
Secretary
Housing, Urban Development &
Public Health Engineering Department
Government of Punjab



Mr. Muhammad Ashraf Khan
Joint Secretary
Economic Affairs Division
Ministry of Economic Affairs & Statistics
Government of Pakistan



Lt. Col (R) Engr Syed Ghias ud din
Managing Director
Water and Sanitation Agency
(WASA/FDA), Faisalabad

ATTACHMENT

1. Objective of the Project

The objective of the Project is to improve the water supply services in Faisalabad in order to supply safe and sufficient water for the residents.

2. Responsible and Implementing Organization

Water and Sanitation Agency (WASA/FDA), Faisalabad

3. Site of the Project

The Project site is as shown in Annex-1 (page 4).

4. Items requested by the Government of Pakistan

After discussions with the Team, the items described in Annex-2 (Page 5) were finally requested by Pakistani side. JICA will assess the appropriateness of the request in engineering, social and financial terms and will report the findings to the Government of Japan.

5. Japan's Grant Aid Programme

Pakistani side has understood the system and characteristics of Japan's Grant Aid Programme as described by the Team shown in Annex-3 (Page 6).

6. Necessary measures to be taken by the Pakistani side

Pakistani side will take the necessary measures, as described in Annex-4 (Page 10), for smooth implementation of the Project on condition that the Japanese Grant Aid is extended.

7. Further Schedule of the Study

- a. The consultant members of the Team will proceed with further studies in Pakistani until January 16th, 2003.
- b. JICA will prepare the Draft Basic Design Study Report in English and dispatch a mission in order to explain its contents around May 2003.

8. Other relevant issues

The Pakistani side and the Team have confirmed the following points:

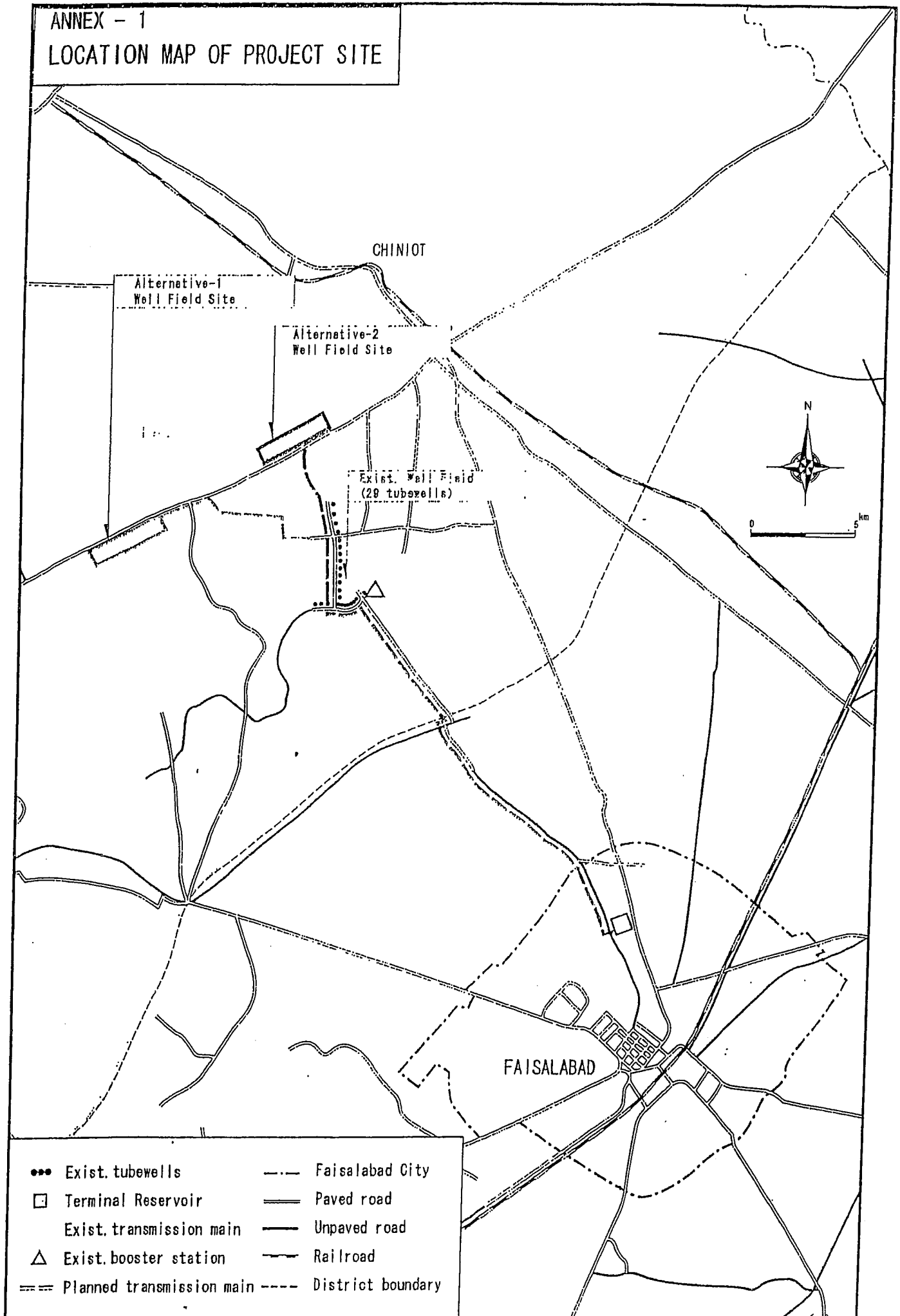
- a. The Pakistani side will obtain necessary consent in writing from inhabitants in and around the proposed well field to be developed under the Project.

- b. The budget required for the land acquisition for the facilities in the Project including the tubewells, the collector main, the transmission main, and electric power supply will be allocated and executed by the time of the explanation of Draft Final Report. The Pakistani side will present the related documents of budgetary arrangements to the Draft Final Report Team.
- c. The proposed booster pumping station is located inside the premises of the existing inline booster pumping station.
- d. The proposed terminal reservoir and related distribution pumping facilities are located inside the existing terminal reservoir premises.
- e. Pakistani side understood that as a prerequisite condition to providing Japan's grand aid program, the facilities to be constructed under the Project should be fully utilized without idling once commissioned.
- f. The water supply facilities to be constructed by the Project shall properly be operated and maintained with necessary financial input to be generated by appropriate water tariff collection.
- g. Pakistani side explained that a Federal government approval (PC-1) was prerequisite to project implementation and that PC-1 shall be prepared and approval would be obtained within three months after receipt of Draft Final Report including information needed to prepare the said project document.
- h. Pakistani side agreed to take a legal clearance for environmental protection from the Environmental Protection Authority/Department.



ANNEX - 1

LOCATION MAP OF PROJECT SITE



Annex-2 List of Requested Items

Construction of new tube wells along the Chenab river area and a transmission system as followed;

1. Tubewells along the Chenab river area (12NOS)
2. Collector main
3. Transmission Main
4. Booster Pumping Station
5. Terminal Reservoir (including pumping facility)



Annex III

JAPAN'S GRANT AID SCHEME

1. Grant Aid Procedures

(1) Japan's Grant Aid Program is executed through the following procedures.

Application	(Request made by a recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by Cabinet)
Determination of Implementation	(The Notes exchanged between the Governments of Japan and the recipient country)

(2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

(1) Contents of the Study

The aim of the Basic Design Study (hereinafter referred to as "the Study"), conducted by JICA on a requested project (hereinafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Japanese Government. The contents of the Study are as follows:

- 1) Confirmation of the background, objectives, and benefits of the requested project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.

- 2) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
- 3) Confirmation of items agreed on by both parties concerning the basic concept of the Project.
- 4) Preparation of a basic design of the Project.
- 5) Estimation of costs of the Project.

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA.

The consulting firm(s) used for the Study is (are) recommended by JICA to the recipient country to also work in the Project's implementation after the Exchange of Notes, in order to maintain technical consistency.

3. Japan's Grant Aid Scheme

(1) Grant Aid

The Grant Aid Program provides a recipient country with non-reimbursable funds to procure facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

(2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc. are confirmed.

- (3) "The period of the Grant Aid" means the one fiscal year which the Cabinet

approves the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and a final payment to them must be completed.

However in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year by mutual agreement between the two Governments.

- (4) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However the prime contractors, namely, consulting, contracting and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

- (5) Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

- (6) Undertakings required of the Government of the Recipient Country

In the implementation of the Grant Aid project, the recipient country is required to undertake such necessary measures as the following:

- 1) To secure land necessary for the sites of the Project, and to clear, level and reclaim the land prior to commencement of the construction.
- 2) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.
- 3) To secure buildings prior to the procurement in case the installation of the equipment.
- 4) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid.
- 5) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts.
- 6) To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

7) Proper Use

The recipient country is required to maintain and use the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

8) Re-export

The products purchased under the Grant Aid should not be re-exported from the recipient country.

9) Banking Arrangement (B/A)

(a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the verified contracts.

(b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an authorization to pay issued by the Government of the recipient country or its designated authority.

Annex-IV

MAJOR UNDERTAKING TO BE TAKEN BY EACH GOVERNMENT

No.	Items	To be covered by Grant Aid	To be covered by Recipient Side
1	To secure land		●
2	To clear, level and reclaim sites and to prepare access roads thereto when needed		●
3	To construct gates and fences in and around sites		●
4	To bear the following commissions to a bank of Japan for the banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
5	To ensure prompt unloading and customs clearance at port of disembarkation in recipient country		
	1) Marine (Air) transportation of the products from Japan to the recipient country	●	
	2) Tax exemption and custom clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	●	
6	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contact such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		●
7	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contact		●
8	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		●
9	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for construction of the facilities		●

Date: August 29, 2003

**TECHNICAL NOTE
FOR
THE BASIC DESIGN STUDY
FOR THE PROJECT FOR IMPROVEMENT OF WATER SUPPLY
IN FAISALABAD, PAKISTAN**

The Basic Design Study for the Project for Improvement of Water Supply in Faisalbad has been underway since August 2, 2003. At the final stage of its field survey, the Water and Sanitation Authority, Faisalabad (WASA), the executing agency of the project, and the study team dispatched by the Japan International Cooperation Agency (JICA), discussed on the results of the study up to date as well as proposals by the executing agency, concentrating on the major project components as follows:

- (1) Development groundwater sources for augmentation of water supply for the city
- (2) Planning for new water supply facilities
- (3) Improvement of existing water system in the city
- (4) Proposal for procurement of equipment for operation and maintenance of the water system

The team continues the survey up to September 10, 2003, and the results will be examined in detail at home for reporting in draft by the team to the executing agency to be scheduled in November 2003.

(1) **Groundwater sources development**

- 1) The groundwater production for augmentation of water sources targeted by the project is 91,000 m³/day.
- 2) All the tubewells are planned to be installed in the land owned by the Government along the Jhang Branch Canal on its eastern side falling in the jurisdiction of the Faisalabad district, within an area extending from RD230 to RD270 (40,000 ft = approximately 12 km) along the canal.
- 3) The proposed land has already been secured by WASA through the notification of the District Government, Faisalabad under Section-4 of the Land Acquisition Act 1894.
- 4) WASA has completed its own pumping test of an existing tubewell in the planned area during

the survey by the team, and will further proceed to the execution of seepage test of the canal by the end of the survey, All the data and information obtained through these tests will be provided to the study team for its analysis of the hydrogeological features of the project area for finalizing the design for the feasibility of groundwater development for the project.

- 5) The results of the pumping test by WASA and the previous studies by international and local consultants/agencies indicate that the production of one tubewell in this area is estimated to be 2 - 3 cusec (=200-300m³/hr). The exact size will be decided after the test drilling program is completed by the study team, together with a proposal for the required number of tubewells as well as the layout of group tubewells across the planned site that could minimize the influence of operation of the targeted production.
- 6) The location of the site for groundwater development is shown at Annex 1 (attached).

(2) Planning of new water facilities

- 1) Planned water facilities are composed of the following items:
 - a. Tubewells along the Jhang Branch Canal
 - b. New intermediate pumping station with a reservoir
 - c. Transmission main (about 12.5 km)
 - d. New terminal reservoir and pumping station in the city
- 2) Among the planned facilities, the study team proposed to use the existing transmission main of 1,500mm in diameter running through the project site from the existing inline booster pump station, collecting the production from the existing 29 tubewells in the Chenab wellfield, since that line can accommodate the targeted production of 91,000 m³/day under the project.
- 3) WASA explained that this proposal will deprive it from the full utilization of the water production capacity of existing wellfield and its extension thereof and that the operation and maintenance cost will increase enormously due to extra electricity consumption. WASA is willing to agree to this proposal on the condition if it is technically and economically more feasible than the plan for installation of a new independent transmission line from the new intermediate pump station. WASA has requested for in-depth study on the technical and economical feasibility of both plans using full capacity of existing wellfield and prevailing electricity rates.
- 4) A new intermediate pumping station with a reservoir is planned to be in the land owned by the Government BAWA road in front of NEWAN rest house, along which the existing transmission main from the existing inline booster pump station is installed.

- 5) Among the basic design elements of water supply planning, WASA proposed to adopt the design capacity of existing tubewells in the Chenab wellfield totaling 11600m³/hour as well as the future extension of the existing wellfield. To this proposal, the study team responded to the effect that the data of the past operation records be provided to the team for employing a practically available production rate, taking into account ongoing drawdown of these wells affecting the surrounding areas. The data has since been provided and all the basic design elements will be further examined in detail by the study team for the formation of an appropriate new system, and the capacities of new facilities will be proposed, based upon the analyses of these factors.
- 6) For reference, the schematic diagram of two planned systems is shown in Annex 2. The location of a site for a new intermediate pump station is shown in Annex 3.

(3) Improvement of existing water supply system in the city

- 1) In order to ensure maximum effect by the implementation of the project, the study team carried out the survey to contribute to the improvement of WASA's existing water system in the city faced with non-uniform water distribution particularly in the east zone accounting for nearly one third of the whole city jurisdiction, which has been getting less water supply and as such facing acute shortage.
- 2) WASA suggested independent water supply line from terminal pump station to Jhal Khanuana water works with a new pump station and water storage there. As a result of the survey, fundamental improvement has proven to require huge investment. However, the following measures have been agreed to have an effect in improvement, though partially, of the existing system.
 - a. Construction of a new reservoir and pumping station in the extended Jhal Khanuana Head Water Works located in the central area of the east zone.
 - b. Improvement of water supply through augmentation of water flow into the east zone of the city by adding new section(s) of pipe line.
- 3) The proposed plans for additional new sections are as follows:
 - a. Plan(a) A section of pipe from Node No. 5 to a new reservoir proposed at Jhal Khanuana HWW. (Section -A, approx. 3.5 km) plus a section of pipe from the planned terminal reservoir to the bifurcation point of existing 1600mm arterial main into 1200mm and 1400mm lines

(Section C, approx. 2.5 km)

- b. Plan (b) A section of pipe , Section- A, plus a section of pipe from Outlet No.2 to Outlet No.5(Section- B, approx. 4 km).

Among these plans, WASA has put the first priority on Plan (a).

- 4) The effects of the respective measures for reinforcement of arterial mains will be examined in detail for possible implementation under the project.
- 5) WASA underscored the necessity of employing an optimum size(s) of additional trunk lines effective for a long term use, in view of the specific characteristics of the arterial mains essential for water distribution.
- 6) The necessity of improvement of the existing terminal reservoir was also discussed for the effective distribution of water transmitted from the existing and new tubewells, since the lower half of the existing reservoir remains unused since its inception due to the characteristics of existing pumps. The measure proposed by the team is to connect the existing reservoir to a new terminal reservoir with a pipe so that the new pumps to be installed under the project can undertake pumping from this inactive lower half of the existing reservoir. As a result of the discussion, a planned pipe will be connected to either the suction header line to the existing pumps or the inflow bypass line from the inline booster pump station.
- 7) The locations of additional facilities and sections are shown in Annex 4.

(4) List of equipment for maintenance and operation proposed by WASA

- 1) The following list shows the items of equipment for operation and maintenance of the project proposed by WASA during the meeting:
 - a. For tubewells along the Jhang Branch Canal and other facilities under this project.
 - ☐ Service rig for tubewells and borehole inspection TV camera.
 - ☐ Mobile workshop with repair/rehabilitation tools for equipment and pipeline
 - ☐ Telemetry system for collecting and recording data from scattered tubewell stations and booster pump stations.
 - ☐ Voice Communication system for connection between tubewells ,maintenance crew , intermediate booster station, terminal pump station and Jhal Khanuana Head Water Works and

WASA Head Quarters.

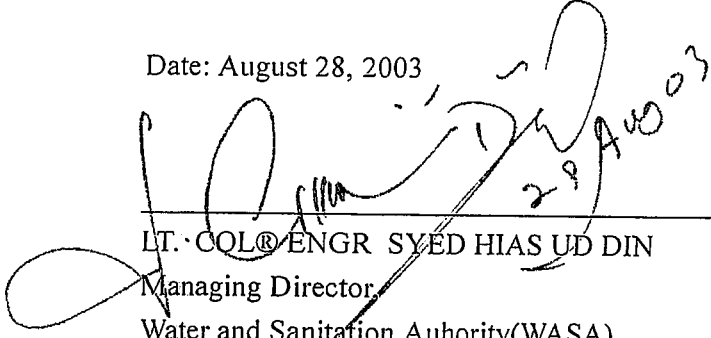
- ☐ Maintenance Vehicle- a Double-cabin pick-up truck (for tubewell maintenance and transportation of staff and materials.)
- ☐ Water quality testing kits/equipment for Na, SO₄, NH₃, NO₂, NO₃, Mn, Fe, Ar, F, Hg, Cd, Pb. Residual Chlorine.
- ☐ GPS meter

b. For pipeline service

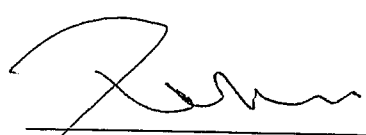
- ☐ Electronic leakage detection equipment
- ☐ Pump monitoring and testing kits.
- ☐ Water meters for consumers in connection with planned tariff reform
- ☐ Tapping drilling units for service connections (1/2" to 3" in size)

2) The details of requested equipment will further be examined by the study team and reported to the Government of Japan.

Date: August 28, 2003



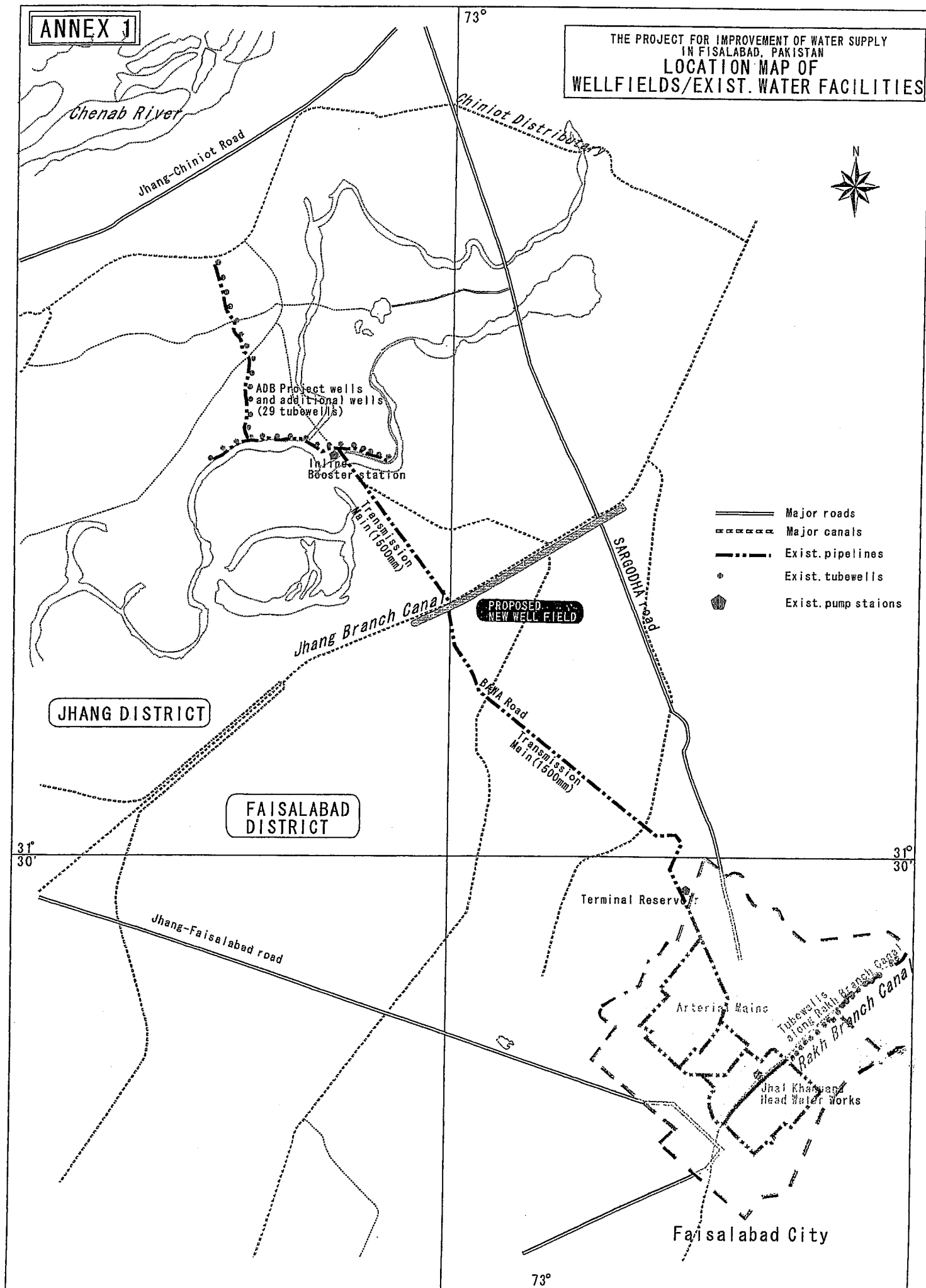
LT. COL. ENGR SYED HIAS UD DIN
Managing Director,
Water and Sanitation Authority (WASA)
FDA, Faisalabad



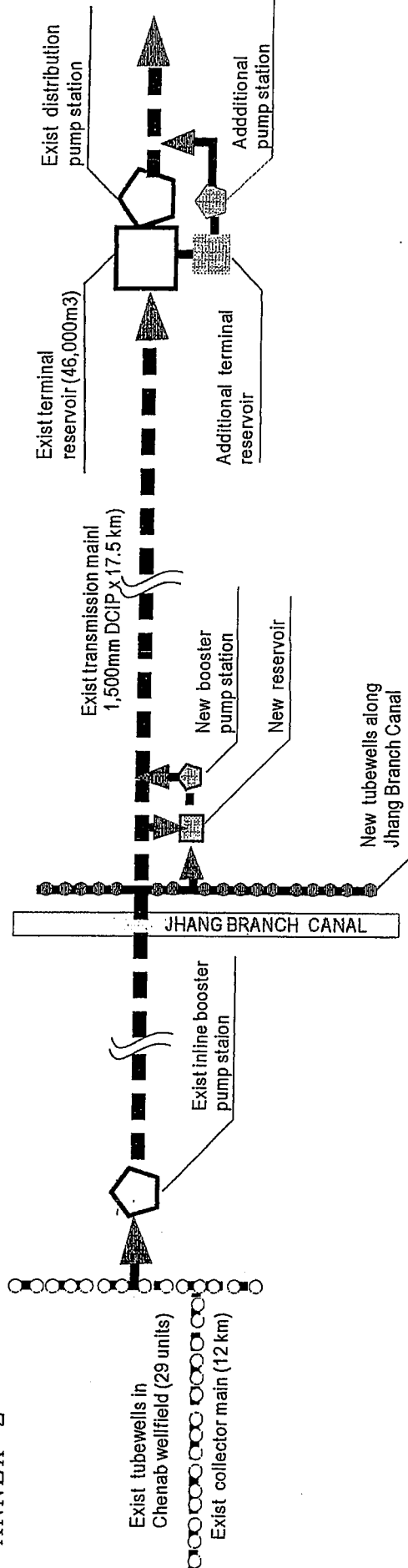
T. NIWANO, Chief Consultant
JICA Basic Design Study Team
for the Project

ANNEX 1

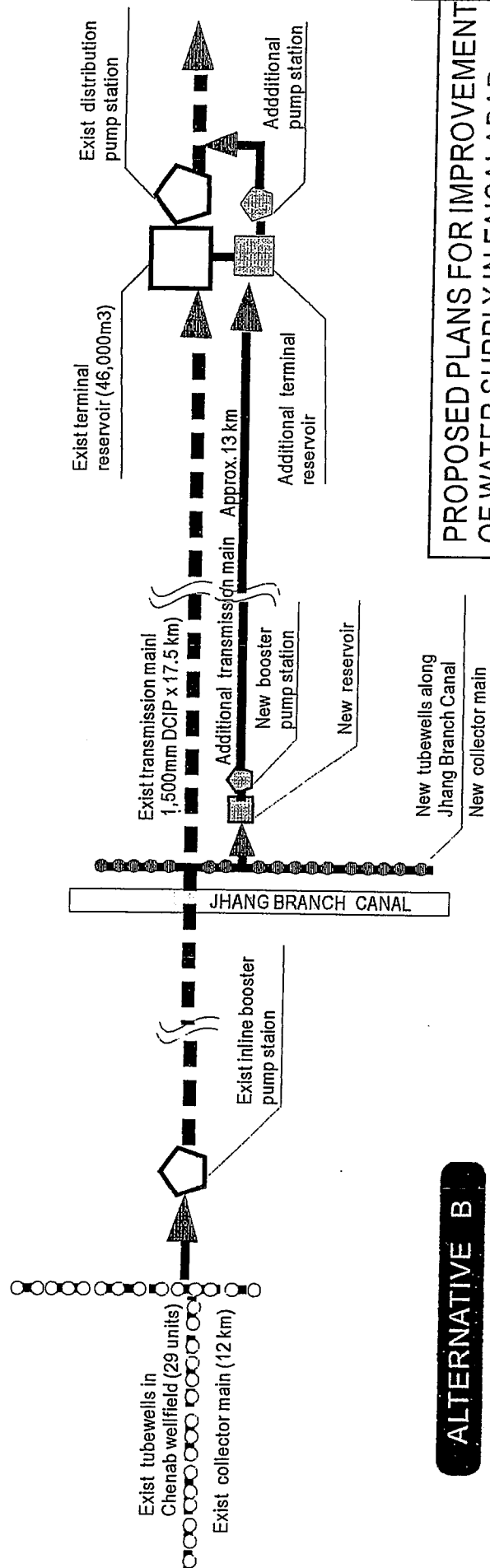
THE PROJECT FOR IMPROVEMENT OF WATER SUPPLY IN Faisalabad, PAKISTAN LOCATION MAP OF WELLFIELDS/EXIST. WATER FACILITIES



ANNEX-2



ALTERNATIVE A



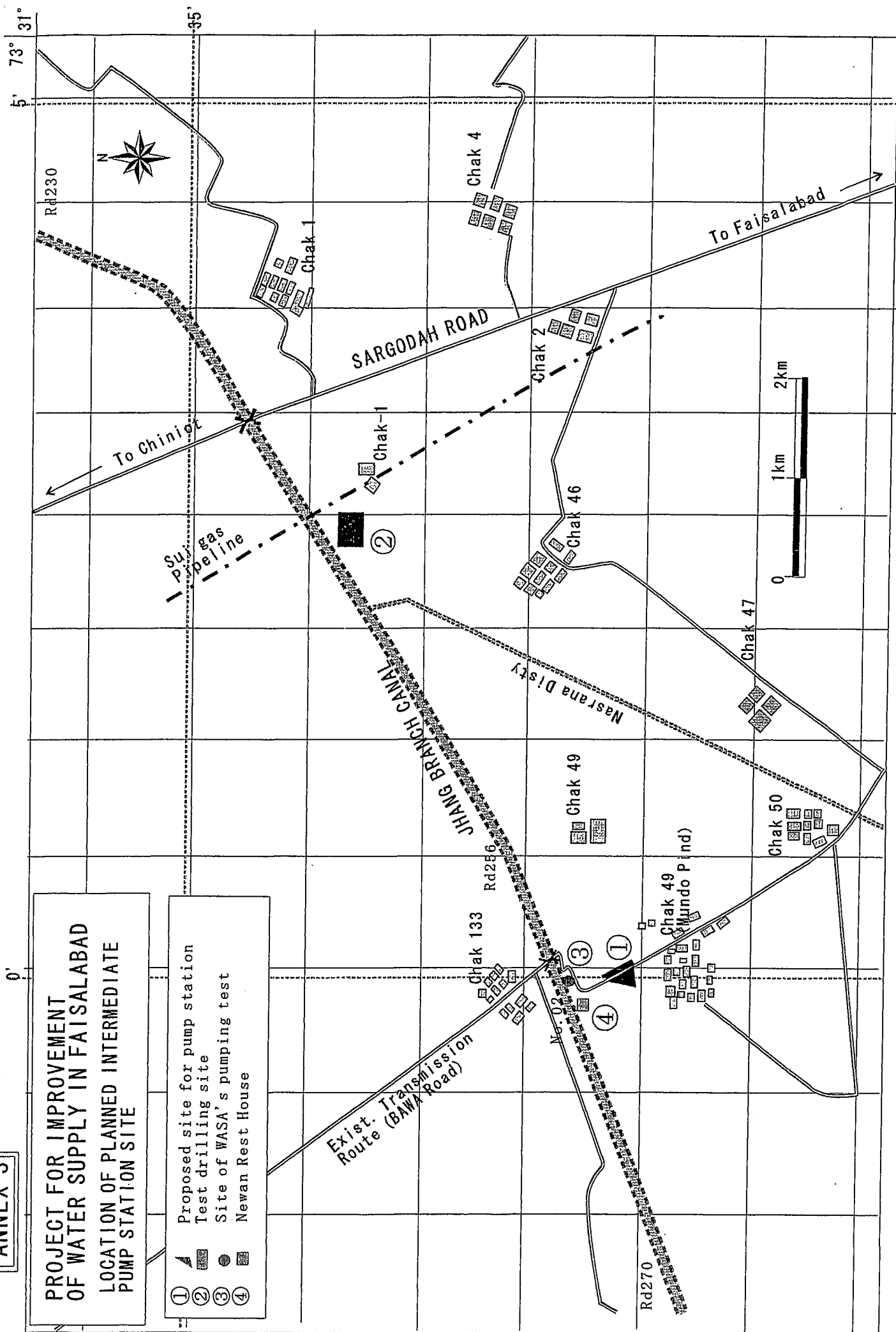
ALTERNATIVE B

PROPOSED PLANS FOR IMPROVEMENT OF WATER SUPPLY IN FAISALABAD

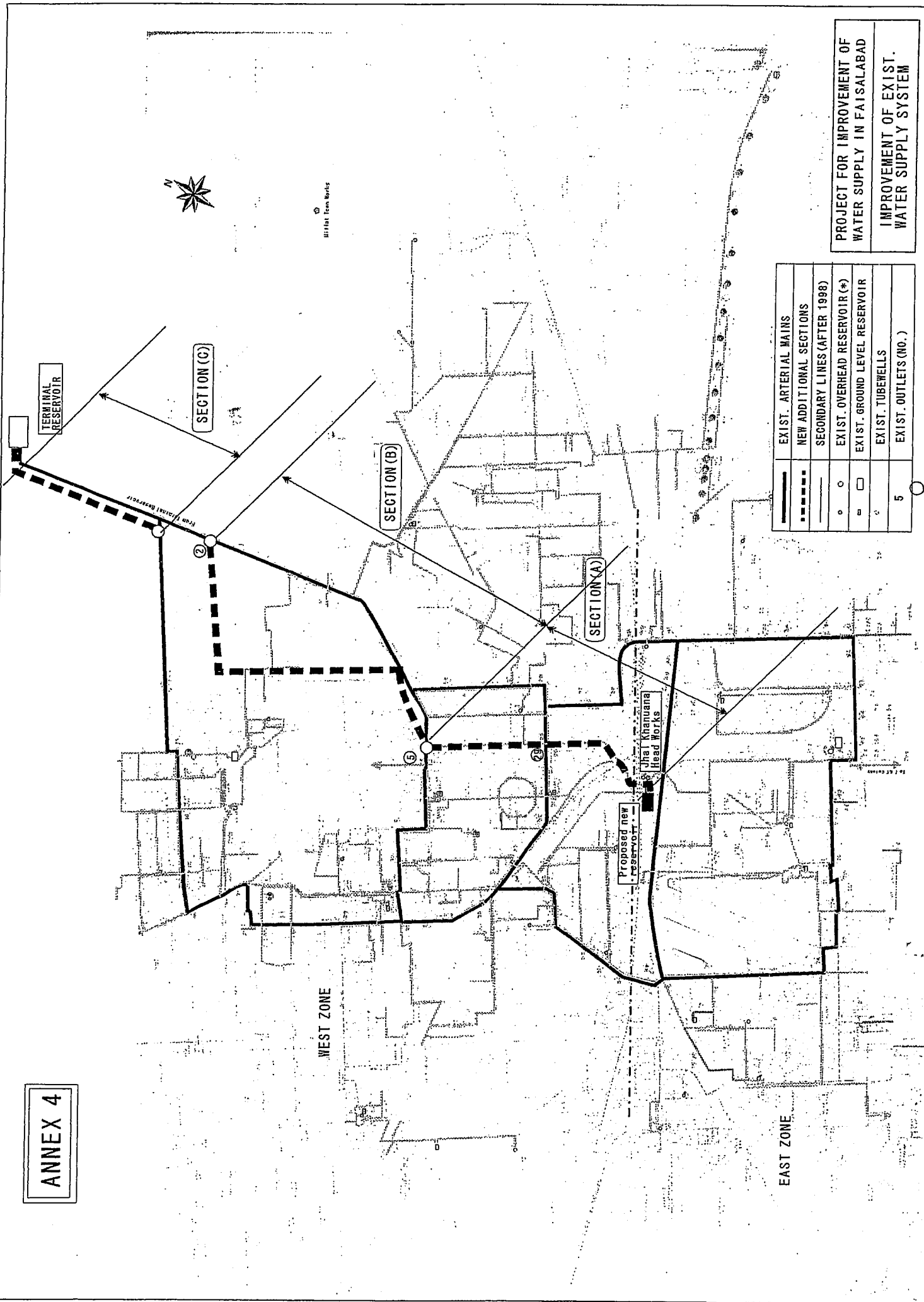
ANNEX 3

PROJECT FOR IMPROVEMENT OF WATER SUPPLY IN FAISALABAD LOCATION OF PLANNED INTERMEDIATE PUMP STATION SITE

- ① Proposed site for pump station
- ② Test drilling site
- ③ Site of WASA's pumping test
- ④ Newan Rest House



ANNEX 4



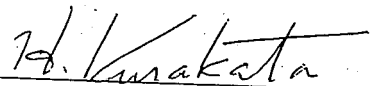
Minutes of Discussions
The Basic Design Study on
The Project for Improvement of Water Supply in Faisalabad
in Islamic Republic of Pakistan
(Explanation on Draft Final Report)

In December 2002, Japan International Cooperation Agency (hereinafter referred to as 'JICA') dispatched a Basic Design Study Team on the Project for Improvement of Water Supply in Faisalabad (hereinafter referred to as "the Project") to the Islamic Republic of Pakistan (hereinafter referred to as 'Pakistan'), and through discussions, field survey, and technical examination of the results in Japan, JICA prepared a draft final report of the study.

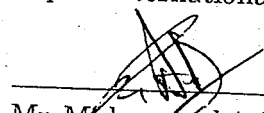
In order to explain and to consult with the Pakistan side on the contents of the draft final report, JICA sent to Pakistan the Draft Final Report Explanation Team (hereinafter referred to as 'the Team'), which was headed by Mr. Hiroshi Kurakata, Director, First Project Management Division, Grant Aid Management Department, JICA, and was scheduled to stay in the country from Mar. 16th to Mar. 28th, 2004.

As a result of discussion, both sides confirmed the main items described on the attached sheets.

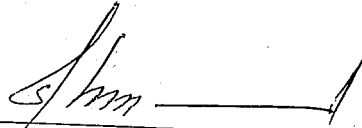
Lahore, March 25th, 2004



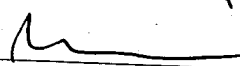
Mr. Hiroshi Kurakata
Leader
Basic Design Study Team
Japan International Cooperation Agency



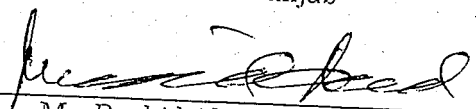
Mr. Muhammad Ashraf Khan
Joint Secretary
Economic Affairs Division
Ministry of Economic Affairs & Statistics
Government of Pakistan



Mr. Sohail Ahmad
Secretary
Planning & Development Board
Government of Punjab



Mr. Riaz Ahmed
Secretary
Housing, Urban Development &
Public Health Engineering Department
Government of Punjab



Mr. Rashid Ahmad Chaudhry
Managing Director
Water and Sanitation Agency
(WASA/FDA), Faisalabad

ATTACHMENT

1. Components of the Project

The Pakistan side agreed and accepted in principle the components of the draft final report explained by the Team.

2. Japan's Grant Aid scheme

The Pakistan side understood the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Pakistan as explained by the Team and described in Annex-III and Annex-IV of the Minutes of Discussions signed by both sides on December 17th, 2002.

3. Schedule of the Study

The Team was informed of the revision of tariff system by WASA in March 2004.

The Team confirmed that JICA would complete the final report with employing a new tariff for its financial analysis and send it to Pakistan side by May 2004.

4. Other relevant issues

Both sides confirmed the importance of the following items in order to realize the Project smoothly and effectively.

(1) Information disclosure and public meeting

The Team requested the Pakistan side to disclose the information about the impact of the Project clearly through the public meeting with the participation of the residents who might be affected by the Project. The Pakistan side will take necessary measures to mitigate the impacts including appropriate compensatory development package up to the extent of Rs.50 million, which would be provided to upgrade the infrastructure system and to subsidize the installation/improvement of the tubewells in the affected area.

And also the Pakistan side confirmed to provide an undertaking in this regard to the Japanese side until 10th April 2004.

(2) Preparation of PCI

For the earlier approval of this project by the Government of Japan, it is a prerequisite for the Pakistan side to secure the approval of PCI by the related agencies of the central government.

The Pakistan side confirmed to inform the Japanese side of its progress and the results on each of the following stages and whenever it would be deemed necessary:



- 1) WASA's submittal of PC1 form to the Punjab government
- 2) Approval of the Punjab government (PDWP)
- 3) CDWP
- 4) ECNEC

The Pakistan side also confirmed to take necessary steps to promote the procedure of approval, targeting its finalization by the end of June 2004.

(3) Environmental Impact Assessment

The Pakistani side explained to undertake the procedures required for environmental protection in compliance with the related regulations of Pakistan during the detailed design stage after the implementation agreement between the governments of Pakistan and Japan.

(4) Plan for Phasing of the Project

Both side agreed that the implementation of the Project would be planned to divide into the following two phases:

- 1) Phase 1 Improvement of existing distribution system (reinforcement of existing network with supplementary sections to arterial mains)
- 2) Phase 2 Construction of facilities for water source, collection, transmission and distribution (construction of tubewells, collector main, booster pump station, transmission main and terminal reservoir)

(5) Requirement for Personnel for Operation and Maintenance of Facilities

WASA will formulate an appropriate plan for recruitment, allocation and training of personnel for operation and maintenance of facilities to be constructed under the Project.

(6) Improvement of Existing Distribution Network

For the purpose of ensuring the maximum effect of increased water supply through the Project, WASA confirmed to carry out the improvement and rehabilitation of existing distribution network, particularly from secondary distribution lines to house connections.



(7) Monitoring System

WASA agreed to establish an appropriate monitoring system of water level in the planned wellfield to check the influence of the Project as well as water quality with reference to the proposal of the Japanese side.

(8) Grading and leveling of Land

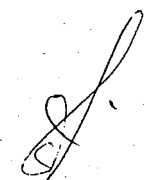
The Pakistani side confirmed to secure the land and to level the sites for the tubewells, the booster pump station and the terminal reservoir, prior to commencement of work on condition that Grant Aid is extended.

(9) Financial Improvement

With the implementation of the project, WASA agreed to take effective measures to secure sound financial status through the improvement of billing, tariff collection and acquisition of new clients.

(10) Tax Exemption

The Pakistan side confirmed to bear all the taxes including customs duties, the Value Added Tax (VAT) related to the Project.



ANNEX 1

THE PROJECT FOR IMPROVEMENT OF WATER SUPPLY
IN Faisalabad, PAKISTAN
LOCATION MAP OF PROJECT AREA



0 5km

- Major roads
- - - Major canals
- . - . - Exist. pipelines
- Exist. tubewells
- New tubewells
- ◻ Exist. pump stations
- ◼ New pump stations

Chenab River

Jhang-Chiniot Road

Chiniot Distributary

24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
09
08
07
06
05
04
03
02
01
Exist. In-line
Booster station

A08 Project wells
and additional wells
(29 tubewells)

Jhang Branch Canal

PLANNED
WELL FIELD

Planned Booster
Pump Station

Bawa road

Planned Transmission
Main (1000mm)
Planned Transmission
Main (1500mm)

Planned Terminal
Reservoir
Exist. Terminal
Reservoir

JHANG DISTRICT

FAISALABAD
DISTRICT

Jhang-Faisalabad road

Faisalabad City

Arterial Mains

Exist. Tubewells
along Rakh Branch Canal
Rakh Branch Canal

Planned Network
Improvement

ANNEX II

LIST OF PLANNED FACILITIES

1. Water Source Facilities
 - a. Tubewells 25 Nos.
 - b. Pumps for tubewells 25 Nos.
 - c. Tubewell stations 25 Nos.
2. Collecting facilities
 - a. Collector mains 14,400m
3. Transmission facilities
 - a. Booster pump station 1 No.
 - b. Intermediate reservoir 1 No.
 - c. Chlorinator 1 No.
 - d. Transmission main 13,000 m
4. Distribution facilities
 - a. Terminal reservoir 1 No.
 - b. Terminal pump station 1 No.
5. Improvement of existing network
 - a. Installation of supplementary sections to existing network 6,000 m

Japan's Grant Aid Scheme

1. Grant Aid Procedures

- 1) Japan's Grant Aid Program is executed through the following procedures.

Application (Request made by a recipient country)

Study (Basic Design Study conducted by JICA)

Appraisal & Approval (Appraisal by the Government of Japan
and Approval by Cabinet)

Determination of Implementation (The Notes exchanged between the Governments of
Japan and the recipient country)


- 2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the Project to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the Project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.



A-1



2. Basic Design Study

1) Contents of the Study

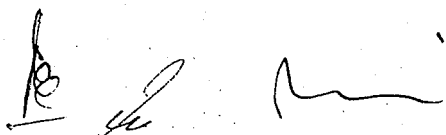
The aim of the Basic Design Study (hereafter referred to as "the Study"), conducted by JICA on a requested project (hereinafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Japanese Government. The contents of the Study are as follows:

- a) Confirmation of the background, objectives, and benefits of the requested Project and also institutional capacity of agencies concerned of the recipient country necessary for Project's implementation.
- b) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
- c) Confirmation of items agreed on by both parties concerning the basic concept of the Project.
- d) Preparation of a basic design of the Project.
- e) Estimation of costs of the Project.

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

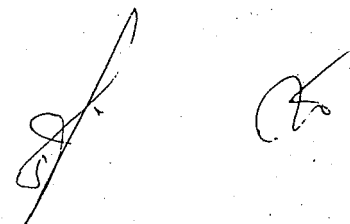
The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants



A-2

A-37



For smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA.

The consultant firm(s) used for the Study is(are) recommended by JICA to the recipient country to also work on the Project's implementation after the Exchanges of Notes, in order to maintain technical consistency.

3. Japan's Grant Aid Scheme

1) Grant Aid

The Grant Aid Program provides a recipient country with non-reimbursable funds to procure facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

2) Exchange of Notes (E/N)



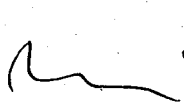
Japan's Grant Aid is extended in accordance with the Notes exchanged by the Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc. are confirmed.

- 3) "The period of the Grant Aid" means the one fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and a final payment to them must be completed.

However in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year by mutual agreement between the two Governments.



A-3



A-38

- 4) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased. When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However the prime contractors, namely, consulting, contracting and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

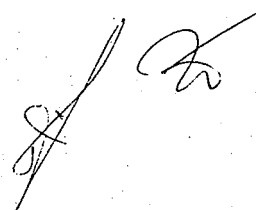
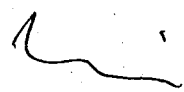


5) Necessity of the "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

6) Undertakings required of the Government of the Recipient Country

In the implementation of the Grant Aid project, the recipient country is required to undertake such necessary measures as the following:

- (1) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction.
- (2) To provide facilities for distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.
- (3) To secure buildings prior to the procurement in case the installation of the equipment.
- (4) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid.



- (5) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts.
- (6) To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.
- (7) Proper Use
The recipient country is required to maintain and use facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.
- (8) Re-export
The products purchased under the Grant Aid should not be re-exported from the recipient country.
- (9) Banking Arrangement (B/A)
- a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the verified contracts.
- b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an authorization to pay issued by the Government of the recipient country or its designated authority.

ANNEX-IV

Major Undertakings to be taken by Each Government

NO	Items	To be covered by Grant Aid	To be covered by Recipient side
1	To secure land		●
2	To clear, level and reclaim the site when needed		●
3	To construct gates and fences in and around the site		●
4	To construct the parking lot	●	
5	To construct roads		●
1)	Within the site	●	
2)	Outside the site		●
6	To construct the building	●	
7	To provide facilities for the distribution of electricity and other incidental facilities		
1)	Electricity		
a.	The distributing line to the site		●
b.	The drop wiring and internal wiring within the site	●	
c.	The main circuit breaker and transformer	●	
2)	Furniture and Equipment		
a.	General furniture		●
b.	Project equipment	●	
8	To bear the following commissions to a bank of Japan for the banking		
1)	Advising commission of A/P		●
2)	Payment commission		●
9	To ensure prompt unloading and customs clearance at the port of		
1)	Marine(Air) transportation of the products from Japan to the recipient country	●	
2)	Tax exemption and customs clearance of the products at the port of disembarkation		●
3)	Internal transportation from the port of disembarkation to the project	●	
10	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		●
11	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract		●
12	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		●
13	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for construction of the facilities as well as for the transportation and installation of the equipment		●

資料 6 基本設計概要表

1. 案件名
パキスタン回教共和国 ファイサラバード上水道整備計画
2. 要請の背景(協力の必要性・位置付け)
<p>(1) 本計画対象地域のファイサラバードは 2003 年推定人口 230 万人で、全国第 3 位の規模にあるが、本調査結果では 55%程度の給水率に過ぎない。パンジャブ州の地方都市は、1998 年国勢調査によると市給水率は平均 50～60%程度の水準にある。このため、2001 年政府の 10 年長期展望開発計画(2001～2011、Ten Year Perspective Development Plan)では全国給水率を平均 60%程度と推定し、2011 年までに 85%まで高める目標を設定した。</p> <p>(2) パ国は長期の経済成長停滞のため、従来開発計画は大部分諸外国や国際機関の支援に依存してきており、水セクターも例外ではない。本計画対象地域ファイサラバード市の上下水道整備は、1976 年から ADB の支援が開始され、上水道施設は 1992 年同機関の財政支援によりフェーズ 1 が完成し、以降今日まで同施設を主体とし同市開発庁／「上下水道公社」(WASA) が給水サービスを実施してきたが、今日まで実質的な増設が行われていないため、現在深刻な給水量の不足に直面している。</p> <p>(3) 同市開発庁／WASA は、1993 年急増する市民需要に対応するため、1976 年の ADB マスタープランを世銀の支援により 1993 年から 2018 年までの長期計画に改訂した。この改訂マスタープランに基づき、1993 年から 2000 年までのフェーズ 2 の実施について、1996 年当時の第 8 次五ヵ年計画の一環として実施することが、中央政府開発計画承認機関である ECNEC により認められ、同年我が国に同フェーズの一環を構成する整備計画に対し無償資金協力による実施が要請された。</p> <p>(4) 同要請に対し、1997 年事前調査が実施され、給水量 91,000m³/日の増強を目的とする新規水源開発計画が合意された。翌 1998 年基本設計調査が開始されたが、調査途中、同年パ国が断行した核実験に対する国際的な経済制裁に我が国も同調し、本調査を含む経済協力は中止となった。</p> <p>(5) 2001 年経済制裁解除後、パ政府は本計画を優先プロジェクトとして再要請し、2002 年から基本設計調査が実施された。調査の結果、1992 年 ADB 支援によるフェーズ 1 完成以降、WASA で世銀マスタープラン・フェーズ 2 計画による施設整備を一部実施したにもかかわらず、実態は 1992 年当時より給水量が減少しており、給水量の不足、普及率の低迷、時間制限給水(一日最大 6 時間)、市内の 1/3 の地域で水圧不足による給水不良など、給水サービスが劣悪化し、特に不足する給水量の増強が急務となっていることが判明した。</p> <p>(6) 本計画による協力は多数の一般市民の BHN を緊急に改善することを目標とし、我が国の無償資金協力事業として実施する妥当性がある。</p>

3. プロジェクト全体計画概要

※ 下線部：本無償資金協力に直接関係する成果、活動及び投入

(1) プロジェクト全体計画の目標（裨益対象の範囲及び規模）

ファイサラバード市の給水サービスが改善される

*対象の範囲および規模。

- ① ファイサラバード市の 2008 年予測人口約 260 万人のうち、156.4 万人（60%）に対し、130lit/人/日の平均給水量が確保される。
- ② 1 日 3 回最大で 6 時間程度の時間制限給水が、継続的な給水に改善される。
- ③ 市人口の 1/3 を占める東部地区に対する不均等な配水が改善される。

(2) プロジェクト全体計画の成果

- ① 水源・取水施設が整備される。
- ② 取水施設からの導水・送水・配水施設が整備される。
- ③ 既存配水幹線の補強により配水システムが改善される。

(3) プロジェクト全体計画の主要活動

- ア. プロジェクト運営のための人員を配置する。
- イ. 水源・取水・導水・送水・配水施設を建設する。
- ウ. 市内の配水管を補強・整備する。(実施機関自助努力分を含む)
- エ. 施設の運営維持管理機材を調達する。
- オ. 新規施設の技術者・操業要員に対し運転・維持管理に必要な技術訓練を実施する。

(4) 投入（インプット）

- ア 日本側(=本案件)：無償資金協力 40.53 億円
- イ 相手国側
- 1) プロジェクト実施に必要な人員(施設要員)
 - 2) 建設資機材
 - 3) 施設の運営・維持管理に係る経費

(5) 実施体制

実施機関：上下水道公社（WASA）

主管官庁：パンジャブ州政府住宅・都市開発・公衆衛生技術省

4. 無償資金協力案件の内容

(1) サイト

ファイサラバード市(パンジャブ州)

(2) 概要

- ① ファイサラバード市において、水源・取水施設、導水施設、送水施設、最終配水池の建設および市内配管の改善
- ② 上記施設の運営・維持管理用機材の調達

(3) 相手国側負担事項

- ① 建設用地の確保、整地
- ② 工事用仮設道路の建設
- ③ 一次側電力工事
- ④ 施設防護柵・門扉等建設
- ⑤ ポンプ場内設備・備品の確保

(4) 概算事業費

概算事業費：46.03 億円（無償資金協力：40.53 億円、「パ」国側負担：5.5 億円）

(5) 工期

E/N(第 1 期)後、詳細設計・入札期間を含め、約 44 ヶ月

(6) 貧困、ジェンダー、環境及び社会面への配慮

- ① 本計画では、新規地下水開発により、水源地周辺地域の地下水位が低下し、地域の主産業である農業が多用する灌漑井戸に影響を与え、それらの井戸の揚水が困難となり、社会問題化するリスクがある。このため、水源計画は、井戸群の取水量や井戸間隔を地下水補給量の範囲で設定する技術的検討を行い、影響を最小限にとどめる考慮をした。
- ② 上記対策にもかかわらず影響が発生した場合の対策として、実施機関は水源地周辺の村落住民に対し住民集会を開催し、本計画の内容、地下水位に関する技術的検討等の説明を含む広報活動を実施し、実際の影響が発生した場合は補償措置を検討し、住民側の合意を得る方針となっている。

5. 外部要因リスク（プロジェクト全体計画の目標の達成に関するもの）

- (1) 地下水の補給にかかわる自然条件と直接の補給源となる用水路が現状と大きく変化しない。
- (2) 周辺農村環境が大きく変化し(生活排水の増大、工場の進出等)水源地の地下水水質を悪化させるような事態とならない。
- (3) 社会情勢の変化等に伴う急激な人口の増減が生じない。

6. 過去の類似案件からの教訓の活用

特になし。

7. プロジェクト全体計画の事後評価に係る提案

(1) プロジェクト全体計画の目標達成を示す成果指標

	現状	計画目標年次（2008 年）
給水人口の増加	127.2 万人	156.4 万人
一人一日平均給水量の増加	100 $\frac{\text{リットル}}{\text{人}}/\text{日}$	130 $\frac{\text{リットル}}{\text{人}}/\text{日}$
市内配水状況の改善	市人口 1/3 を占める東部地区に対する不均等な配水状況	東部地区に対して 130 $\frac{\text{リットル}}{\text{人}}/\text{日}$ の配水が行なわれる。
給水時間の増加	1 日 3 回 計 6 時間給水	24 時間給水

(2) その他の成果指標

- ① 水因性疾患が減少する。

(3) 評価のタイミング

2008 年（本計画にかかる施設建設完工年）以降

資料 7 収集資料リスト

番号	名 称	形態 図書・ビデオ 地図・写真等	オリジナル・ コピー	発行機関	発行年
1	Composite Schedule of Rates	図書	コピー	Standing Rates Committee for Punjab, Govt of Punjab	1998
2	Schedule of Rates Specifications for execution of works	図書	コピー	Standing Rates Committee for Punjab, Govt of Punjab	1967
3	Specifications for materials of construction	図書	コピー	Standing Rates Committee for Punjab, Govt of Punjab	1964
4	Specifications for public health works	図書	コピー	Standing Rates Committee for Punjab, Govt of Punjab	1956
5	Faisalabad area upgrading project	図書	コピー	DFID, GHK, WASA	-
6	Report on seepage measurement of Jhang branch canal at RD215-280	図書	コピー	Irrigation Research Institute, Irrigation & Power Dept., Govt. of Punjab	2003
7	National account of Pakistan	図書	コピー	Federal Bureau of Statistics, Statistic Div., Govt. of Punjab	2002
8	Statistical Supplement Economic Survey	図書	コピー	Finance Div., Govt. of Punjab	1997 -98
9	Daily operation record of WASA	図書	コピー	WASA	2002
10	City map	地図	オリジナル	Federal Development Authority	2002
11	Map of existing network	地図	コピー	WASA	2002
12	Planning machinery in Pakistan	図書	コピー	Planning Commission	-
13	Accelerating economic growth & reducing poverty (PRSP)	図書	コピー	Ministry of Finance, Govt. of Punjab	-
14	Brief on Lahore WASA	図書	コピー	WASA	1998
15	District census report of Faisalabad 1998	図書	コピー	Population census organization, Statistics Div., Govt. of Punjab	2000
16	Provincial census report of Faisalabad 1998	図書	コピー	Population census organization, Statistics Div., Govt. of Punjab	2000
17	Ten year perspective development plan 2001-2011 and three year development program 2001-2004	図書	コピー	Planning commission, Govt. of Punjab	2001
18	WASA balance sheet	図書	コピー	WASA	1994 1995 1996 1997
19	List of water & sewage connections 1997/98-2001/02	図書	コピー	WASA	-
20	Karachi water tariff	図書	コピー	The Sindh Government gazette	2001
21	Lahore water tariff	図書	コピー	The Punjab Government gazette	1998
22	Faisalabad water tariff	図書	コピー	The Punjab Government	2004

				gazette	
23	Brief on metering system planning	図書	コピー	WASA	2002
24	Water supply area map, Faisalabad	地図	コピー	WASA	2003
25	Water supply to pilot arrears	図書	コピー	FDA	1996
26	Annual budget report	図書	コピー	WASA	1998/99 1999/00 2000/01 2001/02 2002/03
27	Greater Faisalabad water supply, sewerage & drainage project (Cost estimate)	図書	コピー	WASA	1990
28	Brief on Faisalabad development authority	図書	コピー		2003