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REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL CIPTA KARYA
DIRECTORATE OF SANITARY ENGINEERING

CONTRACT FOR CONSULTANT SERVICES
FOR
SURAKARTA WATER SYSTEM
NO. 01/WS-S/1/AID/78

MONTHLY PROGRESS

REPORT NO. 20
MAY 1980

BURNS & McDONNELL ENGINEERING COMPANY, INC.
AND
TRANS-ASIA ENGINEERING ASSOCIATES, INC.
A JOINT VENTURE

USAID/Indonesia
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TRANS-ASIA ENGINEERING ASSOCIATES, INC.
A JOINT VENTURE

BURNS & McDONNELL Engineering Co.

Architect - Engineers

A JOINT VENTURE

Consultants - Planners

TRANS-ASIA Engineering Associates, Inc.

Please Reply to: Kotak Pos 105
Surakarta

212/BM/TAE/SKA/80
05 June 1980

Mr. Soesanto Mertodiningrat
Director of Sanitary Engineering
Directorate General Cipta Karya
Jl. Pattimura No: 20
Jakarta Selatan

Subject : Contract for the Consultant Services for
Surakarta Water System, No. 01/WS-S/I/AID/78
dated 26 October 1978

Dear Sir :

In accordance with Section 4.12 and Appendix I of the subject Contract, we are pleased to submit fifteen copies of Monthly Report No. 20 for the month of May 1980.

Very truly yours,

BURNS & MCDONNELL ENGINEERING CO./
TRANS-ASIA ENGINEERING ASSOC. INC.

George M. Pary, P.E.
Chief Engineer

cc.	CJWSP	Semarang	(10 copies)
	USAID	Jakarta	(8 ")
	BM/TAE	Jakarta	(2 ")
	Burns & McDonnell	Kansas City	(1 copy)
	CJWSP-I	Surakarta	(1 ")
	SWE	Surakarta	(1 ")
	Mayor of Surakarta	Surakarta	(1 ")
	File		

GMP/tr

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SECTION I

GENERAL

I-A NARRATIVE SUMMARY

The O & M Specialist, Mr. Al Ringler, has reported in Surakarta on the ninth of May. He immediately started to review the O & M work performed to date, acquainted himself with the site and held conferences with the management personnel of the Surakarta Water Enterprise. The most serious problems experienced to date are the availability of an interpreter and a permanent crew for leak testing. Changing personnel for this function causes unnecessary delays, since they have to be trained in the use of the equipment every time. The O & M Specialist's full report will be found in Appendix VII.

Construction of the transmission pipeline is proceeding rather slowly, due to insufficient contractor personnel and high absenteeism among those actually employed. Despite Contractors' promises at the meeting of 21 May to hire additional personnel, rather fewer than more workers have been showing at the site.

The final part (abt. 200 m) of pipeline right-of-way had been secured early in May. This allowed Sections A and C to proceed with the pipe laying.

All the corporation stops from Ford Meter Box Company required for the completion of the transmission pipeline have been received during the month. However, since the Water Enterprise does not possess AWA standard tapping machine, the installation will have to

wait for the Customs clearance of the last Rohan Corporation shipment, which arrived in the port of Semarang on 19 May. The Consultant offered any help within his capability which would expedite the clearance of this equipment.

The Project has extended by 60 days the completion deadlines on Sections A and B of the transmission line. This action had the support of the Consultant who considers reliable construction and attention to the Technical Specifications as more important than rapid completion. The overall completion of the four sections of the transmission pipeline as of the end of May was 47.2%. Full report of the construction specialist will be found in Appendix III of this report.

The long-awaited water meter test bench arrived in Surakarta on 20 May and was installed in the meter shop of SWE. The Meter Specialist conducted practical training of the prospective repairmen and will supervise beginnings of their work. The O & M Specialist acquainted himself thoroughly with the complete operations as planned for the meter shop and will conduct spot-checks after the departure of the Meter Specialist.

I-B PROBLEMS AND PROPOSED SOLUTIONS

Two worst problems to date have been solved. The right-of-way required for the construction have been obtained and the Rohan Company's shipment held up in Semarang since 4 August 1979 has been released and delivered to Surakarta.

The considerable problem of insufficient personnel hired by the Contractors, continues. Despite Cipta Karya's demand, that the personnel be increased and the Contractors'

assurances to do so, there were no new hires to date. Since even Cipta Karya's instructions are not heeded by the Contractors, there is nothing the Consultant can do, except for bringing this fact to everybody's attention.

There is apparently no permanent O & M crew at the SWE. The Consultant requested that such crew be appointed as per the Organization Chart. Then the O & M Specialist will be able to start proper training of the personnel.

SECTION II
ADMINISTRATION

II-A SUBMISSIONS/APPROVALS

Consultant's Invoice No. 19 for April 1980 U.S. Dollar reimbursible expenses was submitted to Cipta Karya on May 5, 1980 and was approved by CK on May 20, 1980. Consultant's Rupiah Invoice No. 10, submitted to Cipta Karya on 19 May 1980 is awaiting approval. These submittal are in accordance with the Contract Appendix II, page II-15.

II-B CONTRACT STATUS

The month of May was the first month of the new extension to the Consultant's contract. The extension is still under negotiations, however the Consultant has received from Cipta Karya a Letter of Intent and instruction to continue as originally planned. Therefore, no interruption in the work was suffered, the O & M Specialist arrived as scheduled and the Distribution Design Engineer and the Well Drilling Specialist are scheduled to arrive early in June.

Appendix I shows the continuation of Consultant's effort in man-months from the beginning of the Contract.

Appendix II shows billings of approved expenditures to date. Subject to the signing of the Contract, these figures may be subject to adjustment.

II-C PERSONNEL

The Surakarta office personnel in May were as follows :

E x p a t r i a t e s

- George M. Pary, P.E., Chief Engineer
arrived 17 August 1979
- James F. Baucom, Pipeline Engineer
arrived 26 September 1979
- George R. Fike, Meter Specialist
arrived 26 September 1979
- Albert G. Ringler, O & M Specialist
arrived 9 May 1980

I n d o n e s i a n

Professional and Technical :

- A.F. Dengah, Counterpart Chief Engineer
arrived 3 November 1978
- Suyatno Yuwono, Counterpart Hydrogeologist
arrived 5 January 1979 (on leave of absence)
- Mohamad Khalil, Materials Coordinator
arrived 2 October 1978
- Abdul Kadir, Senior Inspector
arrived 9 October 1979
- Bambang Agus Salam, Inspector
arrived 1 May 1979

- Mohamad Syarif Lembah, Inspector
arrived 1 May 1979
- Gatot Bramono, Inspector
arrived 19 November 1979
- Soewanto, Inspector
arrived 11 March 1980
- Wardoyo, Inspector
arrived 11 March 1980
- Akhmad Aries, Draftsman
arrived 13 April 1979
- Translator - Vacancy
- Yonathan Jowie, Accountant
arrived 2 December 1978

Administrative :

- Dradjat Atmardjo, Office Manager
arrived 2 October 1978
- Sri Hartati, Secretary
hired 1 June 1979
- Typist - Vacancy
- Rubiyo, Clerk
hired 1 November 1978
- Chaiz Hidayati, Administrative Clerk
hired 8 October 1979

- Pamudji Rehardjo, Driver
hired 7 October 1978
- Soedarno, Driver
hired 1 December 1979
- Sutrisno, Driver
hired 2 April 1979
- Heru Soewarto, Driver
hired 22 May 1980
- Ermita Taher, Supply Clerk/Labor
hired 19 March 1979
- Djumhan Hardi, Expeditor/Labor
hired 2 January 1979
- Endang Tri Siwi D.M., Receptionist/Labor
hired 1 October 1979
- Suwarno Hadi, Office Boy/Labor
hired 1 November 1978
- Mulyatmono, Watchman/Labor
hired 9 October 1978
- E.M. Suprpto, Field Assistance/Labor
hired 23 November 1979
- Ign. Tri Setya, Copy Machine Operator/Labor
hired 17 March 1980

SECTION III

ENGINEERING & MANAGEMENT

III-A OFF-SHORE PURCHASED MATERIALS

III-A-1 American Cast Iron Pipe Company

The contract has been fulfilled satisfactorily and the Consultant has recommended to Cipta Karya the release of the 10% retention.

III-A-2 Colcorindo Raya

The contract has been fulfilled satisfactorily and the Consultant recommended to Cipta Karya the release of the 10% retention.

III-A-3 The Rohan Company

The shipment which arrived in Semarang on 7 August 1979 has been cleared through the Customs and delivered to Surakarta on 20th of May.

The final shipment from Rohan arrived in Semarang on 24th of May and immediate efforts were started to clear this shipment as soon as possible. Particularly important item in this shipment is AWWA Standard tapping machine, required to complete the construction of the transmission main.

III-A-4 Clow Corporation

The shipment of the missing and damaged parts is expected to be sent in the near future. The Consultant's office in the U.S. received assurances to this effect.

III-B CONSTRUCTION OF TRANSMISSION PIPELINE

III-B-1 General

As mentioned previously, the construction of the pipeline is moving ahead slowly, due to unsufficient personnel hired by the Contractors.

The corporation stops, needed for the completion of the pipeline have arrived in Surakarta. Unfortunately, contrary to previous information, the Surakarta Water Enterprise does not possess AWWA Standard tapping machine and therefore the installation of the corporation stops will have to wait the clearance of the last Rohan shipment, where a tapping machine is available.

III-B-2 Work in Progress

A. Several items of work, on which Contractor Tukadmas was working in the previous reporting periods were completed and therefore the completion percentage rose by 17.9 points. However not very much was achieved during this reporting period, due to high absenteeism among

the already inadequate Contractor's personnel. The flow through the existing main was measured to be 200 litres per second, which is very encouraging. There will be no lack of water when the new pipeline is added to the system.

The Project office has granted the Contractor a 60-day extension for the completion of the contract, that is until 3 July 1980. At the end of month, the completion of Section A was at 81.4%

- B. Contractor Lepen Kencana Utama has completed river crossing No. III and has approximately 300 meters of pipe to lay in order to complete this section, however there is still a considerable amount of other work necessary in order to complete the contract.

The Contractor has been granted a 60-day contract extension by the Project Office, postponing completion deadline until 3 July 1980. By the end of May, the Contractor has completed 65.6% of the contract.

- C. Contractor Tukadmas has six crews working at different places laying the pipe. They have completed the road crossing at Sta. 138+00.

At the end of the month, the completion of Section C was at 18.3%

D. Contractor Lepen Kencana Utama has completed another cross-tie and is installing fittings on the transmission main for crossovers in several other locations. Almost 90% of the pipe has been laid in place.

At the end of the month 61% of work on Section D has been completed.

Full report of the Pipeline Construction Specialist is attached in Appendix III of this report.

III-C GROUNDWATER EXPLORATION AND WELL DEVELOPMENT PROGRAM

No action this month.

III-D MANAGEMENT ASSISTANCE PROGRAM

No action this month.

III-E O & M ASSISTANCE PROGRAM

New O & M Specialist, Mr. Albert Ringler has arrived in Surakarta on 9 May 1980. After review of achievements to date and the study of final report of the previous O & M Specialist, Mr. Ringler has held several informal conferences with the personnel of the Surakarta Water Enterprise and prepared a plan of action for the immediate future.

Full report of the O & M Specialist will be found in Appendix IV of this report.

III-F METER REPAIR TRAINING PROGRAM

The long awaited test bench for water meters arrived on 20th of May. After a slight rework (it was up for

left hand operation) the bench was installed in the new meter shop. The Meter Specialist started practical classes in meter testing and calibrating on 26 May.

Full report of the Meter Repair Specialist will be found in Appendix V of this report.

III-G CONFERENCES

Monthly progress conference was held on 21st of May. Full report will be found in Appendix VII of this report.

III-H ACTIVITIES PLANNED FOR NEXT MONTH

Complete pipe installation in Sections A and B and continue with installation of pipes, valves and fittings in Sections C and D.

Start actual field investigation by the O & M Specialist of the necessary improvements to the existing distribution net of SWE.

Complete the training of meter repairmen and start them on normal working schedule.

Start preliminary work on distribution design by the distribution system design specialist (to arrive early in June).

Start review of drilling plans by the water well drilling specialist (to arrive early in June).

SURAKARTA WATER PROJECT
 REPORT OF MAN-MONTHS EXPENDED BY CONSULTANT
 BURNS & McDONNELL/TRANS-ASIA ENGINEERING ASSOCIATES

CONTRACT NUMBER 01/WS-S/AID/72 AID LOAN 497-U-044	MAN - MONTHS			
	FOR MAY - 1980	CUMULATIVE THROUGH 31 MAY - 1980	% OF TOTAL SCHEDULE	TOTAL IN CONTRACT SCHEDULE
EXPATRIATES				
Principal	0	0.45	22.5	2
Liaison Engineer	0.09	2.61	87	3
Procurement Engineer	0	6.5	100	6.5
Chief Engineer	1	16.5	82.5	20
Pipeline Engineer	1	8.1	50.6	16
Hydrogeologist	0	5.7	47.5	12
Drilling Specialist	0	2.8	23.3	12
Management Specialist	0	16.0	100	16
O & M Specialist	0.7	16.4	78.2	21
Meter Specialist	0.4	7.5	94	8
EXPATRIATE TOTAL	3.19	82.57	70.8	116.5
INDONESIAN PROFESSIONAL & TECHNICAL				
Counterpart Chief Engineer	1	18.6	93	20
Construction Supervisor	0	5.9	42.1	14
Hydrogeologist	0	14.8	98.6	15
Materials Coordinator	1	20	142.8	14
Inspectors	6	50.6	105.4	48
Draftsman	1	16	100	16
Translator	0	11.7	97.5	12
Accountant	1	18	81.8	22
INDON. PROF. & TECH.	10	155.6	96.6	161
INDONESIAN ADMINISTRATIVE				
Office Manager	1	20	100	20
Secretary	1	19	95	20
Typist	0	12.6	57.2	22
Clerks	3	57	129.5	44
Drivers	3.3	65.3	81.6	80
Laborers	6	87.7	54.8	160
ADMINISTRATIVE TOTAL	14.3	261.6	75.6	346

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APPENDIX I

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SURAKARTA WAT
REPORT OF ENGIN
BURNS & MCDONNELL/TRANS-

CONTRACT NO. 01/WS-S/AID/78 SIGNED 26 OCT. 1978 START 1 JAN. 1978 END 31 JAN. 1981	COSTS FOR	CUMULATIVE COSTS THROUGH MAY - 1980 :	
	MAY - 1980	AMOUNT	% OF TOTAL BUDGET ESTIMATE
REIMBURSABLE EXPENDITURES			
U S DOLLAR			
Salaries and Related Costs	-	445,167.81	72.6
Transportation	-	18,748	30.9
Equipment	-	-	-
Miscellaneous	-	30,678.32	92.4
Training	-	-	-
Contingencies	-	-	-
TOTAL DOLLARS	-	494,594.13	59.3
INDONESIAN			
Salaries	8,589,900	64,530,966	90.6
Transportation	3,380,039	25,803,206	91.5
Housing	2,800,000	33,000,000	103.2
Vehicle Costs	712,850	28,956,472	115.5
Equipment Costs	5,126,500	18,233,935	138.6
Miscellaneous	2,769,345	23,640,935	95.9
Contingencies	-	19,416,960	100
TOTAL RUPIAH	23,378,634	213,582,474	99.9

A WATER PROJECT
 ENGINEERING COSTS
 ANS-ASIA ENGINEERING ASSOC.

CUMULATIVE PAYMENTS THROUGH MAY - 1980.			TOTAL BUDGET ESTIMATE FOR CONTRACT
AMOUNT RECEIVED IN MAY - 1980	TOTAL AMOUNT RECEIVED THROUGH	% OF TOTAL BUDGET ESTIMATE	
DOLLARS			
19,093.90	445,167.81	72.6	5612,922
2,005.12	18,748	30.9	60,638
-	-	-	36,000
-	30,678.32	92.4	33,181
-	-	-	14,544
-	-	-	75,729
21,099.02	494,594.13	59.3	\$ 333,014
SIAN RUPIAH			
-	55,941,066	73.6	71,150,000
-	22,423,167	79.5	28,195,000
-	30,200,000	94.5	31,950,000
-	28,243,622	112.7	25,050,000
-	13,107,435	99.6	13,153,000
-	20,871,590	84.6	24,670,000
-	19,416,960	100	19,416,960
-	190,203,840	89	213,586,560

Best Available Document

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SURAKARTA WATER PROJECT
TRANSMISSION MAIN
PROGRESS REPORT NO.8
02 JUNE 1980

I. GENERAL

The Consultant was advised the last crate from Rohan was due into the Port of Semarang 24 May 1980. Efforts are being made to obtain said crate immediately from customs so that the tapping tools contained therein can be used on the transmission main. The partial shipment of corporation stops have been received from Ford Meter Box Co. but without the mentioned tapping tools they cannot be installed.

The other Rohan shipment mentioned in the previous report was received in Surakarta 19 May 1980. The contractors received some unexpected assistance when the O & M Specialist cut some of the pipe using the new abrasive cut off saw while training three of the technical staff of the Surakarta Water Enterprise how to operate it.

On 05 May 1980, the Consultant was advised by CJWSP that the final section of land easement was settled which allows Sections A and C to proceed. It is now anticipated that no other complications regarding easements will develop.

II. WORK IN PROGRESS

- A. Contractor Tukadmas experienced considerable absenteeism following the shutdown operation and was slow to restart ongoing operations. The reservoir at Kartasura was filled and due to the need for the contractor to rework certain portions of the piping was again drained.

Flow through the existing main is now up to 200 L/s. Activity has again started on the north approach to the Tempel River. The main was connected to the stream crossing pipe on the south side of the Brambang River and final work on riprap is in progress. As of the end of this reporting period, the contractor has less than two hundred (200) meters of pipe to install plus some line valves and outlet tees where work sections meet. The Project granted Tukadmas a sixty (60) calendar day extension of time on Section A.

- B. Contractor Lepen Kencana Utama has spanned the stream at crossing No. III and is working the north and south approaches to same. He has less than three hundred (300) meters of pipe to install but it is all through rocky terrain. Restoration work is in progress in the area where tunnel No. 2 was made an open cut. The new intake pipe has been extended across the spring pool from BV-13 at the Division Chamber and is within six meters of the Intake Structure. A free flow was discharged from the new main at Sta. 10+00 to clean the line prior to connecting the third stream crossing. The level was maintained according to design in the Division Chamber with 150 L/S flowing through the existing main to Surakarta (registered on the new flow meter installed at Kartasura Reservoir) during the free flow. The Project granted Lepen Kencana Utama a sixty (60) calendar day extension of time on Section B.
- C. Contractor Tukadmas has received approval of his shop drawings for the stream crossing at the Brojo River and the pipe bridge over the Pelemwulung River. His contract was signed and he submitted his first billing for payment during this period. The highway was crossed

at Sta. 138+00 and six crews are working at various locations along the route. Of the more than ten kilometers of pipe, almost 40% has been laid in place.

- D. Contractor Lepen Kencana Utama made another cross tie to the existing distribution system at Sta. 242+25. Piping is being delivered to start work in the Jebres Reservoir pipe gallery. Fittings are being installed at various locations where work sections join. Coordination meetings have been held with the Surakarta Public Works for closing of streets to make crossings beginning 02 June 1980. Of the nearly eight kilometers of pipe, almost 90% has been laid in place. His contract was signed and he submitted his first billing for payment during this period.

III. PROBLEMS

- A. Tapping machine in final Rohan crate which is now supposed to be in Semarang is needed to complete the installation of corporation stops.
- B. Rock excavation in Section B continuous to be slow.

IV. FUTURE PLANNING

- A. Complete installation of transmission main pipe, valves and fittings, drill and tap as required for high point vents and test where required. Finish tightening all flange joints at Kartasura reservoir and place it into operation.
- B. Complete stream crossing III and installation of transmission main pipe and fittings including drilling and tapping for high point vents. Make connection of new pipe to Intake Structure.

- C. Construct the Brojo stream crossing and pipe bridge over the Pelemwulung River. Continue installation of main and test from crossties previously made. Connect to interface with Sec. D and Sec. A and coordinate those activities.
- D. Make street crossings and complete connections to the existing distribution system. Continue to install remaining main and make tests from crossties. Make railroad crossing at Sta. 204+00 and extend main to interface with Sec. C. Install new pipe, valves and fittings in the pipe gallery of Jebres Reservoir.

V. PIPELINE CONSTRUCTION SPECIALIST COMMENTS

As the Phase I construction enters the final weeks, the importance of concentrating the contractor's efforts toward productive activities will become paramount. It is typical for construction personnel to see the end of the project and tend to slack off. The sixty day contract extension resulted from two main delaying factors, the grater being land acquisition, the lesser was rocky or hard excavation.

With the Phase II completion date being almost the same as the extended date for Phase I, it can be anticipated that the contractors, being involved in both, will diffuse their work force in each. We try to impress the need for any pipe related activity to be done first so that we may start the flow of water. Afterwards, such things as road repair concrete air valve vaults and clean up can be done.

The contractor's interest in showing good progress during the early and mid point segments of his time schedule tends to have the easier work done first. With the more difficult tasks held toward the last, if time was lost during the elapsed period for any reason, the constraint of completing on time becomes almost impossible. It is the opinion of the Pipeline Construction Specialist that both contractors have done exactly that.

SURAKARTA WATER PROJECT
OVERHAUL AND MAINTENANCE ASSISTANCE
PHASE II, PROGRESS REPORT NO. 1
2 JUNE 1980

Arrived in Surakarta on the ninth. Started work on the twelfth. Made tour of the project with the Pipeline Construction Specialist and attended the weekly meeting with the Contractors.

Had a meeting with Mr. Soelarno at Water Enterprise concerning present problems and the handling of same. We discussed a leak on the transmission main at Kartasura, and later I went out and showed there ways of repairing it. There are going to be some changes made in operating procedures.

Started drawings of proposed equipment for the maintenance shop and had them completed for the meeting on the twenty-first.

Khalil and I inventoried materials on hand. I feel that what we have is a bare minimum for the work at hand.

On 20th of May received " Report and Recommendations" of Phase I of O & M and the proposed O & M Manual. Started review of both documents.

Had a meeting with Mr. Soedarto and Harry the interpreter who informed me he is going to leave the employment of Water Enterprise, which means he will have to be replaced.

Gave instruction on the use of the valve locator to six Water Enterprise employees, Mr. Suranto, Chief of Transmission and Distribution, Mr. Said, Mr. Suardi, Mr. Sudarjo, Mr. Pawirorejo, Mr. Biman and Mr. Mrajak. We went to Kartasura on the transmission main and tried to locate a lost blow-off valve. Had to return to the office to get the pipe locator as this valve does not have a valve box on it. In addition, there is so much metal mixed in the asphalt it makes the valve locator impracticable. Will hold another class later in a better location.

Attended monthly meeting the twenty-first. Mr. Aziz stated that the system rehabilitation project has forty million Rupiah available. Since this is 1979/1980 budget money, it should be spent as soon as possible. It was decided to purchase plastic pipe and fittings with thirty million and give the Water Enterprise ten million for labor costs of installing and replacing existing pipe.

Mr. Thorn concern now is getting the rehabilitation program started. We went to the Water Enterprise and inspected their present warehouse and old meter shop and spoke with Mr. Soedarto about making some changes. Mr. Soedarto indicated there were no funds available for such a project. I prepared a drawing of the recommended changes and submitted a letter and drawings to Mr. Hari (Head of Division I) asking for his assistance in getting this phase of the program started.

Had another meeting with Mr. Soedarto and two of his technical personnel gave them each a copy of the revised department structure, and recommended early implementation, as well as stressed the importance of interdepartmental communication. This way a valve survey may get under way immediately so that the leak survey may follow.

Held instruction on the demolition saw three different times for three water enterprise employees, Mr. Saidi, Mr. Biman, and Mr. Mrajak. We went out and made actual pipe cuts for the Contractor. All three did a good job and I feel they can operate and maintain the saw properly and safely. We should try to locate a source for carbon blades in Indonesia for them, since otherwise, when the present supply runs out, the usage of the saw may be discontinued.

WATER METER PROGRAM MONTHLY PROGRESS REPORT

M A Y 1980

The Water Meter Specialist was requested to remain on the Contract one additional month, due to the fact that the meter test bench and the tank are still being held by the Customs authorities. Since the bench was supposed to be released early in May, the Meter Specialist agreed to the request and will leave in mid-June instead of mid-May, as originally planned. While waiting for the delivery of the test bench the Meter Specialist supervised final improvements to the metershop.

Discussions were held with Mr. Hariyanto Santosa of the Surakarta Water Enterprise regarding the progress and class standing of the five prospective meter repairmen. After the completion of the practical part of course (with the test bench) three of the candidates will be recommended as permanent meter repairmen.

The test bench including all accessories was delivered to Surakarta on 20 May, however it turned out that it was oriented for left hand operation. Therefore, the bench had to be drilled and tapped in order to reorient it for right hand operation. This work caused several days' postponement in the already belated practical classes. The practical classes finally started on Monday, 26 May. There was some additional training since all the prospective meter repairmen were helping the Meter Specialist to install and calibrate the test bench, as well as stop a leak that showed at the beginning of testing.

Classes on the repair and testing will continue until early in June. After the completion, the Meter Specialist will supervise repair and calibration to be done by students themselves.

SURAKARTA WATER
SCHEDULE OF
PERCENT COMPLETED AT

ORIGINAL CONTRACT

	1978												1979			
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN
	CHIEF ENGINEER															
GENERAL COORDINATION AND ENGINEERING & MANAGEMENT ASSISTANCE																
O & M SPECIALIST																
REVIEW EXIST. O & M STANDARDS & CONDITION OF DISTRIB. SYSTEM																
PREPARE O & M MANUAL & PLAN FOR REHAB. OF EXIST. SYSTEM																
PREPARE O & M TRAINING MANUAL																
FORMAL CLASSROOM TRAINING																
END PHASE I PREPARE REPORT																
CONDUCT LEAKAGE DETECTION AND DEVELOP REHABILITATION PLAN																
SET UP WAREHOUSING & RECOMMEND ADDITIONAL O & M EQUIPMENT																
OFFSHORE EQUIPMENT PROCUREMENT																
SET UP O & M SHOP																
SUPERVISE REHAB. OF EXIST. DISTR. SYSTEM																
WRITE FINAL REPORT AND CERTIFICATION																

SURAKARTA WATER
SCHEDULE OF
PERCENT COMPLETED AT

	ORIGINAL CONTRACT															
	1978			1979												
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN
MANAGEMENT SPECIALIST																
REVIEW EXIST. SYSTEM & PREPARE MANAGEMENT & ACCOUNTING MANUAL			100													
STAFF TRAINING																
OVER SEEING TRAINED STAFF																
FINANCIAL PROJECTIONS FOR FUTURE OPERATIONS SWE																
FINAL REPORT AND CERTIFICATION																
ADDITIONAL TRAINING/OVER SEEING VISITS BY MANAGEMENT SPECIALIST																
METER SPECIALIST																
SET UP MODERN METER SHOP																
GENERAL TRAINING OF ENG'G STAFF																
TRAINING AND OVER SEEING METER REPAIR TECHNICIANS																
FINAL REPORT AND CERTIFICATION																

SURAKARTA W
 SCHEDULE OF
 PERCENT COMPLETED

	ORIGINAL CONTRACT														
	1973														
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
GROUND WATER DEVELOPMENT HYDROGEOLOGICAL INVESTIGATIONS, STUDIES AND ANALYZIS (Hydrogeologist) WRITE DRILLING SPECIFICATIONS SUPERVISION OF WELL DRILLING (WELL DRILLING SUPERINTENDENT) WELL TESTING AND EXPLOITATION DECISION (HYDROLOGIST) FINAL REPORT ON WELLS WELL EQUIPMENT (PUMPS, MOTORS SPRING) PROCUREMENT OFF-SHORE															
TRANSMISSION MAIN OFF-SHORE PROCUREMENT PIPELINE CONSTRUCTION PREPARE AS-BUILT DRAWINGS FINAL REPORT AND CERTIFICATION															

SURAKARTA WA
SCHEDULE OF
PERCENT COMPLETED AT

	ORIGINAL CONTRACT														
	1978			1979											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
WATER DISTRIBUTION NETWORK															
TOPOGRAPHIC SURVEY AND PREPARATION OF PLANS															
DESIGN OF DISTRIBUTION NETWORK															
PROCUREMENT OF MATERIALS (PIPES, FITTINGS, VALVES ETC.)															
CONSTRUCTION SPECIFICATIONS															
PREQUALIFY, TENDER & AWARD CONTRACTS															
CONSTRUCTION SUPERVISION															
PREPARE AS-BUILT DRAWINGS															
FINAL REPORT AND CERTIFICATION															
OFF-SHORE PROCUREMENT															
PROCUREMENT ENGINEER (AS REQUIRED)															
LIAISON CPTA KARYA/USAID/SM/TAE															
LIAISON OFFICER (AS REQUIRED)															

MEMORANDUM OF
MONTHLY PROGRESS MEETING

Place : Surakarta Project/Consultant Office
Date : May 21, 1980, Wednesday
Hour : 09:45 a.m. - 01:15 p.m.

Attended by :

1. Mr. Aziz A.S. - Directorate of Sanitary Engineering
2. Mr. Paul Thorn - USAID
3. Mr. Krisno Darusman - CJWSP
4. Mr. Hari Wahyuadi - SWSP
5. Mr. Soedarto - SWE
6. Mr. Harry Santosa - SWE
7. Mr. Fred Midgett - BM/TAE
8. Mr. George Pary - BM/TAE
9. Mr. Frank Baucom - BM/TAE
10. Mr. George Pike - BM/TAE
11. Mr. Albert Ringler - BM/TAE
12. Mr. Dengah - BM/TAE
13. Mr. I Made Kari - Tukadmas
14. Mr. Bambang W. - Lepen Kencana

Results :

1. Off-shore Purchased Material Transportation:
 - Balance of shipment which arrived on August 4, 1979 arrived at Surakarta on Monday, May 19, 1980
 - Needed documents to be completed by Panca Niaga soonest.
 - Rohan's purchase order to be completed with shipment to arrive 24 May 1980
2. Consultant's Proposal for Extension & Distribution Design :
 - BM/TAE has received Letter of Intend
 - Each BM/TAE activity should go on

- Drilling Specialist (expat) to be approved soonest.
- Local Hydrogeologist to be on site during drilling - if Suyatno not available CK can supply one.
- Two (2) additional Inspectors : approved if BM/TAE train one of the proposed Inspector.
- Design Criteria to be changed to 20 Kampongs without mentioning length of pipe.

3. Installation of Transmission Main :

- Section C and D funds to be spent up as soon as possible, not later than September 1980.
- Section A : to be completed 3 July 1980
Contractor to increase manpower (appr. 50 laborers)
- Section B : to be completed 3 July 1980
Contractor to increase manpower (appr. 100 laborers)
- Section C : At least jointing of pipes ready 9 July 1980, if possible totally complete
- Section D : Possible to complete 9 July 1980
Attention to traffic flow.
Especially for Ngeemplak Railroad Crossing to be coordinated with Project and Public Works.

4. Rehabilitation of Distribution & Service Lines :

- Coordination between SWE, SWSP and BM/TAE
- Project to purchase material as soon as possible, funds to be spent before September 1980
- Rehabilitation work by SWE under supervision of SWSP & BM/TAE

- Rehabilitation of "Kandang Menjangan" 400 mm old main (200 LM) BM/TAE to consider which system is most efficient, by welding or by replacing it.

5. O & M Workshop :

- BM/TAE to submit revised proposal at the latest Wednesday 28 May 1980.

6. Distribution pipes FY 1980-1981 :

- BM/TAE to submit list of materials to be purchased total of 11,820 M, consisting of 3", 2", 1", 3/4" diameters.
- Project to purchase this material not later than end of June 1980.
- Installation can be done at the end of Fiscal Year 1980-1981.

SURAKARTA WATER
EXPATRIATE STAFF

ORIGINAL CONTRACT

	1978			1979											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	LIAISON OFFICER *	-----													
PRINCIPAL *	-----														
OFF-SHORE PROCUREMENT ENGR. *	-----														
CHIEF ENGINEER	-----														
PIPELINE CONSTR. SPECIALIST	-----														
O & M SPECIALIST	-----														
DISTRIBUTION DESIGN ENGR.	-----														
HYDROGEOLOGIST	-----														
WELL DRILLING SPECIALIST	-----														
METER SPECIALIST	-----														
MANAGEMENT SPECIALIST	-----														
SPECIALIST	-----														

PHASE I

* NOT A FULL-TIME ENGAGEMENT-AVAILABILITY AS REQUIRED

WATER PROJECT
OFF DEPLOYMENT

APPENDIX-VIII

EXTENSION B ADDENDUM TO CONTRACT

1950

1951

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

PHASE II

Best Available Document