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REPUBLIC OF INDONESIA
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DIRECTORATE OF SANITARY ENGINEERING

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

MONTHLY PROGRESS

REPORT NO. 19
APRIL 1980

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

USAID / Indonesia
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BURNS & McDONNELL Engineering Co.

Architect - Engineers

A JOINT VENTURE

Consultants - Planners

TRANS - ASIA Engineering Associates, Inc.

Please Reply to: Kotak pos 105
Surakarta

174/BM/TAE/SKA/80

5 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.

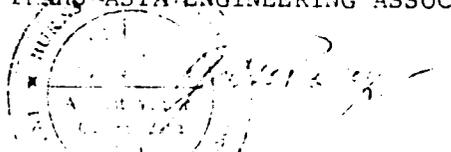
Dear Sir :

In accordance with Section 4.12 and Appendix I of the
subject Contract, we are pleased to submit fifteen
copies of Monthly Report No. 19 for the month of
April 1980.

We hope, that this report will meet with your approval.

Very truly yours,

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


George M. Dary, P.E.
Chief Engineer

cc.	CJWSP	Semarang	(10 copies)
	USAID	Jakarta	(3 ")
	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 work is continuing on all four sections of the transmission main. The most important accomplishment during the month was the completion of six cross-connections between the old and the new transmission lines, as well as the disconnection and bypassing of the old Kartasura break tank. This job was achieved thanks to close cooperation of Surakarta Water Enterprise and Central Java Water Supply Project with the Contractors and the Consultant. This was the only major disruption of service required on the project and was accomplished in four days including draining of the pipelines and disinfection after the completion of the job.

General pipe laying is progressing satisfactorily, although at Sta. 15+50 the work is slow due to the encountered rock.

The Consultant, after approval of the preliminary shop drawings, received assurance from the Ford Meter Box Company, that the brass goods necessary for the completion of the transmission pipeline will be forthcoming as first priority, probably early in May.

On the debit side, approximately 200 meters of right-of-way in Tempel Village are still under negotiations. This matter is strictly between the CJWSP, Regency and owners of record, and little can be achieved by the Consultant in the problem.

The O & M Specialist has completed the first draft of the Final Report and Recommendations for Phase One. The Report is now being reviewed and typed for submittal to Cipta Karya and USAID.

The Meter Specialist, despite incomplete Meter Repair Shop (meter test bench is still be held by the Customs), started classes for the prospective meter repairmen on 21 April. Out of the five candidates, three best will be chosen as meter repairmen.

The Consultant has written a letter to the Rohan Company enumerating parts missing from the shipment as well as damage during transit and expects the missing parts and replacements to be shipped at the earliest.

A meeting was held on 1 April with the Contractors in order to explore the possibilities of speeding up the work. Full report of the meeting is attached Appendix V.

On 7 April a meeting was held in order to coordinate work on interconnections of the new and the existing transmission line, between the Contractors, Consultant, CJWSP and SWE. Full report of the meeting is attached in Appendix V.

I-B PROBLEMS AND PROPOSED SOLUTIONS

The problem of the final length of right-of-way required for the construction of the pipeline is being solved between the Indonesian Governmental agencies. The Consultant was assured, however, that the right-of-way will be obtained early in May.

On the Rohan shipment (meter test bench et al.) the Consultant has given CJWSP a written assurance that the formal papers will be arriving within the next 90 days. The CJWSP is making an effort to have the shipment released by the Customs. The main problem here is, that the Meter Specialist's time is getting short and his program cannot be completed without the repair bench.

SECTION II
ADMINISTRATION

II-A SUBMISSIONS/APPROVALS

Consultant's Invoice No. 18 for March 1980 U.S. Dollar reimbursible expenses was submitted to Cipta Karya on April 9, 1980 and was approved by CK on April 22, 1980. Consultant's Rupiah Invoice No. 9, submitted to Cipta Karya on 8 March 1980 was approved on 22 April 1980. These submittals are in accordance with the Contract Appendix II, page II-15.

II-B CONTRACT STATUS

Appendix I shows the contract status in man/months expended versus man/months authorized for the project. As can be seen the Materials Coordinator's time has already been expended, although his work is necessary for the duration of the construction. This position will be continued in the extension of the Consultant's contract.

Appendix II shows billings and balances of approved expenditures on the contract date. The vehicle/gasoline/maintenance costs have run over the allocated amount. The reason for this overexpenditure is, that soon after the allotments on the contract were made, the devaluation of Rupiah has been announced. Therefore the original costs of the vehicles and maintenance had risen considerably. There was no adjustment made to compensate for the additional costs.

The Consultant requested Cipta Karya at the December monthly meeting to increase the allowance for local transportation from the contingency allowance. This question has been raised again, during the meeting of January 10, 1980. Cipta Karya approved these expenses. The Consultant has been informed, that single line items may run over the allotted amount, provided, that the gross Rupiah expense is kept within the allocation.

The Consultant has submitted another revision to the Consulting Contract. An early decision from Cipta Karya is expected.

II-C PERSONNEL

The Surakarta office personnel in April 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

- Thomas G. Fodor, O & M Specialist
arrived 25 December 1978
departed 12 April 1980

- James F. Baucom, Pipeline Engineer
arrived 26 September 1979

- George R. Pike, Meter Specialist
arrived 26 September 1979

I n d o n e s i a n

Professional and Technical :

- A.F. Dengah, Counterpart Chief Engineer
arrived 8 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
- Rubiyo, Clerk
hired 1 November 1978
- Chaiz Hidayati, Administrative Clerk
hired 8 October 1979
- Pamudji Rahardjo, Driver
hired 2 October 1978
- Soedarno, Driver
hired 1 December 1979
- Sutrisno, Driver
hired 2 April 1979
- 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 to Semarang on 7 August 1979 has not yet been cleared through the Customs. The Consultant, working from Surakarta through the Kansas City Office, has obtained assurance of the early delivery of the required corrected originals and sent a letter to CJWSP with this assurance. The Customs are to release the shipment on the basis of this letter.

It is expected that the shipment will be released early in May, in time for the Meter Specialist to train SWE personnel in meter testing.

III-A-4 Clow Corporation

The Kansas City office of the Consultant has contacted the Clow Corporation regarding missing and damaged parts. To date no answer has been received to the letter sent on the same subject from the Surakarta Office.

III-B CONSTRUCTION OF TRANSMISSION PIPELINE

III-B-1 General

Contrary to previous information, the Consultant learned from the Ford Meter Box Company, that the Letter of Credit has not yet been opened for their contract. This may delay the partial shipment of corporation stocks needed for the completion of the transmission main.

III-B-2 Work in Progress

- A. Contractor Tukadmas continued installation of pipe and connected Section A to Section B south of Tempel River. Three cross ties with the existing transmission main were also completed. Break tank at the Kartasura Reservoir was disconnected and bypassed. It is expected, that early in May the miscellaneous small piping and trim will be installed. At the end of April Section A was at the stage of 63.5% actually completed.
- B. Contractor Lepen Kencana Utama installation of the 500 mm transmission main and was working on the excavation at Tunnel No. 2.

Existing weir in the grit chamber and removed section of the existing pipe. All modifications called for in the division chamber have been completed. Air valve vaults have been also completed.

At the end of April, the Contractor has completed 58.8% of Section B.

- C. Construction by Tukadmas of 600 mm \varnothing main continues in several locations. Railroad crossing structure has been completed and cross tie to the old main accomplished.

At the end of April, the Contractor was 9.8% completed.

- D. Lepen Kencana Utama is installing 500 mm \varnothing transmission main in several locations. The existing 300 mm \varnothing distribution main opposite Jebres Reservoir was connected to the main and two cross ties to the old main were completed.

As of the end of April, the Contractor was 48.6% completed.

Full report of the Pipeline Construction Specialist will be found in Appendix III.

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

The O & M Specialist has completed the formal part of his Phase I job and prepared his final report and recommendations. The report is now being typed and reviewed by the Consultant for a later submittal to Cipta Karya and USAID. O & M Specialist departed for the United States on 12 April 1980.

III-F METER REPAIR TRAINING PROGRAM

While waiting for equipment ordered and test bench to be delivered, the Meter Specialist has started formal classroom training of the prospective repairmen. Five personnel have been chosen from the permanent staff of the Surakarta Water Enterprise, three of whom will be recommended as meter repairmen.

One problem, difficult to overcome, is the lack of qualified interpreter at the Surakarta Water Enterprise. The only interpreter employed by the SWE is often busy on other jobs. When this happens, the Consultant must move one of his personnel from his regular job to do the interpreting, with the consequent difficulties of keeping the latter's job fulfilled. There is a definite need for an interpreter at the SWE.

III-G CONFERENCES

Two general conferences were held at the Consultant's office during April.

On 1 April a conference on problems with delayed construction was held, attended by CJWSP, SWE, the Contractors and the Consultant.

On 7 April a conference was held on coordination of the cross tie work between the new and the old transmission main, attended by CJWSP Sec. I, SWE, Contractors and the Consultant.

Full report on both conferences will be found in Appendix V.

III-H ACTIVITIES PLANNED FOR NEXT MONTH

The Consultant will continue working closely with CJWSP in order to help clear the Rohan Company's shipment through the Customs.

Complete, fill, test and disinfect Kartasura Reservoir and put it on line.

Start work in Tempel Village as soon as the right-of-way is obtained.

Continue laying pipe and make connections to the existing system as required.

Install water meter test bench as soon as received and start practical training of water repairmen.

Continue attempts for early delivery of corporation stops from the Ford Meter Box Company.

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

CONTRACT NUMBER 01/MS-S/AID/78 AID LOAN 497-CU-044	MAN-MONTHS			
	FOR APRIL 1980.	CUMULATIVE THROUGH 30 APRIL 1980	% OF TOTAL SCHEDULE	TOTAL IN CONTRACT SCHEDULE
EXPERIENCED				
Principal	0	0.45	22.5	2
Liaison Engineer	0.09	2.92	84	3
Procurement Engineer	0	6.5	100	6.5
Chief Engineer	1	15.5	77.5	20
Top Field Engineer	1	7.1	44.3	16
Hydrobiologist	0	5.7	47.5	12
Drilling Specialist	0	2.9	23.3	12
Management Specialist	0	16.0	100	16
Drill Specialist	0.3	15.7	75	21
Meter Specialist	1	7.1	88.7	8
EXPERIENCED TOTAL	3.39	79.38	68.1	116.5
ADDITIONAL PERSONNEL TOTALS BY CATEGORY				
Counterpart Chief Engineer	1	17.6	88	20
Counterpart Supervisor	0	5.9	42.1	14
Hydrobiologist	0	14.8	98.6	15
Materials Coordinator	1	19	135.7	14
Inspector	11.4	44.6	92.9	25
Overseer	1	15	93.7	16
Translator	0	11.7	97.5	12
Secretary	1	17	77.2	22
ADMIN. ENG. & TECH.				147
ADMINISTRATIVE PERSONNEL TOTAL				
Office Manager	1	19	95	20
Secretary	1	18	90	20
Driver	0	12.6	95	13
Clerks	3	54	90	44
Drivers	4	62	77.5	80
Laborers	6	81.7	51	160
ADMINISTRATIVE TOTAL	15	267.3	71.4	346

Bea Kati Sidi Damaranti

APR 1980

SURAKARTA WATER
REPORT OF ENGINEER
BURNS & MCDONNELL/TRANS-ASI

CONTRACT NO. 01/WS-S/AID/78 SIGNED 26 OCT. 1978 START 1 JAN. 1978 END 31 JAN. 1981	COSTS FOR		CUMULATIVE COSTS THROUGH	
	APRIL 1980		APRIL 1980	
REIMBURSABLE EXPENDITURES		AMOUNT	% OF TOTAL BUDGET ESTIMATE	
U S DOLLARS				
Salaries and Related Costs	19,093.90	445,167, 81	72.6	24
Transportation	2,005.12	18,748	30.9	
Equipment	-	-	-	
Miscellaneous	-	30,678, 32	92.7	
Training	-	-	-	
Contingencies	-	-	-	
TOTAL DOLLARS	21,009.02	494,363, 13	59.3	
INDONESIAN RUPIAH				
Salaries	-	55,941,066	78.6	9
Transportation	-	22,210,617	78.7	
Housing	-	30,200,000	94.5	
Vehicle Costs	-	28,243,622	112.7	
Equipment Costs	-	13,107,435	99.6	
Miscellaneous	-	10,871,590	84.6	
Contingencies	-	19,416,960	100.0	13
TOTAL RUPIAH	-	189,991,290	88.9	31

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WATER PROJECT
 ENGINEERING COSTS
 S-ASIA ENGINEERING ASSOC.

CUMULATIVE PAYMENTS THROUGH APRIL 1980			TOTAL BUDGET ESTIMATE FOR CONTRACT
AMOUNT RECEIVED IN	TOTAL AMOUNT RECEIVED THROUGH	% OF TOTAL BUDGET ESTIMATE	
DOLLARS			
24,379, 55	426,073, 91	69.5	5612,922
483. 45	16,742. 88	27.6	60,638
-	-	-	36,000
-	30,668, 32	92.4	33,181
-	-	-	14,544
-	-	-	75,729
24,632	473,495, 11	55.8	5333,014
INDONESIAN RUPIAH			
9,442,767	55,941,066	78.6	71,150,000
2,659,664	22,210,617	78.7	23,195,000
2,800,000	30,200,000	94.5	31,950,000
918,852	28,243,622	112.7	35,050,000
2,507,300	13,107,435	99.6	13,153,000
3,884,215	20,871,590	84.6	24,670,000
10,611,135	19,416,960	100.0	19,416,960
32,823,933	189,991,290	88.9	213,586,560

SURAKARTA WATER PROJECT
TRANSMISSION MAIN
PROGRESS REPORT NO.7
01 MAY 1980

I. GENERAL

The Consultant has approved the submittal data from the Ford Meter Box Company and has received their acknowledgement that a partial early shipment can and will be made for the immediately needed corporation stops. It is now anticipated the partial shipment will be received during the month of May 1980.

There are many tools, valve wrenches and other items within the Rohan shipment still being held at the Port of Semarang which would enhance completion of the transmission main. SWE has had to provide part of those things, where they could, to help the Contractors perform certain tasks.

There remains approximately two hundred (200) meters of land easements all within Tempel Village, still unsettled. A research is being made of the records by the various governing authorities to determine jurisdiction in the matter. It is the understanding of the Consultant that Central Java Water Project has the funds available if it is determined jurisdiction remains with Boyolali Regency.

A major undertaking was successfully accomplished during this reporting period. Beginning with coordination and planning meetings called by the Consultant in early April, the water supply to Surakarta was closed off on 28 April 1980. During this shut down period all modification work called for by the original contract was accomplished at Cokrotulung Springs, the Katasura Reservoir Break Tank was disconnected

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and by passed and all six (6) major cross tie connections between the old and new mains were completed from Tegalgondo Village to Jebres plus one connection to the distribution system. All of this involved sections A, B, C, and D. At 1800 on 30 April 1980 SWE began opening valves to again supply water to Surakarta. It was a concerted effort not only involving the Consultant and Contractors but also Central Java Water Project and, of course, the Surakarta Water Enterprise.

II. WORK IN PROGRESS :

- A. Contractor Tukadmas continued with installation of the \emptyset 450 mm transmission main south of the Tempel River and with road repair between Sta. 50+12 and 70+00. He installed the final twelve meters to connect to the butterfly valve left by the Section B Contractor at Sta. 50+00, following a successful Hydrostatic test to Sta. 76+00. The cross ties were made at Sta. 76+60, 121+58 and 121+62 along with extending the \emptyset 600 mm inlet and outlet piping from the Kartasura Reservoir Pipe Gallery to the highway. The Break Tank at the Kartasura Reservoir was disconnected from the old main which in turn was joined for straight through flow. Material was received by the Contractor from CJWSP-Semarang to complete Reservoir overflows and outlet strainers. One length of \emptyset 400 mm MJ cast iron pipe was also furnished by CJWSP-Semarang to supplement the offshore purchase due to compliance with Bina Marga requirement on location of main from centerline of highway which increased the length of the three cross ties mentioned above. SWE made required taps in the gallery piping for Tukadmas. The Contractor still lacks installing accessories, trim and miscellaneous small piping within the reservoir pipe gallery prior to filling the reservoir. As of the end of this reporting period the Contractor is 63.541 % complete actual and with

other considerations is recorded to be 83.541 %.

- B. Contractor Lepen Kencana Utama continued with installation of \emptyset 500 mm transmission main at three locations while working the tunnel No.2 area excavation. He installed the butterfly valve called for in the original contract for the future intake adjacent to the Division Chamber and started installation of the intake piping added by change order. The Contractor completed removal of the existing weir wall in the Grit Chamber and cut and removed the section of existing pipe within the Division Chamber. All other modifications, both original contract and change order, regarding the Division Chamber were completed. Four of the concrete air valve vaults have been constructed. He continues to experience problems with flood stage washing out his sand bag coffer at stream crossing III. Road repair is progressing west from Sta. 50+00. The Contractor's present planning is to complete Section B within four weeks. As of the end of this period, the Contractor is 58.785% complete actual and with other considerations is recorded to be 78.785%.
- C. Contractor Tukadmas continues with installation of the \emptyset 600 mm transmission main at various locations. He completed making the railroad crossing structure at Sta.166+47 as well as the crosstie to the old main and installation of the blowoff at Sta. 191+50. One length of \emptyset 600 mm pipe was installed northward from BV-12 while the \emptyset 450 mm main has been installed for some distance south from Sta. 121+58 (interfaces with section A). As of the end of this reporting period, the Contractor is 9,824 % complete.
- D. Contractor Lepen Kencana Utama continues with installation of the \emptyset 500 mm transmission main at various locations. He completed making the connection to the existing \emptyset 300 mm distribution main at Jebres, cross-ties at Sta. 263+10 and 271+40 and is prepared to make

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other connections to the existing distributions network as he comes to them. The Surakarta Public Works requested the main be placed no closer than seven meters and preferably eight and one-half meters from the centerline of JL. Kol. Sutarto between Jebres Reservoir at Sta. 271+50 and Jl. Jend. Uripsumaharjo at Sta. 263+00± . The Contractor has proceeded accordingly. As of the end of this reporting period , the Contractor is 48,6 % complete .

III. PROBLEMS :

- A. Land acquisition is in the same status as previous report.
- B. Brass goods are in the same status as previous report.
- C. Rock excavation at Sta. 15+50 southward is going very slow.

IV. FUTURE PLANNING :

- A. Complete Kartasura Reservoir and fill for test and cleaning then put same into operation. Continue with pipe installation, concrete and riprap south of the Tempel River. Replace road surface at newly made cross-tie locations and continue with road repair where required. Start work within Tempel Village when advised land acquisition is completed.
- B. Attempt to complete all work within the next four weeks.
- C. Start work on the Brojo River crossing and bridge crossing at Sta. 191 + 00. Replace road surface at newly made cross-tie locations. Continue with pipe installation where permissible to do so.

- D. Continue with pipe installation and make connections to existing distribution system as required. Repair road surface at newly made crosstie locations. Prepare to modify the piping in the Jebres Reservoir pipe gallery.

V. PIPELINE CONSTRUCTION SPECIALIST COMMENTS :

As with all plans of action, room must be allowed for contingency items that are unknown in the beginning but which must be handled in order to complete the mission. During the first planning session 07 April, all Contractors claimed the preliminary work could and would be accomplished within two weeks so that they would be able to be ready for the water shut down operation on 21 April. A one week grace period was allowed and was needed in order to finish the major portion of the preliminary work prior to the actual shut down on 28 April 1980. Some of the contingencies encountered were :

- (i). The Contractor requested SWE to assist in removal of water from intake structure by using their large emergency pump. The suction bell of the pump interfered with placing a plate stopper over the existing outlet. Option used was to close valve between Division and Grit Chambers at 0920, a delay of over three hours on the shut down.
- (ii). The Contractor had constructed a wooden assembly to use on the outlet from the intake structure rather than the metal sheet recommended by the Consultant thus additional time was consumed changing over to the metal plate when the wooden assembly failed.

- (iii). After starting to cut existing pipe within the Division Chamber the Contractor found he still had a supply of water and had to make the first cut by hand saw in lieu of oxy-acetylene torch. Upon removal of the plate from the outlet pipe it was noted there was a head of one bolt holding the plate off of the existing flange.
- (iv). When cutting the existing fittings off to bypass the Kartasura Break Tank it was found that the fitting extended a considerable distance up into the connecting pipe so that two pipe walls had to be cut simultaneously.
- (v). When the existing main was uncovered at Jebres the first section of the crosstie had been made, backfilled and traffic rerouted over the new installation. The Contractor found a blow off tee not indicated on any drawing that would interfere with the installation of all the required parts. Problem was solved by installing two additional 45° MJ bends to move the connecting tee/valve / sleeve coupling assembly farther to the east.
- (vi). When SWE attempted to close two existing valves at the Wonosari River and Delanggu we found them inoperable and in a partially closed position. The problem was solved by removing disc, stem and bonnet as a complete assembly from the valves being abandoned in the Kartasura Break Tank and replacing those same parts in the two line valves.

The overall shut down operation is considered by the Pipeline Construction Specialist to be acceptable in

that the work was done within the time constraint in dealing with a public utility that requires the shortest outage possible but not to exceed a specified time. Various means of communication were utilized throughout from commencement of preliminary work to the fruition of completion.

All the participants are to be commended for their ability to work as team to achieve a common goal. It was a pleasure to see formalities waived so that all offices of the Central Java Water Project and Surakarta Water Enterprise could open their supply depots for materials the Contractors could not locate on the local market. Also, that the Contractors assisted one another in transport of said materials and many other ways.

The cooperation of the Mayor of Surakarta including the Department of Public Works and Department of Traffic Police was greatly appreciated. Also, the recommendations of the Bina Marga inspectors on road repair was greatly appreciated on those cross-ties within section A.

It is assumed all learned from the experience just encountered and will be able to rely upon that knowledge in the future on other projects.

The next major area of concern will be to put the Kartasura Reservoir on line permanently and to add to the supply from the source by completing the pipeline installation between the two. There are some difficult tasks yet to be done before this can be realized.

SURAKARTA WATER SCHEDULE OF PERCENT COMPLETED AT

ORIGINAL CONTRACT

	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 W
SCHEDULE C
PERCENT COMPLETED**

	ORIGINAL CONTRACT														
	1978			1979											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DE
MANAGEMENT SPECIALIST REVIEW EXIST. SYSTEM & PREPARE MANAGEMENT & ACCOUNTING MANUAL 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 SCHEDULE PERCENT COMPLETED

	ORIGINAL CONTRACT														
	1978			1979											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	
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 PIPING) PROCUREMENT OFF-SHORE															
TRANSMISSION MAIN OFF-SHORE PROCUREMENT															
PIPELINE CONSTRUCTION															
PREPARE AS-BUILT DRAWINGS															
FINAL REPORT AND CERTIFICATION															

**SURAKARTA W
SCHEDULE OF
PERCENT COMPLETED A**

	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 CIPTA KARYA/USAID/BM/TAE															
LIAISON OFFICER (AS REQUIRED)															

MEMORANDUM OF
MONTHLY PROGRESS MEETING

Date : Tuesday, 1 April 1980
 Time : 10:00 A.M. - 01:30 a.m.
 Place : Surakarta Water Project Office
 Jl. Brig.Jend. Sudiarto 534,
 Surakarta

Participants :

- | | | |
|-----|---------------------|---------------------------|
| 1. | Mr. Krisno Darusman | - CJWSP. |
| 2. | Mr. Harsono | - CJWSP. |
| 3. | Mr. Hari Wahyuadi | - CJWSP. |
| 4. | Mr. Soedarto | - SWE |
| 5. | Mr. Soelarno | - SWE |
| 6. | Mr. Soetardi | - Surakarta Public Work |
| 7. | Mr. Awang Setyawan | - PT. Lepen Kencana Utama |
| 8. | Mr. A. Dawam | - PT. Lepen Kencana Utama |
| 9. | Mr. I Made Kari | - PT. Tukad Mas |
| 10. | Mr. S.M. Yohannis | - PT. Tukad Mas |
| 11. | Mr. Paul Thorn | - USAID |
| 12. | Mr. A. Grayson | - USAID |
| 13. | Mr. Weston Goodnow | - Burns & McDonnell |
| 14. | Mr. George M. Pary | - BM/TAE |
| 15. | Mr. James F. Baucom | - BM/TAE |
| 16. | Mr. Suyatno Yuwono | - BM/TAE |
| 17. | Mr. Abdulkadir | - BM/TAE |

The meeting was opened by Mr. Krisno Darusman who forward-
 ed topic for the meeting was : Progress and Problem on
 the Construction of Transmission Pipeline Sections A,B,C,
 and D.

Results :

I. Cipta Karya wishes :

1. Target for this week to be fulfilled.

2. Percent completed should be less than 5% compared with the time schedule.
3. Land easement to be completed this week (especially for sections A and C in Boyolali Regency).
4. Contractors sections A and B to finish their work according to the time schedule (1st week of May). If required, manpower as well as equipment of sections C & D to be transferred to sections A and B.
5. Contractors to continue working on section C & D although the contract is still in process, so the work is performed in pre-financed conditions.
6. Consultant to give technical assistance to the Contractors.

II. Contractors' Reports :

A. Tukadmas :

1. Inspector has no authority to make a decision , even on simple problem he has to report it to the Engineer, so it causes delay in work.
2. Never conducted pressure test for 24 hours, so he won't be responsible for any damage that occurred.
3. In installing pipe at Sta.83-90, the Engineers wants it to deepen 1 meter than it was. The Contractor had difficulty due to the soil condition in that area.
4. The Engineer instructed the contractor to perform re-testing for 900 meters although he had performed the same last time and accepted by the Engineer.
5. The Engineer instructed to install concrete which is not found in the original drawing. It needs additional material.

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B. Lepen Kencana Utama.

1. Because of the frequent rain, the excavating soil is always filled with stagnant of water.
2. Soil condition is not so profitable because of the stones.
3. Backfill earth sometime decrease.
4. Experienced difficulty on the work at Cokrotulung and syphon III.
Expected technical assistance from the Consultant.
5. Notice to Proceed additional work to be issued as soon as possible.

III. Clarifications of Consultant & Cipta Karya.

1. Inspectors never have authority to make decision without the Engineer's permission.
2. Delay in reporting to the Engineer and in solving problems is mainly caused by lack of vehicles that should be provided by Contractors. Two additional motorcars and two motor cycles are required for the whole sections (A,B,C and D)
3. 24 hours pressure test is requested by Mr. Aziz and must be performed.
4. Excavation at Sta.83-90 is indeed to be deepen as there is a change in the original design. Payment for this work will be calculated accordingly.
5. The Engineer did not instruct to do a re-test , however, as valve BV - 22 should be tested and it is exactly at Sta.59+50, there is no alternative preference than starting the test from Sta. 50+11.
6. Additional volume concrete will be paid accordingly by the Project.

7. Contractor should have known the soil condition as he had made site surveys before. Nevertheless the Project will consider this matter.
8. Consultant will give technical assistance on the work at Cokrotulung and syphon III.
9. Contractors are to provide additional equipment required.

IV. Recommendations

It is SWE's request and according to the contract , sections A and B to be finished on time (1st week of May 1980), especially to have additional water in Kartosuro Reservoir thru sections A and B. In this matter the consultant will direct the contractors which work to be done first, and which can be done later.

Coordination Meeting on the connecting the old pipe to the new one should be attended by all parties will be held on April 7, 1980.

Methods and coordination and connecting the old pipe to the new one will be the main topic of the next meeting so that 24 hours time target can be reached . On the coming meeting the contractor should have had complete data on the old pipe and prepare necessary proposal.

The Engineer recommended to paint the piping at Kartosuro Reservoir.

It was closed at 13:30 by Mr. Krisno Darusman.

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MEMORANDUM OF MEETING

DATE : 07 April 1980
 TIME : 10.45 a.m. - 1.40 p.m.
 PLACE : Jl. Brig. Jen. Sudiarto 534, Surakarta
 PARTICIPANTS :

1. Mr. Harsono	- CJWSP
2. Mr. Hari Wahyuadi	- CJWSP
3. Mr. Djoko R.	- CJWSP
4. Mr. Soelarno	- SWE
5. Mr. S.M. Yohannis	- PT Tukadmas
6. Mr. I Made Kari	- PT Tukadmas
7. Mr. Soekandji	- PT Tukadmas
8. Mr. A. Dawam	- PT Lepen Kencana Utama
9. Mr. George M. Pary	- BM/TAE
10. Mr. James F. Baucom	- BM/TAE
11. Mr. Abdul Kadir	- BM/TAE
12. Mr. Rubiyo	- BM/TAE
13. Mr. Dradjat Atmardjo	- BM/TAE

- Mr. George M. Pary welcomed the participants of the meeting and then Mr. Baucom proceeds with the meeting with the items on the previous meeting which have been discussed i.e. :

- Disinfecting agents for Kartasura Reservoir.
 He requested the Contractor to submit a proposal to use certain type of disinfectants which will be used in the Kartasura Reservoir with data sheet attached.
- Contractor proposed to use chloride in powder form, which is verbally approved by the Consultant provided the Contractor submit the letter requesting approval to use the said agent and send with it a product data sheet to verify chemical(s) and recommended use.

- Further Mr. Baucom proceeds with critical items prior the shut-down of water to city of Surakarta.

Item 1 :

- Lepen Kencana says they will take about 2 weeks to complete the work of patching concrete wall at new \emptyset 500 mm outlet in the Division Chamber and clean it, install depth gauge and replacing BV-13. It is decided date line of the work shall be 21 April 1980.
- Tukadmas stated that they are ready with the necessary equipment to start the work of tie in installation.

Item 2 :

- Preliminary work to be completed on 3 BVs concentrations.

Mr. Baucom explains to those present how the work should be done. Item 2 to be discussed further during the meeting.

Item 3 :

- Completion of Kartasura Reservoir which are completion of installing 2 fittings for the overflow and installment of 90° bend pipe supplied by CJWSP plus drains, tie rods and supports.
- Installment of 2 fittings supplied by CJWSP equipped with outlet strainers.

These accessories from CJWSP at present are not at the site and CJWSP will provide for these of \emptyset 450 mm.

Mr. Djoko Rusmani will try to locate these accessories, with the help of Contractor (Tukadmas), possibly from Purwodadi site, and will inform the availability to Consultant as soon as the items are located but turn them over to the Contractor for installation.

The Contractor (Tukadmas) estimated the work on the Kartasura Reservoir will be completed about 2 weeks. The date line of work completion is set on 21 April 1980 .

Item 4 :

The work to drill and tap the high point vents drains, meters, gauges and SAMPLE TAPS at Kartasura Reservoir. The work comprises of 10 ea 1 (one) inch and 2 ea ½ (one half) inch drill and taps.

Mr. Soelarno has experienced that 1 (one) drill and tap requires one day of work. Mr. Soelarno will have his personnel do the work for the Contractor.

The Contractor estimated to accomplish the work in about two weeks. Again date line is set on 21 April 1980 for this work.

Mr. Baucom explains to the people present, location of valves, gauges and meters in the Reservoir and the purpose of these gauges and how to operate these.

The meeting proceeds to discuss the items of the work.

Item 1 :

For this work, Consultant requested the Contractor to have ready on hand, a metal sheet to cover the water outlet in the intake chamber at Cokrotulung Springs, in order to stop the flow of water to the Division Chamber and close the valve in the existing main inside the Grit Chamber when the shut down by SWE is carried out. This will enable the Contractor

to remove section of existing \emptyset 450 mm inlet pipe and miscellaneous steel in the Division Chamber and remove the existing concrete weir wall in the Grit Chamber and clean both chamber for use after work is done.

Valve in the Grit Chamber will remain shut and valve into the new main will also remain shut until SWE is advised work is completed downstream and they will operate all valves.

Item 2 :

Mr. Baucom gives guidelines doing the job in installing BVs 24, 26 and BVs 8, 9, 11 and 12 also BVs 37 and 39 which are in 3 separate locations . Simultaneous work should be carried out to complete the installation of these BVs. Contractor gives an estimate of 2 (two) weeks to complete the job. Date line is set on 21 April 1980.

On the locations, BVs 8, 9, 10, 11 and 12 plus BVs 24, 25 and 26, the Contractors are directed to dig a water pond at least $1\frac{1}{2}$ m deep large enough to gather water seepage from the mains and have ready near the ponds 2 (two) good pumps, to pump the water out of the pond.

BVs 35 and 39 may not need water pond, flowing water out of the main can be put through the river nearby. These sumps and pumps will prevent dirty water to enter the existing main when it is cut . Mr. Baucom directed the Contractor to excavate the existing main on locations of the BVs, and assemble following the model of the existing main with S.C.s, BV 25, 10 or 38 as the case may be , and tee for line up with new pipe.

Mean while the completed installation of BVs on new main can be covered and tamped and traffic could be re-routed over the new main.

The method of pipe connection is discussed about, because of pipe diameter difference. 2 (two) alternatives were brought into discussion :

1. with hot method, sleeve couplings will be filled using bleached clean jute and covered with tamped molten lead into the openings.
2. using latex (rubber) band approximately 15 cm wide.

The second method was abandoned.

The Consultant pressed the importance of the thrust blocks and requested the Contractor that the thrust blocks to be completed at least 5 (five) days before the trial of the new main is carried upon. Thrust blocks will be poured behind the tee fitting. The 5 (five) days time is required to give sufficient hardening time for the concrete of the blocks.

The shut-down of the water to Surakarta city is discussed. Guidelines and procedures of the shut down concerning operation of new main are given by Mr. Baucom. All the BVs will be shut by SWE and will only be operated by SWE personnel.

After the intake is shut off at Cokrotulung, blow off valves will be used to pour water out of the existing main. The shut down of the water to the city will use the Kleco valve. Blow off valve before the BV-39 will be used to put out any residue off the main.

After the shut down, time for the Contractor to disinfect the Kartasura Reservoir will be given and at least 24 hours disinfecting time is required.

After the Reservoir is disinfected and refilled, quality of water should be lab-tested, according to Mr. Soelarno, prior to be distributed to consumers.

The authority will be SWE's to get the water samples and have those tested and requested SWE to coordinate with Yogya laboratory for the water tests.

After completion of the BVs, Contractors have 7 days to check and recheck of the BVs installations, prior to water shut down.

Mr. Soelarno will obtain the approval from the Mayor of the shut down.

The Consultant stated that they will be available all the time to give assistance if any parties concerned with the work has problems in the completion of their tasks.

Further the meeting discussed questions raised by the Contractors of :

1. Bridge Crossing at Premulung.

The Contractor's proposal for the crossing is turned down by the Consultant and the Contractor is directed to proceed the crossing as drawn and stipulated according to the Contract Specifications.

2. Railroad crossing in the sugar cane plantation.

The Contractor proposed to use reinforced concrete casing instead of steel casing. They stated that the sugar company has approved 2 alternatives to build the crossing, either using the steel casing or reinforced concrete casing.

The Consultant requested the Contractor to provide the Consultant with a letter and proposed railroad crossing drawing which have been approved by the authority from the sugar company. The Consultant has no reason to stick to steel casing if the sugar company approved of use of reinforced concrete casing. Approval will be given by the Consultant only after the approved drawing by Sugar Company can be shown to the Consultant.

3. Cofferdam has problem in the completion i.e. cement pouring because the water seepage had caused the cement to crumble and flow with water. The Consultant agreed to give advise on the work on the coffer dam.

The meeting was closed at 1:40 p.m.

