Civil and Operation Monitoring Data

Pump Operation Schedule

Date	Day	1st/2nd	Pump No.	Position No.	Suction pipe length	Water at start	flow at end	Q	Start time	End time	hrs	Ampere at start	at end	t	Remark
Jul 1	Sat	1st	No.1												Replacing pipe
		2nd													Replacing pipe
2	Sun	1st	No.1												Replacing pipe
3	Mon	1st	No.1												Replacing pipe
		2nd													Replacing pipe
4	Tue	1st	No.1												Replacing pipe
		2nd													Replacing pipe
5	Wed	1st	No.1												Replacing pipe
		2nd													Replacing pipe
6	Thu	1st	No.1												Replacing pipe
		2nd													Replacing pipe
7	Fri	1st	No.1												Replacing pipe
		2nd													Replacing pipe
8	Sat	1st	No.1												Replacing pipe
		2nd													Replacing pipe
9	Sun	1st	No.1												Replacing pipe
10	Mon	2nd	No.1												Replacing pipe
11	Tue	1st	No.1												Replacing pipe
12	Wed	1st	No.1	P2	8.00 m	27085	28542	153.70	17.14	18.33	59	359.3	378.3	19.00	No electricity
		2nd	No.1												No electricity
13	Thu	1st	No.1	P1	8.00 m	28542	30024	148.20	14.11	15.32	61	378.3	390.1	17.80	
		2nd	No.1	P1	8.00 m	30024	31422	139.80	10.42	11.41	59	390.1	414.2	18.10	
14	Fri	1st	No.1	P2	0.00 m	31422	33000	163.80	8.03	9.04	61	414.2	433.7	19.50	No electricity
		2nd	No.1	P2	6.00 m	33000	34609	154.90	15.09	16.11	62	433.7	453.6	19.90	
15	Sat	1st	No.1	P2	6.00 m	34609	35976	136.70	14.44	15.32	53	433.6	471.6	18.00	No electricity
16	Sun														
17	Mon	1st	No.1	P1	6.00 m	35976	37408	143.20	9.06	10.02	56	471.6	480.3	17.20	No electricity
18	Tue	1st	No.1	P1	6.00 m	37408	38913	150.50	15.13	16.14	61	480.3	509.3	20.00	
		2nd	No.1	P2	6.00 m	38913	40479	156.60	8.33	9.34	61	509.3	523.1	14.80	
19	Wed	1st	No.1	P2	6.00 m	40479	41602	112.30	14.12	14.58	46	523.1	544.9	21.80	
20	Thu	2nd	No.1												No electricity
21	Fri	1st	No.1	P2	8.00 m	41602	43110	150.70	8.80	9.30	60	545.1	564.5	19.40	No electricity
		2nd	No.1	P2	8.00 m	43110	44652	154.20	14.51	15.20	59	564.5	584.3	19.80	
22	Sat	1st	No.1	P1	8.00 m	44652	46077	141.80	8.09	9.09	60	584.3	602.2	17.00	
		2nd	No.1	P1	8.00 m	46077	47583	150.60	11.31	14.10	59	602.2	622.1	19.00	
23	Sun	1st	No.1	P1	8.00 m	47583	49003	142.00	8.07	9.01	57	622.1	640.1	18.00	
		2nd	No.1	P1	8.00 m	49003	50417	130.80	13.29	14.38	59	640.1	658.3	18.20	
24	Mon	1st	No.1	P3	6.00 m	50417	51843	144.70	11.29	12.20	51	658.3	676.4	18.00	
		2nd	No.1	P3	6.00 m	51843	53114	150.50	11.29	14.28	51	676.4	696.0	19.70	
25	Tue	1st	No.1	P2	6.00 m	53114	54784	143.00	8.36	9.24	58	696.0	714.6	18.00	
		2nd	No.1	P2	6.00 m	54784	56206	142.20	14.10	15.08	58	714.6	732.3	17.80	
26	Wed	1st	No.1	P1	6.00 m	56206	57661	135.70	8.18	9.14	56	732.3	750.5	18.00	
		2nd	No.1	P1	6.00 m	57661	59120	135.70	12.01	13.01	56	750.5	770.6	20.10	
27	Thu	1st	No.1	P4	6.00 m	59120	60524	140.40	8.18	9.17	58	770.6	788.7	18.10	
		2nd	No.1	P4	6.00 m	60524	61952	142.50	12.50	15.13	58	788.7	806.8	18.10	
28	Fri	1st	No.1	P3	7.00 m	61952	63395	140.90	7.50	8.50	54	806.8	825.3	18.00	
		2nd	No.1	P3	7.00 m	63395	64777	138.20	13.52	14.49	57	825.3	843.0	17.20	
29	Sat	1st													
30	Sun	2nd													National holiday
31	Mon	1st													

Pump Operation Schedule

	Operate on	Pump No.	Position No.	Suction pipe length	Water at start	Raw at end	Q	Start time	End time	hrs	Ampere at start	Ampere at end	E	Remark
Aug 1 Tue			P3	2.00 m	6677.3	6615.5	138.20	16.38	11.31	53	843.0	861.1	18.10	Rainy
2 Wed	1st	No.1	P3	2.00 m	6615.5	6783.5	138.00	9.18	10.16	58	861.1	878.8	17.70	
	2nd	No.1	P4	2.00 m	6781.4	6891.4	137.00	15.38	16.29	53	878.8	896.3	17.80	
3 Thu	1st													Rainy
	2nd													Rainy
4 Fri	1st													Rainy
	2nd													Rainy
5 Sat	1st	No.1	P2	8.00 m	6891.4	7030.6	139.20	8.22	9.16	54	896.4	913.9	17.50	
	2nd	No.1	P2	8.00 m	7030.6	7168.5	137.90	13.45	14.39	54	913.9	931.7	17.80	
6 Sun														National holiday
7 Mon	1st	No.1	P4	4.00 m	7193.5	7334.1	141.60	8.43	9.38	55	950.3	966.7	16.40	
	2nd	No.1	P3	4.00 m	7334.1	7482.5	148.40	14.20	15.16	56	966.7	985.5	18.80	
8 Tue	1st	No.1	P2	4.00 m	7482.5	7624.6	142.10	8.34	9.30	56	985.6	1000.6	21.00	
	2nd	No.1	P2	4.00 m	7624.6	7763.1	138.50	13.37	14.36	53	1000.6	1028.1	21.50	
9 Wed	1st	No.1	P3	8.00 m	7763.1	7904.7	141.60	8.10	9.03	53	1028.1	1049.6	21.30	
	2nd	No.1	P3	8.00 m	7904.7	8049.3	144.60	14.12	15.14	52	1049.6	1070.4	20.80	
10 Thu	1st	No.1	P4	5.00 m	8049.3	8192.6	143.30	8.07	9.03	56	1063.3	1084.2	20.90	No electricity
11 Fri	1st	No.1	P2	8.00 m	8192.6	8336.7	144.10	8.00	9.00	54	1084.2	1104.2	20.00	
	2nd	No.1	P2	8.00 m	8336.7	8479.1	142.40	14.20	15.13	53	1104.2	1123.8	19.60	
12 Sat	1st													Rainy
	2nd													Rainy
13 Sun	1st													Rainy
14 Mon	1st													Rainy
	2nd													Rainy
15 Tue	1st	No.1	P3	8.00 m	8593.1	8642.3	141.20	8.40	9.33	53	1144.2	1163.5	19.30	Rainy
	2nd	No.1	P3	8.00 m	8642.3	8794.4	152.50	14.11	15.07	56	1163.5	1181.8	18.30	Rainy
16 Wed	1st													Rainy
	2nd													Rainy
17 Thu	1st													No electricity
	2nd													Rainy
18 Fri	1st													Rainy
	2nd													No electricity
19 Sat	1st	No.1	P2	6.00 m	9400.6	9600.8	146.20	8.15	9.10	55	1244.4	1260.1	15.70	
	2nd	No.1	P2	6.00 m	9600.8	9730.3	132.50	14.20	15.14	54	1260.1	1279.6	19.50	
20 Sun	1st													
21 Mon	1st	No.1	P2	6.00 m	9730.3	9849.5	116.20	14.22	15.18	56	1279.6	1300.0	21.30	No electricity
22 Tue	1st	No.1	P3	6.00 m	9903.5	10045.6	142.05	13.33	14.32	59	1300.9	1319.4	18.50	No electricity
	2nd	No.1	P3	8.00 m	10045.6	10191.9	146.35	15.20	9.22	52	1319.6	1337.6	18.20	
23 Wed	1st	No.1	P4	8.00 m	10191.9	10335.3	143.61	7.55	16.42	52	1337.6	1361.1	22.50	
24 Thu	1st	No.1	P3	4.00 m	10335.3	10479.5	144.00	13.36	8.48	53	1361.1	1378.4	18.30	
	2nd	No.1		4.00 m	10479.5	10658.5	149.00	8.57	14.30	53	1378.7	1398.0	20.20	
25 Fri	1st	No.1	P2	6.00 m	10658.5	10735.5	137.00		7.21	61	1398.0	1416.0	17.40	
26 Sat	1st	No.1	P3	6.00 m	10735.5	10894.5	159.00	14.05	18.00	59	1416.0	1436.0	20.00	Rainy
27 Sun	1st													Rainy
28 Tue	1st	No.1	P1	8.00 m	10894.5	11048.7	144.40	7.19	8.19	61	1436.9	1454.8	17.00	
29 Wed	1st	No.1	P4	4.00 m	11048.7	11174.0	141.30	8.15	9.34	59	1454.8	1475.5	18.70	Rainy
30 Wed		No.1	P3	4.00 m	11174.0	11311.9	137.00	14.14	14.90	54	1475.5	1491.8	17.80	Rainy
31 Thu	1st	No.1	P3	2.00 m	11311.9	11471.9	160.00	8.03	9.02	61	1491.3	1511.6	20.00	No electricity

Civil Monitoring Sheet

Date: 7/12/95	1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
1) Operation	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
2) Pump No.	P1->P2													
3) Slide pump — Lift down *1 — Staff	7													
Setup time — Start time	7:18													
End time	7:30			0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Total time	0:12	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *2			P3->P1											
Staff			7											
Start time			19:51											
End time			20:05											
Total time	0:00	0:00	0:14	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater — Lift down *3	T->R													
Staff	7													
Setup time — Start time	7:00													
End time	7:15													
Total time	0:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *4														
Staff														
Start time														
End time														
Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Pipe length	8.00													
6) Filling water — Start time	7:30													
End time	12:00													
Setup time — Total time	4:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time — Start time	12:54													
End time	18:33													
Total time	0:59	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative — At start	359.3													
At end	378.3													
Ampere meter — Total time	19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK — Valve	Open													
10) Remark			No electricity											

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

*4 Recorded position to position (Example : R->T River to Top of bank, R->T River to Middle of bank)

R - 3

547

Operation Monitoring Sheet

Date : 7/12/95

			1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation		
			No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	
a) Chang Chhu	a)-1	River Water Level	1197.4	-	-	-		-	-	-	-	-	-	-	-	-	m
	a)-2	Water Temp.	14	-	-	-		-	-	-	-	-	-	-	-	-	°C
b) Lower Tank (Stage-1)	b)-1	Water level at start	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	m
	b)-2	Water level at end	1.90	-	-	-	-	-	-	-	-	-	-	-	-	-	m
c) Lower Pump	c)-1	Position	P2														
	c)-2	Operation start time	17:34														
	c)-3	Cumulative flow meter at start	2700.5		2854.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	c)-4	Suction Pressure	4.0														
	c)-5	Delivery Pressure	22.0														
	c)-6	Ampere	35.0														
	c)-7	Voltage	420.0														
	c)-8	Bearing Temp.	29.0														
	c)-9	Stuffing box Temp.	30.0														
	c)-10	Operation end time	18:33														
	c)-11	Cumulative flow meter at end	2854.2														
d)		Remark	No electricity														

Note:

e) Maintenance

Monthly
1. Adjustment of leakage from joints.
2. Examination and exchange of oil.

6 Monthly
3. Check of shafts temperature.
4. Check and adjustment of shafts center.
5. Check of vibration and noise.

Yearly
6. Check of shaft sleeve and exchange of grand packing.
7. Check and exchange of mechanical-seals.
8. Exchange of oil for bearing shaft.

2 Years
9. Overhaul and exchange O-ring, Gasket, V-ring, and others.
10. Check of wearing at revolving part.
11. Check of inside casing.
12. Adjustment of all the other parts.

Civil Monitoring Sheet

Date: 7/13/95		1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
1) Operation		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
2) Pump No.		P1		P1											
3) Slide pump — Lift down *1	Staff	0		0											
Setup time	Start time	0:00		0:00		0:00		0:00		0:00		0:00		0:00	
	End time	0:00		0:00											
	Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *2		P1		P1											
	Staff	0		0											
Setup time	Start time	0:00		0:00		0:00		0:00		0:00		0:00		0:00	
	End time	0:00		0:00											
	Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater — Lift down *3		T->R		R->T											
	Staff	6		6											
Setup time	Start time	7:46		16:10		0:00		0:00		0:00		0:00		0:00	
	End time	8:07		17:13		0:00		0:00		0:00		0:00		0:00	
	Total time	0:21	0:00	1:03	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *4															
	Staff														
	Start time	0:00		0:00		0:00		0:00		0:00		0:00		0:00	
	End time	0:00		0:00		0:00		0:00		0:00		0:00		0:00	
	Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Pipe length	8.00		8.00											
6) Filling water	Start time	8:08		14:18											
Setup time	End time	8:30		14:29											
	Total time	0:22	0:00	0:11	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time	Start time	0:00		14:51											
	End time	0:00		15:32											
	Total time	0:00	0:00	1:01	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative Ampere meter	At start			378.3											
	At end			396.1											
	Total time	0.0	0.0	17.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK	Valve	Open		Open											
10) Remark		No electricity													

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

*4 Recorded position to position (Example : R->T River to Top of bank, R->T River to Middle of bank)

R - 5

Operation Monitoring Sheet

Date : 7/13/95

		1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation		
		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	
a) Chang	a)-1 River Water Level	-	-	1196.8	-	-	-	-	-	-	-	-	-	-	-	m
Chhu	a)-2 Water Temp.	-	-	15	-	-	-	-	-	-	-	-	-	-	-	°C
b) Lower Tank	b)-1 Water level at start	0.01	-	0.01	-	-	-	-	-	-	-	-	-	-	-	m
(Stage-1)	b)-2 Water level at end	-	-	-1.98	-	-	-	-	-	-	-	-	-	-	-	m
c)	c)-1 Position			P1												
	c)-2 Operation start time			14:31												
	c)-3 Cumulative flow meter at start	2854.2		2854.2	0.0	3002.4	0.0	0.0	0.0	0.0	0.0	0.01	0.0	0.0	0.0	
c) Lower Pump	c)-4 Suction Pressure			5.5												
	c)-5 Delivery Pressure			22.0												
	c)-6 Ampere			34.0												
	c)-7 Voltage			410.0												
	c)-8 Bearing Temp.			32.0												
	c)-9 Stuffing box Temp.			30.0												
	c)-10 Operation end time			15:32												
	c)-11 Cumulative flow meter at end	2854.2		3002.4												
d)	Remark	No electricity														

c) Maintenance:

Monthly
- Adjustment of leakage from joints.
- Examination and exchange of oil.
- Check of shafts temperature.
- Check and adjustment of shafts center.
- Check of vibration and noise.

6 Monthly
- Check of shaft sleeve and exchange of grand packing.
- Check and exchange of mechanical-seals.

Yearly
- Exchange of oil for bearing shaft.
- Overhaul and exchange O-ring, Gasket, V-ring, and others.

2 Years
- Check of wearing at revolving part.
- Check of inside casing.
- Adjustment of all the other parts.

d) Note:

R - 6

Civil Monitoring Sheet

	1st operation		2nd operation		3th operation		4th operation		5th operation		6th operation		7th operation	
Date: 7/14/95	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
1) Operation														
2) Pump No.	P1		P1											
3) Sink pump — Lift down *1 — Staff	0		0											
Setup time — Start time	0:00		0:00											
End time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Total time	0:00		0:00											
Lift up *2 — Staff														
Start time	0:00		0:00											
End time			0:00											
Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
4) Lift down *3	T->R		R->T											
5) Floater — Setup time — Staff	7		7											
Start time	8:23		16:42											
End time	8:52		17:03											
Total time	0:29	0:00	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *														
Staff														
Start time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
End time														
Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Pipe length	8.00	0:00	8.00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
6) Filling water — Setup time — Start time	9:03		0:00											
End time	9:28	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Total time	0:25	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time — Start time	10:42		0:00											
End time	11:41	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Total time	0:59	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative — At start	396.1													
At end	414.2													
Total time	18.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ampere meter														
9) TANK — Valve	Open		Open											
10) Remark			No electricity											

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3).

*3 Recorded position to position (Example : T->R Top of bank to River ; M->R Middle of bank to River)

... Recorded position to position (... : R->T River to Top of bank, R->T River to Middle of bank)

R - 7

Operation Monitoring Sheet

Date : 7/14/95

			1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation		
			No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	
a)	Chang	a)-1	River Water Level	1196.3	-	-	-	-	-	-	-	-	-	-	-	-	-	m
	Chhu	a)-2	Water Temp.	14	-	-	-	-	-	-	-	-	-	-	-	-	-	°c
b)	Lower Tank	b)-1	Water level at start	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	m
	(Stage-1)	b)-2	Water level at end	1.90	-	-	-	-	-	-	-	-	-	-	-	-	-	m
		c)-1	Position	P1														
		c)-2	Operation start time	10:42														
		c)-3	Cumulative flow meter at start	3002.4		3142.2	0.0		0.0		0.0		0.0		0.0		0.0	
c)	Lower Pump	c)-4	Suction Pressure	5.5														
		c)-5	Delivery Pressure	22.0														
		c)-6	Ampere	34.0														
		c)-7	Voltage	400.0														
		c)-8	Bearing Temp.	29.0														
		c)-9	Stuffing box Temp.	29.0														
		c)-10	Operation end time	11:41														
		c)-11	Cumulative flow meter at end	3142.2														
d)			Remark	No electricity														

Note:

Maintenance

Monthly
- ☐ Adjustment of leakage from joints.
- ☐ Examination and exchange of oil.
- ☐ Check of shafts temperature.

6 Monthly
- ☐ Check and adjustment of shafts center.
- ☐ Check of vibration and noise.

Yearly
- ☐ Check of shaft sleeve and exchange of grand packing.
- ☐ Check and exchange of mechanical-seals.
- ☐ Exchange of oil for bearing shaft.

2 Years
- ☐ Overhaul and exchange O-ring, Gasket, V-ring, and others.
- ☐ Check of wearing at revolving part.
- ☐ Check of inside casing.
- ☐ Adjustment of all the other parts.

Civil Monitoring Sheet

Date: 7/15/95

	1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
Operation / Pump No.	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
Slide pump — Setup time — Lift down *1	P1->P3													
Staff	7													
Start time	7:07													
End time	8:00													
Total time	0:53	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *2			P3->P1											
Staff			7											
Start time			16:46											
End time			17:30											
Total time	0:00	0:00	0:44	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Footer — Setup time — Lift down *3	T->R		R->T											
Staff	4		4											
Start time	14:30		16:38											
End time	14:37		16:45											
Total time	0:07	0:00	0:07	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *4														
Staff														
Start time														
End time														
Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Pipe length	0.00		6.00											
Filling water — Setup time — Start time	7:55		14:37											
End time	8:02		15:08											
Total time	0:07	0:00	0:31	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Driven time — Start time	8:03		15:09											
End time	9:04		16:11											
Total time	1:01	0:00	1:02	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Cumulative Ampere meter — At start	414.2		433.7											
At end	433.7		453.6											
Total time	19.5	0.0	19.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANK — Valve	Open		Open											
Remark														

*1 Recorded position to position (Example : P1->P2)
*2 Recorded position to position (Example : P4->P3)
*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)
*4 Recorded position to position (Example : R->T River to Top of bank, R->T River to Middle of bank)

Operation Monitoring Sheet

			1st operation No.1	1st operation No.2	2nd operation No.1	2nd operation No.2	3rd operation No.1	3rd operation No.2	4th operation No.1	4th operation No.2	5th operation No.1	5th operation No.2	6th operation No.1	6th operation No.2	7th operation No.1	7th operation No.2
a) Chang	a)-1	River Water Level	1198.1	-	1197.6	-	-	-	-	-	-	-	-	-	-	-	m
Chhu	a)-2	Water Temp.	14	-	14	-	-	-	-	-	-	-	-	-	-	-	°c
b) Lower Tank (Stage-1)	b)-1	Water level at start	0.10	-	0.10	-											m
	b)-2	Water level at end	1.90	-	2.00	-											m
c) Lower Pump	c)-1	Position	P3		P3												
	c)-2	Operation start time	8:03		15:09												
	c)-3	Cumulative flow meter at start	3142.2		3306.0	0.0	3460.9	0.0	0.0	0.0	0.01	0.0	0.0	0.0	0.0	0.6	
	c)-4	Suction Pressure	2.2		3.4												
	c)-5	Delivery Pressure	22.0		24.0												
	c)-6	Ampere	32.0		33.0												
	c)-7	Voltage	400.0		400.0												
	c)-8	Bearing Temp.	32.0		35.0												
	c)-9	Stuffing box Temp.	29.0		29.0												
	c)-10	Operation end time	9:04		16:11												
	c)-11	Cumulative flow meter at end	3306.0		3460.9												

d) Remark

Note:

Maintenance

Monthly
- Adjustment of leakage from joints.
- Examination and exchange of oil.

6 Monthly
- Check of shafts temperature.
- Check and adjustment of shafts center.
- Check of vibration and noise.

Yearly
- Check of shaft sleeve and exchange of grand packing.
- Check and exchange of mechanical-seals.
- Exchange of oil for bearing shaft.

2 Years
- Overhaul and exchange O-ring, Gasket, V-ring, and others.
- Check of wearing at revolving part.
- Check of inside casing.
- Adjustment of all the other parts.

R - 10

Civil Monitoring Sheet

Date : 7/17/95	1st operation No.1	No.2	2nd operation No.1	No.2	3rd operation No.1	No.2	4th operation No.1	No.2	5th operation No.1	No.2	6th operation No.1	No.2	7th operation No.1	No.2
1) Operation														
2) Pump No.	P1->P3													
3) Slide pump — Lift down *1			P5->P1											
Staff	7		7											
Setup time — Start time	7:00													
End time	8:00													
Total time	1:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *2														
Staff	7		7											
Start time			17:45											
End time			18:00											
Total time	0:00	0:00	0:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater — Lift down *3	T->R		R->T											
Staff	7		7											
Setup time — Start time	7:32													
End time	7:45													
Total time	0:13	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *4	R->T													
Staff	7		7											
Start time	17:00		17:00											
End time	17:45		17:45											
Total time	0:45	0:00	0:45	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Pipe length	6.00													
6) Filling water — Start time	11:39													
Setup time — End time	12:30													
Total time	0:51	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time — Start time	14:44													
End time	15:37													
Total time	0:53	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative Ampere meter — At start	453.6													
At end	471.6													
Total time	18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK Valve	Open													
10) Remark	No electricity													

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P5)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

*4 Recorded position to position (Example : R->T River to Top of bank, R->T River to Middle of bank)

Operation Monitoring Sheet

Date : 7/17/95.

			1st operation No.1	No.2	2nd operation No.1	No.2	3rd operation No.1	No.2	4th operation No.1	No.2	5th operation No.1	No.2	6th operation No.1	No.2	7th operation No.1	No.2	
a) Chang	a)-1	River Water Level	1197.4	-	-	-	-	-	-	-	-	-	-	-	-	-	m
Chhu	a)-2	Water Temp.	14	-	-	-	-	-	-	-	-	-	-	-	-	-	°C
b) Lower Tank	b)-1	Water level at start	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	m
(Stage-1)	b)-2	Water level at end	1.90	-	-	-	-	-	-	-	-	-	-	-	-	-	m
c) Lower Pump	c)-1	Position	P3														
	c)-2	Operation start time	14:44														
	c)-3	Cumulative flow meter at start	3460.9		3597.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	c)-4	Suction Pressure	3.6														
	c)-5	Delivery Pressure	23.0														
	c)-6	Ampere	35.0														
	c)-7	Voltage	420.0														
	c)-8	Bearing Temp.	30.0														
	c)-9	Stuffing box Temp.	29.0														
	c)-10	Operation end time	15:37														
	c)-11	Cumulative flow meter at end	3597.6														
d)		Remark	No electricity														

Note:

c) Maintenance

Monthly
- Adjustment of leakage from joints.
- Examination and exchange of oil.
- Check of shafts temperature.
- Check and adjustment of shafts center.
- Check of vibration and noise.

6 Monthly
- Check of shaft sleeve and exchange of grand packing.
- Check and exchange of mechanical-seals.

Yearly
- Exchange of oil for bearing shaft.
- Overhaul and exchange O-ring, Gasket, V-ring, and others.

2 Years
- Check of wearing at revolving part.
- Check of inside casing.
- Adjustment of all the other parts.

Civil Monitoring Sheet

Date : 7/18/95

		1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
1) Operation		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
2) Pump No.		P1		P1											
3) Slide pump Setup time	Lift down *1	P1		P1											
	Staff														
	Start time														
	End time	0:00	0:00		0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Total time	0:00	0:00		0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *2														
	Staff														
	Start time														
	End time														
	Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater Setup time	Lift down *3	T->R		R->T											
	Staff	7		7											
	Start time	7:30		17:00											
	End time	7:45		17:15											
	Total time	0:15	0:00	0:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *4														
	Staff														
	Start time														
	End time														
	Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Pipe length	6.00		6.00											
6) Filling water Setup time	Start time	8:00		15:00											
	End time	8:30		15:05											
	Total time	0:30	0:00	0:05	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time	Start time	9:06		15:13											
	End time	10:02		16:14											
	Total time	0:56	0:00	1:01	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulance Ampere meter	At start	471.6		489.3											
	At end	489.3		509.3											
	Total time	17.7	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK	Valve	Open		Open											
10) Remark															

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River; M->R Middle of bank to River)

R - 13

Operation Monitoring Sheet

Date : 7/18/95

			Unit	1st operation No.1	1st operation No.2	2nd operation No.1	2nd operation No.2	3rd operation No.1	3rd operation No.2	4th operation No.1	4th operation No.2	5th operation No.1	5th operation No.2	6th operation No.1	6th operation No.2	7th operation No.1	7th operation No.2
a) Chang Chhu	a)-1	River Water Level	m	1197.4	-	1197.3	-	-	-	-	-	-	-	-	-	-	-
	a)-2	Water Temp.	°c	15	-	15	-	-	-	-	-	-	-	-	-	-	-
b) Lower Tank (Stage-1)	b)-1	Water level at start	m	0.10	-	0.10	-	-	-	-	-	-	-	-	-	-	-
	b)-2	Water level at end	m	1.88	-	1.88	-	-	-	-	-	-	-	-	-	-	-
c) Lower Pump	c)-1	Position		P1		P1											
	c)-2	Operation start time		9:06		15:13											
	c)-3	Cumulative flow meter at start		3597.6		3740.8	0.0	3891.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	c)-4	Suction Pressure		5.0		5.0											
	c)-5	Delivery Pressure		21.0		21.0											
	c)-6	Ampere		34.0		34.0											
	c)-7	Voltage		400.0		400.0											
	c)-8	Bearing Temp.		32.0		32.0											
	c)-9	Stuffing box Temp.		29.0		30.0											
	c)-10	Operation end time		10:02		16:14											
	c)-11	Cumulative flow meter at end		3740.8		3891.3											
d)		Remark															

Note:

e) Maintenance

Monthly:
[ ] Adjustment of leakage from joints.
[ ] Examination and exchange of oil.

6 Monthly:
[ ] Check of shafts temperature.
[ ] Check and adjustment of shafts center.
[ ] Check of vibration and noise.

Yearly:
[ ] Check of shaft sleeve and exchange of grand packing.
[ ] Check and exchange of mechanical-seals.
[ ] Exchange of oil for bearing shaft.

2 Years:
[ ] Overhaul and exchange O-ring, Gasket, V-ring, and others.
[ ] Check of wearing at revolving part.
[ ] Check of inside casing.
[ ] Adjustment of all the other parts.

Civil Monitoring Sheet

Date : 7/19/95		1st operation		2nd operation		3th operation		4th operation		5th operation		6th operation		7th operation	
		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
1) Operation															
2) Pump No.															
3) Slide pump	Lift down *1	P1->P2		P2->P1											
	Staff	7		7											
Setup time	Start time	7:00		17:45											
	End time	7:45		18:09											
	Total time	0:45	0:00	0:24	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *2			P2->P1											
	Staff			7											
	Start time														
	End time														
	Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater	Lift down *3	T->R		R->T											
	Staff	4		7											
Setup time	Start time	7:10		17:00											
	End time	7:45		17:45											
	Total time	0:35	0:00	0:45	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *4	R->T		R->T											
	Staff			7											
	Start time			17:00											
	End time			17:45											
	Total time	0:00	0:00	0:45	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
6) Filling water	Pipe length	6.00		6.00											
Setup time	Start time	7:45		0:00											
	End time	8:30		0:00											
	Total time	0:45	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time	Start time	8:33		14:12											
	End time	9:34		14:58											
	Total time	1:01	0:00	0:46	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative	At start	509.3		523.1											
	At end	523.1		544.9											
Ampere meter	Total time	13.8	0.0	21.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK	Valve	Open		open											
10) Remark															

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

*4 Recorded position to position (Example : R->T River to Top of bank, R->T River to Middle of bank)

Operation Monitoring Sheet

Date : 7/19/95

		1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation		
		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	
a) Chang Chiu	a)-1 River Water Level	1197.5	-	1197.3	-	-	-	-	-	-	-	-	-	-	-	m
	a)-2 Water Temp.	14	-	14	-	-	-	-	-	-	-	-	-	-	-	°c
b) Lower Tank (Stage-1)	b)-1 Water level at start	0.10	-	0.10	-	-	-	-	-	-	-	-	-	-	-	m
	b)-2 Water level at end	1.88	-	1.5	-	-	-	-	-	-	-	-	-	-	-	m
c) Lower Pump	c)-1 Position	P2		P2												
	c)-2 Operation start time	8:33		14:12												
	c)-3 Cumulative flow meter at start	3891.3		4047.9	0.0	4160.2	0.0		0.0		0.0		0.0		0.0	
	c)-4 Suction Pressure	4.5		4.5												
	c)-5 Delivery Pressure	22.0		22.0												
	c)-6 Ampere	34.0		34.0												
	c)-7 Voltage	400.0		400.0												
	c)-8 Bearing Temp.	32.0		30.0												
	c)-9 Stuffing box Temp.	29.0		29.0												
	c)-10 Operation end time	9:34		14:58												
	c)-11 Cumulative flow meter at end	4047.9		4160.2												

d) Remark

Note:

e) Maintenance

Monthly
- Adjustment of leakage from joints.
- Examination and exchange of oil.

6 Monthly
- Check of shafts temperature.
- Check and adjustment of shafts center.
- Check of vibration and noise.
- Check of shaft sleeve and exchange of ground packing.

Yearly
- Check and exchange of mechanical-seals.
- Exchange of oil for bearing shaft.
- Overhaul and exchange O-ring, Gasket, V-ring, and others.

2 Years
- Check of wearing at revolving part.
- Check of inside casing.
- Adjustment of all the other parts.

Civil Monitoring Sheet

Date : 7/21/95		1st operation		2nd operation		3th operation		4th operation		5th operation		6th operation		7th operation	
1) Operation		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
2) Pump No.	Lift down *1	P1->P2													
	Staff	6													
3) Slide pump Setup time	Start time	7:20													
	End time	7:45	0:00		0:00		0:00		0:00		0:00		0:00		0:00
	Total time	0:25													
	Lift up *2			P2->P1											
	Staff			6											
	Start time			17:46											
	End time			18:05											
	Total time	0:00	0:00	0:19	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater	Lift down *3	T->R													
	Staff	6													
	Setup time Start time	7:00													
	End time	7:20	0:00		0:00		0:00		0:00		0:00		0:00		0:00
	Total time	0:20													
	Lift up *4			R->T											
	Staff			6											
	Start time			17:46											
	End time			17:46											
	Total time	0:00	0:00	0:46	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Pipe length	8.00		8.00											
6) Filling water Setup time	Start time	7:50		0:00											
	End time	8:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Total time	0:50		0:00											
7) Driven time	Start time	8:30		14:21											
	End time	9:30		15:20											
	Total time	1:00	0:00	0:59	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative Ampere meter	At start	545.1		564.5											
	At end	564.5		584.3											
	Total time	19.4	0.0	19.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK Valve		Open		Open											
10) Remark															

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

*4 ... R->T River to Top of bank, R->M River to Middle of bank)

Operation Monitoring Sheet

Date : 7/21/95

				1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation		
				No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	
a)	Chang Chhu	a)-1	River Water Level	1197.5	-	1197.4	-	-	-	-	-	-	-	-	-	-	-	m
		a)-2	Water Temp.	14	-	14	-	-	-	-	-	-	-	-	-	-	-	°c
b)	Lower Tank (Stage-1)	b)-1	Water level at start	0.10	-	-0.10	-	-	-	-	-	-	-	-	-	-	-	m
		b)-2	Water level at end	1.90	-	1.90	-	-	-	-	-	-	-	-	-	-	-	m
c)	Lower Pump	c)-1	Position	P2		P2												
		c)-2	Operation start time	8:30		14:21												
		c)-3	Cumulative flow meter at start	4160.3		4311.0	0.0	4465.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
		c)-4	Suction Pressure	4.5		4.5												
		c)-5	Delivery Pressure	23.0		23.0												
		c)-6	Ampere	34.0		34.0												
		c)-7	Voltage	420.0		420.0												
		c)-8	Bearing Temp.	32.0		30.0												
		c)-9	Stuffing box Temp.	30.0		29.0												
		c)-10	Operation end time	9:30		15:20												
		c)-11	Cumulative flow meter at end	4311.0		4465.2												
d)			Remark															

Note:

	:: Adjustment of leakage from joints.
Monthly	: Examination and exchange of oil.
	:: Check of shafts temperature.
6 Monthly	:: Check and adjustment of shafts center.
	:: Check of vibration and noise.
	:: Check of shaft sleeve and exchange of grand packing.
Yearly	:: Check and exchange of mechanical-seals.
	: Exchange of oil for bearing shaft.
	:: Overhaul and exchange O-ring, Gasket, V-ring, and others.
2 Years	:: Check of wearing at revolving part.
	:: Check of inside casing.
	:: Adjustment of all the other parts.

e) Maintenance

R - 18

Civil Monitoring Sheet

Date: 7/22/95		1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
(1) Operation		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
(2) Pump No.		P1->P3		P3->P1											
Lift down *1	Staff	6		7											
(3) Slide pump	Start time	7:00		15:00											
Setup time	End time	7:14		15:20											
	Total time	0:14	0:00	0:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *2	Staff	T->X		R->T											
	Start time														
	End time														
	Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift down *3	Staff	6		7											
(5) Floater	Start time	7:35		15:22											
Setup time	End time	7:45		16:10											
	Total time	0:10	0:00	0:48	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *4	Staff														
	Start time														
	End time														
	Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Pipe length		8.00		8.00											
(6) Filling water	Start time	7:45		13:25											
Setup time	End time	8:08		13:29											
	Total time	0:23	0:00	0:04	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
(7) Driven time	Start time	8:09		13:31											
	End time	9:09		14:30											
	Total time	1:00	0:00	0:59	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
(8) Cumulative	At start	584.3		602.2											
Ampere meter	At end	602.2		622.1											
	Total time	17.9	0.0	19.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(9) TANK	Valve	Open		Open											
(10) Remark															

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

Operation Monitoring Sheet

Date : 7/22/95

			1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
			No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
a) Chang Chhu	a)-1	River Water Level	1197.5	-	1197.3	-	-	-	-	-	-	-	-	-	-	-	m
	a)-2	Water Temp.	15	-	15	-	-	-	-	-	-	-	-	-	-	-	°C
b) Lower Tank (Stage-1)	b)-1	Water level at start	0.10	-	0.10	-	-	-	-	-	-	-	-	-	-	-	m
	b)-2	Water level at end	1.90	-	1.90	-	-	-	-	-	-	-	-	-	-	-	m
c) Lower Pump	c)-1	Position	P3		P3												
	c)-2	Operation start time	8:09		13:31												
	c)-3	Cumulative flow meter at start	4465.9		4607.7	0.0	4758.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	c)-4	Suction Pressure	3.2		3.2												
	c)-5	Delivery Pressure	23.0		23.0												
	c)-6	Ampere	33.0		35.0												
	c)-7	Voltage	410.0		400.0												
	c)-8	Bearing Temp.	30.0		32.0												
	c)-9	Stuffing box Temp.	29.0		30.0												
	c)-10	Operation end time	9:09		14:30												
	c)-11	Cumulative flow meter at end	4607.7		4758.3												

d) Remark

Note:

e) Maintenance:

Monthly
- [ ] Adjustment of leakage from joints.
- [ ] Examination and exchange of oil.

6 Monthly
- [ ] Check of shafts temperature.
- [ ] Check and adjustment of shafts center.
- [ ] Check of vibration and noise.

Yearly
- [ ] Check of shaft sleeve and exchange of grand packing.
- [ ] Check and exchange of mechanical-seals.
- [ ] Exchange of oil for bearing shaft.

2 Years
- [ ] Overhaul and exchange O-ring, Gasket, V-ring, and others.
- [ ] Check of wearing at revolving part.
- [ ] Check of inside casing.
- [ ] Adjustment of all the other parts.

Civil Monitoring Sheet

Date : 7/24/95			1st operation		2nd operation		3th operation		4th operation		5th operation		6th operation		7th operation	
1) Operation			No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
2) Pump No.			P1		P1											
		Staff	0		0											
3) Slide pump	Setup time	Start time	0:00		0:00											
		End time	0:00		0:00											
		Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *2	Staff			P1											
					0											
		Start time			0:00											
		End time			0:00											
		Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater	Lift down *3	Staff	T->R		R->T											
	Setup time		7		6											
		Start time	7:00		17:00											
		End time	7:20		17:55											
		Total time	0:20	0:00	0:55	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *4	Staff														
		Start time														
		End time														
		Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
		Pipe length	8.00		8.00											
6) Filling water	Setup time	Start time	7:20		13:22											
		End time	7:48		13:27											
		Total time	0:28	0:00	0:05	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time		Start time	8:07		13:29											
		End time	9:01		14:28											
		Total time	0:54	0:00	0:59	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative		At start	622.1		640.1											
	Ampere meter	At end	640.1		658.3											
		Total time	18.0	0.0	18.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK		Valve	Open		Open											
10) Remark																

*1 Recorded position to position (Example : P1->P2).

*2 Recorded position to position (Example : P4->P5)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

*4 Recorded position to position (Example : R->T River to Top of bank, R->T River to Middle of bank)

Operation Monitoring Sheet

Date : 7/24/95

			1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation		
			No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	
a)	Chang	a)-1	River Water Level	1197.1	-	1197.0	-	-	-	-	-	-	-	-	-	-	-	m
	Chhu	a)-2	Water Temp.	14	-	14	-	-	-	-	-	-	-	-	-	-	-	°c
b)	Lower Tank	b)-1	Water level at start	0.10	-	0.10	-	-	-	-	-	-	-	-	-	-	-	m
	(Stage-1)	b)-2	Water level at end	1.90	-	1.90	-	-	-	-	-	-	-	-	-	-	-	m
		c)-1	Position	P1-		P1												
		c)-2	Operation start time	8:07		13:29												
		c)-3	Cumulative flow meter at start	4758.3		4900.3	0.0	5041.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
c)	Lower Pump	c)-4	Suction Pressure	5.2		5.2												
		c)-5	Delivery Pressure	21.0		21.0												
		c)-6	Ampere	34.0		34.0												
		c)-7	Voltage	400.0		400.0												
		c)-8	Bearing Temp.	30.0		32.0												
		c)-9	Stuffing box Temp.	29.0		30.0												
		c)-10	Operation end time	9:01		14:28												
		c)-11	Cumulative flow meter at end	4800.3		5041.1												
d)			Remark															

Note:

Monthly	□ Adjustment of leakage from joints.
	□ Examination and exchange of oil.
6 Monthly	□ Check of shafts temperature.
	□ Check and adjustment of shafts center.
	□ Check of vibration and noise.
e) Maintenance	□ Check of shaft sleeve and exchange of grand packing.
Yearly	□ Check and exchange of mechanical-seals.
	□ Exchange of oil for bearing shaft.
	□ Overhaul and exchange O-ring, Gasket, V-ring, and others.
2 Years	□ Check of wearing at revolving part.
	□ Check of inside casing.
	□ Adjustment of all the other parts.

Civil Monitoring Sheet

Date: 7/25/95		1st operation		2nd operation		3th operation		4th operation		5th operation		6th operation		7th operation	
		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
1) Operation															
2) Pump No.															
3) Slide pump	Lift down *1	P1->P3		P3->P4											
	Staff	7		7											
Setup time	Start time	7:15		16:45											
	End time	7:48		17:15											
	Total time	0:33	0:00	0:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *2														
	Staff			7											
	Start time														
	End time														
	Total time	0:00	0:00	0:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater	Lift down *3	T->R													
	Staff	7													
Setup time	Start time	7:49		17:15											
	End time	8:05		17:55											
	Total time	0:16	0:00	0:40	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *4	R->T													
	Staff	7		7											
	Start time														
	End time														
	Total time	0:00	0:00	0:40	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
6) Filling water	Pipe length	6.00		6.00											
Setup time	Start time	8:06		13:24											
	End time	8:20		13:28											
	Total time	0:14	0:00	0:04	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time	Start time	8:21		13:29											
	End time	9:20		14:28											
	Total time	0:59	0:00	0:59	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative	At start	658.3		676.3											
Ampere meter	At end	676.3		696.0											
	Total time	18.0	0.0	19.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK	Valve														
10) Remark															

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

R - 23

Operation Monitoring Sheet

Date : 7/25/95

			1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
			No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
a) Chang Chhu	a)-1	River Water Level	1197.1	-	1196.9	-	-	-	-	-	-	-	-	-	-	-	m
	a)-2	Water Temp.	13	-	14	-	-	-	-	-	-	-	-	-	-	-	°c
b) Lower Tank (Stage-1)	b)-1	Water level at start	0.10	-	0.10	-	-	-	-	-	-	-	-	-	-	-	m
	b)-2	Water level at end	1.90	-	1.90	-	-	-	-	-	-	-	-	-	-	-	m
c) Lower Pump	c)-1	Position	P3		P3												
	c)-2	Operation start time	8:21		13:29												
	c)-3	Cumulative flow meter at start	5041.1		5184.8	0.0	5335.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	c)-4	Suction Pressure	3.5		3.5												
	c)-5	Delivery Pressure	23.0		23.0												
	c)-6	Ampere	33.0		33.0												
	c)-7	Voltage	400.0		400.0												
	c)-8	Bearing Temp.	30.0		30.0												
	c)-9	Stuffing box Temp.	29.0		29.0												
	c)-10	Operation end time	9:20		14:28												
	c)-11	Cumulative flow meter at end	5184.8		5335.0												
d)		Remark															

Note:

[ ] Adjustment of leakage from joints.

Maintenance:

Monthly:
[ ] Examination and exchange of oil.
[ ] Check of shafts temperature.
[ ] Check and adjustment of shafts center.
[ ] Check of vibration and noise.

6 Monthly:
[ ] Check of shaft sleeve and exchange of grand packing.
[ ] Check and exchange of mechanical seals.

Yearly:
[ ] Exchange of oil for bearing shaft.
[ ] Overhaul and exchange O-ring, Gasket, V-ring, and others.

2 Years:
[ ] Check of wearing at revolving part.
[ ] Check of inside casing.
[ ] Adjustment of all the other parts.

Civil Monitoring Sheet

Date : 7/26/95		1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
1) Operation		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
2) Pump No.															
3) Slide pump	Lift down *1	P1->P2		P2->P1											
	Staff	6		6											
Setup time	Start time	7:00		7:20											
	End time	7:20	0:00		0:00		0:00		0:00		0:00		0:00		0:00
	Total time	0:20		0:20											
	Lift up *2	P2->P1													
	Staff	6		6											
	Start time	16:45													
	End time	17:00													
	Total time	0:00	0:00	0:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater	Lift down *3	T->R		R->T											
	Staff	6		6											
Setup time	Start time	7:22													
	End time	7:40													
	Total time	0:18	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *4	R->T													
	Staff	6		6											
	Start time			17:05											
	End time			17:45											
	Total time	0:00	0:00	0:40	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Pipe length	6.00		6.00											
6) Filling water	Start time	7:40		14:04											
Setup time	End time	8:25		14:09											
	Total time	0:45	0:00	0:05	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time	Start time	8:26		14:10											
	End time	9:24		15:08											
	Total time	0:58	0:00	0:58	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative	At start	696.0		714.6											
Ampere meter	At end	714.6		732.4											
	Total time	18.6	0.0	17.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK	Valve	Open		Open											
10) Remark															

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 ... Recorded position to position (Example : T->R It Top of bank to River; M->R Middle of bank to River)

Operation Monitoring Sheet

Date : 7/26/95

			1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation		
			No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	
a)	Chang Chhu	a)-1	River Water Level	1197.0	-	1196.9	-	-	-	-	-	-	-	-	-	-	-	m
		a)-2	Water Temp.	14	-	14	-	-	-	-	-	-	-	-	-	-	-	°C
b)	Lower Tank (Stage-1)	b)-1	Water level at start	0.10	-	0.10	-	-	-	-	-	-	-	-	-	-	-	m
		b)-2	Water level at end	1.9	-	1.9	-	-	-	-	-	-	-	-	-	-	-	m
c)	Lower Pump	c)-1	Position	P2		P2												
		c)-2	Operation start time	8:26		14:10												
		c)-3	Cumulative flow meter at start	5335.0		5478.4	0.0	5620.6	0.0		0.0		0.0		0.0		0.0	
		c)-4	Suction Pressure	4.5		4.5												
		c)-5	Delivery Pressure	22.0		22.0												
		c)-6	Ampere	33.0		33.0												
		c)-7	Voltage	400.0		400.0												
		c)-8	Bearing Temp.	32.0		32.0												
		c)-9	Stuffing box Temp.	30.0		30.0												
		c)-10	Operation end time	9:24		15:08												
		c)-11	Cumulative flow meter at end	5478.4		5620.6												

d) Remark

Note:

e) Maintenance

Monthly:
1. Adjustment of leakage from joints.
2. Examination and exchange of oil.
3. Check of shafts temperature.
4. Check and adjustment of shafts center.
5. Check of vibration and noise.

6 Monthly:
6. Check of shaft sleeve and exchange of grand packing.

Yearly:
7. Check and exchange of mechanical-seals.
8. Exchange of oil for bearing shaft.
9. Overhaul and exchange O-ring, Gasket, V-ring, and others.

2 Years:
10. Check of wearing at revolving part.
11. Check of inside casing.
12. Adjustment of all the other parts.

R - 26

Civil Monitoring Sheet

Date: 7/27/95

		1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
1) Operation															
2) Pump No.		P1		P1											
3) Slide pump	Lift down *1 Staff	0		0											
	Setup time Start time	0:00		0:00											
	End time		0:00												
	Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *2 Staff	0		0											
	Start time	0:00		0:00											
	End time	0:00		0:00											
	Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater	Lift down *3 Staff	T->R		R->T											
	Setup time Start time	6		6											
		7:15		13:58											
	End time	7:37		14:01											
	Total time	0:22	0:00	0:03	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *4 Staff	6		6											
	Start time														
	End time														
	Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
6) Filling water	Pipe length	6.00		6.00											
	Setup time Start time	7:38		13:58											
	End time	8:00		14:01											
	Total time	0:22	0:00	0:03	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time	Start time	8:18		14:03											
	End time	9:14		15:04											
	Total time	0:56	0:00	1:01	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative	At start	732.4		750.5											
	At end	750.5		770.6											
	Total time	18.1	0.0	20.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ampere meter															
9) TANK	Valve	Open		Open											
10) Remark															

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

*4 Recorded position to position (Example : R->T River to Top of bank, R->T River to Top of bank, R->T River to Middle of bank)

Operation Monitoring Sheet

Date : 7/27/95

				1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation		
				No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	
a)	Chang Chau	a)-1	River Water Level	1197.0	-	1196.8	-	-	-	-	-	-	-	-	-	-	-	m
		a)-2	Water Temp.	15	-	15	-	-	-	-	-	-	-	-	-	-	-	°c
b)	Lower Tank (Stage-1)	b)-1	Water level at start	0.10	-	0.10	-											m
		b)-2	Water level at end	1.90	-	1.90	-											m
c)	Lower Pump	c)-1	Position	PI		PI												
		c)-2	Operation start time	8:18		14:03												
		c)-3	Cumulative flow meter at start	5620.6		5766.3	0.0	5912.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
		c)-4	Suction Pressure	5.1		5.1												
		c)-5	Delivery Pressure	21.0		21.0												
		c)-6	Ampere	34.0		34.0												
		c)-7	Voltage	400.0		400.0												
		c)-8	Bearing Temp.	30.0		32.0												
		c)-9	Stuffing box Temp.	29.0		30.0												
		c)-10	Operation end time	9:14		15:04												
		c)-11	Cumulative flow meter at end	5766.3		5912.0												
d)	Remark																	

Maintenance

Monthly
- () Adjustment of leakage from joints.
- () Examination and exchange of oil.
- () Check of shafts temperature.

6 Monthly
- () Check and adjustment of shafts center.
- () Check of vibration and noise.

Yearly
- () Check of shaft sleeve and exchange of grand packing.
- () Check and exchange of mechanical-seals.
- () Exchange of oil for bearing shaft.

2 Years
- () Overhaul and exchange O-ring, Gasket, V-ring, and others.
- () Check of wearing at revolving part.
- () Check of inside casing.
- () Adjustment of all the other parts.

Note:
Error-1 Include air in suction hose.
Error-2 Electric error
Error-3 Electric error
Error-4 Electric error

R - 28

Civil Monitoring Sheet

Date : 7/28/95		1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
1) Operation		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
2) Pump No.		P1->P3		P3->P1											
3) Slide pump	Lift down *1	5		7											
	Staff														
Setup time	Start time	7:00													
	End time	7:25													
	Total time	0:25	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *2			P5->P1											
	Staff			7											
	Start time			17:56											
	End time			18:15											
	Total time	0:00	0:00	0:19	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater	Lift down *3	T->R		R->T											
	Staff	5		7											
Setup time	Start time	7:25													
	End time	7:48													
	Total time	0:23	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *4			R->T											
	Staff			7											
	Start time			17:00											
	End time			17:56											
	Total time	0:00	0:00	0:56	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Pipe length	4.00		4.00											
6) Filling water	Start time	7:48		0:00											
Setup time	End time	8:25		0:00											
	Total time	0:37	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time	Start time	8:18		14:15											
	End time	9:17		15:13											
	Total time	0:59	0:00	0:58	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative	At start	770.6		788.7											
Ampere meter	At end	788.7		806.8											
	Total time	18.1	0.0	18.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK	Valve	Open		Open											
10) Remark															

*1 Recorded position to position (Example : P1->P2)
*2 Recorded position to position (Example : P4->P3)
*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)
*4 Recorded position to position (Example : R->T River to Top of bank, R->T River to Top of bank, R->T River to Middle of bank)

R - 29

Operation Monitoring Sheet

Date : 7/28/95

			1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation		
			No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	
a)	Chang	a)-1	River Water Level	1197.2	-	1196.9	-	-	-	-	-	-	-	-	-	-	-	m
	Chhu	a)-2	Water Temp.	15	-	15	-	-	-	-	-	-	-	-	-	-	-	°c
b)	Lower Tank	b)-1	Water level at start	0.10	-	0.10	-	-	-	-	-	-	-	-	-	-	-	m
	(Stage-1)	b)-2	Water level at end	1.90	-	1.92	-	-	-	-	-	-	-	-	-	-	-	m
		c)-1	Position	P3		P3												
		c)-2	Operation start time	8:18		14:15												
		c)-3	Cumulative flow meter at start	5912.0		6052.4	0.0	6194.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
		c)-4	Suction Pressure	3.5		3.5												
c)	Lower Pump	c)-5	Delivery Pressure	23.0		23.0												
		c)-6	Ampere	34.0		34.0												
		c)-7	Voltage	400.0		400.0												
		c)-8	Bearing Temp.	30.0		30.0												
		c)-9	Stuffing box Temp.	29.0		29.0												
		c)-10	Operation end time	9:17		15:13												
		c)-11	Cumulative flow meter at end	6052.4		6194.9												

d) Remark

Monthly:
- Adjustment of leakage from joints.
- Examination and exchange of oil.

6 Monthly:
- Check of shafts temperature.
- Check and adjustment of shafts center.
- Check of vibration and noise.

Yearly:
- Check of shaft sleeve and exchange of grund packing.
- Check and exchange of mechanical-seals.
- Exchange of oil for bearing shaft.

2 Years:
- Overhaul and exchange O-ring, Gasket, V-ring, and others.
- Check of wearing at revolving part.
- Check of inside casing.
- Adjustment of all the other parts.

e) Maintenance

Note:
Error-1 Include air in suction hose.
Error-2 Electric error
Error-3 Electric error
Error-4 Electric error

R - 30

Civil Monitoring Sheet

Date:	7/29/95	1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
1) Operation															
2) Pump No.		P1-P2		P1-P2											
3) Slide pump	Lift down *1 Staff	6		6											
Setup time	Start time	7:00													
	End time	7:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Total time	0:20	0:00	0:10	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *2			P2->P1											
	Staff			6											
	Start time	15:25		15:25											
	End time	15:35	0:00	15:35	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Total time	0:10	0:00	0:10	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater	Lift down *3	T->R		R->T											
	Staff	6		5											
Setup time	Start time	7:20		15:00											
	End time	7:35	0:00	15:25	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Total time	0:15	0:00	0:25	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *3 Staff														
	Start time														
	End time		0:00		0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Pipe length	4.00		4.00											
6) Filling water	Start time	7:37		13:49											
Setup time	End time	7:55		13:51											
	Total time	0:18	0:00	0:02	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time	Start time	7:56		13:52											
	End time	8:50		14:49											
	Total time	0:54	0:00	0:57	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative	At start	806.8		825.3											
Ampere meter	At end	825.3		843.0											
	Total time	18.5	0.0	17.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK	Valve	Open		Open											
10) Remark															

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

(Example : R->T River to Top of bank, R->T River to Middle of bank)

Operation Monitoring Sheet

Date : 7/29/95

			1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
			No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
a) Chang Chhu	a)-1	River Water Level	1196.9	-	1196.0	-	-	-	-	-	-	-	-	-	-	-	m
	a)-2	Water Temp.	15	-	15	-	-	-	-	-	-	-	-	-	-	-	°C
b) Lower Tank (Stage-1)	b)-1	Water level at start	0.10	-	0.10	-	-	-	-	-	-	-	-	-	-	-	m
	b)-2	Water level at end	1.90	-	1.90	-	-	-	-	-	-	-	-	-	-	-	m
c) Lower Pump	c)-1	Position	P2		P2												
	c)-2	Operation start time	7:56		13:52												
	c)-3	Cumulative flow meter at start	6194.9		6339.2	0.0	6477.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	c)-4	Suction Pressure	4.5		4.5												
	c)-5	Delivery Pressure	22.0		22.0												
	c)-6	Ampere	34.0		35.0												
	c)-7	Voltage	400.0		400.0												
	c)-8	Bearing Temp.	30.0		36.0												
	c)-9	Stuffing box Temp.	29.0		30.0												
	c)-10	Operation end time	8:50		14:49												
	c)-11	Cumulative flow meter at end	6339.2		6477.3												
d)		Remark															

Note:
Error-1 Include air in suction hose.
Error-2 Electric error
Error-3 Electric error
Error-4 Electric error

e) Maintenance

Monthly
: Adjustment of leakage from joints.
: Examination and exchange of oil.
: Check of shafts temperature.
: Check and adjustment of shafts center.
: Check of vibration and noise.

6 Monthly
: Check of shaft sleeve and exchange of grund packing.

Yearly
: Check and exchange of mechanical-seals.
: Exchange of oil for bearing shaft.
: Overhaul and exchange O-ring, Gasket, V-ring, and others.

2 Years
: Check of wearing at revolving part.
: Check of inside casing.
: Adjustment of all the other parts.

Civil Monitoring Sheet

		1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
Date :	8/1/95														
1) Operation															
2) Pump No.		P1->P3													
	Lift down *1 Staff	6													
3) Slide pump Setup time	Start time	9:40													
	End time	9:55	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Total time	0:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *2 Staff			P3->P1 6											
	Start time			15:32											
	End time			15:56											
	Total time	0:00	0:00	0:24	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater Setup time	Lift down *3 Staff	T->R 6													
	Start time	9:38													
	End time	10:12	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Total time	0:34	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *4 Staff			R->T 6											
	Start time			16:02											
	End time			16:29											
	Total time	0:00	0:00	0:27	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Pipe length	2.00		6.00											
6) Filling water Setup time	Start time	10:13													
	End time	10:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Total time	0:17	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time	Start time	10:38													
	End time	11:31	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Total time	0:53	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Cumulative		843.0		861.1											
Ampere meter	At start	861.1		861.1											
	At end	18.1	0.0	861.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total time														
8) Valve		Open		Open											
9) TANK															
10) Remark				Rainy											

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

*4 Recorded position to position (Example : R->T River to Top of bank R->T River to Middle of bank)

R - 33

Operation Monitoring Sheet

			1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation		
			No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	
a) Chang Chhu	a)-1	River Water Level	1197.5	-	-	-	-	-	-	-	-	-	-	-	-	-	m
	a)-2	Water Temp.	15	-	-	-	-	-	-	-	-	-	-	-	-	-	°c
b) Lower Tank (Stage-1)	b)-1	Water level at start	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	m
	b)-2	Water level at end	1.90	-	-	-	-	-	-	-	-	-	-	-	-	-	m
c) Lower Pump	c)-1	Position	P3														
	c)-2	Operation start time	10:38														
	c)-3	Cumulative flow meter at start	6477.3		6615.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	c)-4	Suction Pressure	3.0														
	c)-5	Delivery Pressure	24.0														
	c)-6	Ampere	35.0														
	c)-7	Voltage	396.0														
	c)-8	Bearing Temp.	32.0														
	c)-9	Stuffing box Temp.	30.0														
	c)-10	Operation end time	11:51														
	c)-11	Cumulative flow meter at end	6615.5														
d)		Remark			Rainy												

Note:

c) Maintenance	
Monthly	[ ] Adjustment of leakage from joints. [ ] Examination and exchange of oil.
6 Monthly	[ ] Check of shafts temperature. [ ] Check and adjustment of shafts center. [ ] Check of vibration and noise.
Yearly	[ ] Check of shaft sleeve and exchange of grand packing. [ ] Check and exchange of mechanical-seals. [ ] Exchange of oil for bearing shaft.
2 Years	[ ] Overhaul and exchange O-ring, Gasket, V-ring, and others. [ ] Check of wearing at revolving part. [ ] Check of inside casing. [ ] Adjustment of all the other parts.

Civil Monitoring Sheet

Date: 8/2/95		1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
1) Operation		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
2) Pump No.		P1->P3													
3) Slide pump Setup time	Lift down*1														
	Staff	6													
	Start time	8:10													
	End time	8:23													
	Total time	0:13	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up*2	P3->P1		P3->P1											
	Staff	6		6											
	Start time			16:30											
	End time			16:45											
	Total time	0:00	0:00	0:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater Setup time	Lift down*3	T->R		R->T											
	Staff	6		6											
	Start time	8:31		16:45											
	End time	8:59		17:10											
	Total time	0:28	0:00	0:25	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up*4														
	Staff														
	Start time														
	End time														
	Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Pipe length	2.00		2.00											
6) Filling water Setup time	Start time	9:02		0:00											
	End time	9:16		0:00											
	Total time	0:14	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time	Start time	9:18		15:35											
	End time	10:16		16:29											
	Total time	0:58	0:00	0:54	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative Ampere meter	At start	861.1		878.8											
	At end	878.8		896.4											
	Total time	17.7	0.0	17.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK	Valve	Open		Open											
10) Remark															

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

*4 Recorded position to position (Example : R->T River to Top of bank, R->T River to Middle of bank)

R - 35

563

Operation Monitoring Sheet

Date : 8/2/95

			1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
			No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
a) Chang Chhu	a)-1	River Water Level	1197.5	-	1197.0	-	-	-	-	-	-	-	-	-	-	-	m
	a)-2	Water Temp.	15	-	16	-	-	-	-	-	-	-	-	-	-	-	°c
b) Lower Tank (Stage-1)	b)-1	Water level at start	0.10	-	0.10	-	-	-	-	-	-	-	-	-	-	-	m
	b)-2	Water level at end	1.90	-	1.90	-	-	-	-	-	-	-	-	-	-	-	m
c) Lower Pump	c)-1	Position	P3		P3												
	c)-2	Operation start time	9:18		15:35												
	c)-3	Cumulative flow meter at start	6615.5		6753.5	0.0	6891.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	c)-4	Suction Pressure	3.0		3.0												
	c)-5	Delivery Pressure	24.0		24.0												
	c)-6	Ampere	35.0		35.0												
	c)-7	Voltage	400.0		400.0												
	c)-8	Bearing Temp.	30.0		36.0												
	c)-9	Stuffing box Temp.	30.0		29.0												
	c)-10	Operation end time	10:16		16:29												
	c)-11	Cumulative flow meter at end	6753.5		6891.4												
d)		Remark															

e) Maintenance

Monthly:
1) Adjustment of leakage from joints.
1) Examination and exchange of oil.

6 Monthly:
1) Check of shafts temperature.
1) Check and adjustment of shafts center.
1) Check of vibration and noise.

Yearly:
1) Check of shaft sleeve and exchange of grand packing.
1) Check and exchange of mechanical-seals.
1) Exchange of oil for bearing shaft.

2 Years:
1) Overhaul and exchange O-ring, Gasket, V-ring, and others.
1) Check of wearing at revolving part.
1) Check of inside casing.
1) Adjustment of all the other parts.

Note:

Civil Monitoring Sheet

Date: 8/5/95		1st operation		2nd operation		3th operation		4th operation		5th operation		6th operation		7th operation	
1) Operation		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
2) Pump No.		P1->P2		P2->P1											
3) Slide pump	Lift down*1														
Setup time	Staff	6		6											
	Start time	7:03													
	End time	7:18													
	Total time	0:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up*2														
	Staff														
	Start time			17:05											
	End time			17:20											
	Total time	0:00	0:00	0:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater	Lift down*3	T->R		R->T											
Setup time	Staff	6		6											
	Start time	7:19													
	End time	7:34													
	Total time	0:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up*4														
	Staff														
	Start time			17:21											
	End time			17:45											
	Total time	0:00	0:00	0:24	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Pipe length	8.00		8.00											
6) Filling water	Start time	7:42		0:00											
Setup time	End time	8:17		0:00											
	Total time	0:35	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time	Start time	8:22		13:45											
	End time	9:16		14:39											
	Total time	0:54	0:00	0:54	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative	At start	896.4		913.9											
Ampere meter	At end	913.9		931.7											
	Total time	17.5	0.0	17.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK	Valve	Open		Open											
10) Remark															

*1 Recorded position to position (Example : P1->P2)
*2 Recorded position to position (Example : P4->P3)
*3 Recorded position to position (Example : T->R Top of bank to River, M.->R Middle of bank to River)
*4 Recorded position to position (Example : R->T River to Top of bank, R->T River to Middle of bank)

Operation Monitoring Sheet

Date : 8/5/95.

			1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation		
			No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	
a) Chang Chhu	a)-1	River Water Level	1196.4	-	1196.1	-	-	-	-	-	-	-	-	-	-	-	m
	a)-2	Water Temp.	15	-	16	-	-	-	-	-	-	-	-	-	-	-	°c
b) Lower Tank (Stage-1)	b)-1	Water level at start	0.10	-	0.10	-	-	-	-	-	-	-	-	-	-	-	m
	b)-2	Water level at end	1.90	-	1.90	-	-	-	-	-	-	-	-	-	-	-	m
c) Lower Pump	c)-1	Position	P2		P2												
	c)-2	Operation start time	8:22		13:45												
	c)-3	Cumulative flow meter at start	6891.4		7030.6	0.0	7168.5	0.0		0.01	0.0		0.0	0.0		0.0	0.0	
	c)-4	Suction Pressure	4.8		5.0												
	c)-5	Delivery Pressure	22.0		22.0												
	c)-6	Ampere	33.0		34.0												
	c)-7	Voltage	400.0		400.0												
	c)-8	Bearing Temp.	35.0		36.0												
	c)-9	Stuffing box Temp.	28.0		30.0												
	c)-10	Operation end time	9:16		14:39												
	c)-11	Cumulative flow meter at end	7030.6		7168.5												

d) Remark

Note:

e) Maintenance

Monthly
(1) Adjustment of leakage from joints.
(1) Examination and exchange of oil.

6 Monthly
(1) Check of shafts temperature.
(1) Check and adjustment of shafts center.

Yearly
(1) Check of vibration and noise.
(1) Check of shaft sleeve and exchange of grand packing.
(1) Check and exchange of mechanical-seals.
(1) Exchange of oil for bearing shaft.

2 Years
(1) Overhaul and exchange O-ring, Gasket, V-ring, and others.
(1) Check of wearing at revolving part.
(1) Check of inside casing.
(1) Adjustment of all the other parts.

Civil Monitoring Sheet

Date : 8/7/95

		1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
1) Operation															
2) Pump No.															
3) Slide pump Setup time	Lift down *1	P1->P3		P3->P1											
	Staff	6		6											
	Start time	7:15		17:10											
	End time	7:30		17:32											
	Total time	0:15	0:00	0:22	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *2			P3->P1											
	Staff			6											
	Start time														
	End time														
	Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater Setup time	Lift down *3	T->R		R->T											
	Staff	6		6											
	Start time	7:30													
	End time	7:45													
	Total time	0:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *4			R->T											
	Staff			6											
	Start time			17:33											
	End time			17:48											
	Total time	0:00	0:00	0:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Pipe length	4.00		4.00											
6) Filling water Setup time	Start time	7:36		0:00											
	End time	8:20		0:00											
	Total time	0:54	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time	Start time	8:43		14:20											
	End time	9:38		15:16											
	Total time	0:55	0:00	0:56	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative Ampere meter	At start	950.3		950.7											
	At end	966.7		985.5											
	Total time	16.4	0.0	18.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK	Valve	Open		Open											
10) Remark															

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

*4 Recorded position to position (Example : R->T River to Top of bank, R->M River to Middle of bank)

Operation Monitoring Sheet

Date : 8/7/95

			1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation		unit
			No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	
a)	Chang Chhu	a)-1	River Water Level	1196.2	-	1196.1	-	-	-	-	-	-	-	-	-	-	-	m
		a)-2	Water Temp.	15	-	16	-	-	-	-	-	-	-	-	-	-	-	°c
b)	Lower Tank (Stage-1)	b)-1	Water level at start	0.10	-	0.10	-	-	-	-	-	-	-	-	-	-	-	m
		b)-2	Water level at end	1.90	-	2.00	-	-	-	-	-	-	-	-	-	-	-	m
c)	Lower Pump	c)-1	Position	P3		P3												
		c)-2	Operation start time	8:43		14:20												
		c)-3	Cumulative flow meter at start	7193.5	0.0	7334.1	0.0	7482.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
		c)-4	Suction Pressure	4.0		4.0												
		c)-5	Delivery Pressure	22.0		24.0												
		c)-6	Ampere	33.0		34.0												
		c)-7	Voltage	400.0		400.0												
		c)-8	Bearing Temp.	35.0		36.0												
		c)-9	Stuffing box Temp.	30.0		30.0												
		c)-10	Operation end time	9:38		15:16												
		c)-11	Cumulative flow meter at end	7334.1		7482.5												
d)			Remark															

Maintenance

e)	Maintenance	
	Monthly	1 Adjustment of leakage from joints.
		1 Examination and exchange of oil.
		1 Check of shafts temperature.
	6 Monthly	1 Check and adjustment of shafts center.
		1 Check of vibration and noise.
	Yearly	1 Check of shaft sleeve and exchange of grand packing.
		1 Check and exchange of mechanical-seals.
		1 Exchange of oil for bearing shaft.
	2 Years	1 Overhaul and exchange O-ring, Gasket, V-ring, and others.
		1 Check of wearing at revolving part.
		1 Check of inside casing.
		1 Adjustment of all the other parts.

Note:

Civil Monitoring Sheet

		1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
Date :	8/8/95	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
1) Operation															
2) Pump No.	Lift down *¹	P1->P2		P2->P1											
	Staff	6		6											
3) Slide pump Setup time	Start time	7:23													
	End time	7:46													
	Total time	0:23	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *²			P2->P1											
	Staff			6											
	Start time			17:10											
	End time			17:32											
	Total time	0:00	0:00	0:22	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater Setup time	Lift down *³	T->K		K->T											
	Staff	6		6											
	Start time	7:05													
	End time	7:20													
	Total time	0:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *⁴			K->T											
	Staff			6											
	Start time			17:53											
	End time			17:48											
	Total time	0:00	0:00	0:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Pipe length	4.00		4.00											
6) Filling water Setup time	Start time	8:00		0:00											
	End time	8:24		0:00											
	Total time	0:24	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time	Start time	8:34		13:37											
	End time	9:30		14:30											
	Total time	0:56	0:00	0:53	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative Ampere meter	At start	985.6		1006.6											
	At end	1006.6		1028.1											
	Total time	21.0	0.0	21.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK	Valve	Open		Open											
10) Remark															

*1 Recorded position to position (Example : P1->P2).

*2 Recorded position to position (Example : P4->P3).

*3 Recorded position to position (Example : T->K Top of bank to River, M->R Middle of bank to River)

*4 Recorded position to position (Example : R->T River to Top of bank, R->T River to Middle of bank)

Operation Monitoring Sheet

Date : 8/8/95

			1st operation No.1	1st operation No.2	2nd operation No.1	2nd operation No.2	3rd operation No.1	3rd operation No.2	4th operation No.1	4th operation No.2	5th operation No.1	5th operation No.2	6th operation No.1	6th operation No.2	7th operation No.1	7th operation No.2
a) Chang Chhu	a)-1	River Water Level	1197.1 m	-	1197.1 m	-	-	-	-	-	-	-	-	-	-	- m
	a)-2	Water Temp.	15 °c	-	18 °c	-	-	-	-	-	-	-	-	-	-	- °c
b) Lower Tank (Stage-1)	b)-1	Water level at start	0.10 m	-	0.10 m	-	-	-	-	-	-	-	-	-	-	- m
	b)-2	Water level at end	1.90 m	-	1.90 m	-	-	-	-	-	-	-	-	-	-	- m
c) Lower Pump	c)-1	Position	P2		P2											
	c)-2	Operation start time	8:34		13:37											
	c)-3	Cumulative flow meter at start	7482.5		7624.6	0.0	7763.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	c)-4	Suction Pressure	-4.0		-4.0											
	c)-5	Delivery Pressure	22.0		22.0											
	c)-6	Ampere	32.0		35.0											
	c)-7	Voltage	400.0		400.0											
	c)-8	Bearing Temp.	40.0		40.0											
	c)-9	Stuffing box Temp.	30.0		30.0											
	c)-10	Operation end time	9:30		14:30											
	c)-11	Cumulative flow meter at end	7624.6		7763.1											
d)		Remark							Note:							

c) Maintenance

Monthly	Adjustment of leakage from joints. Examination and exchange of oil.
6 Monthly	Check of shafts temperature. Check and adjustment of shafts center. Check of vibration and noise.
Yearly	Check of shaft sleeve and exchange of grand packing. Check and exchange of mechanical-seals. Exchange of oil for bearing shaft. Overhaul and exchange O-ring, Gasket, V-ring, and others.
2 Years	Check of wearing at revolving part. Check of inside casing. Adjustment of all the other parts.

R - 42

Civil Monitoring Sheet

Date : 8/9/95	1st operation No.1	1st operation No.2	2nd operation No.1	2nd operation No.2	3th operation No.1	3th operation No.2	4th operation No.1	4th operation No.2	5th operation No.1	5th operation No.2	6th operation No.1	6th operation No.2	7th operation No.1	7th operation No.2
1) Operation														
2) Pump No.														
3) Slide pump Lift down *1	P1->P3		P3->P1											
Staff	6		6											
Setup time Start time	7:05		17:15											
End time	7:18		17:38											
Total time	0:13	0:00	0:23	0:00										
Lift up *2														
Staff														
Start time														
End time														
Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater Lift down *3	T->R		R->T											
Staff	6		6											
Setup time Start time	7:20		17:38											
End time	7:39		18:05											
Total time	0:19	0:00	0:27	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *4														
Staff														
Start time														
End time														
Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Pipe length	8.00		8.00											
6) Filling water Start time	7:36		14:12											
Setup time End time	8:09		15:04											
Total time	0:33	0:00	0:52	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time Start time	8:10													
End time	9:03													
Total time	0:53	0:00												
8) Cumulative At start	1028.1		1049.6											
At end	1049.6		1070.4											
Total time	21.5	0.0	20.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ampere meter														
9) TANK Value	Open		Open											
10) Remark														

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

*4 Recorded position to position (Example : R->T River to Top of bank, R->T River to Top of bank, R->T River to Middle of bank)

R - 43

Operation Monitoring Sheet

Date : 8/9/95

			1st operation No.1	1st operation No.2	2nd operation No.1	2nd operation No.2	3rd operation No.1	3rd operation No.2	4th operation No.1	4th operation No.2	5th operation No.1	5th operation No.2	6th operation No.1	6th operation No.2	7th operation No.1	7th operation No.2
a) Chang Chhu	a)-1	River Water Level	1196.3	-	1196.3	-	-	-	-	-	-	-	-	-	-	-	m
	a)-2	Water Temp.	15	-	16	-	-	-	-	-	-	-	-	-	-	-	°c
b) Lower Tank (Stage-1)	b)-1	Water level at start	0.10	-	0.10	-	-	-	-	-	-	-	-	-	-	-	m
	b)-2	Water level at end	1.90	-	1.90	-	-	-	-	-	-	-	-	-	-	-	m
c) Lower Pump	c)-1	Position	P3		P3												
	c)-2	Operation start time	8:10		14:12												
	c)-3	Cumulative flow meter at start	7763.1		7904.7	0.0	8049.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	c)-4	Suction Pressure	5.0		5.0												
	c)-5	Delivery Pressure	22.0		22.0												
	c)-6	Ampere	35.0		34.0												
	c)-7	Voltage	400.0		400.0												
	c)-8	Bearing Temp.	36.0		36.0												
	c)-9	Stuffing box Temp.	30.0		29.0												
	c)-10	Operation end time	9:03		15:04												
	c)-11	Cumulative flow meter at end	7904.7		8049.3												
d)		Remark															

Note:

e) Maintenance

Monthly
☐ Adjustment of leakage from joints.
☐ Examination and exchange of oil.
☐ Check of shafts temperature.

6 Monthly
☐ Check and adjustment of shafts center.
☐ Check of vibration and noise.

Yearly
☐ Check of shaft sleeve and exchange of grand packing.
☐ Check and exchange of mechanical-seals.
☐ Exchange of oil for bearing shaft.

2 Years
☐ Overhaul and exchange O-ring, Gasket, V-ring, and others.
☐ Check of wearing at revolving part.
☐ Check of inside casing.
☐ Adjustment of all the other parts.

Civil Monitoring Sheet

Date: 8/10/95	1st operation No.1	No.2	2nd operation No.1	No.2	3th operation No.1	No.2	4th operation No.1	No.2	5th operation No.1	No.2	6th operation No.1	No.2	7th operation No.1	No.2
1) Operation														
2) Pump No.														
Lift down *1	P1->P3													
Staff	6													
3) Slide pump Setup time Start time	7:10													
End time	7:22													
Total time	0:12	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *2			P3->P1											
Staff			6											
Start time			16:47											
End time			17:15											
Total time	0:00	0:00	0:28	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater Lift down *3	T->R		R->T											
Staff	6		6											
Setup time Start time	7:24		17:16											
End time	7:55		17:28											
Total time	0:31	0:00	0:12	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *4														
Staff														
Start time														
End time														
Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Pipe length	2.00													
6) Filling water Setup time Start time	7:56													
End time	8:27													
Total time	0:31	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time Start time	8:07													
End time	9:03													
Total time	0:56	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative At start	1181.8		1202.7											
At end	1202.7		-1202.7											
Ampere meter Total time	20.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK Valve	Open		Open											
10) Remark			No electricity											

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

Operation Monitoring Sheet

Date : 8/10/95

				1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation		
				No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	
a)	Chang Chhu	a)-1	River Water Level	1196.4	-	-	-	-	-	-	-	-	-	-	-	-	-	m
		a)-2	Water Temp.	16	-	-	-	-	-	-	-	-	-	-	-	-	-	°c
b)	Lower Tank (Stage-1)	b)-1	Water level at start	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	m
		b)-2	Water level at end	1.90	-	-	-	-	-	-	-	-	-	-	-	-	-	m
c)	Lower Pump	c)-1	Position	P3														
		c)-2	Operation start time	8:07														
		c)-3	Cumulative flow meter at start	8794.8	0.0	8938.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
		c)-4	Suction Pressure	-1.0														
		c)-5	Delivery Pressure	22.0														
		c)-6	Ampere	34.0														
		c)-7	Voltage	400.0														
		c)-8	Bearing Temp.	39.0														
		c)-9	Stuffing box Temp.	30.0														
		c)-10	Operation end time	9:03														
		c)-11	Cumulative flow meter at end	8938.1														
d)			Remark			Error ----: Not supply													

Note:

c) Maintenance

Monthly
□ Adjustment of leakage from joints.
□ Examination and exchange of oil.
□ Check of shafts temperature.

6 Monthly
□ Check and adjustment of shafts center.
□ Check of vibration and noise.

Yearly
□ Check of shaft sleeve and exchange of grand packing.
□ Check and exchange of mechanical-seals.
□ Exchange of oil for bearing shaft.

2 Years
□ Overhaul and exchange O-ring, Gasket, V-ring, and others.
□ Check of wearing at revolving part.
□ Check of inside casing.
□ Adjustment of all the other parts.

Civil Monitoring Sheet

Date : 8/11/95	1st operation		2nd operation		3th operation		4th operation		5th operation		6th operation		7th operation	
	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
1) Operation														
2) Pump No.	P1->P2													
3) Slide pump Lift down *1	6													
Staff														
Setup time Start time	7:00													
End time	7:20													
Total time	0:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *2			P2->P1											
Staff			6											
Start time			17:02											
End time			17:20											
Total time	0:00	0:00	0:18	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater Lift down *3	T->R		R->T											
Staff	6		6											
Setup time Start time	7:20		17:22											
End time	7:34		17:58											
Total time	0:14	0:00	0:36	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *4														
Staff														
Start time														
End time														
Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Pipe length	8:00		8:00											
6) Filling water Setup time Start time	7:35		0:00											
End time	8:05		0:00											
Total time	0:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time Start time	8:06		14:20											
End time	9:00		15:13											
Total time	0:54	0:00	0:53	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative At start	1084.2		1104.2											
Ampere meter At end	1104.2		1123.8											
Total time	20.0	0.0	19.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK Valve	Open		Open											
10) Remark														

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

R - 47

Operation Monitoring Sheet

Date : 8/11/95

				1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
				No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
a) Chang Chhu	a)-1	River Water Level	m	1196.5	-	1196.4	-	-	-	-	-	-	-	-	-	-	-
	a)-2	Water Temp.	°c	15	-	15	-	-	-	-	-	-	-	-	-	-	-
b) Lower Tank (Stage-1)	b)-1	Water level at start	m	0.10	-	0.10	-	-	-	-	-	-	-	-	-	-	-
	b)-2	Water level at end	m	1.90	-	1.90	-	-	-	-	-	-	-	-	-	-	-
	c)-1	Position		P2		P2											
	c)-2	Operation start time		8:06		14:20											
	c)-3	Cumulative flow meter at start		8192.6		8336.7	0.0	8479.1	0.0		0.0		0.0		0.0		0.0
c) Lower Pump	c)-4	Suction Pressure		4.5		4.5											
	c)-5	Delivery Pressure		22.0		22.0											
	c)-6	Ampere		35.0		35.0											
	c)-7	Voltage		400.0		400.0											
	c)-8	Bearing Temp.		33.0		36.0											
	c)-9	Stuffing box Temp.		29.0		30.0											
	c)-10	Operation end time		9:00		15:13											
	c)-11	Cumulative flow meter at end		8336.7		8479.1											
d)		Remark															

Note:

e) Maintenance

Monthly:
[ ] Adjustment of leakage from joints.
[ ] Examination and exchange of oil.

6 Monthly:
[ ] Check of shafts temperature.
[ ] Check and adjustment of shafts center.
[ ] Check of vibration and noise.

Yearly:
[ ] Check of shaft sleeve and exchange of grand packing.
[ ] Check and exchange of mechanical-seals.
[ ] Exchange of oil for bearing shaft.

2 Years:
[ ] Overhaul and exchange O-ring, Gasket, V-ring, and others.
[ ] Check of wearing at revolving part.
[ ] Check of inside casing.
[ ] Adjustment of all the other parts.

R - 48

Civil Monitoring Sheet

Date: 8/15/95		1st operation		2nd operation		3th operation		4th operation		5th operation		6th operation		7th operation	
1) Operation		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
2) Pump No.															
3) Slide pump	Lift down *1	P1->P3													
	Staff	6													
	Setup time Start time	7:42													
	End time	8:16													
	Total time	0:34	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *2			P3->P1											
	Staff			6											
	Start time			16:36											
	End time			17:15											
	Total time	0:00	0:00	0:29	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater	Lift down *3	T->R													
	Staff	6													
	Setup time Start time	7:42													
	End time	8:16													
	Total time	0:34	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *4			R->T											
	Staff			6											
	Start time			17:15											
	End time			17:55											
	Total time	0:00	0:00	0:40	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Pipe length	8.00		8.00											
6) Filling water	Start time	8:16		0:00											
	Setup time End time	8:39		0:00											
	Total time	0:23	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7)	Start time	8:40		14:11											
	End time	9:33	0:00	15:07	0:00										
	Driven time Total time	0:53	0:00	0:56	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative	At start	1144.2		1163.5											
	Ampere meter At end	1163.5		1181.8											
	Total time	19.3	0.0	18.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK	Valve	Open		Open											
10) Remark															

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

*4 Recorded position to position (Example : R->T River to Top of bank, R->T River to ...)

Operation Monitoring Sheet

Date : 8/15/95

		1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation		
		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	
a) Chang Chhu	a)-1 River Water Level	1196.2	-	1196.1	-	-	-	-	-	-	-	-	-	-	-	m
	a)-2 Water Temp.	15	-	15	-	-	-	-	-	-	-	-	-	-	-	°c
b) Lower Tank (Stage-1)	b)-1 Water level at start	0.10	-	0.10	-	-	-	-	-	-	-	-	-	-	-	m
	b)-2 Water level at end	1.90	-	1.90	-	-	-	-	-	-	-	-	-	-	-	m
c) Lower Pump	c)-1 Position	P3		P3												
	c)-2 Operation start time	8:40		14:11												
	c)-3 Cumulative flow meter at start	8501.1		8642.3	0.0	8794.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	c)-4 Suction Pressure	4.5		5.0												
	c)-5 Delivery Pressure	22.0		24.0												
	c)-6 Ampere	35.0		35.0												
	c)-7 Voltage	400.0		400.0												
	c)-8 Bearing Temp.	33.0		35.0												
	c)-9 Stuffing box Temp.	29.0		29.0												
	c)-10 Operation end time	9:33		15:07												
	c)-11 Cumulative flow meter at end	8642.3		8794.8												
d)	Remark															

Note:

e) Maintenance

Monthly
☐ Adjustment of leakage from joints.
☐ Examination and exchange of oil.
☐ Check of shafts temperature.
☐ Check and adjustment of shafts center.
☐ Check of vibration and noise.

6 Monthly

Yearly
☐ Check of shaft sleeve and exchange of grand packing.
☐ Check and exchange of mechanical-seals.
☐ Exchange of oil for bearing shaft.

2 Years
☐ Overhaul and exchange O-ring, Gasket, V-ring, and others.
☐ Check of wearing at revolving part.
☐ Check of inside casing.
☐ Adjustment of all the other parts.

R - 50

Civil Monitoring Sheet

Date : 8/19/95		1st operation		2nd operation		3th operation		4th operation		5th operation		6th operation		7th operation	
		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
1) Operation															
2) Pump No.															
3) Slide pump	Lift down *1	P1->P2													
	Staff	6													
	Setup time Start time	7:10													
	End time	7:29	0:00		0:00		0:00		0:00		0:00		0:00		0:00
	Total time	0:19													
	Lift up *2			P2->P1											
	Staff			6											
	Start time			17:09											
	End time			17:31	0:00		0:00		0:00		0:00		0:00		0:00
	Total time	0:00	0:00	0:22	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater	Lift down *3	T->R													
	Staff	6													
	Setup time Start time	7:30													
	End time	7:46	0:00		0:00		0:00		0:00		0:00		0:00		0:00
	Total time	0:16													
	Lift up *4			R->T											
	Staff			6											
	Start time			17:32											
	End time			17:48	0:00		0:00		0:00		0:00		0:00		0:00
	Total time	0:00	0:00	0:16	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Pipe length	6.00		6.00											
6) Filling water	Setup time Start time	7:47		0:00											
	End time	8:20		0:00											
	Total time	0:33	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time	Start time	8:15		14:20											
	End time	9:10		15:14											
	Total time	0:55	0:00	0:54	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative Ampere meter	At start	1244.4		1260.1											
	At end	1260.1		1279.6											
	Total time	15.7	0.0	19.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK	Valve	Open		Open											
10) Remark															

*1 Recorded position to position (Example : P1->P2)
*2 Recorded position to position (Example : P4->P3)
*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)
*4 Recorded position to position (Example : R->T River to Top of bank, R->T River to Middle of bank)

Operation Monitoring Sheet

Date : 8/19/95

			1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation		
			No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	
a) Chang	a)-1	River Water Level	1196.6	-	1196.6	-	-	-	-	-	-	-	-	-	-	-	m
Chhu	a)-2	Water Temp.	15	-	15	-	-	-	-	-	-	-	-	-	-	-	°c
b) Lower Tank	b)-1	Water level at start	0.10	-	0.10	-											m
(Stage-1)	b)-2	Water level at end	1.90	-	1.90	-											m
	c)-1	Position	P2		P2												
	c)-2	Operation start time	8:15		14:20												
	c)-3	Cumulative flow meter at start	9460.6		9606.8	0.0	9739.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	c)-4	Suction Pressure	4.5		4.5												
c) Lower Pump	c)-5	Delivery Pressure	24.0		24.0												
	c)-6	Ampere	34.0		34.0												
	c)-7	Voltage	400.0		400.0												
	c)-8	Bearing Temp.	35.0		35.0												
	c)-9	Stuffing box Temp.	30.0		30.0												
	c)-10	Operation end time	9:10		15:14												
	c)-11	Cumulative flow meter at end	9606.8		9739.3												

d) Remark:

Note:

e) Maintenance

Monthly
Adjustment of leakage from joints.
Examination and exchange of oil.

6 Monthly
Check of shafts temperature.
Check and adjustment of shafts center.
Check of vibration and noise.

Yearly
Check of shaft sleeve and exchange of grand packing.
Check and exchange of mechanical-seals.
Exchange of oil for bearing shaft.

2 Years
Overhaul and exchange O-ring, Gasket, V-ring, and others.
Check of wearing at revolving part.
Check of inside casing.
Adjustment of all the other parts.

Civil Monitoring Sheet

Date: 8/21/95		1st operation		2nd operation		3th operation		4th operation		5th operation		6th operation		7th operation	
1) Operation		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
2) Pump No.		P1->P2		P2->P1											
3) Slide pump	Lift down *¹														
	Staff	6		6											
Setup time	Start time	7:07													
	End time	7:15													
	Total time	0:08	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *²			P2->P1											
	Staff			6											
	Start time			17:00											
	End time			17:20											
	Total time	0:00	0:00	0:20	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater	Lift down *³	T->R		R->T											
	Staff	6		6											
Setup time	Start time	7:15		17:21											
	End time	7:25		17:57											
	Total time	0:10	0:00	0:36	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *⁴			R->T											
	Staff			6											
	Start time			17:21											
	End time			17:57											
	Total time	0:00	0:00	0:36	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Pipe length	6.00		6.00											
6) Filling water	Start time	7:25		14:18											
Setup time	End time	8:00		14:20											
	Total time	0:35		0:02											
7) Driven time	Start time	0:00		14:22											
	End time	0:00		15:18											
	Total time	0:00	0:00	0:56	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative	At start	1279.6		1279.6											
Ampere meter	At end	1279.6		1300.9											
	Total time	0.0	0.0	21.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK	Valve	Open		Open											
10) Remark		No electricity													

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

R - 53

572

Operation Monitoring Sheet

Date : 8/21/95.

			1st operation No.1	1st operation No.2	2nd operation No.1	2nd operation No.2	3rd operation No.1	3rd operation No.2	4th operation No.1	4th operation No.2	5th operation No.1	5th operation No.2	6th operation No.1	6th operation No.2	7th operation No.1	7th operation No.2	
a) Chang	a)-1	River Water Level	-	-	1196.6	-	-	-	-	-	-	-	-	-	-	-	m
Chhu	a)-2	Water Temp.	-	-	16	-	-	-	-	-	-	-	-	-	-	-	°C
b) Lower Tank	b)-1	Water level at start	-	-	0.10	-	-	-	-	-	-	-	-	-	-	-	m
(Stage-1)	b)-2	Water level at end	-	-	1.90	-	-	-	-	-	-	-	-	-	-	-	m
c) Lower Pump	c)-1	Position			P2												
	c)-2	Operation start time			14:22												
	c)-3	Cumulative flow meter at start	9739.3		9739.3	0.0	9849.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	c)-4	Suction Pressure			4.5												
	c)-5	Delivery Pressure			24.0												
	c)-6	Ampere			34.0												
	c)-7	Voltage			400.0												
	c)-8	Bearing Temp.			35.0												
	c)-9	Stuffing box Temp.			30.0												
	c)-10	Operation end time			15:18												
	c)-11	Cumulative flow meter at end	9739.3		9849.5												
d)		Remark	Error	E-Not supply													

Note:

Monthly:
- Adjustment of leakage from joints.
- Examination and exchange of oil.

6 Monthly:
- Check of shafts temperature.
- Check and adjustment of shafts center.
- Check of vibration and noise.

Yearly:
- Check of shaft sleeve and exchange of grand packing.
- Check and exchange of mechanical-seals.
- Exchange of oil for bearing shaft.
- Overhaul and exchange O-ring, Gasket, V-ring, and others.

2 Years:
- Check of wearing at revolving part.
- Check of inside casing.
- Adjustment of all the other parts.

e) Maintenance

Civil Monitoring Sheet

Date: 8/22/95

	1st operation No.1	1st operation No.2	2nd operation No.1	2nd operation No.2	3th operation No.1	3th operation No.2	4th operation No.1	4th operation No.2	5th operation No.1	5th operation No.2	6th operation No.1	6th operation No.2	7th operation No.1	7th operation No.2
1) Operation														
2) Pump No. — Lift down *1	P1->P3													
Staff	6													
3) Slide pump — Setup time — Start time	7:00													
End time	7:15													
Total time	0:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *2			P3->P1											
Staff			6											
Start time			16:56											
End time			17:20											
Total time	0:00	0:00	0:24	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift down *3	T->R													
5) Floater — Staff	6													
Setup time — Start time	7:18													
End time	7:32													
Total time	0:14	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *4			R->T											
Staff			6											
Start time			17:22											
End time			18:00											
Total time	0:00	0:00	0:38	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Pipe length	6.00		6.00											
6) Filling water — Setup time — Start time	7:40		0:00											
End time	8:04		0:00											
Total time	0:24	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time — Start time	0:00		13:33											
End time	0:00		14:52											
Total time	0:00	0:00	0:59	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative Ampere meter — At start	1300.9		1300.9											
At end	1300.9		1319.4											
Total time	0.0	0.0	18.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) Valve	Open		Open											
10) Remark	No electricity													

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

*4 Recorded position to position (Example : R->T River to Top of bank, R->T River to Top of bank, R->T River to Middle of bank)

Operation Monitoring Sheet

Date : 8/22/95

					Unit	1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
						No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
a) Chang Chhu	a)-1	River Water Level			m	-	-	1196.5	-	-	-	-	-	-	-	-	-	-	-
	a)-2	Water Temp.			°c	-	-	17	-	-	-	-	-	-	-	-	-	-	-
b) Lower Tank (Stage-1)	b)-1	Water level at start			m	-	-	0.10	-	-	-	-	-	-	-	-	-	-	-
	b)-2	Water level at end			m	-	-	1.90	-	-	-	-	-	-	-	-	-	-	-
c) Lower Pump	c)-1	Position						P3											
	c)-2	Operation start time						13:33											
	c)-3	Cumulative flow meter at start				9903.5		9903.5	0.0	10045.6	0.0		0.0		0.0		0.0	0.0	0.0
	c)-4	Suction Pressure						-4.5											
	c)-5	Delivery Pressure						22.0											
	c)-6	Ampere						33.0											
	c)-7	Voltage						400.0											
	c)-8	Bearing Temp.						36.0											
	c)-9	Stuffing box Temp.						30.0											
	c)-10	Operation end time						14:32											
	c)-11	Cumulative flow meter at end				9903.5		10045.6											
d)		Remark				Error E:Not supply													

Monthly:
□ Adjustment of leakage from joints.
□ Examination and exchange of oil.
□ Check of shafts temperature.

6 Monthly:
□ Check and adjustment of shafts center.
□ Check of vibration and noise.

e) Maintenance

Yearly:
□ Check of shaft sleeve and exchange of grand packing.
□ Check and exchange of mechanical-seals.
□ Exchange of oil for bearing shaft.

2 Years:
□ Overhaul and exchange O-ring, Gasket, V-ring, and others.
□ Check of wearing at revolving part.
□ Check of inside casing.
□ Adjustment of all the other parts.

Note:

Civil Monitoring Sheet

Date: 8/23/95		1st operation		2nd operation		3th operation		4th operation		5th operation		6th operation		7th operation	
Operation		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
Pump No.															
Slide pump	Lift down *1	P1->P3		P3->P1											
	Staff	6		6											
	Setup time — Start time	7:06													
	End time	7:22													
	Total time	0:16	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *2														
	Staff			6											
	Start time			17:00											
	End time			17:21											
	Total time	0:00	0:00	0:21	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Floater	Lift down *3	T->R		R->T											
	Staff	6		6											
	Setup time — Start time	7:22													
	End time	7:56													
	Total time	0:34	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *4														
	Staff	6		6											
	Start time			17:21											
	End time			17:56											
	Total time	0:00	0:00	0:35	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Pipe length	8.00		8.00											
Filling water	Setup time — Start time	7:57		0:00											
	End time	8:27		0:00											
	Total time	0:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Driven time	Start time	8:30		15:20											
	End time	9:22		16:12											
	Total time	0:52	0:00	0:52	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Cumulative Ampere-meter	At start	1319.4		1337.6											
	At end	1337.6		1360.1											
	Total time	18.2	0.0	22.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TANK	Valve	Open		Open											
Remark															

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

Operation Monitoring Sheet

Date : 8/23/95

			1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
			No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
a) Chang Chhu	a)-1	River Water Level	1196.3	-	1196.3	-	-	-	-	-	-	-	-	-	-	-	m
	a)-2	Water Temp.	15	-	15	-	-	-	-	-	-	-	-	-	-	-	°C
b) Lower Tank (Stage-1)	b)-1	Water level at start	0.10	-	0.10	-											m
	b)-2	Water level at end	1.90	-	1.90	-											m
c) Lower Pump	c)-1	Position	P3		P3												
	c)-2	Operation start time	8:30		15:20												
	c)-3	Cumulative flow meter at start	10045.6	0.0	10191.9	0.0	10335.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	c)-4	Suction Pressure	4.5		4.5												
	c)-5	Delivery Pressure	24.0		22.0												
	c)-6	Ampere	35.0		35.0												
	c)-7	Voltage	400.0		400.0												
	c)-8	Bearing Temp.	35.0		36.0												
	c)-9	Stuffing box Temp.	29.0		30.0												
	c)-10	Operation end time	9:22		16:12												
	c)-11	Cumulative flow meter at end	10191.9		10335.5												
d)		Remark													Note:		

e) Maintenance

Monthly:
- Adjustment of leakage from joints.
- Examination and exchange of oil.

6 Monthly:
- Check of shafts temperature.
- Check and adjustment of shafts center.
- Check of vibration and noise.

Yearly:
- Check of shaft sleeve and exchange of grand packing.
- Check and exchange of mechanical seals.
- Exchange of oil for bearing shaft.

2 Years:
- Overhaul and exchange O-ring, Gasket, V-ring, and others.
- Check of wearing at revolving part.
- Check of inside casing.
- Adjustment of all the other parts.

Civil Monitoring Sheet

Date : 8/24/95		1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
1) Operation		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
2) Pump No.		P1->P3		P3->P1											
3) Slide pump	Lift down *1														
	Staff	6													
Setup time	Start time	7:00													
	End time	7:15													
	Total time	0:15	0:00		0:00		0:00		0:00		0:00		0:00		0:00
	Lift up *2			P3->P1											
	Staff			6											
	Start time			17:22											
	End time			18:06											
	Total time	0:00	0:00	0:44	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater	Lift down *3	T->R		R->T											
	Staff	6		6											
Setup time	Start time	7:18													
	End time	7:32													
	Total time	0:14	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *4														
	Staff			6											
	Start time			18:07											
	End time			18:38											
	Total time	0:00	0:00	0:31	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Pipe length	4.00		4.00											
6) Filling water	Start time	7:40		0:00											
Setup time	End time	7:55		0:00											
	Total time	0:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time	Start time	7:55		13:36											
	End time	8:48		14:30											
	Total time	0:53	0:00	0:54	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative	At start	1360.1		1378.4											
Ampere meter	At end	1378.4		1398.6											
	Total time	18.3	0.0	20.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK	Valve	Open		Open											
10) Remark															

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

R · 59

575

Operation Monitoring Sheet

			1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation		Unit
			No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	
a) Chang	a)-1	River Water Level	1196.5	-	1196.6	-	-	-	-	-	-	-	-	-	-	-	m
Chhu	a)-2	Water Temp.	16	-	16	-	-	-	-	-	-	-	-	-	-	-	°c
b) Lower Tank	b)-1	Water level at start	0.10	-	0.10	-	-	-	-	-	-	-	-	-	-	-	m
(Stage-1)	b)-2	Water level at end	1.90	-	1.90	-	-	-	-	-	-	-	-	-	-	-	m
	c)-1	Position	P3		P3												
	c)-2	Operation start time	7:55		13:36												
	c)-3	Cumulative flow meter at start	10335.5		10499.5	0.0	10598.5	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
	c)-4	Suction Pressure	4.5		4.5												
c) Lower Pump	c)-5	Delivery Pressure	22.0		22.0												
	c)-6	Ampere	33.0		36.0												
	c)-7	Voltage	400.0		400.0												
	c)-8	Bearing Temp.	35.0		35.0												
	c)-9	Stuffing box Temp.	30.0		30.0												
	c)-10	Operation end time	8:48		14:30												
	c)-11	Cumulative flow meter at end	10499.5		10598.5												

d) Remark

Note:

e) Maintenance

Monthly:
[ ] Adjustment of leakage from joints.
[ ] Examination and exchange of oil.

6 Monthly:
[ ] Check of shafts temperature.
[ ] Check and adjustment of shafts center.
[ ] Check of vibration and noise.

Yearly:
[ ] Check of shaft sleeve and exchange of grand packing.
[ ] Check and exchange of mechanical-seals.
[ ] Exchange of oil for bearing shaft.

2 Years:
[ ] Overhaul and exchange O-ring, Gasket, V-ring, and others.
[ ] Check of wearing at revolving part.
[ ] Check of inside casing.
[ ] Adjustment of all the other parts.

Civil Monitoring Sheet

Date : 8/25/95	1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
1) Operation	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
2) Pump No.														
3) Slide pump — Lift down *1	P1->P3		P3->P1											
Staff	6		6											
Setup time — Start time	7:00		14:22											
End time	7:21		15:03											
Total time	0:21	0:00	0:41	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *3														
Staff														
Start time														
End time														
Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater — Lift down *2	T->R		R->T											
Staff	6		6											
Setup time — Start time	7:21		15:04											
End time	7:43		15:32											
Total time	0:22	0:00	0:28	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *4														
Staff	6													
Start time														
End time														
Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
6) Filling water — Pipe length	6.00													
Setup time — Start time	7:43													
End time	8:26													
Total time	0:43	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time — Start time	8:27													
End time	9:21													
Total time	0:54	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative — At start	1398.6		1416.0											
At end	1416.0		-1416.0											
Ampere meter — Total time	17.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) Valve	Open		Open											
10) Remark			Rainy											

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

*4 Recorded position to position (Example : R->T River to Top of bank, R->T River to Top of bank, R->T River to Middle of bank)

R - 61

Operation Monitoring Sheet

Date : 8/25/95

			1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation		
			No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	
a) Chang Chhu	a)-1	River Water Level	1196.6	-	-	-	-	-	-	-	-	-	-	-	-	-	m
	a)-2	Water Temp.	15	-	-	-	-	-	-	-	-	-	-	-	-	-	°c
b) Lower Tank (Stage-1)	b)-1	Water level at start	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	m
	b)-2	Water level at end	1.90	-	-	-	-	-	-	-	-	-	-	-	-	-	m
c) Lower Pump	c)-1	Position	P3														
	c)-2	Operation start time	8:27														
	c)-3	Cumulative flow meter at start	10598.5		10735.5												
	c)-4	Suction Pressure	5.0														
	c)-5	Delivery Pressure	22.0														
	c)-6	Ampere	34.0														
	c)-7	Voltage	400.0														
	c)-8	Bearing Temp.	36.0														
	c)-9	Stuffing box Temp.	30.0														
	c)-10	Operation end time	9:21														
	c)-11	Cumulative flow meter at end	10735.5			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
d)		Remark															

Note:

c) Maintenance

Monthly:
- Adjustment of leakage from joints.
- Examination and exchange of oil.

6 Monthly:
- Check of shafts temperature.
- Check and adjustment of shafts center.
- Check of vibration and noise.

Yearly:
- Check of shaft sleeve and exchange of grand packing.
- Check and exchange of mechanical-seals.
- Exchange of oil for bearing shaft.

2 Years:
- Overhaul and exchange O-ring, Gasket, V-ring, and others.
- Check of wearing at revolving part.
- Check of inside casing.
- Adjustment of all the other parts.

R - 62

Civil Monitoring Sheet

Date : 8/26/95

		1st operation		2nd operation		3th operation		4th operation		5th operation		6th operation		7th operation	
1) Operation		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
2) Pump No.															
3) Slide pump	Lift down *1	P1->P3													
	Staff	6													
Setup time	Start time	7:12													
	End time	7:38													
	Total time	0:26	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *2			P3->P1											
	Staff			6											
	Start time			16:45											
	End time			17:12											
	Total time	0:00	0:00	0:27	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater	Lift down *3	T->R													
	Staff	6													
Setup time	Start time	7:39													
	End time	8:03													
	Total time	0:24	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Lift up *4			R->T											
	Staff			6											
	Start time			17:13											
	End time			17:42											
	Total time	0:00	0:00	0:29	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Pipe length	6.00		6.00											
6) Filling water	Start time	8:03		0:00											
Setup time	End time	8:35		0:00											
	Total time	0:32	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time	Start time			14:05											
	End time			15:04											
	Total time	0:00	0:00	0:59	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative	At start	1416.0		1416.0											
Ampere meter	At end	1416.0		1436.9											
	Total time	0.0	0.0	20.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK	Valve	Open		Open											
10) Remark		Rainy													

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

R - 63

577

Operation Monitoring Sheet

Date : 8/26/95

				1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation		
				No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	
a) Chang	a)-1	River Water Level	m	-	-	1196.5	-	-	-	-	-	-	-	-	-	-	-	m
Chhu	a)-2	Water Temp.	°c	-	-	17	-	-	-	-	-	-	-	-	-	-	-	°c
b) Lower Tank	b)-1	Water level at start	m	-	-	0.10	-	-	-	-	-	-	-	-	-	-	-	m
(Stage-1)	b)-2	Water level at end	m	-	-	1.90	-	-	-	-	-	-	-	-	-	-	-	m
c) Lower Pump	c)-1	Position				P3												
	c)-2	Operation start time				14:05												
	c)-3	Cumulative flow meter at start		10735.5		10735.5	0.0	10894.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	c)-4	Suction Pressure				4.5												
	c)-5	Delivery Pressure				22.0												
	c)-6	Ampere				33.0												
	c)-7	Voltage				400.0												
	c)-8	Bearing Temp.				35.0												
	c)-9	Stuffing box Temp.				30.0												
	c)-10	Operation end time				15:04												
	c)-11	Cumulative flow meter at end		10735.5		10894.5												
d)		Remark		Rainy														

Note:

Maintenance		
Monthly	□ Adjustment of leakage from joints.	
	□ Examination and exchange of oil.	
6 Monthly	□ Check of shafts temperature.	
	□ Check and adjustment of shafts center.	
	□ Check of vibration and noise.	
Yearly	□ Check of shaft sleeve and exchange of grand packing.	
	□ Check and exchange of mechanical-seals.	
	□ Exchange of oil for bearing shaft.	
2 Years	□ Overhaul and exchange O-ring, Gasket, V-ring, and others.	
	□ Check of wearing at revolving part.	
	□ Check of inside casing.	
	□ Adjustment of all the other parts.	

Civil Monitoring Sheet

Date : 8/28/95		1st operation		2nd operation		3th operation		4th operation		5th operation		6th operation		7th operation	
		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
1) Operation															
2) Pump No.															
3) Slide pump	Lift down *1	P1													
	Staff	0													
Setup time	Start time	0:00													
	End time	0:00													
	Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *2		P1		P1											
	Staff	0		0											
	Start time	0:00		0:00											
	End time	0:00		0:00											
	Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
5) Floater	Lift down *3														
	Staff	0		0											
Setup time	Start time	0:00		0:00											
	End time	0:00		0:00											
	Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *4		-		-											
	Staff	0		0											
	Start time	0:00		0:00											
	End time	0:00		0:00											
	Total time	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
	Pipe length	8.00													
6) Filling water	Start time	7:00													
Setup time	End time	7:18													
	Total time	0:18	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7)	Start time	7:19													
Driven time	End time	8:19													
	Total time	1:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative	M start	1436.9													
Ampere meter	M end	1454.8													
	Total time	17.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK	Valve	Open													
10) Remark		Rainy													

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3)

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

*4 Recorded position to position (Example : R->T River to Top of bank, R->T River to Middle of bank)

Operation Monitoring Sheet

Date :   8/28/95

			1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation	
			No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
a) Chang Chhu	a)-1	River Water Level	1196.3	- m	-	- m	-	- m	-	- m	-	- m	-	- m	-	- m
	a)-2	Water Temp.	15	- °c	-	- °c	-	- °c	-	- °c	-	- °c	-	- °c	-	- °c
b) Lower Tank (Stage-1)	b)-1	Water level at start	0.04	- m	-	- m	-	- m	-	- m	-	- m	-	- m	-	- m
	b)-2	Water level at end	1.90	- m	-	- m	-	- m	-	- m	-	- m	-	- m	-	- m
	c)-1	Position	P1													
	c)-2	Operation start time	7:19													
	c)-3	Cumulative flow meter at start	10894.5		110.18.9	0.0		0.0		0.0		0.0		0.0		0.0
c) Lower Pump	c)-4	Suction Pressure	5.5													
	c)-5	Delivery Pressure	22.0													
	c)-6	Ampere	32.0													
	c)-7	Voltage	400.0													
	c)-8	Bearing Temp.	30.0													
	c)-9	Stuffing box Temp.	29.0													
	c)-10	Operation end time	8:19													
	c)-11	Cumulative flow meter at end	11018.9													
d)		Remark	Rainy													

Note:

Monthly:
□ Adjustment of leakage from joints.
□ Examination and exchange of oil.

6 Monthly:
□ Check of shafts temperature.
□ Check and adjustment of shafts center.
□ Check of vibration and noise.

Yearly:
□ Check of shaft sleeve and exchange of grand packing.
□ Check and exchange of mechanical-seals.
□ Exchange of oil for bearing shaft.

2 Years:
□ Overhaul and exchange O-ring, Gasket, V-ring, and others.
□ Check of wearing at revolving part.
□ Check of inside casing.
□ Adjustment of all the other parts.

e) Maintenance

Civil Monitoring Sheet

Date: 8/30/95		1st operation No.1	1st No.2	2nd operation No.1	2nd No.2	3rd operation No.1	3rd No.2	4th operation No.1	4th No.2	5th operation No.1	5th No.2	6th operation No.1	6th No.2	7th operation No.1	7th No.2
1) Operation															
2) Pump No.															
Lift down *1		P1->P3													
	Staff	6													
3) Slide pump Setup time	Start time	7:18													
	End time	7:50													
	Total time	0:32	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *2				P3->P1											
	Staff			6											
	Start time			16:40											
	End time			17:05											
	Total time	0:00	0:00	0:25	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift down *3		T->R													
5) Floster	Staff	6													
Setup time	Start time	7:31													
	End time	8:05													
	Total time	0:34	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Lift up *4				R->T											
	Staff			6											
	Start time			17:06											
	End time			17:39											
	Total time	0:00	0:00	0:33	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
Pipe length		4.00		4.00											
6) Filling water	Start time	8:06		0:00											
Setup time	End time	8:34		0:00											
	Total time	0:28	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7) Driven time	Start time	8:35		14:14											
	End time	9:34		15:08											
	Total time	0:59	0:00	0:54	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative	At start	1454.8		1473.5											
Ampere meter	At end	1473.5		1491.3											
	Total time	18.7	0.0	17.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK	Valve	Open													
10) Remark															

*1 Recorded position to position (Example: P1->P2)

*2 Recorded position to position (Example: P4->P3)

*3 Recorded position to position (Example: T->R Top of bank to River, M->R Middle of bank to River)

Operation Monitoring Sheet

Date : 8/30/95

			Unit	1st operation No.1	1st operation No.2	2nd operation No.1	2nd operation No.2	3rd operation No.1	3rd operation No.2	4th operation No.1	4th operation No.2	5th operation No.1	5th operation No.2	6th operation No.1	6th operation No.2	7th operation No.1	7th operation No.2
a) Chang Chhu	a)-1	River Water Level	m	1196.7	-	1196.5	-	-	-	-	-	-	-	-	-	-	-
	a)-2	Water Temp.	°c	16	-	16	-	-	-	-	-	-	-	-	-	-	-
b) Lower Tank (Stage-1)	b)-1	Water level at start	m	0.10	-	0.10	-	-	-	-	-	-	-	-	-	-	-
	b)-2	Water level at end	m	1.90	-	1.90	-	-	-	-	-	-	-	-	-	-	-
c) Lower Pump	c)-1	Position		P3		P3											
	c)-2	Operation start time		8:35		14:14											
	c)-3	Cumulative flow meter at start		11038.9		11174.9	0.0	11311.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	c)-4	Suction Pressure		3.5		4.0											
	c)-5	Delivery Pressure		22.0		22.0											
	c)-6	Ampere		35.0		35.0											
	c)-7	Voltage		400.0		400.0											
	c)-8	Bearing Temp.		36.0		36.0											
	c)-9	Stuffing box Temp.		30.0		30.0											
	c)-10	Operation end time		9:34		15:08											
	c)-11	Cumulative flow meter at end		11174.9		11311.9											
d)		Remark															

Maintenance

Monthly
- Adjustment of leakage from joints.
- Examination and exchange of oil.

6 Monthly
- Check of shafts temperature.
- Check and adjustment of shafts center.
- Check of vibration and noise.

Yearly
- Check of shaft sleeve and exchange of grand packing.
- Check and exchange of mechanical-seals.
- Exchange of oil for bearing shaft.

2 Years
- Overhaul and exchange O-ring, Gasket, V-ring, and others.
- Check of wearing at revolving part.
- Check of inside casing.
- Adjustment of all the other parts.

Note:

Civil Monitoring Sheet

			1st operation		2nd operation		3th operation		4th operation		5th operation		6th operation		7th operation	
Date :	8/31/95		No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2
1) Operation																
2) Pump No.			P1->P3													
3) Slide pump	Setup time	Lift down *1														
		Staff	6													
		Start time	7:00													
		End time	7:31	0:00		0:00		0:00		0:00		0:00		0:00		0:00
		Total time	0:31													
		Lift up *2	P3->P1													
		Staff	6													
		Start time	16:49													
		End time	17:15													
		Total time	0:26	0:00		0:00		0:00		0:00		0:00		0:00		0:00
		Lift down *3	T->R													
5) Floater	Setup time	Staff	6													
		Start time	7:31													
		End time	7:45	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
		Total time	0:14													
		Lift up *4	R->T													
		Staff			6												
		Start time			17:15												
		End time			18:00												
		Total time	0:00	0:00	0:45	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
		Pipe length	2.00													
6) Filling water	Setup time	Start time	7:45													
		End time	8:00													
		Total time	0:15	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
7)	Driven time	Start time	8:01													
		End time	9:02													
		Total time	1:01	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
8) Cumulative Ampere meter		At start	1491.3													
		At end	1511.6													
		Total time	20.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9) TANK		Valve	Open													
10) Remark					Rainy											

*1 Recorded position to position (Example : P1->P2)

*2 Recorded position to position (Example : P4->P3).

*3 Recorded position to position (Example : T->R Top of bank to River, M->R Middle of bank to River)

Operation Monitoring Sheet

Date : 8/31/95

			1st operation		2nd operation		3rd operation		4th operation		5th operation		6th operation		7th operation		
			No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	No.1	No.2	
a) Chang	a)-1	River Water Level	1196.8	-	-	-	-	-	-	-	-	-	-	-	-	-	m
Chhu	a)-2	Water Temp.	16	-	-	-	-	-	-	-	-	-	-	-	-	-	°C
b) Lower Tank	b)-1	Water level at start	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	m
(Stage-1)	b)-2	Water level at end	1.90	-	-	-	-	-	-	-	-	-	-	-	-	-	m
	c)-1	Position	P3														
	c)-2	Operation start time	8:01														
	c)-3	Cumulative flow meter at start	11311.9		11471.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.0	
	c)-4	Suction Pressure	4.0														
c) Lower Pump	c)-5	Delivery Pressure	22.0														
	c)-6	Ampere	35.0														
	c)-7	Voltage	400.0														
	c)-8	Bearing Temp.	36.0														
	c)-9	Stuffing box Temp.	30.0														
	c)-10	Operation end time	9:02														
	c)-11	Cumulative flow meter at end	11471.9														
d)		Remark	No electricity														

Note:

e) Maintenance		
Monthly		[1] Adjustment of leakage from joints.
		[2] Examination and exchange of oil.
		[3] Check of shafts temperature.
6 Monthly		[1] Check and adjustment of shafts center.
		[1] Check of vibration and noise.
Yearly		[1] Check of shaft sleeve and exchange of grand packing.
		[1] Check and exchange of mechanical-seals.
		[1] Exchange of oil for bearing shaft.
		[1] Overhaul and exchange O-ring, Gasket, V-ring, and others.
2 Years		[1] Check of wearing at revolving part.
		[1] Check of inside casing.
		[1] Adjustment of all the other parts.