ANNEX 9 DETAILS OF TREATMENT PLANTS

1. SPECIFICATIONS OF TREATMENT PLANTS

KAOLIEO

1) Intake Facility					
Item		Intake Tower	Pontoon (Floating Dock)		
a. Dimension	Oval: ^B 4.800	$m \times^{L} 7.800 m \times^{H} 18.800 m$	$^{\rm B}$ 3.5 m $\times^{\rm L}$ 4.0 m $\times^{\rm H}$ 0.5 m W/Float		
b. Dimension of Pump House	Oval: ^B 5.800m	$x \times^{L} 8.800 \text{m} \times^{H} 5.600 \text{m}$	^B 4.5 m \times^{L} 5.0 m \times^{H} 1.7 m		
c. Material of Intake	Reinforce Cor	icrete	Steel		
	Туре	Vertical Mixed Flow Pump	Туре	Centrifugal Pump	
	Capacity	7.65 m ³ /min	Capacity	4.5 m^{3}/min	
	Total Head	19.5 m	Total Head	40 m	
	Motor	37 kW	Motor	45 kW	
d. Intake Pump	Speed	1,470 rpm	Speed	1,450 rpm	
	Number	3 Unit	Number	1 Unit	
	Present Condition	Decrease 20% of Rated Capacity to be ascertained by Flow Measurement	Present Condition	Decrease 15% of Rated Capacity to be ascertained by Flow Measurement	
e. Operation Schedule of Intake Pumps	Alternately Operation(15 – 22hr)		15 – 22hr		
	Туре	Sluice with Manual Floor Stand	Туре		
f. Gate	Diameter	D700 mm	Diameter		
	Number	2 Unit	Number		
	Diameter	D250 mm	Diameter	D200 mm	
	Operator	W/Operating Nut	Operator	W/Hand Wheel	
g. Gate Valve	Number	3 Unit	Number	1 Unit	
0	Remarks	Rising Stem	Remarks		
	Present Condition	Non-working by leakage			
h Check Valve	Diameter	D250 mm	Diameter	D200 mm	
II. CHECK Valve	Number	3 Unit	Number	1 Unit	
	Diameter	500 mm	Diameter		
	Operator	W/Hand Wheel	Operator		
	Number	1 Unit	Number		
i. Butterfly Valve	Purpose	Intake Control Valve	Purpose		
	Remarks	Horizontal Type	Remarks		
	Present Condition	Non-working			
i Chain Plack	Туре	Fixed	Туре		
J. Cham Block	Capacity	5 ton	Capacity		
j. Piping	Diameter	D250-D500 mm	Diameter	D200 mm × D250mm	
	Material	SP	Material	SP	

Specifications of Kaolieo Treatment Plant Facilities

Item	Intake Tower		Pontoon (Floating Dock)		
	Diameter	500 mm	Diameter	D200 mm	
a. Piping	Material	SP	Material	SP & Cornice Pipe	
	Length	30.0 m	Length	38 m	
	Dimension	$^{\rm W}$ 1570 m \times $^{\rm H}$ 1.50 m	Dimension		
b. Inspection	Туре	Truss Structure Type	Туре		
Bridge	Length	25 m	Length		
	Material	Steel	Material		
	Туре	Orifice	Туре		
c. Flow Meter	Diameter	500 mm	Diameter		
	Number	1 Unit	Number		

2) Raw Water Transmission Facility

3) Treatment Facilities

a. Space for Expansion Area		Enough Space		
b. Design Capacity		22,000 m ^{3/} day		
	Water Level	+176.000 m		
	Dimension	$^{\rm D}$ 2.80 m × ^H 4.00 m × ^{EWD} 3.35 m		
	Number of Basin	1 Basin		
c. Receiving Well	Туре	Flash Mixer / Weir		
and Mixing Well	Volume	82.51 m ³		
	Retention Time	5.4 min		
	Flash Mixer	Vertical Propeller Type, 3.7 kW, 1,500/1,800 rpm		
	Piping	D400 mm × SP		
	Drain Valve	D100 mm		
	Dimension	W (6.0×2) m× ^L (0.9+1.0×3)+(0.9+1.6)m× ^H 5.6 m× ^{EWD} 3.5 m		
	Number of Basin	2 Basins / 4 Units		
1 51 1 1	Туре	Zigzag – Up and Down (Non-using)		
d. Flocculation	Volume	268.8 m ³ /Basin		
Basin	Retention Time	35.2 min (23.1 min at present)		
	Inlet Valve	D400 mm × 2 Units		
	Drain Valve	D250 mm \times 4 Units		
	Water Level	+175.400 m		
	Dimension	$^{\rm W}$ (6.0×2) m × $^{\rm L}$ 14.70 m × $^{\rm H}$ 5.8 m × $^{\rm EWD}$ 5.15 m		
	Number of Basin	2 Basins / 4 Units		
e. Sedimentation	Туре	Horizontal Flow		
Basin	Volume	908.5 m ³ /Basin		
	Retention Time	2.0 h (1.3 h at present) : Over-loading		
	Average Velocity	123.6 mm/min		
	Surface Loading	39.8 mm/min		
	Water Level	175.250 m		
	Dimension	W 10.00 m × L 7.0 m × H ??.??? m × EWD 5.15 m		
	Number of Basin	2 Basins / 4 Units		
f. Pre-filtration	Туре	Up-flow Gravel Filtration		
Basin	Depth of Gravel	0.4 m		
	Size of Gravel	D?? mm - D?? mm		
	Wash Water Drain Valve	D150 mm × 4 Units		
	Drain Valve	D150 mm ×2 Units		
	Water Level	+174.580 m		
	Dimension	$^{\rm W}$ 5.50 m $\times^{\rm L}$ 8.20 m		
	Number of Basin	4 Units		
g. Filtration Basin	Туре	Gravity Sand Filter		
	Filtered Area	45.10 m ² /Unit		
	Filtration Rate	$122 \text{ m}^3/\text{d/m}^2$		
	Depth of Sand	0.60 m		

	Type of U	Under - Dra	ain					
	Surface V	Washing Ra	ite	$0.60 \text{ m}^3/\text{min/m}^2$				
	Back Wa	shing Rate		$0.15 \text{ m}^3/\text{min/m}^2$				
	Inlet Valv	ve		D300 mm \times 4 Units				
	Filtered V	Valve		D250 mm × 4Units ×	D250 mm \times 4Units \times 2 Pieces			
	Back Wa	sh Valve		D450 mm × 4 Units				
a Filtration Basin	Surface V	Surface Washing Valve		D200 mm × 4 Units				
g. Filitation Basin	Filtered (Controller		D250 mm × 4 Units	× Do	ouble Seat		
	Loss Hea	d Meter		4 Units : Dial Type Indicator				
				Non-working				
	Wash Dra	ain Valve		$D400 \text{ mm} \times 8 \text{ Units}$				
	Drain Va	lve		$D100 \text{ mm} \times 4 \text{ Units}$				
	Piping			D450 mm ~ D100 n	nm			
	Back Wa	sh Pump		D350 mm × ^Q 14.5 m	^{3/} mi	$n \times {}^{H}18.0m \times 60 kw \times 3 Units$		
	Water Lo	wal		HWL +170.600 m				
	water Le	vei		LWL +166.600 m				
	Dimensio	on		$^{\rm W}$ 16.00 m × $^{\rm L}$ 32.00	m ×	$^{\rm H}$ 4.50 m × $^{\rm EWD}$ 4.00 m		
	Number	of Basin		2 Basins				
	Туре			Flat Slab Structure				
h Clear Water	Volume			4,096 m ³				
Reservoir	Retention	n Time		4.9 h				
				Inlet		$D400 \text{ mm} \times 2 \text{ Units}$		
	Valve			Maintenance		$3300 \text{ mm} \times 6 \text{ Units}$		
				Over Flow		$2200 \text{ mm} \times 2 \text{ Units}$		
	Dining			D400 mm D200 m	$D_{200} \text{ mm} \sim D_{200} \text{ mm} : DCIP$			
	Piping Watan La	1 Matan		D400 mm ~ D200 n	2 Plane			
	water Le	A lum Sto	ragaT	2 Places	2 Flaces			
		Alum Su	nage I	alik		3 Units		
						Rectangular \times Stainless Steel $\times 100^{1}$		
	TT 1	Alum Contact Wa		Vater Level Head Tank		1 Unit		
	Tank	Hypo. Storage Ta		ank		Cylindrical \times FRP \times ^Q 800 ^l \times 2 Units		
						Non-working		
		Hypo Contact W		/ater Level Head Tank		Rectangular \times PVC \times 50 ^l \times 1 Unit		
		Hypo. et	mact	ater Lever fiedu Talik		Non-working		
		Alum Cit	culatio	on Pump		$^{Q}100 \text{ l/min} \times ^{H}8.0\text{m} \times 0.75\text{kw} \times 2\text{Units}$		
i. Chemical	Pump			F		Non-working		
Feeding Facilities		Hypo. Ci	rculati	n Pump		$\approx 60 \text{ l/min} \times 18.0 \text{m} \times 0.75 \text{kw} \times 20 \text{ nits}$		
	A1 M					Non-working		
	Alum MI	xer	Verti	al Propeller Type		20.1/min × 2. Units		
	Flow Me	tor	Alun	I FIOW MIELEI		$20 \text{ l/min} \times 3 \text{ Units}$		
	TIOW MIC		Нурс	o. Flow Meter		Non-working		
			Alum	Flow Controller		3 Units		
	Flow Co	ntroller	7 tiun			3 Units		
	11011 001		Нурс	o. Flow Controller		Non-working		
	Monorail	System	Gear	ed Trolley, 0.5 ton		Non-working		
			·	Туре		Centrifugal Pump		
			-	Canacity		$6.2 \text{ m}^3/\text{min}$		
			-					
j. Distribution	Distribut	ion Pump	Ļ	Total Head		67.0 m		
Pump Station		p		Motor		110 kW		
			Γ	Speed		1,470 rpm		
			F	Number		4 Units		
L	N							

		Туре	Centrifugal Pu	ımp		
	Back Wash Pump	Capacity	14.5 m ³ /min	*		
		Total Head	18.0 m			
	(Surface Wash Pump)	Motor	60 kW			
		Speed	980 rpm			
		Number	3 Units			
	<u> </u>	Туре	Centrifugal Pu	imp		
		Capacity	1.1 m ³ /min (W	/ind Volume)		
		Total Head	620 mmHg m	· · · · · · · · · · · · · · · · · · ·		
	Vacuum Pump	Motor	2.2 kW			
		Speed	1.450 rpm			
		Number	2 Units			
			Diameter	200 mm		
j. Distribution			Operator	W/Manual Floor		
Pump Station		Distribution Delivery		Stand		
			Number	4 Unit		
	Gate Valve		Remarks	Non-Rising Stem		
			Diameter	350 mm		
		Back Wash Delivery	Operator	W/Manual Floor Stand		
			Number	3 Unit		
			Remarks	Non-Rising Stem		
	Check Valve	Distribution Dalias	Diameter	200 mm		
		Distribution Delivery	Number	4 Unit		
		D. I. W. I. D. T	Diameter	350 mm		
		Back Wash Delivery	Number	3 Unit		
		D200 mm , D350 mm : SP				
	Piping	D100 mm, D350 mm : SP/DCIP				
			Diameter	450 mm		
			Operator	W/Hand Wheel		
		Back Wash Water Control	Number	1 Unit		
			Remarks	Horizontal Type		
			Present Condition	Non-working		
	Butterfly Valve		Diameter	200 mm		
Ir. Otherr			Operator	W/Manual Floor Stand		
K. Outers		Surface Wash Water	Number	1 Unit		
		Connor	Remarks	Vertical Type		
			Present Condition	Non-working		
		Туре	Diesel Engine	Туре		
		Capacity Total Hand	7.50 m ³ /min			
	Drain Pump	Diesel Engine	r m kW			
		Speed	? rpm			
		Number	1 Unit			

CHINAIMO

1) Intake Facility					
a. Dimension	B 5.000 m × ^L	20.000 m×2 Units			
h Dimension of Dump House	$^{-5.000}$ m \times^{-1}	$4.800 \text{ m}^{\times 12}$ 18.000m×2 Units			
c. Material of Intake	Reinforce Con				
	Туре	Vertical Mixed Flow Pump	Vertical Submersible		
	Capacity	18.0 m ³ /min	$18.0 \text{ m}^3/\text{min}$		
	Total Head	14.8 m	14.8 m		
d. Intake Pump	Motor	75 kW	75 kW		
	Speed	1,480 rpm	1,470 rpm		
	Number	4 Unit	2 Unit		
	Pump Support	Steel Construction, W/Ladder & I	Landing		
e. Operation Schedule of Intake Pumps	Alternately Op	ely Operation (18 – 20 h/Unit)			
	Operator	W/ Manual Floor Stand			
f. Sluice Gate	Diameter	D1,000 mm			
	Number	5 Unit			
	Diameter	D350 mm			
α Gate Valve	Operator	W/Operating Nut			
g. Gate valve	Number	6 Unit			
	Remarks	Rising Stem			
h. Check Valve	Diameter	D350 mm			
	Number	6 Unit			
i. Screen	Number	1 Set			
i Level Meter	Туре	Ultra Sonic Type			
J. Level Meter	Number	1 Set			
	Туре	ESM			
k. Motor Hoist	Capacity	5 ton, 10/0.19kW			
	Number	2 Units			
1 Company Tentr	Туре	Make-up Tank for No.5 & No.6 Ra	w Water Intake Pump		
	Number	2 Units			
m Dining	Diameter	D350 - D1,000 mm			
m. r iping	Material	SP			
Operating Staff	No. of Staff	8 Persons / Group (24 hours) : including Treatment Plant			
n. Operating Staff	Shift	8:0020:00 ; All Member, 20:008:00 : 3 Shift			

Specifications of Chinaimo Treatment Plant Facilities

	Diameter	1,100 mm			
	Operator	Electric			
a. Butterfly Valve	Number	1 Unit	1 Unit		
	Purpose	Raw Water Control Valve	Raw Water Control Valve		
	Remarks	Horizontal Type			
	Diameter	D800 – D1,100 mm			
b. Piping	Material	SP & DIP			
	Length	210.0 m			
	Туре	Orifice Type Ultra Sonic Type			
c. Flow Meter	Diameter	1,100 mm × 800 mm	D1,100 mm		
	Number	1 Unit	1 Unit		

2) Raw Water Transmission Facility

3) Treatment Facilities

a. Space for Expansion Area		Limited Space but affect under construction						
b. Design Capacity		88,000 m ^{3/} day (80,000 m ^{3/} day : Nominal Design Capacity)						
	Water Level	+173.950 m						
	Dimension	$^{\rm W}$ 5.00 m × $^{\rm L}$ 3.30 m × $^{\rm H}$ 4.35 m× $^{\rm EWD}$ 3.75 m						
	Number of Basin	1 Basin						
	Туре	Weir × ^H 3.50 m×4 Sets :Uniformity Distribution						
	Volume	61.9 m ³						
	Retention Time	1.0 min (0.9	min at present average	ge) : Over-loading				
		Diameter	1,100 mm					
c. Receiving Well	Butterfly Valve	Operator	Manual					
and Mixing Well		Number	1 Unit					
		Operator	W/ Manual Floor St	and				
	Sluice Gate	Diameter	D100 mm					
		Number	4 Unit					
		Diameter	D400 mm	D80 mm	D150 mm			
	Drain Gate Valve	Operator	W/Operating Nut	W/Operating Nut				
		Number	1 Unit	4 Units	2 Units			
	Piping	D1,100mm – D80 mm \times DIP						
	Water Level	+173.550 m						
	Dimonsion (por Unit)	^w 6.70 m× ^L (0.90+0.95+1.00+1.0	5+1.15+1.25)+				
	Dimension (per Unit)	$(1.35) \text{ m}^{\times^{\text{H}}} (3.85 - 2.99) \text{ m}^{\times^{\text{EWD}}} (2.59 - 3.15) \text{ m}$						
	Number of Basin	4 Basins / 8	Units					
d. Flocculation Basin	Туре	Zigzag – Up and Down						
	Volume	294.2 m ³ /Ba	sin					
	Retention Time	19.3 min (17	.6 min at present) : C	Over-loading				
	Drain Valve	D300 mm \times	8Units					
	Drain Sluice Gate	360 mm ×2	230 mm					
	Water Level	+173.250 m						
	Dimension	^w 13.60 m × ¹	$-64.05 \text{ m} \times H (3.01 -$	-2.51) m × ^{EWD} (2.50	0 - 2.00) m			
	Number of Basin	4 Basins						
	Туре	Horizontal F	low with Launder					
	Volume	1,980 m ³ /Ba	sin					
	Detention Time	2.40 h (1.97	h at present) : Over-	loading				
e Sedimentation	Launder	$^{\rm W}0.50 \ {\rm m} \times {}^{\rm L}$	$20.0 \text{ m} \times \text{H} 0.32 \text{ m} \times \text{H}$	4 Pieces /Basin				
Basin	Weir Loading	137.5 m ³ /d/n	$n (150.8 \text{ m}^3/\text{d/m})$					
Dushi	Average Velocity	0.50 m/min	0.40 m/min} (0.55 r	n/min at present)				
	Surface Loading	17.4 mm/min	<u>n (15 – 30 mm/min) (</u>	(19.1 mm/min at pres	sent)			
		Capacity	0.72 m ³ /min					
		Total Head	25.0 m					
	Wash Pump	Motor	75 kW					
		Speed	3,000 rpm					
		Number	1 Unit					

		Diameter	D250 mm		
	Wash Water Control	Operator	W/Operating Nut (Rising	s Stem)	
	Valve	Number	1 Unit		
		Diameter	D100 mm		
	Wash Water Value	Operator	W/Operating Nut (Rising	r Stem)	
e Sedimentation	wash water varve	Number	24 Unite	z Stelli)	
Basin		Diameter	D350 mm		
Dubin	Ton Valve	Operator	W/Manual Eloor Stand		
	Top valve	Number	8 Units		
		Operator	W/ Manual Eloor Stand		
	Shuice Gate	Diameter	$D1000 \times D1000 \text{ mm}$		
	Shullee Gate	Number	12 Units		
	Water Level	$\pm 173.168 \text{ m}$	12 Units		
	Dimension	$\frac{175.100 \text{ m}}{5.50 \text{ m}} \times \frac{1}{2}$	4.00 m		
	Number of Basin	8 Unite	4.00 III		
	Type	Gravity Sand 1	Filter		
	Filtered Area	$79.00 \text{ m}^2/\text{Unit}$	inter		
	Filtration Rate	$142.9 \text{ m}^3/\text{d/m}^2$	$(163.3 \text{ m}^3/\text{d/m}^2)$		
	Depth of Sand	1 00 m	(105.5 m /u/m)		
	Depth of Sand	Porous Concre	te		
		Diffusing Gray	zel		
	Type of Under Drain	Honeycomb S	lah		
	Type of Onder Drain	Dorforated Din	2		
		Supporting Do			
	Deals Weaking Data	Supporting Be	alli m ² (Dools Weah Dump)	Wash Water Channel's	
	Back wasning Kate	0.55 III /IIIII/III (Back wash Pump) + wash water Channel's			
	(All)	Diamatar	D250 mm		
	Air Control Value	Diameter	D250 mm		
	All Control valve	Number	Tatol All Cyllinder Drive		
		Diamatar	eter D500 mm		
	Deal-Weak Value	Diameter	A in Calin dan Drive		
f. Filtration Basin	Dack wash valve	Number 8 Units			
		Diameter B400/500			
		Diameter B400/500			
	Volvoset	Operator Pneumatic Drive			
		Capacity 125 m/d			
		Operator	SUBIS W/ Menual Electr Stard		
	Cata	Diamatar	$700 \times 700 \text{ mm}$		
	Gale	Number	100 × 700 mm		
		Operator	4 Units Motor Drive	W/ Manual Eleor	
		Operator	Motor Drive	Stand	
	Sluice Gate	Diameter	265 × 820 mm	$1.350 \times 1.350 \text{ mm}$	
		Number	16 Units	1 Units	
		Type	Differential Pressure	1 Onits	
	Clogging Detector	Number	8 Units		
	Ton Valve	$D100 \text{ mm} \times 4$	Units		
	Droin Value	$D150 \text{ mm} \times 9$	Unita		
		D130 IIIII ^ 8	Units		
	Flow Meter	Float Type : C	hlorination Chamber		
	Piping	D 100mm ~ I	O 500mm		
	Water Level	HWL +170.81	0 m		
	Dimension	$\frac{107.91}{10.80}$ W 10.80 m \times L	$\frac{71}{24.60}$ m × $\frac{H}{4.00}$ m × $\frac{EWD}{2}$	2 90 m	
g Clear Water	Number of Pasin	2 Basing	27.00 III ^ 4.00 III ^	2.70 III	
g. Cicai water Reservoir	Type	2 Dasilis Flat Slab Struz	ture		
ICESCI VUII	Volume	$1 412.5 \text{ m}^{3/\text{D}_2}$	sin		
	Potention Time	1,412.3 m/Ba	SIII present)		
	L aval Matar	0.0 fr (0.7 h at)	present)		
	Level Mieter	Immersion Type \times 2 Sets			

		Operator Manual		[Manual
	Control Valve	Diameter 1,100 mm		nm		600 mm
g. Clear Water		Number	Number 4 Units			1 Unit
Reservoir	Drain Valve	D200 mm ×	2Units			
	Piping	D1,100 mm	~ D200 m	ım : DIP		
	Water Level Meter	2 Places				
			Туре		HF-7405	
		Alum	Specificat	ions	$1.5 \text{ kW} \times$	380V
			Number		4 Units	
		Uuno	Type	iona	HF-/403	2801/
		пуро	Number	10115	3 Linits	380 V
	Mixer		Type		HF-7406	
		Lime	Specificat	ions	$2.2 \text{ kW} \times$	380V
			Number		2 Units	
			Туре		HF-7402	
		Saturator	Specificat	ions	$0.2 \text{ kW} \times$	380V
			Number	N/	1 Unit	
	T 1	Alum Storag	ge Tank	^w 2.0 m >	$\frac{12.5 \text{ m}}{12.5 \text{ m}}$	2.5×4 Units
	Tank	Hypo. Stora	ge Tank	<u>" 1.2 m ></u>	$\frac{2.6 \text{ m} \times 10}{1.1 \text{ c}}$	2.3×3 Units
	Lima Saturatar	Une Storag	$\frac{1}{2}$ my $\frac{1}{5}$	$\frac{1.5m \times 1.5m}{1.5m}$	- 1.5 m× - 2	2.2×2 Units
	Line Saturator	5.5III × 3	5.5 m× 5.	$\frac{0 \times 1 \text{ Unit}}{5 \text{PS}_W K}$	TT	
	Ejector	Number		4 Units	-11	
h. Chemical Feeding Facilities	Alum Doser	2 Units	4 01113			
	Hypo Doser	3 Units				
	Flow Motor	Туре		Orifice	;	
i ucilitios	FIOW MELEI	Number		3 Unit	5	
	Crain System	Overhead Crane	Traveling	g EMS >	$\times 1$ Ton $\times 1$ U	Jnit
		Electric Chain Hoist		EMS >	$1 \text{ Ton} \times 1 \text{ U}$	Jnit
		Aluminum Sulfate		Maxim	num	mg/l
				Minim	um	mg/l
				Average		mg/l
				Maxin	num	mg/l
		Polymer		Minim	um	mg/l
	Design of Dosing Rate			Averag	ge	mg/l
	for Chemicals			Maxin	num	mg/l
		Lime		Minim	um	mg/l
				Averag	ge	mg/l
				Maxin	num	mg/l
		Hypochlorit	e	Minim	um	mg/l
				Averag	ge	mg/l
		Туре		Centri	fugal Pump	Centrifugal Pump
i Trongmission /		Capacity		14.1 m	³ /min	4.3 m ³ /min
1. Transmission / Distribution Pump	Transmission/Distributi	Total Head		56.0 m	l	66.0 m
Station	on Pump	Motor		180 kV	V	80 kW
		Speed		980 rp	m	1,485 rpm
		Number		6 Unit	5	2 Units

		Туре	Centrifugal P	ump
		Capacity	25.5 m ³ /min	
		Total Head	6.0 m	
	Back Wash Pump	Motor	37 kW	
		Speed	735 rpm	
		Number	2 Units	
		Туре		
		Capacity	0.7 m ³ /min (V	Wind Volume)
	V D	Total Head	620 mmHg m	1
	vacuum Pump	Motor	1.5 kW	
		Speed	1,410 rpm	
		Number	2 Units	
	Chain Hoist	Manual Operation × 1 Un	nit	
		Туре		
		Capacity	94.6 m ³ /min ((Wind Volume)
		Pressure	0.3 kg/cm ²	
		Motor	90 kW	
	Air Blower	Speed	1,500 rpm	
		Number	2 Units	
		Air Filter	DV-70, 90 kW	
		Silencer	DV-70, 90 kW	
i. Transmission /		Air Filter, Silencer	DV-70, 90 kV	V
Distribution Pump	Air Compressor	Туре	3.7P-9.5T	
Station		Capacity	400l/min	
		Number	2 Units	
		Distribution Delivery to City	Diameter	350 mm
			Operator	Motor Drive
			Number	6 Units
			Remarks	Non-Rising Stem
			Diameter	200 mm
	Cata Valua	Distribution Delivery to	Operator	Motor Drive
	Gate valve	Thadeua	Number	2 Units
			Remarks	Non-Rising Stem
			Diameter	400 mm
		Back Wash Delivery	Operator	W/Operating Nut
		Dack wash Denvery	Number	2 Units
			Remarks	Rising Stem
		Distribution Delivery to	Diameter	350 mm
		City	Number	6 Units
		Distribution Delivery to	Diameter	200 mm
	Check Valve	Thadeua	Number	2 Units
		Back Wash Delivery	Diameter	400 mm
		Back wash Denvery	Number	2 Units
		Player Dalizzaria	Diameter	250 mm
		Blower Delivery	Number	2 Units

			Diameter	800 mm
		Clear Water Control	Operator	Manual
		(Suction Pit)	Number	1 Unit
	Butterfly Valve		Remarks	D600 mm
			Diameter	500 mm
i Others		Clear Water Control (Flow Meter Chamber)	Operator	Electric
j			Number	1 Unit
		Purpose	To City	To Thadeua
	Flow Meter	Туре	Ultra Sonic T	ype Ultra Sonic Type
	(Flow Meter Chamber)	Diameter	D500 mm	D300 mm
		Number	1 Unit 1 Unit	
	Pressure Meter	Pressure of Clear Water a	at Flow Meter Chamber	

2. PRESENT CONDITIONS OF MECHANICAL EQUIPMENT AND MATERIALS

KAOLIEO

Image matrix					a			~ .	Presen	t Status	Re-working	To be	
Image weight of the second of the	Item	No.	Name	Location	Capacity	Total head	Motor	Speed		Non-	by Repair	Replaced	Remarks
$ \left \begin{array}{c c c c c c c c c c c c c c c c c c c $					(m ³ /min)	(m)	(kw)	(rpm)	Working	working	/Overhaul	New One	
$ \left \begin{array}{c c c c c c c c c c c c c c c c c c c $		P-1	Intake pump No	Intake numn house	7.65	19.5	37	1 470	OK			Replaced	Declene Pump Capacity:7.65m ³ /min→6.0m ³ /min
$ \frac{1}{12} \frac{1}{100} + \frac{1}{1$		D_2	ditto No.	ditta	7.65	10.5	27	1,470	OK			Replaced	Declene Pump Capacity: 7.65m3/min ~6.0m3/min
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		P-2	ditto No.	ditto	7.65	19.5	37	1,470	OK			Replaced	Declene Pump Capacity: 7.65m3/min → 6.0m3/min
$ \frac{1}{23} \frac{1}{20} \frac{1}{20}$		P-3	ditto No.	On the next on	/.03	19.3	37	1,470	OK			Replaced	Justallad on Jan 102 by NDV
$ \frac{1}{12} $		1-3 1141411			4.3	40.0	43 \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	1,400					Instance on Jan. 02 by NPV
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		//X244//	nanades booobs	VENER NEWER VENERANDIN	x	X	///////////////////////////////////////	<u></u>					NAG-MOSERGEG
$ \frac{1}{12} = \frac{1}{100} \frac{1}{1000} \frac{1}{1000} \frac{1}{1000} \frac{1}{100} \frac{1}{100}$	_		66666611111111111111111111111111111111	1. 664666 IIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		(7.0		1 470					
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	du	P-6	Distribution pump No.	Distribution pump nouse	6.3	67.0	110	1,470	OK				Deteriorated over 20's years:6.3m3/min→5.3m3/min
$ \frac{1}{12} \frac{1}{10} $	Pu	P-/	ditto No.		6.3	67.0	110	1,470	OK				Deteriorated over 20's years.6.3m3/min-5.3m3/min
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		P-8	ditto No.	ditto	6.3	67.0	110	1,470	OK				Deteriorated over 20's years:6.3m3/min→5.3m3/min
$ \begin{array}{ $		P-9	ditto No.		6.3	67.0	110	1,470	OK				Deteriorated over 20's years:6.3m3/min→5.3m3/min
$ \frac{1}{12} \frac{1}{100} \frac{1}{100} - \frac{1}{100} \frac{1}{100} - \frac{1}{100} \frac{1}{100} \frac{1}{100} + \frac{1}{100} \frac{1}$		P-10	Back wash pump No.	Distribution pump house	15.5	18.0	60	980	OK				Deteriorated over 20's years
$ \frac{1}{12} 0 0 0 0 0 0 0 0 0 $		P-11 D 12	ditto No.		15.5	18.0	60	980	OK				Deteriorated over 20's years
$ \begin{array}{ $		P-12	ditto No.	ditto	15.5	18.0	60	980	OK				Character over 20's years
$ \begin{array}{ $		P-13	Vaccum pump No.	ditta	(Wind volume) 1.1	(Max. vacum)620mmHg	2.2	1,450	OK				Deteriorneted even 20/a comm
Intern Name Learing Grading View Norm View Norm View Norm Norm Remarks Norm 23 Manu circuitoria gamp No Manuucicircuitoria gamp		P-14	ditto NO.	anto	(wind volume) 1.1	(Max. vacum)620mmHg	2.2	1,430	Drocon	t Status	D	Taha	Detenorated over 20's years
Nom Own Own Own Operation Non-Nom Replace P23 Hoto Alma feed upon Alma feed upon Gold 8 0,75 Non Non-Nom Replace P24 Hoto Alma feed upon Chainan Chainan Chainan Chainan Non-Nom Replace P36 Alma feed upon Alma feed upon Alma feed upon Non-Nom Replace Replace T2 Alma feed upon Alma feed upon Alma feed upon Cylindrial FRP 550 Cold Ko Ko Replace T2 Alma constant water level head inth Altio Cylindrial FRP 550 Cold Ko No Replace T4 Alma constant water level head inth Altio Cylindrial FRP 800 Cold No Replace <	Item	No	Name	Location	Capacity	Total head	Motor	Speed	rresen	Non-	by Reneir	Replaced	Remarks
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Accini	110.	traine	Location	(Q/min)	(m)	(kw)	(rnm)	Working	working	/Overheul	New One	ixtinai ko
$ \begin{array}{ c c c c c } \hline \hline$	_	D 21	Alum singulation nump No.	Alum fooding room	(30/11111)	(111)	(KW) 0.75	(rpm)		NON	/ Overnaul	Doplood	
$ \begin{array}{c c c c c c } \hline P_{23} & $	ical Ip	P_22	ditto No.	ditto	100	8	0.75			NON		Replaced	
$ \frac{1}{2} = \frac{1}{2} \frac$	um,	P.23	Hype Circulation nump No.	Chlorination room	60	8	0.75			NON		Replaced	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	5 -	P.24	ditta No.	ditto	60	8	0.75			NON		Replaced	
Item No. Name Location Type Marrial Metrial (0) Capacity (0) Working Working Working Non- Working No		1-24	110.	unto		v	0.75		Presen	t Status	Re-working	To be	
$ \frac{1}{10} $	Item	No	Name	Location	Type	Material	Capacity		110501	Non-	by Renair	Replaced	Remarks
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $					- , P*		(0)		Working	working	/Overheul	New One	
$ \frac{1}{29} \int_{1}^{1} \frac{1}{10} \frac{1}{10}$		T-1	Alum storage tank No	Alum feeding room	Cylindrical	FRP	5 500		OK		/ • • • • • • • • • • •		
y T-3 litto No. Cylindrical FRP 5,500 OK Image: Color of the color		T-2	ditto No	ditto	Cylindrical	FRP	5 500		OK				
Image: Problem in the second state and the second state of the second		T-3	ditto No	ditto	Cylindrical	FRP	5 500		OK				
1-5 Hsps. Storage tank No.1 Chlorintion room Cylindrical FRP 800 NON Replaced 1-6 ditio No. Neplaced NON Replaced 1-7 Hyps. constant water level head tank ditto Retangular PVC 50 NON Replaced Hem No. Name Location Type Type Present Statiss Reworking Nove Nove M-1 Flash mixer Mixing basin Vertical propellar OK No Replaced M-2 Alum reeding room Vertical propellar OK No Remarks M-4 dito dito Vertical propellar OK No No M-4 dito dito Vertical propellar OK No Remarks M-4 dito Location Dia Operator No Remarks No V-11 Intake pump delivery valve No.1 Intake pump house 250 Woperating nut Rising stem NON Replaced V-13 dito No.2 dito 250 Woperating nut Rising stem NON Replaced V-15 dito No.2 dito <td< td=""><td>anl</td><td>T-4</td><td>Alum constant water level head tank</td><td>ditto</td><td>Cylindrical</td><td>Stainless Steel</td><td>100</td><td></td><td>OK</td><td></td><td></td><td></td><td></td></td<>	anl	T-4	Alum constant water level head tank	ditto	Cylindrical	Stainless Steel	100		OK				
$ \frac{1}{160} 1$	Ë	T-5	Hypo, Storage tank No.	Chlorination room	Cylindrical	FRP	800			NON		Replaced	
		T-6	ditto No.	ditto	Cylindrical	FRP	800			NON		Replaced	
Item No. Name Location Type Present Status Re-working working To be working Repart Working Re-working working To be working Repart Were one M-1 Flash mixer Mixing basin Vertical propellar OK Vertical propellar No. No. No. No. No. Vertical propellar OK Vertical propellar OK Vertical propellar OK Vertical propellar No. Remarks No. Repared No. Repared No. Repared Repared Repared No. Repared No. No.		T-7	Hypo, constant water level head tank	ditto	Rectangular	PVC	50			NON		Replaced	
Item No. Non. Working			* *	1					Presen	t Status	Re-working	To be	
Vertical process More and an anti-anti-anti-anti-anti-anti-anti-anti-	Item	No.	Name	Location	T	уре			Waaldaa	Non-	by Repair	Replaced	Remarks
$ \frac{M-1}{M-2} = \frac{M-1}{M-2} = \frac{M-1}{M-1} =$									working	working	/Overhaul	New One	
M-2 Alum mixer Alum feeding room Vertical propellar OK Image: Constraint of the cons		M-1	Flash mixer	Mixing basin	Vertical	propellar			OK				
 M-3 ditto M-4 ditto M-6 ditto M-7 ditto M-1 latke pump delivery valve No. M-1 latke pump delivery valve No.1 latke pump house M-20 ditto M-3 ditto M-4 dit	ıəx	M-2	Alum mixer	Alum feeding room	Vertical	propellar			OK				
M4 ditto Vertical propellar OK M M M Mane Dia. Operator Remarks Presettatus Revail Rob Remarks Remarks <t< td=""><td>Mi</td><td>M-3</td><td>ditto</td><td>ditto</td><td>Vertical</td><td>propellar</td><td></td><td></td><td>OK</td><td></td><td></td><td></td><td></td></t<>	Mi	M-3	ditto	ditto	Vertical	propellar			OK				
ItemNo.NameDia.Dia.OperatorRemarksPresent Status WorkingReworking WorkingTo be ReplacedRemarksRemarksV-11Intake pump delivery valveNo.1Intake pump house250Woperating nutRising stemNONNONReplacedV-12dittoNo.2ditto250Woperating nutRising stemNONReplacedReplacedV-13dittoNo.2ditto250Woperating nutRising stemNONReplacedReplacedV-13dittoNo.2ditto250Woperating nutRising stemOKNONReplacedV-14Reservoir maintenance valveNo.1Clear water reservoir300W/manual floor standNon-rising stemOKNoReplacedV-16dittoNo.2ditto300W/manual floor standNon-rising stemOKImage: StatusNoV-17dittoNo.4ditto300W/manual floor standNon-rising stemOKImage: StatusImage: StatusV-19dittoNo.6ditto300W/manual floor standNon-rising stemOKImage: StatusImage: StatusV-19dittoNo.6ditto300W/manual floor standNon-rising stemOKImage: StatusImage: StatusV-19dittoNo.6ditto300W/manual floor standNon-rising stemOKImage: StatusImage: StatusV-19		M-4	ditto	ditto	Vertical	propellar			OK				
Iten No. Name Location Data (mm) Operator Remarks (Nor- working Non- working Non- working Non- working Neplacet (Nor- working Replaced New One Remarks (Nor- morking V-11 Intake pump delivery valve No.1 Intake pump house 250 W/operating nut Rising stem NON Replaced V-12 ditto No.3 ditto 250 W/operating nut Rising stem OK No Replaced V-13 ditto No.3 ditto 250 W/operating nut Rising stem OK No Replaced V-14 Reservoir maintenance valve No.1 Clear water reservoir 300 W/manual floor stand Non-rising stem OK Image: Clear water reservoir 300 V-15 ditto No.3 ditto 300 W/manual floor stand Non-rising stem OK Image: Clear water reservoir V-16 ditto No.4 ditto 300 W/manual floor stand Non-rising stem OK Image: Clear water reservoir					Dia				Presen	t Status	Re-working	To be	
V-10 Intake pump delivery valve No.1 Intake pump house 250 W/operating nut Rising stem NON Replaced V-12 ditto No.3 ditto 250 W/operating nut Rising stem NON Replaced V-13 ditto No.3 ditto 250 W/operating nut Rising stem OK NON Replaced V-14 Reservoir maintenance valve No.1 Clear water reservoir 300 W/manual floor stand Non-rising stem OK V-16 ditto No.3 ditto 300 W/manual floor stand Non-rising stem OK V-16 ditto No.3 ditto 300 W/manual floor stand Non-rising stem OK V-16 ditto No.4 ditto 300 W/manual floor stand Non-rising stem OK V-19 ditto No.6 ditto 300 W/manual floor stand </td <td>Item</td> <td>No.</td> <td>Name</td> <td>Location</td> <td>D1a.</td> <td>Operato</td> <td>r</td> <td>Remarks</td> <td>Working</td> <td>Non-</td> <td>by Repair</td> <td>Replaced</td> <td>Remarks</td>	Item	No.	Name	Location	D1a.	Operato	r	Remarks	Working	Non-	by Repair	Replaced	Remarks
V-11 Intake pump delivery valve No.1 Intake pump house 250 W/operating nut Rising stem NON Replaced V-12 ditto No.2 ditto 250 W/operating nut Rising stem NON Replaced V-13 ditto No.3 ditto 250 W/operating nut Rising stem OK Replaced V-13 ditto No.3 ditto 250 W/operating nut Rising stem OK Replaced V-14 Reservoir maintenance valve No.1 Clear water reservoir 300 W/manual floor stand Non-rising stem OK Replaced V-16 ditto No.3 ditto 300 W/manual floor stand Non-rising stem OK Image: Clear water reservoir V-16 ditto No.4 ditto 300 W/manual floor stand Non-rising stem OK Image: Clear water reservoir V-17 ditto No.6 ditto 300 W/manual floor stand Non-rising stem OK Image: Clear wa					(mm)					working	/Overhaul	New One	
V-12 ditto No.2 ditto 250 W/operating nut Rising stem NON Replaced V-13 ditto No.3 ditto 250 W/operating nut Rising stem OK Replaced Repaired 1 times by NPV V-14 Reservoir maintenance valve No.1 Clear water reservoir 300 W/manual floor stand Non-rising stem OK Replaced Repaired 1 times by NPV V-15 ditto No.2 ditto 300 W/manual floor stand Non-rising stem OK Image: Comparison of times by NPV V-15 ditto No.2 ditto 300 W/manual floor stand Non-rising stem OK Image: Comparison of times by NPV V-16 ditto No.3 ditto 300 W/manual floor stand Non-rising stem OK Image: Comparison of times by NPV V-18 ditto No.4 ditto 300 W/manual floor stand Non-rising stem OK Image: Comparison of times by NPV V-20 ditto No.6 ditto 3		V-11	Intake pump delivery valve No.	Intake pump house	250	W/operatin	g nut	Rising stem		NON		Replaced	
V-13 ditto No.3 ditto 250 W/opcrating nut Rising stem OK Replaced Repaired 1 times by NPV V-14 Reservoir maintenance valve No.1 Clear water reservoir 300 W/manual floor stand Non-rising stem OK V-15 ditto No.2 ditto 300 W/manual floor stand Non-rising stem OK V-16 ditto No.3 ditto 300 W/manual floor stand Non-rising stem OK V-16 ditto No.4 ditto 300 W/manual floor stand Non-rising stem OK V-18 ditto No.4 ditto 300 W/manual floor stand Non-rising stem OK V-19 ditto No.6 ditto 300 W/manual floor stand Non-rising stem OK V-20 ditto No.6 ditto 300 <td< td=""><td></td><td>V-12</td><td>ditto No.</td><td>ditto</td><td>250</td><td>W/operatin</td><td>g nut</td><td>Rising stem</td><td></td><td>NON</td><td></td><td>Replaced</td><td></td></td<>		V-12	ditto No.	ditto	250	W/operatin	g nut	Rising stem		NON		Replaced	
V-14 Reservoir maintenance valve No.1 Clear water reservoir 300 Winanual floor stand Non-rising stem OK V-16 ditto No.2 ditto 300 Winanual floor stand Non-rising stem OK Image: Constraint of the stand in the s		V-13	ditto No.	ditto	250	W/operating	g nut	Rising stem	OK			Replaced	Repaired 1 times by NPV
V-15 ditto No.2 ditto 300 Winanual floor stand Non-rising stem OK V-16 ditto No.3 ditto 300 Winanual floor stand Non-rising stem OK Image: Constraint of the stand sta		V-14	Reservoir maintenance valve No.	Clear water reservoir	300	W/manual floo	or stand	Non-rising stem	OK				
V-16 ditto No.3 ditto 300 Winanual floor stand Non-rising stem OK V-17 ditto No.4 ditto 300 Winanual floor stand Non-rising stem OK Image: Constraint of the stand sta	a)	V-15	ditto No.	ditto	300	W/manual floo	or stand	Non-rising stem	OK				
V-1/ Utility No.4 Other Other Other V V V It ditto No.4 ditto 300 W/manual floor stand Non-rising stem OK OK V V It ditto No.6 ditto 300 W/manual floor stand Non-rising stem OK OK V-19 ditto No.6 ditto 300 W/manual floor stand Non-rising stem OK OK V-20 ditto No.7 ditto 300 W/manual floor stand Non-rising stem OK OK V-21 ditto No.8 ditto 300 W/manual floor stand Non-rising stem OK OK V-22 ditto No.8 ditto 300 W/manual floor stand Non-rising stem OK OK V-22 ditto No.9 ditto 300 W/manual floor stand Non-rising stem OK OK V-23 ditto No.10 ditto <	alv	V-16	ditto No.	ditto	300	W/manual floo	or stand	Non-rising stem	OK				
V-18 ditto No.5 ditto 300 W/manual floor stand Non-rising stem OK V-19 ditto No.6 ditto 300 W/manual floor stand Non-rising stem OK Image: Constraint of the stand sta	Ň	V-17	ditto No.	ditto	300	W/manual floo	or stand	Non-rising stem	OK				
V V-19 uito No.6 uito 300 W/manual floor stand Non-rising stem OK V-20 ditto No.7 ditto 300 W/manual floor stand Non-rising stem OK Image: Constraint of the stand	ate	V-18	atto No.	aitto	300	w/manual floo	or stand	Non-rising stem	OK		ļ		
V-20 Olito No.7 Otto 300 W/manual floor stand Non-rising stem OK V-21 ditto No.8 ditto 300 W/manual floor stand Non-rising stem OK V-22 ditto No.9 ditto 300 W/manual floor stand Non-rising stem OK V-23 ditto No.10 ditto 300 W/manual floor stand Non-rising stem OK V-23 ditto No.10 ditto 300 W/manual floor stand Non-rising stem OK V-23 ditto No.10 ditto 300 W/manual floor stand Non-rising stem OK	9	V-19	aitto No.	ditto	300	w/manual floo	n stand	Non-rising stem	OK				
V-21 utto ivo. utto 300 w/manual noor stand Non-rising stem OK V-22 ditto No.9 ditto 300 W/manual floor stand Non-rising stem OK V-23 ditto No.10 ditto 300 W/manual floor stand Non-rising stem OK V-24 ditto No.10 ditto 300 W/manual floor stand Non-rising stem OK V-24 Distribution pump delivery value No.1 Distribution pump delivery rate No.1 Non-rising stem OK		V-20	ditto No.	ditto	300	W/manual floo	n stand	Non-rising stem	OK				
V-22 utto ivo.* utto 300 w/manual noor stand Non-rising stem OK V-23 ditto No.10 ditto 300 W/manual floor stand Non-rising stem OK V-24 Distribution pump delivery value No.10 ditto 300 W/manual floor stand Non-rising stem OK		V-21	ditto No.		300	W/manual floo	n stand	Non-rising stem	OK				
V 22 pittov rootvatu V 200 Wintanua noo statu Potristing stein OK	1	V-22	ditto No.	0 ditto	300	W/manual floo	n stand	Non-rising stem	OK				
		v-23 V-24	Distribution nump delivery valve No.	Distribution numn house	200	W/manual floo	n stand	Non-rising stem	OK				

Present Conditions on Mechanical Equipment and Materials at Kaolieo Water Treatment Plant

						1	-				
	V-25	ditto No.2	ditto	200	W/manual floor stand	Non-rising stem	OK				
	V-26	ditto No 3	ditto	200	W/manual floor stand	Non-rising stem	OK				
	11.07	line No.5	L'un	200	W//	NU	OK				
	V-27	ditto No.4	ditto	200	w/manual floor stand	Non-rising stem	OK				
	V-28	Backwash pump delivery valve No.1	ditto	350	W/manual floor stand	Non-rising stem	OK				
	V-29	ditto No.2	ditto	350	W/manual floor stand	Non-rising stem	OK				
	V-30	ditto No 3	ditto	350	W/manual floor stand	Non rising stam	OK				
	¥-50			330	W/manual fibor stand	Non-rising stem	OK			D 1 1	
		Flocculation basin inlet valve No.1	Flocculation basin	400	w/operating nut	Non-rising stem	OK			Replaced	Deteriorated over 40's years
		ditto No.2	ditto	400	W/operating nut	Non-rising stem	OK			Replaced	Deteriorated over 40's years
		Flocculation basin drain valve No.1	Flocculation basin	250	W/operating nut	Non-rising stem	OK			Replaced	Deteriorated over 40's years
		ditto No 2	ditto	250	W/operating nut	Non-rising stem	OK			Replaced	Deteriorated over 40's years
		Creased filter drain surface No.1	Crassel filter	150	W/operating nut	Non riging store	OK			Damlagad	Deteriorated ever 40's years
		Graver filter drain valve No.1	Glaver Inter	130	w/operating nut	Non-rising stem	UK			Replaced	Deteriorated over 40's years
		ditto No.2	ditto	150	W/operating nut	Non-rising stem	OK			Replaced	Deteriorated over 40's years
		Sedimentation drain valve No.1	Sedimentation basin	150	W/operating nut	Non-rising stem	OK			Replaced	Deteriorated over 40's years
		ditto No 2	ditto	150	W/operating nut	Non-rising stem	OK			Replaced	Deteriorated over 40's years
		Filter inlet valve No 1	Filter control floor	300	W/manual floor stand	Rising stem	OK			Replaced	Deteriorated over 40's years
		The met valve		300	W/manual floor stand	Rising stem	OK			Replaced	Deteriorated over 40's years
		ditto No.2	ditto	300	w/manual floor stand	Rising stem	OK			Replaced	Deteriorated over 40's years
		ditto No.3	ditto	300	W/manual floor stand	Rising stem	OK			Replaced	Deteriorated over 40's years
		ditto No.4	ditto	300	W/manual floor stand	Rising stem	OK			Replaced	Deteriorated over 40's years
		Filtered valve No 1	Filter control floor	250	W/manual floor stand	Rising stem	OK			Replaced	Deteriorated over 40's years
	_	ditto No 2	ditto	250	W/manual floor stand	Piging stom	OK			Replaced	Deteriorated over 10's years
		N0.2	110	250	W/manual floor stand	Kising stein	OK			Replaced	Deteriorated over 40's years
		ditto No.3	ditto	250	w/manual floor stand	Kising stem	ОК			Replaced	Deteriorated over 40's years
e		ditto No.4	ditto	250	W/manual floor stand	Rising stem	OK			Replaced	Deteriorated over 40's years
À		ditto No.5	ditto	250	W/manual floor stand	Rising stem	OK			Replaced	Deteriorated over 40's years
2°		ditto No.6	ditto	250	W/manual floor stand	Rising stem	OK			Replaced	Deteriorated over 40's years
Ite		ditto No 7	ditto	250	W/manual floor stand	Piging stom	OK			Replaced	Deteriorated over 10's years
ü		line No.7	Litte	250	W/manual fibor stand	Rising stem	OK			Replaced	Deteriorated over 40's years
-		ditto No.8	ditto	250	w/manual floor stand	Rising stem	0K			Replaced	Deteriorated over 40's years
		Filter backwash valve No.1	Filter control floor	450	W/manual floor stand	Rising stem	OK			Replaced	Deteriorated over 40's years
		ditto No.2	ditto	450	W/manual floor stand	Rising stem	OK			Replaced	Deteriorated over 40's years
		ditto No 3	ditto	450	W/manual floor stand	Rising stem	OK			Replaced	Deteriorated over 40's years
		ditto No.4	ditto	450	W/manual floor stand	Rising stem	OK			Replaced	Deteriorated over 40's years
		ditto ito: i	antio			100000000000000000000000000000000000000	0.12			reepideed	
		Filter surface wash valve No 1	Filter control floor	200	W/manual floor stand	Picing stem	OK			Replaced	Deteriorated over 40's years
		Filter surface wash valve No.1	Filter control floor	200	W/manual floor stand	Rising stem	OK			Replaced	Deteriorated over 40's years
		Filter surface wash valve No.1 ditto No.2	Filter control floor ditto	200 200	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK			Replaced Replaced	Deteriorated over 40's years Deteriorated over 40's years
		Filter surface wash valve No.1 ditto No.2 ditto No.3	Filter control floor ditto ditto	200 200 200	W/manual floor stand W/manual floor stand W/manual floor stand	Rising stem Rising stem Rising stem	OK OK OK			Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated over 40's years Deteriorated over 40's years
		Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4	Filter control floor ditto ditto ditto	200 200 200 200	W/manual floor stand W/manual floor stand W/manual floor stand W/manual floor stand	Rising stem Rising stem Rising stem	OK OK OK			Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated over 40's years Deteriorated over 40's years Deteriorated over 40's years
		Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.4	Filter control floor ditto ditto ditto Filter control floor	200 200 200 200 200 400	W/manual floor stand W/manual floor stand W/manual floor stand W/manual floor stand W/manual floor stand	Rising stem Rising stem Rising stem Rising stem	OK OK OK OK			Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated over 40's years Deteriorated over 40's years Deteriorated over 40's years Deteriorated over 40's years
		Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2	Filter control floor ditto ditto ditto Filter control floor ditto	200 200 200 200 400 400	W/manual floor stand W/manual floor stand W/manual floor stand W/manual floor stand W/manual floor stand	Rising stem Rising stem Rising stem Rising stem Rising stem	OK OK OK OK			Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated over 40's years
		Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.2	Filter control floor ditto ditto ditto Filter control floor ditto ditto	200 200 200 200 400 400	W/manual floor stand W/manual floor stand W/manual floor stand W/manual floor stand W/manual floor stand W/manual floor stand	Rising stem Rising stem Rising stem Rising stem Rising stem Bising stem	OK OK OK OK OK			Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated over 40's years
		Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.4 Top valve No.1 ditto No.2 ditto No.2 ditto No.2	Filter control floor ditto ditto ditto Filter control floor ditto ditto	200 200 200 400 400 400	W/manual floor stand W/manual floor stand W/manual floor stand W/manual floor stand W/manual floor stand W/manual floor stand	Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem	OK OK OK OK OK OK			Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated over 40's years
		Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.3 ditto No.1 ditto No.1 ditto No.2 ditto No.2 ditto No.2 ditto No.3	Filter control floor ditto ditto ditto Filter control floor ditto ditto ditto	200 200 200 400 400 400 400	W/manual floor stand W/manual floor stand W/manual floor stand W/manual floor stand W/manual floor stand W/manual floor stand W/manual floor stand	Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem	OK OK OK OK OK OK OK			Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated over 40's years
		Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.2 ditto No.2 ditto No.3 ditto No.4 ditto No.3 ditto No.3 ditto No.4 ditto No.4	Filter control floor ditto ditto ditto Filter control floor ditto ditto ditto ditto	200 200 200 400 400 400 400 400 400	W/manual floor stand W/manual floor stand	Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem	OK OK OK OK OK OK OK			Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated over 40's years
		Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.2 ditto No.2 ditto No.3 ditto No.3 ditto No.4 ditto No.4 ditto No.4 ditto No.4 ditto No.5 ditto No.5	Filter control floor ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto	200 200 200 400 400 400 400 400 400	W/manual floor stand W/manual floor stand	Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem	0K 0K 0K 0K 0K 0K 0K			Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated over 40's years
		Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.2 ditto No.3 ditto No.3 ditto No.4 ditto No.5 ditto No.6 ditto No.6 ditto No.6	Filter control floor ditto ditto ditto Filter control floor ditto ditto ditto ditto ditto ditto ditto ditto ditto	200 200 200 400 400 400 400 400 400 400	W/manual floor stand W/manual floor stand	Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem	OK OK OK OK OK OK OK OK			Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated over 40's years
		Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.4 Top valve No.1 ditto No.2 ditto No.2 ditto No.3 ditto No.4 ditto No.4 ditto No.5 ditto No.6 ditto No.7 ditto No.7	Filter control floor ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto	200 200 200 400 400 400 400 400 400 400	W/manual floor stand W/manual floor stand	Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem Rising stem	OK OK OK OK OK OK OK OK			Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated over 40's years
		Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.3 ditto No.4 ditto No.3 ditto No.3 ditto No.3 ditto No.4 ditto No.4 ditto No.5 ditto No.6 ditto No.6 Either drain value No.8	Filter control floor ditto ditto ditto ditto Filter control floor ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto	200 200 200 400 400 400 400 400 400 400	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK			Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated over 40's years
		Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.4 Top valve No.1 ditto No.2 ditto No.2 ditto No.3 ditto No.4 ditto No.4 ditto No.4 ditto No.5 ditto No.6 ditto No.7 ditto No.8 Filter drain valve No.1	Filter control floor ditto	200 200 200 400 400 400 400 400 400 400	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK			Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated over 40's years
		Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.3 ditto No.3 ditto No.3 ditto No.3 ditto No.4 ditto No.4 ditto No.4 ditto No.4 ditto No.5 ditto No.7 ditto No.8 Filter drain valve No.1 ditto No.4	Filter control floor ditto	200 200 200 400 400 400 400 400 400 400	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK			Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated over 40's years
		Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.2 ditto No.3 ditto No.1 ditto No.2 ditto No.3 ditto No.4 ditto No.5 ditto No.6 ditto No.7 ditto No.7 ditto No.8 Filter drain valve No.1 ditto No.2 ditto No.2 ditto No.1	Filter control floor ditto ditto ditto Filter control floor ditto	200 200 200 400 400 400 400 400 400 400	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK OK			Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated over 40's years
		Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.4 Top valve No.1 ditto No.2 ditto No.2 ditto No.2 ditto No.3 ditto No.6 ditto No.7 ditto No.7 ditto No.8 Filter drain valve No.1 ditto No.2 ditto No.2 ditto No.3 ditto No.4	Filter control floor ditto di	200 200 200 400 400 400 400 400 400 400	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK OK OK			Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated ove
		Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.3 ditto No.3 ditto No.3 ditto No.4 ditto No.3 ditto No.4 ditto No.5 ditto No.6 ditto No.7 ditto No.8 Filter drain valve No.1 ditto No.2 ditto No.2 ditto No.4 ditto No.4	Filter control floor ditto di	200 200 200 400 400 400 400 400 400 400	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK OK OK			Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated over 40's years
		Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.3 ditto No.2 ditto No.4 ditto No.3 ditto No.4 ditto No.4 ditto No.4 ditto No.5 ditto No.6 ditto No.4	Filter control floor ditto ditto ditto ditto control floor ditto	200 200 200 400 400 400 400 400 400 400	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK OK OK OK			Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated over 40's years
14		Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.3 ditto No.3 ditto No.3 ditto No.4 ditto No.3 ditto No.4 ditto No.4 ditto No.4 ditto No.5 ditto No.6 filto No.7 ditto No.7 ditto No.2 ditto No.4 ditto No.4 ditto No.4 ditto No.4 ditto No.4	Filter control floor ditto	200 200 200 400 400 400 400 400 400 400	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK OK OK OK Presen	t Status	Re-working	Replaced Replaced	Deteriorated over 40's years Deteriorated over 40's years
Item	No.	Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.4 ditto No.3 ditto No.4 ditto No.5 ditto No.6 ditto No.6 ditto No.7 ditto No.7 ditto No.7 ditto No.7 ditto No.7 ditto No.7 ditto No.1 ditto No.2 ditto No.4 Matto No.4	Filter control floor ditto ditto ditto Filter control floor ditto	200 200 200 400 400 400 400 400 400 400	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK OK OK OK OK O	t Status Non-	Re-working by Repair	Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated ove
Item	No.	Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.4 Top valve No.1 ditto No.2 ditto No.2 ditto No.3 ditto No.4 ditto No.4 ditto No.5 ditto No.7 ditto No.7 ditto No.7 ditto No.4 ditto No.4 ditto No.4 Matto No.4	Filter control floor ditto	200 200 200 400 400 400 400 400 400 100 100 100 1	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK OK OK OK OK O	t Status Non-working	Re-working by Repair //Overhaul	Replaced Rep	Deteriorated over 40's years Deteriorated ove
Item	No. V-51	Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.3 ditto No.2 ditto No.3 ditto No.3 ditto No.6 ditto No.6 ditto No.6 ditto No.6 ditto No.7 ditto No.8 Filter drain valve No.1 ditto No.3 ditto No.4 Intake pump delivery valve No.4	Filter control floor ditto ditto ditto filter control floor ditto	200 200 200 400 400 400 400 400 400 100 100 100 1	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK OK OK OK OK O	t Status Non-working	Re-working by Repair /Overhaul	Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated ove
Item	No.	Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.4 Top valve No.1 ditto No.2 ditto No.2 ditto No.2 ditto No.3 ditto No.6 ditto No.7 ditto No.7 ditto No.2 ditto No.4 Vitto No.4 litto No.7 ditto No.2 ditto No.4 Name Name Intake pump delivery valve ditto	Filter control floor ditto ditto ditto control floor ditto	200 200 200 400 400 400 400 400 400 400	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK OK OK Working OK	t Status Non-working	Re-working by Repair /Overhaul	Replaced Rep	Deteriorated over 40's years Deteriorated ove
Item	No. V-511 V-522 V-533	Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.3 ditto No.3 ditto No.3 ditto No.4 ditto No.3 ditto No.4 ditto No.4 ditto No.4 ditto No.4 ditto No.4 ditto No.6 ditto No.7 ditto No.7 ditto No.3 ditto No.3 ditto No.4 Name Name Intake pump delivery valve ditto ditto ditto	Filter control floor ditto ditto ditto Filter control floor ditto ditto ditto ditto ditto ditto ditto ditto ditto tito ditto	200 200 200 400 400 400 400 400 400 100 100 100 1	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK OK OK OK OK O	t Status Non-working	Re-working by Repair /Overhaul	Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated ove
Item	No. V-511 V-523 V-533	Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.4 Top valve No.1 ditto No.2 ditto No.4 Top valve No.1 ditto No.2 ditto No.3 ditto No.4 ditto No.4 ditto No.4 ditto No.6 ditto No.6 ditto No.7 ditto No.2 ditto No.2 ditto No.3 ditto No.4 Name Name Intake pump delivery valve ditto ditto Distribution pump delivery valve	Filter control floor ditto ditto ditto Eventson filter control floor ditto	200 200 200 400 400 400 400 400 400 400	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK OK OK OK OK O	t Status Non- working	Re-working by Repair /Overhaul	Replaced Rep	Deteriorated over 40's years Deteriorated ove
alve	No. V-511 V-52 V-53	Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.4 Top valve No.1 ditto No.2 ditto No.2 ditto No.2 ditto No.3 ditto No.6 ditto No.7 ditto No.7 ditto No.6 filter drain valve No.1 ditto No.2 ditto No.4 Name Intake pump delivery valve ditto Distribution pump delivery valve	Filter control floor ditto ditto ditto filter control floor ditto	200 200 200 400 400 400 400 400 400 100 100 100 1	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK OK OK OK OK O	t Status Non- working	Re-working by Repair /Overhaul	Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated ove
c Valve	No. V-511 V-522 V-533 V-54 V-55	Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.3 ditto No.3 ditto No.3 ditto No.4 ditto No.3 ditto No.6 ditto No.6 ditto No.6 ditto No.6 ditto No.7 ditto No.6 ditto No.6 ditto No.4 ditto No.4 ditto No.4 litto Do.4 litto Do.4 litto Do.4	Filter control floor ditto ditto ditto filter control floor ditto	200 200 200 400 400 400 400 400 400 100 100 100 1	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK OK OK OK OK O	t Status Non-working	Re-working by Repair /Overhaul	Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated ove
eck Valve mətl	No. V-511 V-523 V-544 V-555 V-556	Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.4 Top valve No.1 ditto No.2 ditto No.2 ditto No.3 ditto No.4 ditto No.4 ditto No.6 ditto No.7 ditto No.7 ditto No.2 ditto No.4 Vitto No.4 ditto No.4 litto Distribution pump delivery valve ditto Distribution pump delivery valve ditto ditto	Filter control floor ditto ditto ditto filter control floor ditto	200 200 200 400 400 400 400 400 400 100 100 100 1	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK OK OK OK OK O	t Status Non-working	Re-working by Repair /Overhaul	Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated ove
Check Valve	No. V-51 V-52 V-53 V-54 V-55 V-56	Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.3 ditto No.3 ditto No.3 ditto No.4 ditto No.3 ditto No.4 ditto No.4 ditto No.4 ditto No.4 ditto No.4 ditto No.7 ditto No.7 ditto No.6 filter drain valve No.1 ditto No.3 ditto No.4 Name Intake pump delivery valve ditto Distribution pump delivery valve ditto ditto ditto ditto	Filter control floor ditto ditto ditto filter control floor ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto tito ditto	200 200 200 400 400 400 400 400 400 400	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK OK OK OK OK O	t Status Non-working	Re-working by Repair /Overhaul	Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated ove
Check Valve mayI	No. V-511 V-522 V-533 V-54 V-556 V-556 V-556 V-576	Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.3 ditto No.2 ditto No.4 Top valve No.1 ditto No.2 ditto No.3 ditto No.4 ditto No.4 ditto No.6 ditto No.6 ditto No.6 ditto No.6 ditto No.6 ditto No.3 ditto No.4 Value No.1 ditto No.2 ditto No.3 ditto No.4 Distribution pump delivery valve ditto ditto Jointo ditto Jointo ditto Backwash pump delivery valve	Filter control floor ditto ditto ditto control floor ditto	200 200 200 400 400 400 400 400 400 100 100 100 1	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK OK OK OK OK O	t Status Non-working	Re-working by Repair /Overhaul	Replaced Rep	Deteriorated over 40's years Deteriorated ove
Check Valve	No. V-51 V-52 V-53 V-54 V-55 V-56 V-55 V-56 V-57 V-58	Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.2 ditto No.4 Top valve No.1 ditto No.2 ditto No.2 ditto No.2 ditto No.3 ditto No.4 ditto No.4 ditto No.7 ditto No.7 ditto No.2 ditto No.4 ditto Distribution pump delivery valve ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto <th>Filter control floor ditto ditto ditto filter control floor ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto filter control floor ditto</th> <th>200 200 200 400 400 400 400 400 400 100 100 100 1</th> <th>W/manual floor stand W/manual floor stand</th> <th>Rising stem Rising stem</th> <th>OK OK OK OK OK OK OK OK OK OK OK OK OK O</th> <th>t Status Non- working</th> <th>Re-working by Repair /Overhaul</th> <th>Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced</th> <th>Deteriorated over 40's years Deteriorated 0's</th>	Filter control floor ditto ditto ditto filter control floor ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto filter control floor ditto	200 200 200 400 400 400 400 400 400 100 100 100 1	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK OK OK OK OK O	t Status Non- working	Re-working by Repair /Overhaul	Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced Replaced	Deteriorated over 40's years Deteriorated 0's
Check Valve ma11	No. V-51 V-52 V-53 V-54 V-55 V-56 V-57 V-58 V-59 V-59	Filter surface wash valve No.1 ditto No.2 ditto No.3 ditto No.4 Top valve No.1 ditto No.4 Top valve No.1 ditto No.2 ditto No.4 Top valve No.1 ditto No.2 ditto No.3 ditto No.4 ditto No.4 ditto No.6 ditto No.6 ditto No.7 ditto No.8 Filter drain valve No.1 ditto No.2 ditto No.4 Mame No.4 Name Name Intake pump delivery valve ditto ditto Journal Distribution pump delivery valve ditto ditto Backwash pump delivery valve ditto Journal	Filter control floor ditto ditto ditto control floor ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto ditto filter control floor ditto	200 200 200 400 400 400 400 400 400 100 100 100 1	W/manual floor stand W/manual floor stand	Rising stem Rising stem	OK OK OK OK OK OK OK OK OK OK OK OK OK O	t Status Non-working	Re-working by Repair /Overhaul	Replaced Rep	Deteriorated over 40's years Deteriorated ove

1				D			Presen	t Status	Re-working	To be	
Item	No.	Name	Location	Dia.	Operato	r Remarks	W/ 11	Non-	by Repair	Replaced	Remarks
				(mm)	-		working	working	/Overhaul	New One	
x	V-72	Intak control valve	Intake pump house	500	W/handwl	neel Horizontal typ	e	NON		Relaced	
lve Ive	V-73	Backwash water control valve	Flow control chamber	450	W/handwl	neel Horizontal typ	e	NON		Relaced	
ute Va]	V-74	Surface water control valve	Flow control chamber	200	W/handwl	neel Vertical type	e	NON		Relaced	
m											
				D			Presen	t Status	Re-working	To be	
Item	No.	Name	Location	Dia.	Material			Non-	by Repair	Replaced	Remarks
				(mm)			Working	working	/Overhaul	New One	
	G-1	Intake pump piping	Intaka pump house	Φ250-Φ500	SP		OK				
	G-2	Backwash piping	Flow control chamber	Φ450	DCIP		OK				
	G-3	Surfacewash piping	Flow control chamber	Φ200	DCIP		OK				
50	G-4	Distribution pump suction bellmouth(Existing)	Clear water reservoir	Φ250	DCIP		OK				
pi.	G-5	Distribution pump piping	Distribution pump	Φ200	SP		OK				
Ŀ	G-6	Distribution main by-pass piping	Distribution pump	Φ100	SP/DCIP		OK				
	G-7	Backwasy pump suction pipe bellmouth	Clear water reservoir	Φ350	DCIP		OK				
	G-8	Backwash pump piping (Existing)	Distribution pump	Φ350	SP		OK				
	G-9	Backwash pump piping (Additional)	Distribution pump	Φ350	SP/DCIP		OK				
							Presen	t Status	Re-working	To be	
Item	No.	Name	Location	Туре	Capacity	Remarks	Working	Non-	by Repair	Replaced	Remarks
							working	working	/Overhaul	New One	
	E-1	Gate No.1	Intake pump house	Sluice	Φ700mm	W/manual floor stand	OK				
	E-2	ditto No.2	ditto	Sluice	Φ700mm	W/manual floor stand	OK				
	E-3	Chain block	ditto	Fixed	5 ton		OK				
	E-4	Pump support	ditto	Steel construction		W/ladder & landing		NON		Replaced	
	E-5	Filter controller No.1	Filter valve room	Double seat	Φ250mm		OK				
	E-6	ditto No.2	ditto	Double seat	Φ250mm		OK				
	E-7	ditto No.3	ditto	Double seat	Φ250mm		OK				
	E-8	ditto No.4	ditto	Double seat	Φ250mm		OK				
	E-9	Loss head meter No.1	ditto	Dial type indicator	Max. 5 m			NON		Replaced	
ent	E-10	ditto No.2	ditto	Dial type indicator	Max. 5 m			NON		Replaced	
Ĕ	E-11	ditto No.3	ditto	Dial type indicator	Max. 5 m			NON		Replaced	
iii	E-12	ditto No.4	ditto	Dial type indicator	Max. 5 m			NON		Replaced	
Eq	E-13	Alum flow meter No.1	Alum feeding room		20 ℓ/min		OK				
sne	E-14	ditto No.2	ditto		20 l/min		OK				
nec	E-15	ditto No.3	ditto		20 l/min		OK				
IIa	E-16	Alum flow controller No.1	ditto				OK				
sce	E-17	ditto No.2	ditto				OK				
Mi	E-18	ditto No.3	ditto	Ctrue et au et a el			OK				
	E-19	Working stage	ditto	Member Frame with			OK				
	E-20	Monorail system	ditto	Geared trolly	0.5 ton			NON		Replaced	
	E-21	Hypo. Flow meter No.1	Chlorination room		2 Ø/min			NON		Replaced	
	E-22	ditto No.2	ditto		2 &/min			NON		Replaced	
	E-23	ditto No.3	ditto		2 Ø/min			NON		Replaced	
1	E-24	Hypo.flow controller No.1	ditto					NON		Replaced	
1	E-25	ditto No.2	ditto					NON		Replaced	
1	E-26	ditto No.3	ditto					NON		Replaced	
1											

CHINAIMO

Final Report The Study on Vientiane Water Supply Development Project

					a .			a 1	Presen	Present Status		To be	
Item	No.	Name		Location	Capacity	Total head	Motor	Speed	***	Non-	by Repair	Replaced	Remarks
					(m^3/min)	(m)	(kw)	(rpm)	Working	working	/Overhaul	New One	
	P-1	Raw water pump No	o.1	Raw water intake tower	18.0	14.8	75	1,480	OK				Repair to change impeller, impeller ringand suction bell
	P-2	Ditto	p 2	Ditto	18.0	14.8	75	1.480	OK				
					- 010			-,					Replace the new motor due to motor fire on May. 12.
	P-3	Ditto	0.3	Ditto	18.0	14.8	75	1.480	ОК				'01 Repair to chage bearing sleeve suction bell etc on
							, .	-,					Feb 14 '02 and Jul 30 '02
													Repair to change impeller bearing sleeve ball bearing
	P-4	Ditto No	o.4	Ditto	18.0	14.8	75	1,480	OK				etc on lun 23 '99 Ian 2 '01 and lun 4 '02
	P-5	Ditto	o 5	Ditto	18.0	14.8	75	1.470	OK				Repair to change impeller impeller ring on Feb 28 '02
	P-6	Ditto	o 6	Ditto	18.0	14.8	75	1.470	OK				Repair to change impeller impeller ring on Dec 4 '02
	P-7	Wash water pump No	5.1	Pumping station	25.5	6.0	37	735	OK				
	P-8	Ditto	p.2	Ditto	25.5	6.0	37	735	OK				
~	P-9	Clea water pump No	p.1	Pumping station	14.1	56.0	180	980	OK				
Ξ													Repair to change packing sleeve ball bearing and liner
Ŀ	P-10	Ditto No	5.2	Ditto	14.1	56.0	180	980	ОК				ring on Aug 16 '99
	P-11	Ditto	o 3	Ditto	14.1	56.0	180	980	OK				
	P-12	Ditto	p.4	Ditto	14.1	56.0	180	980	OK				Repair to change packing sleeve ball bearing on Oct 9
	P-13	Ditto	o 5	Ditto	14.1	56.0	180	980	OK				
	P-14	Ditto	n 6	Ditto	14.1	56.0	180	980	OK				
	P-15	Clear water pump to Thadeua No	p.1	Pumping station	43	66.0	80	1.485	OK				
	P-16	Ditto No	n 2	Ditto	43	66.0	80	1,105	OK				
	P-17	Wash numn		Sedimentation tank	0.72	25.0	75	3,000	OK				
	P-18				0.72	20.0	10	5,000	011				
	P-19	Vaccum pump No	o 1	Pumping station	0.7	620mmHg	1.5	1 410	OK				
	P-20	Ditto	p 2	Ditto	0.7	620mmHg	1.5	1,410	OK				
								-,					
					D.'				Presen	t Status	Re-working	To be	
Item	No.	Name		Location	Dia.	Oper	ator	Remarks	Washing	Non-	by Repair	Replaced	Remarks
					(mm)	_			working	working	/Overhaul	New One	
	V-1	Raw water pump delivery No	o.1	Raw water intake tower	350	W/Operating	g nut	Rising Stem	OK				
	V-2	Ditto	o.2	Ditto	350	Ditto		Ditto	OK				
	V-3	Ditto No	o.3	Ditto	350	Ditto		Ditto	OK				
	V-4	Ditto No	o.4	Ditto	350	Ditto		Ditto	OK				
	V-5	Ditto No	o.5	Ditto	350	Ditto		Ditto	OK				
	V-6	Ditto No	o.6	Ditto	350	Ditto		Ditto	OK				
	V-7	Wash water valve No	o.1	Sedimentation tank	100	W/Operating	g nut	Rising Stem	OK				
	V-8	Ditto No	o.2	Ditto	100	Ditto		Ditto	OK				
و	V-9	Ditto No	o.3	Ditto	100	Ditto		Ditto	OK				
alv	V-10	Ditto No	o.4	Ditto	100	Ditto		Ditto	OK				
\sim	V-11	Ditto No	o.5	Ditto	100	Ditto		Ditto	OK				
at	V-12	Ditto No	o.6	Ditto	100	Ditto		Ditto	OK				
9	V-13	Ditto No	o.7	Ditto	100	Ditto		Ditto	OK				
	V-14	Ditto No	o.8	Ditto	100	Ditto		Ditto	OK				
	V-15	Ditto No	o.9	Ditto	100	Ditto		Ditto	OK				
	V-16	Ditto	o.10	Ditto	100	Ditto		Ditto	OK				
	V-17	Ditto	o.11	Ditto	100	Ditto		Ditto	OK				
	V-18	Ditto	o.12	Ditto	100	Ditto		Ditto	OK				
	V-19	Wash water pump delivery No	o.1	Pumping station	400	W/Operatin	g nut	Rising Stem	OK				
	V-20	Ditto	o.2	Ditto	400	Ditto		Ditto	OK				
•	V 21	Clear water nump delivery No.	o 1	Pumping station	350	Motor Drive	•	Non Rising Stem	OK				

Present Conditions on Mechanical Equipment and Materials at Chinaimo Water Treatment Plant

					D'			Presen	t Status	Re-working	To be	
Item	No.	Name		Location	Dia.	Operator	Remarks	Woulding	Non-	by Repair	Replaced	Remarks
					(mm)			working	working	/Overhaul	New One	
	V-22	Clear water pump delivery N	lo.2	Ditto	350	Motor Drive	Non Rising Stem	OK				
	V-23	Ditto N	lo.3	Ditto	350	Ditto	Ditto	OK				
	V-24	Ditto N	lo.4	Ditto	350	Ditto	Ditto	OK				
	V-25	Ditto N	lo.5	Ditto	350	Ditto	Ditto	OK				
	V-26	Ditto N	10.6	Ditto	350	Ditto	Ditto	OK				
	V-27	Clear water pump delivery N	lo.1	Pumping station	200	Motor Drive	Non Rising Stem	OK				
	V-28	Ditto N	lo.2	Ditto	200	Ditto	Ditto	OK				
	V-29	Air control valve N	lo.1	Filter	250	Air Cylinder Drive	-	OK				
	V-30	Ditto N	lo.2	Ditto	250	Ditto	—	OK				
	V-31	Ditto N	lo.2	Ditto	250	Ditto	-	OK				
	V-32	Ditto N	lo.2	Ditto	250	Ditto	-	OK				
	V-33	Ditto N	lo.2	Ditto	250	Ditto	-	OK				
	V-34	Ditto N	lo.2	Ditto	250	Ditto	-	OK				
	V-35	Ditto N	lo.2	Ditto	250	Ditto	—	OK				
	V-36	Ditto N	lo.2	Ditto	250	Ditto	-	OK				
	V-37	Wash water control valve		Sedimentation tank	250	W/Operating nut	Rising Stem	OK				
	V-38	Back wash valve N	lo.1	Filter	500	Air Cylinder Drive	-	OK				
	V-39	Ditto N	lo.2	Ditto	500	Ditto	—	OK				
	V-40	Ditto N	lo.3	Ditto	500	Ditto	-	OK				
	V-41	Ditto N	lo.4	Ditto	500	Ditto	—	OK				
	V-42	Ditto N	lo.5	Ditto	500	Ditto	—	OK				
ve	V-43	Ditto N	10.6	Ditto	500	Ditto	—	OK				
Va	V-44	Ditto N	lo.7	Ditto	500	Ditto	—	OK				
te	V-45	Ditto N	0.8	Ditto	500	Ditto	-	OK				
G	V-130	Solenoid valve N	lo.1	Pumps	25	Solenoid Drive	For Vaccum	OK				
	V-131	Ditto N	lo.2	Ditto	25	Ditto	Ditto	OK				
	V-132	Ditto N	lo.3	Ditto	25	Ditto	Ditto	OK				
	V-133	Ditto N	lo.4	Ditto	25	Ditto	Ditto	OK				
	V-134	Ditto N	10.5	Ditto	25	Ditto	Ditto	OK				
	V-135	Ditto N	10.6	Ditto	25	Ditto	Ditto	OK				
	V-136	Ditto N	lo.7	Ditto	25	Ditto	Ditto	OK				
	V-137	Ditto No	10.8	Ditto	25	Ditto	Ditto	OK				
	V-138	Ditto N	10.9	Ditto	25	Ditto	Ditto	OK				
	V-139	Ditto No	10.10	Ditto	25	Ditto	Ditto	OK				
	V-140	Solenoid valve N	lo.1	Pumps	25	Solenoid Drive	For Vaccum	OK				
	V-141	Ditto N	lo.2	Ditto	25	Ditto	Ditto	OK				
	V-142	Ditto N	lo.3	Ditto	25	Ditto	Ditto	OK				
	V-143	Ditto N	lo.4	Ditto	25	Ditto	Ditto	OK				
	V-144	Ditto N	10.5	Ditto	25	Ditto	Ditto	OK				
	V-145	Ditto N	10.6	Ditto	25	Ditto	Ditto	OK				
	V-146	Ditto N	lo.7	Ditto	25	Ditto	Ditto	OK				
	V-147	Ditto N	0.8	Ditto	25	Ditto	Ditto	OK				
	V-148	Ditto N	10.9	Ditto	25	Ditto	Ditto	OK				
	V-149	Ditto N	10.10	Ditto	25	Ditto	Ditto	OK				
	V-80	Wash water valve N	10.13	Sedimentation tank	100	W/Operating nut	Rising Stem	OK				
1	V-81	Ditto	lo.14	Ditto	100	Ditto	Ditto	OK				

			Dia				Presen	t Status	Re-working	To be		
Item	No.	Name	Location	Dia.	Oper	ator	Remarks	Working	Non-	by Repair	Replaced	Remarks
				(mm)	1			working	working	/Overhaul	New One	
	V-82	Wash water valve No.15	Sedimentation tank	100	W/Operatin	g nut	Rising Stem	OK				
	V-83	Ditto No.16	Ditto	100	Ditto		Ditto	OK				
	V-84	Ditto No.17	Ditto	100	Ditto		Ditto	OK				
	V-85	Ditto No.18	Ditto	100	Ditto		Ditto	OK				
	V-86	Ditto No.19	Ditto	100	Ditto		Ditto	OK				
	V-87	Ditto No.20	Ditto	100	Ditto		Ditto	OK				
	V-88	Ditto No.21	Ditto	100	Ditto		Ditto	OK				
	V-89	Ditto No.22	Ditto	100	Ditto		Ditto	OK				
	V-90	Ditto No.23	Ditto	100	Ditto		Ditto	OK				
	V-91	Ditto No.24	Ditto	100	Ditto		Ditto	OK				
	V-92	Drain valve No.1	Receiving well	80	W/Operatin	g nut	Rising Stem	OK				
	V-93	Ditto No.2	Ditto	80	Ditto		Ditto	OK				
	V-94	Ditto No.3	Ditto	80	Ditto		Ditto	OK				
	V-95	Ditto No.4	Ditto	80	Ditto		Ditto	OK				
	V-96	Ditto No.5	Ditto	400	Ditto		Ditto	OK				
ve	V-97	Ditto No.6	Ditto	150				OK				
Val	V-98	Ditto No.7	Ditto	150				OK				
te	V-99	Drain valve No.1	Flocculation basin	300				OK				
ß	V-100	Ditto No.2	Ditto	300				OK				
	V-101	Ditto No.3	Ditto	300				OK				
	V-102	Ditto No.4	Ditto	300				OK				
	V-103	Ditto No.5	Ditto	300				OK				
	V-104	Ditto No.6	Ditto	300				OK				
	V-105	Ditto No.7	Ditto	300				OK				
	V-106	Ditto No.8	Ditto	300				OK				
	V-107	Drain valve No.1	Filter	150				OK				
	V-108	Ditto No.2	Ditto	150				OK				
	V-109	Ditto No.3	Ditto	150				OK				
	V-110	Ditto No.4	Ditto	150				OK				
	V-111	Ditto No.5	Ditto	150				OK				
	V-112	Ditto No.6	Ditto	150				OK				
	V-113	Ditto No.7	Ditto	150				OK				
	V-114	Ditto No.8	Ditto	150				OK				
								Presen	t Status	Re-working	To be	
Item	No.	Name	Location	I I	Гуре	Capacity	Remarks	Working	Non-	by Repair	Replaced	Remarks
								g	working	/Overhaul	New One	
Ħ	F-1	Motor hoist No.1	Raw water intake tower	ESM		5 t	10/0.19kw	OK				
me	F-2	Ditto No.2	Ditto	ESM		5 t	10/0.19kw	OK				
Ē	F-3	Sluice gate	Raw water intake tower	Φ1000		-	W/Manual floor stand	OK				
ıb	F-4	Sluice gate	Ditto	Φ1000		-	W/Manual floor stand	OK				
IS F	F-5	Sluice gate	Ditto	Φ1000			W/Manual floor stand	OK				
eor	F-6	Sluice gate	Ditto	Φ1000		-	W/Manual floor stand	OK				
an	F-7	Sluice gate	Ditto	Φ1000		-	W/Manual floor stand	OK				
cel	F-8	Sluice gate No.1	Receiving wll	$\Phi 800$		-	W/Manual floor stand	OK				
Ais	F-9	Ditto No.2	Ditto	Φ800			W/Manual floor stand	OK				
~	F-10	Ditto No.3	Ditto	$\Phi 800$		-	W/Manual floor stand	OK				

							Presen	t Status	Re-working	To be	
Item	No.	Name	Location	Туре	Capacity	Remarks	Working	Non-	by Repair	Replaced	Remarks
							working	working	/Overhaul	New One	
	F-11	Sluice gate No.4	Receiving wll	Φ800	-	W/Manual floor stand	OK				
	F-12	Drain sluice gate	Baffled-flow flocculation basin	360×230			OK				
	F-13	Top valve No.1	Sedimentation tank	Φ350		W/Manual floor stand	OK				
	F-14	Ditto No.2	Ditto	Φ350		W/Manual floor stand	OK				
	F-15	Ditto No.3	Ditto	Φ350		W/Manual floor stand	OK				
	F-16	Ditto No.4	Ditto	Φ350		W/Manual floor stand	OK				
	F-17	Ditto No.5	Ditto	Φ350		W/Manual floor stand	OK				
	F-18	Ditto No.6	Ditto	Φ350		W/Manual floor stand	OK				
	F-19	Ditto No.7	Ditto	Φ350		W/Manual floor stand	OK				
	F-20	Ditto No.8	Ditto	Φ350 700700		W/Manual floor stand	OK				
	F-21	Gate No.1	Filter	/00×/00		W/Manual floor stand	OK				
	F-22	Ditto No.2	Ditto	700×700		W/Manual floor stand	OK				
	F-23	Ditto No.3	Ditto	700×700		W/Manual floor stand	OK				
	Г-24	Vilue and No.4	Ditto	<u>/00×/00</u> 8400/500	105 3/1	w/ivianuai noor stand	OK				
	F-25	volvocet No.1	Filter regulator room	8400/300	125m ⁻ /d	Pheumatic drive	UK				
	F-26	Ditto No.2	Ditto	8400/500	125m ³ /d	Pheumatic drive	OK				
	F-27	Ditto No.3	Ditto	8400/500	$125m^{3}/d$	Pheumatic drive	OK				
	F-28	Ditto No.4	Ditto	8400/500	125m ³ /d	Pheumatic drive	OK				
ent	F-29	Ditto No.5	Ditto	8400/500	125m ³ /d	Pheumatic drive	OK				
bm	F-30	Ditto No.6	Ditto	8400/500	125m ³ /d	Pheumatic drive	OK				
in b	F-31	Ditto No.7	Ditto	8400/500	$125m^{3}/d$	Pheumatic drive	OK				
IS E	F-32	Ditto No.8	Ditto	8400/500	125m ³ /d	Pheumatic drive	OK				
601	F-33	Aie compressor	Machmery room	3.7P-9.5T	4000/min		OK				
lan	F-34	Ditto	Ditto	3.7P-9.5T	4000/min		OK				
cel	F-35	Air filter	Air blower	DV-70	90kw		OK				
Mis	F-36	Silencer	Air blower	DV-70	90kw		OK				
_	F-37	Air filter, silencer	Air blower	DV-70	90kw		OK				
	F-38	Oriffice meter	Raw water control room	1100/800mm		SUS304	OK				
	F-39	Sluice gate No.1	Sedimentation tank	1000/1000		W/Manual floor stand	OK				
	F-40	Ditto No.2	Ditto	1000/1000		W/Manual floor stand	OK				
	F-41	Ditto No.3	Ditto	1000/1000		W/Manual floor stand	OK				
	F-42	Ditto No.4	Ditto	1000/1000		W/Manual floor stand	OK				
	F-43	Ditto No.5	Ditto	1000/1000		W/Manual floor stand	OK				
	F-44	Ditto No.6	Ditto	1000/1000		W/Manual floor stand	OK				
	F-45	Ditto No.7	Ditto	1000/1000		W/Manual floor stand	OK				
	F-46	Ditto No.8	Ditto	1000/1000		W/Manual floor stand	OK				
	F-4/	Ditto No.9	Ditto	1000/1000		W/Manual floor stand	OK				
	F-48	Ditto No.10	Ditto	1000/1000		W/Manual floor stand	OK OV				
	F 50	Ditto No.11	Ditto	1000/1000		W/Manual floor stand	OK				
	F-50	Flow meter N0.12	Raw water nine line	Φ1100		Ultra sonic type	OK				
1	F-51	Shice gate	Filter No 1	265×820		Motor Drive	OK				
	F-53	Ditto	Filter No 2	265×820		Motor Drive	OK				
1	F-54	Ditto	Filter No 3	265×820	1	Motor Drive	OK				
	F-55	Ditto	Filter No.4	265×820		Motor Drive	OK				

								Present Status Working Non-		Re-working	To be	
Item	No.	Name		Location	Туре	Capacity	Remarks	W	Non-	by Repair	Replaced	Remarks
						· ·		working	working	/Overhaul	New One	
	F-56	Sluice gate		Filter No.5	265×820		Motor Drive	OK				
	F-57	Ditto		Filter No.6	265×820		Motor Drive	OK				
	F-58	Ditto		Filter No.7	265×820		Motor Drive	OK				
	F-59	Ditto		Filter No.8	265×820		Motor Drive	OK				
	F-60	Ditto		Filter No.9	265×820		Motor Drive	OK				
	F-61	Ditto		Filter No.10	265×820		Motor Drive	OK				
	F-62	Ditto		Filter No.11	265×820		Motor Drive	OK				
	F-63	Ditto		Filter No.12	265×820		Motor Drive	OK				
	F-64	Ditto		Filter No.13	265×820		Motor Drive	OK				
	F-65	Ditto		Filter No.14	265×820		Motor Drive	OK				
	F-66	Ditto		Filter No.15	265×820		Motor Drive	OK				
	F-67	Ditto		Filter No.16	265×820		Motor Drive	OK				
	F-68	Flow meter		Flow meter chamber	Ф300		For Tha Deua		NON	REPAIR		Malfunction of transmitter from Sep. 26, '02 to present
	F 60	Ditto		Ditto	መ500		For City	OK				Malfunction of transmitter on Sep. 26, '02. Substitute
Ħ	T-09	Ditto		Ditto	\$500		For City	OK				the Thadeua for the City.
mei	F-70	Screen		Raw water intake tower	M 10 3			OK				
iġ	F-71	Chain hoist		Pumping Station	Manual Operation			OK				
nb	F-72	Service tank for No.5 Pump		Raw water intake tower	Make-up tank			OK				
s	F-73	Service tank for No.6 Pump		Ditto	Make-up tank			OK				
101	F-74	Sluice gate		Filter	1350×1350			OK				
llaı	F-75	Top valve	No.1	Filter	Φ100 * 100			OK				
sce	F-76	Ditto	No.2	Ditto	Φ100			OK				
Mi	F-77	Ditto	No.3	Ditto	Φ100 * 100			OK				
	F-78	Ditto	No.4	Ditto	Φ100			OK				
	F-79	Level meter		Clear water reservoir	Immersion			OK				
	F-80	Ditto		Ditto	Immersion			OK				
	F-81	Flow meter		Filtered water canal	Flort type			OK				
	F-82	Level meter		Raw water intake tower	Ultra sonic type	15m		OK				
	F-83	Crogging detector	No.1	Filter	Differential Pressure	0		OK				
	F-84	Ditto	No.2	Ditto	Differential Pressure	0		OK				
	F-85	Ditto	No.3	Ditto	Differential Pressure	0		OK				
	F-86	Ditto	No.4	Ditto	Differential Pressure	0		OK				
	F-87	Ditto	No.5	Ditto	Differential Pressure	0		OK				
	F-88	Ditto	No.6	Ditto	Differential Pressure	0		OK				
	F-89	Ditto	No.7	Ditto	Differential Pressure	0		OK				
	F-90	Ditto	No.8	Ditto	Differential Pressure	0		OK				
	F-91	Clear water pressure meter		Flow meter chamber	Pressure			OK				

					D:-			Presen	t Status	Re-working	To be	
Iten	n No.	Name		Location	Dia.	Operator	Remarks	Working	Non-	by Repair	Replaced	Remarks
					(mm)	-		working	working	/Overhaul	New One	
	V-71	Raw water control valve		Raw water flow meter chamber	1,100	Electric		OK				Replaced the new motor due to motor fire on Sep. 5, '99
	V-72	Clear water control valve	No.1	Clear water reservoir	1,100	Manual		OK				
e	V-73	Ditto	No.1	Ditto	1,100	Manual		OK				
alv	V-74	Ditto	No.2	Ditto	1,100	Manual		OK				
5	V-75	Ditto	No.2	Ditto	1,100	Manual		OK				
L.	V-76	Clear water control valve		Clear water reservoir	600	Manual		OK				
Ite	V-77	Clear water control valve		Suction pit	800	Manual	Φ600mm	OK				
B	V-78	Clear water control valve		Flow meter chamber	500	Electric		OK				
	V-79	Raw water control valve		Receiving well	1,100	Manual		OK				
					D'			Presen	t Status	Re-working	To be	
Iten	n No.	Name		Location	Dia.		Remarks	Woulding	Non-	by Repair	Replaced	Remarks
					(mm)			working	working	/Overhaul	New One	
	V-51	Raw wagter delivery valve	No.1	Raw water intake tower	350			OK				
	V-52	Ditto	No.2	Ditto	350			OK				
	V-53	Ditto	No.3	Ditto	350			OK				
	V-54	Ditto	No.4	Ditto	350			OK				
	V-55	Ditto	No.5	Ditto	350			OK				
	V-56	Ditto	No.6	Ditto	350			OK				
	V-57	Wash water delivery valve	No.1	Pumping Station	400			OK				
e	V-58	Ditto	No.2	Ditto	400			OK				
alv	V-59	Clear water delivery valve	No.1	Pumping Station	350			OK				
\sim	V-60	Ditto	No.2	Ditto	350			OK				
lec	V-61	Ditto	No.3	Ditto	350			OK				
ð	V-62	Ditto	No.4	Ditto	350			OK				
	V-63	Ditto	No.5	Ditto	350			OK				
	V-64	Ditto	No.6	Ditto	350			OK				
	V-65	Clear water delivery valve	No.1	Pumping Station	200			OK				
	V-66	Ditto	No.2	Ditto	200			OK				
	V-67	Blower delivery valve	No.1	Pumping Station	250			OK				
	V-68	Ditto	No.2	Ditto	250			OK				
								Presen	t Status	Re-working	To be	
Iten	n No.	Name		Location	T	уре	Remarks	Working	Non-	by Repair	Replaced	Remarks
								working	working	/Overhaul	New One	
	M-1	Alum mixer	No.1	Administration building	HF	5-7405	1.5kw 380V	OK				
	M-2	Ditto	No.2	Ditto	HF	7-7405	1.5kw 380V	OK				
	M-3	Ditto	No.3	Ditto	HF	-7405	1.5kw 380V	OK				
	M-4	Ditto	No.4	Ditto	HF	-7405	1.5kw 380V	OK				
er.	M-5	Hypo mixer	No.1	Administration building	HF	-7403	0.4kw 380V	OK				
Iix	M-6	Ditto	No.2	Ditto	HF	5-7403	0.4kw 380V	OK				
2	M-7	Ditto	No.3	Ditto	HF	-7403	0.4kw 380V	OK				
1	M-8	Lime mixer	No.1	Administration building	HF	-7406	2.2kw 380V					Disused due to needless adjustment of pH
1	M-9	Ditto	No.2	Ditto	HF	-7406	2.2kw 380V					Disused due to needless adjustment of pH
1	M-10	Saturator mixer		Administration building	HF	5-7402	0.2kw 380V					Disused due to needless adjustment of pH
1				1		1	1	1	1		1	

Γ								Presen	t Status	Re-working	To be	
Item	No.	Name	Location	Т	Type Ca		Remarks	Working	Non-	by Repair	Replaced	Remarks
								working	working	/Overhaul	New One	
	E-1	Overhead travelling crane	Administration building	E	SM	1 ton		OK				
	E-2	Electric chain hoist	Administration building	E	SM	1 ton		OK				
	E-3	Ejecter No.1	Administration building	5PS-	WK-TT			OK				
ent	E-4	Ditto No.2	Ditto	5PS-	WK-TT			OK				
Ē	E-5	Ditto No.3	Ditto	5PS-	WK-TT			OK				
Ē	E-6	Ditto No.4	Ditto	5PS-	WK-TT			OK				
Eq	T-1	Alum doser No.1	Administration building					OK				
sno	T-2	Ditto No.2	Ditto					OK				
nec	T-3	Hypo doser No.1	Administration building					OK				
illa	T-4	Ditto No.2	Ditto					OK				
sce	T-5	Ditto No.3	Ditto					OK				
Mi	T-6	Orifice meter No.1	Administration building	FL	W-K			OK				
	T-7	Ditto No.2	Ditto	FL	.W-K			OK				
	T-8	Ditto No.3	Ditto	FL	.W-K				NON	REPAIR		
				Canacity	Pressure	Motor	Sneed	Presen	t Status	Re-working	To be	
Item	No.	Name	Location	Capacity	Tressure	MOTOL	speca	Working	Non-	by Repair	Replaced	Remarks
				(m ³ /min)	(kg/cm ²)	(kw)	(rpm)	working	working	/Overhaul	New One	
	B-1	Air blower No.1	Pumping Station	94.6	0.3	90	1500	OK				
er	B-2	Ditto No.2	Ditto	94.6	0.3	90	1500	OK				
οM												
В												