

## **3. REHABILITATION WORK IN KAOLIEO TREATMENT PLANT**

### Rehabilitation Work in Kaolieo Treatment Plant

| Name of Facility / Equipment       |  | Construction / Installation |           | Present Condition |               |             | Remarks   | Recommendation   |
|------------------------------------|--|-----------------------------|-----------|-------------------|---------------|-------------|---|--|
|                                    |  | Year 1963                   | Year 1983 | Working           | Deterioration | Malfunction |   |  |
| Intake Facility                    | Intake Tower Structure                 | ○                           |           | ○                 |               |             |   | Use continuously   |
|                                    | Intake Pump                            |                             | ○         |                   | ○             |             | 7.65 m <sup>3</sup> /min. 6 m <sup>3</sup> /min.  | Replace the new one  |
|                                    | Pump Accessories Valves & Check Valves |                             | ○         |                   | ○             |             | Heavy Leakage   | Replace the new one  |
|                                    | Inlet Gate                             |                             | ○         |                   | ○             |             |   | Confirm the function of gates, subsequently replace the new one  |
|                                    | Control Butterfly Valve                |                             | ○         |                   |               | ○           |   | Replace the new one  |
|                                    | Maintenance Bridge                     | ○                           |           |                   | ○             |             |   | Repair   |
|                                    | Bank of Mekong River                   |                             | ○         |                   | ○             |             |   | Repair & Restore   |
| Raw Water Transmission Line        | Pipeline                               | ○                           |           | ○                 |               |             |   | Use continuously   |
|                                    | Raw Water Flow Meter                   | ○                           |           |                   |               | ○           |   | Replace the new one  |
| Receiving Well & Mixing Well       | Structure                              | ○                           |           | ○                 |               |             |   | Use continuously   |
|                                    | Flash Mixer                            |                             | ○         |                   | ○             |             |   | Replace the new one  |
|                                    | Piping & Valves                        | ○                           |           | ○                 |               |             |   | Use continuously   |
| Flocculation & Sedimentation Basin | Structure                              | ○                           |           |                   | ○             |             | Cracks causing leakage  | Use continuously by means of repairing clacks of structural wall   |
|                                    | Baffle Plates                          | ○                           |           |                   |               | ○           |   | Replace the new one  |
|                                    | Maintenance Valves                     | ○                           |           |                   | ○             |             |   | Replace the new one  |
| Filtration Facility                | Structure                              | ○                           |           | ○                 |               |             |   | Use Continuously, repairing the structure if necessary   |
|                                    | Filter Media and Underdrain            | ○                           |           |                   | ○             |             | Observed muddy sand after washing. Estimated by long term accumulation of turbidity in filter bed due to insufficient washing | Renovation of Filter Washing System in equipped with automatic control devices including all equipment and materials |
|                                    | Surface Wash System                    |                             | ○         |                   | ○             |             |   |  |
|                                    | Back Wash System                       |                             | ○         |                   | ○             |             |   |  |
|                                    | Back Wash Pump                         |                             |           |                   |               |             |   |  |
|                                    | Filter's Accessories Valves & Pipe     | ○                           |           |                   | ○             |             |   |  |
|                                    | Back Wash Control Butterfly Valve      |                             | ○         |                   |               | ○           |   |  |
|                                    | Surface Wash Control Butterfly Valve   |                             | ○         |                   |               | ○           |   |  |
| Filter Controller                  |  | ○                           | ○         |                   |               |             |   |  |
| Loss Head Meter                    |  | ○                           |           |                   | ○             |             |   |  |
| Clear Water Reservoir              | Structure                              | ○                           |           | ○                 |               |             |   | Repairing the structure and maintenance valves if necessary  |
|                                    | Maintenance Valves                     |                             | ○         | ○                 |               |             |   |  |
|                                    | Connecting Pipeline                    |                             |           |                   | ○             |             | Leakage   | Repairing the leakage point  |

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|------------------------------|--|-----------------------------|-----------|-------------------|---------------|-------------|---|---|
|                              |  | Year 1963                   | Year 1983 | Working           | Deterioration | Malfunction |   |   |
| Distribution Facility        | Pump Building                          |                             | ○         | ○                 |               |             |   | Use continuously  |
|                              | Distribution Pump                      |                             | ○         |                   | ○             |             | 6.3 m <sup>3</sup> /min. 5.3 m <sup>3</sup> /min. | Replace the new one   |
|                              | Vacuum Pump                            |                             | ○         | ○                 | ○             |             | Change New 1 Unit by NPV                          | Replace the new one   |
|                              | Pump Accessories Valves & Check Valves |                             | ○         | ○                 |               |             |   | Confirm the function of valves & check valves, subsequently replace the new one |
| Chemical Feeding Facility    | Alum Circulation Pump                  |                             | ○         |                   |               | ○           |   | Replace the new one   |
|                              | Alum Storage Tank                      |                             | ○         | ○                 |               |             |   | Use continuously by means of repairing if necessary                             |
|                              | Alum Constant Water Level Head Tank    |                             | ○         | ○                 |               |             |   |   |
|                              | Alum Mixer                             |                             | ○         | ○                 |               |             |   |   |
|                              | Alum Flow Meter                        |                             | ○         | ○                 |               |             |   |   |
|                              | Alum Flow Controller                   |                             | ○         | ○                 |               |             |   |   |
|                              | Hypo Circulation Pump                  |                             | ○         |                   |               | ○           |   | Replace the new one   |
|                              | Hypo Storage Tank                      |                             | ○         |                   |               | ○           |   | Replace the new one   |
|                              | Hypo Constant Water Level Head Tank    |                             | ○         |                   |               | ○           |   | Replace the new one   |
|                              | Hypo Flow Meter                        |                             | ○         |                   |               | ○           |   | Replace the new one   |
|                              | Hypo Flow Controller                   |                             | ○         |                   |               | ○           |   | Replace the new one   |
| Monorail System              |  | ○                           |           |                   | ○             |             | Replace the new one                               |   |
| Electrical Facility          | Power Receiving Facility               | ○                           |           | ○                 |               |             |   | Replace the new one   |
|                              | Power Supply Facility                  | ○                           | ○         | ○                 |               |             |   | Replace the new one   |
|                              | Clear Water Flow Meter                 |                             |           | ○                 |               |             | Installed by AFD                                  | Use continuously  |
| Laboratory                   | Building                               | ○                           |           |                   |               |             |   | Use continuously  |
|                              | Water Quality Analysis Equipment       |                             |           |                   |               |             |   | Renovation of water quality analysis equipment                                  |
| Administration Building      |  | ○                           |           |                   |               |             |   | Use continuously  |