

Appendix-6 B. Proposed Monthly Water Requirement B-1 No.22 Sahel Alakaba Kebri

Table Consumptive Use of Each Crop

Location: **Whole Upper Egypt** (Unit : m³/month/feddan)

| Season/Crops | Winter Season | | | | Summer Season | | | | | Winter Season | | | Total |
|----------------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|---------------|---------------|---------------|-----------------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Winter Season | | | | | | | | | | | | | |
| Wheat | 450.0 | 458.0 | 460.0 | 452.0 | | | | | | | 249.0 | 520.0 | 2589.0 |
| Broad Beans | 362.0 | 368.0 | 533.0 | 100.0 | | | | | | | 620.0 | 618.0 | 2601.0 |
| Barley | 316.0 | 418.0 | 320.0 | | | | | | | 468.0 | 493.0 | 2015.0 | |
| Fenugreek | 270.0 | 315.0 | 350.0 | | | | | | | | 332.0 | 1267.0 | |
| Lupine | 253.0 | 310.5 | 345.0 | | | | | | | | 333.5 | 1242.0 | |
| Chick-peas | 264.5 | 304.8 | 356.5 | | | | | | | | 345.0 | 1270.8 | |
| Lentils | 420.0 | 420.0 | 294.0 | | | | | | | 168.0 | 315.0 | 1617.0 | |
| Clover | 809.0 | 920.0 | 860.0 | 820.0 | 900.0 | 950.0 | 930.0 | 500.0 | 910.0 | 800.0 | 600.0 | 590.0 | 9589.0 |
| Berseem(Fodder) | 275.0 | 402.0 | | | | | | | | | 245.0 | 275.0 | 1197.0 |
| Flax | 410.0 | 425.0 | 285.0 | | | | | | | 150.0 | 280.0 | 1550.0 | |
| Onion | 550.0 | 551.0 | 568.0 | 515.0 | | | | | | | 373.0 | 426.0 | 2983.0 |
| Garlic | 390.0 | 388.0 | 413.0 | 364.0 | | | | | | 655.0 | 874.0 | 995.0 | 4079.0 |
| Vegetables | 650.0 | 726.0 | 108.0 | | | | | | 358.0 | 390.0 | 493.0 | 2725.0 | |
| Other Plants | 420.0 | 399.0 | 273.0 | | | | | | | | 126.0 | 1218.0 | |
| Beet | 272.0 | 304.0 | 564.0 | 735.0 | 857.0 | 422.0 | | | | | | 131.0 | 3285.0 |
| Summer Season | | | | | | | | | | | | | |
| Cotton | 435.9 | 521.6 | 620.8 | 836.6 | 976.5 | 494.8 | | | | | | | 3886.2 |
| Rice | | | | | 24.2 | 149.7 | 2022.2 | 1676.0 | 2430.0 | 425.0 | | | 6727.0 |
| Maize | | | | | | 423.0 | 805.0 | 749.0 | 859.0 | 459.0 | | | 3295.0 |
| Sorghum | | | | | 245.0 | 690.0 | 1000.0 | 740.0 | 140.0 | | | | 2815.0 |
| Soia Beans | | | | | 661.7 | 1015.0 | 1415.0 | 202.9 | | | | | 3294.6 |
| Sugarcane | 153.6 | 239.9 | 254.2 | 349.7 | 792.1 | 892.0 | 1238.9 | 1344.5 | 1144.0 | 929.5 | 698.5 | 371.1 | 8408.1 |
| Banana | 160.0 | 245.0 | 260.0 | 360.0 | 800.0 | 900.0 | 1240.0 | 1350.0 | 1150.0 | 1000.0 | 700.0 | 380.0 | 8545.0 |
| Sesame | | | | | 350.0 | 603.0 | 636.5 | 602.0 | 424.75 | | | | 2616.3 |
| Berseem(Fodder) | | | | | 825.0 | 1111.0 | 1393.0 | 696.0 | | | | | |
| Groundnuts | | | | | 577.0 | 670.0 | 1385.0 | 1618.0 | | | | | 4250.0 |
| Onion | | | | | | | | | | | | | 0.0 |
| Vegetables | 550.0 | 556.0 | 1090.0 | 1186.0 | 1345.0 | 1122.0 | 203.0 | | | | | | 6052.0 |
| Corn | | | | | 686.0 | 904.0 | 1154.0 | 565.0 | | | | | 3309.0 |
| Other Plants | | | | | 214.2 | 596.4 | 646.8 | 638.4 | 529.2 | | | | 2625.0 |
| Nile Seasons | | | | | | | | | | | | | |
| Maize | | | | | 220.0 | 575.0 | 651.0 | 642.0 | 535.0 | | | | 2623.0 |
| Sorghum | | | | | | | | | | | | | 0.0 |
| Vegetables | | | | | | | | 1429.0 | 1836.0 | 1720.0 | | | 4985.0 |
| Fruits | 250.0 | 220.0 | 225.0 | 308.0 | 376.0 | 497.0 | 484.0 | 469.0 | 440.0 | 425.0 | 308.0 | 303.0 | 4305.0 |
| Berseem(Fodder) | | | | | | | | 1409.0 | 1813.0 | 1711.0 | | | |
| Total | 7661.1 | 8491.8 | 8179.4 | 6026.4 | 9849.7 | 10642.9 | 14274.4 | 14630.7 | 12211.0 | 8482.5 | 5843.5 | 7326.6 | 106963.9 |

Data Source: irrigation Department Aswan

Notes: 1) Above table shows consumptive use of crops, which are not including any losses as conveyance and application.

Table Cropping Area (%) for Each Crop (Plan)

Location: **No.22 Sahel Alakaba Kebli** (Unit: %)

| Season/Crops | Winter Season | | | | Summer Season | | | | | Winter Season | | | Total |
|----------------------|---------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|-------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Winter Season | | | | | | | | | | | | | |
| Wheat | 20.0 | 20.0 | 20.0 | 20.0 | 5.0 | | | | | 10.0 | 20.0 | 20.0 | |
| Broad Beans | 4.0 | 4.0 | 4.0 | 4.0 | | | | | | 4.0 | 4.0 | 4.0 | |
| Barley | | | | | | | | | | | | | |
| Fenugreek | | | | | | | | | | | | | |
| Lupine | | | | | | | | | | | | | |
| Chick-peas | | | | | | | | | | | | | |
| Lentils | | | | | | | | | | | | | |
| Clover | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | |
| Berseem(Fodder) | 8.0 | 8.0 | | | | | | | | 8.0 | 8.0 | 8.0 | |
| Flax | | | | | | | | | | | | | |
| Onion | 5.0 | 5.0 | 5.0 | 5.0 | | | | | | | 5.0 | 5.0 | 5.0 |
| Garlic | 5.0 | 5.0 | 5.0 | 5.0 | | | | | | 5.0 | 5.0 | 5.0 | |
| Vegetables | 30.0 | 30.0 | 30.0 | 8.0 | | | | | | 15.0 | 30.0 | 30.0 | |
| Other Plants | | | | | | | | | | | | | |
| Beet | | | | | | | | | | | | | |
| Summer Season | | | | | | | | | | | | | |
| Cotton | | | | | | | | | | | | | |
| Rice | | | | | | | | | | | | | |
| Maize | | | | | | | | | | | | | |
| Sorghum | | | | | | | | | | | | | |
| Soia Beans | | | | | | | | | | | | | |
| Sugarcane | | | | | | | | | | | | | |
| Banana | | | | | | | | | | | | | |
| Sesame | | | | | | | | | | | | | |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Groundnuts | | | | | | | | | | | | | |
| Onion | | | | | | | | | | | | | |
| Vegetables | | | 8.0 | 30.0 | 30.0 | 30.0 | 30.0 | | | | | | |
| Corn | | | | | 37.0 | 42.0 | 42.0 | 42.0 | 42.0 | | | | |
| Other Plants | | | | | | | | | | | | | |
| Nile Seasons | | | | | | | | | | | | | |
| Maize | | | | | | | | | | | | | |
| Sorghum | | | | | | | | | | | | | |
| Vegetables | | | | | | | | 30.0 | 30.0 | 30.0 | | | |
| Fruits | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | |

Appendix-6 B. Proposed Monthly Water Requirement

Table Consumptive Use of Each Crop (Plan)
Location: No.22 Sahel Alakaba Kebli (Unit : liter/sec/feddan)

| Season/Crops | Winter Season | | | | Summer Season | | | | | Winter Season | | | Remarks |
|----------------------|---------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|---------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Winter Season | | | | | | | | | | | | | |
| Wheat | 0.127 | 0.143 | 0.130 | 0.132 | | | | | | | 0.072 | 0.146 | |
| Broad Beans | 0.020 | 0.023 | 0.030 | 0.006 | | | | | | | 0.036 | 0.035 | |
| Barley | | | | | | | | | | | | | |
| Fenugreek | | | | | | | | | | | | | |
| Lupine | | | | | | | | | | | | | |
| Chick-peas | | | | | | | | | | | | | |
| Lentils | | | | | | | | | | | | | |
| Clover | 0.091 | 0.115 | 0.097 | 0.095 | 0.101 | 0.111 | 0.105 | 0.056 | 0.106 | 0.090 | 0.070 | 0.066 | |
| Berseem(Fodder) | 0.031 | 0.050 | | | | | | | | | 0.029 | 0.031 | |
| Flax | | | | | | | | | | | | | |
| Onion | 0.039 | 0.043 | 0.040 | 0.037 | | | | | | | 0.027 | 0.030 | |
| Garlic | 0.027 | 0.030 | 0.029 | 0.026 | | | | | | 0.046 | 0.064 | 0.070 | |
| Vegetables | 0.275 | 0.340 | 0.046 | | | | | | | 0.076 | 0.170 | 0.208 | |
| Other Plants | | | | | | | | | | | | | |
| Beet | | | | | | | | | | | | | |
| Summer Season | | | | | | | | | | | | | |
| Cotton | | | | | | | | | | | | | |
| Rice | | | | | | | | | | | | | |
| Maize | | | | | | | | | | | | | |
| Sorghum | | | | | | | | | | | | | |
| Soia Beans | | | | | | | | | | | | | |
| Sugarcane | | | | | | | | | | | | | |
| Banana | | | | | | | | | | | | | |
| Sesame | | | | | | | | | | | | | |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Groundnuts | | | | | | | | | | | | | |
| Onion | | | | | | | | | | | | | |
| Vegetables | | | 0.123 | 0.518 | 0.568 | 0.490 | 0.086 | | | | | | |
| Corn | | | | | 0.357 | 0.552 | 0.682 | 0.334 | | | | | |
| Other Plants | | | | | | | | | | | | | |
| Nile Seasons | | | | | | | | | | | | | |
| Maize | | | | | | | | | | | | | |
| Sorghum | | | | | | | | | | | | | |
| Vegetables | | | | | | | | | 0.604 | 0.801 | 0.727 | | |
| Fruits | 0.070 | 0.069 | 0.063 | 0.090 | 0.106 | 0.145 | 0.136 | 0.132 | 0.128 | 0.120 | 0.090 | 0.085 | |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Total | 0.680 | 0.812 | 0.557 | 0.904 | 1.133 | 1.187 | 0.905 | 1.126 | 1.035 | 1.058 | 0.557 | 0.672 | |

Table Monthly Water Requirement (Plan)

| Description | Winter Season | | | | Summer Season | | | | | Winter Season | | | Remarks |
|--|---------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Unit Consumption (l/s/feddan) | 0.680 | 0.812 | 0.557 | 0.904 | 1.133 | 1.187 | 0.905 | 1.126 | 1.035 | 1.058 | 0.557 | 0.672 | |
| Water Requirement (m³/s) | | | | | | | | | | | | | |
| Whole Area (300 feddan) | | | | | | | | | | | | | |
| Existing 250 | 0.17 | 0.20 | 0.14 | 0.23 | 0.28 | 0.30 | 0.23 | 0.28 | 0.26 | 0.26 | 0.14 | 0.17 | |
| Extension 50 | 0.03 | 0.04 | 0.03 | 0.05 | 0.06 | 0.06 | 0.05 | 0.06 | 0.05 | 0.05 | 0.03 | 0.03 | |
| Total Requirement | 0.20 | 0.24 | 0.17 | 0.27 | 0.34 | 0.36 | 0.27 | 0.34 | 0.31 | 0.32 | 0.17 | 0.20 | |
| Total Requirement | 0.20 | 0.24 | 0.17 | 0.27 | 0.34 | 0.36 | 0.27 | 0.34 | 0.31 | 0.32 | 0.17 | 0.20 | Annual Ttl. |
| Pro. Monthly Req. (MCM) | 0.319 | 0.344 | 0.261 | 0.410 | 0.531 | 0.538 | 0.424 | 0.528 | 0.470 | 0.496 | 0.253 | 0.315 | 4.889 |

Appendix-6 B. Proposed Monthly Water Requirement

B-2 No.23 Al Rakikin Sahel

Table Consumptive Use of Each Crop

Location: Whole Upper Egypt

(Unit : m³/month/feddan)

| Season/Crops | Winter Season | | | | Summer Season | | | | | Winter Season | | | Total |
|----------------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|---------------|---------------|---------------|-----------------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Winter Season | | | | | | | | | | | | | |
| Wheat | 450.0 | 458.0 | 460.0 | 452.0 | | | | | | | 249.0 | 520.0 | 2589.0 |
| Broad Beans | 362.0 | 368.0 | 533.0 | 100.0 | | | | | | | 620.0 | 618.0 | 2601.0 |
| Barley | 316.0 | 418.0 | 320.0 | | | | | | | | 468.0 | 493.0 | 2015.0 |
| Fenugreek | 270.0 | 315.0 | 350.0 | | | | | | | | | 332.0 | 1267.0 |
| Lupine | 253.0 | 310.5 | 345.0 | | | | | | | | | 333.5 | 1242.0 |
| Chick-peas | 264.5 | 304.8 | 356.5 | | | | | | | | | 345.0 | 1270.8 |
| Lentils | 420.0 | 420.0 | 294.0 | | | | | | | | 168.0 | 315.0 | 1617.0 |
| Clover | 809.0 | 920.0 | 860.0 | 820.0 | 900.0 | 950.0 | 930.0 | 500.0 | 910.0 | 800.0 | 600.0 | 590.0 | 9589.0 |
| Berseem(Fodder) | 275.0 | 402.0 | | | | | | | | | 245.0 | 275.0 | 1197.0 |
| Flax | 410.0 | 425.0 | 285.0 | | | | | | | | 150.0 | 280.0 | 1550.0 |
| Onion | 550.0 | 551.0 | 568.0 | 515.0 | | | | | | | 373.0 | 426.0 | 2983.0 |
| Garlic | 390.0 | 388.0 | 413.0 | 364.0 | | | | | | 655.0 | 874.0 | 995.0 | 4079.0 |
| Vegetables | 650.0 | 726.0 | 108.0 | | | | | | | 358.0 | 390.0 | 493.0 | 2725.0 |
| Other Plants | 420.0 | 399.0 | 273.0 | | | | | | | | | 126.0 | 1218.0 |
| Beet | 272.0 | 304.0 | 564.0 | 735.0 | 857.0 | 422.0 | | | | | | 131.0 | 3285.0 |
| Summer Season | | | | | | | | | | | | | |
| Cotton | 435.9 | 521.6 | 620.8 | 836.6 | 976.5 | 494.8 | | | | | | | 3886.2 |
| Rice | | | | | 24.2 | 149.7 | 2022.2 | 1676.0 | 2430.0 | 425.0 | | | 6727.0 |
| Maize | | | | | | 423.0 | 805.0 | 749.0 | 859.0 | 459.0 | | | 3295.0 |
| Sorghum | | | | | 245.0 | 690.0 | 1000.0 | 740.0 | 140.0 | | | | 2815.0 |
| Soia Beans | | | | | 661.7 | 1015.0 | 1415.0 | 202.9 | | | | | 3294.6 |
| Sugarcane | 153.6 | 239.9 | 254.2 | 349.7 | 792.1 | 892.0 | 1238.9 | 1344.5 | 1144.0 | 929.5 | 698.5 | 371.1 | 8408.1 |
| Banana | 160.0 | 245.0 | 260.0 | 360.0 | 800.0 | 900.0 | 1240.0 | 1350.0 | 1150.0 | 1000.0 | 700.0 | 380.0 | 8545.0 |
| Sesame | | | | | 350.0 | 603.0 | 636.5 | 602.0 | 424.75 | | | | 2616.3 |
| Berseem(Fodder) | | | | | 825.0 | 1111.0 | 1393.0 | 696.0 | | | | | |
| Groundnuts | | | | | 577.0 | 670.0 | 1385.0 | 1618.0 | | | | | 4250.0 |
| Onion | | | | | | | | | | | | | 0.0 |
| Vegetables | 550.0 | 556.0 | 1090.0 | 1186.0 | 1345.0 | 1122.0 | 203.0 | | | | | | 6052.0 |
| Corn | | | | | 686.0 | 904.0 | 1154.0 | 565.0 | | | | | 3309.0 |
| Other Plants | | | | | 214.2 | 596.4 | 646.8 | 638.4 | 529.2 | | | | 2625.0 |
| Nile Seasons | | | | | | | | | | | | | |
| Maize | | | | | 220.0 | 575.0 | 651.0 | 642.0 | 535.0 | | | | 2623.0 |
| Sorghum | | | | | | | | | | | | | 0.0 |
| Vegetables | | | | | | | | 1429.0 | 1836.0 | 1720.0 | | | 4985.0 |
| Fruits | 250.0 | 220.0 | 225.0 | 308.0 | 376.0 | 497.0 | 484.0 | 469.0 | 440.0 | 425.0 | 308.0 | 303.0 | 4305.0 |
| Berseem(Fodder) | | | | | | | | 1409.0 | 1813.0 | 1711.0 | | | |
| Total | 7661.1 | 8491.8 | 8179.4 | 6026.4 | 9849.7 | 10642.9 | 14274.4 | 14630.7 | 12211.0 | 8482.5 | 5843.5 | 7326.6 | 106963.9 |

Data Source: irrigation Department Aswan

Notes: 1) Above table shows consumptive use of crops, which are not including any losses as conveyance and application.

Table Cropping Area (%) for Each Crop (Plan)

Location: No.23 Al Rakikin Sahel

(Unit: %)

| Season/Crops | Winter Season | | | | Summer Season | | | | | Winter Season | | | Total |
|----------------------|---------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|-------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Winter Season | | | | | | | | | | | | | |
| Wheat | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| Broad Beans | 10.0 | 10.0 | 10.0 | 10.0 | | | | | | 10.0 | 10.0 | 10.0 | |
| Barley | | | | | | | | | | | | | |
| Fenugreek | | | | | | | | | | | | | |
| Lupine | | | | | | | | | | | | | |
| Chick-peas | | | | | | | | | | | | | |
| Lentils | | | | | | | | | | | | | |
| Clover | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | |
| Berseem(Fodder) | 10.0 | 10.0 | | | | | | | | 10.0 | 10.0 | 10.0 | |
| Flax | | | | | | | | | | | | | |
| Onion | 10.0 | 10.0 | 10.0 | 10.0 | | | | | | | 10.0 | 10.0 | |
| Garlic | 5.0 | 5.0 | 5.0 | 5.0 | | | | | | 5.0 | 5.0 | 5.0 | |
| Vegetables | 25.0 | 25.0 | 25.0 | 10.0 | | | | | | 10.0 | 25.0 | 25.0 | |
| Other Plants | | | | | | | | | | | | | |
| Beet | | | | | | | | | | | | | |
| Summer Season | | | | | | | | | | | | | |
| Cotton | | | | | | | | | | | | | |
| Rice | | | | | | | | | | | | | |
| Maize | | | | | | | | | | | | | |
| Sorghum | | | | | | | | | | | | | |
| Soia Beans | | | | | | | | | | | | | |
| Sugarcane | | | | | | | | | | | | | |
| Banana | | | | | | | | | | | | | |
| Sesame | | | | | | | | | | | | | |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Groundnuts | | | | | | | | | | | | | |
| Onion | | | | | | | | | | | | | |
| Vegetables | | | 10.0 | 25.0 | 25.0 | 25.0 | 25.0 | | | | | | |
| Corn | | | | | 35.0 | 40.0 | 40.0 | 40.0 | 40.0 | | | | |
| Other Plants | | | | | | | | | | | | | |
| Nile Seasons | | | | | | | | | | | | | |
| Maize | | | | | | | | | | | | | |
| Sorghum | | | | | | | | | | | | | |
| Vegetables | | | | | | | | 25.0 | 25.0 | 25.0 | | | |
| Fruits | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | |

Appendix-6 B. Proposed Monthly Water Requirement

Table Consumptive Use of Each Crop (Plan)
Location: No.23 Al Rakikin Sahel (Unit : liter/sec/feddan)

| Season/Crops | Winter Season | | | | Summer Season | | | | | Winter Season | | | Remarks |
|----------------------|---------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|---------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Winter Season | | | | | | | | | | | | | |
| Wheat | 0.032 | 0.036 | 0.032 | 0.033 | | | | | | | 0.018 | 0.037 | |
| Broad Beans | 0.051 | 0.057 | 0.075 | 0.015 | | | | | | | 0.090 | 0.087 | |
| Barley | | | | | | | | | | | | | |
| Fenugreek | | | | | | | | | | | | | |
| Lupine | | | | | | | | | | | | | |
| Chick-peas | | | | | | | | | | | | | |
| Lentils | | | | | | | | | | | | | |
| Clover | 0.171 | 0.215 | 0.182 | 0.179 | 0.190 | 0.207 | 0.196 | 0.106 | 0.199 | 0.169 | 0.131 | 0.125 | |
| Berseem(Fodder) | 0.039 | 0.063 | | | | | | | | | 0.036 | 0.039 | |
| Flax | | | | | | | | | | | | | |
| Onion | 0.077 | 0.086 | 0.080 | 0.075 | | | | | | | 0.054 | 0.060 | |
| Garlic | 0.027 | 0.030 | 0.029 | 0.026 | | | | | | 0.046 | 0.064 | 0.070 | |
| Vegetables | 0.229 | 0.283 | 0.038 | | | | | | | 0.050 | 0.142 | 0.174 | |
| Other Plants | | | | | | | | | | | | | |
| Beet | | | | | | | | | | | | | |
| Summer Season | | | | | | | | | | | | | |
| Cotton | | | | | | | | | | | | | |
| Rice | | | | | | | | | | | | | |
| Maize | | | | | | | | | | | | | |
| Sorghum | | | | | | | | | | | | | |
| Soia Beans | | | | | | | | | | | | | |
| Sugarcane | | | | | | | | | | | | | |
| Banana | | | | | | | | | | | | | |
| Sesame | | | | | | | | | | | | | |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Groundnuts | | | | | | | | | | | | | |
| Onion | | | | | | | | | | | | | |
| Vegetables | | | 0.153 | 0.431 | 0.473 | 0.408 | 0.071 | | | | | | |
| Corn | | | | | 0.338 | 0.526 | 0.650 | 0.318 | | | | | |
| Other Plants | | | | | | | | | | | | | |
| Nile Seasons | | | | | | | | | | | | | |
| Maize | | | | | | | | | | | | | |
| Sorghum | | | | | | | | | | | | | |
| Vegetables | | | | | | | | 0.503 | 0.668 | 0.605 | | | |
| Fruits | 0.070 | 0.069 | 0.063 | 0.090 | 0.106 | 0.145 | 0.136 | 0.132 | 0.128 | 0.120 | 0.090 | 0.085 | |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Total | 0.696 | 0.839 | 0.653 | 0.849 | 1.108 | 1.079 | 0.858 | 1.059 | 0.995 | 0.991 | 0.624 | 0.676 | |

Table Monthly Water Requirement (Plan)
Location: No.23 Al Rakikin Sahel

| Description | Winter Season | | | | Summer Season | | | | | Winter Season | | | Remarks |
|--|---------------|-------------|-------------|-------------|---------------|-------------|-------------|-------------|-------------|---------------|-------------|-------------|-------------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Unit Consumption (l/s/feddan) | 0.696 | 0.839 | 0.653 | 0.849 | 1.108 | 1.079 | 0.858 | 1.059 | 0.995 | 0.991 | 0.624 | 0.676 | |
| Water Requirement (m³/s) | | | | | | | | | | | | | |
| Whole Area (150 feddan) | | | | | | | | | | | | | |
| Existing 150 | 0.10 | 0.13 | 0.10 | 0.13 | 0.17 | 0.16 | 0.13 | 0.16 | 0.15 | 0.15 | 0.09 | 0.10 | |
| Extension 0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Total Requirement | 0.10 | 0.13 | 0.10 | 0.13 | 0.17 | 0.16 | 0.13 | 0.16 | 0.15 | 0.15 | 0.09 | 0.10 | |
| Total Requirement | 0.10 | 0.13 | 0.10 | 0.13 | 0.17 | 0.16 | 0.13 | 0.16 | 0.15 | 0.15 | 0.09 | 0.10 | Annual Ttl. |
| Pro. Monthly Req. (MCM) | 0.163 | 0.178 | 0.153 | 0.193 | 0.260 | 0.245 | 0.201 | 0.248 | 0.226 | 0.232 | 0.142 | 0.158 | 2.397 |

B-3 No.24 Blowhker

Table Consumptive Use of Each Crop

Location: Whole Upper Egypt

(Unit : m³/month/feddan)

| Season/Crops | Winter Season | | | | Summer Season | | | | | Winter Season | | | Total |
|----------------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|---------------|-----------------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Winter Season | | | | | | | | | | | | | |
| Wheat | 450.0 | 458.0 | 460.0 | 452.0 | | | | | | | 249.0 | 520.0 | 2589.0 |
| Broad Beans | 362.0 | 368.0 | 533.0 | 100.0 | | | | | | | 620.0 | 618.0 | 2601.0 |
| Barley | 316.0 | 418.0 | 320.0 | | | | | | | | 468.0 | 493.0 | 2015.0 |
| Fenugreek | 270.0 | 315.0 | 350.0 | | | | | | | | | 332.0 | 1267.0 |
| Lupine | 253.0 | 310.5 | 345.0 | | | | | | | | | 333.5 | 1242.0 |
| Chick-peas | 264.5 | 304.8 | 356.5 | | | | | | | | | 345.0 | 1270.8 |
| Lentils | 420.0 | 420.0 | 294.0 | | | | | | | | 168.0 | 315.0 | 1617.0 |
| Clover | 809.0 | 920.0 | 860.0 | 820.0 | 900.0 | 950.0 | 930.0 | 500.0 | 910.0 | 800.0 | 600.0 | 590.0 | 9589.0 |
| Berseem(Fodder) | 275.0 | 402.0 | | | | | | | | | 245.0 | 275.0 | 1197.0 |
| Flax | 410.0 | 425.0 | 285.0 | | | | | | | | 150.0 | 280.0 | 1550.0 |
| Onion | 550.0 | 551.0 | 568.0 | 515.0 | | | | | | | 373.0 | 426.0 | 2983.0 |
| Garlic | 390.0 | 388.0 | 413.0 | 364.0 | | | | | | 655.0 | 874.0 | 995.0 | 4079.0 |
| Vegetables | 650.0 | 726.0 | 108.0 | | | | | | | 358.0 | 390.0 | 493.0 | 2725.0 |
| Other Plants | 420.0 | 399.0 | 273.0 | | | | | | | | | 126.0 | 1218.0 |
| Beet | 272.0 | 304.0 | 564.0 | 735.0 | 857.0 | 422.0 | | | | | | 131.0 | 3285.0 |
| Summer Season | | | | | | | | | | | | | |
| Cotton | 435.9 | 521.6 | 620.8 | 836.6 | 976.5 | 494.8 | | | | | | | 3886.2 |
| Rice | | | | | 24.2 | 149.7 | 2022.2 | 1676.0 | 2430.0 | 425.0 | | | 6727.0 |
| Maize | | | | | | 423.0 | 805.0 | 749.0 | 859.0 | 459.0 | | | 3295.0 |
| Sorghum | | | | | 245.0 | 690.0 | 1000.0 | 740.0 | 140.0 | | | | 2815.0 |
| Soia Beans | | | | | 661.7 | 1015.0 | 1415.0 | 202.9 | | | | | 3294.6 |
| Sugarcane | 154 | 240 | 254 | 350 | 792 | 892 | 1,239 | 1,344 | 1,144 | 930 | 699 | 371 | 8408.1 |
| Banana | 160.0 | 245.0 | 260.0 | 360.0 | 800.0 | 900.0 | 1240.0 | 1350.0 | 1150.0 | 1000.0 | 700.0 | 380.0 | 8545.0 |
| Sesame | | | | | 350.0 | 603.0 | 636.5 | 602.0 | 424.75 | | | | 2616.3 |
| Berseem(Fodder) | | | | | 825.0 | 1111.0 | 1393.0 | 696.0 | | | | | |
| Groundnuts | | | | | 577.0 | 670.0 | 1385.0 | 1618.0 | | | | | 4250.0 |
| Onion | | | | | | | | | | | | | 0.0 |
| Vegetables | 550.0 | 556.0 | 1090.0 | 1186.0 | 1345.0 | 1122.0 | 203.0 | | | | | | 6052.0 |
| Corn | | | | | 686.0 | 904.0 | 1154.0 | 565.0 | | | | | 3309.0 |
| Other Plants | | | | | 214.2 | 596.4 | 646.8 | 638.4 | 529.2 | | | | 2625.0 |
| Nile Seasons | | | | | | | | | | | | | |
| Maize | | | | | 220.0 | 575.0 | 651.0 | 642.0 | 535.0 | | | | 2623.0 |
| Sorghum | | | | | 245.0 | 690.0 | 1000.0 | 740.0 | 140.0 | | | | 2815.0 |
| Vegetables | | | | | | | | 1429.0 | 1836.0 | 1720.0 | | | 4985.0 |
| Fruits | 250.0 | 220.0 | 225.0 | 308.0 | 376.0 | 497.0 | 484.0 | 469.0 | 440.0 | 425.0 | 308.0 | 303.0 | 4305.0 |
| Berseem(Fodder) | | | | | | | | 1409.0 | 1813.0 | 1711.0 | | | |
| Total | 7661.1 | 8491.8 | 8179.4 | 6026.4 | 10094.7 | 11332.9 | 15274.4 | 15370.7 | 12351.0 | 8482.5 | 5843.5 | 7326.6 | 109778.9 |

Data Source: irrigation Department Aswan

Notes: 1) Above table shows consumptive use of crops, which are not including any losses as conveyance and application.

Table Cropping Area (%) for Each Crop (Plan)

Location: No.24 Blowkher

(Unit: %)

| Season/Crops | Winter Season | | | | Summer Season | | | | | Winter Season | | | Total |
|----------------------|---------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Winter Season | | | | | | | | | | | | | |
| Wheat | 13.0 | 13.0 | 13.0 | 13.0 | 11.0 | | | | | 2.0 | 13.0 | 13.0 | |
| Broad Beans | | | | | | | | | | | | | |
| Barley | | | | | | | | | | | | | |
| Fenugreek | | | | | | | | | | | | | |
| Lupine | | | | | | | | | | | | | |
| Chick-peas | | | | | | | | | | | | | |
| Lentils | | | | | | | | | | | | | |
| Clover | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | |
| Berseem(Fodder) | 6.0 | 6.0 | 6.0 | 6.0 | | | | | | 6.0 | 6.0 | 6.0 | |
| Flax | | | | | | | | | | | | | |
| Onion | | | | | | | | | | | | | |
| Garlic | | | | | | | | | | | | | |
| Vegetables | 5.0 | 5.0 | 5.0 | | | | | | | | 5.0 | 5.0 | |
| Other Plants | | | | | | | | | | | | | |
| Beet | | | | | | | | | | | | | |
| Summer Season | | | | | | | | | | | | | |
| Cotton | | | | | | | | | | | | | |
| Rice | | | | | | | | | | | | | |
| Maize | | | | | | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | | |
| Sorghum | | | | | | | | | | | | | |
| Soia Beans | | | | | | | | | | | | | |
| Sugarcane | 65.0 | 65.0 | 65.0 | 65.0 | 65.0 | 65.0 | 65.0 | 65.0 | 65.0 | 65.0 | 65.0 | 65.0 | |
| Banana | | | | | | | | | | | | | |
| Sesame | | | | | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | | | | |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Groundnuts | | | | | | | | | | | | | |
| Onion | | | | | | | | | | | | | |
| Vegetables | | | | 5.0 | 5.0 | 5.0 | 5.0 | | | | | | |
| Corn | | | | | | | | | | | | | |
| Other Plants | | | | | | | | | | | | | |
| Nile Seasons | | | | | | | | | | | | | |
| Maize | | | | | | | | | | | | | |
| Sorghum | | | | | | | | | | | | | |
| Vegetables | | | | | | | | 5.0 | 5.0 | 5.0 | | | |
| Fruits | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Appendix-6 B. Required Monthly Water Requirement

Table Consumptive Use of Each Crop (Plan)
 Location: No.24 Blowkher (Unit : liter/sec/feddan)

| Season/Crops | Winter Season | | | | Summer Season | | | | | Winter Season | | | Remarks |
|----------------------|---------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|---------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Winter Season | | | | | | | | | | | | | |
| Wheat | 0.082 | 0.093 | 0.084 | 0.085 | | | | | | | 0.047 | 0.095 | |
| Broad Beans | | | | | | | | | | | | | |
| Barley | | | | | | | | | | | | | |
| Fenugreek | | | | | | | | | | | | | |
| Lupine | | | | | | | | | | | | | |
| Chick-peas | | | | | | | | | | | | | |
| Lentils | | | | | | | | | | | | | |
| Clover | 0.068 | 0.086 | 0.073 | 0.072 | 0.076 | 0.083 | 0.079 | 0.042 | 0.079 | 0.068 | 0.052 | 0.050 | |
| Berseem(Fodder) | 0.023 | 0.038 | | | | | | | | | 0.021 | 0.023 | |
| Flax | | | | | | | | | | | | | |
| Onion | | | | | | | | | | | | | |
| Garlic | | | | | | | | | | | | | |
| Vegetables | 0.046 | 0.057 | 0.008 | | | | | | | | 0.028 | 0.035 | |
| Other Plants | | | | | | | | | | | | | |
| Beet | | | | | | | | | | | | | |
| Summer Season | | | | | | | | | | | | | |
| Cotton | | | | | | | | | | | | | |
| Rice | | | | | | | | | | | | | |
| Maize | | | | | | 0.068 | 0.125 | 0.116 | 0.137 | 0.071 | | | |
| Sorghum | | | | | | | | | | | | | |
| Soya Beans | | | | | | | | | | | | | |
| Sugarcane | 0.141 | 0.243 | 0.233 | 0.331 | 0.725 | 0.844 | 1.134 | 1.231 | 1.082 | 0.851 | 0.661 | 0.340 | |
| Banana | | | | | | | | | | | | | |
| Sesame | | | | | 0.039 | 0.070 | 0.072 | 0.068 | 0.049 | | | | |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Groundnuts | | | | | | | | | | | | | |
| Onion | | | | | | | | | | | | | |
| Vegetables | | | | 0.086 | 0.095 | 0.082 | 0.014 | | | | | | |
| Cone | | | | | | | | | | | | | |
| Other Plants | | | | | | | | | | | | | |
| Nile Seasons | | | | | | | | | | | | | |
| Maize | | | | | | | | | | | | | |
| Sorghum | | | | | | | | | | | | | |
| Vegetables | | | | | | | | 0.101 | 0.134 | 0.121 | | | |
| Fruits | 0.018 | 0.017 | 0.016 | 0.022 | 0.026 | 0.036 | 0.034 | 0.033 | 0.032 | 0.030 | 0.022 | 0.021 | |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Total | 0.378 | 0.533 | 0.413 | 0.597 | 0.962 | 1.099 | 1.379 | 1.590 | 1.514 | 1.140 | 0.832 | 0.564 | |

Table Monthly Water Requirement (Plan)
 Location: No.24 Blowkher

| Description | Winter Season | | | | Summer Season | | | | | Winter Season | | | Remarks |
|--|---------------|-------------|-------------|-------------|---------------|-------------|-------------|-------------|-------------|---------------|-------------|-------------|-------------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Unit Consumption (l/s/feddan) | 0.378 | 0.533 | 0.413 | 0.597 | 0.962 | 1.099 | 1.379 | 1.590 | 1.514 | 1.140 | 0.832 | 0.564 | |
| Water Requirement (m³/s) | | | | | | | | | | | | | |
| Whole Area (2,400 feddan) | | | | | | | | | | | | | |
| Existing 2,000 | 0.76 | 1.07 | 0.83 | 1.19 | 1.92 | 2.20 | 2.76 | 3.18 | 3.03 | 2.28 | 1.66 | 1.13 | |
| Extension 400 | 0.15 | 0.21 | 0.17 | 0.24 | 0.38 | 0.44 | 0.55 | 0.64 | 0.61 | 0.46 | 0.33 | 0.23 | |
| Total Requirement | 0.91 | 1.28 | 0.99 | 1.43 | 2.31 | 2.64 | 3.31 | 3.82 | 3.63 | 2.74 | 2.00 | 1.35 | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| Total Requirement | 0.91 | 1.28 | 0.99 | 1.43 | 2.31 | 2.64 | 3.31 | 3.82 | 3.63 | 2.74 | 2.00 | 1.35 | Annual Ttl. |
| Pro. Monthly Req. (MCM) | 1.417 | 1.806 | 1.548 | 2.165 | 3.606 | 3.989 | 5.170 | 5.963 | 5.494 | 4.277 | 3.020 | 2.115 | 40.569 |

Appendix-6 B. Proposed Monthly Water Requirement

B-4 No.25 El Ghorera
Table Consumptive Use of Each Crop
Location: Whole Upper Egypt

(Unit : m³/month/feddan)

| Season/Crops | Winter Season | | | | Summer Season | | | | | Winter Season | | | Total |
|----------------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|---------------|-----------------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Winter Season | | | | | | | | | | | | | |
| Wheat | 450.0 | 458.0 | 450.0 | 452.0 | | | | | | | 249.0 | 520.0 | 2579.0 |
| Broad Beans | 362.0 | 368.0 | 533.0 | 100.0 | | | | | | | 620.0 | 618.0 | 2601.0 |
| Barley | 316.0 | 418.0 | 320.0 | | | | | | | | 468.0 | 493.0 | 2015.0 |
| Fenugreek | 270.0 | 315.0 | 350.0 | | | | | | | | | 332.0 | 1267.0 |
| Lupine | 253.0 | 310.5 | 345.0 | | | | | | | | | 333.5 | 1242.0 |
| Chick-peas | 264.5 | 304.8 | 356.5 | | | | | | | | | 345.0 | 1270.8 |
| Lentils | 420.0 | 420.0 | 294.0 | | | | | | | | 168.0 | 315.0 | 1617.0 |
| Clover | 809.0 | 920.0 | 850.0 | 820.0 | 900.0 | 950.0 | 930.0 | 500.0 | 910.0 | 800.0 | 500.0 | 590.0 | 9479.0 |
| Berseem(Fodder) | 275.0 | 402.0 | | | | | | | | | 245.0 | 275.0 | 1197.0 |
| Flax | 410.0 | 425.0 | 285.0 | | | | | | | | 150.0 | 280.0 | 1550.0 |
| Onion | 550.0 | 551.0 | 568.0 | 515.0 | | | | | | | 373.0 | 426.0 | 2983.0 |
| Garlic | 390.0 | 388.0 | 413.0 | 364.0 | | | | | | 655.0 | 874.0 | 995.0 | 4079.0 |
| Vegetables | 650.0 | 726.0 | 108.0 | | | | | | | 358.0 | 390.0 | 493.0 | 2725.0 |
| Other Plants | 420.0 | 399.0 | 273.0 | | | | | | | | | 126.0 | 1218.0 |
| Beet | 272.0 | 304.0 | 564.0 | 735.0 | 857.0 | 422.0 | | | | | | 131.0 | 3285.0 |
| Summer Season | | | | | | | | | | | | | |
| Cotton | 435.9 | 521.6 | 620.8 | 836.6 | 976.5 | 494.8 | | | | | | | 3886.2 |
| Rice | | | | | 24.2 | 149.7 | 2022.2 | 1676.0 | 2430.0 | 425.0 | | | 6727.0 |
| Maize | | | | | | 423.0 | 805.0 | 749.0 | 859.0 | 459.0 | | | 3295.0 |
| Sorghum | | | | | 245.0 | 690.0 | 1000.0 | 740.0 | 140.0 | | | | 2815.0 |
| Soia Beans | | | | | 661.7 | 1015.0 | 1415.0 | 202.9 | | | | | 3294.6 |
| Sugarcane | 153.6 | 239.9 | 254.2 | 349.7 | 792.1 | 892.0 | 1,238.9 | 1,344.5 | 1,144.0 | 929.5 | 698.5 | 371.1 | 8408.1 |
| Banana | 150.0 | 245.0 | 250.0 | 350.0 | 800.0 | 900.0 | 1240.0 | 1350.0 | 1150.0 | 1000.0 | 700.0 | 380.0 | 8515.0 |
| Sesame | | | | | 350.0 | 503.0 | 636.5 | 502.0 | 424.75 | | | | 2416.3 |
| Berseem(Fodder) | | | | | 825.0 | 1111.0 | 1393.0 | 696.0 | | | | | |
| Groundnuts | | | | | 577.0 | 670.0 | 1385.0 | 1618.0 | | | | | 4250.0 |
| Onion | | | | | | | | | | | | | 0.0 |
| Vegetables | 550.0 | 556.0 | 1090.0 | 1186.0 | 1345.0 | 1122.0 | 203.0 | | | | | | 6052.0 |
| Corn | | | | | 686.0 | 904.0 | 1154.0 | 565.0 | | | | | 3309.0 |
| Other Plants | | | | | 214.2 | 596.4 | 646.8 | 638.4 | 529.2 | | | | 2625.0 |
| Nile Seasons | | | | | | | | | | | | | |
| Maize | | | | | 220.0 | 575.0 | 651.0 | 642.0 | 535.0 | | | | 2623.0 |
| Sorghum | | | | | 245.0 | 690.0 | 1000.0 | 740.0 | 140.0 | | | | 2815.0 |
| Vegetables | | | | | | | | 1429.0 | 1836.0 | 1720.0 | | | 4985.0 |
| Fruits | 250.0 | 220.0 | 225.0 | 308.0 | 376.0 | 497.0 | 484.0 | 469.0 | 440.0 | 425.0 | 308.0 | 303.0 | 4305.0 |
| Berseem(Fodder) | | | | | | | | 1409.0 | 1813.0 | 1711.0 | | | |
| Total | 7651.1 | 8491.8 | 8149.4 | 6016.4 | 10094.7 | 11232.9 | 15274.4 | 15270.7 | 12351.0 | 8482.5 | 5743.5 | 7326.6 | 109428.9 |

Data Source: irrigation Department Aswan

Notes: 1) Above table shows consumptive use of crops, which are not including any losses as conveyance and application.

Table Cropping Area (%) for Each Crop (Plan)
Location: No.25 El Ghorera

(Unit: %)

| Season/Crops | Winter Season | | | | Summer Season | | | | | Winter Season | | | Total |
|----------------------|---------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Winter Season | | | | | | | | | | | | | |
| Wheat | 18.0 | 18.0 | 18.0 | 18.0 | | | | | | | 18.0 | 18.0 | |
| Broad Beans | | | | | | | | | | | | | |
| Barley | | | | | | | | | | | | | |
| Fenugreek | | | | | | | | | | | | | |
| Lupine | | | | | | | | | | | | | |
| Chick-peas | | | | | | | | | | | | | |
| Lentils | | | | | | | | | | | | | |
| Clover | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Berseem(Fodder) | 4.0 | 4.0 | 4.0 | 4.0 | | | | | | | 4.0 | 4.0 | |
| Flax | | | | | | | | | | | | | |
| Onion | | | | | | | | | | | | | |
| Garlic | | | | | | | | | | | | | |
| Vegetables | 4.0 | 4.0 | 4.0 | | | | | | | | 4.0 | 4.0 | |
| Other Plants | | | | | | | | | | | | | |
| Beet | | | | | | | | | | | | | |
| Summer Season | | | | | | | | | | | | | |
| Cotton | | | | | | | | | | | | | |
| Rice | | | | | | | | | | | | | |
| Maize | | | | | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | | | |
| Sorghum | | | | | | | | | | | | | |
| Soia Beans | | | | | | | | | | | | | |
| Sugarcane | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 |
| Banana | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Sesame | | | | | | | | | | | | | |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Groundnuts | | | | | | | | | | | | | |
| Onion | | | | | | | | | | | | | |
| Vegetables | | | | 4.0 | 4.0 | 4.0 | 4.0 | | | | | | |
| Corn | | | | | | | | | | | | | |
| Other Plants | | | | | | | | | | | | | |
| Nile Seasons | | | | | | | | | | | | | |
| Maize | | | | | | | | | | | | | |
| Sorghum | | | | | | | | | | | | | |
| Vegetables | | | | | | | | 4.0 | 4.0 | 4.0 | | | |
| Fruits | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Appendix-6 B. Proposed Monthly Water Requirement

Table Consumptive Use of Each Crop (Plan)
 Location: No.25 El Ghorera (Unit : liter/sec/feddan)

| Season/Crops | Winter Season | | | | Summer Season | | | | | Winter Season | | | Remarks |
|----------------------|---------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|---------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Winter Season | | | | | | | | | | | | | |
| Wheat | 0.114 | 0.129 | 0.114 | 0.118 | | | | | | | 0.065 | 0.132 | |
| Broad Beans | | | | | | | | | | | | | |
| Barley | | | | | | | | | | | | | |
| Fenugreek | | | | | | | | | | | | | |
| Lupine | | | | | | | | | | | | | |
| Chick-peas | | | | | | | | | | | | | |
| Lentils | | | | | | | | | | | | | |
| Clover | 0.046 | 0.057 | 0.048 | 0.048 | 0.051 | 0.055 | 0.052 | 0.028 | 0.053 | 0.045 | 0.029 | 0.033 | |
| Berseem(Fodder) | 0.015 | 0.025 | | | | | | | | | 0.014 | 0.015 | |
| Flax | | | | | | | | | | | | | |
| Onion | | | | | | | | | | | | | |
| Garlic | | | | | | | | | | | | | |
| Vegetables | 0.037 | 0.045 | 0.006 | | | | | | | | 0.023 | 0.028 | |
| Other Plants | | | | | | | | | | | | | |
| Beet | | | | | | | | | | | | | |
| Summer Season | | | | | | | | | | | | | |
| Cotton | | | | | | | | | | | | | |
| Rice | | | | | | | | | | | | | |
| Maize | | | | | | 0.135 | 0.249 | 0.232 | 0.275 | 0.142 | | | |
| Sorghum | | | | | | | | | | | | | |
| Soia Beans | | | | | | | | | | | | | |
| Sugarcane | 0.130 | 0.224 | 0.215 | 0.305 | 0.669 | 0.779 | 1.047 | 1.136 | 0.999 | 0.785 | 0.610 | 0.314 | |
| Banana | 0.011 | 0.019 | 0.018 | 0.025 | 0.056 | 0.065 | 0.087 | 0.095 | 0.084 | 0.070 | 0.051 | 0.027 | |
| Sesame | | | | | | | | | | | | | |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Groundnuts | | | | | | | | | | | | | |
| Onion | | | | | | | | | | | | | |
| Vegetables | | | | 0.069 | 0.076 | 0.065 | 0.011 | | | | | | |
| Cone | | | | | | | | | | | | | |
| Other Plants | | | | | | | | | | | | | |
| Nile Seasons | | | | | | | | | | | | | |
| Maize | | | | | | | | | | | | | |
| Sorghum | | | | | | | | | | | | | |
| Vegetables | | | | | | | | 0.080 | 0.107 | 0.097 | | | |
| Fruits | 0.018 | 0.017 | 0.016 | 0.022 | 0.026 | 0.036 | 0.034 | 0.033 | 0.032 | 0.030 | 0.022 | 0.021 | |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Total | 0.370 | 0.517 | 0.416 | 0.588 | 0.878 | 1.081 | 1.429 | 1.605 | 1.549 | 1.170 | 0.814 | 0.570 | |

Table Monthly Water Requirement (Plan)
 Location: No.25 El Ghorera

| Description | Winter Season | | | | Summer Season | | | | | Winter Season | | | Remarks |
|--|---------------|-------------|-------------|-------------|---------------|-------------|-------------|-------------|-------------|---------------|-------------|-------------|--------------------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Unit Consumption (l/s/feddan) | 0.370 | 0.517 | 0.416 | 0.588 | 0.878 | 1.081 | 1.429 | 1.605 | 1.549 | 1.170 | 0.814 | 0.570 | |
| Water Requirement (m³/s) | | | | | | | | | | | | | |
| Whole Area (2,450 feddan) | | | | | | | | | | | | | |
| Existing 1,000 | 0.37 | 0.52 | 0.42 | 0.59 | 0.88 | 1.08 | 1.43 | 1.60 | 1.55 | 1.17 | 0.81 | 0.57 | |
| Reversion 1,450 | 0.54 | 0.75 | 0.60 | 0.85 | 1.27 | 1.57 | 2.07 | 2.33 | 2.25 | 1.70 | 1.18 | 0.83 | |
| Total Requirement | 0.91 | 1.27 | 1.02 | 1.44 | 2.15 | 2.65 | 3.50 | 3.93 | 3.80 | 2.87 | 2.00 | 1.40 | |
| Total Requirement | 0.91 | 1.27 | 1.02 | 1.44 | 2.15 | 2.65 | 3.50 | 3.93 | 3.80 | 2.87 | 2.00 | 1.40 | Annual Ttl. |
| Pro. Monthly Req. (MCM) | 1.376 | 1.737 | 1.549 | 2.119 | 3.269 | 3.893 | 5.318 | 5.972 | 5.580 | 4.353 | 2.933 | 2.121 | 40.220 |

Appendix-6 B. Proposed Monthly Water Requirement

B-5 No.26 El Biadiea El Ollia

Table Consumptive Use of Each Crop

Location: Whole Upper Egypt

(Unit : m³/month/feddan)

| Season/Crops | Winter Season | | | | Summer Season | | | | | Winter Season | | | Total |
|----------------------|---------------|--------|--------|--------|---------------|---------|---------|---------|---------|---------------|--------|--------|----------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Winter Season | | | | | | | | | | | | | |
| Wheat | 450.0 | 458.0 | 460.0 | 452.0 | | | | | | | 249.0 | 520.0 | 2589.0 |
| Broad Beans | 362.0 | 368.0 | 533.0 | 100.0 | | | | | | | 620.0 | 618.0 | 2601.0 |
| Barley | 316.0 | 418.0 | 320.0 | | | | | | | | 468.0 | 493.0 | 2015.0 |
| Fenugreek | 270.0 | 315.0 | 350.0 | | | | | | | | | 332.0 | 1267.0 |
| Lupine | 253.0 | 310.5 | 345.0 | | | | | | | | | 333.5 | 1242.0 |
| Chick-peas | 264.5 | 304.8 | 356.5 | | | | | | | | | 345.0 | 1270.8 |
| Lentils | 420.0 | 420.0 | 294.0 | | | | | | | | 168.0 | 315.0 | 1617.0 |
| Clover | 809.0 | 920.0 | 860.0 | 820.0 | 900.0 | 950.0 | 930.0 | 500.0 | 910.0 | 800.0 | 600.0 | 590.0 | 9589.0 |
| Berseem(Fodder) | 275.0 | 402.0 | | | | | | | | | 245.0 | 275.0 | 1197.0 |
| Flax | 410.0 | 425.0 | 285.0 | | | | | | | | 150.0 | 280.0 | 1550.0 |
| Onion | 550.0 | 551.0 | 568.0 | 515.0 | | | | | | | 373.0 | 426.0 | 2983.0 |
| Garlic | 390.0 | 388.0 | 413.0 | 364.0 | | | | | | 655.0 | 874.0 | 995.0 | 4079.0 |
| Vegetables | 650.0 | 726.0 | 108.0 | | | | | | | 358.0 | 390.0 | 493.0 | 2725.0 |
| Other Plants | 420.0 | 399.0 | 273.0 | | | | | | | | | 126.0 | 1218.0 |
| Beet | 272.0 | 304.0 | 564.0 | 735.0 | 857.0 | 422.0 | | | | | | 131.0 | 3285.0 |
| Summer Season | | | | | | | | | | | | | |
| Cotton | 435.9 | 521.6 | 620.8 | 836.6 | 976.5 | 494.8 | | | | | | | 3886.2 |
| Rice | | | | | 24.2 | 149.7 | 2022.2 | 1676.0 | 2430.0 | 425.0 | | | 6727.0 |
| Maize | | | | | | 423.0 | 805.0 | 749.0 | 859.0 | 459.0 | | | 3295.0 |
| Sorghum | | | | | 245.0 | 690.0 | 1000.0 | 740.0 | 140.0 | | | | 2815.0 |
| Soia Beans | | | | | 661.7 | 1015.0 | 1415.0 | 202.9 | | | | | 3294.6 |
| Sugarcane | 153.6 | 239.9 | 254.2 | 349.7 | 792.1 | 892.0 | 1,238.9 | 1,344.5 | 1,144.0 | 929.5 | 698.5 | 371.1 | 8408.1 |
| Banana | 160.0 | 245.0 | 260.0 | 360.0 | 800.0 | 900.0 | 1240.0 | 1350.0 | 1150.0 | 1000.0 | 700.0 | 380.0 | 8545.0 |
| Sesame | | | | | 350.0 | 603.0 | 636.5 | 602.0 | 424.75 | | | | 2616.3 |
| Berseem(Fodder) | | | | | 825.0 | 1111.0 | 1393.0 | 696.0 | | | | | |
| Groundnuts | | | | | 577.0 | 670.0 | 1385.0 | 1618.0 | | | | | 4250.0 |
| Onion | | | | | | | | | | | | | 0.0 |
| Vegetables | 550.0 | 556.0 | 1090.0 | 1186.0 | 1345.0 | 1122.0 | 203.0 | | | | | | 6052.0 |
| Corn | | | | | 686.0 | 904.0 | 1154.0 | 565.0 | | | | | 3309.0 |
| Other Plants | | | | | 214.2 | 596.4 | 646.8 | 638.4 | 529.2 | | | | 2625.0 |
| Nile Seasons | | | | | | | | | | | | | |
| Maize | | | | | 220.0 | 575.0 | 651.0 | 642.0 | 535.0 | | | | 2623.0 |
| Sorghum | | | | | 245.0 | 690.0 | 1000.0 | 740.0 | 140.0 | | | | 2815.0 |
| Vegetables | | | | | | | | 1429.0 | 1836.0 | 1720.0 | | | 4985.0 |
| Fruits | 250.0 | 220.0 | 225.0 | 308.0 | 376.0 | 497.0 | 484.0 | 469.0 | 440.0 | 425.0 | 308.0 | 303.0 | 4305.0 |
| Berseem(Fodder) | | | | | | | | 1409.0 | 1813.0 | 1711.0 | | | |
| Total | 7661.1 | 8491.8 | 8179.4 | 6026.4 | 10094.7 | 11332.9 | 15274.4 | 15370.7 | 12351.0 | 8482.5 | 5843.5 | 7326.6 | 109778.9 |

Data Source: irrigation Department Aswan

Notes: 1) Above table shows consumptive use of crops, which are not including any losses as conveyance and application.

Table Cropping Area (%) for Each Crop (Plan)

Location: No.26 El Biadiea El Ollia

(Unit: %)

| Season/Crops | Winter Season | | | | Summer Season | | | | | Winter Season | | | Total |
|----------------------|---------------|-------|-------|-------|---------------|-------|-------|-------|-------|---------------|-------|-------|-------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Winter Season | | | | | | | | | | | | | |
| Wheat | 17.0 | 17.0 | 17.0 | 17.0 | 9.0 | | | | | 12.0 | 17.0 | 17.0 | |
| Broad Beans | 4.0 | 4.0 | 4.0 | 4.0 | | | | | | | 4.0 | 4.0 | |
| Barley | | | | | | | | | | | | | |
| Fenugreek | | | | | | | | | | | | | |
| Lupine | | | | | | | | | | | | | |
| Chick-peas | | | | | | | | | | | | | |
| Lentils | | | | | | | | | | | | | |
| Clover | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Berseem(Fodder) | 5.0 | 5.0 | 5.0 | 5.0 | | | | | | 5.0 | 5.0 | 5.0 | |
| Flax | | | | | | | | | | | | | |
| Onion | | | | | | | | | | | | | |
| Garlic | | | | | | | | | | | | | |
| Vegetables | 4.0 | 4.0 | 4.0 | | | | | | | 4.0 | 4.0 | 4.0 | |
| Other Plants | | | | | | | | | | | | | |
| Beet | | | | | | | | | | | | | |
| Summer Season | | | | | | | | | | | | | |
| Cotton | | | | | | | | | | | | | |
| Rice | | | | | | | | | | | | | |
| Maize | | | | | | 9.0 | 9.0 | 9.0 | 9.0 | 5.0 | | | |
| Sorghum | | | | | | | | | | | | | |
| Soia Beans | | | | | | | | | | | | | |
| Sugarcane | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | |
| Banana | | | | | | | | | | | | | |
| Sesame | | | | | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | | | | |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Groundnuts | | | | | | | | | | | | | |
| Onion | | | | | | | | | | | | | |
| Vegetables | | | | 4.0 | 4.0 | 4.0 | 4.0 | | | | | | |
| Corn | | | | | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | | | | |
| Other Plants | | | | | | | | | | | | | |
| Nile Seasons | | | | | | | | | | | | | |
| Maize | | | | | | | | | | | | | |
| Sorghum | | | | | | | | | | | | | |
| Vegetables | | | | | | | | 4.0 | 4.0 | 4.0 | | | |
| Fruits | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | |

Appendix-6 B. Proposed Monthly Water Requirement

Table Consumptive Use of Each Crop (Plan)
Location: No.26 El Biadiea El Ollia (Unit : liter/sec/feddan)

| Season/Crops | Winter Season | | | | Summer Season | | | | | Winter Season | | | Remarks |
|----------------------|---------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|---------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Winter Season | | | | | | | | | | | | | |
| Wheat | 0.108 | 0.121 | 0.110 | 0.112 | | | | | | | 0.062 | 0.124 | |
| Broad Beans | 0.020 | 0.023 | 0.030 | 0.006 | | | | | | | 0.036 | 0.035 | |
| Barley | | | | | | | | | | | | | |
| Fenugreek | | | | | | | | | | | | | |
| Lupine | | | | | | | | | | | | | |
| Chick-peas | | | | | | | | | | | | | |
| Lentils | | | | | | | | | | | | | |
| Clover | 0.057 | 0.072 | 0.061 | 0.060 | 0.063 | 0.069 | 0.065 | 0.035 | 0.066 | 0.056 | 0.044 | 0.042 | |
| Berseem(Fodder) | 0.019 | 0.031 | | | | | | | | | 0.018 | 0.019 | |
| Flax | | | | | | | | | | | | | |
| Onion | | | | | | | | | | | | | |
| Garlic | | | | | | | | | | | | | |
| Vegetables | 0.037 | 0.045 | 0.006 | | | | | | | 0.020 | 0.023 | 0.028 | |
| Other Plants | | | | | | | | | | | | | |
| Beet | | | | | | | | | | | | | |
| Summer Season | | | | | | | | | | | | | |
| Cotton | | | | | | | | | | | | | |
| Rice | | | | | | | | | | | | | |
| Maize | | | | | | 0.055 | 0.102 | 0.095 | 0.112 | 0.032 | | | |
| Sorghum | | | | | | | | | | | | | |
| Soya Beans | | | | | | | | | | | | | |
| Sugarcane | 0.130 | 0.224 | 0.215 | 0.305 | 0.669 | 0.779 | 1.047 | 1.136 | 0.999 | 0.785 | 0.610 | 0.314 | |
| Banana | | | | | | | | | | | | | |
| Sesame | | | | | 0.039 | 0.070 | 0.072 | 0.068 | 0.049 | | | | |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Groundnuts | | | | | | | | | | | | | |
| Onion | | | | | | | | | | | | | |
| Vegetables | | | | 0.069 | 0.076 | 0.065 | 0.011 | | | | | | |
| Cone | | | | | 0.087 | 0.118 | 0.146 | 0.072 | | | | | |
| Other Plants | | | | | | | | | | | | | |
| Nile Seasons | | | | | | | | | | | | | |
| Maize | | | | | | | | | | | | | |
| Sorghum | | | | | | | | | | | | | |
| Vegetables | | | | | | | | 0.080 | 0.107 | 0.097 | | | |
| Fruits | 0.018 | 0.017 | 0.016 | 0.022 | 0.026 | 0.036 | 0.034 | 0.033 | 0.032 | 0.030 | 0.022 | 0.021 | |
| Berseem(Fodder) | | | | | | | | | | | | | |
| Total | 0.388 | 0.534 | 0.437 | 0.574 | 0.961 | 1.124 | 1.412 | 1.519 | 1.366 | 1.021 | 0.814 | 0.583 | |

Table Monthly Water Requirement (Plan)
Location: No.26 El Biadiea El Ollia

| Description | Winter Season | | | | Summer Season | | | | | Winter Season | | | Remarks |
|--|---------------|--------------|--------------|--------------|---------------|--------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| Unit Consumption (l/s/feddan) | 0.388 | 0.534 | 0.437 | 0.574 | 0.961 | 1.124 | 1.412 | 1.519 | 1.366 | 1.021 | 0.814 | 0.583 | |
| Water Requirement (m³/s) | | | | | | | | | | | | | |
| Lower Canal (3,550 feddan) | | | | | | | | | | | | | |
| Existing 2,920 | 1.13 | 1.56 | 1.28 | 1.68 | 2.81 | 3.28 | 4.12 | 4.44 | 3.99 | 2.98 | 2.38 | 1.70 | |
| Extension 630 | 0.24 | 0.34 | 0.28 | 0.36 | 0.61 | 0.71 | 0.89 | 0.96 | 0.86 | 0.64 | 0.51 | 0.37 | |
| Total of Lower C. | 1.38 | 1.90 | 1.55 | 2.04 | 3.41 | 3.99 | 5.01 | 5.39 | 4.85 | 3.62 | 2.89 | 2.07 | |
| Upper Canal (1,550 feddan) | | | | | | | | | | | | | |
| Existing 1,300 | 0.50 | 0.69 | 0.57 | 0.75 | 1.25 | 1.46 | 1.84 | 1.97 | 1.78 | 1.33 | 1.06 | 0.76 | |
| Extension 250 | 0.10 | 0.13 | 0.11 | 0.14 | 0.24 | 0.28 | 0.35 | 0.38 | 0.34 | 0.26 | 0.20 | 0.15 | |
| Total of Upper C. | 0.60 | 0.83 | 0.68 | 0.89 | 1.49 | 1.74 | 2.19 | 2.35 | 2.12 | 1.58 | 1.26 | 0.90 | |
| Total Requirement | 1.98 | 2.72 | 2.23 | 2.93 | 4.90 | 5.73 | 7.20 | 7.75 | 6.97 | 5.21 | 4.15 | 2.97 | Annual Ttl. |
| Pro. Monthly Req. (MCI) | 3.095 | 3.845 | 3.485 | 4.426 | 7.659 | 8.669 | 11.252 | 12.103 | 10.532 | 8.135 | 6.278 | 4.644 | 84.122 |

Appendix-6 . C Irrigated Area, Benefited Population and Agricultural Production

Irrigated Area • Benefited Population

| Site | Benefited Area (feddan) | | Number of benefited Household (nos.) | | Benefited Population (persons) | | Remarks |
|------------------------------|------------------------------|--------|---|-------|-----------------------------------|--------|---|
| | Exist. | Exten. | Prent. | Plan | Prent. | Plan | |
| No.22 Sahel Alakaba Kebri | Exist. | 250 | 210 | 250 | 1,260 | 1,500 | By Field survey • 1.2 fed/household • 6 persons/household |
| | Exten. | 50 | | | | | |
| | Total | 300 | | | | | |
| No.23 Al Rakikin Sahel | Exist. | 150 | 500 | 500 | 3,000 | 3,000 | By Field survey • 0.3 fed/household • 6 persons/household |
| | Exten. | 0 | | | | | |
| | Total | 150 | | | | | |
| No.24 Blowkher | Exist. | 2,000 | 1,000 | 1,200 | 6,000 | 7,200 | By Field survey • 2.0 fed/household • 6persons/household |
| | Exten. | 400 | | | | | |
| | Total | 2,400 | | | | | |
| No.25 El Ghorera | Exist. | 1,000 | 1,000 | 2,450 | 5,000 | 12,250 | By Field survey • 1.0 fed/household • 5persons/household |
| | Recov. | 1,450 | | | | | |
| | Total | 2,450 | | | | | |
| No.26 El Biadica El Ollia | Exis(U) | 1,300 | 2,920 | 3,800 | 14,600 | 19,000 | By Field survey • 1.0 fed/household • 5persons/household Resistance area concentrates in service area of Lower Canal. Then, the number of benefited household and population are estimated by calculation. |
| | Exis(L) | 2,920 | | | | | |
| | Exten. | 880 | | | | | |
| | Total | 5,100 | | | | | |
| Total | Exist. | 7,620 | 5,630 | 8,200 | 29,860 | 42,950 | |
| | Recov. | 1,450 | | | | | |
| | Exten. | 1,330 | | | | | |
| | Total | 10,400 | | | | | |

Assumption of cropping area of present/plan

| Season /Crops | Total Area (Feddan) | | | Product of Existing | | | | Product of Proposed | | | |
|----------------------|---------------------|----------|-------|---------------------|---------|--------|------------|---------------------|---------|--------|--------------------------------|
| | Existing | Proposed | Diff. | ton/fed | ton | LE/ton | LE | ton/fed | ton | LE/ton | LE |
| Winter Season | | | | | | | | | | | |
| Wheat | 1691.5 | 1687.5 | ▲ 4 | 1.61 | 2,723 | 739 | 2,012,530 | 1.61 | 2,717 | 739 | 2,007,771 |
| Broad Beans | 238.5 | 231.0 | ▲ 8 | 4.38 | 1,045 | 22.8 | 23,818 | 4.38 | 1,012 | 22.8 | 23,069 |
| Clover | 521.0 | 543.5 | 23 | | | | | | | | |
| Berseem | 513.5 | 536.0 | 23 | | | | | | | | |
| Onion | 27.5 | 30.0 | 3 | 7.96 | 219 | 500 | 109,450 | 7.96 | 239 | 500 | 119,400 |
| Garlic | 20.0 | 22.5 | 3 | | | | | | | | |
| Vegetables | 553.5 | 549.5 | ▲ 4 | | | | | | | | |
| Summer Season | | | | | | | | | | | |
| Maize | 1,274.5 | 1,262.0 | ▲ 13 | | | | | | | | |
| Sugarcane | 4,868.5 | 6,090.0 | 1,222 | 36.09 | 175,704 | 95 | 16,691,896 | 36.09 | 219,788 | 95 | 20,879,870 |
| Banana | 122.5 | 122.5 | 0 | 7.0 | 858 | 700 | 600,250 | 7.0 | 858 | 700 | 600,250 |
| Sesami | 622.0 | 600.0 | ▲ 22 | 0.35 | 218 | 2843 | 618,921 | 0.35 | 210 | 2843 | 597,030 |
| Vegetables | 553.5 | 549.5 | ▲ 4 | 8.5 | 4,705 | 500 | 2,352,375 | 8.5 | 4,671 | 500 | 2,335,375 |
| Corn | 594.5 | 645.0 | 51 | | | | | | | | |
| Nile Season | | | | | | | | | | | |
| Vegetables | | | | | | | | | | | |
| Fruits | 513.5 | 587.5 | 74 | 0.29 | 149 | 11000 | 1,638,065 | 0.29 | 170 | 11000 | 1,874,125 |
| Total | 9,070 | 10,400 | 1,330 | | | | 24,047,304 | | | | 28,436,889 |
| % | 100.0 | 114.7 | | | | | 100.0 | | | | Increase 4,389,585 118.3 |

* Numbers of ton/fed and LE/ton in Product of Existing are average of the result of the farmers' interview. Feed crops and crops for self-consume are not included in production. In this table, tomato is a representative of vegetable, and date is a representative of fruits.

Appendix-6 D-1. General Information of Existing Pump Stations

| | Proposed Pump Station | | Proposed Pump Station | | Proposed Pump Station | | | | |
|---|--|---------------------|---|----------------|---|----------------|--|----------------|--|
| | 1. Sahel Alakaba Kebli (No.22) Floating station Pump No.1 Pump No.2 | | 2. Al Rakikin Sahel (No.23) Floating station Pump No.1 Pump No.2 | | 3. Blowkher (No. 24) Floating station No. 1 Pump No.1 Pump No.2 | | 3. Blowkher (No. 24) Floating station No. 2 Pump No.1 Pump No.2 | | 3. Blowkher (No. 24) Fixed station Pump No.1, Pump No. 2, Pump No. 3 |
| 1 Number of Pump Sets | 2 | | 2 | | 2 | | 2 | | 3 |
| 2 Commencement and Rehabilitation of the Pump Station (year) | 1981 | | 1981 | | 1987 | | 1987 | | 1985 funded by USA |
| 2 Operation | Summer:10 days, 2days stop, 12 hours Winter:1 week, 1 week stop, 10 hours | | Summer:12 days, 2days stop, 12 hrs Winter:10 days, 4 days stop, 9-10 hrs | | Summer: 24 hours, 1 week, 1 day stop, operate, in case of fixed pump stop; or more necessary. | | Summer: 24 hours, 1 week, 1 day stop, Winter: 16 hours, 1 week, 2 days stop. | | pump No. 3: not operated by vibration, others: 3-4 weeks after every one month stop by damage. |
| 3 Pump | | | | | | | | | |
| 1 Type | single suction | single suction | single suction | single suction | double suction | double suction | double suction | double suction | Axial flow |
| 2 Name of manufacture | KLEINS CHANBLIN | KLEINS CHANBLIN | SULZER | SUIZER | | | | | |
| 3 Year of manufacture, installation | 1951 | 1951 | 1948 | 1948 | 1952 | 1952 | 1957 | 1957 | 1985 |
| 4 Country of origin | German | German | Swiss | Swiss | England | England | Austria | Austria | USA |
| 5 Discharge capacity (m3/s) | 0.25 | 0.25 | 0.35 | 0.35 | 0.35 | 0.35 | 0.76 | 0.76 | 0.85 |
| 6 Total head | 13 | 13 | 13 | 13 | 8 | 8 | 10 | 10 | 9.6 |
| 7 Revolution | 800 | 800 | 1000 | 1000 | 590 | 590 | 600 | 600 | 766 |
| 8 Present workability | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 9 Appearance of casing | | | | | | | | | |
| 1 Finish coat | △ | △ | △ | △ | X | X | △ | △ | ○ |
| 2 Rust | X | X | X | X | X | X | △ | △ | ○ |
| 10 Appearance of installation | | | | | | | | | |
| 1 Bolt tightness | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 Vibration | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 3 Noise(hydraulic) | ○ | ○ | ○ | ○ | △ | △ | ○ | ○ | △ |
| 11 Bearing | | | | | | | | | |
| 1 Noise | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 Vibration | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 3 Temperature | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 4 Oil leak | X | X | X | X | △ | △ | ○ | ○ | △ |
| 12 Coupling | | | | | | | | | (gear box) (gear ratio: 1/2) |
| 1 Bolt tightness | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 Eccentricity | △ | △ | △ | △ | △ | △ | ○ | ○ | ○ |
| 3 Wear | △ | △ | △ | △ | △ | △ | ○ | ○ | △ (easily damaged) |
| 13 Stuff box | | | | | | | | | |
| 1 Water leak | △ | △ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 Temperature | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 14 Others | | | | | | | | | |
| 1 Rust | X | X | ○ | ○ | X | X | X | X | X |
| 2 Oil leak | △ | △ | ○ | ○ | △ | △ | ○ | ○ | △ |
| 3 Water leak | △ | △ | ○ | ○ | △ | △ | ○ | ○ | △ |
| 4 Wear | △ | △ | ○ | ○ | △ | △ | ○ | ○ | △ |
| 5 Rotor hand turn | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 4 Prime mover | | | | | | | | | |
| 1 Type | squirrel_star-delta | squirrel_star-delta | squirrel | squirrel | squirrel | squirrel | squirrel | squirrel | Reliance (USA) |
| 2 Name of manufacture | CCCP (Rosian) | CCCP (Rosian) | Reliance (USA) | CCCP (Rosian) | France | France | France | France | Reliance (USA) |
| 3 Year of manufacture, installation | 1969 | 1969 | - | - | - | - | 1981 | 1981 | 1997 |
| 4 Output (kw) | 100 | 100 | 110 | 75 | 110 | 110 | 110 | 110 | 110 |
| 5 Voltage | 220-380 | 220-380 | 220/380 | 220/380 | 380 | 380 | 380 | 380 | 380 |
| 6 Ampere | 336-194 | 336-194 | 319/185 | 240/139 | 234 | 234 | 234 | 234 | 250 |
| 7 Frequency | 50 | 50 | 60 | 50 | 50 | 50 | 50 | 50 | 50 |
| 8 Revolution | 735 | 735 | 985 | 985 | 590 | 590 | 590 | 590 | 1470 |
| 9 No. of poles | | | | | | | | | |
| 10 Present workability | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 11 Appearance | | | | | | | | | |
| 1 Finish coat | △ | △ | △ | △ | △ | △ | △ | △ | ○ |
| 2 Rust | X | X | △ | △ | △ | △ | X | X | ○ |
| 12 Bearing | | | | | | | | | |
| 1 Noise | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 Vibration | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | △ (by pump) |
| 3 Temperature | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 4 Oil leak | △ | △ | ○ | ○ | ○ | ○ | ○ | ○ | △ |
| 13 Rotor & fan | | | | | | | | | |
| 1 Noise | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 Vibration | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 3 Wind pressure | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 14 Others | | | | | | | | | |
| 1 Rust | X | X | ○ | ○ | △ | △ | X | X | △ |
| 2 Oil leak | △ | △ | ○ | ○ | △ | △ | ○ | ○ | △ |
| 3 Wear | △ | △ | ○ | ○ | △ | △ | ○ | ○ | ○ |

| | Proposed Pump Station | | Proposed Pump Station | | Proposed Pump Station | | Proposed Pump Station | | Proposed Pump Station | |
|-------------------------------------|--------------------------------|-----------|-----------------------------|-----------|---------------------------|-----------|---------------------------|-----------|-----------------------------------|--|
| | 1. Sahel Alakaba Kebli (No.22) | | 2. Al Rakikin Sahel (No.23) | | 3. Blowkher (No. 24) | | 3. Blowkher (No. 24) | | 3. Blowkher (No. 24) | |
| | Floating station | | Floating station | | Floating station No. 1 | | Floating station No. 2 | | Fixed station | |
| | Pump No.1 | Pump No.2 | Pump No.1 | Pump No.2 | Pump No.1 | Pump No.2 | Pump No.1 | Pump No.2 | Pump No.1, Pump No. 2, Pump No. 3 | |
| 5 Vacuum pump | (one unit only) | | (no vacuum pump) | | one vacuum pump only | | one vacuum pump only | | (none) | |
| 1 Type | single stage | | | | multi stage | | multi stage | | | |
| 2 Name of manufacture | - | | | | - | | - | | | |
| 3 Year of manufacture, installation | 1951 | | | | - | | - | | | |
| 4 Country of origin | German | | | | Checo | | Checo | | | |
| 5 Discharge capacity | 100 lit/min | | | | 7.5 lit/s | | 7.5 lit/s | | | |
| 6 Total head | 5 m | | | | 0.01 MP2 | | 0.01 MP2 | | | |
| 7 Revolution | 1400 | | | | 1415 | | 1415 | | | |
| 8 Present workability | ○ | | | | ○ | | ○ | | | |
| 9 Appearance of casing | | | | | | | | | | |
| 1 Finish coat | X | | | | X | | X | | | |
| 2 Rust | X | | | | △ | | △ | | | |
| 10 Appearance of installation | | | | | | | | | | |
| 1 Bolt tightness | ○ | | | | ○ | | ○ | | | |
| 2 Vibration | ○ | | | | ○ | | ○ | | | |
| 3 Noise(hydraulic) | ○ | | | | ○ | | ○ | | | |
| 11 Bearing | | | | | | | | | | |
| 1 Noise | ○ | | | | △ | | ○ | | | |
| 2 Vibration | ○ | | | | ○ | | ○ | | | |
| 3 Temperature | ○ | | | | ○ | | ○ | | | |
| 4 Oil leak | ○ | | | | ○ | | ○ | | | |
| 12 Coupling | | | | | | | | | | |
| 1 Bolt tightness | ○ | | | | ○ | | ○ | | | |
| 2 Eccentricity | △ | | | | ○ | | ○ | | | |
| 3 Wear | △ | | | | ○ | | ○ | | | |
| 13 Stuff box | | | | | | | | | | |
| 1 Water leak | ○ | | | | ○ | | ○ | | | |
| 2 Temperature | ○ | | | | ○ | | ○ | | | |
| 14 Others | | | | | | | | | | |
| 1 Rust | X | | | | X | | X | | | |
| 2 Oil leak | ○ | | | | ○ | | ○ | | | |
| 3 Water leak | ○ | | | | ○ | | ○ | | | |
| 4 Wear | △ | | | | △ | | △ | | | |
| 5 Rotor hand turn | ○ | | | | - | | - | | | |
| 6 Motor for Vacuum Pump | one motor for vacuum pump | | (no motor) | | one motor for vacuum pump | | one motor for vacuum pump | | (none) | |
| 1 Type | totally closed | | | | totally closed | | totally closed | | | |
| 2 Name of manufacture | - | | | | Checo | | Checo | | | |
| 3 Year of manufacture, installation | 1983 | | | | - | | - | | | |
| 4 Output (kw) | 1.3 | | | | 3 | | 3 | | | |
| 5 Voltage | 380 | | | | 380 | | 380 | | | |
| 6 Ampere | 6 | | | | 6.9 | | 6.9 | | | |
| 7 Frequency | 50 | | | | 50 | | 50 | | | |
| 8 Revolution | 1400 | | | | 1420 | | 1420 | | | |
| 9 No. of poles | - | | | | - | | - | | | |
| 10 Present workability | ○ | | | | ○ | | ○ | | | |
| 11 Appearance | | | | | | | | | | |
| 1 Finish coat | X | | | | △ | | △ | | | |
| 2 Rust | X | | | | X | | X | | | |
| 12 Bearing | | | | | | | | | | |
| 1 Noise | ○ | | | | △ | | ○ | | | |
| 2 Vibration | ○ | | | | ○ | | ○ | | | |
| 3 Temperature | ○ | | | | ○ | | ○ | | | |
| 4 Oil leak | ○ | | | | ○ | | ○ | | | |
| 13 Rotor & fan | | | | | | | | | | |
| 1 Noise | ○ | | | | ○ | | ○ | | | |
| 2 Vibration | ○ | | | | △ | | ○ | | | |
| 3 Wind pressure | ○ | | | | ○ | | ○ | | | |
| 14 Others | | | | | | | | | | |
| 1 Rust | X | | | | X | | X | | | |
| 2 Oil leak | ○ | | | | ○ | | ○ | | | |
| 3 Wear | △ | | | | △ | | △ | | | |
| 7 Sluce Valve | | | | | | | | | | |
| 1 Type | plate | | plate | | plate | | plate | | | |
| 2 Name of manufacture | German | | German | | Sulzer | | - | | France | |
| 3 Year of manufacture, installation | 1951 | | 1951 | | 1948 | | - | | France | |
| 4 Bore (mm) | 400 | | 400 | | 350 | | 350 | | 500 | |
| 5 Appearance | | | | | | | | | | |
| 1 Finish coat | X | | X | | △ | | △ | | X | |
| 2 Rust | X | | X | | △ | | △ | | △ | |
| 3 Water leak | ○ | | ○ | | ○ | | ○ | | △ | |
| 4 Wear | ○ | | ○ | | ○ | | △ | | △ | |

| | Proposed Pump Station | | Proposed Pump Station | | Proposed Pump Station | | Proposed Pump Station | | Proposed Pump Station | | | |
|-------------------------------------|--------------------------------|-----------------|-----------------------------|-----------|------------------------|-----------|------------------------|-----------|-----------------------------------|--|--|------------|
| | 1. Sahel Alakaba Kebli (No.22) | | 2. Al Rakikin Sahel (No.23) | | 3. Blowkher (No. 24) | | 3. Blowkher (No. 24) | | 3. Blowkher (No. 24) | | | |
| | Floating station | | Floating station | | Floating station No. 1 | | Floating station No. 2 | | Fixed station | | | |
| | Pump No.1 | Pump No.2 | Pump No.1 | Pump No.2 | Pump No.1 | Pump No.2 | Pump No.1 | Pump No.2 | Pump No.1, Pump No. 2, Pump No. 3 | | | |
| 8 Check Valve | | | | | | | | | | | | |
| 1 Type | butterfly | butterfly | (no check valve) | | (no check valve) | | (no check valve) | | | | | |
| 2 Name of manufacture | German | German | | | | | | | | | | |
| 3 Year of manufacture, installation | 1951 | 1951 | | | | | | | | | | |
| 4 Bore (mm) | 400 | 400 | | | | | | | | | | |
| 5 Appearance | | | | | | | | | | | | |
| 1 Finish coat | X | X | | | | | | | | | | |
| 2 Rust | △ | △ | | | | | | | | | | |
| 3 Water leak | △ | △ | | | | | | | | | | |
| 4 Wear | △ | △ | | | | | | | | | | |
| 9 Ball Joint with pipe | | (one set only) | | | | | | | | | | (none) |
| 1 Type | ball joint | | Flexible joint | | Flexible | | Flexible | | | | | |
| 2 Name of manufacture | India | | Egypt | | Egypt | | Egypt | | | | | |
| 3 Year of manufacture, installation | 1996 | | 1997 | | 1997 | | 1997 | | | | | |
| 4 Bore (mm) | 400 | | 500 | | 500 | | 500 | | | | | |
| 5 Appearance | | | | | | | | | | | | |
| 1 Finish coat | X | | X | | X | | X | | | | | |
| 2 Rust | △ | | △ | | △ | | △ | | | | | |
| 3 Water leak | △ | | △ | | △ | | △ | | | | | |
| 4 Wear | △ | | △ | | △ | | △ | | | | | |
| 10 Switch Board | | (one unit only) | | | | | | | | | | |
| 1 Type | self-stand | | self-stand | | self-stand | | self-stand | | | | | self-stand |
| 2 Name of manufacture | Egypt | | Almaco, Egypt | | Egypt | | Egypt | | | | | USA |
| 3 Year of manufacture, installation | 1987 | | 1987 | | 1987 | | 1987 | | | | | 1985 |
| 4 Dimension | | | | | | | | | | | | |
| 1 Height (mm) | 2000 | | 2200 | | 2000 | | 2000 | | | | | |
| 2 Width (mm) | 1400 | | 950 | | 1800 | | 1400 | | | | | |
| 3 Depth (mm) | 500 | | 750 | | 450 | | 500 | | | | | |
| 5 Rated voltage | 380 | | 380 | | 380 | | 380 | | | | | 380 |
| 6 Rated frequency | 50 | | 50 | | 50 | | 50 | | | | | 50 |
| 7 Appearance of outside | | | | | | | | | | | | |
| 1 Rust | X | | △ | | X | | △ | | | | | X |
| 2 Wear | △ | | △ | | △ | | △ | | | | | △ |
| 3 Noise | △ | | △ | | △ | | △ | | | | | △ |
| 4 Vibration | △ | | △ | | △ | | △ | | | | | △ |
| 5 Tightness | △ | | △ | | △ | | △ | | | | | △ |
| 6 Insulation | △ | | △ | | △ | | △ | | | | | △ |
| 8 Meter | | | | | | | | | | | | |
| 1 Zero setting | △ | | △ | | △ | | △ | | | | | △ |
| 2 Workability | △ | | △ | | △ | | △ | | | | | △ |
| 9 Door opening | △ | | △ | | △ | | △ | | | | | △ |
| 10 Appearance of inside | | | | | | | | | | | | |
| 1 Lighting | X | | X | | △ | | X | | | | | X |
| 2 Rust | X | | △ | | △ | | △ | | | | | X |
| 3 Tightness | △ | | △ | | △ | | △ | | | | | △ |
| 11 Barge | | (one unit only) | | | | | | | | | | (no barge) |
| 1 Appearance of body outside | | | | | | | | | | | | |
| 1 Finish coat | X | | X | | X | | X | | | | | |
| 2 Damage | △ | | △ | | △ | | △ | | | | | |
| 3 Rust | △ | | △ | | △ | | △ | | | | | |
| 4 Wear | △ | | △ | | △ | | △ | | | | | |
| 2 Appearance of shed | | | | | | | | | | | | |
| 1 Finish coat | X | | X | | △ | | X | | | | | |
| 2 Damage | △ | | △ | | △ | | △ | | | | | |
| 3 Rust | △ | | △ | | △ | | △ | | | | | |
| 4 Wear | △ | | △ | | △ | | △ | | | | | |
| 3 Anchoring | | | | | | | | | | | | |
| 1 Type (wire or chain) | chain | | chain | | chain 4, wire 1 | | chain 1, wire 3 | | | | | |
| 2 Number of anchor | 5 | | 4 | | 5 | | 4 | | | | | |
| 3 Damage | △ | | △ | | △ | | △ | | | | | |
| 4 Rust | △ | | △ | | △ | | △ | | | | | |
| 4 Appearance of inside | | | | | | | | | | | | |
| 1 Finish coat | X | | X | | X | | X | | | | | |
| 2 Damage | △ | | △ | | △ | | △ | | | | | |
| 3 Rust | △ | | △ | | △ | | △ | | | | | |
| 4 Wear | △ | | △ | | △ | | △ | | | | | |
| 5 Appearance of intake hole | | | | | | | | | | | | |
| 1 Finish coat | X | | X | | X | | X | | | | | |
| 2 Damage | △ | | △ | | △ | | △ | | | | | |
| 3 Rust | △ | | △ | | △ | | △ | | | | | |
| 4 Wear | △ | | △ | | △ | | △ | | | | | |
| 6 Appearance of pipe support | | | | | | | | | | | | |
| 1 Finish coat | X | | X | | X | | X | | | | | |
| 2 Damage | △ | | △ | | △ | | △ | | | | | |
| 3 Rust | △ | | △ | | △ | | △ | | | | | |
| 4 Wear | △ | | △ | | △ | | △ | | | | | |

| | Proposed Pump Station | | Proposed Pump Station | | Proposed Pump Station | | Proposed Pump Station | | Proposed Pump Station | |
|-------------------------------------|--------------------------------|-----------|-----------------------------|-----------|----------------------------------|-----------|----------------------------------|-----------|-----------------------------------|--|
| | 1. Sahel Alakaba Kebli (No.22) | | 2. Al Rakikin Sahel (No.23) | | 3. Blowkher (No. 24) | | 3. Blowkher (No. 24) | | 3. Blowkher (No. 24) | |
| | Floating station | | Floating station | | Floating station No. 1 | | Floating station No. 2 | | Fixed station | |
| | Pump No.1 | Pump No.2 | Pump No.1 | Pump No.2 | Pump No.1 | Pump No.2 | Pump No.1 | Pump No.2 | Pump No.1, Pump No. 2, Pump No. 3 | |
| 12 Discharge Tower | (tower: 2 units in series) | | (no tower) | | (no tower) | | (tower: 1 unit) | | (no tower) | |
| 1 Nominal bore (mm) | 1000 | | | | | | 1000 | | | |
| 2 Intake frange size (mm) | 500 | | | | | | 700-500 | | | |
| 3 Output frange size (mm) | 600 | | | | | | 800 | | | |
| 4 Material | steel | | | | | | steel | | | |
| 5 Present workability | ○ | | | | | | ○ | | | |
| 6 Apperance | X | | | | | | X | | | |
| 1 Damage | X | | | | | | X | | | |
| 2 Rust | X | | | | | | X | | | |
| 3 Wear | △ | | | | | | △ | | | |
| 4 Water leak | △ | | | | | | △ (connection points) | | | |
| 13 Discharge Pipe Line | (pipe line: 1 line) | | | | | | (connection points) | | (pipe line: 3 lines) | |
| 1 Nominal bore (mm) | 600 | | 500 | | 500-600-700 | | 700 | | 800 | |
| 2 Material | steel | | steel & flexible | | steel | | steel | | steel | |
| 3 Buried or not | not | | not | | half buried | | not | | buried | |
| 4 Present workability | ○ | | ○ | | △ (leak at joints) | | ○ | | ○ | |
| 5 Apperance | △ | | △ | | △ | | ○ | | ○ | |
| 1 Damage | △ | | △ | | △ | | ○ | | ○ | |
| 2 Rust | ○ | | △ | | X | | ○ | | ○ | |
| 3 Wear | ○ | | ○ | | △ | | ○ | | ○ | |
| 4 Water leak | ○ | | △ | | △ (connection points) | | ○ | | ○ | |
| 14 Power Cable | | | | | | | | | | |
| 1 Apperance | ○ | | ○ | | ○ | | ○ | | ○ | |
| 2 Damage | ○ | | ○ | | ○ | | ○ | | ○ | |
| 3 Covering | X | | X | | △ (half covering) | | △ (half covering) | | ○ | |
| 4 Connection | △ | | △ | | - | | ○ | | ○ | |
| 5 Insulation | △ | | △ | | △ | | △ | | ○ | |
| 15 Transformer | in steel house | | (in brick house) | | (supplied by fixed pump station) | | (supplied by fixed pump station) | | in reinforced concrete house | |
| 1 Type | - | | - | | - | | - | | - | |
| 2 Name of manufacture | Egypt | | Egypt | | - | | - | | USA | |
| 3 Year of manufacture, installation | 1987 | | 1990 | | - | | - | | 1985 | |
| 4 Capacity (kVA) | 300 | | 200 | | - | | - | | 750 | |
| 5 Primary | 11000 | | 11000 | | - | | - | | 11000 | |
| 1 Voltage (V) | 11000 | | 11000 | | - | | - | | 11000 | |
| 2 Frequency (Hz) | 50 | | 50 | | - | | - | | 50 | |
| 6 Secondary | 380 | | 380 | | - | | - | | 380 | |
| 1 Voltage (V) | 380 | | 380 | | - | | - | | 380 | |
| 2 Frequency (Hz) | 50 | | 50 | | - | | - | | 50 | |
| 7 Present workability | ○ | | ○ | | - | | - | | ○ | |
| 8 Apperance of outside | △ | | △ | | - | | - | | △ | |
| 1 Rust | △ | | △ | | - | | - | | △ | |
| 2 Wear | △ | | △ | | - | | - | | △ | |
| 3 Tightness | ○ | | ○ | | - | | - | | ○ | |
| 4 Insulation | ○ | | ○ | | - | | - | | ○ | |
| 9 Door opening | △ | | △ | | - | | - | | ○ | |
| 10 Apperance of inside | △ | | △ | | - | | - | | △ | |
| 1 Rust | ○ | | △ | | - | | - | | △ | |
| 2 Tightness | ○ | | ○ | | - | | - | | ○ | |

○ = good, effective, normal
△ = some affected but able to use
X = affcted, better to repair

| Proposed Pump Station | | | | Proposed Pump Station | | | | |
|--|--|--------------------|---|--|-------------|---|----------------|--|
| | 4. El Ghorera (No. 25) Floating station Pump No.1 Pump No.2 | | 4. El Ghorera (No. 25) Fixed station Pump No.1 - No. 3 | 5. El Biadiea El Ollia (No. 26) Floating No. 1 (Japan's Grant Aid) Pump No.1 Pump No.2 | | 5. El Biadiea El Ollia (No. 26) Floating station No. 2 Pump No.1 Pump No.2 | | 5. El Biadiea El Ollia (No. 26) Fixed station Pump No.1 - No. 4 |
| 1 Number of Pump Sets | 2 | | 3 | 2 | | 2 | | 4 |
| 2 Commencement and Rehabilitation of the Pump Station | | | | | | | | |
| 1 Commencement of the pump station (year) | operation stopped 10 years ago. | | 1945 started changed motor in 1985 | 1993 funded by Japan | | 1985 started, 1989 change to electricity | | 1987 Oct. started. |
| 2 Operation | cannot operate. | | Summer: 3 units, 24 hours operation; continuous operation. Winter: 2 units, 24 hours operation; one week operate, one week stop. | Summer: 2 units, 24 hours operation Upper canal: one week, stop one week; Lower canal: stop one week, supply one week Winter: 3 units, 24 hours operation Upper canal: one week, stop one week; Lower canal: stop one week, supply one week | | | | Summer: 3 units, 24 hours operation Winter: cannot operate by low water |
| 3 Pump | centrifugal | centrifugal | centrifugal | centrifugal | centrifugal | centrifugal | centrifugal | mixed flow |
| 1 Type | centrifugal | centrifugal | centrifugal | centrifugal | centrifugal | centrifugal | centrifugal | mixed flow |
| 2 Name of manufacture | | | Ingg. Audoli & Hertola | Kubota | Kubota | Sulzer | Sulzer | Gang Lanyi |
| 3 Year of manufacture, installation | more than 50 years | more than 50 years | 1985 | 1994 | 1994 | 1981 | 1981 | 1987 |
| 4 Country of origin | Rossian | Rossian | Italy | Japan | Japan | Swiss | Swiss | Hungary |
| 5 Discharge capacity (m3/s) | 0.5 | 0.5 | 0.5 | 1.3 | 1.3 | 1.35 | 1.35 | 2 |
| 6 Total head | - | - | 9 | 28 | 28 | 23 | 23 | 21.85 |
| 7 Revolution | 1000? | - | 960 | 500 | 500 | 500 | 500 | 735 |
| 8 Present workability | X | X | O | O | O | O | O | O |
| 9 Appearance of casing | | | | | | | | |
| 1 Finish coat | △ | △ | △ | △ | △ | △ | △ | △ |
| 2 Rust | X | X | △ | △ | △ | △ | △ | △ |
| 10 Appearance of installation | | | | | | | | |
| 1 Bolt tightness | O | O | O | O | O | O | O | O |
| 2 Vibration | O | O | O | O | O | O | O | O |
| 3 Noise(hydraulic) | O | O | △ | O | O | O | O | O |
| 11 Bearing | | | | | | | | |
| 1 Noise | O | O | △ | O | O | O | O | △ |
| 2 Vibration | O | O | △ | O | O | O | O | O |
| 3 Temperature | O | O | △ | O | O | O | O | O |
| 4 Oil leak | O | O | O | O | O | O | O | △ |
| 12 Coupling | | | | | | | | |
| 1 Bolt tightness | O | O | O | O | O | O | O | O |
| 2 Eccentricity | O | O | O | O | O | O | O | O |
| 3 Wear | O | O | O | O | O | O | O | O |
| 13 Stuff box | | | | | | | | |
| 1 Water leak | O | O | O | O | O | O | O | O |
| 2 Temperature | O | O | O | O | O | O | O | O |
| 14 Others | X | X | △ | △ | △ | X | X | △ |
| 1 Rust | X | X | △ | △ | △ | △ | △ | △ |
| 2 Oil leak | O | O | O | O | O | O | O | △ |
| 3 Water leak | O | O | O | O | O | O | O | △ |
| 4 Wear | O | O | △ | O | O | O | O | △ |
| 5 Rotor hand turn | O | O | O | O | O | O | O | O |
| 4 Prime mover | | | | | | | | |
| 1 Type | squirrel | squirrel | squirrel | squirrel | squirrel | resistant | resistant | vertical |
| 2 Name of manufacture | China | China | German | Fuji | Fuji | Loher, Germany | Loher, Germany | Rado Koncar, Yugoslavia |
| 3 Year of manufacture, installation | 1990 | 1990 | 1985 | 1994 | 1994 | 1989 | 1989 | 1984 |
| 4 Output (kw) | 150HP | 150HP | 75 | 460 | 460 | 440 | 440 | 560 |
| 5 Voltage | 380 | 380 | 380 | 6000 | 6000 | 6000 | 6000 | 6000 |
| 6 Ampere | 205 | 205 | 138 | 280 | 280 | 280 | 280 | 420 |
| 7 Frequency | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| 8 Revolution | 987 | 987 | 985 | 500 | 500 | 493 | 493 | 740 |
| 9 No. of poles | | | | | | | | |
| 10 Present workability | X | X | O | O | O | O | O | O |
| 11 Appearance | | | | | | | | |
| 1 Finish coat | X | X | △ | △ | △ | △ | △ | △ |
| 2 Rust | X | X | △ | △ | △ | △ | △ | △ |
| 12 Bearing | | | | | | | | |
| 1 Noise | O | O | O | O | O | O | O | O |
| 2 Vibration | O | O | O | O | O | O | O | O |
| 3 Temperature | O | O | O | O | O | O | O | O |
| 4 Oil leak | O | O | O | O | O | O | O | O |
| 13 Rotor & fan | | | | | | | | |
| 1 Noise | O | O | △ | O | O | △ | △ | O |
| 2 Vibration | O | O | △ | O | O | O | O | O |
| 3 Wind pressure | O | O | O | O | O | O | O | O |
| 14 Others | | | | | | | | |
| 1 Rust | X | X | △ | O | O | △ | △ | △ |
| 2 Oil leak | O | O | O | O | O | O | O | △ |
| 3 Wear | X | X | △ | O | O | △ | △ | △ |

| | Proposed Pump Station | | | Proposed Pump Station | | | Proposed Pump Station | | |
|-------------------------------------|-------------------------------|---------------------|--|---|------------------|-------------------------------------|---------------------------------|---|---------------------------------|
| | 4. El Ghorera (No. 25) | | 4. El Ghorera (No. 25) | 5. El Biadiea El Ollia (No. 26) | | 5. El Biadiea El Ollia (No. 26) | 5. El Biadiea El Ollia (No. 26) | | 5. El Biadiea El Ollia (No. 26) |
| | Floating station Pump No.1 | Pump No.2 (none) | Fixed station Pump No.1 - No. 3 (none) | Floating No. 1 (Japan's Grant Aid) Pump No.1 | Pump No.2 | Floating station No. 2 Pump No.1 | Pump No.2 (one unit only) | Fixed station Pump No. 1 - No. 4 (none) | |
| 5 Vacuum pump | | | | | | | | | |
| 1 Type | | | | multi stage | multi stage | multi stage | | | |
| 2 Name of manufacture | | | | Kubota | Kubota | Sigma Pumpy | | | |
| 3 Year of manufacture, installation | | | | 1994 | 1994 | - | | | |
| 4 Country of origin | | | | Japan | Japan | Czech | | | |
| 5 Discharge capacity | | | | 50 lit/min | 50 lit/min | 50 lit/min | | | |
| 6 Total head | | | | 10m | 10m | 0.1 bar | | | |
| 7 Revolution | | | | 1400 | 1400 | 1400 | | | |
| 8 Present workability | | | | ○ | ○ | ○ | | | |
| 9 Appearance of casing | | | | | | | | | |
| 1 Finish coat | | | | ○ | ○ | △ | | | |
| 2 Rust | | | | ○ | ○ | △ | | | |
| 10 Appearance of installation | | | | | | | | | |
| 1 Bolt tightness | | | | ○ | ○ | ○ | | | |
| 2 Vibration | | | | ○ | ○ | ○ | | | |
| 3 Noise(hydraulic) | | | | ○ | ○ | ○ | | | |
| 11 Bearing | | | | | | | | | |
| 1 Noise | | | | ○ | ○ | ○ | | | |
| 2 Vibration | | | | ○ | ○ | ○ | | | |
| 3 Temperature | | | | ○ | ○ | ○ | | | |
| 4 Oil leak | | | | ○ | ○ | ○ | | | |
| 12 Coupling | | | | | | | | | |
| 1 Bolt tightness | | | | ○ | ○ | ○ | | | |
| 2 Eccentricity | | | | ○ | ○ | ○ | | | |
| 3 Wear | | | | ○ | ○ | ○ | | | |
| 13 Stuff box | | | | | | | | | |
| 1 Water leak | | | | ○ | ○ | ○ | | | |
| 2 Temperature | | | | ○ | ○ | ○ | | | |
| 14 Others | | | | | | | | | |
| 1 Rust | | | | ○ | ○ | △ | | | |
| 2 Oil leak | | | | ○ | ○ | △ | | | |
| 3 Water leak | | | | ○ | ○ | △ | | | |
| 4 Wear | | | | ○ | ○ | △ | | | |
| 5 Rotor hand turn | | | | ○ | ○ | △ | | | |
| 6 Motor for Vacuum Pump | | | | | | | | | |
| 1 Type | | | | totally enclosed | totally enclosed | totally enclosed | | | |
| 2 Name of manufacture | | | | | | Siemens | | | |
| 3 Year of manufacture, installation | | | | 1993 | 1993 | 1993 | | | |
| 4 Output (kw) | | | | 2.2 | 2.2 | 3.5 | | | |
| 5 Voltage (kw) | | | | 380 | 380 | 605 | | | |
| 6 Ampere | | | | 5 | 5 | 6.5 | | | |
| 7 Frequency | | | | 50 | 50 | 60 | | | |
| 8 Revolution | | | | 1200 | 1200 | 1420 | | | |
| 9 No. of poles | | | | - | - | - | | | |
| 10 Present workability | | | | ○ | ○ | ○ | | | |
| 11 Appearance | | | | | | | | | |
| 1 Finish coat | | | | ○ | ○ | △ | | | |
| 2 Rust | | | | ○ | ○ | △ | | | |
| 12 Bearing | | | | | | | | | |
| 1 Noise | | | | ○ | ○ | ○ | | | |
| 2 Vibration | | | | ○ | ○ | ○ | | | |
| 3 Temperature | | | | ○ | ○ | ○ | | | |
| 4 Oil leak | | | | ○ | ○ | ○ | | | |
| 13 Rotor & fan | | | | | | | | | |
| 1 Noise | | | | ○ | ○ | ○ | | | |
| 2 Vibration | | | | ○ | ○ | ○ | | | |
| 3 Wind pressure | | | | ○ | ○ | ○ | | | |
| 14 Others | | | | | | | | | |
| 1 Rust | | | | ○ | ○ | △ | | | |
| 2 Oil leak | | | | ○ | ○ | △ | | | |
| 3 Wear | | | | ○ | ○ | △ | | | |
| 7 Sluce Valve | | | | | | | | | |
| 1 Type | plate | plate | plate | plate | plate | plate | plate | plate, electric | |
| 2 Name of manufacture | Rossian | Rossian | Italy | Kubota | Kubota | Sulzer | Sulzer | Hungary | |
| 3 Year of manufacture, installation | more than 50 years | more than 50 years | 1985 | 1993 | 1993 | 1951 | 1951 | 1987 | |
| 4 Bore (mm) | 500 | 500 | 500 | 700 | 700 | 700 | 700 | 800 | |
| 5 Appearance | | | | | | | | | |
| 1 Finish coat | X | X | X | ○ | ○ | X | X | ○ | |
| 2 Rust | △ | △ | △ | ○ | ○ | △ | △ | ○ | |
| 3 Water leak | - | - | - | ○ | ○ | △ | △ | ○ | |
| 4 Wear | - | - | △ | ○ | ○ | △ | △ | ○ | |

| | | Proposed Pump Station | | Proposed Pump Station | | Proposed Pump Station | | Proposed Pump Station | |
|-------------------------------------|--|------------------------|--|------------------------|--|---------------------------------|--|---------------------------------|--|
| | | 4. El Ghorera (No. 25) | | 4. El Ghorera (No. 25) | | 5. El Biadtea El Ollia (No. 26) | | 5. El Biadtea El Ollia (No. 26) | |
| | | Floating station | | Fixed station | | Floating station No. 2 | | Fixed station | |
| | | Pump No.1 Pump No.2 | | Pump No.1 - No. 3 | | Pump No.1 Pump No.2 | | Pump No.1 - No. 4 | |
| 8 Check Valve | | (none) | | (none) | | | | (none) | |
| 1 Type | | | | | | swing | | swing | |
| 2 Name of manufacture | | | | | | Kubota | | Sulzer | |
| 3 Year of manufacture, installation | | | | | | 1993 | | 1951 | |
| 4 Bore (mm) | | | | | | 700 | | 700 | |
| 5 Appearance | | | | | | | | | |
| 1 Finish coat | | | | | | ○ | | △ | |
| 2 Rust | | | | | | ○ | | △ | |
| 3 Water leak | | | | | | ○ | | △ | |
| 4 Wear | | | | | | ○ | | △ | |
| 9 Ball Joint with pipe | | (none) | | (none) | | | | (none) | |
| 1 Type | | | | | | ball joint | | ball joint | |
| 2 Name of manufacture | | | | | | Kubota | | Swiss | |
| 3 Year of manufacture, installation | | | | | | 1993 | | 1988 | |
| 4 Bore (mm) | | | | | | 700 | | 700 | |
| 5 Appearance | | | | | | | | | |
| 1 Finish coat | | | | | | ○ | | X | |
| 2 Rust | | | | | | ○ | | △ | |
| 3 Water leak | | | | | | ○ | | △ | |
| 4 Wear | | | | | | ○ | | △ | |
| 10 Switch Board | | (none) | | self-stand | | (one set) | | (one set) | |
| 1 Type | | | | self-stand | | self-stand | | self-stand | |
| 2 Name of manufacture | | | | Almako, Egypt | | Kubota, Japan | | Egypt | |
| 3 Year of manufacture, installation | | | | 1985 | | 1993 | | 1991 | |
| 4 Dimension | | | | | | | | | |
| 1 Height (mm) | | | | 2000 | | 2200 | | 2200 | |
| 2 Width (mm) | | | | 3800 | | 2000 | | 2200 | |
| 3 Depth (mm) | | | | 400 | | 600 | | 1200 | |
| 5 Rated voltage | | | | 380 | | 6000 | | 6000 | |
| 6 Rated frequency | | | | 50 | | 50 | | 50 | |
| 7 Appearance of outside | | | | | | | | | |
| 1 Rust | | | | △ | | ○ | | △ | |
| 2 Wear | | | | ○ | | ○ | | ○ | |
| 3 Noise | | | | ○ | | ○ | | ○ | |
| 4 Vibration | | | | ○ | | ○ | | ○ | |
| 5 Tightness | | | | ○ | | ○ | | ○ | |
| 6 Insulation | | | | ○ | | ○ | | ○ | |
| 8 Meter | | | | | | | | | |
| 1 Zero setting | | | | ○ | | ○ | | ○ | |
| 2 Workability | | | | ○ | | ○ | | ○ | |
| 3 Door opening | | | | ○ | | ○ | | ○ | |
| 10 Appearance of inside | | | | | | | | | |
| 1 Lighting | | | | ○ | | ○ | | ○ | |
| 2 Rust | | | | △ | | ○ | | △ | |
| 3 Tightness | | | | ○ | | ○ | | ○ | |
| 11 Barge | | | | (none) | | (one unit) | | (one unit) | |
| 1 Appearance of body outside | | | | | | | | | |
| 1 Finish coat | | X | | | | △ | | X | |
| 2 Damage | | △ | | | | ○ | | △ | |
| 3 Rust | | X | | | | ○ | | △ | |
| 4 Wear | | X | | | | ○ | | △ | |
| 2 Appearance of shed | | | | | | | | | |
| 1 Finish coat | | X | | | | ○ | | X | |
| 2 Damage | | X | | | | ○ | | △ | |
| 3 Rust | | X | | | | ○ | | △ | |
| 4 Wear | | X | | | | ○ | | △ | |
| 3 Anchoring | | | | | | | | | |
| 1 Type (wire or chain) | | chain | | | | wire 2, chain 2 | | wire | |
| 2 Number of anchor | | 2 | | | | 4 | | 4 | |
| 3 Damage | | △ | | | | ○ | | △ | |
| 4 Rust | | X | | | | ○ | | △ | |
| 4 Appearance of inside | | | | | | | | | |
| 1 Finish coat | | X | | | | ○ | | X | |
| 2 Damage | | △ | | | | ○ | | △ | |
| 3 Rust | | X | | | | ○ | | △ | |
| 4 Wear | | X | | | | ○ | | △ | |
| 5 Appearance of intake hole | | | | | | | | | |
| 1 Finish coat | | X | | | | ○ | | X | |
| 2 Damage | | △ | | | | ○ | | △ | |
| 3 Rust | | X | | | | ○ | | △ | |
| 4 Wear | | X | | | | ○ | | △ | |
| 6 Appearance of pipe support | | (none) | | | | | | | |
| 1 Finish coat | | | | | | ○ | | △ | |
| 2 Damage | | | | | | ○ | | △ | |
| 3 Rust | | | | | | ○ | | △ | |
| 4 Wear | | | | | | ○ | | △ | |

| Proposed Pump Station | | | | Proposed Pump Station | | | |
|-------------------------------------|---------------------------|---------------|---------------------------|---------------------------------|---------------|-------------------------------------|---------------------------------|
| | 4. El Ghorera (No. 25) | | 4. El Ghorera (No. 25) | 5. El Biadiea El Ollia (No. 26) | | 5. El Biadiea El Ollia (No. 26) | 5. El Biadiea El Ollia (No. 26) |
| | Floating station | Fixed station | Fixed station | Floating station No. 2 | Fixed station | Fixed station | Fixed station |
| | Pump No.1 | Pump No.2 | Pump No.1 - No. 3 | Pump No.1 | Pump No.2 | Pump No.1 | Pump No.2 |
| | (tower: 1 unit) | | (none) | (2 units) | | (2 units) | |
| 12 Discharge Tower | | | | | | | |
| 1 Nominal bore (mm) | 1200 | | | 1000 | 1000 | 1000 | 1200 |
| 2 Intake frange size (mm) | 700-500 | | | 600 | 600 | 600 | 600 |
| 3 Output frange size (mm) | 500 | | | 1000 | 1000 | 1000 | 1000 |
| 4 Material | steel | | | steel | steel | steel | steel |
| 5 Present workability | ○ | | | ○ | ○ | ○ | ○ |
| 6 Appearance | | | | | | | |
| 1 Finish coat | △ | | | ○ | ○ | ○ | ○ |
| 2 Damage | △ | | | △ | △ | △ | △ |
| 3 Rust | △ | | | △ | △ | △ | △ |
| 4 Wear | △ | | | △ | △ | △ | △ |
| 5 Water leak | - | | | △ | △ | △ | △ |
| 13 Discharge Pipe Line | | | | | | | |
| 1 Nominal bore (mm) | (pipe line: 1 line) | | (pipeline: 3 lines) | (pile line: 1 line) | | (connected to floating's pile line) | |
| 2 Material | steel | | steel | steel | | | steel |
| 3 Buried or not | buried | | buried | buried | | | buried |
| 4 Present workability | ○ | | ○ | X | | | |
| 5 Appearance | | | | | | | |
| 1 Damage | ○ | | ○ | △ | | | ○ |
| 2 Rust | ○ | | ○ | ○ | | | ○ |
| 3 Wear | ○ | | ○ | ○ | | | ○ |
| 4 Water leak | - | | ○ | △ | | | ○ |
| 14 Power Cable | | | | | | | |
| 1 Appearance | | | | | | | |
| 2 Damage | ○ | | ○ | ○ | | ○ | ○ |
| 3 Rust | ○ | | ○ | ○ | | ○ | ○ |
| 4 Covering | △ | | ○ | X | | X | ○ |
| 5 Connection | △ | | ○ | △ | | △ | ○ |
| 6 Insulation | △ | | ○ | △ | | △ | ○ |
| 15 Transformer | in black house (one unit) | | in steel house (one unit) | (same one as fixing station) | | (same one as fixing station) | |
| 1 Type | | | | | | | self-stand |
| 2 Name of manufacture | Elmako, Egypt | | Elmako, Egypt | | | | Hitachi |
| 3 Year of manufacture, installation | 1983 | | 1985 | | | | 1967 |
| 4 Capacity (kVA) | 500 | | 500 | | | | 2500 |
| 5 Primary | | | | | | | |
| 1 Voltage (V) | 11000 | | 11000 | | | | 11kV |
| 2 Frequency (Hz) | 50 | | 50 | | | | 50 |
| 6 Secondary | | | | | | | |
| 1 Voltage (V) | 380 | | 380 | | | | 380 |
| 2 Frequency (Hz) | 50 | | 50 | | | | 50 |
| 7 Present workability | ○ | | ○ | | | | ○ |
| 8 Appearance of outside | | | | | | | |
| 1 Rust | △ | | △ | | | | △ |
| 2 Wear | △ | | △ | | | | △ |
| 3 Tightness | ○ | | ○ | | | | ○ |
| 4 Insulation | ○ | | ○ | | | | ○ |
| 9 Door opening | ○ | | ○ | | | | ○ |
| 10 Appearance of inside | | | | | | | |
| 1 Rust | △ | | △ | | | | △ |
| 2 Tightness | ○ | | ○ | | | | ○ |

○ = good, effective, normal
△ = some affected but able to use
X = affected, better to repair

D-2. List of Pump Stations

Aswan Governorate

| Pump Station | | Purpose of Pump Station | | | Rehabilitation | | | Directorate | |
|--------------|----------------------------|-------------------------|--------------------------------|----------------------------|--------------------|--------------------|--------------------|-------------|------------|
| No. | Name of Pump Station | Main/ Booster | Irrigation Area (feddan) | Type of Pump Station | Phase -1 No. | Phase -2 No. | Phase -3 No. | Directorate | Handaset |
| 1 | Gezirat Aswan | main | 50 | fixed | | | | Aswan | El Khatara |
| 2 | Gharb Aswan Kebly | main | 325 | fixed | | | | Aswan | El Khatara |
| 3 | Sahel Abu Rish | main | 590 | floating | | 14 | | Aswan | El Khatara |
| 4 | Gharb Aswan Baharia | main | 660 | floating | 8 | | | Aswan | El Khatara |
| 5 | Gezirat Behrif | main | 475-600 | floating | 10 | | | Aswan | El Khatara |
| 6 | Wadi El Kobania | main | 710 | floating | | 16 | | Aswan | El Khatara |
| 7 | Sahel El Khatara | main | 1,480 | floating | | | | Aswan | El Khatara |
| 8 | Gezirat El Kobania Bahary | main | 80 | floating | | | | Aswan | El Khatara |
| 9 | Sahel Alakaba Kebli | main | 250-300 | floating | | | 22 | Aswan | El Khatara |
| 10 | Gezirat Kubania | main | 110 | floating | | 13 | | Aswan | El Khatara |
| 11 | Sahel El Kobania | main | 400 | floating | 4 | | | Aswan | El Khatara |
| 12 | Sahel Alakaba Bahary | main | 300 | floating | | | | Aswan | El Khatara |
| 13 | Baklaous | main | 150 | floating | | 19 | | Aswan | El Khatara |
| 14 | El Sheikh Fadl | main | 310 | floating | 1 | | | Aswan | Daraw |
| 15 | El Twisa | main | 290 | floating | 7 | | | Aswan | Daraw |
| 16 | Wadi El Noqra | main | 65,000 | fixed | | | | | |
| 17 | Daraw Rey | main | 3,800 | fixed | | | | | |
| 18 | Al Twisa Rey | main | 30,210 | fixed | | | | | |
| 19 | Adendan Rey | booster | 3,400 | fixed | | | | | |
| 20 | Blana Rey | booster | 26,870 | fixed | | | | | |
| 21 | Kstal Fera | booster | 600 | fixed | | | | | |
| 22 | Kostal | booster | 23,170 | fixed | | | | | |
| 23 | Keret El Sofla | booster | 14,400 | fixed | | | | | |
| 24 | Keret El Alia | booster | 900 | fixed | | | | | |
| 25 | Gezirat Ballola | main | 270 | floating | | 11 | | Aswan | Daraw |
| 26 | Al Rakaba | booster | 120 | fixed | | | | | |
| 27 | Bamban | main | 4,000 | fixed | | | | | |
| 28 | Gezirat Al Arab | main | 110 | floating | | 12 | | Aswan | Daraw |
| 29 | Daraw Sarf | main | non-operation | fixed | | | | | |
| 30 | Gezirat Al Mansoria | main | 1,200 | fixed | | | | | |
| 31 | Alberba Sarf | main | 1,160 | fixed | | | | | |
| 32 | Sahel Maniha | main | 600 | floating | | | | Aswan | Daraw |
| 33 | Albiara Al Gadida | main | 11,318 | fixed | | | | | |
| 34 | Albiara Al Kadima | main | 27,850 | fixed | | | | | |
| 35 | Gezirat Maniha Almostageda | main | 70 | floating | | | | Aswan | Daraw |
| 36 | Ekliat Rey | main | 2,075 | fixed | | | | | |
| 37 | Ekliat Sarf | main | non-operation | fixed | | | | | |
| 38 | Gezirat Fares | main | 620 | floating | 9 | | | Aswan | Daraw |
| 39 | Sahel Fares | main | 630 | floating | 5 | | | Aswan | Daraw |
| 40 | New Sahel Fares | main | 940 | floating | | 20 | | Aswan | Daraw |
| 41 | Ablim | booster | 3,200 | fixed | | | | | |
| 42 | Aeniba | booster | 2,900 | fixed | | | | | |
| 43 | Al Daka | booster | 2,840 | fixed | | | | | |
| 44 | Wadi Al Arab | booster | 9,410 | fixed | | | | | |
| 45 | Korta | booster | 9,410 | fixed | | | | | |
| 46 | El Sabaha | main | 22,105 | fixed | | | | | |
| 47 | Selwa Keble | main | 1,450 | fixed | | | | | |
| 48 | Selwa Bari | main | 2,050 | fixed | | | | | |
| 49 | Sahel El Hamam | main | 200 | floating | 2 | | | Aswan | Daraw |
| 50 | Gezirat Selwa Kebli | main | 100 | floating | | | | Aswan | Daraw |
| 51 | El Hegz El Mostageda | main | 35 | fixed | | | | Aswan | Edfu |
| 52 | Al Rakikin Sahel | main | 150 | floating | | | 23 | Aswan | Daraw |
| 53 | El Boeer | main | | floating | | | | Aswan | Daraw |
| 54 | El Karabla | main | 510 | floating | | 21 | | Aswan | Edfu |
| 55 | Al Ramadi | main | 9,680 | fixed | | | | | |

D-2. List of Pump Stations

Aswan Governorate

| Pump Station | | Purpose of Pump Station | | | Rehabilitation | | | Directorate | |
|--------------|-------------------------------|-------------------------|--------------------------------|----------------------------|--------------------|--------------------|--------------------|-------------|---------------|
| No. | Name of Pump Station | Main/ Booster | Irrigation Area (feddan) | Type of Pump Station | Phase -1 No. | Phase -2 No. | Phase -3 No. | Directorate | Handaset |
| 56 | Al Radisia | main | 3,600 | fixed | | | | | |
| 57 | Gexirat Al Sarage | main | 50 | floating | | | | Aswan | Edfu |
| 58 | Ganoob Al Radisia (1) | booster | 250 | fixed | | | | | |
| 59 | Ganoob Al Radisia (2) | booster | 0 | fixed | | | | | |
| 60 | Gexirat Al Malkia | main | 650 | floating | | | | Aswan | Edfu |
| 61 | Atia Shenoda | main | 60 | floating | | | | Aswan | Edfu |
| 62 | Al Radisia Shamal (2) | booster | 500 | fixed | | | | | |
| 63 | Al Radisia Shamal (1) | booster | 250 | fixed | | | | | |
| 64 | Wadi Al Radisia (3) | booster | 1,540 | fixed | | | | | |
| 65 | Wadi Al Radisia (2) | booster | 5,700 | fixed | | | | | |
| 66 | Wadi Al Radisia (1) | main | 5,950 | fixed | | | | | |
| 67 | El Foza Al Kblia | main | 75 | floating | | | | Aswan | Edfu |
| 68 | El Foza Al Wsta | main | 50 | floating | | | | Aswan | Edfu |
| 69 | El Foza El Baharia | main | 150 | floating | 3 | | | Aswan | Edfu |
| 70 | Blowkher | main | 2000-2400 | fixed/floating | | | 24 | Edfu | North & South |
| 71 | Idfu Al Kala & Al Shih Mamoud | main | 11,215 | fixed | | | | | |
| 72 | Sarf Idfu & El Kala | main | 1,900 | fixed | | | | | |
| 73 | Gezirat Al Sabaha | main | 300 | floating | | | | Aswan | Edfu |
| 74 | Al Bosilia | main | 4,000 | fixed | | | | | |
| 75 | Al Sebaia | main | 5,585 | fixed | | | | | |
| 76 | Sarf Al Sebaia | main | non-operation | fixed | | | | | |
| 77 | Wadi Abady (4) | booster | | fixed | | | | | |
| 78 | Wadi Abady (3) | booster | 1,780 | fixed | | | | | |
| 79 | Wadi Abady (2) | booster | 3,265 | fixed | | | | | |
| 80 | Wadi Abady (1) | main | 4,389 | fixed | | | | | |
| 81 | Mokcefat Al Atoany | main | 580 | floating | | | | Aswan | Edfu |
| 82 | Gezirat Abo Arafa | main | 50 | floating | | | | Aswan | Edfu |
| 83 | Gezirat Al Kalh (Al Domaria) | main | 500 | floating | | | | Aswan | Edfu |
| 84 | Sahel El Kelh | main | 740 | floating | | | 15 | Aswan | Edfu |
| 85 | Sahel El Hagez Kebly | main | 750 | floating | | | | Idfu | |
| 86 | Gezirat El Hagez | main | 100 | floating | | | | Aswan | Edfu |
| 87 | El Sayeh | main | | floating | | | | Aswan | Edfu |
| 88 | El Hagez | main | 1,800 | fixed | | | | | |
| 89 | El Owenia | main | 770 | floating | | | 18 | Edfu | |
| 90 | El Sharunia | main | 1,300 | floating | | | 17 | Edfu | |

Luxor Directorate (extracted)

| Pump Station | | Purpose of Pump Station | | | Rehabilitation | | | Directorate | |
|--------------|---------------------------------|-------------------------|--------------------------------|----------------------------|--------------------|--------------------|--------------------|-------------|------------|
| No. | Name of Pump Station | Main/ Booster | Irrigation Area (feddan) | Type of Pump Station | Phase -1 No. | Phase -2 No. | Phase -3 No. | Directorate | Handaset |
| 1 | El Ghorera | main | 2,450 | fixed/floating | | | 25 | Luxor | El Ghorera |
| 2 | El Ghorera on Asfun | booster | 19,000 | fixed | | | | | |
| 3 | Al Rozikat | main | | fixed/floating | | | | | |
| 4 | Maila | main | | fixed | | | | | |
| 5 | El Biadiea El Ollia | main | 4220-5100 | fixed/floating | | | 26 | Luxor | El Hebul |
| 6 | (another) | main | | fixed | | | | | |
| 7 | (another) | | | fixed | | | | | |
| 8 | (another Sah Hour pump station) | | | | | | | | |

D-3. Operation Records of Proposed Pump Stations

Pump Station: No. 26 El Biadiea El Ollia

Unit: hour

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total | Troubles, problems & repairing way (when, duration, kinds of troubles, problems) |
|------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---|
| Year 1999 | | | | | | | | | | | | | | |
| 1 Floating (1.35m ³ /s) | | | | | | | | | | | | | | |
| 1st | 249 | 40 | 27 | 24 | 0 | 0 | 0 | 0 | 136 | 280 | 120 | 315 | 1,191 | |
| 2nd | 420 | 115 | 143 | 37 | 108 | 0 | 0 | 0 | 128 | 282 | 153 | 536 | 1,922 | |
| Total | 669 | 155 | 170 | 61 | 108 | 0 | 0 | 0 | 264 | 562 | 273 | 851 | 3,113 | |
| Discharge (MCM) | 3.251 | 0.753 | 0.826 | 0.296 | 0.525 | 0.000 | 0.000 | 0.000 | 1.283 | 2.731 | 1.327 | 4.136 | 15.129 | |
| 2 Floating (1.30m ³ /s) | | | | | | | | | | | | | | |
| 1st | 0 | 3 | 217 | 109 | 45 | 283 | 243 | 245 | 65 | 0 | 49 | 299 | 1,558 | |
| 2nd | 0 | 0 | 111 | 51 | 9 | 62 | 118 | 105 | 57 | 0 | 0 | 0 | 513 | |
| Total | 0 | 3 | 328 | 160 | 54 | 345 | 361 | 350 | 122 | 0 | 49 | 299 | 2,071 | |
| Discharge (MCM) | 0.000 | 0.014 | 1.535 | 0.749 | 0.253 | 1.615 | 1.689 | 1.638 | 0.571 | 0.000 | 0.229 | 1.399 | 9.692 | |
| 3 Fixed (2.0m ³ /s) | | | | | | | | | | | | | | |
| 1st | 0 | 121 | 156 | 88 | 291 | 297 | 311 | 250 | 203 | 232 | 247 | 0 | 2,196 | |
| 2nd | 125 | 78 | 0 | 125 | 43 | 149 | 187 | 241 | 170 | 101 | 26 | 0 | 1,245 | |
| 3rd | 144 | 276 | 218 | 76 | 94 | 219 | 156 | 123 | 167 | 217 | 309 | 0 | 1,999 | |
| 4th | 0 | 54 | 146 | 288 | 307 | 123 | 180 | 276 | 286 | 135 | 12 | 0 | 1,807 | |
| Total | 269 | 529 | 520 | 577 | 735 | 788 | 834 | 890 | 826 | 685 | 594 | 0 | 7,247 | |
| Discharge (MCM) | 1.937 | 3.809 | 3.744 | 4.154 | 5.292 | 5.674 | 6.005 | 6.408 | 5.947 | 4.932 | 4.277 | 0.000 | 52.178 | |
| Total discharge (MCM) | 5.188 | 4.576 | 6.105 | 5.200 | 6.070 | 7.288 | 7.694 | 8.046 | 7.801 | 7.663 | 5.833 | 5.535 | 77.000 | |
| Year 2000 | | | | | | | | | | | | | | |
| 1 Floating (1.35m ³ /s) | | | | | | | | | | | | | | |
| 1st | 204 | 130 | 55 | 66 | 75 | 0 | 318 | 157 | 313 | 570 | 438 | 486 | 2,812 | |
| 2nd | 441 | 236 | 30 | 7 | 3 | 0 | 356 | 299 | 416 | 648 | 448 | 497 | 3,381 | |
| Total | 645 | 366 | 85 | 73 | 78 | 0 | 674 | 456 | 729 | 1,218 | 886 | 983 | 6,193 | |
| Discharge (MCM) | 3.135 | 1.779 | 0.413 | 0.355 | 0.379 | 0.000 | 3.276 | 2.216 | 3.543 | 5.919 | 4.306 | 4.777 | 30.098 | |
| 2 Floating (1.30m ³ /s) | | | | | | | | | | | | | | |
| 1st | 256 | 0 | 6 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 64 | 0 | 366 | |
| 2nd | 0 | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 464 | 0 | 0 | 495 | |
| Total | 256 | 0 | 6 | 71 | 0 | 0 | 0 | 0 | 0 | 464 | 64 | 0 | 861 | |
| Discharge (MCM) | 1.198 | 0.000 | 0.028 | 0.332 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 2.172 | 0.300 | 0.000 | 4.029 | |
| 3 Fixed (2.0m ³ /s) | | | | | | | | | | | | | | |
| 1st | 0 | 134 | 323 | 280 | 85 | 339 | 290 | 329 | 112 | 24 | 17 | 0 | 1,933 | |
| 2nd | 0 | 6 | 23 | 68 | 285 | 90 | 116 | 163 | 155 | 0 | 7 | 0 | 913 | |
| 3rd | 0 | 190 | 263 | 229 | 309 | 307 | 124 | 35 | 131 | 0 | 0 | 0 | 1,588 | |
| 4th | 0 | 0 | 68 | 85 | 115 | 161 | 341 | 300 | 133 | 31 | 174 | 0 | 1,408 | |
| Total | 0 | 330 | 677 | 662 | 794 | 897 | 871 | 827 | 531 | 55 | 198 | 0 | 5,842 | |
| Discharge (MCM) | 0.000 | 2.376 | 4.874 | 4.766 | 5.717 | 6.458 | 6.271 | 5.954 | 3.823 | 0.396 | 1.426 | 0.000 | 42.062 | |
| Total discharge (MCM) | 4.333 | 4.155 | 5.316 | 5.453 | 6.096 | 6.458 | 9.547 | 8.171 | 7.366 | 8.487 | 6.031 | 4.777 | 76.190 | |

D-3. Operation Records of Proposed Pump Stations

Pump Station: No. 26 El Biadiea El Ollia

Unit: hour

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total | Troubles, problems & repairing way (when, duration, kinds of troubles, problems) |
|------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---|
| Year 2001 | | | | | | | | | | | | | | |
| 1 Floating (1.35m ³ /s) | | | | | | | | | | | | | | |
| 1st | 522 | 341 | 238 | 127 | 218 | 271 | 133 | 63 | 176 | 38 | 234 | 227 | 2,588 | |
| 2nd | 712 | 643 | 279 | 16 | 0 | 0 | 139 | 66 | 162 | 69 | 276 | 122 | 2,484 | |
| Total | 1,234 | 984 | 517 | 143 | 218 | 271 | 272 | 129 | 338 | 107 | 510 | 349 | 5,072 | |
| Discharge (MCM) | 5.997 | 4.782 | 2.513 | 0.695 | 1.059 | 1.317 | 1.322 | 0.627 | 1.643 | 0.520 | 2.479 | 1.696 | 24.650 | |
| 2 Floating (1.30m ³ /s) | | | | | | | | | | | | | | |
| 1st | 40 | 0 | 0 | 0 | 20 | 0 | 48 | 241 | 0 | 84 | 0 | 186 | 619 | |
| 2nd | 0 | 0 | 0 | 0 | 20 | 40 | 0 | 115 | 0 | 7 | 0 | 153 | 335 | |
| Total | 40 | 0 | 0 | 0 | 40 | 40 | 48 | 356 | 0 | 91 | 0 | 339 | 954 | |
| Discharge (MCM) | 0.187 | 0.000 | 0.000 | 0.000 | 0.187 | 0.187 | 0.225 | 1.666 | 0.000 | 0.426 | 0.000 | 1.587 | 4.465 | |
| 3 Fixed (2.0m ³ /s) | | | | | | | | | | | | | | |
| 1st | 0 | 0 | 194 | 272 | 323 | 327 | 272 | 250 | 273 | 193 | 76 | 0 | 2,180 | |
| 2nd | 0 | 0 | 35 | 41 | 58 | 194 | 115 | 227 | 155 | 191 | 166 | 0 | 1,182 | |
| 3rd | 0 | 0 | 119 | 35 | 133 | 118 | 204 | 238 | 131 | 208 | 86 | 0 | 1,272 | |
| 4th | 0 | 0 | 171 | 317 | 190 | 199 | 252 | 226 | 246 | 207 | 151 | 0 | 1,959 | |
| Total | 0 | 0 | 519 | 665 | 704 | 838 | 843 | 941 | 805 | 799 | 479 | 0 | 6,593 | |
| Discharge (MCM) | 0.000 | 0.000 | 3.737 | 4.788 | 5.069 | 6.034 | 6.070 | 6.775 | 5.796 | 5.753 | 3.449 | 0.000 | 47.470 | |
| Total discharge (MCM) | 6.184 | 4.782 | 6.249 | 5.483 | 6.315 | 7.538 | 7.616 | 9.068 | 7.439 | 6.699 | 5.927 | 3.283 | 76.584 | |
| Average | | | | | | | | | | | | | | |
| 1 Floating (1.35m ³ /s) | | | | | | | | | | | | | | |
| 1st | 325 | 170 | 107 | 72 | 98 | 90 | 150 | 73 | 208 | 296 | 264 | 343 | 2,197 | |
| 2nd | 524 | 331 | 151 | 20 | 37 | 0 | 165 | 122 | 235 | 333 | 292 | 385 | 2,596 | |
| Total | 849 | 502 | 257 | 92 | 135 | 90 | 315 | 195 | 444 | 629 | 556 | 728 | 4,793 | |
| Discharge (MCM) | 4.128 | 2.438 | 1.251 | 0.449 | 0.654 | 0.439 | 1.533 | 0.948 | 2.156 | 3.057 | 2.704 | 3.536 | 23.292 | |
| 2 Floating (1.30m ³ /s) | | | | | | | | | | | | | | |
| 1st | 99 | 1 | 74 | 50 | 22 | 94 | 97 | 162 | 22 | 28 | 38 | 162 | 848 | |
| 2nd | 0 | 0 | 37 | 27 | 10 | 34 | 39 | 73 | 19 | 157 | 0 | 51 | 448 | |
| Total | 99 | 1 | 111 | 77 | 31 | 128 | 136 | 235 | 41 | 185 | 38 | 213 | 1,295 | |
| Discharge (MCM) | 0.462 | 0.005 | 0.521 | 0.360 | 0.147 | 0.601 | 0.638 | 1.101 | 0.190 | 0.866 | 0.176 | 0.995 | 6.062 | |
| 3 Fixed (2.0m ³ /s) | | | | | | | | | | | | | | |
| 1st | 0 | 85 | 224 | 213 | 233 | 321 | 291 | 276 | 196 | 150 | 113 | 0 | 2,103 | |
| 2nd | 42 | 28 | 19 | 78 | 129 | 144 | 139 | 210 | 160 | 97 | 66 | 0 | 1,113 | |
| 3rd | 48 | 155 | 200 | 113 | 179 | 215 | 161 | 132 | 143 | 142 | 132 | 0 | 1,620 | |
| 4th | 0 | 18 | 128 | 230 | 204 | 161 | 258 | 267 | 222 | 124 | 112 | 0 | 1,725 | |
| Total | 90 | 286 | 572 | 635 | 744 | 841 | 849 | 886 | 721 | 513 | 424 | 0 | 6,561 | |
| Discharge (MCM) | 0.646 | 2.062 | 4.118 | 4.570 | 5.359 | 6.055 | 6.115 | 6.379 | 5.189 | 3.694 | 3.050 | 0.000 | 47.237 | |
| Total discharge (MCM) | 5.235 | 4.504 | 5.890 | 5.379 | 6.160 | 7.095 | 8.286 | 8.428 | 7.535 | 7.616 | 5.930 | 4.532 | 76.591 | |

A6-28

D-4. O/M Cost of Pump Station

Operation and Maintenance Cost of Proposed Floating Pump Stations

| No. | Station Name | Total operating hours | Estimated total discharge (1000 m ³) | Cost of maintenance | Cost of electric and fuel | Cost of oil & grease | Cost of inspection & repairing | O&M Cost (A) | Wages & salary | Cost of consumed assets | Total cost | Service area (feddan) | Unit cost of Electricity (LE/feddan) | Unit cost of O&M (A) (LE/feddan) | Unit Cost of irrigation (LE/feddan) |
|-----|--|-----------------------|--|---------------------|---------------------------|----------------------|--------------------------------|--------------|----------------|-------------------------|-------------|-----------------------|--------------------------------------|----------------------------------|-------------------------------------|
| 22 | Sahel Alakaba Kebli | | | | | | | | | | | | | | |
| | Jul 1998 to Jun 1999 | 4,800 | 4,320 | 3,000.0 | 16,825.0 | 62.6 | 6,000.0 | 25,887.6 | 37,268.7 | | 89,043.9 | 250.0 | 67.3 | 103.6 | 356.2 |
| | Jul 1999 to Jun 2000 | 4,626 | 4,163 | 3,000.0 | 16,480.0 | 94.9 | - | 19,574.9 | 45,676.8 | | 84,826.6 | 250.0 | 65.9 | 78.3 | 339.3 |
| | Jul 2000 to Jun 2001 | 4,990 | 4,491 | 3,100.0 | 21,360.0 | 97.7 | 6,000.0 | 30,557.7 | 47,307.6 | | 108,423.0 | 250.0 | 85.4 | 122.2 | 433.7 |
| | Average | 4,805 | 4,325 | 3,033.3 | 18,221.7 | 85.1 | 6,000.0 | 27,340.1 | 43,417.7 | | 94,097.8 | 250.0 | 72.9 | 109.4 | 376.4 |
| 23 | Al Rakikin Sahel | | | | | | | | | | | | | | |
| | Jul 1998 to Jun 1999 | 1,950 | 2,457 | 2,000.0 | 5,880.0 | 68.0 | 5,000.0 | 12,948.0 | 20,412.1 | | 46,308.1 | 150.0 | 39.2 | 86.3 | 308.7 |
| | Jul 1999 to Jun 2000 | 1,906 | 2,402 | 2,000.0 | 5,718.0 | 75.1 | - | 7,793.1 | 24,421.9 | | 40,008.1 | 150.0 | 38.1 | 52.0 | 266.7 |
| | Jul 2000 to Jun 2001 | 1,844 | 2,323 | 2,017.0 | 6,264.0 | 75.0 | 6,000.0 | 14,356.0 | 29,804.0 | | 58,516.0 | 150.0 | 41.8 | 95.7 | 390.1 |
| | Average | 1,900 | 2,394 | 2,005.7 | 5,954.0 | 72.7 | 5,500.0 | 13,532.4 | 24,879.3 | | 48,277.4 | 150.0 | 39.7 | 90.2 | 321.8 |
| 24 | Blowkher | | | | | | | | | | | | | | |
| | Jul 1998 to Jun 1999 | 12,154 | 36,100 | 18,659.0 | 250,338.0 | 2,028.0 | 37,359.0 | 308,384.0 | 73,131.0 | | 689,899.0 | 2,000.0 | 125.2 | 154.2 | 344.9 |
| | Jul 1999 to Jun 2000 | 14,578 | 41,000 | 20,165.0 | 241,602.0 | 1,776.0 | 129,174.0 | 392,717.0 | 71,694.0 | | 857,128.0 | 2,000.0 | 120.8 | 196.4 | 428.6 |
| | Jul 2000 to Jun 2001 | 14,621 | 44,400 | 15,632.0 | 290,743.0 | 2,127.0 | 120,146.0 | 428,648.0 | 77,168.0 | | 934,464.0 | 2,000.0 | 145.4 | 214.3 | 467.2 |
| | Average | 13,784 | 40,500 | 18,152.0 | 260,894.3 | 1,977.0 | 95,559.7 | 376,583.0 | 73,997.7 | | 827,163.7 | 2,000.0 | 130.4 | 188.3 | 413.6 |
| 25 | El Ghorera | | | | | | | | | | | | | | |
| | Jul 1998 to Jun 1999 | 9,680 | 17,396 | 1,409.0 | 58,200.0 | 157.0 | 800.0 | 60,566.0 | 27,696.0 | 3,239.0 | 152,067.0 | 1,000.0 | 58.2 | 60.6 | 152.1 |
| | Jul 1999 to Jun 2000 | 10,073 | 18,073 | 1,831.0 | 58,521.0 | 73.0 | 888.0 | 61,313.0 | 30,780.0 | 3,239.0 | 156,645.0 | 1,000.0 | 58.5 | 61.3 | 156.6 |
| | Jul 2000 to Jun 2001 | 9,570 | 17,073 | 296.0 | 52,629.0 | 200.0 | 984.0 | 54,109.0 | 34,200.0 | 3,239.0 | 145,657.0 | 1,000.0 | 52.6 | 54.1 | 145.7 |
| | Average | 9,774 | 17,514 | 1,178.7 | 56,450.0 | 143.3 | 890.7 | 58,662.7 | 30,892.0 | 3,239.0 | 151,456.3 | 1,000.0 | 56.5 | 58.7 | 151.5 |
| 26 | El Biadiea El Ollia (Floating pump stations 1.35 m ³ /sx2units) | | | | | | | | | | | | | | |
| | Floating pump stations: 1.35 m ³ /sx2units | | | | | | | | | | | | | | |
| | Jul 1998 to Jun 1999 | 3,113 | 15,129 | 2,000.0 | 210,252.0 | 400.0 | 1,000.0 | 213,652.0 | 26,000.0 | | 453,304.0 | 829.2 | 253.6 | 257.7 | 546.7 |
| | Jul 1999 to Jun 2000 | 6,193 | 30,098 | 2,000.0 | 418,275.2 | 300.0 | 745,763.0 | 1,166,338.2 | 26,000.0 | | 2,358,676.4 | 1,667.1 | 250.9 | 699.6 | 1,414.9 |
| | Jul 2000 to Jun 2001 | 5,072 | 24,650 | 2,000.0 | 342,562.9 | 175.0 | 26,420.0 | 371,157.9 | 26,000.0 | | 768,315.8 | 1,358.3 | 252.2 | 273.3 | 565.7 |
| | Average | 4,793 | 23,292 | 2,000.0 | 323,696.7 | 291.7 | 257,727.7 | 583,716.0 | 26,000.0 | | 1,193,432.1 | 1,284.8 | 252.2 | 454.3 | 842.4 |
| | Reference: Fixed pump stations: 2.0 m ³ /s x 4units | | | | | | | | | | | | | | |
| | Jul 1998 to Jun 1999 | 7,247 | 52,178 | 4,000.0 | 622,952.1 | 6,053.0 | 1,500.0 | 634,505.1 | 26,000.0 | | 1,295,010.2 | 2,859.7 | 217.8 | 221.9 | 452.9 |
| | Jul 1999 to Jun 2000 | 5,842 | 42,062 | 4,000.0 | 502,178.3 | 1,401.0 | 8,000.0 | 515,579.3 | 26,000.0 | | 1,057,158.6 | 2,329.8 | 215.5 | 221.3 | 453.8 |
| | Jul 2000 to Jun 2001 | 6,593 | 47,470 | 4,000.0 | 566,734.3 | 18,367.0 | 13,000.0 | 602,101.3 | 26,000.0 | | 1,230,202.6 | 2,615.7 | 216.7 | 230.2 | 470.3 |
| | Average | 6,561 | 47,237 | 4,000.0 | 563,954.9 | 8,607.0 | 7,500.0 | 584,061.9 | 26,000.0 | | 1,194,123.8 | 2,601.7 | 216.7 | 224.5 | 459.0 |

* Note: At El Biadiea El Ollia pump stations, service areas (total 4,220 feddan) are divided by proportions of yearly estimated total discharge by each pump station.

Operation and Maintenance Cost of Stage-1 & Stage-2 Floating Pump Stations

| No. | Station Name | Total operating hours | Estimated total discharge (1000 m3) | Cost of maintenance | Cost of electric and fuel | Cost of oil & grease | Cost of inspection & repairing | O&M Cost (A) | Wages & salary | Cost of consumed assets | Total cost | Service area (feddan) | Unit cost of Electricity (LE/feddan) | Unit cost of O&M (A) (LE/feddan) | Unit Cost of irrigation (LE/feddan) |
|-----|--|-----------------------|-------------------------------------|---------------------|---------------------------|----------------------|--------------------------------|--------------|----------------|-------------------------|------------|-----------------------|--------------------------------------|----------------------------------|-------------------------------------|
| 6 | El Biadiea El Ollia (1.3m ³ /s x 2 units) | | | | | | | | | | | | | | |
| | Jul 1998 to Jun 1999 | 2,071 | 9,692 | 2,000.0 | 146,233.3 | 50.0 | 5,000.0 | 153,283.3 | 26,000.0 | | 332,566.6 | 531.2 | 275.3 | 288.6 | 626.1 |
| | Jul 1999 to Jun 2000 | 861 | 4,029 | 2,000.0 | 60,795.2 | 50.0 | 5,000.0 | 67,845.2 | 26,000.0 | | 161,690.4 | 223.2 | 272.4 | 304.0 | 724.5 |
| | Jul 2000 to Jun 2001 | 954 | 4,465 | 2,000.0 | 67,361.9 | 50.0 | 5,000.0 | 74,411.9 | 26,000.0 | | 174,823.9 | 246.0 | 273.8 | 302.4 | 710.6 |
| | Average | 1,295 | 6,062 | 2,000.0 | 91,463.5 | 50.0 | 5,000.0 | 98,513.5 | 26,000.0 | | 223,027.0 | 333.5 | 273.8 | 295.4 | 687.1 |
| 7 | El Twisa | | | | | | | | | | | | | | |
| | Jul 1998 to Jun 1999 | 3,472 | 3,125 | 1,000.0 | 6,837.2 | 92.0 | 2,000.0 | 9,929.2 | 19,810.8 | | 39,669.1 | 290.0 | 23.6 | 34.2 | 136.8 |
| | Jul 1999 to Jun 2000 | 3,526 | 3,173 | 17.5 | 10,478.7 | 98.0 | 700.0 | 11,294.2 | 22,386.1 | | 44,974.5 | 290.0 | 36.1 | 38.9 | 155.1 |
| | Jul 2000 to Jun 2001 | 3,753 | 3,378 | 6,100.0 | 17,504.7 | 35.0 | 1,080.0 | 24,719.7 | 22,986.6 | | 72,426.0 | 290.0 | 60.4 | 85.2 | 249.7 |
| | Average | 3,584 | 3,225 | 2,372.5 | 11,606.9 | 75.0 | 1,260.0 | 15,314.4 | 21,727.8 | | 52,356.5 | 290.0 | 40.0 | 52.8 | 180.5 |
| 10 | Gezirat Bahrif | | | | | | | | | | | | | | |
| | Jul 1998 to Jun 1999 | 6,956 | 8,765 | 5,000.0 | 16,008.0 | 112.4 | 940.0 | 22,060.4 | 41,984.4 | | 86,105.2 | 300.0 | 53.4 | 73.5 | 287.0 |
| | Jul 1999 to Jun 2000 | 6,584 | 8,296 | 18.0 | 20,484.0 | 214.0 | 2,030.0 | 22,746.0 | 51,856.6 | | 97,348.6 | 300.0 | 68.3 | 75.8 | 324.5 |
| | Jul 2000 to Jun 2001 | 7,186 | 9,054 | 1,000.0 | 17,184.0 | 33.0 | 300.0 | 18,517.0 | 52,270.8 | | 89,304.8 | 300.0 | 57.3 | 61.7 | 297.7 |
| | Average | 6,909 | 8,705 | 2,006.0 | 17,892.0 | 119.8 | 1,090.0 | 21,107.8 | 48,703.9 | | 90,919.5 | 300.0 | 59.6 | 70.4 | 303.1 |
| 11 | Gezirat Ballola | | | | | | | | | | | | | | |
| | Jul 1998 to Jun 1999 | 3,439 | 3,095 | 2,000.0 | 7,892.0 | 115.0 | 2,000.0 | 12,007.0 | 33,217.7 | | 57,231.7 | 300.0 | 26.3 | 40.0 | 190.8 |
| | Jul 1999 to Jun 2000 | 3,408 | 3,068 | 2,098.0 | 5,080.0 | 15.0 | 750.0 | 7,943.0 | 38,820.7 | | 54,706.7 | 300.0 | 16.9 | 26.5 | 182.4 |
| | Jul 2000 to Jun 2001 | 3,687 | 3,318 | 1,167.5 | 9,752.0 | 95.0 | 2,500.0 | 13,514.5 | 35,830.9 | | 62,859.9 | 300.0 | 32.5 | 45.0 | 209.5 |
| | Average | 3,511 | 3,160 | 1,755.2 | 7,574.7 | 75.0 | 1,750.0 | 11,154.8 | 35,956.4 | | 58,266.1 | 300.0 | 25.2 | 37.2 | 194.2 |
| 14 | Sahel Abu Rish | | | | | | | | | | | | | | |
| | Jul 1998 to Jun 1999 | 4,931 | 8,876 | 1,080.0 | 33,600.0 | 12.3 | - | 34,692.3 | 34,376.0 | | 103,760.7 | 500.0 | 67.2 | 69.4 | 207.5 |
| | Jul 1999 to Jun 2000 | 7,776 | 13,997 | 2,000.0 | 54,420.0 | 238.6 | 2,100.0 | 58,758.6 | 50,558.0 | | 168,075.2 | 500.0 | 108.8 | 117.5 | 336.2 |
| | Jul 2000 to Jun 2001 | 7,706 | 13,871 | 2,300.0 | 46,000.0 | 12.0 | 950.0 | 49,262.0 | 50,586.0 | | 149,110.0 | 500.0 | 92.0 | 98.5 | 298.2 |
| | Average | 6,804 | 12,248 | 1,793.3 | 44,673.3 | 87.6 | 1,525.0 | 48,079.3 | 45,173.3 | | 140,315.3 | 500.0 | 89.3 | 96.2 | 280.6 |

* Note: At El Biadiea El Ollia pump stations, service areas (total 4,500 feddan) are divided by proportions of yearly estimated total discharge by each pump station.

D-5. Equipment Conditions of Workshop

Workshop Name: Kom Ombo Central Workshop

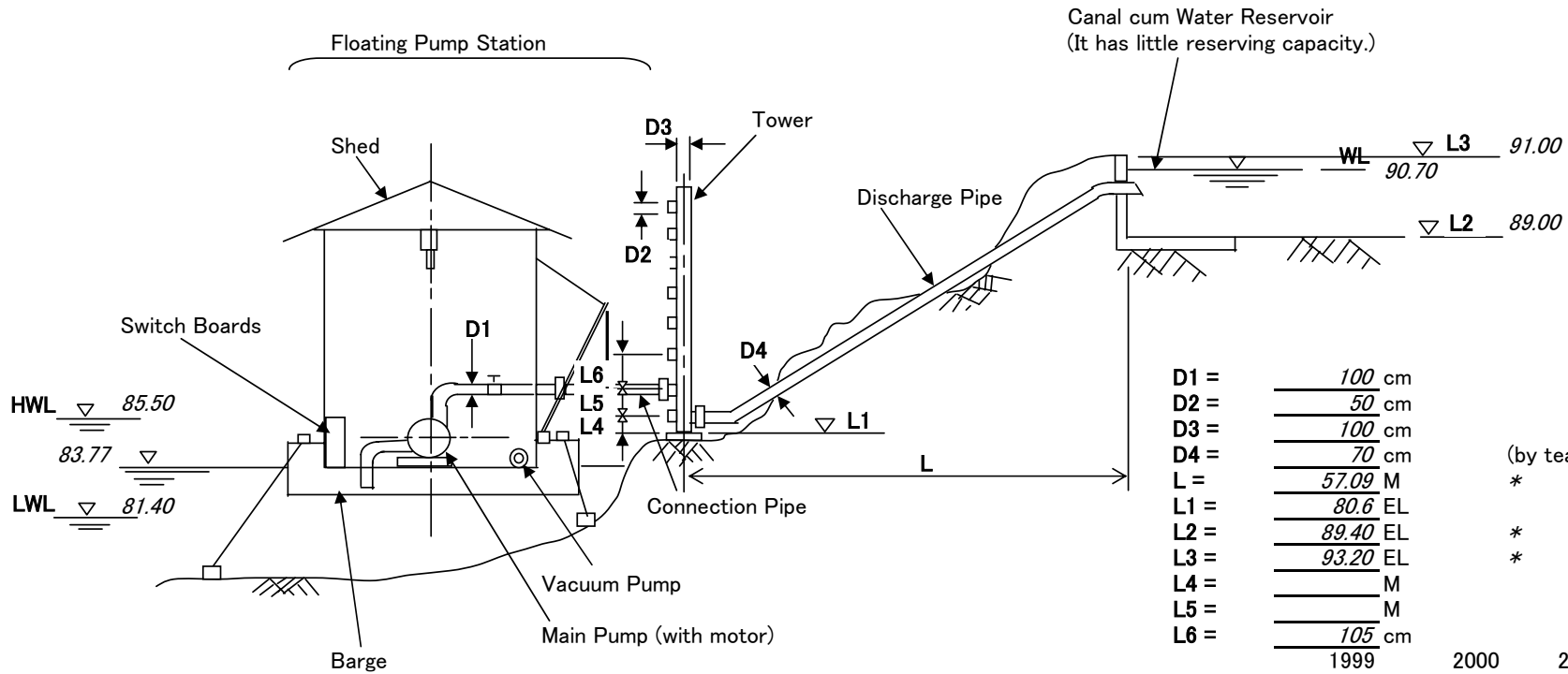
| No. | Description | Year of installed | Year of manufactured | Model | Manufacturer Country | Specification | Unit | Conditions and comment (good O, poor Δ, bad X) |
|-----|----------------------------|-------------------|----------------------|-------|----------------------|---------------------------------------|------|--|
| 1 | Vertical turning machine | | | | Romania | Bed 145cm, power 60kW | 1 | |
| 2 | Horizontal turning machine | | | | USA | Distance 9.25M, Bed 340mm, power 30HP | 1 | |
| 3 | Horizontal turning machine | | | | Russia | Distance 3M, Bed 280mm, power 30HP | 1 | |
| 4 | Horizontal turning machine | | | | Russia | Distance 1.4M, Bed 290mm, power 30HP | 1 | |
| 5 | Horizontal turning machine | | | | Russia | Distance 2.5M, Bed 470mm, power 50HP | 1 | |
| 6 | Horizontal turning machine | | | | Spain | Distance 1.25M, Bed 170mm, power 15HP | 1 | |
| 7 | Horizontal turning machine | | | | Bulgaria | Distance 4.0M, Bed 630mm, power 11kW | 1 | |
| 8 | Vertical drill | | | | Tiwan | power 10 HP | 1 | |
| 9 | Shaping machine | | | | Russia | power 7kW | 1 | |
| 10 | Shaping machine | | | | Egypt | power 7.5 HP | 1 | |
| 11 | Universal milling machine | | | | India | power 1.5 HP | 1 | |
| 12 | Welding machine | | | | USA | power 25 HP | 1 | |
| 13 | Welding machine | | | | USA | power 14 kW | 1 | |
| 14 | Mechanical sawing machine | | | | Russia | power 2.2kW | 2 | |
| 15 | Manual hydraulic press | | | | USA | | 1 | |
| 16 | Electrical hydraulic press | | | | Italy | power 1.5kW | 1 | |
| 17 | Air compressor | | | | USA | power 3.0kW | 1 | |
| 18 | Sawing machine | | | | Egypt | power 4.0kW | 1 | |
| 19 | Manual lifting machine | | | | UK | | 1 | |
| 20 | Grinding machine | | | | Egypt | power 3.0kW | 1 | |
| 21 | Table drilling | | | | Egypt | power 0.75HP | 1 | |

Source: Aswan MED, May 2002

Date: May 3, 2002

Name of Pump Station: No. 22. Sahel Alakaba Kebli Pump Station
 Pump: unit(s): 2 Type: _____
 discharge: 0.25 m³/s total head: 13 m
 revolution: 800 rpm
 Motor: 100 kW 380 V 735 rpm
194 amp. Type: _____
 Transformer: 11/380 kV/V 300 kVA 500 amp.

A8-32



| | | | |
|-------|-----------------|--------------------|-----------------|
| D1 = | <u>100</u> cm | | |
| D2 = | <u>50</u> cm | | |
| D3 = | <u>100</u> cm | | |
| D4 = | <u>70</u> cm | (by team's survey) | |
| L = | <u>57.09</u> M | * | |
| L1 = | <u>80.6</u> EL | | |
| L2 = | <u>89.40</u> EL | * | |
| L3 = | <u>93.20</u> EL | * | |
| L4 = | _____ M | | |
| L5 = | _____ M | | |
| L6 = | <u>105</u> cm | | |
| | 1999 | 2000 | 2001 |
| HWL = | <u>85.00</u> | <u>85.30</u> | <u>85.50</u> EL |
| LWL = | <u>81.60</u> | <u>81.50</u> | <u>81.40</u> EL |
| WL = | _____ | _____ | _____ EL |

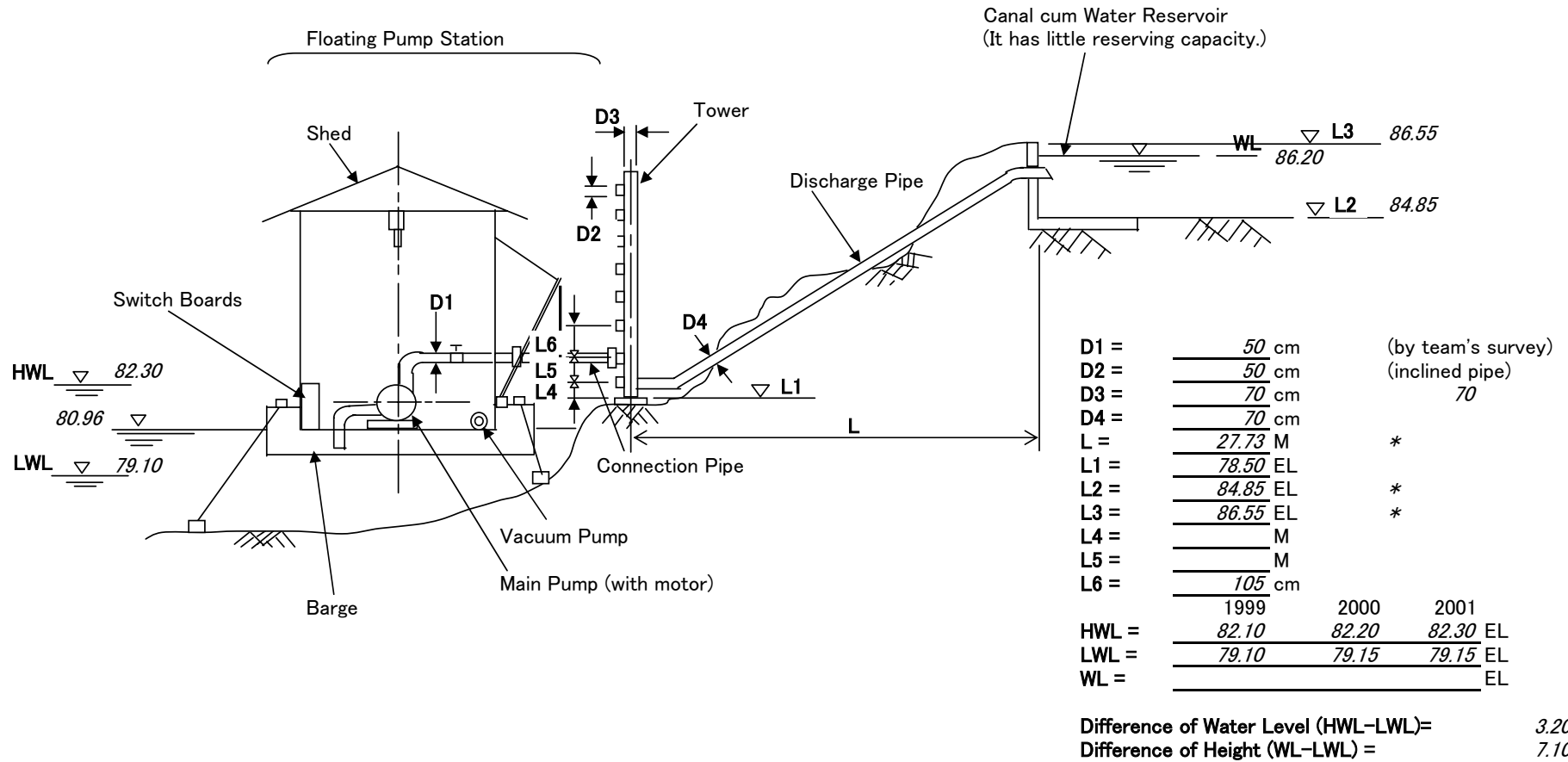
Difference of Water Level (HWL-LWL)= 4.10 M
 Difference of Height (WL-LWL) = 9.30 M

D-6 (1) GENERAL LAYOUT FOR EXISTING FLOATING PUMP STATION
 FLOATING PUMP STATION DATA SHEET

Date: May 3, 2002

Name of Pump Station: No. 23. Al Rakikin Sahel Pump Station
Pump: unit(s): 2 Type: SULZER
 discharge: 0.35 m³/s total head: 13 m
 revolution: 1000 rpm
Motor: 100 kW 380 V 985 rpm
 amp. Type:
Transformer: 11/380 kV/V 300 kVA 500 amp.

A8-33

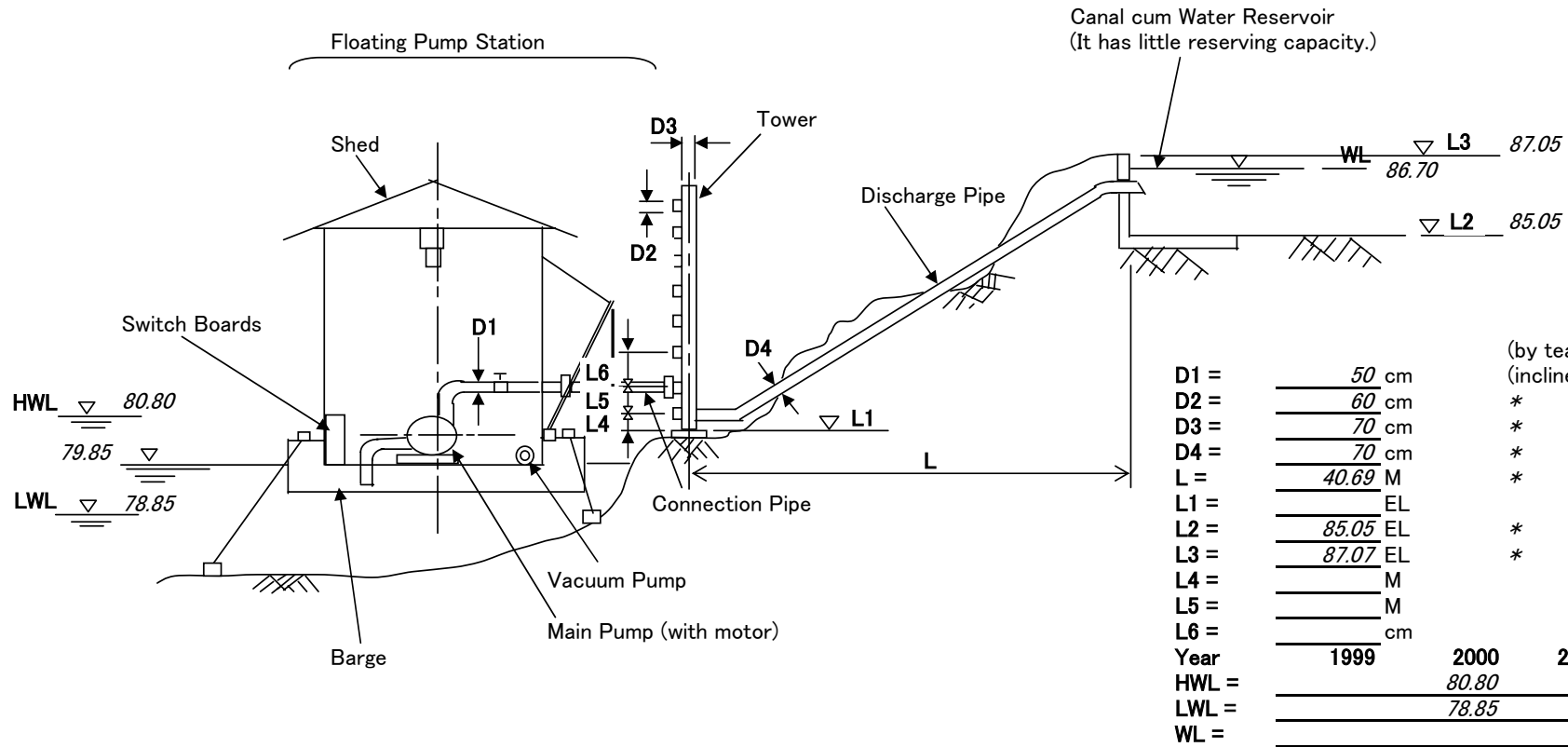


D-6 (2) GENERAL LAYOUT FOR EXISTING FLOATING PUMP STATION
 FLOATING PUMP STATION DATA SHEET

Date: May 3, 2002

Name of Pump Station: No. 24. Blowkher Pump Station (1)
 Pump: unit(s): 2 Type: _____
 discharge: 0.35 m³/s total head: 13 m
 revolution: 560 rpm
 Motor: 110 kW 380 V 590 rpm
 amp. Type: _____
 Transformer: _____ kV/V _____ kVA _____ amp.

A8-34



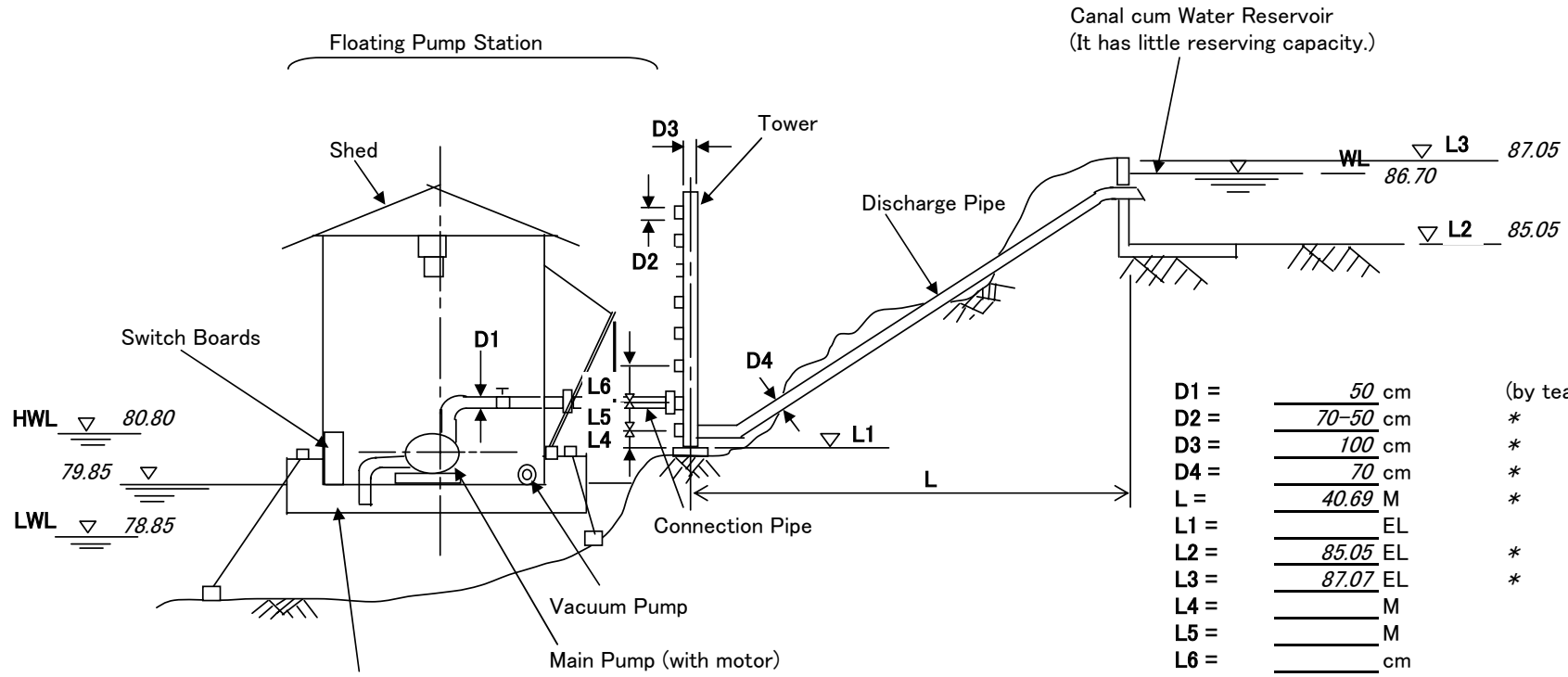
Difference of Water Level (HWL-LWL)= 1.95 M
 Difference of Height (WL-LWL) = 7.85 M

D-6 (3-1) GENERAL LAYOUT FOR EXISTING FLOATING PUMP STATION
 FLOATING PUMP STATION DATA SHEET

Date: May 3, 2002

Name of Pump Station: No. 24. Blowkher Pump Station (2)
Pump: unit(s): 2 Type: _____
 discharge: 0.75 m³/s total head: 10 m
 revolution: 590 rpm
Motor: 110 kW 380 V 590 rpm
 amp. Type: _____
Transformer: _____ kV/V _____ kVA _____ amp.

A8-35



| | | |
|------|-----------------|--------------------|
| D1 = | <u>50</u> cm | (by team's survey) |
| D2 = | <u>70-50</u> cm | * |
| D3 = | <u>100</u> cm | * |
| D4 = | <u>70</u> cm | * |
| L = | <u>40.69</u> M | * |
| L1 = | _____ EL | |
| L2 = | <u>85.05</u> EL | * |
| L3 = | <u>87.07</u> EL | * |
| L4 = | _____ M | |
| L5 = | _____ M | |
| L6 = | _____ cm | |

| | | | | |
|-------|------|--------------|------|----|
| | 1999 | 2000 | 2001 | |
| HWL = | | <u>80.80</u> | | EL |
| LWL = | | <u>78.85</u> | | EL |
| WL = | | | | EL |

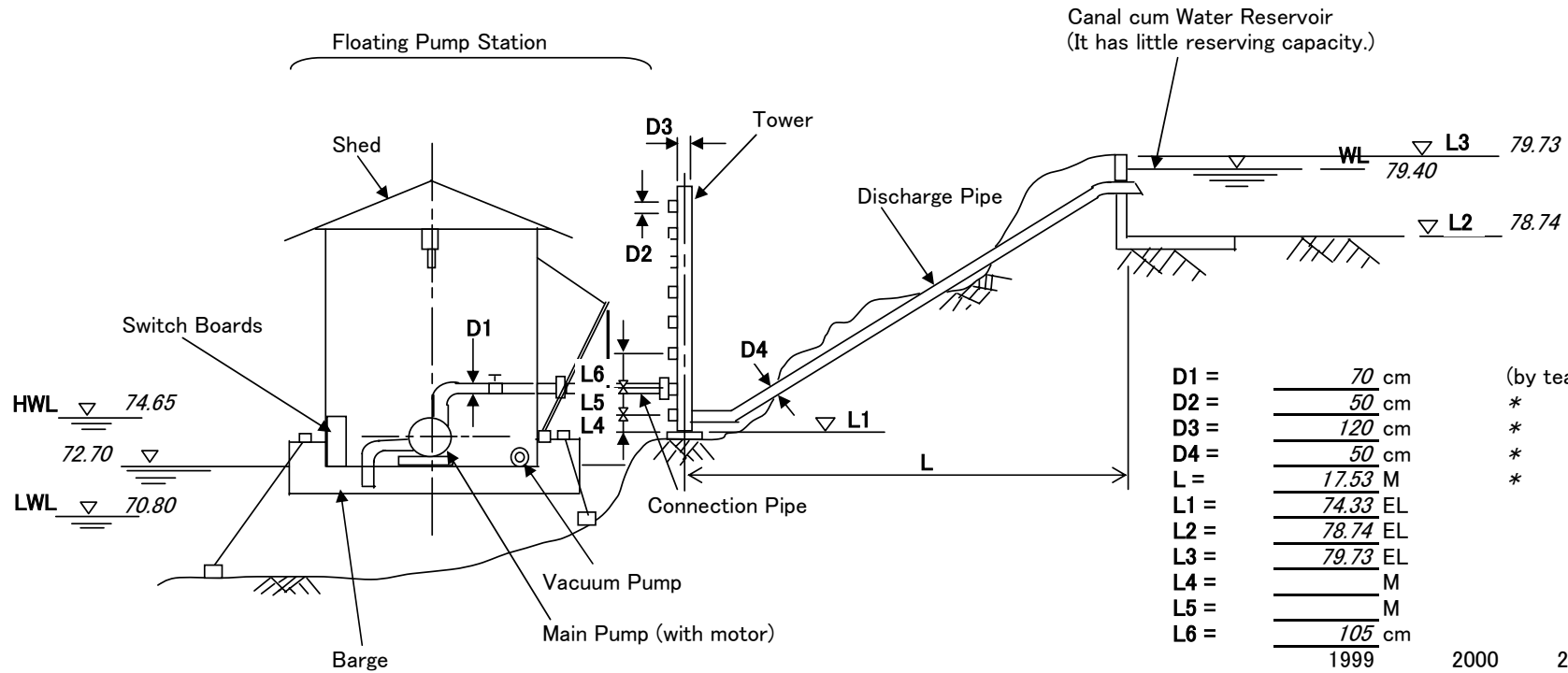
Difference of Water Level (HWL-LWL)= 1.95 M
 Difference of Height (WL-LWL) = 7.85 M

D-6 (3-2) GENERAL LAYOUT FOR EXISTING FLOATING PUMP STATION
 FLOATING PUMP STATION DATA SHEET

Date: May 12, 2002

Name of Pump Station: No. 25. El Ghorera Pump Station
 Pump: unit(s): 2 Type: _____
 discharge: 0.5 m³/s total head: 8.7 m
 revolution: _____ rpm
 Motor: 150 HP 380 V 987 rpm
205 amp. Type: Y615L-6
 Transformer: 11/380 kV/V 500 kVA 26.24/721.7 amp.

A8-36



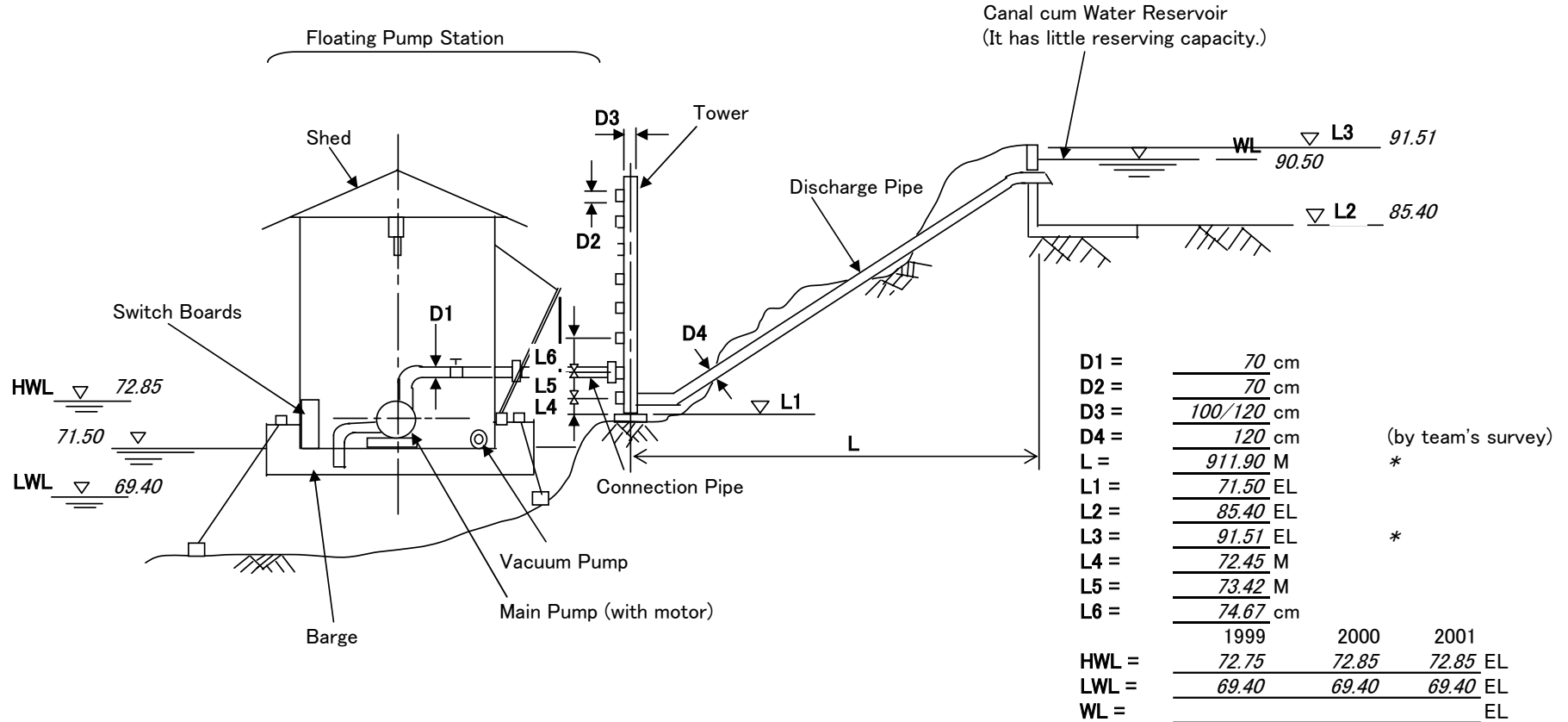
| | | |
|------|-----------------|--------------------|
| D1 = | <u>70</u> cm | (by team's survey) |
| D2 = | <u>50</u> cm | * |
| D3 = | <u>120</u> cm | * |
| D4 = | <u>50</u> cm | * |
| L = | <u>17.53</u> M | * |
| L1 = | <u>74.33</u> EL | |
| L2 = | <u>78.74</u> EL | |
| L3 = | <u>79.73</u> EL | |
| L4 = | _____ M | |
| L5 = | _____ M | |
| L6 = | <u>105</u> cm | |

| | | | |
|-------|--------------|------|-----------------|
| | 1999 | 2000 | 2001 |
| HWL = | <u>74.65</u> | | <u>74.65</u> EL |
| LWL = | <u>70.80</u> | | <u>70.80</u> EL |
| WL = | <u>79.20</u> | | <u>79.20</u> EL |

Difference of Water Level (HWL-LWL)= 3.85 M
 Difference of Height (WL-LWL) = 8.60 M

D-6 (4) GENERAL LAYOUT FOR EXISTING FLOATING PUMP STATION
 FLOATING PUMP STATION DATA SHEET

Name of Pump Station: No. 26. El Biadiea El Ollia Pump Station
Pump: unit(s): 2 Type: NCP90 efx SULZER
 discharge: 1.35 m³/s total head: 23 m
 revolution: 500 rpm
Motor: 440 kW 6000 V 493 rpm
55.9 amp. Type: 3-MOT JTSA-560MB-12A LOHER
Transformer: 11/6000 kV/V 2500 kVA 131 amp.



A6-37

D-6 (5) GENERAL LAYOUT FOR EXISTING FLOATING PUMP STATION
 FLOATING PUMP STATION DATA SHEET

Difference of Water Level (HWL-LWL)= 3.45 M
 Difference of Height (WL-LWL) = 21.10 M

E. Monthly Water Discharge and Water Level of the Nile River

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec. | Ave |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 1997 | | | | | | | | | | | | | |
| Max. Discharge (MCM/d) | 89 | 110 | 150 | 151 | 198 | 252 | 260 | 218 | 140 | 140 | 113 | 70 | 157.58 |
| Aswan W.L.. (m), 6km | 82.67 | 83.00 | 83.80 | 83.80 | 84.71 | 85.42 | 85.56 | 85.03 | 83.60 | 83.60 | 83.10 | 82.08 | 83.86 |
| El Gaafra WL. (m), 34km | 81.55 | 81.80 | 82.55 | 82.55 | 83.41 | 84.10 | 84.20 | 83.67 | 82.41 | 81.85 | 81.83 | 80.97 | 82.57 |
| Min. Discharge (MCM/d) | 85 | 100 | 140 | 140 | 190 | 240 | 240 | 200 | 130 | 130 | 105 | 60 | 146.67 |
| Aswan W.L.. (m) | 82.43 | 82.78 | 83.60 | 83.60 | 84.55 | 85.27 | 85.27 | 84.71 | 83.40 | 83.40 | 82.89 | 81.84 | 83.65 |
| El Gaafra WL. (m), 34km | 81.35 | 81.50 | 82.41 | 82.41 | 83.22 | 83.87 | 83.85 | 83.42 | 82.15 | 81.55 | 81.50 | 80.62 | 82.32 |
| Average Discharge (MCM/d) | 87 | 105 | 145 | 145.5 | 194 | 246 | 250 | 209 | 135 | 135 | 109 | 65 | 152.13 |
| Average WL (m), 6km | 82.55 | 82.89 | 83.70 | 83.70 | 84.63 | 85.35 | 85.42 | 84.87 | 83.50 | 83.50 | 83.00 | 81.96 | 83.75 |
| Average WL (m), 34km | 81.45 | 81.65 | 82.48 | 82.48 | 83.32 | 83.99 | 84.03 | 83.55 | 82.28 | 81.70 | 81.67 | 80.80 | 82.45 |
| 1998 | | | | | | | | | | | | | |
| Max. Discharge (MCM/d) | 96 | 106 | 145 | 151 | 197 | 250 | 251 | 215 | 231 | 227 | 188 | 130 | 182.25 |
| Aswan W.L.. (m), 6km | 82.67 | 82.89 | 83.70 | 83.80 | 84.63 | 85.42 | 85.42 | 84.95 | 85.11 | 85.11 | 84.55 | 83.40 | 84.30 |
| El Gaafra WL. (m), 34km | 81.57 | 81.78 | 82.58 | 82.66 | 83.50 | 84.10 | 84.12 | 83.73 | 83.84 | 83.80 | 83.40 | 82.28 | 83.11 |
| Min. Discharge (MCM/d) | 85 | 100 | 125 | 140 | 180 | 240 | 200 | 215 | 205 | 200 | 160 | 120 | 164.17 |
| Aswan W.L.. (m) | 82.43 | 82.78 | 83.30 | 83.60 | 84.36 | 85.27 | 84.71 | 84.95 | 84.79 | 84.71 | 83.99 | 83.20 | 84.01 |
| El Gaafra WL. (m), 34km | 81.31 | 81.64 | 82.08 | 82.36 | 83.09 | 83.95 | 83.44 | 83.65 | 83.51 | 83.43 | 82.74 | 82.00 | 82.77 |
| Average Discharge (MCM/d) | 90.5 | 103 | 135 | 145.5 | 188.5 | 245 | 225.5 | 215 | 218 | 213.5 | 174 | 125 | 173.21 |
| Average WL (m), 6km | 82.55 | 82.84 | 83.50 | 83.70 | 84.50 | 85.35 | 85.07 | 84.95 | 84.95 | 84.91 | 84.27 | 83.30 | 84.16 |
| Average WL (m), 34km | 81.44 | 81.71 | 82.33 | 82.51 | 83.30 | 84.03 | 83.78 | 83.69 | 83.68 | 83.62 | 83.07 | 82.14 | 82.94 |
| 1999 | | | | | | | | | | | | | |
| Max. Discharge (MCM/d) | 121 | 144 | 176 | 190 | 233 | 257 | 265 | 237 | 219 | 148 | 145 | 101 | 186.33 |
| Aswan W.L.. (m), 6km | 83.20 | 83.70 | 84.26 | 84.55 | 85.19 | 85.40 | 85.63 | 85.19 | 85.03 | 83.80 | 83.70 | 82.78 | 84.37 |
| El Gaafra WL. (m), 34km | 82.09 | 82.56 | 83.06 | 83.33 | 83.93 | 84.08 | 84.10 | 83.91 | 83.79 | 82.63 | 82.55 | 81.68 | 83.14 |
| Min. Discharge (MCM/d) | 100 | 120 | 160 | 170 | 210 | 240 | 250 | 220 | 200 | 130 | 130 | 90 | 168.33 |
| Aswan W.L.. (m) | 82.78 | 83.20 | 83.99 | 84.17 | 84.87 | 85.27 | 85.42 | 85.03 | 84.71 | 83.40 | 83.40 | 82.55 | 84.07 |
| El Gaafra WL. (m), 34km | 81.65 | 82.05 | 82.77 | 82.93 | 83.60 | 83.97 | 84.10 | 83.75 | 83.45 | 82.22 | 82.22 | 81.44 | 82.85 |
| Average Discharge (MCM/d) | 110.5 | 132 | 168 | 180 | 221.5 | 248.5 | 257.5 | 228.5 | 209.5 | 139 | 137.5 | 95.5 | 177.33 |
| Average WL (m), 6km | 82.99 | 83.45 | 84.13 | 84.36 | 85.03 | 85.34 | 85.53 | 85.11 | 84.87 | 83.60 | 83.55 | 82.67 | 84.22 |
| Average WL (m), 34km | 81.87 | 82.31 | 82.92 | 83.13 | 83.77 | 84.03 | 84.10 | 83.83 | 83.62 | 82.43 | 82.39 | 81.56 | 82.99 |

E. Monthly Water Discharge and Water Level of the Nile River

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec. | Ave |
|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 2000 | | | | | | | | | | | | | |
| Max. Discharge (MCM/d) | 118 | 128 | 185 | 190 | 235 | 263 | 263 | 243 | 156 | 140 | 130 | 104 | 179.58 |
| Aswan W.L.. (m), 6km | 83.20 | 83.40 | 84.46 | 84.55 | 85.19 | 85.63 | 85.63 | 85.35 | 83.91 | 83.60 | 83.40 | 82.89 | 84.27 |
| El Gaafra WL. (m), 34km | 82.09 | 82.26 | 83.22 | 83.30 | 83.92 | 84.30 | 84.32 | 84.05 | 82.69 | 82.43 | 82.25 | 81.79 | 83.05 |
| Min. Discharge (MCM/d) | 95 | 115 | 166 | 180 | 210 | 220 | 220 | 220 | 140 | 130 | 115 | 95 | 158.83 |
| Aswan W.L.. (m) | 82.67 | 83.10 | 84.08 | 84.36 | 84.87 | 85.03 | 85.03 | 85.03 | 83.60 | 83.40 | 83.10 | 82.67 | 83.91 |
| El Gaafra WL. (m), 34km | 81.57 | 81.98 | 82.86 | 83.10 | 83.60 | 83.73 | 83.73 | 83.72 | 82.43 | 82.25 | 81.98 | 81.57 | 82.71 |
| Average Discharge (MCM/d) | 106.5 | 121.5 | 175.5 | 185 | 222.5 | 241.5 | 241.5 | 231.5 | 148 | 135 | 122.5 | 99.5 | 169.21 |
| Average WL (m), 6km | 82.94 | 83.25 | 84.27 | 84.46 | 85.03 | 85.33 | 85.33 | 85.19 | 83.76 | 83.50 | 83.25 | 82.78 | 84.09 |
| Average WL (m), 34km | 81.83 | 82.12 | 83.04 | 83.20 | 83.76 | 84.02 | 84.03 | 83.89 | 82.56 | 82.34 | 82.12 | 81.68 | 82.88 |
| 2001 | | | | | | | | | | | | | |
| Max. Discharge (MCM/d) | 114 | 120 | 157 | 166 | 211 | 267 | 266 | 256 | 258 | 200 | 125 | 100 | 186.67 |
| Aswan W.L.. (m), 6km | 83.10 | 83.20 | 83.91 | 84.08 | 84.87 | 85.63 | 85.63 | 85.49 | 85.56 | 84.71 | 83.30 | 82.78 | 84.36 |
| El Gaafra WL. (m), 34km | 81.85 | 82.05 | 82.71 | 82.86 | 83.59 | 84.28 | 84.28 | 84.18 | 84.20 | 83.50 | 82.10 | 81.68 | 83.11 |
| Min. Discharge (MCM/d) | 100 | 110 | 140 | 155 | 195 | 245 | 240 | 220 | 220 | 85 | 100 | 95 | 158.75 |
| Aswan W.L.. (m) | 82.78 | 83.00 | 83.60 | 83.91 | 84.63 | 85.30 | 85.27 | 85.03 | 85.03 | 82.43 | 82.78 | 82.67 | 83.87 |
| El Gaafra WL. (m), 34km | 81.75 | 81.81 | 82.60 | 82.80 | 83.45 | 83.91 | 83.88 | 83.75 | 83.95 | 83.20 | 81.75 | 81.48 | 82.86 |
| Average Discharge (MCM/d) | 107 | 115 | 148.5 | 160.5 | 203 | 256 | 253 | 238 | 239 | 142.5 | 112.5 | 97.5 | 172.71 |
| Average WL (m), 6km | 82.94 | 83.1 | 83.755 | 83.995 | 84.75 | 85.465 | 85.45 | 85.26 | 85.295 | 83.57 | 83.04 | 82.725 | 84.11 |
| Average WL (m), 34km | 81.8 | 81.93 | 82.655 | 82.83 | 83.52 | 84.095 | 84.08 | 83.965 | 84.075 | 83.35 | 81.925 | 81.58 | 82.98 |
| Average | | | | | | | | | | | | | |
| Max. Discharge (MCM/d) | 107.6 | 121.6 | 162.6 | 169.6 | 214.8 | 257.8 | 261 | 233.8 | 200.8 | 171 | 140.2 | 101 | 178.48 |
| Aswan W.L.. (m), 6km | 82.968 | 83.238 | 84.026 | 84.156 | 84.918 | 85.5 | 85.574 | 85.202 | 84.642 | 84.164 | 83.61 | 82.786 | 84.23 |
| El Gaafra WL. (m), 34km | 81.83 | 82.09 | 82.824 | 82.94 | 83.67 | 84.172 | 84.204 | 83.908 | 83.386 | 82.842 | 82.426 | 81.68 | 83.00 |
| Min. Discharge (MCM/d) | 93 | 109 | 146.2 | 157 | 197 | 237 | 230 | 215 | 179 | 135 | 122 | 92 | 159.35 |
| Aswan W.L.. (m) | 82.618 | 82.972 | 83.714 | 83.928 | 84.656 | 85.228 | 85.14 | 84.95 | 84.306 | 83.468 | 83.232 | 82.586 | 83.90 |
| El Gaafra WL. (m), 34km | 81.526 | 81.796 | 82.544 | 82.72 | 83.392 | 83.886 | 83.8 | 83.658 | 83.098 | 82.53 | 82.038 | 81.422 | 82.70 |
| Average (discharge) | 100.3 | 115.3 | 154.4 | 163.3 | 205.9 | 247.4 | 245.5 | 224.4 | 189.9 | 153 | 131.1 | 96.5 | 168.92 |
| Average WL (m), 6km | 82.793 | 83.105 | 83.87 | 84.042 | 84.787 | 85.364 | 85.357 | 85.076 | 84.474 | 83.816 | 83.421 | 82.686 | 84.07 |
| Average WL (m), 34km | 81.678 | 81.943 | 82.684 | 82.83 | 83.531 | 84.029 | 84.002 | 83.783 | 83.242 | 82.686 | 82.232 | 81.551 | 82.85 |

F-1. Proposed Pump Capacity Required to Supply Water for Service Area

Unit : m³/sec

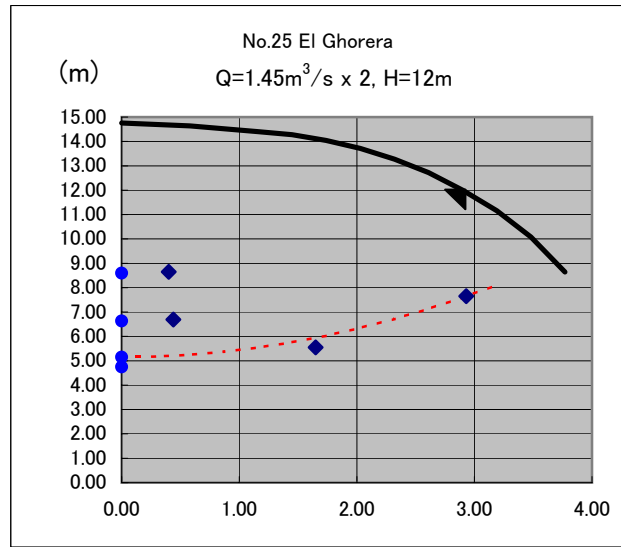
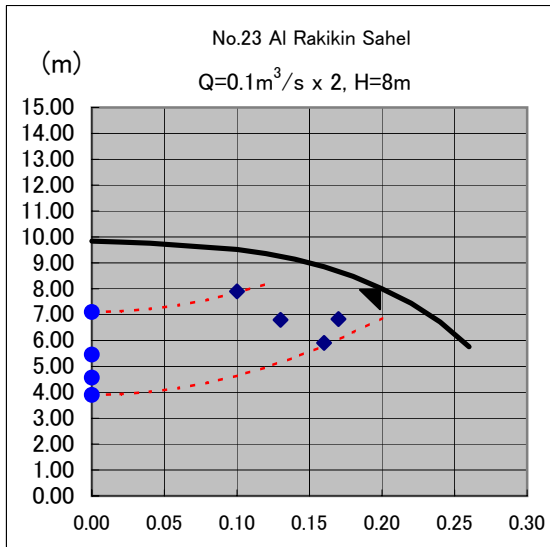
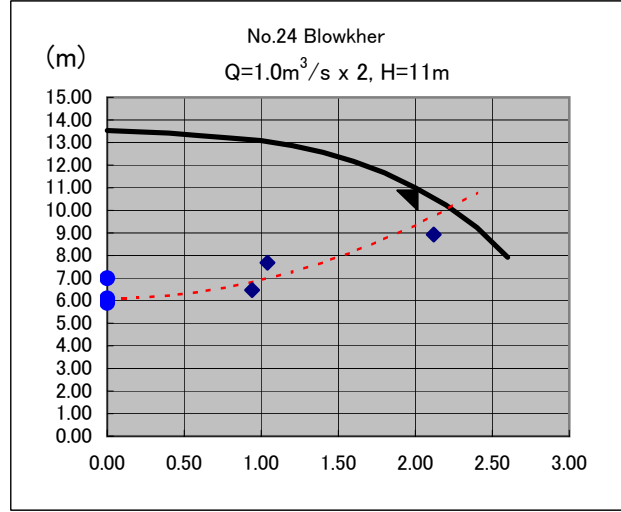
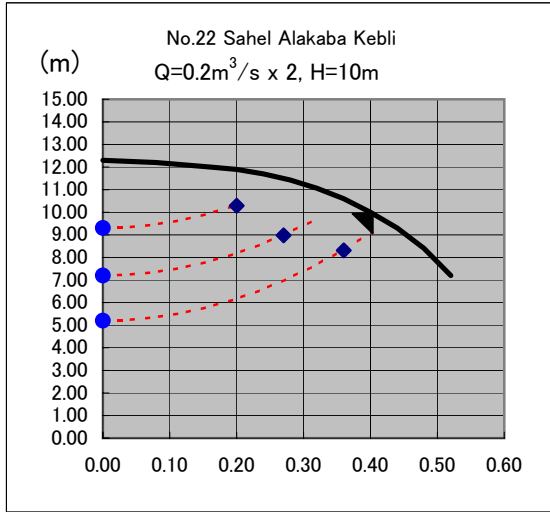
| Pump Station | Description | Area (feddan) | Winter Season | | | | Summer Season | | | | | Winter Season | | |
|---------------------------------|------------------------|--|---------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|-------------|---------------|------|--------------|
| | | | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
| No.22 Sahel Alakaba Kebli | Existing | 250 | 0.17 | 0.20 | 0.14 | 0.23 | 0.28 | 0.30 | 0.23 | 0.28 | 0.26 | 0.26 | 0.14 | 0.17 |
| | Extension | 50 | 0.03 | 0.04 | 0.03 | 0.05 | 0.06 | 0.06 | 0.05 | 0.06 | 0.05 | 0.05 | 0.03 | 0.03 |
| | Total Requirement | | 0.20 | 0.24 | 0.17 | 0.27 | 0.34 | 0.36 | 0.27 | 0.34 | 0.31 | 0.32 | 0.17 | 0.20 |
| | Ex. Pump Capacity | 0 m ³ /s x 2 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | Required Pump Capacity | | 0.20 | 0.24 | 0.17 | 0.27 | 0.34 | 0.36 | 0.27 | 0.34 | 0.31 | 0.32 | 0.17 | 0.20 |
| No.23 Al Rakikin Sahel | Existing | 150 | 0.10 | 0.13 | 0.10 | 0.13 | 0.17 | 0.16 | 0.13 | 0.16 | 0.15 | 0.15 | 0.09 | 0.10 |
| | Extension | 0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | Total Requirement | | 0.10 | 0.13 | 0.10 | 0.13 | 0.17 | 0.16 | 0.13 | 0.16 | 0.15 | 0.15 | 0.09 | 0.10 |
| | Ex. Pump Capacity | 0 m ³ /s x 2 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | Required Pump Capacity | | 0.10 | 0.13 | 0.10 | 0.13 | 0.17 | 0.16 | 0.13 | 0.16 | 0.15 | 0.15 | 0.09 | 0.10 |
| No.24 Blowkher | Existing | 2,000 | 0.76 | 1.07 | 0.83 | 1.19 | 1.92 | 2.20 | 2.76 | 3.18 | 3.03 | 2.28 | 1.66 | 1.13 |
| | Extension | 400 | 0.15 | 0.21 | 0.17 | 0.24 | 0.38 | 0.44 | 0.55 | 0.64 | 0.61 | 0.46 | 0.33 | 0.23 |
| | Total Requirement | | 0.91 | 1.28 | 0.99 | 1.43 | 2.31 | 2.64 | 3.31 | 3.82 | 3.63 | 2.74 | 2.00 | 1.35 |
| | Ex. Pump Capacity | 0.85m ³ /s x 2 | 1.70 | 1.70 | 1.70 | 1.70 | 1.70 | 1.70 | 1.70 | 1.70 | 1.70 | 1.70 | 1.70 | 1.70 |
| | Required Pump Capacity | | -0.79 | -0.42 | -0.71 | -0.27 | 0.61 | 0.94 | 1.61 | 2.12 | 1.93 | 1.04 | 0.30 | -0.35 |
| No.25 El Ghorera | Existing | 1,000 | 0.37 | 0.52 | 0.42 | 0.59 | 0.88 | 1.08 | 1.43 | 1.60 | 1.55 | 1.17 | 0.81 | 0.57 |
| | Reversion | 1,450 | 0.54 | 0.75 | 0.60 | 0.85 | 1.27 | 1.57 | 2.07 | 2.33 | 2.25 | 1.70 | 1.18 | 0.83 |
| | Total Requirement | 2,450 | 0.91 | 1.27 | 1.02 | 1.44 | 2.15 | 2.65 | 3.50 | 3.93 | 3.80 | 2.87 | 2.00 | 1.40 |
| | Ex. Pump Capacity | 0.50m ³ /s x 2 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| | Required Pump Capacity | | -0.09 | 0.27 | 0.02 | 0.44 | 1.15 | 1.65 | 2.50 | 2.93 | 2.80 | 1.87 | 1.00 | 0.40 |
| No.26 El Biadiea El Ollia | Lower Canal | | | | | | | | | | | | | |
| | Existing | 2,920 | 1.13 | 1.56 | 1.28 | 1.68 | 2.81 | 3.28 | 4.12 | 4.44 | 3.99 | 2.98 | 2.38 | 1.70 |
| | Extension | 630 | 0.24 | 0.34 | 0.28 | 0.36 | 0.61 | 0.71 | 0.89 | 0.96 | 0.86 | 0.64 | 0.51 | 0.37 |
| | Total of Lower C. | 3,550 | 1.38 | 1.90 | 1.55 | 2.04 | 3.41 | 3.99 | 5.01 | 5.39 | 4.85 | 3.62 | 2.89 | 2.07 |
| | Upper Canal | | | | | | | | | | | | | |
| | Existing | 1,300 | 0.50 | 0.69 | 0.57 | 0.75 | 1.25 | 1.46 | 1.84 | 1.97 | 1.78 | 1.33 | 1.06 | 0.76 |
| | Extension | 250 | 0.10 | 0.13 | 0.11 | 0.14 | 0.24 | 0.28 | 0.35 | 0.38 | 0.34 | 0.26 | 0.20 | 0.15 |
| | Total of Upper C. | 1,550 | 0.60 | 0.83 | 0.68 | 0.89 | 1.49 | 1.74 | 2.19 | 2.35 | 2.12 | 1.58 | 1.26 | 0.90 |
| | Total Requirement | 5,100 | 1.98 | 2.72 | 2.23 | 2.93 | 4.90 | 5.73 | 7.20 | 7.75 | 6.97 | 5.21 | 4.15 | 2.97 |
| | Ex. Pump Capacity | 1.30m ³ /s x 2 +2.0m ³ /s x 3 | | 2.60 | 2.60 | 8.60 | 8.60 | 8.60 | 8.60 | 8.60 | 8.60 | 8.60 | 2.60 | 2.60 |
| Required Pump Capacity | | -0.62 | 0.12 | -6.37 | -5.67 | -3.70 | -2.87 | -1.40 | -0.85 | -1.63 | 2.61 | 1.55 | 0.37 | |

Note : At No.26 El Biadiea El Ollia, the Fixed Pump (2.0m³/s x 3units) can't operate during winter from Oct. to Feb. due to low water level of the Nile.

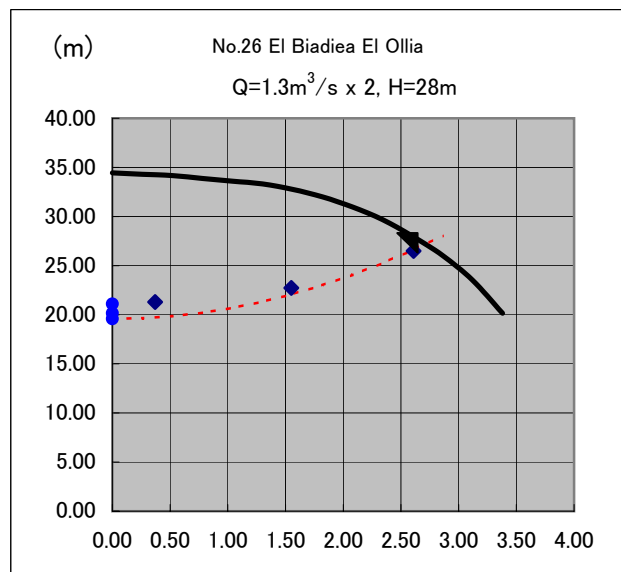
Applied unit Consumptive use of water for Sugarcane is based on the research result in 1994 by the Water Management Research Institute.

F-2 Specification Point of Proposed Pump

Pump Discharge (m^3/s) and Required Head (m)



| No. | Q | H | Qo | Ho |
|-----|------|-------|------|-------|
| 22 | 0.27 | 8.98 | 0.00 | 7.20 |
| | 0.36 | 8.31 | 0.00 | 5.20 |
| | 0.20 | 10.29 | 0.00 | 9.30 |
| 23 | 0.13 | 6.80 | 0.00 | 5.46 |
| | 0.17 | 6.83 | 0.00 | 4.57 |
| | 0.16 | 5.91 | 0.00 | 3.90 |
| 24 | 0.10 | 7.90 | 0.00 | 7.10 |
| | 0.94 | 6.47 | 0.00 | 5.90 |
| | 2.12 | 8.93 | 0.00 | 6.10 |
| 25 | 1.04 | 7.68 | 0.00 | 6.99 |
| | 0.44 | 6.69 | 0.00 | 6.63 |
| | 1.65 | 5.55 | 0.00 | 4.75 |
| 26 | 2.93 | 7.65 | 0.00 | 5.15 |
| | 0.40 | 8.65 | 0.00 | 8.60 |
| | 2.61 | 26.50 | 0.00 | 19.58 |
| | 1.55 | 22.73 | 0.00 | 20.15 |
| | 0.37 | 21.30 | 0.00 | 21.10 |



Appendix-6 G. Maintenance Cost

1. Present Condition of Maintenance

MED is responsible for the O&M of the pump facilities, while ID is responsible for the O&M of the main canals and attachment gates. Maintenance of the pump facilities is implemented by staffs of MED. Maintenance of the main canal including repairing construction is implemented by ID entrusting local companies, and farmers don't participate. Farmers doesn't charge any cost for these. On the other hand, farmers construct on farm canals (Mesuca), and they do O&M of these.

In No.23 Al Rakikin Sahel region, farmers historically do maintenance works for main canals, and ID regularly inspects the situation and instructs farmers about the repairing places.

2. Maintenance Cost after Rehabilitation

Maintenance cost of pump is approximately divided into 3 parts such as electricity, wage and salary, and repairing cost. Maintenance cost (cost/Feddan) in total project area after installing renewal pumps is estimated, which is compared with it before installing. In calculation, followings are focused.

- Cost of electricity is estimated by multiplying volume planed of irrigated water by cost/ m³ of existing pump stations in each region, because the capacity of the pumping head of the planed pump stations is same as the existing pump stations.
- Repairing cost for renewal pumps is estimated by calculating average of actual repairing cost/m³ in Phase I and Phase II, and multiplying it by volume planed of irrigated water of the pump.
- If the renewal pumps used parallely with existing pumps, repairing cost of existing pumps is estimated by calculating actual repairing cost /m³ of the existing pumps in each region, and multiplying it by volume planed of irrigated water of the pump.
- Allotment volume is decided by considering of actual operating record and comparing of the pumping capacity of each pump.
- Wage and salary are actual cost from the record in the each area, because the number of the staff does not change.

Maintenance cost is After implementation of the Project, annual operation and maintenance cost for 5 pump stations composed of renewal floating pumps and existing pumps is estimated at approximately 1.75 million LE as

shown below, which means about 10% reduction of the annual cost, and MED and ID are capable of O&M by the existing organization.

Maintenance cost in No.24 Blowkher region and No.26 El Biadiea El Ollia 2 region is relatively high, because the pumping head capacity in these regions is higher than the other regions. However, except of No.26 El Biadiea El Ollia, after installing the pumps the maintenance cost is estimated to be cheaper than before.

Annual Maintenance Cost

| Item | Record | | | After Rehabilitation |
|----------------------|-------------|-----------|-----------|----------------------|
| | 1998 / 1999 | 1999/2000 | 2000/2001 | |
| Maintenance Cost | 98,546 | 927,591 | 227,687 | 169,846 |
| Electricity and Fuel | 1,310,680 | 1,303,570 | 1,347,655 | 1,362,504 |
| Salary | 184,508 | 198,573 | 214,480 | 214,480 |
| Total | 1,593,734 | 2,429,733 | 1,789,821 | 1,746,831 |
| Area (feddan) | 7,470 | 7,470 | 7,470 | 10,400 |
| Per 1 feddan | 213 | 325 | 240 | 168 |

No.22 Sahel Alakaba Kebli (unit : LE/feddan)

| | Electricity | Electr. + Repair Cost | Elec.+Repair+Salary |
|--------------|-------------|-----------------------|---------------------|
| Present | 72.9 | 101.4 | 275.0 |
| After Rehab. | 68.5 | 82.2 | 226.9 |

No.23 Al Rakikin Sahel (unit : LE/feddan)

| | Electricity | Electr. + Repair Cost | Elec.+Repair+Salary |
|--------------|-------------|-----------------------|---------------------|
| Present | 39.7 | 78.0 | 243.9 |
| After Rehab. | 39.8 | 53.3 | 219.2 |

No.24 Blowkher (unit : LE/feddan)

| | Electricity | Electr. + Repair Cost | Elec.+Repair+Salary |
|--------------|-------------|-----------------------|---------------------|
| Present | 130.4 | 188.3 | 225.3 |
| After Rehab. | 109.2 | 136.0 | 166.8 |

No.25 El Ghorera (unit : LE/feddan)

| | Electricity | Electr. + Repair Cost | Elec.+Repair+Salary |
|--------------|-------------|-----------------------|---------------------|
| Present | 66.4 | 69.0 | 105.4 |
| After Rehab. | 54.4 | 66.2 | 78.8 |

No.26 El Biadica El Ollia

(unit : LE/feddan)

| | Electricity | Electr. + Repair Cost | Elec.+Repair+Salary |
|--------------|-------------|-----------------------|---------------------|
| Present | 232.0 | 312.1 | 306.2 |
| After Rehab. | 184.4 | 198.3 | 203.4 |

Case-1 : Pay for Fuel , Case-2 : Pay for fuel and repairing cost, Case-3 : Pay for fuel, repairing cost, and wage

3. Possibility of Affordability by Farmers

It is confirmed that how heavy the water fees are for the farmers interviewed. Although its result is not a representative of all, one can suppose the situation. It is conjectured in condition that the farmer's income does not change after installing the pumps.

Judging from the results, in No.26 El Biadica El Ollia region, maintenance cost is higher than the other regions, so the water fees are higher than the other regions. In all region except No.26region, charge of electricity and repairing is less than 10% of the agricultural income. However, general balance per cap. is annually 240 ~ 3,600LE(\$52 ~ 777), and farmers can not save money recognizing from the interview. Balance of farmers owning more than 10 Feddan of the land has some surplus, while, considering of the income, water fees are a heavy burden for self-consuming small farmers. Considering of the total project area, most farmers doesn't have medium or large land, so it is difficult to collect water fees from farmers.

Moreover, irrigation water is historically provided without charge by MED and ID, so irrigation cost-sharing is not considered to be introduced.

Table G-1 Irrigation water fees after installing renewal floating pumps

| Sample number | Number of family member | Number of dependent | Agricultural population | Non-agricultural population | Cultivated area(Feddan) | | | Agricultural income(LE) | | | Non-agricultural income (LE) | Total income (LE) | Rate of agricultural income | General expenditure(LE) | | Cost for agriculture(LE) | | | | | Benefit from agriculture(LE) | | Balance (LE) |
|---------------|-------------------------|---------------------|-------------------------|-----------------------------|-------------------------|-------------|-------|-------------------------|-----------|--------|------------------------------|-------------------|-----------------------------|-------------------------|-----------|--------------------------|------------------|-------|--------|--------|------------------------------|---------|--------------|
| | | | | | Private land | Rented land | Total | Agriculture | Livestock | Total | | | | Expenditure | per capt. | Tax for land | Fertilizer, seed | Labor | Others | Total | Total benefit | /Feddan | |
| 22-1 | 5 | 4 | 2 | 1 | 1.0 | 0.0 | 1.0 | 0 | 1,000 | 1,000 | 2,640 | 3,640 | 27% | 3,640 | 728 | 20 | 220 | | | 240 | 760 | 760 | -240 |
| 22-2 | 5 | 2 | 3 | 0 | 2.5 | 1.0 | 3.5 | 7,000 | 900 | 7,900 | 0 | 7,900 | 100% | 5,000 | 1,000 | 1,220 | 1,250 | | 50 | 2,520 | 5,380 | 1,537 | 380 |
| 22-3 | 9 | 5 | 4 | 0 | 2.0 | 0.5 | 2.5 | 500 | 3,000 | 3,500 | 0 | 3,500 | 100% | 2,500 | 278 | | | | | 0 | 3,500 | 1,400 | 1,000 |
| 23-1 | 5 | 3 | 2 | 1 | 0.0 | 0.2 | 0.2 | 480 | 600 | 1,080 | 320 | 1,400 | 77% | 1,200 | 240 | | 150 | | | 150 | 930 | 4,650 | 50 |
| 23-2 | 9 | 0 | 7 | 2 | 0.5 | 0.0 | 0.5 | 0 | 1,200 | 1,200 | 5,800 | 7,000 | 17% | 8,000 | 889 | | | | | 0 | 1,200 | 2,400 | -1,000 |
| 23-3 | 6 | 3 | 3 | 0 | 0.0 | 2.0 | 2.0 | 4,000 | 1,300 | 5,300 | 0 | 5,300 | 100% | 3,600 | 600 | 1,000 | 500 | | 190 | 1,690 | 3,610 | 1,805 | 10 |
| 24-1 | 5 | 2 | 3 | 1 | 2.0 | 2.0 | 4.0 | 12,000 | 2,600 | 14,600 | 6,000 | 20,600 | 71% | 7,200 | 1,440 | 3,040 | 1,140 | 1,200 | 2,460 | 7,840 | 6,760 | 1,690 | 5,560 |
| 24-2 | 6 | 4 | 2 | 0 | 0.3 | 0.0 | 0.3 | 4,500 | 0 | 4,500 | 2,160 | 6,660 | 68% | 4,000 | 667 | 40 | 330 | 120 | 680 | 1,170 | 3,330 | 11,100 | 1,490 |
| 24-3 | 6 | 2 | 4 | 0 | 2.0 | 0.0 | 2.0 | 4,000 | 2,600 | 6,600 | 0 | 6,600 | 100% | 4,200 | 700 | 30 | 645 | 400 | 600 | 1,675 | 4,925 | 2,463 | 725 |
| 25-1 | 10 | 6 | 4 | 1 | 7.0 | 4.0 | 11.0 | 25,100 | 2,200 | 27,300 | | 27,300 | 100% | 12,000 | 1,200 | 8,000 | 1,500 | 1,200 | 2,400 | 13,100 | 14,200 | 1,291 | 2,200 |
| 25-2 | 5 | 3 | 2 | 0 | 2.0 | 0.0 | 2.0 | 4,845 | 400 | 5,245 | 7,200 | 12,445 | 42% | 10,800 | 2,160 | 40 | 640 | 480 | 400 | 1,560 | 3,685 | 1,843 | 85 |
| 25-3 | 2 | 0 | 2 | 1 | 20.0 | 0.0 | 20.0 | 51,300 | 0 | 51,300 | 6,000 | 57,300 | 90% | 7,200 | 3,600 | 2,000 | 15,700 | 5,760 | 4,180 | 27,640 | 23,660 | 1,183 | 22,460 |
| 26-1 | 5 | 3 | 2 | 1 | 2.8 | 0.0 | 2.8 | 7,125 | 1,000 | 8,125 | 4,560 | 12,685 | 64% | 6,000 | 1,200 | 62 | 350 | 800 | 600 | 1,812 | 6,313 | 2,255 | 4,873 |
| 26-2 | 8 | 3 | 5 | 0 | 19.0 | 0.0 | 19.0 | 31,950 | 2,000 | 33,950 | 0 | 33,950 | 100% | 12,000 | 1,500 | 420 | 6,650 | 3,520 | 2,640 | 13,230 | 20,720 | 1,091 | 8,720 |
| 26-3 | 9 | 3 | 3 | 3 | 12.0 | 13.0 | 25.0 | 62,825 | 1,000 | 63,825 | 10,840 | 74,665 | 85% | 13,200 | 1,467 | 7,862 | 5,200 | 5,440 | 4,165 | 22,667 | 41,158 | 1,646 | 38,798 |
| 26-4 | 5 | 2 | 1 | 4 | 3.0 | 6.0 | 9.0 | 18,555 | 2,000 | 20,555 | 1,000 | 21,555 | 95% | 10,800 | 2,160 | 4,650 | 4,500 | 1,500 | 1,925 | 12,575 | 7,980 | 887 | -1,820 |
| 26-5 | 17 | 10 | 7 | 0 | 4.0 | 0.0 | 4.0 | 6,985 | 600 | 7,585 | 0 | 7,585 | 100% | 7,200 | 424 | 88 | 330 | 400 | 280 | 1,098 | 6,487 | 1,622 | -713 |

Others in cost for agriculture include transport cost and fees of agricultural cooperation.

Estimated water fee (LE/feddan)

| | Case 1 | Case 2 | Case 3 |
|----|--------|--------|--------|
| 22 | 68.5 | 82.2 | 226.9 |
| 23 | 39.8 | 53.3 | 219.2 |
| 24 | 109.2 | 136.0 | 166.8 |
| 25 | 54.4 | 66.2 | 78.8 |
| 26 | 184.4 | 198.3 | 203.4 |

Case 1: pay for fuel

Case 2: Pay for fuel and repairing cost

Case 3: Pay for fuel, repairing cost, and wage

| sample number | Water fees (Case 1) | | | | Water fees (Case 2) | | | | Water fees (Case 3) | | | | |
|---------------|---------------------|--|--------------------------------------|---------------------------------------|---------------------|--|--------------------------------------|---------------------------------------|---------------------|--|--------------------------------------|---------------------------------------|---|
| | Water fees (LE) | Water fee rate in agricultural benefit | Increasing rate of agricultural cost | Balance after charging the water fees | Water fees (LE) | Water fee rate in agricultural benefit | Increasing rate of agricultural cost | Balance after charging the water fees | Water fees (LE) | Water fee rate in agricultural benefit | Increasing rate of agricultural cost | Balance after charging the water fees | |
| 22-1 | 69 | 9% | 29% | -309 | 82 | 11% | 34% | -322 | 227 | 30% | 95% | -467 | |
| 22-2 | 240 | 4% | 10% | 140 | 288 | 5% | 11% | 92 | 794 | 15% | 32% | -414 | |
| 22-3 | 171 | 5% | — | 829 | 206 | 6% | — | 794 | 567 | 16% | — | 433 | Land-rending fee is 1/3of the product. |
| 23-1 | 8 | 1% | 5% | 42 | 11 | 1% | 7% | 39 | 44 | 5% | 29% | 6 | |
| 23-2 | 20 | 2% | — | -1,020 | 27 | 2% | — | -1,027 | 110 | 9% | — | -1,110 | |
| 23-3 | 80 | 2% | 5% | -70 | 107 | 3% | 6% | -97 | 438 | 12% | 26% | -428 | |
| 24-1 | 437 | 6% | 6% | 5,123 | 544 | 8% | 7% | 5,016 | 667 | 10% | 9% | 4,893 | |
| 24-2 | 33 | 1% | 3% | 1,457 | 41 | 1% | 3% | 1,449 | 50 | 2% | 4% | 1,440 | |
| 24-3 | 218 | 4% | 13% | 507 | 272 | 6% | 16% | 453 | 334 | 7% | 20% | 391 | |
| 25-1 | 598 | 4% | 5% | 1,602 | 728 | 5% | 6% | 1,472 | 867 | 6% | 7% | 1,333 | |
| 25-2 | 109 | 3% | 7% | -24 | 132 | 4% | 8% | -47 | 158 | 4% | 10% | -73 | |
| 25-3 | 1,088 | 5% | 4% | 21,372 | 1,324 | 6% | 5% | 21,136 | 1,576 | 7% | 6% | 20,884 | Profit is devided among family members(5brother) |
| 26-1 | 516 | 8% | 29% | 4,357 | 555 | 9% | 31% | 4,318 | 569 | 9% | 31% | 4,304 | |
| 26-2 | 3,504 | 17% | 26% | 5,216 | 3,767 | 18% | 28% | 4,953 | 3,864 | 19% | 29% | 4,856 | |
| 26-3 | 4,611 | 11% | 20% | 34,187 | 4,957 | 12% | 22% | 33,841 | 5,084 | 12% | 22% | 33,714 | |
| 26-4 | 1,660 | 21% | 13% | -3,480 | 1,784 | 22% | 14% | -3,604 | 1,830 | 23% | 15% | -3,650 | Non-agricultural income is rental fee of tractor. |
| 26-5 | 738 | 11% | 67% | -1,451 | 793 | 12% | 72% | -1,506 | 813 | 13% | 74% | -1,526 | |

* Discuss how heavy the water fees are for the farmers interviewed. Although its result is not a representative of all, one can suppose the situation.