

## 12.3 Village Profile of Sites in Al Mahweet Governorate

| SITE IDENTIFICATION PANEL          |  |                                 |                        |           |                        |
|------------------------------------|--|---------------------------------|------------------------|-----------|------------------------|
| No.                                | Item   | Description                     |                        |           |                        |
|                                    | Code No.   | A-01                            |                        |           |                        |
|                                    | Site Name  | Al Sha'afel Al Olyah & Al Sufia |                        |           |                        |
|                                    | Sub-District (Uzlat)                                   | Al Sha'afel                     |                        |           |                        |
|                                    | District   | Al Khabt                        |                        |           |                        |
|                                    | Governorate  | Al Mahweet                      |                        |           |                        |
|                                    | Coordinates  | Latitude                        | Longitude              |           |                        |
|                                    | Coordinates (Measured Location)                        |                                 |                        |           |                        |
|                                    | Annual precipitation (rainfall)                        | 380 mm                          |                        |           |                        |
|                                    | Population (2006)                                      | 9,405                           |                        |           |                        |
|                                    | Population Forecast(2016)                              | 12,481                          |                        |           |                        |
|                                    | No. of Village (Qariah) in Total                       | 22                              |                        |           |                        |
|                                    | No. of Village (Qariah) to be served                   | 22                              |                        |           |                        |
|                                    | Village (Qariah) in the Community                      | Name                            | Population             | Household | Coordinate (Lat / Lon) |
|                                    |  | Suda                            | 1,500                  | 280       |                        |
|                                    |  | Al Galia                        | 350                    | 75        |                        |
|                                    |  | Al Theara'h                     | 600                    | 90        |                        |
|                                    |  | Al Khumash                      | 850                    | 110       |                        |
|                                    |  | Al Luhuf Al Ala                 | 1,400                  | 275       |                        |
|                                    |  | Al Aukash                       | 350                    | 70        |                        |
|                                    |  | Shahyiah                        | 300                    | 60        |                        |
|                                    |  | Deer Al Sabeq                   | 900                    | 150       |                        |
|                                    |  | Al Aurgain                      | 355                    | 73        |                        |
|                                    |  | Al Khumeeri                     | 320                    | 60        |                        |
|                                    |  | Bab Al Sha'ab                   | 200                    | 40        |                        |
|                                    |  | Wadi Al Mudeerah                | 250                    | 55        |                        |
|                                    |  | Al Madraj                       | 100                    | 25        |                        |
|                                    |  | Al Khatmah                      | 280                    | 55        |                        |
|                                    |  | Al Dahla                        | 30                     | 5         |                        |
|                                    |  | Dhabian                         | 210                    | 35        |                        |
|                                    |  | Habeel Al Jone                  | 260                    | 55        |                        |
|                                    |  | Al Elaq                         | 150                    | 30        |                        |
|                                    |  | Al Areedh                       | 250                    | 55        |                        |
|                                    | Al Howyiah   | 200                             | 50                     |           |                        |
|                                    | Al Madafen   | 300                             | 50                     |           |                        |
|                                    | Maqsaab  | 250                             | 40                     |           |                        |
| EXISTING WATER SUPPLY SCHEME PANEL |  |                                 |                        |           |                        |
| No.                                | Item   | Description                     |                        |           |                        |
|                                    | Functioning Components of Existing Water Supply Scheme | No existing Component           | Specification          | Condition | Year                   |
|                                    |  | Pump for Deep Well              |                        |           |                        |
|                                    |  | Eng./Gen. for Deep Well         |                        |           |                        |
|                                    |  | Pump House for Deep We          |                        |           |                        |
|                                    |  | Pump for Booster                |                        |           |                        |
|                                    |  | Eng./Gen. for Booster           |                        |           |                        |
|                                    |  | Pump House for Booster          |                        |           |                        |
|                                    |  | Booster Tank                    |                        |           |                        |
|                                    |  | Distribution Tank               |                        |           |                        |
|                                    |  | Pumping Main                    |                        |           |                        |
|                                    |  | Distribution Main               |                        |           |                        |
|                                    |  | Public Tapstand                 |                        |           |                        |
|                                    |  | House Connection                |                        |           |                        |
|                                    | Observations   |                                 |                        |           |                        |
| WATER SOURCE PANEL                 |  |                                 |                        |           |                        |
| No.                                | Item   | Description                     |                        |           |                        |
|                                    | <b>【Borehole Code】</b>                                 |                                 |                        |           |                        |
|                                    | Grid (UTM)   | North<br>1709668                | East<br>317540         |           |                        |
|                                    | Grid (Lat/Lon)   | Lat. N<br>15°27' 27.0"          | Lon. E<br>43°17' 58.1" |           |                        |
|                                    | Present Condition (Pump Type)                          | Capped                          |                        |           |                        |
|                                    | Elevation (m)  | 355 m                           |                        |           |                        |
|                                    | Aquifer/Geological Description                         |                                 |                        |           |                        |
|                                    | Year of Construction                                   | 2005                            |                        |           |                        |
|                                    | Fund   | Local Council                   |                        |           |                        |
|                                    | Depth (m)  | 192 m                           |                        |           |                        |
|                                    | Casing Diameter (inch)                                 | 8 inch                          |                        |           |                        |
|                                    | Screen   |                                 |                        |           |                        |
|                                    | Static Water Level (G.L.-m)                            | 27 m                            |                        |           |                        |
|                                    | Dynamic Water Level (G.L.-m)                           | 177 m                           |                        |           |                        |
|                                    | Drawdown (m)   | 150 m                           |                        |           |                        |
|                                    | Discharge  | 70 g/min                        | 4.4 L/sec              |           |                        |
|                                    | Specific Capacity                                      | 0.035 L/s/m                     |                        |           |                        |
|                                    | EC (mS/m)  | 180.9 mS/m                      |                        |           |                        |
|                                    | pH   | 6.61                            |                        |           |                        |
|                                    | Temperature (°C)                                       | 34.7                            |                        |           |                        |
|                                    | Remarks  |                                 |                        |           |                        |

### 12.3 Village Profile of Sites in Al Mahweet Governorate

| WATER SUPPLY PLANNING PANEL     |  |   |                         |
|---------------------------------|--|---|-------------------------|
| No.                             | Item   | Description   |                         |
|                                 | <b>[Design Parameter]</b>                        |   |                         |
|                                 | No. of Villages in Total                         | 22  |                         |
|                                 | No. of Villages to be Covered                    | 22  |                         |
|                                 | Current Population (2005)                        | 9,405   |                         |
|                                 | Design Population (2025)                         | 12,481  |                         |
|                                 | Design Water Supply Rate                         | 40 L/c/d  | 499 m <sup>3</sup> /day |
|                                 | Type of Work Required                            | New construction  |                         |
|                                 | Required Facilities                              | Component   | To be Constructed by    |
|                                 |  | Pump for Deep Well  | Donor                   |
|                                 |  | Eng./Gen. for Deep Well   | Donor                   |
|                                 |  | Pump House for Deep Well  | Donor/Village           |
|                                 |  | Pump for Booster  | Donor                   |
|                                 |  | Eng./Gen. for Booster   | Donor                   |
|                                 |  | Pump House for Booster  | Donor/Village           |
|                                 |  | Booster Tank  | Donor                   |
|                                 |  | Distribution Tank   | Donor                   |
|                                 |  | Pumping Main  | Donor                   |
|                                 |  | Distribution Main   | Donor                   |
|                                 |  | Public Tapstand   | Donor                   |
|                                 |  | House Connection  | Village                 |
|                                 | Accessibility                                    | End of lower village accessible through paved road. Upper village accessibility is possible through dirt track. |                         |
|                                 | Security   | No problem  |                         |
|                                 | Observation                                      |   |                         |
| OPERATION AND MAINTENANCE PANEL |  |   |                         |
| No.                             | Item   | Description   |                         |
|                                 | No. of Village Head (Sheikh)                     |   |                         |
|                                 | No. of Tribe                                     |   |                         |
|                                 | Observation in Current Supply Scheme             |   |                         |
|                                 | Mode of Ownership                                |   |                         |
|                                 | Mode of Management Entity                        |   |                         |
|                                 | Organizational Management                        |   |                         |
|                                 | Technical Operation and Maintenance              |   |                         |
|                                 | Financial Management and Transparency            |   |                         |
|                                 | Stakeholder Involvement / Responsibility Sharing |   |                         |
|                                 | Community Contribution                           |   |                         |
|                                 | Community Contracting-Out                        |   |                         |
|                                 | Conflict Resolution                              |   |                         |
|                                 | Pro-Gender and Pro-Poor                          |   |                         |
|                                 | Remarks  |   |                         |

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| SITE IDENTIFICATION PANEL          |  |                          |               |             |                        |            |
|------------------------------------|--|--------------------------|---------------|-------------|------------------------|------------|
| No.                                | Item                                       | Description              |               |             |                        |            |
|                                    | Code No.                                   | A-02                     |               |             |                        |            |
|                                    | Site Name                                  | Jabal Al Taraf           |               |             |                        |            |
|                                    | Sub-District (Uzlat)                       | Jabal Al Taraf           |               |             |                        |            |
|                                    | District                                   | Al Mahweet               |               |             |                        |            |
|                                    | Governorate                                | Al Mahweet               |               |             |                        |            |
|                                    | Coordinates                                | Latitude                 | Longitude     |             |                        |            |
|                                    | Coordinates (Measured Location)            |                          |               |             |                        |            |
|                                    | Annual precipitation (rainfall)            | 470 mm                   |               |             |                        |            |
|                                    | Population (2006)                          | 2,727                    |               |             |                        |            |
|                                    | Population Forecast (2016)                 | 3,619                    |               |             |                        |            |
|                                    | No. of Village (Qariah) in Total           | 24                       |               |             |                        |            |
|                                    | No. of Village (Qariah) to be served       | 9                        |               |             |                        |            |
|                                    | Village (Qariah) in the Community          | Name                     | Population    | Household   | Coordinate (Lat / Lon) |            |
|                                    |  | Al Namer                 | 512           | 90          |                        |            |
|                                    |  | Al Hisn                  | 314           | 51          |                        |            |
|                                    |  | Al Fayesh                | 152           | 27          |                        |            |
|                                    |  | Al Manakh                | 418           | 82          |                        |            |
|                                    |  | Al Shaqa                 | 138           | 21          |                        |            |
|                                    |  | Al Souq                  | 102           | 19          |                        |            |
|                                    |  | Al Mahajir               | 201           | 39          |                        |            |
|                                    |  | Mahla                    | 514           | 92          |                        |            |
|                                    |  | Al Midfanah              | 376           | 65          |                        |            |
| EXISTING WATER SUPPLY SCHEME PANEL |  |                          |               |             |                        |            |
| No.                                | Item                                       | Description              |               |             |                        |            |
|                                    | Functioning                                | Functional               |               |             |                        |            |
|                                    | Components of Existing Water Supply Scheme | Component                | Specification | Condition   | Year                   | Fund       |
|                                    |  | Pump for Deep Well       | Vertical      | CAPRARI     |                        | 1999 GAREW |
|                                    |  | Engine for Deep Well     |               | Technodrive |                        | 1999 GAREW |
|                                    |  | Pump House for Deep Well | RC            |             |                        | 1999 GAREW |
|                                    |  | Pump for Booster         | Horizontal    | JET         |                        | 1999 GAREW |
|                                    |  | Engine for Booster       |               | IVECO       |                        | 1999 GAREW |
|                                    |  | Pump House for Booster   | RC            |             |                        | 1999 GAREW |
|                                    |  | Booster Tank             | RC            | 25m3        |                        | 1999 GAREW |
|                                    |  | Distribution Tank        | RC            | 100m3       |                        | 1999 GAREW |
|                                    |  | Pumping Main             | SGP           |             |                        | 1999 GAREW |
|                                    |  | Distribution Main        | SGP           |             |                        | 1999 GAREW |
|                                    |  | Public Tapstand          |               |             |                        |            |
|                                    |  | House Connection         |               |             |                        |            |
|                                    | Observations                               |                          |               |             |                        |            |
| WATER SOURCE PANEL                 |  |                          |               |             |                        |            |
| No.                                | Item                                       | Description              |               |             |                        |            |
|                                    | [Borehole Code]                            |                          |               |             |                        |            |
|                                    | Grid (UTM)                                 | North                    | East          |             |                        |            |
|                                    |  | 1707431                  | 339834        |             |                        |            |
|                                    | Grid (Lat/Lon)                             | Lat. N                   | Lon. E        |             |                        |            |
|                                    |  | 15°26' 20.4"             | 43°30' 26.1"  |             |                        |            |
|                                    | Present Condition (Pump Type)              | Working vertical pump    |               |             |                        |            |
|                                    | Elevation (m)                              | 1111 m                   |               |             |                        |            |
|                                    | Aquifer/Geological Description             |                          |               |             |                        |            |
|                                    | Year of Construction                       | 1997                     |               |             |                        |            |
|                                    | Fund                                       | GAREW                    |               |             |                        |            |
|                                    | Depth (m)                                  | 165 m                    |               |             |                        |            |
|                                    | Casing Diameter (inch)                     | 8-5/8 inch               |               |             |                        |            |
|                                    | Screen                                     |                          |               |             |                        |            |
|                                    | Static Water Level (G.L.-m)                | 26 m                     |               |             |                        |            |
|                                    | Dynamic Water Level (G.L.-m)               | 54 m                     |               |             |                        |            |
|                                    | Drawdown (m)                               | 28 m                     |               |             |                        |            |
|                                    | Discharge                                  | 70 g/min                 | 4.4 L/sec     |             |                        |            |
|                                    | Specific Capacity                          | 0.1577 L/s/m             |               |             |                        |            |
|                                    | EC (mS/m)                                  | 71 mS/m                  |               |             |                        |            |
|                                    | pH   | 7.27                     |               |             |                        |            |
|                                    | Temperature (°C)                           | 29.1                     |               |             |                        |            |
|                                    | Remarks                                    |                          |               |             |                        |            |

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| WATER SUPPLY PLANNING PANEL     |                                      |   |
|---------------------------------|--------------------------------------|---|
| No.                             | Item                                 | Description   |
|                                 | [Design Parameter]                   |   |
|                                 | No. of Villages in Total             | 24  |
|                                 | No. of Villages to be Covered        | 9   |
|                                 | Current Population (2005)            | 2,727   |
|                                 | Design Population (2025)             | 3,619   |
|                                 | Design Water Supply Rate             | 40 L/c/d      145 m <sup>3</sup> /day   |
|                                 | Type of Work Required                | Rehabilitation  |
|                                 | Required Facilities                  | Component   |
|                                 |                                      | Pump for Deep Well  |
|                                 |                                      | Eng./Gen. for Deep Well   |
|                                 |                                      | Pump House for Deep Well  |
|                                 |                                      | Pump for Booster  |
|                                 |                                      | Eng./Gen. for Booster   |
|                                 |                                      | Pump House for Booster  |
|                                 |                                      | Booster Tank  |
|                                 |                                      | Distribution Tank   |
|                                 |                                      | Pumping Main  |
|                                 |                                      | Distribution Main   |
|                                 |                                      | Public Tapstand   |
|                                 |                                      | House Connections   |
|                                 | Accessibility                        | Good, along paved road  |
|                                 | Security                             |   |
|                                 | Observation                          |   |
| OPERATION AND MAINTENANCE PANEL |                                      |   |
| No.                             | Item                                 | Description   |
|                                 | No. of Village Head (Sheikh)         | ?   |
|                                 | No. of Tribe                         | 1   |
|                                 | Observation in Current Supply Scheme | <p>Problem with pump unit is observed, changing pump head frequently because of overuse. Frequent replacement of pump head increases expense.</p> <p>Leakages in pipelines are observed.</p> <p>In the scheme construction, 20% of project costs are contributed by the community in the forms of labor and material (sands and stones) provision, while 80% of costs are borne by Legal Ownership is vested to the community in traditional manner (Document for legal ownership is not prepared).</p>   |
|                                 | Mode of Ownership                    | <p>Scheme was handed over to the community, but no minutes of understanding are prepared. Management Board is registered under Ministry of Social Affairs.</p>  |
|                                 | Mode of Management Entity            | <p>General Assembly for Water management is ultimately responsible for the scheme management, while Management Board is responsible daily management of the scheme. General Assembly for Water management is formed by all users registered and paid for. Twenty eight (28) members are selected as consulting committee.</p> <p>Among Consulting Committee members, four (4) members are elected as Management Board membership is consisted of; a) Chairperson (1), b) Manager (1), c) Financial Manager (1), d) Treasurer (1).</p> <p>Management Board members elected are all teachers.</p> <p>Sheik was failed in the election of Management Board members, however, keeping good relation with the Boards.</p> <p>Board members emphasized 'democracy' in board election and management.</p> <p>Three (3) community members are appointed as Monitoring Committee</p> <p>Management Board has been registered since 1998 under Ministry of Social Affairs.</p> <p>Election of Management Board has been conducted three (3) times after the scheme</p> <p>Election of Management Board is made every after 4 years.</p> |
|                                 | Organizational Management            | <p>Constitution for Management Board has been prepared, clarifying roles and responsibilities of each community institution (Management Board, General Assembly, Consulting Committee, Monitoring Committee), terms of office, financial management procedures, etc. Legal status for Management Board is established, registering it under Ministry of Social</p> <p>Managerial decisions entailed expense more than YR 200,000 are made by Consulting Committee.</p> <p>Management Board is responsible for daily management and operation.</p> <p>There is one female member in the Consulting Committee.</p>  |
|                                 | Technical Operation and Maintenance  | <p>Manuals for pump operation are prepared.</p> <p>Operation records are not kept at pump, while every meter at house connection is read and recorded.</p> <p>Pump is operated for four (4) hours in a day.</p> <p>Pump head units are frequently (4 times in a year) replaced, which costs every YR 100,000 – 150,000 (in the most expensive case, it costs YR 300,000)</p> <p>Costs for replacement of pump head unit are borne by the Scheme account (community).</p>  |

### 12.3 Village Profile of Sites in AI Mahweet Governorate

|                         |  |  |                        |                  |           |              |           |          |           |             |           |            |          |                         |             |                |         |                |                   |                |              |                |  |          |                 |
|-------------------------|--|--|------------------------|------------------|-----------|--------------|-----------|----------|-----------|-------------|-----------|------------|----------|-------------------------|-------------|----------------|---------|----------------|-------------------|----------------|--------------|----------------|--|----------|-----------------|
|                         | Financial Management and Transparency            | <p>Water Tariff Structure: YR 150/m3 (YR 120/m3 until November '05)<br/>         For the poor households, water is free up to 1-3m3/day.<br/>         Identification of the poor is made by the community.<br/>         All meters at house connection are read once in a month, and billing is made every month.<br/>         Water bills are sent to each household, and bills are collected by the Treasure visiting and staying village-to-village.<br/>         Financial book keeping is done in a accountable manner.<br/>         Bank account is opened.<br/>         Internal auditing for the scheme account is conducted.<br/>         Financial reports are presented in General Assembly once in a year.<br/>         Income in average: YR 92,000 / month (March '05)<br/>         Expenditure in average: YR 86,000 / month (March '05)</p> <table border="1"> <tr> <td rowspan="5">Expenditure Breakdown:</td> <td>Salary/Allowance</td> <td>YR 27,000</td> </tr> <tr> <td>Billing Cost</td> <td>YR 10,000</td> </tr> <tr> <td>Fuel/Oil</td> <td>YR 26,900</td> </tr> <tr> <td>Maintenance</td> <td>YR 30,000</td> </tr> <tr> <td>Stationery</td> <td>YR 2,500</td> </tr> <tr> <td rowspan="4">Staff Salary/Allowance:</td> <td>Chairperson</td> <td>YR 2,000/month</td> </tr> <tr> <td>Manager</td> <td>YR 3,000/month</td> </tr> <tr> <td>Financial Manager</td> <td>YR 3,000/month</td> </tr> <tr> <td>Meter Reader</td> <td>YR 4,000/month</td> </tr> <tr> <td></td> <td>Operator</td> <td>YR 13,000/month</td> </tr> </table> | Expenditure Breakdown: | Salary/Allowance | YR 27,000 | Billing Cost | YR 10,000 | Fuel/Oil | YR 26,900 | Maintenance | YR 30,000 | Stationery | YR 2,500 | Staff Salary/Allowance: | Chairperson | YR 2,000/month | Manager | YR 3,000/month | Financial Manager | YR 3,000/month | Meter Reader | YR 4,000/month |  | Operator | YR 13,000/month |
| Expenditure Breakdown:  | Salary/Allowance                                 | YR 27,000  |                        |                  |           |              |           |          |           |             |           |            |          |                         |             |                |         |                |                   |                |              |                |  |          |                 |
|                         | Billing Cost                                     | YR 10,000  |                        |                  |           |              |           |          |           |             |           |            |          |                         |             |                |         |                |                   |                |              |                |  |          |                 |
|                         | Fuel/Oil   | YR 26,900  |                        |                  |           |              |           |          |           |             |           |            |          |                         |             |                |         |                |                   |                |              |                |  |          |                 |
|                         | Maintenance                                      | YR 30,000  |                        |                  |           |              |           |          |           |             |           |            |          |                         |             |                |         |                |                   |                |              |                |  |          |                 |
|                         | Stationery                                       | YR 2,500   |                        |                  |           |              |           |          |           |             |           |            |          |                         |             |                |         |                |                   |                |              |                |  |          |                 |
| Staff Salary/Allowance: | Chairperson                                      | YR 2,000/month   |                        |                  |           |              |           |          |           |             |           |            |          |                         |             |                |         |                |                   |                |              |                |  |          |                 |
|                         | Manager  | YR 3,000/month   |                        |                  |           |              |           |          |           |             |           |            |          |                         |             |                |         |                |                   |                |              |                |  |          |                 |
|                         | Financial Manager                                | YR 3,000/month   |                        |                  |           |              |           |          |           |             |           |            |          |                         |             |                |         |                |                   |                |              |                |  |          |                 |
|                         | Meter Reader                                     | YR 4,000/month   |                        |                  |           |              |           |          |           |             |           |            |          |                         |             |                |         |                |                   |                |              |                |  |          |                 |
|                         | Operator   | YR 13,000/month  |                        |                  |           |              |           |          |           |             |           |            |          |                         |             |                |         |                |                   |                |              |                |  |          |                 |
|                         | Stakeholder Involvement / Responsibility Sharing | <p>No training package has been provided by other stakeholders.<br/>         Experienced operators are hired, who satisfy the daily operational requirements.</p>  |                        |                  |           |              |           |          |           |             |           |            |          |                         |             |                |         |                |                   |                |              |                |  |          |                 |
|                         | Community Contribution                           | <p>Cash amounted to YR 27,000,000 is collected for travel and other expenses entailed with petition to GARWSP Headquarters, each head of household (i.e. married males only) contributing YR 3,000 – 5,000.<br/>         Labor contribution was provided for trench digging for pipelines and approach road construction to the borehole point.<br/>         No cash contribution was made for the construction of the scheme.</p>   |                        |                  |           |              |           |          |           |             |           |            |          |                         |             |                |         |                |                   |                |              |                |  |          |                 |
|                         | Community Contracting-Out                        | <p>Yearly renewable contract arrangement is made with operators, and meter readers.</p>  |                        |                  |           |              |           |          |           |             |           |            |          |                         |             |                |         |                |                   |                |              |                |  |          |                 |
|                         | Conflict Resolution                              | <p>No tribal conflicts are mentioned.<br/>         Time restriction is programmed for equalization of service level in each service area.</p>  |                        |                  |           |              |           |          |           |             |           |            |          |                         |             |                |         |                |                   |                |              |                |  |          |                 |
|                         | Pro-Gender and Pro-Poor                          | <p>There is one female member in the Consulting Committee.<br/>         It is mentioned by male members of the Management Board that male is responsible to cope with female vision and needs in water issues.</p>   |                        |                  |           |              |           |          |           |             |           |            |          |                         |             |                |         |                |                   |                |              |                |  |          |                 |
| Remarks                 |  |  |                        |                  |           |              |           |          |           |             |           |            |          |                         |             |                |         |                |                   |                |              |                |  |          |                 |

## 12.3 Village Profile of Sites in Al Mahweet Governorate

| SITE IDENTIFICATION PANEL |   |                                 |            |           |                        |
|---------------------------|---|---------------------------------|------------|-----------|------------------------|
| No.                       | Item                                      | Description                     |            |           |                        |
|                           | Code No.                                  | A-03                            |            |           |                        |
|                           | Site Name                                 | Ozlat Al Jaradi                 |            |           |                        |
|                           | Sub-District (Uzlat)                      | Al Jaradi                       |            |           |                        |
|                           | District                                  | AL Rujum                        |            |           |                        |
|                           | Governorate                               | Al Mahweet                      |            |           |                        |
|                           | Coordinates                               | Latitude                        | Longitude  |           |                        |
|                           |   | Coordinates (Measured Location) |            |           |                        |
|                           | Annual precipitation (rainfall)           | 490 mm                          |            |           |                        |
|                           | Population (2006)                         | 20,786                          |            |           |                        |
|                           | Population Forecast (2016)                | 27,584                          |            |           |                        |
|                           | No. of Village (Qariah) in Total          | 65                              |            |           |                        |
|                           | No. of Village (Qariah) to be served      |                                 |            |           |                        |
|                           | Village (Qariah) in the Community         | Name                            | Population | Household | Coordinate (Lat / Lon) |
|                           |   | Al Aianbrash                    |            |           |                        |
|                           |   | Al Wessad                       | 765        | 43        |                        |
|                           |   | Al Muqbel                       | 670        | 38        |                        |
|                           |   | Al Jumaimah                     | 282        | 14        |                        |
|                           |   | Al Mahla                        | 165        | 8         |                        |
|                           |   | Al Helhal                       | 347        | 20        |                        |
|                           |   | Al Qa'ad                        | 132        | 7         |                        |
|                           |   | Shamsan Bait Rumaitha           | 287        | 25        |                        |
|                           |   | Jabal Ali                       |            |           |                        |
|                           |   | Al Haifa                        | 830        | 55        |                        |
|                           |   | Bait Al Jaradi                  | 450        | 38        |                        |
|                           |   | Rahban                          | 500        | 40        |                        |
|                           |   | Bait Sulaiman                   | 460        | 36        |                        |
|                           |   | Bait Qatran                     | 282        | 18        |                        |
|                           |   | Hajar Al Ma'yen                 | 385        | 28        |                        |
|                           |   | Bait Al Nathari                 | 560        | 46        |                        |
|                           |   | Azzan                           | 340        | 27        |                        |
|                           |   | Bait Al Zain                    | 174        | 13        |                        |
|                           |   | Bait Ramtha                     |            |           |                        |
|                           |   | Al Alaneyiah Al Ma'ram          | 240        | 10        |                        |
|                           |   | Bait Hunaina+ Al Musainea'a     | 270        | 18        |                        |
|                           |   | Al Qarah                        | 670        | 40        |                        |
|                           |   | Thahban                         | 870        | 60        |                        |
|                           |   | Bait Soroum                     | 1,150      | 110       |                        |
|                           |   | Al Hamami (Al Rubs)             | 750        | 43        |                        |
|                           |   | Shamsan Al Hamami               | 386        | 28        |                        |
|                           |   | Bait Jasaar                     | 370        | 36        |                        |
|                           |   | Al Marsubah                     | 650        | 70        |                        |
|                           |   | Bait Al Murair                  | 75         | 6         |                        |
|                           |   | Al Maqoor                       | 170        | 12        |                        |
|                           |   | Al Hajar Al Sufia               | 140        | 9         |                        |
|                           |   | Bait Safoof                     | 180        | 12        |                        |
|                           |   | Bait muta'a                     | 195        | 13        |                        |
|                           |   | Al Qufi                         | 65         | 5         |                        |
|                           |   | Al Dhabrah + Al Sharaf          | 950        | 78        |                        |
|                           |   | Al Khaza'a                      | 213        | 11        |                        |
|                           |   | Al Me'zaab                      | 292        | 18        |                        |
|                           |   | Bait Al Mushaki                 | 284        | 17        |                        |
|                           |   | Bait Mudafar                    | 187        | 8         |                        |
|                           |   | Bait Harras                     | 240        | 12        |                        |
|                           | Al Hejrah                                 | 283                             | 13         |           |                        |
|                           | Al Nashma                                 | 277                             | 15         |           |                        |
|                           | Bait Al Na'ama + Bait Al                  | 290                             | 17         |           |                        |
|                           | Al Ahzam                                  | 1,250                           | 130        |           |                        |
|                           | Bait Al Jayefi                            | 270                             | 21         |           |                        |
|                           | Qala'at Al Nowairah                       | 56                              | 53         |           |                        |
|                           | Al Mandhaha                               | 240                             | 20         |           |                        |
|                           | Ebr Sehah                                 | 220                             | 19         |           |                        |
|                           | Bait Al Sayiat                            | 312                             | 34         |           |                        |
|                           | Bararah                                   | 170                             | 14         |           |                        |
|                           | Bait Al Zurqa'a                           | 185                             | 10         |           |                        |
|                           | Bait Al Suraimi                           | 274                             | 22         |           |                        |
|                           | Al Sur                                    | 73                              | 9          |           |                        |
|                           | Bait Al Madar Al Ala& Al Asfal            | 350                             | 30         |           |                        |
|                           | Al Nasham                                 | 220                             | 13         |           |                        |
|                           | ?   | 180                             | 10         |           |                        |
|                           | Kha'em                                    | 275                             | 14         |           |                        |
|                           | Qarat Kha'em                              | 200                             | 12         |           |                        |
|                           | Al Helfah                                 | 130                             | 6          |           |                        |
|                           | Qaryat Al Athar                           | 300                             | 18         |           |                        |
|                           | Bait Al Ghubaisi& its neighboring hamlets | 255                             | 16         |           |                        |

## 12.3 Village Profile of Sites in Al Mahweet Governorate

| EXISTING WATER SUPPLY SCHEME PANEL                     |                                |  |                        |                         |                         |       |
|--|--------------------------------|--|------------------------|-------------------------|-------------------------|-------|
| No.  | Item                           | Description  |                        |                         |                         |       |
| Functioning Components of Existing Water Supply Scheme | Functional Component           | Specification  |                        | Condition               | Year                    | Fund  |
|  |                                | Pump for Deep Well   | Submersible            |                         |                         |       |
|  | Generator for Deep Well        |  | Denyo                  |                         | 1988                    | Japan |
|  | Pump House for Deep Well       | RC   |                        |                         | 1988                    | Japan |
|  | Pump for Booster               | Horizontal   | 2 Nos.                 |                         | 1988                    | Japan |
|  | Generator for Booster          | Horizontal   | 2 Nos.                 |                         | 1988                    | Japan |
|  | Booster House                  | RC   | 2 Nos.                 |                         | 1988                    | Japan |
|  | Booster Tank No.1              | Steel panel  | 60m <sup>3</sup>       |                         | 1988                    | Japan |
|  | Booster Tank No.2              | Steel panel  | 75m <sup>3</sup>       |                         | 1988                    | Japan |
|  | Distribution Tank              | Steel panel  | 200m <sup>3</sup>      |                         | 1988                    | Japan |
|  | Pumping Main                   | SGP  |                        |                         | 1988                    | Japan |
|  | Distribution Main              | SGP  |                        |                         | 1988                    | Japan |
|  | Public Tapstand                | 14 by Japan, 4 by village  |                        |                         | 1988                    | Japan |
|  | House Connection               |  |                        |                         |                         |       |
| Observations   |                                |  |                        |                         |                         |       |
| WATER SOURCE PANEL                                     |                                |  |                        |                         |                         |       |
| No.  | Item                           | Description  |                        |                         |                         |       |
|  | [Borehole Code]                |  |                        |                         |                         |       |
|  | Grid (UTM)                     | North<br>1710197   | East<br>352837         |                         |                         |       |
|  | Grid (Lat/Lon)                 | Lat. N<br>15°27' 53.0"   | Lon. E<br>43°37' 41.9" |                         |                         |       |
|  | Present Condition (Pump Type)  | Working  | Submersible pump       |                         |                         |       |
|  | Elevation (m)                  | 1986 m   |                        |                         |                         |       |
|  | Aquifer/Geological Description |  |                        |                         |                         |       |
|  | Year of Construction           | 1990   |                        |                         |                         |       |
|  | Fund                           | Japan  |                        |                         |                         |       |
|  | Depth (m)                      | 150 m  |                        |                         |                         |       |
|  | Casing Diameter (inch)         | 10 inch  |                        |                         |                         |       |
|  | Screen                         |  |                        |                         |                         |       |
|  | Static Water Level (G.L.-m)    | 50.8 m   |                        |                         |                         |       |
|  | Dynamic Water Level (G.L.-m)   | 55.9 m   |                        |                         |                         |       |
|  | Drawdown (m)                   | 5.1 m  |                        |                         |                         |       |
|  | Discharge (g/min)              | 165 g/min  |                        | 10.4 L/sec              |                         |       |
|  | Specific Capacity              | 2.04 L/s/m   |                        |                         |                         |       |
|  | EC (mS/m)                      | 31.2 mS/m  |                        |                         |                         |       |
|  | pH                             | 6.7  |                        |                         |                         |       |
|  | Temperature (°C)               | 24.7   |                        |                         |                         |       |
|  | Remarks                        |  |                        |                         |                         |       |
| WATER SUPPLY PLANNING PANEL                            |                                |  |                        |                         |                         |       |
| No.  | Item                           | Description  |                        |                         |                         |       |
|  | [Design Parameter]             |  |                        |                         |                         |       |
|  | No. of Villages in Total       | 65   |                        |                         |                         |       |
|  | No. of Villages to be Covered  | 0  |                        |                         |                         |       |
|  | Current Population (2006)      | 20,786   |                        |                         |                         |       |
|  | Design Population (2016)       | 27,584   |                        |                         |                         |       |
|  | Design Water Supply Rate       | 25 L/c/d   |                        | 690 m <sup>3</sup> /day |                         |       |
|  | Type of Work Required          | Rehabilitation   |                        |                         |                         |       |
|  | Required Facilities            | Component  |                        |                         | Notes                   |       |
|  |                                | Pump for Deep Well   |                        |                         | Replace                 |       |
|  |                                | Eng./Gen. for Deep Well  |                        |                         | Replace                 |       |
|  |                                | Pump House for Deep Well   |                        |                         |                         |       |
|  |                                | Pump for Booster   |                        | 2 Nos. Replace          |                         |       |
|  |                                | Eng./Gen. for Booster  |                        | 2 Nos. Replace          |                         |       |
|  |                                | Pump House for Booster   |                        | 2 Nos.                  |                         |       |
|  |                                | Booster Tank   |                        | 2 Nos.                  |                         |       |
|  |                                | Distribution Tank  |                        |                         | Water leakage           |       |
|  |                                | Pumping Main   |                        |                         |                         |       |
|  |                                | Distribution Main  |                        |                         | Extension to 2 villages |       |
|  |                                | Public Tapstand  |                        |                         |                         |       |
|  |                                | House Connections  |                        |                         |                         |       |
|  | Accessibility                  | Good, near paved road, but inside site, rugged mountain road   |                        |                         |                         |       |
|  | Security                       |  |                        |                         |                         |       |
|  | Observation                    | Made request to Embassy of Japan in April 2005 for new borehole and pipelines to 7 villages. Tank for this scheme already completed through fund from Embassy of Japan (2004). When this scheme is completed, plan to separate this scheme from existing system. |                        |                         |                         |       |

## 12.3 Village Profile of Sites in Al Mahweet Governorate

| OPERATION AND MAINTENANCE PANEL                  |                                       |  |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|--|---------------------------------------|--|------------------------|------------------|---------------------------|----------|---------------------------|-------------------------|---------|-----------------|--------------|----------------|-------------------|----------------|-----------|----------------|----------|-----------------|--------------|-----------------|--|--------|----------------|
| No.  | Item                                  | Description  |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | No. of Village Head (Sheikh)          | 4  |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | No. of Tribe                          | 1  |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | Observation in Current Supply Scheme  | <p>Booster station and pump located in another village (?)</p> <p>Main pipeline was destroyed by land slide</p> <p>House connections are all metered. Most of meters are installed by users, while there are some installed by the Project.</p> <p>After 3 years of project completion, public stands (4) are constructed and pipelines are extended by the community</p>  |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | Mode of Ownership                     | <p>Legal Ownership is vested to the community in traditional manner (Document for legal ownership is not prepared).</p> <p>Scheme was handed over to the community, but no minutes of understanding are prepared.</p>  |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | Mode of Management Entity             | <p>Management (Administrative) Board is responsible for the scheme management.</p> <p>Management (Administrative) Board is composed of; a) Manager (1), b) Financial Manager (1), c) Treasurer (1), d) Technical Staff (3), e) Meter Reader/Revenue Collector (4).</p> <p>Management (Administrative) Board is appointed by community.</p> <p>The manager of the Management Board is also Sheik</p> <p>Village meeting was held for selection/appointment of the Board members.</p> <p>First selection/appointment of the Board was made after scheme handing-over.</p> <p>Latest selection/appointment of the Board was made two (2) years ago.</p> <p>Financial Manager (1) and Treasurers (3) were replaced so far.</p> <p>Technical and Financial trainings are provided and arranged every year since the completion of the project by GARWSP.</p> <p>3-4 persons / year are attended to the training provided by GARWSP.</p> <p>All Board members are participated in the training provided by GARWSP.</p>   |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | Organizational Management             | <p>Constitution for Management Board is not prepared.</p> <p>Legal status of Management Board is not established.</p> <p>Mode of decision makings is largely subject to the manager of Board (i.e. Sheikh).</p>  |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | Technical Operation and Maintenance   | <p>Manuals for pump operation are prepared.</p> <p>Operation records are kept at pump, and every meter is read.</p> <p>Pump is operated for eight (8) hours in a day.</p> <p>Major repair: Installation of new pipeline (20m x 6), of which costs of YR 1,500,000 are borne by the community (i.e. Scheme account).</p>  |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | Financial Management and Transparency | <p>Water Tariff Structure: YR 100/m3</p> <p>For the poor households, water is free up to 2m3/day.</p> <p>Identification of the poor is made by the Sheikh and the Board Manager.</p> <p>All meters at house connection are read once in a month, and billing is made every month.</p> <p>Water bills are sent to each household, and bills are collected by the Meter Reader/Revenue Collector visiting house-to-house.</p> <p>Bank account is opened</p> <p>Bank account is managed by three Board members' signatory (i.e. Manager, Financial Manager, and Treasure).</p> <p>Yearly internal auditing and monitoring is undertaken by community members.</p> <p>Summarized financial report is prepared, which is open for the community.</p> <p>Financial reporting announce is not done.</p> <p>Income in average: YR 400,000 – 600,000 / month</p> <p>Expenditure in average: YR 473,000 (December '05)</p> <table border="1"> <tr> <td rowspan="2">Expenditure Breakdown:</td> <td>Salary/Allowance</td> <td>YR 193,000 (December '05)</td> </tr> <tr> <td>Fuel/Oil</td> <td>YR 280,000 (December '05)</td> </tr> <tr> <td rowspan="6">Staff Salary/Allowance:</td> <td>Manager</td> <td>YR 15,000/month</td> </tr> <tr> <td>Vice Manager</td> <td>YR 8,000/month</td> </tr> <tr> <td>Financial Manager</td> <td>YR 8,000/month</td> </tr> <tr> <td>Treasurer</td> <td>YR 8,000/month</td> </tr> <tr> <td>Operator</td> <td>YR 20,000/month</td> </tr> <tr> <td>Meter Reader</td> <td>YR 15,000/month</td> </tr> <tr> <td></td> <td>Guards</td> <td>YR 4,000/month</td> </tr> </table> | Expenditure Breakdown: | Salary/Allowance | YR 193,000 (December '05) | Fuel/Oil | YR 280,000 (December '05) | Staff Salary/Allowance: | Manager | YR 15,000/month | Vice Manager | YR 8,000/month | Financial Manager | YR 8,000/month | Treasurer | YR 8,000/month | Operator | YR 20,000/month | Meter Reader | YR 15,000/month |  | Guards | YR 4,000/month |
| Expenditure Breakdown:                           | Salary/Allowance                      | YR 193,000 (December '05)  |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | Fuel/Oil                              | YR 280,000 (December '05)  |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
| Staff Salary/Allowance:                          | Manager                               | YR 15,000/month  |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | Vice Manager                          | YR 8,000/month   |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | Financial Manager                     | YR 8,000/month   |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | Treasurer                             | YR 8,000/month   |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | Operator                              | YR 20,000/month  |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | Meter Reader                          | YR 15,000/month  |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | Guards                                | YR 4,000/month   |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
| Stakeholder Involvement / Responsibility Sharing |                                       |  |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | Community Contribution                | <p>Lands for the scheme construction are contributed by the community.</p> <p>Pipeline extension and construction of four (4) public stands (costs: YR 1,500,000) was undertaken by the community.</p> <p>In pipeline extension, transportation and laying of pipeline, was conducted by the community, while pipe fitting was undertaken by hiring a contractor by the community.</p>   |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | Community Contracting-Out             | Yearly renewable contract arrangement is made with operators, and meter readers/revenue collectors   |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | Conflict Resolution                   | No tribal conflicts are mentioned. Conflicts are resolved by the Sheikh  |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | Pro-Gender and Pro-Poor               | No female participants are observed in the scheme Management/Administrative Board.   |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |
|  | Remarks                               | Although any community conflict cases are not mentioned, there are more than 50 villages (sub-villages) and 4 uzula are located in the scheme, managed by 4 sheikh. Further conflict resolution mechanism shall be identified.   |                        |                  |                           |          |                           |                         |         |                 |              |                |                   |                |           |                |          |                 |              |                 |  |        |                |



### 12.3 Village Profile of Sites in Al Mahweet Governorate

| SITE IDENTIFICATION PANEL          |  |                         |   |                          |           |                        |
|------------------------------------|--|-------------------------|---|--------------------------|-----------|------------------------|
| No.                                | Item                                       | Description             |   |                          |           |                        |
|                                    | Code No.                                   | A-04                    |   |                          |           |                        |
|                                    | Site Name                                  | Al Khamis-Bani Ali      |   |                          |           |                        |
|                                    | Sub-District (Uzlat)                       | Al Khamis               |   |                          |           |                        |
|                                    | District                                   | Bani Sa'ad              |   |                          |           |                        |
|                                    | Governorate                                | Al Mahweet              |   |                          |           |                        |
|                                    | Coordinates                                | Latitude                | Longitude   |                          |           |                        |
|                                    | Coordinates (Measured Location)            |                         |   |                          |           |                        |
|                                    | Annual precipitation (rainfall)            | 530 mm                  |   |                          |           |                        |
|                                    | Population (2006)                          | 1,602                   |   |                          |           |                        |
|                                    | Population Forecast (2016)                 | 2,126                   |   |                          |           |                        |
|                                    | No. of Village (Qariah) in Total           |                         |   |                          |           |                        |
|                                    | No. of Village (Qariah) to be served       |                         |   |                          |           |                        |
|                                    | Village (Qariah) in the Community          | Name                    | To Be Served                                      | Population               | Household | Coordinate (Lat / Lon) |
|                                    |  | Al Rajma                |   |                          |           |                        |
|                                    |  | Al Kasia                |   |                          |           |                        |
|                                    |  | Al Modawre              |   |                          |           |                        |
|                                    |  | Al Hariga               |   |                          | 80        |                        |
|                                    |  | Al Zonoob               |   |                          |           |                        |
|                                    |  | Wadi Mugaiser           |   |                          |           |                        |
|                                    |  | Al Mangum               |   |                          |           |                        |
|                                    |  | Al Taine                |   |                          |           |                        |
|                                    |  | Al Mashgab              |   |                          |           |                        |
|                                    |  | Al Kulabia              |   |                          |           |                        |
|                                    |  | Kareed                  |   |                          |           |                        |
|                                    |  | Al Megzab               |   |                          |           |                        |
|                                    |  | Al Shareba              |   |                          |           |                        |
|                                    |  | Wadi Rizig              |   |                          |           |                        |
|                                    |  | Al Raga                 |   |                          |           |                        |
|                                    |  | Al Khamis (market)      |   |                          |           |                        |
|                                    | Al Karbah                                  |                         |   |                          |           |                        |
|                                    | Thahr Al Karbah                            |                         |   |                          |           |                        |
|                                    | Al Dundunah                                |                         |   |                          |           |                        |
|                                    | MaqqSarah                                  |                         |   |                          |           |                        |
| EXISTING WATER SUPPLY SCHEME PANEL |  |                         |   |                          |           |                        |
| No.                                | Item                                       | Description             |   |                          |           |                        |
|                                    | Functioning                                | Partially existing      |   |                          |           |                        |
|                                    | Components of Existing Water Supply Scheme | Component               | Specification                                     | Condition                | Year      | Fund                   |
|                                    |  | Pump for Deep Well      |   |                          |           |                        |
|                                    |  | Eng./Gen. for Deep Well |   |                          |           |                        |
|                                    |  | Pump House for Deep We  |   | Under construction       |           | GARWSP                 |
|                                    |  | Pump for Booster        |   |                          |           |                        |
|                                    |  | Eng./Gen. for Booster   |   |                          |           |                        |
|                                    |  | Booster House           |   |                          |           |                        |
|                                    |  | Booster Tank            |   |                          |           |                        |
|                                    |  | Distribution Tank       |   | For Al Khamis, completed | 2005      | GARWSP                 |
|                                    |  | Pumping Main            | Material for Al Khamis available at branch office |                          |           |                        |
|                                    |  | Distribution Main       | Material for Al Khamis available at branch office |                          |           |                        |
|                                    |  | Public Tapstand         |   |                          |           |                        |
|                                    |  | House Connection        |   |                          |           |                        |
|                                    | Observations                               |                         |   |                          |           |                        |
| WATER SOURCE PANEL                 |  |                         |   |                          |           |                        |
| No.                                | Item                                       | Description             |   |                          |           |                        |
|                                    | [Borehole Code]                            |                         |   |                          |           |                        |
|                                    | Grid (UTM)                                 | North                   | East  |                          |           |                        |
|                                    |  | 1678985                 | 338756  |                          |           |                        |
|                                    | Grid (Lat/Lon)                             | Lat. N                  | Lon. E  |                          |           |                        |
|                                    |  | 15°10' 54.4"            | 43°29' 56.4"                                      |                          |           |                        |
|                                    | Present Condition (Pump Type)              | Capped                  |   |                          |           |                        |
|                                    | Elevation (m)                              | 458 m                   |   |                          |           |                        |
|                                    | Aquifer/Geological Description             |                         |   |                          |           |                        |
|                                    | Year of Construction                       | 2001                    |   |                          |           |                        |
|                                    | Fund                                       | GARWSP                  |   |                          |           |                        |
|                                    | Depth (m)                                  | 92 m                    |   |                          |           |                        |
|                                    | Casing Diameter (inch)                     | 10 inch                 |   |                          |           |                        |
|                                    | Screen                                     | 32m - 92m               |   |                          |           |                        |
|                                    | Static Water Level (G.L.-m)                | 6.66 m                  |   |                          |           |                        |
|                                    | Dynamic Water Level (G.L.-m)               | 28.82 m                 |   |                          |           |                        |
|                                    | Drawdown (m)                               | 22.16 m                 |   |                          |           |                        |
|                                    | Discharge (g/min)                          | 70 g/min                |   | 4.4 L/sec                |           |                        |
|                                    | Specific Capacity                          | 0.1993 L/s/m            |   |                          |           |                        |
|                                    | EC (mS/m)                                  | 283.0 mS/m              |   |                          |           |                        |
|                                    | pH   | 6.99                    |   |                          |           |                        |
|                                    | Temperature (°C)                           | 33.4                    |   |                          |           |                        |
|                                    | Remarks                                    |                         |   |                          |           |                        |

### 12.3 Village Profile of Sites in Al Mahweet Governorate

| WATER SUPPLY PLANNING PANEL     |  |  |                        |
|---------------------------------|--|--|------------------------|
| No.                             | Item   | Description  |                        |
|                                 | <b>[Design Parameter]</b>                        |  |                        |
|                                 | No. of Villages in Total                         | 0  |                        |
|                                 | No. of Villages to be Covered                    | 0  |                        |
|                                 | Current Population (2006)                        | 1,602  |                        |
|                                 | Design Population (2016)                         | 2,126  |                        |
|                                 | Design Water Supply Rate                         | 40 L/c/d   | 85 m <sup>3</sup> /day |
|                                 | Type of Work Required                            | Partial construction   |                        |
|                                 | Required Facilities                              | Component  | To be Constructed by   |
|                                 |  |  | Notes                  |
|                                 |  | Pump for Deep Well   | Donor                  |
|                                 |  | Eng./Gen. for Deep Well  | Donor                  |
|                                 |  | Pump House for Deep We   | GARWSP                 |
|                                 |  | Pump for Booster   | Donor                  |
|                                 |  | Eng./Gen. for Booster  | Donor                  |
|                                 |  | Pump House for Booster   | Donor                  |
|                                 |  | Booster Tank   | Donor                  |
|                                 |  | Distribution Tank  | Donor/GARWSP           |
|                                 |  | Pumping Main   | Donor/GARWSP           |
|                                 |  | Distribution Main  | Donor/GARWSP           |
|                                 |  | Public Tapstand  | Donor                  |
|                                 |  | House Connections  | Village                |
|                                 | Accessibility                                    | Access to Bani Ali is very difficult, but access to borehole is good, along paved road   |                        |
|                                 | Security   |  |                        |
|                                 | Observation                                      | Work for Bani Ali only. Work for Al Khamis to be done by GARWSP branch. Branch has pipe 3" diam., 6m x 400 pcs. Also, vertical pump and 2 booster pumps available at branch (?), but need to confirm actual availability and specifications. |                        |
| OPERATION AND MAINTENANCE PANEL |  |  |                        |
| No.                             | Item   | Description  |                        |
|                                 | No. of Village Head (Sheikh)                     |  |                        |
|                                 | No. of Tribe                                     |  |                        |
|                                 | Observation in Current Supply Scheme             |  |                        |
|                                 | Mode of Ownership                                |  |                        |
|                                 | Mode of Management Entity                        |  |                        |
|                                 | Organizational Management                        |  |                        |
|                                 | Technical Operation and Maintenance              |  |                        |
|                                 | Financial Management and Transparency            |  |                        |
|                                 | Stakeholder Involvement / Responsibility Sharing |  |                        |
|                                 | Community Contribution                           |  |                        |
|                                 | Community Contracting-Out                        |  |                        |
|                                 | Conflict Resolution                              |  |                        |
|                                 | Pro-Gender and Pro-Poor                          |  |                        |
|                                 | Remarks  |  |                        |

## 12.4 Village Profile of Sites in Sana'a Governorate

| SITE IDENTIFICATION PANEL          |  |   |               |            |           |                        |
|------------------------------------|--|---|---------------|------------|-----------|------------------------|
| No.                                | Item                                       | Description   |               |            |           |                        |
|                                    | Code No.                                   | S-01  |               |            |           |                        |
|                                    | Site Name                                  | Bani Waleed - Al Asboor   |               |            |           |                        |
|                                    | Sub-District (Uzlat)                       |   |               |            |           |                        |
|                                    | District                                   | Al Haymah Al Kharijiyah   |               |            |           |                        |
|                                    | Governorate                                | Sana'a  |               |            |           |                        |
|                                    | Coordinates                                | Latitude  | Longitude     |            |           |                        |
|                                    |  | Coordinates (Measured Location)   |               |            |           |                        |
|                                    | Annual precipitation (rainfall)            | 490 mm  |               |            |           |                        |
|                                    | Population (2006)                          | 1,923   |               |            |           |                        |
|                                    | Population Forecast (2016)                 | 2,360   |               |            |           |                        |
|                                    | No. of Village (Qariah) in Total           |   |               |            |           |                        |
|                                    | No. of Village (Qariah) to be served       |   |               |            |           |                        |
|                                    | Village (Qariah) in the Community          | Name  | To Be Served  | Population | Household | Coordinate (Lat / Lon) |
|                                    |  | Al Sharqa   |               |            |           |                        |
|                                    |  | Al Karf   |               |            |           |                        |
|                                    |  | Dhahrat Al Ula  |               |            |           |                        |
|                                    |  | Al Lakma  |               |            |           |                        |
|                                    |  | Qamran  |               |            |           |                        |
|                                    |  | Dhahrat Al Wali   |               |            |           |                        |
|                                    |  | Hajjar  |               |            |           |                        |
|                                    |  | Al Qamh   |               |            |           |                        |
|                                    |  | AL Zubair & AL Matariya   |               |            |           |                        |
|                                    |  | AL Muhami   |               |            |           |                        |
|                                    |  | Bait Saad   |               |            |           |                        |
|                                    |  | Al Majel & Al Sharaf  |               |            |           |                        |
|                                    |  | Al Nuzoh  |               |            |           |                        |
|                                    |  | Kail 1  |               |            |           |                        |
|                                    |  | Kail 2  |               |            |           |                        |
|                                    |  | Al Kiyab & Al Manakh  |               |            |           |                        |
|                                    |  | Al Dhila'a & Al Wathan  |               |            |           |                        |
|                                    |  | Al Awdan  |               |            |           |                        |
|                                    |  | Al Dhahrah  |               |            |           |                        |
|                                    |  | Al Hais   |               |            |           |                        |
|                                    |  | Al Muthab   |               |            |           |                        |
|                                    |  | Al Dhiq & Al Lajeej   |               |            |           |                        |
|                                    | Al Jabal                                   |   |               |            |           |                        |
|                                    | Shamlan & Sha'ab Qasim                     |   |               |            |           |                        |
|                                    | Al Mustawsif                               |   |               |            |           |                        |
|                                    | Dar Al Qura'an                             |   |               |            |           |                        |
|                                    | Madrasat Al Fuqan                          |   |               |            |           |                        |
|                                    | Madrasat Al Zahra'a                        |   |               |            |           |                        |
| EXISTING WATER SUPPLY SCHEME PANEL |  |   |               |            |           |                        |
| No.                                | Item                                       | Description   |               |            |           |                        |
|                                    | Functioning                                | No existing   |               |            |           |                        |
|                                    | Components of Existing Water Supply Scheme | Component   | Specification | Condition  | Year      | Fund                   |
|                                    |  | Pump for Deep Well  |               |            |           |                        |
|                                    |  | Eng./Gen. for Deep Well   |               |            |           |                        |
|                                    |  | Pump House for Deep We  |               |            |           |                        |
|                                    |  | Pump for Booster  |               |            |           |                        |
|                                    |  | Eng./Gen. for Booster   |               |            |           |                        |
|                                    |  | Pump House for Booster  |               |            |           |                        |
|                                    |  | Booster Tank  |               |            |           |                        |
|                                    |  | Distribution Tank   |               |            |           |                        |
|                                    |  | Pumping Main  |               |            |           |                        |
|                                    |  | Distribution Main   |               |            |           |                        |
|                                    |  | Public Tapstand   |               |            |           |                        |
|                                    |  | House Connection  |               |            |           |                        |
|                                    | Observations                               | One private dug well with motorized pump; Two private dug wells (hand fetched). All dug wells become dry in dry season, so buy from another village at YR2,500/200 lit (YR 12,500/m3) |               |            |           |                        |

## 12.4 Village Profile of Sites in Sana'a Governorate

| WATER SOURCE PANEL          |                                |                          |                         |
|-----------------------------|--------------------------------|--------------------------|-------------------------|
| No.                         | Item                           | Description              |                         |
|                             | [Borehole Code]                | S-01/2 AA                |                         |
|                             | Grid (UTM)                     | North<br>1659630         | East<br>379635          |
|                             | Grid (Lat/Lon)                 | Lat. N<br>15°00' 33.1"   | Lon. E<br>43°52' 50.1"  |
|                             | Present Condition (Pump Type)  | Capped                   |                         |
|                             | Elevation (m)                  | 1664 m                   |                         |
|                             | Aquifer/Geological Description | 2005                     |                         |
|                             | Year of Construction           | 2005                     |                         |
|                             | Fund                           | GARWSP                   |                         |
|                             | Depth (m)                      | 348 m                    |                         |
|                             | Casing Diameter (inch)         | 8 inch                   |                         |
|                             | Screen                         |                          |                         |
|                             | Static Water Level (G.L.-m)    | 47 m                     |                         |
|                             | Dynamic Water Level (G.L.-m)   | 120 m                    |                         |
|                             | Drowdown (m)                   | 73 m                     |                         |
|                             | Discharge (g/min)              | 99 g/min                 | 6.2 L/sec               |
|                             | Specific Capacity              | 0.086 L/s/m              |                         |
|                             | EC (mS/m)                      | 120.8 mS/m               |                         |
|                             | pH                             | 7.04                     |                         |
|                             | Temperature (°C)               | 30.7                     |                         |
|                             | Remarks                        |                          |                         |
|                             | [Borehole Code]                | S-01/1 BW                |                         |
|                             | Grid (UTM)                     | North<br>1659638         | East<br>380252          |
|                             | Grid (Lat/Lon)                 | Lat. N<br>15°00' 32.8"   | Lon. E<br>43°52' 49.4"  |
|                             | Present Condition (Pump Type)  | Capped                   |                         |
|                             | Elevation (m)                  | 1654 m                   |                         |
|                             | Aquifer/Geological Description | 2005                     |                         |
|                             | Year of Construction           | 2005                     |                         |
|                             | Fund                           | GARWSP                   |                         |
|                             | Depth (m)                      | 300 m                    |                         |
|                             | Casing Diameter (inch)         | 8 inch                   |                         |
|                             | Screen                         |                          |                         |
|                             | Static Water Level (G.L.-m)    | 85 m                     |                         |
|                             | Dynamic Water Level (G.L.-m)   | 210 m                    |                         |
|                             | Drowdown (m)                   | 125 m                    |                         |
|                             | Discharge (g/min)              | 50 g/min                 | 3.2 L/sec               |
|                             | Specific Capacity              | 0.025 L/s/m              |                         |
|                             | EC (mS/m)                      | 113.9 mS/m               |                         |
|                             | pH                             | 6.70                     |                         |
|                             | Temperature (°C)               | 29.4                     |                         |
|                             | Remarks                        |                          |                         |
| WATER SUPPLY PLANNING PANEL |                                |                          |                         |
| No.                         | Item                           | Description              |                         |
|                             | [Design Parameter]             |                          |                         |
|                             | No. of Villages in Total       | 0                        |                         |
|                             | No. of Villages to be Covered  | 0                        |                         |
|                             | Current Population (2006)      | 1,923                    |                         |
|                             | Design Population (2016)       | 2,360                    |                         |
|                             | Design Water Supply Rate       | 40 L/c/d                 | 260 m <sup>3</sup> /day |
|                             | Type of Work Required          | New construction         |                         |
|                             | Required Facilities            | Component                | To be Constructed by    |
|                             |                                | Pump for Deep Well       | Donor                   |
|                             |                                | Eng./Gen. for Deep Well  | Donor                   |
|                             |                                | Pump House for Deep Well | Donor/Village           |
|                             |                                | Pump for Booster         | Donor                   |
|                             |                                | Eng./Gen. for Booster    | Donor                   |
|                             |                                | Pump House for Booster   | Donor/Village           |
|                             |                                | Booster Tank             | Donor                   |
|                             |                                | Distribution Tank        | Donor                   |
|                             |                                | Pumping Main             | Donor                   |
|                             |                                | Distribution Main        | Donor                   |
|                             |                                | Public Tapstand          | Donor                   |
|                             |                                | House Connections        | Village                 |
|                             | Accessibility                  | Difficult, through wadi  |                         |
|                             | Security                       |                          |                         |
|                             | Observation                    |                          |                         |

## 12.4 Village Profile of Sites in Sana'a Governorate

| SITE IDENTIFICATION PANEL          |  |  |               |                 |                        |
|------------------------------------|--|--|---------------|-----------------|------------------------|
| No.                                | Item                                       | Description  |               |                 |                        |
|                                    | Code No.                                   | S-02   |               |                 |                        |
|                                    | Site Name                                  | Jarban   |               |                 |                        |
|                                    | Sub-District (Uzlat)                       |  |               |                 |                        |
|                                    | District                                   | Hamdan   |               |                 |                        |
|                                    | Governorate                                | Sana'a   |               |                 |                        |
|                                    | Coordinates                                | Latitude   | Longitude     |                 |                        |
|                                    | Coordinates (Measured Location)            |  |               |                 |                        |
|                                    | Annual precipitation (rainfall)            | 340 mm   |               |                 |                        |
|                                    | Population (2006)                          | 1,611  |               |                 |                        |
|                                    | Population Forecast (2016)                 | 1,977  |               |                 |                        |
|                                    | No. of Village (Qariah) in Total           | 15   |               |                 |                        |
|                                    | No. of Village (Qariah) to be served       | 15   |               |                 |                        |
|                                    | Village (Qariah) in the Community          | Name   | Population    | Household       | Coordinate (Lat / Lon) |
|                                    |  | Al Matrah  | 85            | 15              |                        |
|                                    |  | Al Hisn  | 70            | 11              |                        |
|                                    |  | Al Balad   | 32            | 19              |                        |
|                                    |  | Al Aridhah   | 142           | 25              |                        |
|                                    |  | Al Saradeh   | 150           | 20              |                        |
|                                    |  | Om Jafar   | 74            | 9               |                        |
|                                    |  | Al Himrariy  | 358           | 56              |                        |
|                                    |  | Ra'as Al Mathab  | 71            | 10              |                        |
|                                    |  | Ra'as Al Aqaba   | 100           | 13              |                        |
|                                    |  | Qatta'a Al Nakeel  | 92            | 14              |                        |
|                                    |  | Wadi Jasas   | 83            | 13              |                        |
|                                    |  | Al Enab  | 26            | 6               |                        |
|                                    |  | Al Sadr  | 251           | 30              |                        |
|                                    |  | Al Madhaf  | 52            | 7               |                        |
|                                    |  | Sha'ab Al Sumor  | 25            | 5               |                        |
| EXISTING WATER SUPPLY SCHEME PANEL |  |  |               |                 |                        |
| No.                                | Item                                       | Description  |               |                 |                        |
|                                    | Functioning                                | Non-functional   |               |                 |                        |
|                                    | Components of Existing Water Supply Scheme | Component  | Specification | Condition       | Year                   |
|                                    |  | Pump for Deep Well   | Vertical      | Stopped in 1986 | 1981 MAI               |
|                                    |  | Engine for Deep Well   |               | Stopped in 1986 | 1981 MAI               |
|                                    |  | Pump House for Deep Well   | RC            | Cannot use      | 1981 MAI               |
|                                    |  | Pump for Booster   | Horizontal    | Cannot use      | 1981 MAI               |
|                                    |  | Engine for Booster   |               | Stopped in 1986 | 1981 MAI               |
|                                    |  | Pump House for Booster   | RC            | Useless         | 1981 MAI               |
|                                    |  | Booster Tank   | 25 m3         | RC              | Cannot use             |
|                                    |  | Distribution Tank  | 100(?) m3     | RC              | Cannot use             |
|                                    |  | Pumping Main   | SGP           | Cannot use      | 1981 MAI               |
|                                    |  | Distribution Line  | SGP           | Cannot use      | 1981 MAI               |
|                                    |  | Public Tapstand  |               |                 |                        |
|                                    |  | House Connection   |               |                 |                        |
|                                    | Observations                               | Water supply system constructed by MAI (Ministry of Agriculture and Irrigation), Highlands Authority, but borehole dried up in 1986. Now get water from private wells (4km away) using tanker or donkey. |               |                 |                        |
| WATER SOURCE PANEL                 |  |  |               |                 |                        |
| No.                                | Item                                       | Description  |               |                 |                        |
|                                    | [Borehole Code]                            | S-02   |               |                 |                        |
|                                    | Grid (UTM)                                 | North  | East          |                 |                        |
|                                    |  | 1722732  | 398177        |                 |                        |
|                                    | Grid (Lat/Lon)                             | Lat. N   | Lon. E        |                 |                        |
|                                    |  | 15°34' 49.2"   | 44°03' 01.1"  |                 |                        |
|                                    | Present Condition (Pump Type)              | Capped   |               |                 |                        |
|                                    | Elevation (m)                              | 2642 m   |               |                 |                        |
|                                    | Aquifer/Geological Description             |  |               |                 |                        |
|                                    | Year of Construction                       | 2005   |               |                 |                        |
|                                    | Fund                                       | GARWSP   |               |                 |                        |
|                                    | Depth (m)                                  | 450 m  |               |                 |                        |
|                                    | Casing Diameter (inch)                     | 10 inch  |               |                 |                        |
|                                    | Screen                                     |  |               |                 |                        |
|                                    | Static Water Level (G.L.-m)                | 345.3 m  |               |                 |                        |
|                                    | Dynamic Water Level (G.L.-m)               | 345.4 m  |               |                 |                        |
|                                    | Drawdown (m)                               | 0.1 m  |               |                 |                        |
|                                    | Discharge (g/min)                          | 32 g/min   | 2.0 L/sec     |                 |                        |
|                                    | Specific Capacity                          | 20.19 L/s/m  |               |                 |                        |
|                                    | EC (mS/m)                                  | 28.8 mS/m  |               |                 |                        |
|                                    | pH   | 8.08   |               |                 |                        |
|                                    | Temperature (°C)                           | 25.4   |               |                 |                        |
|                                    | Remarks                                    | Constant discharge test only   |               |                 |                        |

## 12.4 Village Profile of Sites in Sana'a Governorate

| WATER SUPPLY PLANNING PANEL     |  |  |  |
|---------------------------------|--|--|--|
| No.                             | Item   | Description  |  |
|                                 | <b>[Design Parameter]</b>                        |  |  |
|                                 | No. of Villages in Total                         | 15   |  |
|                                 | No. of Villages to be Covered                    | 15   |  |
|                                 | Current Population (2006)                        | 1,611  |  |
|                                 | Design Population (2016)                         | 1,977  |  |
|                                 | Design Water Supply Rate                         | 40 L/c/d   | 174 m <sup>3</sup> /day  |
|                                 | Type of Work Required                            | New construction   |  |
|                                 | Required Facilities                              | Component  | To be Constructed by   |
|                                 |  | Pump for Deep Well   | Donor  |
|                                 |  | Eng./Gen. for Deep Well  | Donor  |
|                                 |  | Pump House for Deep Well   | Donor/Village  |
|                                 |  | Pump for Booster   | Donor  |
|                                 |  | Eng./Gen. for Booster  | Donor  |
|                                 |  | Pump House for Booster   | Donor/Village  |
|                                 |  | Booster Tank   | Donor  |
|                                 |  | Distribution Tank No.1   | Donor  |
|                                 |  | Distribution Tank No.2   | Village  |
|                                 |  | Pumping Main   | Donor  |
|                                 |  | Distribution Main  | Donor  |
|                                 |  | Public Tapstand  | Donor  |
|                                 |  | House Connections  | Village  |
|                                 | Accessibility                                    | Good, along paved road   |  |
|                                 | Security   | Problem at check points  |  |
|                                 | Observation                                      |  |  |
| OPERATION AND MAINTENANCE PANEL |  |  |  |
| No.                             | Item   | Description  |  |
|                                 | No. of Village Head (Sheikh)                     | 3  | Those three are most likely Aqwi. Unique setting in one village. |
|                                 | No. of Tribe                                     | 1  |  |
|                                 | Observation in Current Supply Scheme             | <p>Village population expanded downwards from the hill. Number of households, when the existing scheme is completed in 1982, was 150, all of which were served. Currently, there are 3,000 populations with 250 households.</p> <p>Booster pump unit was broken in 1998 or 2000 (different information was given), possibly because of overload beyond capacity.</p> <p>The booster pump broken in 1998/2000 has not been replaced, and only borehole pump unit has been operated to fill booster pump located just beside of the pump house. However, soon after the booster pump was broken down, the borehole pump unit was also worn out possibly because of overloaded operation in the condition that the water level became considerably lower than the depth where the submersible pump was installed.</p> |  |
|                                 | Mode of Ownership                                | <p>No legal arrangement for ownership of the supply scheme was prepared.</p> <p>GAREW handed over the scheme without any written agreement and memorandum.</p> <p>Ownership is believed belongs to the community in traditional manner and custom.</p>   |  |
|                                 | Mode of Management Entity                        | <p>Administrative body was formed, the community and Sheikh appointing the following members; a) manager (1), b) accountant/meter reader/fee collector (1), and c) operator (1).</p> <p>After the scheme broken down, the administrative body became inactive.</p> <p>Administrative board had worked on voluntary bases.</p>  |  |
|                                 | Organizational Management                        | <p>In future when the rehabilitation project is implemented, there is observed willingness to form new CBO scheme management following the guideline for registration under Ministry of Social Affairs.</p> <p>No constitution and by-law had been prepared.</p> <p>Managerial decisions are made by village authority (Sheikh and Agil) and management body appointed. However, the scheme management had been closely observed by the community (informal monitoring/checking system worked in a small community).</p>   |  |
|                                 | Technical Operation and Maintenance              | <p>It is mentioned that borehole pump unit (submersible pump) had been frequently repaired. However, it has neither been replaced nor new borehole been constructed by the community.</p> <p>Meter was not installed in the pump unit, so that the produced water was not compared with consumption.</p> <p>Pipeline network was divided into three (3) zones for operational purposes. User communities of each zone were responsible for maintenance of house connection pipelines in the zone, while administrative body was responsible for the one of main pipeline.</p>  |  |
|                                 | Financial Management and Transparency            | <p>Tariff structure: YR 20/m<sup>3</sup> (in late 90s)</p> <p>Average water charge for a household per month is estimated at YR 150-200.</p> <p>During the scheme operated, income and balance had been balanced.</p>  |  |
|                                 | Stakeholder Involvement / Responsibility Sharing | <p>There was no Local Council involvement.</p> <p>Major community contribution is not observed in the construction stage of the existing supply scheme but house connection with meter.</p>  |  |
|                                 | Community Contribution                           | <p>In future project, it is mentioned that the community is willing to contribute for the construction/rehabilitation of the scheme. However, consultation and agreement with GARWSP regarding community contribution and responsibility sharing in the construction stage is not made.</p>  |  |

## 12.4 Village Profile of Sites in Sana'a Governorate

|  |                           |   |
|--|---------------------------|---|
|  | Community Contracting-Out | There are three (3) Sheikh (possibly Aqil) in the village. Although the relationship among them is reported as cooperative, this setting could be a trigger of conflict. Background for this setting with three (3) Sheikh in one community and conflict resolution mechanism shall be further examined.  |
|  | Conflict Resolution       |   |
|  | Pro-Gender and Pro-Poor   | There are three (3) Sheikh (possibly Aqil) in the village. There is also sheik in Uzula where the community is located. Thus, they are probably Aqil, instead of Sheikh. Those village authorities do not have the area allocation in the village designated for traditional leadership. Relationship among those Sheikh was said cordial and cooperative. However, three (3) Sheikh existing in one village is unique case in the area, so that careful observation shall be required in the planning and implementing stages. |
|  |                           | It is mentioned that the pump units are broken down because of overloaded operation in dry well. However, it shall be further examined whether it was broken because of dry well or misuse of the pump unit.  |
|  |                           | CBO (charity organization) was formed in late 80's for relief of the poor by food provision. However, it had been inactive and dissolved due to decreasing interest of individual supporters. It is said that the food was provided to the poor, raising contribution from better-off, in which the supporter could not find any benefit.   |
|  | Remarks                   | New borehole for rehabilitation/reconstruction of the scheme was drilled successful with good yield and water quality in about 2.5 km away from the village center, located on the boundary of the village. Other three (3) borehole had been drilled prior to the successful borehole. Locating of the borehole drilling sites was done by GARWSP Branch Office, which does not have necessary equipment for groundwater investigation.  |
|  |                           | Pumping test for the new borehole was conducted by GARWSP in 2005, of which result was satisfactory. However, the community employed another contractor for pump test (24 hours) due to distrust for GARWSP and the result of the one carried out by GARWSP. The cost of RY 200,000 for employing the contractor for additional pumping test was contributed by Shaikh and the community members. The results confirmed also satisfactory.  |
|  |                           | No pumping test has not been carried out for the existing (old) borehole constructed in 1982 and reported dry.  |
|  |                           | Existing water sources: Most of households own water tank (about 6 m3) and installed in house yard. Water is available from water vending truck coming from outside of the village, which costs YR 3,000/tank (6 m3). There is private wells (boreholes), but they are utilized for irrigation, while the community own small dam for watering animals.   |

## 12.4 Village Profile of Sites in Sana'a Governorate

| SITE IDENTIFICATION PANEL          |  |  |                        |              |                        |               |
|------------------------------------|--|--|------------------------|--------------|------------------------|---------------|
| No.                                | Item                                       |  | Description            |              |                        |               |
|                                    | Code No.                                   | S-03   |                        |              |                        |               |
|                                    | Site Name                                  | Al Kharaba   |                        |              |                        |               |
|                                    | Sub-District (Uzlat)                       |  |                        |              |                        |               |
|                                    | District                                   | Bani Matar   |                        |              |                        |               |
|                                    | Governorate                                | Sana'a   |                        |              |                        |               |
|                                    | Coordinates                                | Latitude   | Longitude              |              |                        |               |
|                                    | Coordinates (Measured Location)            |  |                        |              |                        |               |
|                                    | Annual precipitation (rainfall)            | 370 mm   |                        |              |                        |               |
|                                    | Population (2006)                          | 1,361  |                        |              |                        |               |
|                                    | Population Forecast (2016)                 | 1,670  |                        |              |                        |               |
|                                    | No. of Village (Qariah) in Total           | 3  |                        |              |                        |               |
|                                    | No. of Village (Qariah) to be served       | 3  |                        |              |                        |               |
|                                    | Village (Qariah) in the Community          | Name   | Population             | Household    | Coordinate (Lat / Lon) |               |
|                                    |  | Al Kharaba   | 890                    | 140          |                        |               |
|                                    |  | Mahal Mahyib   | 278                    | 46           |                        |               |
|                                    |  | Bait Awadh   | 193                    | 37           |                        |               |
|                                    |  | Wade Al Qeelah   |                        |              |                        |               |
| EXISTING WATER SUPPLY SCHEME PANEL |  |  |                        |              |                        |               |
| No.                                | Item                                       |  | Description            |              |                        |               |
|                                    | Functioning                                | Non-functional   |                        |              |                        |               |
|                                    | Components of Existing Water Supply Scheme | Component  | Specification          | Condition    | Year                   | Fund          |
|                                    |  | Pump for Deep Well   | Vertical               | Damaged 20   | 1985                   | GAREW         |
|                                    |  | Engine for Deep Well   | 24HP Yanmar            | Broken in 20 | 1985                   | GAREW         |
|                                    |  | Pump House for Deep We   | Concrete block         | Cannot use   | 1985                   | Local Council |
|                                    |  | Pumping Unit for Booster   |                        |              |                        |               |
|                                    |  | Eng./Gen. for Booster  |                        |              |                        |               |
|                                    |  | Pump House for Booster   |                        |              |                        |               |
|                                    |  | Booster Tank   |                        |              |                        |               |
|                                    |  | Distribution Tank  | x 3                    | Cannot use   | 1985                   | Local Council |
|                                    |  | Pumping Main   | SGP                    | Cannot use   | 1985                   | Local Council |
|                                    |  | Distribution Main  |                        |              |                        |               |
|                                    |  | Public Tapstand  | 3 (4 taps)             | Not function |                        | Charity       |
|                                    |  | House Connection   |                        |              |                        |               |
|                                    | Observations                               | Residents now use water from private wells, pay for fuel: YR20/pers/mon (including children) |                        |              |                        |               |
| WATER SOURCE PANEL                 |  |  |                        |              |                        |               |
| No.                                | Item                                       |  | Description            |              |                        |               |
|                                    | [Borehole Code]                            |  |                        |              |                        |               |
|                                    | Grid (UTM)                                 | North<br>1693207   | East<br>390761         |              |                        |               |
|                                    | Grid (Lat/Lon)                             | Lat. N<br>15°18' 47.2"   | Lon. E<br>43°58' 56.4" |              |                        |               |
|                                    | Present Condition (Pump Type)              | Not working  | Vertical pump          |              |                        |               |
|                                    | Elevation (m)                              | 2,935 m  |                        |              |                        |               |
|                                    | Aquifer/Geological Description             |  |                        |              |                        |               |
|                                    | Year of Construction                       | 1982   |                        |              |                        |               |
|                                    | Fund                                       | GAREW  |                        |              |                        |               |
|                                    | Depth (m)                                  | 150 m  |                        |              |                        |               |
|                                    | Casing Diameter (inch)                     | 8-5/8  | inch                   |              |                        |               |
|                                    | Screen                                     |  |                        |              |                        |               |
|                                    | Static Water Level (G.L.-m)                | 44.9 m   |                        |              |                        |               |
|                                    | Dynamic Water Level (G.L.-m)               | 80.8 m   |                        |              |                        |               |
|                                    | Drawdown (m)                               | 35.9 m   |                        |              |                        |               |
|                                    | Discharge (g/min)                          | 55 g/min   | 3.5 L/sec              |              |                        |               |
|                                    | Specific Capacity                          | 0.097 L/s/m  |                        |              |                        |               |
|                                    | EC (mS/m)                                  | 61.5 mS/m  |                        |              |                        |               |
|                                    | pH   | 7.64   |                        |              |                        |               |
|                                    | Temperature (°C)                           | 18.1   |                        |              |                        |               |
|                                    | Remarks                                    |  |                        |              |                        |               |



## 12.4 Village Profile of Sites in Sana'a Governorate

| WATER SUPPLY PLANNING PANEL     |  |   |                        |
|---------------------------------|--|---|------------------------|
| No.                             | Item   | Description   |                        |
|                                 | <b>[Design Parameter]</b>                        |   |                        |
|                                 | No. of Villages in Total                         | 3   |                        |
|                                 | No. of Villages to be Covered                    | 3   |                        |
|                                 | Current Population (2006)                        | 1,361   |                        |
|                                 | Design Population (2016)                         | 1,670   |                        |
|                                 | Design Water Supply Rate                         | 40 L/c/d  | 67 m <sup>3</sup> /day |
|                                 | Type of Work Required                            | New construction  |                        |
|                                 | Required Facilities                              | Component   | To be Constructed by   |
|                                 |  | Pump for Deep Well  | Donor                  |
|                                 |  | Eng./Gen. for Deep Well   | Donor                  |
|                                 |  | Pump House for Deep Well  | Donor/Village          |
|                                 |  | Pump for Booster  |                        |
|                                 |  | Eng./Gen. for Booster   |                        |
|                                 |  | Pump House for Booster  |                        |
|                                 |  | Booster Tank  |                        |
|                                 |  | Distribution Tank   | Donor                  |
|                                 |  | Pumping Main  | Donor                  |
|                                 |  | Distribution Main   | Donor                  |
|                                 |  | Public Tapstand   | Donor                  |
|                                 |  | House Connections   | Village                |
|                                 | Accessibility                                    | Good  |                        |
|                                 | Security   |   |                        |
|                                 | Observation                                      |   |                        |
| OPERATION AND MAINTENANCE PANEL |  |   |                        |
| No.                             | Item   | Description   |                        |
|                                 | No. of Village Head (Sheikh)                     | 1   |                        |
|                                 | No. of Tribe                                     | 1   |                        |
|                                 | Observation in Current Supply Scheme             | <p>Pump unit was totally broken down three (3) years ago, being deteriorated after more than 15 years operation although several repairs were done.</p> <p>Pump unit repair was done by Sheikh, of which cost was borne by Sheikh and the scheme revenue collected by Sheikh.</p> <p>Until the public stands were constructed by individual charity, water is provided on the borehole site.</p> <p>There is no house connection because of the poor economic conditions of the community. Existing water sources are three (3) cisterns, and four (4) private well for irrigation. One private well is connected to the school and mosque.</p> <p>Water is provided for community members at free cost from the private wells (those wells are used primarily for irrigation).</p> |                        |
|                                 | Mode of Ownership                                | No legal ownership arrangement are made.  |                        |
|                                 | Mode of Management Entity                        | <p>Scheme management has been undertaken by Sheikh, appointing one (1) operator.</p> <p>Some of community members contributed privately for fuel cost.</p> <p>Maintenance costs had been borne by Sheikh.</p>   |                        |
|                                 | Organizational Management                        | <p>No constitution for the scheme management has been prepared.</p> <p>Cash contribution had been collected and managed by Aqil.</p>  |                        |
|                                 | Technical Operation and Maintenance              | <p>Pump had been operated for 4 hours per day, and for 4-5 days in a week.</p> <p>Replacement of pump unit, pump head, and cylinder of generator were undertaken, of which costs were borne by Sheikh.</p>  |                        |
|                                 | Financial Management and Transparency            | <p>Water Tariff Structure: YR 20 per capita (including females and children)</p> <p>Water Tariff had been collected and managed by Aqil.</p> <p>No bank account had been opened.</p> <p>There was no auditing system on the scheme account.</p> <p>Financial status had not been disclosed.</p> <p>Free water is provided for the poor</p>  |                        |
|                                 | Stakeholder Involvement / Responsibility Sharing | No training had been provided by stakeholders.  |                        |
|                                 | Community Contribution                           | Pump house was constructed by the community.  |                        |
|                                 | Community Contracting-Out                        |   |                        |
|                                 | Conflict Resolution                              | <p>Currently, there is no tribal conflict.</p> <p>In 80's, there were conflict with other village, but in 90's those conflicts were resolved and calmed down.</p>   |                        |
|                                 | Pro-Gender and Pro-Poor                          |   |                        |
|                                 | Remarks  | There is no house connection in the existing supply scheme, because affordability of households for house connection is limited. The community members opted for service provision through public stands. In this community, public stands might be the most applicable service option.   |                        |

## 12.4 Village Profile of Sites in Sana'a Governorate

| SITE IDENTIFICATION PANEL          |  |                          |                |                     |           |                        |
|------------------------------------|--|--------------------------|----------------|---------------------|-----------|------------------------|
| No.                                | Item                                       |                          |                | Description         |           |                        |
|                                    | Code No.                                   | S-04                     |                |                     |           |                        |
|                                    | Site Name                                  | Qamlan-Bait Al Najrani   |                |                     |           |                        |
|                                    | Sub-District (Uzlat)                       |                          |                |                     |           |                        |
|                                    | District                                   | Bani Matar               |                |                     |           |                        |
|                                    | Governorate                                | Sana'a                   |                |                     |           |                        |
|                                    | Coordinates                                | Latitude                 | Longitude      |                     |           |                        |
|                                    | Coordinates (Measured Location)            |                          |                |                     |           |                        |
|                                    | Annual precipitation (rainfall)            | 420 mm                   |                |                     |           |                        |
|                                    | Population (2006)                          | 629                      |                |                     |           |                        |
|                                    | Population Forecast (2016)                 | 772                      |                |                     |           |                        |
|                                    | No. of Village (Qariah) in Total           | 2                        |                |                     |           |                        |
|                                    | No. of Village (Qariah) to be served       | 2                        |                |                     |           |                        |
|                                    | Village (Qariah) in the Community          | Name                     | To Be Served   | Population          | Household | Coordinate (Lat / Lon) |
|                                    |  | Qamlan                   |                | 225                 |           |                        |
|                                    |  | Bait Al Najrani          |                | 404                 |           |                        |
| EXISTING WATER SUPPLY SCHEME PANEL |  |                          |                |                     |           |                        |
| No.                                | Item                                       |                          | Description    |                     |           |                        |
|                                    | Functioning                                | Partially existing       |                |                     |           |                        |
|                                    | Components of Existing Water Supply Scheme | Component                | Specification  | Condition           | Year      | Fund                   |
|                                    |  | Pump for Deep Well       | Vertical       |                     | 1977      | GAREW                  |
|                                    |  | Engine for Deep Well     |                |                     | 1977      | GAREW                  |
|                                    |  | Pump House for Deep Well | Concrete block |                     | 1977      | Village                |
|                                    |  | Pump for Booster         |                |                     |           |                        |
|                                    |  | Eng./Gen. for Booster    |                |                     |           |                        |
|                                    |  | Pump House for Booster   |                |                     |           |                        |
|                                    |  | Booster Tank             |                |                     |           |                        |
|                                    |  | Distribution Tank        | Rock, open     | 25m <sup>3</sup>    | 1977      | Village                |
|                                    |  | Pumping Main             | SGP            | to open tank        | 1977      | Village                |
|                                    |  | Distribution Main        | SGP            | from tank to valley | 1977      | Village                |
|                                    |  | Public Tapstand          | 1 in valley    |                     | 1977      | Village                |
|                                    |  | House Connection         |                |                     |           |                        |
|                                    | Observations                               |                          |                |                     |           |                        |
| WATER SOURCE PANEL                 |  |                          |                |                     |           |                        |
| No.                                | Item                                       |                          |                | Description         |           |                        |
|                                    | [Borehole Code]                            |                          |                |                     |           |                        |
|                                    | Grid (UTM)                                 | North                    | East           |                     |           |                        |
|                                    |  | 1677966                  | 389807         |                     |           |                        |
|                                    | Grid (Lat/Lon)                             | Lat. N                   | Lon. E         |                     |           |                        |
|                                    |  | 15°10' 31.1"             | 43°58' 27.4"   |                     |           |                        |
|                                    | Present Condition (Pump Type)              | Working                  | Vertical pump  |                     |           |                        |
|                                    | Elevation (m)                              | 2,748 m                  |                |                     |           |                        |
|                                    | Aquifer/Geological Description             |                          |                |                     |           |                        |
|                                    | Year of Construction                       | 1975                     |                |                     |           |                        |
|                                    | Fund                                       | GAREW                    |                |                     |           |                        |
|                                    | Depth (m)                                  | 145 m                    |                |                     |           |                        |
|                                    | Casing Diameter (inch)                     | 8 inch                   |                |                     |           |                        |
|                                    | Screen                                     |                          |                |                     |           |                        |
|                                    | Static Water Level (G.L.-m)                | 10 m                     |                |                     |           |                        |
|                                    | Dynamic Water Level (G.L.-m)               | 10.9 m                   |                |                     |           |                        |
|                                    | Drawdown (m)                               | 0.9 m                    |                |                     |           |                        |
|                                    | Discharge (g/min)                          | 89 g/min                 |                | 5.6 L/sec           |           |                        |
|                                    | Specific Capacity                          | 6.222 L/s/m              |                |                     |           |                        |
|                                    | EC (mS/m)                                  | 33.8 mS/m                |                |                     |           |                        |
|                                    | pH   | 7.36                     |                |                     |           |                        |
|                                    | Temperature (°C)                           | 19.9                     |                |                     |           |                        |
|                                    | Remarks                                    |                          |                |                     |           |                        |

## 12.4 Village Profile of Sites in Sana'a Governorate

| WATER SUPPLY PLANNING PANEL     |  |                         |                        |
|---------------------------------|--|-------------------------|------------------------|
| No.                             | Item   | Description             |                        |
|                                 | <b>[Design Parameter]</b>                        |                         |                        |
|                                 | No. of Villages in Total                         | 2                       |                        |
|                                 | No. of Villages to be Covered                    | 2                       |                        |
|                                 | Current Population (2006)                        | 629                     |                        |
|                                 | Design Population (2016)                         | 772                     |                        |
|                                 | Design Water Supply Rate                         | 40 L/c/d                | 31 m <sup>3</sup> /day |
|                                 | Type of Work Required                            | New construction        |                        |
|                                 | Required Facilities                              | Component               | To be Constructed by   |
|                                 |  | Pump for Deep Well      | Donor                  |
|                                 |  | Eng./Gen. for Deep Well | Donor                  |
|                                 |  | Pump House for Deep We  | Donor/Village          |
|                                 |  | Pump for Booster        |                        |
|                                 |  | Eng./Gen. for Booster   |                        |
|                                 |  | Pump House for Booster  |                        |
|                                 |  | Booster Tank            |                        |
|                                 |  | Distribution Tank       | Donor                  |
|                                 |  | Pumping Main            | Donor                  |
|                                 |  | Distribution Main       | Donor                  |
|                                 |  | Public Tapstand         | Donor                  |
|                                 |  | House Connections       | Village                |
|                                 | Accessibility                                    | Good, near paved road   |                        |
|                                 | Security   |                         |                        |
|                                 | Observation                                      |                         |                        |
| OPERATION AND MAINTENANCE PANEL |  |                         |                        |
| No.                             | Item   | Description             |                        |
|                                 | No. of Village Head (Sheikh)                     |                         |                        |
|                                 | No. of Tribe                                     |                         |                        |
|                                 | Observation in Current Supply Scheme             |                         |                        |
|                                 | Mode of Ownership                                |                         |                        |
|                                 | Mode of Management Entity                        |                         |                        |
|                                 | Organizational Management                        |                         |                        |
|                                 | Technical Operation and Maintenance              |                         |                        |
|                                 | Financial Management and Transparency            |                         |                        |
|                                 | Stakeholder Involvement / Responsibility Sharing |                         |                        |
|                                 | Community Contribution                           |                         |                        |
|                                 | Community Contracting-Out                        |                         |                        |
|                                 | Conflict Resolution                              |                         |                        |
|                                 | Pro-Gender and Pro-Poor                          |                         |                        |
|                                 | Remarks  |                         |                        |

## 12.4 Village Profile of Sites in Sana'a Governorate

| SITE IDENTIFICATION PANEL          |  |  |               |                       |                        |      |
|------------------------------------|--|--|---------------|-----------------------|------------------------|------|
| No.                                | Item                                       |  |               | Description           |                        |      |
|                                    | Code No.                                   | S-05   |               |                       |                        |      |
|                                    | Site Name                                  | Afesh  |               |                       |                        |      |
|                                    | Sub-District (Uzlat)                       |  |               |                       |                        |      |
|                                    | District                                   | Belad Al Rous  |               |                       |                        |      |
|                                    | Governorate                                | Sana'a   |               |                       |                        |      |
|                                    | Coordinates                                | Latitude   | Longitude     |                       |                        |      |
|                                    | Coordinates (Measured Location)            |  |               |                       |                        |      |
|                                    | Annual precipitation (rainfall)            | 480 mm   |               |                       |                        |      |
|                                    | Population (2006)                          | 3,680  |               |                       |                        |      |
|                                    | Population Forecast (2016)                 | 4,517  |               |                       |                        |      |
|                                    | No. of Village (Qariah) in Total           | 1  |               |                       |                        |      |
|                                    | No. of Village (Qariah) to be served       | 1  |               |                       |                        |      |
|                                    | Village (Qariah) in the Community          | Name   | Population    | Household             | Coordinate (Lat / Lon) |      |
|                                    |  | Afesh  | 3,680         | 609                   |                        |      |
| EXISTING WATER SUPPLY SCHEME PANEL |  |  |               |                       |                        |      |
| No.                                | Item                                       |  |               | Description           |                        |      |
|                                    | Functioning                                | Non-functional   |               |                       |                        |      |
|                                    | Components of Existing Water Supply Scheme | Component  | Specification | Condition             | Year                   | Fund |
|                                    |  | Pump for Deep Well   | Submersible   | Removed               | 1999                   | MAI  |
|                                    |  | Generator for Deep Well  | 80kVA         | IVECO-FIAT Cannot use | 1999                   | MAI  |
|                                    |  | Pump House for Deep Well   | RC            |                       | 1999                   | MAI  |
|                                    |  | Pump for Booster   | Horizontal    | CAPRARI Cannot use    | 1999                   | MAI  |
|                                    |  | Engine for Booster   |               | AP Cannot use         | 1999                   | MAI  |
|                                    |  | Pump House for Booster   | RC            | next to deep well     | 1999                   | MAI  |
|                                    |  | Booster Tank   | RC            | 75m <sup>3</sup>      | 1999                   | MAI  |
|                                    |  | Distribution Tank  | RC            | 100m <sup>3</sup>     | 1999                   | MAI  |
|                                    |  | Pumping Main   | SGP           |                       | 1999                   | MAI  |
|                                    |  | Distribution Main  | SGP           |                       | 1999                   | MAI  |
|                                    |  | Public Tapstand  | 3 (3 taps)    |                       | 1999                   | MAI  |
|                                    |  | House Connection   |               |                       |                        |      |
|                                    | Observations                               | Water supply system was constructed by MAI (Ministry of Agriculture and Irrigation), General Authority for Northern Area Development (Sada'ah, Hajjah, Amran Governorates) in 1999, but worked only 2 days. Now using small private spring (free).<br>4 mosques, 1 school and no health centers. |               |                       |                        |      |
| WATER SOURCE PANEL                 |  |  |               |                       |                        |      |
| No.                                | Item                                       |  |               | Description           |                        |      |
|                                    | [Borehole Code]                            |  |               |                       |                        |      |
|                                    | Grid (UTM)                                 | North  | East          |                       |                        |      |
|                                    |  | 1666558  | 416749        |                       |                        |      |
|                                    | Grid (Lat/Lon)                             | Lat. N   | Lon. E        |                       |                        |      |
|                                    |  | 15°04' 23.5"   | 44°13' 31.2"  |                       |                        |      |
|                                    | Present Condition (Pump Type)              | Not working  |               | Open                  |                        |      |
|                                    | Elevation (m)                              | 2,006 m  |               |                       |                        |      |
|                                    | Aquifer/Geological Description             |  |               |                       |                        |      |
|                                    | Year of Construction                       | 1996   |               |                       |                        |      |
|                                    | Fund                                       | MAI  |               |                       |                        |      |
|                                    | Depth (m)                                  | 300 m  |               |                       |                        |      |
|                                    | Casing Diameter (inch)                     | 8 inch   |               |                       |                        |      |
|                                    | Screen                                     |  |               |                       |                        |      |
|                                    | Static Water Level (G.L.-m)                | 213.0 m  |               |                       |                        |      |
|                                    | Dynamic Water Level (G.L.-m)               | 231.2 m  |               |                       |                        |      |
|                                    | Drawdown (m)                               | 18.2 m   |               |                       |                        |      |
|                                    | Discharge (g/min)                          | 51 g/min   |               | 3.2 L/sec             |                        |      |
|                                    | Specific Capacity                          | 0.177 L/s/m  |               |                       |                        |      |
|                                    | EC (mS/m)                                  | 125.6 mS/m   |               |                       |                        |      |
|                                    | pH   | 7.48   |               |                       |                        |      |
|                                    | Temperature (°C)                           | 32.7   |               |                       |                        |      |
|                                    | Remarks                                    | Need to confirm water quality (Fe, F).   |               |                       |                        |      |

## 12.4 Village Profile of Sites in Sana'a Governorate

| WATER SUPPLY PLANNING PANEL     |  |  |                         |
|---------------------------------|--|--|-------------------------|
| No.                             | Item   | Description  |                         |
|                                 | [Design Parameter]                               |  |                         |
|                                 | No. of Villages in Total                         | 1  |                         |
|                                 | No. of Villages to be Covered                    | 1  |                         |
|                                 | Current Population (2006)                        | 3,680  |                         |
|                                 | Design Population (2016)                         | 4,517  |                         |
|                                 | Design Water Supply Rate                         | 35 L/c/d   | 158 m <sup>3</sup> /day |
|                                 | Type of Work Required                            | Partial construction   |                         |
|                                 | Required Facilities                              | Component  | To be Constructed by    |
|                                 |  | Pump for Deep Well   | Donor                   |
|                                 |  | Eng./Gen. for Deep Well  | Donor                   |
|                                 |  | Pump House for Deep We   | Donor/Village           |
|                                 |  | Pump for Booster   | Donor                   |
|                                 |  | Eng./Gen. for Booster  | Donor                   |
|                                 |  | Pump House for Booster   | Donor/Village           |
|                                 |  | Booster Tank   | Donor/Village           |
|                                 |  | Distribution Tank  | Donor/Village           |
|                                 |  | Pumping Main   | Donor/Village           |
|                                 |  | Distribution Main  | Donor/Village           |
|                                 |  | Public Tapstand  | Donor                   |
|                                 |  | House Connections  | Village                 |
|                                 | Accessibility                                    |  |                         |
|                                 | Security   |  |                         |
|                                 | Observation                                      |  |                         |
| OPERATION AND MAINTENANCE PANEL |  |  |                         |
| No.                             | Item   | Description  |                         |
|                                 | No. of Village Head (Sheikh)                     | 1  |                         |
|                                 | No. of Tribe                                     | 1  |                         |
|                                 | Observation in Current Supply Scheme             | <p>Afish is name of village, instead of Afesh.</p> <p>Construction of the existing supply scheme was constructed and completed in 1999 under Integrated Rural Development Project by Ministry of Agriculture and Irrigation. However, it had functional error and could not supply even "a drop of water" since its completion. It is assumed by the community, since the implementing agency did not give any account to the community, that the pump units both for borehole and booster had technical error. The pump units installed both for borehole and booster station is observed as secondhand. Pump unit and generator for borehole were replaced by other second hand ones, which also failed to rift up groundwater to the reservoir located just beside to the pump house. It was observed by the community that the implementing agency carried out pumping test for 19 hours, which confirmed water yield of 60 gallons/minute. Thus, the functional error might not caused by borehole yield.</p> <p>Intake and main distribution pipelines were installed instead of technical error with pump House connections and construction of public stands were not carried out.</p> |                         |
|                                 | Mode of Ownership                                | <p>The existing scheme has not been handed over to the community from Ministry of Agriculture and Irrigation because of technical error with pump units.</p> <p>It is said that currently the ownership of the scheme is transferred to GARWSP.</p>  |                         |
|                                 | Mode of Management Entity                        | <p>CBO for the scheme management had been established in 1999 when the scheme is constructed. The CBO members were selected through the community election. It had a plan to register the CBO under Ministry of Social Affairs.</p> <p>However, the CBO had been dissolved because of the scheme failure.</p>  |                         |
|                                 | Organizational Management                        | <p>Constitution was prepared, but no effected.</p>   |                         |
|                                 | Technical Operation and Maintenance              | <p>Replacement of the pump units was undertaken by Ministry of Agriculture and Irrigation.</p>   |                         |
|                                 | Financial Management and Transparency            | <p>Water tariff had not been collected because of the scheme failure.</p>  |                         |
|                                 | Stakeholder Involvement / Responsibility Sharing | <p>Local Council was not involved.</p>   |                         |
|                                 | Community Contribution                           | <p>There was no community contribution neither in cash nor kind.</p> <p>The communities are prepared for contribution in future project with GARWSP.</p>   |                         |
|                                 | Community Contracting-Out                        | <p>N/A</p>   |                         |
|                                 | Conflict Resolution                              | <p>Any community conflict cases were mentioned.</p>  |                         |
|                                 | Pro-Gender and Pro-Poor                          | <p>N/A</p>   |                         |
|                                 | Remarks  | <p>The area has no reliable water source. The community depends water for for domestic use on rain water (cistern) and stream in rain season, and spring in distance taking more than one hour to fetch in dry season. There is no borehole observed near the existing one. Currently community are making request for service provision to GARWSP, instead of Ministry of Agriculture and Irrigation.</p> <p>Land for the existing pump house and booster pump station is purchased by the community from the private land owner, of which ownership is still entailed to the community.</p>  |                         |

## 12.4 Village Profile of Sites in Sana'a Governorate

| SITE IDENTIFICATION PANEL          |  |                          |                 |                  |              |                        |
|------------------------------------|--|--------------------------|-----------------|------------------|--------------|------------------------|
| No.                                | Item                                       | Description              |                 |                  |              |                        |
|                                    | Code No.                                   | S-06                     |                 |                  |              |                        |
|                                    | Site Name                                  | Al-Legam                 |                 |                  |              |                        |
|                                    | Sub-District (Uzlat)                       |                          |                 |                  |              |                        |
|                                    | District                                   | Sanhan & Bani Bahlool    |                 |                  |              |                        |
|                                    | Governorate                                | Sana'a                   |                 |                  |              |                        |
|                                    | Coordinates                                | Latitude                 | Longitude       |                  |              |                        |
|                                    | Coordinates (Measured Location)            |                          |                 |                  |              |                        |
|                                    | Annual precipitation (rainfall)            | 330 mm                   |                 |                  |              |                        |
|                                    | Population (2006)                          | 1,068                    |                 |                  |              |                        |
|                                    | Population Forecast (2016)                 | 1,311                    |                 |                  |              |                        |
|                                    | No. of Village (Qariah) in Total           |                          |                 |                  |              |                        |
|                                    | No. of Village (Qariah) to be served       |                          |                 |                  |              |                        |
|                                    | Village (Qariah) in the Community          | Name                     | To Be Served    | Population       | Household    | Coordinate (Lat / Lon) |
|                                    |  | Al Balad                 |                 |                  |              |                        |
|                                    |  | Bait Mitash 1            |                 |                  |              |                        |
|                                    |  | Bait Mitash 2            |                 |                  |              |                        |
|                                    |  | Al Sardaja               |                 |                  |              |                        |
|                                    |  | Maqar Al Fara            |                 |                  |              |                        |
|                                    |  | Al Dayq                  |                 |                  |              |                        |
|                                    |  | Al Gelhaf                |                 |                  |              |                        |
|                                    |  | Qetat Al Asheri          |                 |                  |              |                        |
|                                    |  | Observations             |                 |                  |              |                        |
| EXISTING WATER SUPPLY SCHEME PANEL |  |                          |                 |                  |              |                        |
| No.                                | Item                                       | Description              |                 |                  |              |                        |
|                                    | Functioning                                | Functional               |                 |                  |              |                        |
|                                    | Components of Existing Water Supply Scheme | Component                | Specification   | Condition        | Year         | Fund                   |
|                                    |  | Pump for Deep Well       | Vertical        |                  | 1995         | GAREW                  |
|                                    |  | Engine for Deep Well     |                 | IVECO            | 1995         | GAREW                  |
|                                    |  | Pump House for Deep Well | RC              |                  | 1995         | GAREW                  |
|                                    |  | Pump for Booster         | Horizontal      |                  | 1995         | GAREW                  |
|                                    |  | Engine for Booster       |                 | IVECO            | 1995         | GAREW                  |
|                                    |  | Pump House for Booster   | RC              |                  | 1995         | GAREW                  |
|                                    |  | Booster Tank             | RC              | 25m <sup>3</sup> | 1995         | GAREW                  |
|                                    |  | Distribution Tank        | RC              |                  | 1995         | GAREW                  |
|                                    |  | Pumping Main             | SGP             |                  | 1995         | GAREW                  |
|                                    |  | Distribution Main        | SGP             |                  | 1995         | GAREW                  |
|                                    |  | Public Tapstand          |                 | 5                | Not used now | 1995 GAREW             |
|                                    |  | House Connection         | 200 with meters |                  |              | Village                |
|                                    | Observations                               |                          |                 |                  |              |                        |
| WATER SOURCE PANEL                 |  |                          |                 |                  |              |                        |
| No.                                | Item                                       | Description              |                 |                  |              |                        |
|                                    | [Borehole Code]                            |                          |                 |                  |              |                        |
|                                    | Grid (UTM)                                 | North                    | East            |                  |              |                        |
|                                    |  | 1689659                  | 431368          |                  |              |                        |
|                                    | Grid (Lat/Lon)                             | Lat. N                   | Lon. E          |                  |              |                        |
|                                    |  | 15°16' 56.6"             | 44°21' 38.7"    |                  |              |                        |
|                                    | Present Condition (Pump Type)              | Working                  | Vertical pump   |                  |              |                        |
|                                    | Elevation (m)                              | 2,435 m                  |                 |                  |              |                        |
|                                    | Aquifer/Geological Description             |                          |                 |                  |              |                        |
|                                    | Year of Construction                       | 1993                     |                 |                  |              |                        |
|                                    | Fund                                       | GAREW                    |                 |                  |              |                        |
|                                    | Depth (m)                                  | 300 m                    |                 |                  |              |                        |
|                                    | Casing Diameter (inch)                     | 8 inch                   |                 |                  |              |                        |
|                                    | Screen                                     |                          |                 |                  |              |                        |
|                                    | Static Water Level (G.L.-m)                | 148.66 m                 |                 |                  |              |                        |
|                                    | Dynamic Water Level (G.L.-m)               | 280 m                    |                 |                  |              |                        |
|                                    | Drawdown (m)                               | 131.34 m                 |                 |                  |              |                        |
|                                    | Discharge (g/min)                          | 66 g/min                 | 4.2 L/sec       |                  |              |                        |
|                                    | Specific Capacity                          | 0.032 L/s/m              |                 |                  |              |                        |
|                                    | EC (mS/m)                                  | 57.7 mS/m                |                 |                  |              |                        |
|                                    | pH   | 9.27                     |                 |                  |              |                        |
|                                    | Temperature (°C)                           | 31.9                     |                 |                  |              |                        |
|                                    | Remarks                                    |                          |                 |                  |              |                        |

## 12.4 Village Profile of Sites in Sana'a Governorate

| WATER SUPPLY PLANNING PANEL     |                                      |  |                       |
|---------------------------------|--------------------------------------|--|-----------------------|
| No.                             | Item                                 | Description  |                       |
|                                 | [Design Parameter]                   |  |                       |
|                                 | No. of Villages in Total             | 0  |                       |
|                                 | No. of Villages to be Covered        | 0  |                       |
|                                 | Current Population (2006)            | 1,068  |                       |
|                                 | Design Population (2016)             | 1,311  |                       |
|                                 | Design Water Supply Rate             | L/c/d  | 0 m <sup>3</sup> /day |
|                                 | Type of Work Required                | Rehabilitation   |                       |
|                                 | Required Facilities                  | Component  | To be Constructed by  |
|                                 |                                      | Pump for Deep Well   | Donor                 |
|                                 |                                      | Eng./Gen. for Deep Well  | Donor                 |
|                                 |                                      | Pump House for Deep Well   |                       |
|                                 |                                      | Pump for Booster   | Donor                 |
|                                 |                                      | Eng./Gen. for Booster  | Donor                 |
|                                 |                                      | Pump House for Booster   |                       |
|                                 |                                      | Booster Tank   |                       |
|                                 |                                      | Distribution Tank  | Donor                 |
|                                 |                                      | Pumping Main   | Donor/Village         |
|                                 |                                      | Distribution Main  | Donor/Village         |
|                                 |                                      | Public Tapstand  | Donor                 |
|                                 |                                      | House Connections  | Village               |
|                                 | Accessibility                        | Good   |                       |
|                                 | Security                             |  |                       |
|                                 | Observation                          |  |                       |
| OPERATION AND MAINTENANCE PANEL |                                      |  |                       |
| No.                             | Item                                 | Description  |                       |
|                                 | No. of Village Head (Sheikh)         | 1  |                       |
|                                 | No. of Tribe                         | 1  |                       |
|                                 | Observation in Current Supply Scheme | <p>Problems with booster pump are observed, not working properly.</p> <p>Booster pump can not be repaired by replacement of spare parts, whole replacement of pump unit is required.</p> <p>Fund for booster pump replacement can not be collected, although additional fund (i.e. additional community contribution apart from normal water tariff collection) is raised.</p> <p>Additional fund raising for booster pump replacement seems not to be accepted by the community members.</p> <p>Water tariff is set at lowest level (at YR 50/m<sup>3</sup>) only to satisfy minimum operation cost, users refusing tariff increase to cover replacement / rehabilitation cost in the scheme operation.</p> |                       |
|                                 | Mode of Ownership                    | <p>Handing-over document was prepared by the contractor.</p> <p>Handing-over arrangement to the community was made by GARWSP (However, written document is not confirmed).</p>   |                       |
|                                 | Mode of Management Entity            | <p>Water Committee is formed in 1994.</p> <p>Water Committee members were recommended by Sheikh and the community.</p> <p>Water Committee membership is consisted of, a) Director (1), b) Treasure (1), and c) Operator/watchman.</p> <p>In every sub-village (4 sub-villages), one revenue collector/bill distributor/meter reader is employed (4 persons in total).</p> <p>Committee is not registered, so that legal status is not established.</p> <p>Major decision is made by the Committee, although Informative meetings are held for the community, if it seems necessary.</p>  |                       |
|                                 | Organizational Management            | <p>Written constitution for the Committee is prepared, defining community contribution in operation and maintenance, management and financial procedures, accounting regulations, penalties, and so forth.</p> <p>Legal status is not established.</p> <p>Major decisions are made by the Committee, through consultation with Sheikh and the community members.</p> <p>A term of office for the Water Committee is 3 years.</p> <p>After three (3) years of terms of office for the Committee members, refresh recommendation is made by Sheikh and the community.</p> <p>Operator/Meter readers are hired on the contract-base, and the contract is not specifying the contract period.</p>                |                       |
|                                 | Technical Operation and Maintenance  | <p>Major repair and replacement is not experienced, because of limit in fund raising.</p> <p>Only minor replacement of spare parts has been undertaken.</p>  |                       |

## 12.4 Village Profile of Sites in Sana'a Governorate

|   |   |
|---|---|
| <p>Financial Management and Transparency</p>            | <p>Water Tariff Structure: YR 50/m<sup>3</sup></p> <p>Revenue is just enough for minimum operation expenditure (fuel and personnel expense), not satisfying requirements for major replacement and rehabilitation.</p> <p>Fund for major replacement and rehabilitation is raised when necessity is recognized through additional community contribution.</p> <p>After meter reading, bills are distributed, and revenue is collected at the house of revenue collectors.</p> <p>Water is provided free for the poorest.</p> <p>No bank account had been opened.</p> <p>Auditing Committee was formed to check the scheme account.</p> <p>There was no auditing system on the scheme account.</p> <p>Income in average: YR 50,000/month</p> <p>Expenditure in average: YR 45,000/month</p> <p>Expenditure Break down: YR 42,000 Fuel<br/>YR 12,000 Personnel Expense (for only Operator/Watchman)</p> <p>Other Committee members except Operator/Watchman and revenue collector/bill distributor/meter reader are not get paid.</p> |
| <p>Stakeholder Involvement / Responsibility Sharing</p> | <p>No training had been provided by stakeholders.</p> <p>No assistance by District Council and GARWSP are mentioned.</p>  |
| <p>Community Contribution</p>                           | <p>House connection cost is borne by the users at YR 4,000/connection.</p>  |
| <p>Community Contracting-Out</p>                        | <p>Contract arrangement is made only for Operator/Watchman, while revenue collector/bill distributor/meter readers are not contracted (working on voluntary basis, appointed by the</p>   |
| <p>Conflict Resolution</p>                              | <p>No conflict cases are mentioned.</p>   |
| <p>Pro-Gender and Pro-Poor</p>                          |   |
| <p>Remarks</p>  | <p>Water tariff is set at lowest possible level only to satisfy minimum operation costs (fuel and personnel expense), the users refusing additional increase for major replacement and rehabilitation. Additional fund raising for the replacement of the booster pump seems not successful at present, observing community reluctance. Current water tariff setting shall be revised, and community awareness on importance to include future investment (rehabilitation and replacement of facilities and equipment) shall be enhanced.</p>   |



## 12.4 Village Profile of Sites in Sana'a Governorate

| SITE IDENTIFICATION PANEL          |  |   |               |           |                        |
|------------------------------------|--|---|---------------|-----------|------------------------|
| No.                                | Item                                       | Description   |               |           |                        |
|                                    | Code No.                                   | S-07  |               |           |                        |
|                                    | Site Name                                  | Bait Al Hadrami   |               |           |                        |
|                                    | Sub-District (Uzlat)                       |   |               |           |                        |
|                                    | District                                   | Sanhan & Bani Bahloul   |               |           |                        |
|                                    | Governorate                                | Sana'a  |               |           |                        |
|                                    | Coordinates                                | Latitude  | Longitude     |           |                        |
|                                    | Coordinates (Measured Location)            |   |               |           |                        |
|                                    | Annual precipitation (rainfall)            | 350 mm  |               |           |                        |
|                                    | Population (2006)                          | 2,550   |               |           |                        |
|                                    | Population Forecast (2016)                 | 3,130   |               |           |                        |
|                                    | No. of Village (Qariah) in Total           |   |               |           |                        |
|                                    | No. of Village (Qariah) to be served       |   |               |           |                        |
|                                    | Village (Qariah) in the Community          | Name  | Population    | Household | Coordinate (Lat / Lon) |
|                                    |  | Al Qaryah   | 760           | 52        |                        |
|                                    |  | Al Hisn   | 410           | 35        |                        |
|                                    |  | Al Saradih  | 180           | 12        |                        |
|                                    |  | Lakmat Al Salah   | 220           | 20        |                        |
|                                    |  | Sha'ab Al Ein   | 90            | 7         |                        |
|                                    |  | Al Aqabah   | 120           | 10        |                        |
|                                    |  | Wahaba  | 170           | 18        |                        |
|                                    |  | Qarfan  | 161           | 16        |                        |
|                                    |  | Ardh Al Haid  | 164           | 22        |                        |
|                                    |  | Al Swayda   | 70            | 5         |                        |
|                                    |  | Al Maqate'e   | 45            | 5         |                        |
|                                    |  | Al Zuqaq  | 160           | 21        |                        |
| EXISTING WATER SUPPLY SCHEME PANEL |  |   |               |           |                        |
| No.                                | Item                                       | Description   |               |           |                        |
|                                    | Functioning                                | No existing   |               |           |                        |
|                                    | Components of Existing Water Supply Scheme | Component   | Specification | Condition | Year                   |
|                                    |  | Pump for Deep Well  |               |           |                        |
|                                    |  | Eng./Gen. for Deep Well   |               |           |                        |
|                                    |  | Pump House for Deep We  |               |           |                        |
|                                    |  | Pump for Booster  |               |           |                        |
|                                    |  | Eng./Gen. for Booster   |               |           |                        |
|                                    |  | Pump House for Booster  |               |           |                        |
|                                    |  | Booster Tank  |               |           |                        |
|                                    |  | Distribution Tank   |               |           |                        |
|                                    |  | Pumping Main  |               |           |                        |
|                                    |  | Distribution Main   |               |           |                        |
|                                    |  | Public Tapstand   |               |           |                        |
|                                    |  | House Connection  |               |           |                        |
|                                    | Observations                               | Presently using private boreholes, but their water levels are lowering and yields are decreasing. |               |           |                        |
| WATER SOURCE PANEL                 |  |   |               |           |                        |
| No.                                | Item                                       | Description   |               |           |                        |
|                                    | [Borehole Code]                            |   |               |           |                        |
|                                    | Grid (UTM)                                 | North   | East          |           |                        |
|                                    |  | 1685602   | 423739        |           |                        |
|                                    | Grid (Lat/Lon)                             | Lat. N  | Lon. E        |           |                        |
|                                    |  | 15°14' 44.0"  | 44°17' 23".6  |           |                        |
|                                    | Present Condition (Pump Type)              | Capped  |               |           |                        |
|                                    | Elevation (m)                              | 2,374 m   |               |           |                        |
|                                    | Aquifer/Geological Description             |   |               |           |                        |
|                                    | Year of Construction                       | 2005  |               |           |                        |
|                                    | Fund                                       | GARWSP  |               |           |                        |
|                                    | Depth (m)                                  | 410 m   |               |           |                        |
|                                    | Casing Diameter (inch)                     | 8 inch  |               |           |                        |
|                                    | Screen                                     |   |               |           |                        |
|                                    | Static Water Level (G.L.-m)                | 193.2 m   |               |           |                        |
|                                    | Dynamic Water Level (G.L.-m)               | 197.1 m   |               |           |                        |
|                                    | Drawdown (m)                               | 3.9 m   |               |           |                        |
|                                    | Discharge (g/min)                          | 51 g/min  | 3.2 L/sec     |           |                        |
|                                    | Specific Capacity                          | 0.821 L/s/m   |               |           |                        |
|                                    | EC (mS/m)                                  | 38.5 mS/m   |               |           |                        |
|                                    | pH   | 8.54  |               |           |                        |
|                                    | Temperature (°C)                           | 31.3  |               |           |                        |
|                                    | Remarks                                    |   |               |           |                        |

## 12.4 Village Profile of Sites in Sana'a Governorate

| WATER SUPPLY PLANNING PANEL     |  |                         |                         |
|---------------------------------|--|-------------------------|-------------------------|
| No.                             | Item   | Description             |                         |
|                                 | <b>[Design Parameter]</b>                        |                         |                         |
|                                 | No. of Villages in Total                         | 0                       |                         |
|                                 | No. of Villages to be Covered                    | 0                       |                         |
|                                 | Current Population (2006)                        | 2,550                   |                         |
|                                 | Design Population (2016)                         | 3,130                   |                         |
|                                 | Design Water Supply Rate                         | 40 L/c/d                | 125 m <sup>3</sup> /day |
|                                 | Type of Work Required                            | New construction        |                         |
|                                 | Required Facilities                              | Component               | To be Constructed by    |
|                                 |  | Pump for Deep Well      | Donor                   |
|                                 |  | Eng./Gen. for Deep Well | Donor                   |
|                                 |  | Pump House for Deep We  | Donor/Village           |
|                                 |  | Pump for Booster        |                         |
|                                 |  | Eng./Gen. for Booster   |                         |
|                                 |  | Pump House for Booster  |                         |
|                                 |  | Booster Tank            |                         |
|                                 |  | Distribution Tank       | Donor                   |
|                                 |  | Pumping Main            | Donor                   |
|                                 |  | Distribution Main       | Donor                   |
|                                 |  | Public Tapstand         | Donor                   |
|                                 |  | House Connections       | Village                 |
|                                 | Accessibility                                    | Good, near paved road   |                         |
|                                 | Security   |                         |                         |
|                                 | Observation                                      |                         |                         |
| OPERATION AND MAINTENANCE PANEL |  |                         |                         |
| No.                             | Item   | Description             |                         |
|                                 | No. of Village Head (Sheikh)                     |                         |                         |
|                                 | No. of Tribe                                     |                         |                         |
|                                 | Observation in Current Supply Scheme             |                         |                         |
|                                 | Mode of Ownership                                |                         |                         |
|                                 | Mode of Management Entity                        |                         |                         |
|                                 | Organizational Management                        |                         |                         |
|                                 | Technical Operation and Maintenance              |                         |                         |
|                                 | Financial Management and Transparency            |                         |                         |
|                                 | Stakeholder Involvement / Responsibility Sharing |                         |                         |
|                                 | Community Contribution                           |                         |                         |
|                                 | Community Contracting-Out                        |                         |                         |
|                                 | Conflict Resolution                              |                         |                         |
|                                 | Pro-Gender and Pro-Poor                          |                         |                         |
|                                 | Remarks  |                         |                         |

## 12.4 Village Profile of Sites in Sana'a Governorate

| SITE IDENTIFICATION PANEL |                                      |                       |              |             |           |                        |
|---------------------------|--------------------------------------|-----------------------|--------------|-------------|-----------|------------------------|
| No.                       | Item                                 |                       |              | Description |           |                        |
|                           | Code No.                             | S-08                  |              |             |           |                        |
|                           | Site Name                            | Dajah & Sarfah        |              |             |           |                        |
|                           | Sub-District (Uzlat)                 |                       |              |             |           |                        |
|                           | District                             | Sanhan & Bani Bahlool |              |             |           |                        |
|                           | Governorate                          | Sana'a                |              |             |           |                        |
|                           | Coordinates                          | Latitude              | Longitude    |             |           |                        |
|                           |                                      |                       |              |             |           |                        |
|                           | Coordinates (Measured Location)      |                       |              |             |           |                        |
|                           | Annual precipitation (rainfall)      | 320 mm                |              |             |           |                        |
|                           | Population (2006)                    | 2,647                 |              |             |           |                        |
|                           | Population Forecast(2016)            | 3,249                 |              |             |           |                        |
|                           | No. of Village (Qariah) in Total     | 2                     |              |             |           |                        |
|                           | No. of Village (Qariah) to be served | 2                     |              |             |           |                        |
|                           | Village (Qariah) in the Community    | Name                  | To Be Served | Population  | Household | Coordinate (Lat / Lon) |
|                           |                                      | Dajah                 |              |             |           |                        |
|                           |                                      | Sarfah                |              |             |           |                        |

| EXISTING WATER SUPPLY SCHEME PANEL |  |  |               |             |      |      |
|------------------------------------|--|--|---------------|-------------|------|------|
| No.                                | Item                                       |  |               | Description |      |      |
|                                    | Functioning                                | No existing  |               |             |      |      |
|                                    | Components of Existing Water Supply Scheme | Component  | Specification | Condition   | Year | Fund |
|                                    |  | Pump for Deep Well   |               |             |      |      |
|                                    |  | Eng./Gen. for Deep Well  |               |             |      |      |
|                                    |  | Pump House for Deep We   |               |             |      |      |
|                                    |  | Pump for Booster   |               |             |      |      |
|                                    |  | Eng./Gen. for Booster  |               |             |      |      |
|                                    |  | Pump House for Booster   |               |             |      |      |
|                                    |  | Booster Tank   |               |             |      |      |
|                                    |  | Distribution Tank  |               |             |      |      |
|                                    |  | Pumping Main   |               |             |      |      |
|                                    |  | Distribution Main  |               |             |      |      |
|                                    |  | Public Tapstand  |               |             |      |      |
|                                    |  | House Connection   |               |             |      |      |
|                                    | Observations                               | Presently using water from private boreholes and dug wells (free). Also, buy water from tanker (YR250/m <sup>3</sup> ). If tanker is not available, buy from Sana'a (YR3,000/m <sup>3</sup> ). |               |             |      |      |

| WATER SOURCE PANEL |                                |                                |              |             |  |  |
|--------------------|--------------------------------|--------------------------------|--------------|-------------|--|--|
| No.                | Item                           |                                |              | Description |  |  |
|                    | [Borehole Code]                |                                |              |             |  |  |
|                    | Grid (UTM)                     | North                          | East         |             |  |  |
|                    |                                | 1697722                        | 438126       |             |  |  |
|                    | Grid (Lat/Lon)                 | Lat. N                         | Lon. E       |             |  |  |
|                    |                                | 15°21' 20.4"                   | 44°25' 25.3" |             |  |  |
|                    | Present Condition (Pump Type)  | Capped                         |              |             |  |  |
|                    | Elevation (m)                  | 2,567 m                        |              |             |  |  |
|                    | Aquifer/Geological Description |                                |              |             |  |  |
|                    | Year of Construction           | 2006                           |              |             |  |  |
|                    | Fund                           | GARWSP                         |              |             |  |  |
|                    | Depth (m)                      | 672 m                          |              |             |  |  |
|                    | Casing Diameter (inch)         | 10 inch                        |              |             |  |  |
|                    | Screen                         |                                |              |             |  |  |
|                    | Static Water Level (G.L.-m)    | 468.33 m                       |              |             |  |  |
|                    | Dynamic Water Level (G.L.-m)   | 620 m                          |              |             |  |  |
|                    | Drawdown (m)                   | 151.67 m                       |              |             |  |  |
|                    | Discharge (g/min)              | 150 g/min                      |              | 9.5 L/sec   |  |  |
|                    | Specific Capacity              | 0.062 L/s/m                    |              |             |  |  |
|                    | EC (mS/m)                      | 143.9 mS/m                     |              |             |  |  |
|                    | pH                             | 8.69                           |              |             |  |  |
|                    | Temperature (°C)               | 48.5                           |              |             |  |  |
|                    | Remarks                        | Pumping test carried by GARWSP |              |             |  |  |

## 12.4 Village Profile of Sites in Sana'a Governorate

| WATER SUPPLY PLANNING PANEL     |  |   |  |
|---------------------------------|--|---|--|
| No.                             | Item   | Description   |  |
|                                 | [Design Parameter]                               |   |  |
|                                 | No. of Villages in Total                         | 2   |  |
|                                 | No. of Villages to be Covered                    | 2   |  |
|                                 | Current Population (2006)                        | 2,647   |  |
|                                 | Design Population (2016)                         | 3,249   |  |
|                                 | Design Water Supply Rate                         | L/c/d   | m <sup>3</sup> /day                            |
|                                 | Type of Work Required                            | New construction  |  |
|                                 | Required Facilities                              |   | To be Constructed by                           |
|                                 |  |   | Notes  |
|                                 |  | Pump for Deep Well  | Donor New                                      |
|                                 |  | Eng./Gen. for Deep Well                                       | Donor New                                      |
|                                 |  | Pump House for Deep We  | Donor/Village New                              |
|                                 |  | Pump for Booster  | Donor New x 2                                  |
|                                 |  | Eng./Gen. for Booster   | Donor New                                      |
|                                 |  | Pump House for Booster  | Donor/Village New                              |
|                                 |  | Booster Tank  | Donor New                                      |
|                                 |  | Distribution Tank   | Donor New x 2                                  |
|                                 |  | Pumping Main  | Donor New x 2                                  |
|                                 |  | Distribution Main   | Donor New x 2                                  |
|                                 |  | Public Tapstand   | Donor New (for mosque, school and clinic only) |
|                                 |  | House Connections   | Village New                                    |
|                                 | Accessibility                                    | Good, along paved road. Access to end of Dajah, through wadi. |  |
|                                 | Security   | Slight problem at check point                                 |  |
|                                 | Observation                                      |   |  |
| OPERATION AND MAINTENANCE PANEL |  |   |  |
| No.                             | Item   | Description   |  |
|                                 | No. of Village Head (Sheikh)                     |   |  |
|                                 | No. of Tribe                                     |   |  |
|                                 | Observation in Current Supply Scheme             |   |  |
|                                 | Mode of Ownership                                |   |  |
|                                 | Mode of Management Entity                        |   |  |
|                                 | Organizational Management                        |   |  |
|                                 | Technical Operation and Maintenance              |   |  |
|                                 | Financial Management and Transparency            |   |  |
|                                 | Stakeholder Involvement / Responsibility Sharing |   |  |
|                                 | Community Contribution                           |   |  |
|                                 | Community Contracting-Out                        |   |  |
|                                 | Conflict Resolution                              |   |  |
|                                 | Pro-Gender and Pro-Poor                          |   |  |
|                                 | Remarks  |   |  |

## 12.4 Village Profile of Sites in Sana'a Governorate

| SITE IDENTIFICATION PANEL          |  |  |               |           |                        |      |
|------------------------------------|--|--|---------------|-----------|------------------------|------|
| No.                                | Item                                       | Description  |               |           |                        |      |
|                                    | Code No.                                   | S-09   |               |           |                        |      |
|                                    | Site Name                                  | Ruhm   |               |           |                        |      |
|                                    | Sub-District (Uzlat)                       |  |               |           |                        |      |
|                                    | District                                   | Sanhan & Bani Bahlool  |               |           |                        |      |
|                                    | Governorate                                | Sana'a   |               |           |                        |      |
|                                    | Coordinates                                | Latitude   | Longitude     |           |                        |      |
|                                    | Coordinates (Measured Location)            |  |               |           |                        |      |
|                                    | Annual precipitation (rainfall)            | 360 mm   |               |           |                        |      |
|                                    | Population (2006)                          | 4,567  |               |           |                        |      |
|                                    | Population Forecast (2016)                 | 5,605  |               |           |                        |      |
|                                    | No. of Village (Qariah) in Total           | 2  |               |           |                        |      |
|                                    | No. of Village (Qariah) to be served       | 2  |               |           |                        |      |
|                                    | Village (Qariah) in the Community          | Name   | Population    | Household | Coordinate (Lat / Lon) |      |
|                                    |  | Ruhm Al Olya   | 2,373         | 260       |                        |      |
|                                    |  | Ruhm Al Sufia  | 2,194         | 276       |                        |      |
| EXISTING WATER SUPPLY SCHEME PANEL |  |  |               |           |                        |      |
| No.                                | Item                                       | Description  |               |           |                        |      |
|                                    | Functioning                                | No existing  |               |           |                        |      |
|                                    | Components of Existing Water Supply Scheme | Component  | Specification | Condition | Year                   | Fund |
|                                    |  | Pump for Deep Well   |               |           |                        |      |
|                                    |  | Eng./Gen. for Deep Well  |               |           |                        |      |
|                                    |  | Pump House for Deep We   |               |           |                        |      |
|                                    |  | Pump for Booster   |               |           |                        |      |
|                                    |  | Eng./Gen. for Booster  |               |           |                        |      |
|                                    |  | Pump House for Booster   |               |           |                        |      |
|                                    |  | Booster Tank   |               |           |                        |      |
|                                    |  | Distribution Tank  |               |           |                        |      |
|                                    |  | Pumping Main   |               |           |                        |      |
|                                    |  | Distribution Main  |               |           |                        |      |
|                                    |  | Public Tapstand  |               |           |                        |      |
|                                    |  | House Connection   |               |           |                        |      |
|                                    | Observations                               | This site is considered as peri-urban, so need to confirm future development plans.<br>Buy water from private wells outside of village at YR1,800/20 barrel (YR566/m <sup>3</sup> ). |               |           |                        |      |
| WATER SOURCE PANEL                 |  |  |               |           |                        |      |
| No.                                | Item                                       | Description  |               |           |                        |      |
|                                    | [Borehole Code]                            |  |               |           |                        |      |
|                                    | Grid (UTM)                                 | North  | East          |           |                        |      |
|                                    |  | 1678864  | 418658        |           |                        |      |
|                                    | Grid (Lat/Lon)                             | Lat. N   | Lon. E        |           |                        |      |
|                                    |  | 15°11' 04.1"   | 44°14' 34.0"  |           |                        |      |
|                                    | Present Condition (Pump Type)              | Capped   |               |           |                        |      |
|                                    | Elevation (m)                              | 2,395 m  |               |           |                        |      |
|                                    | Aquifer/Geological Description             |  |               |           |                        |      |
|                                    | Year of Construction                       | 2003   |               |           |                        |      |
|                                    | Fund                                       | GARWSP   |               |           |                        |      |
|                                    | Depth (m)                                  | 470 m  |               |           |                        |      |
|                                    | Casing Diameter (inch)                     | 8 inch   |               |           |                        |      |
|                                    | Screen                                     |  |               |           |                        |      |
|                                    | Static Water Level (G.L.-m)                | 192.5 m  |               |           |                        |      |
|                                    | Dynamic Water Level (G.L.-m)               | 227.9 m  |               |           |                        |      |
|                                    | Drawdown (m)                               | 35.4 m   |               |           |                        |      |
|                                    | Discharge (g/min)                          | 48 g/min   | 3.0 L/sec     |           |                        |      |
|                                    | Specific Capacity                          | 0.085 L/s/m  |               |           |                        |      |
|                                    | EC (mS/m)                                  | 38.5 mS/m  |               |           |                        |      |
|                                    | pH   | 7.94   |               |           |                        |      |
|                                    | Temperature (°C)                           | 28.3   |               |           |                        |      |
|                                    | Remarks                                    |  |               |           |                        |      |

## 12.4 Village Profile of Sites in Sana'a Governorate

| WATER SUPPLY PLANNING PANEL     |  |                         |                         |  |
|---------------------------------|--|-------------------------|-------------------------|--|
| No.                             | Item   | Description             |                         |  |
|                                 | [Design Parameter]                               |                         |                         |  |
|                                 | No. of Villages in Total                         | 2                       |                         |  |
|                                 | No. of Villages to be Covered                    | 2                       |                         |  |
|                                 | Current Population (2006)                        | 4,567                   |                         |  |
|                                 | Design Population (2016)                         | 5,605                   |                         |  |
|                                 | Design Water Supply Rate                         | 30 L/c/d                | 168 m <sup>3</sup> /day |  |
|                                 | Type of Work Required                            | New construction        |                         |  |
|                                 | Required Facilities                              | Component               | To be Constructed by    | Notes                                    |
|                                 |  | Pumping for Deep Well   | Donor                   | New                                      |
|                                 |  | Eng./Gen. for Deep Well | Donor                   | New                                      |
|                                 |  | Pump House for Deep We  | Donor/Village           | New                                      |
|                                 |  | Pump for Booster        |                         |  |
|                                 |  | Eng./Gen. for Booster   |                         |  |
|                                 |  | Pump House for Booster  |                         |  |
|                                 |  | Booster Tank            |                         |  |
|                                 |  | Distribution Tank       | Donor                   | New x 2                                  |
|                                 |  | Pumping Main            | Donor                   | New x 2                                  |
|                                 |  | Distribution Main       | Donor                   | New x 2                                  |
|                                 |  | Public Tapstand         | Donor                   | New (for mosque, school and clinic only) |
|                                 |  | House Connections       | Village                 | New                                      |
|                                 | Accessibility                                    |                         |                         |  |
|                                 | Security   |                         |                         |  |
|                                 | Observation                                      |                         |                         |  |
| OPERATION AND MAINTENANCE PANEL |  |                         |                         |  |
| No.                             | Item   | Description             |                         |  |
|                                 | No. of Village Head (Sheikh)                     |                         |                         |  |
|                                 | No. of Tribe                                     |                         |                         |  |
|                                 | Observation in Current Supply Scheme             |                         |                         |  |
|                                 | Mode of Ownership                                |                         |                         |  |
|                                 | Mode of Management Entity                        |                         |                         |  |
|                                 | Organizational Management                        |                         |                         |  |
|                                 | Technical Operation and Maintenance              |                         |                         |  |
|                                 | Financial Management and Transparency            |                         |                         |  |
|                                 | Stakeholder Involvement / Responsibility Sharing |                         |                         |  |
|                                 | Community Contribution                           |                         |                         |  |
|                                 | Community Contracting-Out                        |                         |                         |  |
|                                 | Conflict Resolution                              |                         |                         |  |
|                                 | Pro-Gender and Pro-Poor                          |                         |                         |  |
|                                 | Remarks  |                         |                         |  |

## 12.4 Village Profile of Sites in Sana'a Governorate

| SITE IDENTIFICATION PANEL          |  |  |               |                   |                        |         |         |
|------------------------------------|--|--|---------------|-------------------|------------------------|---------|---------|
| No.                                | Item                                       | Description  |               |                   |                        |         |         |
|                                    | Code No.                                   | S-10   |               |                   |                        |         |         |
|                                    | Site Name                                  | Tawa'ar  |               |                   |                        |         |         |
|                                    | Sub-District (Uzlat)                       |  |               |                   |                        |         |         |
|                                    | District                                   | Al Hesn  |               |                   |                        |         |         |
|                                    | Governorate                                | Sana'a   |               |                   |                        |         |         |
|                                    | Coordinates                                | Latitude   | Longitude     |                   |                        |         |         |
|                                    | Coordinates (Measured Location)            |  |               |                   |                        |         |         |
|                                    | Annual precipitation (rainfall)            | 340 mm   |               |                   |                        |         |         |
|                                    | Population (2006)                          | 4,593  |               |                   |                        |         |         |
|                                    | Population Forecast (2016)                 | 5,637  |               |                   |                        |         |         |
|                                    | No. of Village (Qariah) in Total           |  |               |                   |                        |         |         |
|                                    | No. of Village (Qariah) to be served       |  |               |                   |                        |         |         |
|                                    | Village (Qariah) in the Community          | Name   | Population    | Household         | Coordinate (Lat / Lon) |         |         |
| EXISTING WATER SUPPLY SCHEME PANEL |  |  |               |                   |                        |         |         |
| No.                                | Item                                       | Description  |               |                   |                        |         |         |
|                                    | Functioning                                |  |               |                   |                        |         |         |
|                                    | Components of Existing Water Supply Scheme | Component  | Specification | Condition         | Year                   | Fund    |         |
|                                    |  | Pump for Deep Well (Old)   | Vertical      |                   | 1994                   | GAREW   |         |
|                                    |  | Generator for Deep Well (  |               |                   | 1994                   | GAREW   |         |
|                                    |  | Pump House for Deep We   | RC            |                   | 1994                   | GAREW   |         |
|                                    |  | Pump for Deep Well (New)   | Vertical      | CAPRARI           | Temporary u            | 2004    | Private |
|                                    |  | Engine for Deep Well (New)   |               |                   | Temporary u            | 2004    | Private |
|                                    |  | Pump House for Deep We   | Mud brick     |                   | 2004                   | Village |         |
|                                    |  | Pump for Booster   |               |                   |                        |         |         |
|                                    |  | Eng./Gen. for Booster  |               |                   |                        |         |         |
|                                    |  | Pump House for Booster   |               |                   |                        |         |         |
|                                    |  | Booster Tank   |               |                   |                        |         |         |
|                                    |  | Distribution Tank  | RC            | 100m <sup>3</sup> | 1994                   | GAREW   |         |
|                                    |  | Pumping Main   | SGP           |                   | 1994                   | GAREW   |         |
|                                    |  | Distribution Main  | SGP           |                   | 1994                   | GAREW   |         |
|                                    |  | Public Tapstand  |               |                   |                        |         |         |
|                                    |  | House Connection   | 300           |                   |                        | Village |         |
|                                    | Observations                               | According to residents, both boreholes have salty taste. Need to confirm water quality (F).<br>Need to confirm other water sources possible for use. |               |                   |                        |         |         |
| WATER SOURCE PANEL                 |  |  |               |                   |                        |         |         |
| No.                                | Item                                       | Description  |               |                   |                        |         |         |
|                                    | [Borehole Code]                            | S-10/1 Old   |               |                   |                        |         |         |
|                                    | Grid (UTM)                                 | North  | East          |                   |                        |         |         |
|                                    | Grid (Lat/Lon)                             | Lat. N   | Lon. E        |                   |                        |         |         |
|                                    | Present Condition (Pump Type)              | Working Submersible  |               |                   |                        |         |         |
|                                    | Elevation (m)                              | 2,230 m  |               |                   |                        |         |         |
|                                    | Aquifer/Geological Description             |  |               |                   |                        |         |         |
|                                    | Year of Construction                       | 1994   |               |                   |                        |         |         |
|                                    | Fund                                       | GAREW  |               |                   |                        |         |         |
|                                    | Depth (m)                                  | 280 m  |               |                   |                        |         |         |
|                                    | Casing Diameter (inch)                     | inch   |               |                   |                        |         |         |
|                                    | Screen                                     |  |               |                   |                        |         |         |
|                                    | Static Water Level (G.L.-m)                | 135.35 m   |               |                   |                        |         |         |
|                                    | Dynamic Water Level (G.L.-m)               | ? m  |               |                   |                        |         |         |
|                                    | Drawdown (m)                               | #VALUE! m  |               |                   |                        |         |         |
|                                    | Discharge (g/min)                          | 33 g/min   |               | 2.1 L/sec         |                        |         |         |
|                                    | Specific Capacity                          | #VALUE! L/s/m  |               |                   |                        |         |         |
|                                    | EC (mS/m)                                  | 112.7 mS/m   |               |                   |                        |         |         |
|                                    | pH   | 9.45   |               |                   |                        |         |         |
|                                    | Temperature (°C)                           | 28.8   |               |                   |                        |         |         |
|                                    | Remarks                                    |  |               |                   |                        |         |         |
|                                    | [Borehole Code]                            | S-10/2 New   |               |                   |                        |         |         |
|                                    | Grid (UTM)                                 | North  | East          |                   |                        |         |         |
|                                    |  | 1664345  | 444316        |                   |                        |         |         |
|                                    | Grid (Lat/Lon)                             | Lat. N   | Lon. E        |                   |                        |         |         |
|                                    |  | 15° 03' 13.8   | 44° 28' 54.4  |                   |                        |         |         |
|                                    | Present Condition (Pump Type)              | Working Private vertical pump  |               |                   |                        |         |         |
|                                    | Elevation (m)                              | 2,259 m  |               |                   |                        |         |         |
|                                    | Aquifer/Geological Description             |  |               |                   |                        |         |         |
|                                    | Year of Construction                       | 2004   |               |                   |                        |         |         |
|                                    | Fund                                       | GARWSP   |               |                   |                        |         |         |
|                                    | Depth (m)                                  | 310 m  |               |                   |                        |         |         |
|                                    | Casing Diameter (inch)                     | 8 inch   |               |                   |                        |         |         |
|                                    | Screen                                     |  |               |                   |                        |         |         |
|                                    | Static Water Level (G.L.-m)                | 145.27(50) m   |               |                   |                        |         |         |
|                                    | Dynamic Water Level (G.L.-m)               | ?(120) m   |               |                   |                        |         |         |
|                                    | Drawdown (m)                               | ?(70) m  |               |                   |                        |         |         |
|                                    | Discharge (g/min)                          | 81 g/min   |               | 5.1 L/sec         |                        |         |         |
|                                    | Specific Capacity                          | ?(0.099) L/s/m   |               |                   |                        |         |         |
|                                    | EC (mS/m)                                  | 103.3 mS/m   |               |                   |                        |         |         |
|                                    | pH   | 8.91   |               |                   |                        |         |         |
|                                    | Temperature (°C)                           | 30.4   |               |                   |                        |         |         |
|                                    | Remarks                                    |  |               |                   |                        |         |         |

## 12.4 Village Profile of Sites in Sana'a Governorate

| WATER SUPPLY PLANNING PANEL     |  |   |                      |
|---------------------------------|--|---|----------------------|
| No.                             | Item   | Description   |                      |
|                                 | [Design Parameter]                               |   |                      |
|                                 | No. of Villages in Total                         | 0   |                      |
|                                 | No. of Villages to be Covered                    | 0   |                      |
|                                 | Current Population (2006)                        | 4,593   |                      |
|                                 | Design Population (20116)                        | 5,637   |                      |
|                                 | Design Water Supply Rate                         | L/c/d   | m <sup>3</sup> /day  |
|                                 | Type of Work Required                            | Rehabilitation  |                      |
|                                 | Required Facilities                              | Component   | To be Constructed by |
|                                 |  | Pump for Deep Well (Old)  | Donor                |
|                                 |  | Eng./Gen. for Deep Well (Old)   | Donor                |
|                                 |  | Pump House for Deep Well (Old)  | Donor                |
|                                 |  | Pump for Deep Well (New)  | Donor                |
|                                 |  | Eng./Gen. for Deep Well (New)   | Donor                |
|                                 |  | Pump House for Deep Well (New)  | Donor/Village        |
|                                 |  | Pump for Booster  | Donor                |
|                                 |  | Eng./Gen. for Booster   | Donor                |
|                                 |  | Pump House for Booster  | Donor/Village        |
|                                 |  | Booster Tank  |                      |
|                                 |  | Distribution Tank   | Donor                |
|                                 |  | Pumping Main  | Donor                |
|                                 |  | Distribution Main   | Donor/Village        |
|                                 |  | Public Tapstand   | Donor                |
|                                 |  | House Connections   | Village              |
|                                 | Accessibility                                    |   |                      |
|                                 | Security   |   |                      |
|                                 | Observation                                      | Possible problem at check points  |                      |
| OPERATION AND MAINTENANCE PANEL |  |   |                      |
| No.                             | Item   | Description   |                      |
|                                 | No. of Village Head (Sheikh)                     | 2   |                      |
|                                 | No. of Tribe                                     | 1   |                      |
|                                 | Observation in Current Supply Scheme             | <p>The community installed vertical pump unit on new borehole constructed by GARWSP in 2004, providing water supply to the community at the point through stand pipe (tap is not installed). The pump unit is rent by village Sheikh at YR 30,000/month.</p> <p>Water supplied from new borehole constructed in 2004 at free of charge to the community for use of domestic purpose, while water venders (water trucks) are charged at YR 500/3 m<sup>3</sup> water tank.</p> <p>Pump house for new borehole constructed in 2004 was constructed by the community, although it is said as temporal arrangement.</p> <p>Borehole initially constructed in 1994 was re-drilled 2004 (1.5 years ago) up to 350m (original depth is not known), which cost YR 1.5 million together with replacement of impeller of pump unit.</p> <p>Pump unit for old borehole constructed in 1994 is operated for eight (8) hours in a day.</p> <p>Leakage from pipeline is observed.</p> |                      |
|                                 | Mode of Ownership                                | There is no legal arrangement for the scheme ownership.   |                      |
|                                 | Mode of Management Entity                        | <p>There is no CBO for the scheme management.</p> <p>The supply scheme is managed by Sheikh with four (4) appointed operation workers (operator, revenue collectors/bill distributors). These operation workers are paid with allowance at YR 20,000/month/worker.</p> <p>In future project, the Sheikh agreed on CBO formation and registration, following the guideline for registration under Ministry of Social Affairs.</p>  |                      |
|                                 | Organizational Management                        | No constitution and legal status for the scheme management is arranged.   |                      |
|                                 | Technical Operation and Maintenance              | <p>Borehole constructed in 1994 was re-drilled in 2003 (1.5 years ago) up to 350m (original depth is unknown), which cost YR 1.5 million together with replacement of pump impeller.</p> <p>The cost for re-drilling and replacement of impeller was borne by the scheme account and the Sheikh.</p>  |                      |
|                                 | Financial Management and Transparency            | <p>Tariff structure for the scheme constructed in 1994: YR 100/m<sup>3</sup></p> <p>Tariff structure for the point supply through new borehole of 2004: Free for the community</p> <p>YR 500/3 m<sup>3</sup> tank for water vender (water truck)</p> <p>Income in average: YR 100,000/month</p> <p>Expenditure in average: YR 80,000/month</p> <p>Bank account was opened once, but the bank was bankrupted.</p> <p>Currently there is no bank account for the scheme.</p> <p>Financial management is also done by Sheikh.</p>  |                      |
|                                 | Stakeholder Involvement / Responsibility Sharing | Local Authority is not involved in financial monitoring and auditing.   |                      |
|                                 | Community Contribution                           | <p>In the scheme construction completed in 1994, the community contributed pipe transportation, trench digging and pipe laying.</p> <p>For the future project, agreement and arrangement for the community contribution has not been made. However, the community agreed on pipe transportation and laying with trench digging.</p>   |                      |
|                                 | Community Contracting-Out                        | N/A   |                      |
|                                 | Conflict Resolution                              | <p>There are two (2) villages with two (2) Sheikh. Relationship with two (2) Sheikh and villages are mentioned cooperative, and marital arrangement between and relatives in the villages are observed.</p> <p>Any community conflict cases are not mentioned.</p>  |                      |
|                                 | Pro-Gender and Pro-Poor                          | N/A   |                      |
|                                 | Remarks  | Relationship with two (2) Sheikh and villages are mentioned good, and marital arrangement between and relatives in the villages are observed.   |                      |



## 12.4 Village Profile of Sites in Sana'a Governorate

| SITE IDENTIFICATION PANEL          |  |  |                          |            |           |                        |
|------------------------------------|--|--|--------------------------|------------|-----------|------------------------|
| No.                                | Item                                       | Description  |                          |            |           |                        |
|                                    | Code No.                                   | S-11   |                          |            |           |                        |
|                                    | Site Name                                  | Al Hesn-Al Abyad   |                          |            |           |                        |
|                                    | Sub-District (Uzlat)                       |  |                          |            |           |                        |
|                                    | District                                   | Jehana   |                          |            |           |                        |
|                                    | Governorate                                | Sana'a   |                          |            |           |                        |
|                                    | Coordinates                                | Latitude   | Longitude                |            |           |                        |
|                                    | Coordinates (Measured Location)            |  |                          |            |           |                        |
|                                    | Annual precipitation (rainfall)            | 320 mm   |                          |            |           |                        |
|                                    | Population (2006)                          | 2,372  |                          |            |           |                        |
|                                    | Population Forecast (2016)                 | 2,911  |                          |            |           |                        |
|                                    | No. of Village (Qariah) in Total           | 1  |                          |            |           |                        |
|                                    | No. of Village (Qariah) to be served       | 1  |                          |            |           |                        |
|                                    | Village (Qariah) in the Community          | Name   | To Be Served             | Population | Household | Coordinate (Lat / Lon) |
|                                    |  | Al Hesn - Al Abyad   | 2372                     |            | 307       |                        |
| EXISTING WATER SUPPLY SCHEME PANEL |  |  |                          |            |           |                        |
| No.                                | Item                                       | Description  |                          |            |           |                        |
|                                    | Functioning                                | Functional   |                          |            |           |                        |
|                                    | Components of Existing Water Supply Scheme | Component  | Specification            | Condition  | Year      | Fund                   |
|                                    |  | Pump for Deep Well (Old)   | Vertical Porcelli        |            | 1986      | GAREW                  |
|                                    |  | Engine for Deep Well (Old)   | Technodrive IVECO        |            | 2002      | Village                |
|                                    |  | Pump House for Deep Well   | RC                       |            | 2002      | PWP                    |
|                                    |  | Pump for Booster   | Horizontal Luigi Biraghi |            | 2004      | Village                |
|                                    |  | Engine for Booster   | HATZ                     |            | 2002      | GAREW                  |
|                                    |  | Pump House for Booster   | Rock                     |            | 1980      | Village                |
|                                    |  | Booster Tank   | RC 25m <sup>3</sup>      |            | 2002      | PWP                    |
|                                    |  | Distribution Tank  | RC 50m <sup>3</sup>      |            | 2002      | PWP                    |
|                                    |  | Pumping Main   | SGP                      |            | 2002      | PWP                    |
|                                    |  | Distribution Main  | SGP                      |            | 2002      | PWP                    |
|                                    |  | Public Tapstand  |                          |            |           |                        |
|                                    |  | House Connection   | 280                      |            |           | Village                |
|                                    | Observations                               | PWP: Public Works Project<br>Borehole pump operated 12-13hr/day, booster 4hr/day |                          |            |           |                        |
| WATER SOURCE PANEL                 |  |  |                          |            |           |                        |
| No.                                | Item                                       | Description  |                          |            |           |                        |
|                                    | [Borehole Code]                            | S-11/2 Old   |                          |            |           |                        |
|                                    | Grid (UTM)                                 | North  | East                     |            |           |                        |
|                                    | Grid (Lat/Lon)                             | Lat. N   | Lon. E                   |            |           |                        |
|                                    |  | 15°11' 43.1"   | 44°27' 44.9"             |            |           |                        |
|                                    | Present Condition (Pump Type)              | Working Vertical pump  |                          |            |           |                        |
|                                    | Elevation (m)                              | 2,300 m  |                          |            |           |                        |
|                                    | Aquifer/Geological Description             |  |                          |            |           |                        |
|                                    | Year of Construction                       | 1980   |                          |            |           |                        |
|                                    | Fund                                       | GAREW  |                          |            |           |                        |
|                                    | Depth (m)                                  | 180 m  |                          |            |           |                        |
|                                    | Casing Diameter (inch)                     | 6 inch   |                          |            |           |                        |
|                                    | Screen                                     |  |                          |            |           |                        |
|                                    | Static Water Level (G.L.-m)                | ?  | m                        |            |           |                        |
|                                    | Dynamic Water Level (G.L.-m)               | ?  | m                        |            |           |                        |
|                                    | Drawdown (m)                               | #VALUE!  | m                        |            |           |                        |
|                                    | Discharge (g/min)                          | ?  | g/min                    | #VALUE!    | L/sec     |                        |
|                                    | Specific Capacity                          | #VALUE!  | L/s/m                    |            |           |                        |
|                                    | EC (mS/m)                                  | 101.8 mS/m   |                          |            |           |                        |
|                                    | pH   | 8.09   |                          |            |           |                        |
|                                    | Temperature (°C)                           | 31.5   |                          |            |           |                        |
|                                    | Remarks                                    | Pumping tests canceled (can not set equipments)                                  |                          |            |           |                        |
|                                    | [Borehole Code]                            | S-11/1 New   |                          |            |           |                        |
|                                    | Grid (UTM)                                 | North  | East                     |            |           |                        |
|                                    |  | 1679689  | 442407                   |            |           |                        |
|                                    | Grid (Lat/Lon)                             | Lat. N   | Lon. E                   |            |           |                        |
|                                    |  | 15° 11' 33.3 44° 27' 49.8  |                          |            |           |                        |
|                                    | Present Condition (Pump Type)              | Capped   |                          |            |           |                        |
|                                    | Elevation (m)                              | 2,310 m  |                          |            |           |                        |
|                                    | Aquifer/Geological Description             |  |                          |            |           |                        |
|                                    | Year of Construction                       | 2005   |                          |            |           |                        |
|                                    | Fund                                       | GARWSP   |                          |            |           |                        |
|                                    | Depth (m)                                  | 350 m  |                          |            |           |                        |
|                                    | Casing Diameter (inch)                     | 8 inch   |                          |            |           |                        |
|                                    | Screen                                     |  |                          |            |           |                        |
|                                    | Static Water Level (G.L.-m)                | 154.1 m  |                          |            |           |                        |
|                                    | Dynamic Water Level (G.L.-m)               | 219.1 m  |                          |            |           |                        |
|                                    | Drawdown (m)                               | 65 m   |                          |            |           |                        |
|                                    | Discharge (g/min)                          | 60 g/min   |                          |            |           |                        |
|                                    | Specific Capacity                          | 0.058 L/s/m  |                          |            |           |                        |
|                                    | EC (mS/m)                                  | 119.5 mS/m   |                          |            |           |                        |
|                                    | pH   | 8.37   |                          |            |           |                        |
|                                    | Temperature (°C)                           | 32.9   |                          |            |           |                        |
|                                    | Remarks                                    |  |                          |            |           |                        |

## 12.4 Village Profile of Sites in Sana'a Governorate

| WATER SUPPLY PLANNING PANEL     |                                      |   |                                    |
|---------------------------------|--------------------------------------|---|------------------------------------|
| No.                             | Item                                 | Description   |                                    |
|                                 | [Design Parameter]                   |   |                                    |
|                                 | No. of Villages in Total             | 1   |                                    |
|                                 | No. of Villages to be Covered        | 1   |                                    |
|                                 | Current Population (2006)            | 2,372   |                                    |
|                                 | Design Population (2016)             | 2,911   |                                    |
|                                 | Design Water Supply Rate             | 40 L/c/d  | 116 m <sup>3</sup> /day            |
|                                 | Type of Work Required                | Partial construction  |                                    |
|                                 | Required Facilities                  | Component   | To be Constructed by               |
|                                 |                                      | Pump for Deep Well (New)  | Donor                              |
|                                 |                                      | Eng./Gen. for Deep Well (New)   | Donor                              |
|                                 |                                      | Pump House for Deep Well (New)  | Donor/Village                      |
|                                 |                                      | Pump for Booster  |                                    |
|                                 |                                      | Eng./Gen. for Booster   |                                    |
|                                 |                                      | Pump House for Booster  |                                    |
|                                 |                                      | Booster Tank  |                                    |
|                                 |                                      | Distribution Tank   | Donor                              |
|                                 |                                      | Pumping Main  | Donor                              |
|                                 |                                      | Distribution Main   |                                    |
|                                 |                                      | Public Tapstand   |                                    |
|                                 |                                      | House Connection  | Village                            |
|                                 | Accessibility                        |   | Extensions                         |
|                                 | Security                             |   |                                    |
|                                 | Observation                          |   |                                    |
| OPERATION AND MAINTENANCE PANEL |                                      |   |                                    |
| No.                             | Item                                 | Description   |                                    |
|                                 | No. of Village Head (Sheikh)         | 1   | Four (4) Aqil for each sub-village |
|                                 | No. of Tribe                         | 1   |                                    |
|                                 | Observation in Current Supply Scheme | <p>Borehole with pump unit was constructed 25 years ago. Until 2002 when the Public Works Project was completed, water had been supplied at point where the borehole is located.</p> <p>Till 2002, water had been provided at free of charge for the community members for domestic use, while water trucks (venders) had been charged at YR 5/tank and YR 50/tank in 80s and 00s, respectively.</p> <p>New pumping unit for borehole was replaced in 2002, contributed by the community. One replaced is utilized as booster pump.</p> <p>Water shortage is mentioned by the community, because of limited capacity for water tank and borehole.</p> <p>Currently supply service is rationed every after 4-5 day for each sub-village.</p> <p>Pump unit is operated 24 hours according to the community.</p> |                                    |
|                                 | Mode of Ownership                    | <p>No legal ownership is arranged to the community, while handing-over document was prepared in PWP project in 2002.</p> <p>CBO members for the scheme management are willing to register their organization under Ministry of Social Affairs, when increase of income is confirmed by new project (enlargement of tank and new borehole construction).</p>   |                                    |
|                                 | Mode of Management Entity            | <p>Constitution of CBO is not prepared yet.</p> <p>Beneficiary Committee for water scheme management has been established by the community election, which is consisted of; a) director (1), b) treasurer/accountant (1), and c) operator (1).</p> <p>Beneficiary Committee further employs; a) operator (2), b) meter reader (1), and c) bill distributor (1).</p> <p>Till 2002 when the PWP project was completed, the scheme (point source service provision) had been managed by one person appointed by the community.</p> <p>Additional 15 community representatives have been elected/appointed as Monitoring Committee members.</p>   |                                    |
|                                 | Organizational Management            | <p>Constitution for CBO for the scheme management (Beneficiary Committee) has not been prepared.</p> <p>CBO is not registered without having legal status.</p> <p>Important managerial decisions are made by Beneficiary Committee through meeting with 15 community representatives (Monitoring Committee).</p> <p>Terms of office for Beneficiary Committee are not questioned.</p>   |                                    |
|                                 | Technical Operation and Maintenance  | <p>Generator for pump unit installed for borehole was repaired in 1997 by purchasing spare parts from Germany, which cost YR 370,000.</p> <p>Cost for the repair of the generator was borne by the community, through the scheme account and raising additional community contribution.</p> <p>Impeller of pump unit for the borehole has been replaced every two (2) years, which costs YR 800,000/repair borne by the community and scheme account.</p>   |                                    |

## 12.4 Village Profile of Sites in Sana'a Governorate

|  |   |                                       |
|--|---|---------------------------------------|
| Financial Management and Transparency  | From twenty five (25) years ago up to 2002, water had been provided at borehole point for the community members at free of charge, while water truck (venders) had been charged at YR 5/water tank and YR 50/water tank in 80s and 00s, respectively. |                                       |
|  | Current water tariff structure:   | YR 130 -1 m3                          |
|  |   | YR 250 -2 m3                          |
|  |   | YR 500 -3 m3                          |
|  |   | YR 1,000 -4 m3                        |
|  |   | YR 2,000 -5 m3                        |
|  | Water tariff is doubled by consumption of each cubic meter. This tariff structure has been introduced to control water consumption in water shortage.   |                                       |
|  | Water rationing has been introduced because of shortage, providing water every after 4-5 days in each sub-village.  |                                       |
|  | Income in average:  | YR 100,000/month                      |
|  | Expenditure in average:   | YR 80,000/month                       |
| Expenditure breakdown:   | YR 64,000/month   | Fuel                                  |
|  | YR 16,000/month   | Personnel Cost (salary and allowance) |
| Personnel cost:  | YR 13,000/month   | Operator                              |
|  | YR 3,000/month  | Treasurer                             |
| Meter readers work in voluntary.   |   |                                       |
| Financial statements are reported every year to 15 community representatives (Monitoring Committee). |   |                                       |
| Bank account for the scheme has been opened.   |   |                                       |
| Stakeholder Involvement / Responsibility Sharing   | Local council is not involved in financial monitoring and auditing.   |                                       |
| Community Contribution   | In the first investment in 25 years ago, there was no community contribution.   |                                       |
|  | In the implementation of the project under PWP, community contributed pumping unit and generator for the borehole, while any cash contribution, pipe transportation, and trench digging and laying has not been undertaken by the community.          |                                       |
|  | In future project with GARWSP, community is willing to contribute in pump house construction, while any arrangement for responsibility sharing is not made with GARWSP.   |                                       |
| Community Contracting-Out  | N/A   |                                       |
| Conflict Resolution  | Any conflict cases are not mentioned  |                                       |
| Pro-Gender and Pro-Poor  | N/A   |                                       |
| Remarks  | Land ownership for new borehole constructed by GARWSP is belong to the Beneficiary Committee. The land was donated by the land owner with written agreement.  |                                       |
|  | Land for the existing borehole is located in public land, so that the ownership is belong to the government under Sheikh control.   |                                       |

## 12.4 Village Profile of Sites in Sana'a Governorate

| SITE IDENTIFICATION PANEL          |  |  |               |                  |           |                        |
|------------------------------------|--|--|---------------|------------------|-----------|------------------------|
| No.                                | Item   | Description  |               |                  |           |                        |
|                                    | Code No.   | S-12   |               |                  |           |                        |
|                                    | Site Name  | Mahdah   |               |                  |           |                        |
|                                    | Sub-District (Uzlat)                                   |  |               |                  |           |                        |
|                                    | District   | Jehana   |               |                  |           |                        |
|                                    | Governorate  | Sana'a   |               |                  |           |                        |
|                                    | Coordinates  | Latitude   | Longitude     |                  |           |                        |
|                                    | Coordinates (Measured Location)                        |  |               |                  |           |                        |
|                                    | Annual precipitation (rainfall)                        | 330 mm   |               |                  |           |                        |
|                                    | Population (2006)                                      | 160(196: Interim Report)   |               |                  |           |                        |
|                                    | Population Forecast (2016)                             | 241  |               |                  |           |                        |
|                                    | No. of Village (Qariah) in Total                       | 1  |               |                  |           |                        |
|                                    | No. of Village (Qariah) to be served                   | 1  |               |                  |           |                        |
|                                    | Village (Qariah) in the Community                      | Name   | To Be Served  | Population       | Household | Coordinate (Lat / Lon) |
|                                    |  | Mahdah   | 160           |                  | 21        |                        |
| EXISTING WATER SUPPLY SCHEME PANEL |  |  |               |                  |           |                        |
| No.                                | Item   | Description  |               |                  |           |                        |
|                                    | Functioning Components of Existing Water Supply Scheme | Non-functional Component   | Specification | Condition        | Year      | Fund                   |
|                                    |  | Pump for Deep Well (Old)   |               | Dropped in w     | 1985      | GAREW                  |
|                                    |  | Engine for Deep Well (Old)   |               | Useless          |           |                        |
|                                    |  | Pump House for Deep We   |               | Useless          | 1985      | GAREW                  |
|                                    |  | Pump for Booster   |               |                  |           |                        |
|                                    |  | Eng./Gen. for Booster  |               |                  |           |                        |
|                                    |  | Pump House for Booster   |               |                  |           |                        |
|                                    |  | Booster Tank   |               |                  |           |                        |
|                                    |  | Distribution Tank  | RC            | 25m <sup>3</sup> | Cracked   | 1991 GAREW             |
|                                    |  | Pumping Main   | SGP           |                  |           | 1985 GAREW             |
|                                    |  | Distribution Main  | SGP           |                  |           | 1985 GAREW             |
|                                    |  | Public Tapstand  | One only      |                  |           | 1985 GAREW             |
|                                    |  | House Connection   |               |                  |           |                        |
|                                    | Observations   | Old borehole was used unto 1990 when water level lowered, and pump was dropped inside of borehole. |               |                  |           |                        |
| WATER SOURCE PANEL                 |  |  |               |                  |           |                        |
| No.                                | Item   | Description  |               |                  |           |                        |
|                                    | [Borehole Code]  | Old  |               |                  |           |                        |
|                                    | Grid (UTM)   | North  | East          |                  |           |                        |
|                                    | Grid (Lat/Lon)   | Lat. N   | Lon. E        |                  |           |                        |
|                                    |  | 15°09' 07"   | 44°28' 28"    |                  |           |                        |
|                                    | Present Condition (Pump Type)                          | Unusable because pump dropped inside borehole when water level lowered                             |               |                  |           |                        |
|                                    | Elevation (m)  | 2,304 m  |               |                  |           |                        |
|                                    | Aquifer/Geological Description                         |  |               |                  |           |                        |
|                                    | Year of Construction                                   | 1985   |               |                  |           |                        |
|                                    | Fund   | GAREW  |               |                  |           |                        |
|                                    | Depth (m)  | m  |               |                  |           |                        |
|                                    | Casing Diameter (inch)                                 | inch   |               |                  |           |                        |
|                                    | Screen   |  |               |                  |           |                        |
|                                    | Static Water Level (G.L.-m)                            | m  |               |                  |           |                        |
|                                    | Dynamic Water Level (G.L.-m)                           | m  |               |                  |           |                        |
|                                    | Drawdown (m)   | 0 m  |               |                  |           |                        |
|                                    | Discharge (g/min)                                      | g/min  |               |                  |           |                        |
|                                    | Specific Capacity                                      | #DIV/0!  | L/s/m         |                  |           |                        |
|                                    | EC (mS/m)  | mS/m   |               |                  |           |                        |
|                                    | pH   |  |               |                  |           |                        |
|                                    | Temperature (°C)                                       |  |               |                  |           |                        |
|                                    | Remarks  |  |               |                  |           |                        |
|                                    | [Borehole Code]  | S-12 New   |               |                  |           |                        |
|                                    | Grid (UTM)   | North  | East          |                  |           |                        |
|                                    |  | 1674966  | 443218        |                  |           |                        |
|                                    | Grid (Lat/Lon)   | Lat. N   | Lon. E        |                  |           |                        |
|                                    |  | 15°09' 00"   | 44°28' 17"    |                  |           |                        |
|                                    | Present Condition (Pump Type)                          | Capped   |               |                  |           |                        |
|                                    | Elevation (m)  | 2,234 m  |               |                  |           |                        |
|                                    | Aquifer/Geological Description                         |  |               |                  |           |                        |
|                                    | Year of Construction                                   | 2005   |               |                  |           |                        |
|                                    | Fund   | GARWSP   |               |                  |           |                        |
|                                    | Depth (m)  | 350 m  |               |                  |           |                        |
|                                    | Casing Diameter (inch)                                 | 8 inch   |               |                  |           |                        |
|                                    | Screen   |  |               |                  |           |                        |
|                                    | Static Water Level (G.L.-m)                            | 150 m  |               |                  |           |                        |
|                                    | Dynamic Water Level (G.L.-m)                           | 270 m  |               |                  |           |                        |
|                                    | Drawdown (m)   | 120 m  |               |                  |           |                        |
|                                    | Discharge (g/min)                                      | 80 g/min   |               |                  |           |                        |
|                                    | Specific Capacity                                      | 0.042 L/s/m  |               |                  |           |                        |
|                                    | EC (mS/m)  | mS/m   |               |                  |           |                        |
|                                    | pH   |  |               |                  |           |                        |
|                                    | Temperature (°C)                                       |  |               |                  |           |                        |
|                                    | Remarks  |  |               |                  |           |                        |

## 12.4 Village Profile of Sites in Sana'a Governorate

| WATER SUPPLY PLANNING PANEL     |  |  |                      |
|---------------------------------|--|--|----------------------|
| No.                             | Item   | Description  |                      |
|                                 | [Design Parameter]                               |  |                      |
|                                 | No. of Villages in Total                         | 1  |                      |
|                                 | No. of Villages to be Covered                    | 1  |                      |
|                                 | Current Population (2006)                        | 160(196: Interim Report)   |                      |
|                                 | Design Population (2016)                         | 241  |                      |
|                                 | Design Water Supply Rate                         | L/c/d  | m <sup>3</sup> /day  |
|                                 | Type of Work Required                            | New construction   |                      |
|                                 | Required Facilities                              | Component  | To be Constructed by |
|                                 |  | Pump for Deep Well (New  | Donor                |
|                                 |  | Eng./Gen. for Deep Well (  | Donor                |
|                                 |  | Pump House for Deep We   | Donor/Village        |
|                                 |  | Pump for Booster   |                      |
|                                 |  | Eng./Gen. for Booster  |                      |
|                                 |  | Pump House for Booster   |                      |
|                                 |  | Booster Tank   |                      |
|                                 |  | Distribution Tank  | Donor                |
|                                 |  | Pumping Main   | Donor                |
|                                 |  | Distribution Main  | Donor                |
|                                 |  | Public Tapstand  | Donor                |
|                                 |  | House Connections  | Village              |
|                                 | Accessibility                                    |  |                      |
|                                 | Security   |  |                      |
|                                 | Observation                                      | Consider pipeline extension to school (mutually used by surrounding villages) located in outskirts of village.   |                      |
| OPERATION AND MAINTENANCE PANEL |  |  |                      |
| No.                             | Item   | Description  |                      |
|                                 | No. of Village Head (Sheikh)                     | 1  | One (1) Aqil         |
|                                 | No. of Tribe                                     | 1  |                      |
|                                 | Observation in Current Supply Scheme             | <p>There has been no house connection.</p> <p>Pumping unit and generator for borehole had been in good operation for eight months after installation. It is mentioned by the community member that the generator installed was second hand. After eight months, the generator had not functioned, and replaced with another second hand one by village Sheikh. However, problem had not resolved.</p> <p>During replacing generator, pump unit was fallen down to the borehole.</p> <p>GARWSP tried to fish up the pump unit fallen down to the borehole twice in 2002 and 2003. However, it was failed.</p> <p>Water was supplied only through a public stand located in center of village (removed). Pipe connection to the mosque was undertaken by the Sheikh.</p>   |                      |
|                                 | Mode of Ownership                                | There was no arrangement made in mid 80s for legal ownership.  |                      |
|                                 | Mode of Management Entity                        | <p>There was no CBO arrangement in mid 80s.</p> <p>The scheme had been managed by Sheikh, appointing one (1) scheme operator.</p> <p>The community is willing to form new CBO in future project, following guideline prepared for CBO registration under Ministry of Social Affairs.</p>   |                      |
|                                 | Organizational Management                        | There was no constitution, by-law, and legal status for the scheme management.   |                      |
|                                 | Technical Operation and Maintenance              | Replacement of generator was done by the community, of which cost was borne by village   |                      |
|                                 | Financial Management and Transparency            | <p>Tariff structure: YR 100/household/month (fixed tariff) in 80s</p> <p>Water bill collected was used only for fuel cost and personnel cost for the operator.</p> <p>The scheme account was managed by Sheikh.</p> <p>It is mentioned that income and expenditure was balanced during the scheme operation.</p>   |                      |
|                                 | Stakeholder Involvement / Responsibility Sharing | N/A  |                      |
|                                 | Community Contribution                           | <p>There was no community contribution in the implementation of the project in mid 80s.</p> <p>There is no agreement made with GARWSP for community contribution in future project, while the community members agreed on pipe transportation and laying.</p>  |                      |
|                                 | Community Contracting-Out                        | N/A  |                      |
|                                 | Conflict Resolution                              | No community conflict case is mentioned  |                      |
|                                 | Pro-Gender and Pro-Poor                          | N/A  |                      |
|                                 | Remarks  | <p>Typical traditional management style headed by Sheikh is observed.</p> <p>It is questionable whether or not the pumping problem was caused by generator. Generator was replaced possibly without any technical guidance, resulting pump unit falling down to the borehole.</p> <p>Land for the existing and abandoned borehole is located in public land, so the land ownership belongs to the government under Sheikh control.</p> <p>Land for new borehole constructed by GARWSP is also located in public land.</p> <p>Existing water sources available for the community are; 1) hand dug well used for domestic purpose not for drinking (few uses for drinking purpose), 2) purchasing water at city center by water truck, which costs YR 2,000/3 m<sup>3</sup> tank, and 3) private small dam, which is dry currently.</p> <p>Electricity is available in the village. Average household expenditure for electricity ranged from YR 500 – 700/month. Community mentioned that the water bill shall be lower than the one for electricity.</p> |                      |

## 12.4 Village Profile of Sites in Sana'a Governorate

### SITE IDENTIFICATION PANEL

| No. | Item                                 | Description |            |           |                        |
|-----|--------------------------------------|-------------|------------|-----------|------------------------|
|     | Code No.                             | S-13        |            |           |                        |
|     | Site Name                            | Al Ga'ra    |            |           |                        |
|     | Sub-District (Uzlat)                 |             |            |           |                        |
|     | District                             | Alteyal     |            |           |                        |
|     | Governorate                          | Sana'a      |            |           |                        |
|     | Coordinates                          | Latitude    | Longitude  |           |                        |
|     | Coordinates (Measured Location)      |             |            |           |                        |
|     | Annual precipitation (rainfall)      | 310 mm      |            |           |                        |
|     | Population (2006)                    | 2,047       |            |           |                        |
|     | Population Forecast (2016)           | 2,512       |            |           |                        |
|     | No. of Village (Qariah) in Total     |             |            |           |                        |
|     | No. of Village (Qariah) to be served |             |            |           |                        |
|     | Village (Qariah) in the Community    | Name        | Population | Household | Coordinate (Lat / Lon) |
|     |                                      | Al Ga'ra    |            |           |                        |

### EXISTING WATER SUPPLY SCHEME PANEL

| No. | Item                                       | Description  |               |           |      |      |
|-----|--|--|---------------|-----------|------|------|
|     | Functioning                                | No existing  |               |           |      |      |
|     | Components of Existing Water Supply Scheme | Component  | Specification | Condition | Year | Fund |
|     |  | Pump for Deep Well   |               |           |      |      |
|     |  | Eng./Gen. for Deep Well  |               |           |      |      |
|     |  | Pump House for Deep We   |               |           |      |      |
|     |  | Pump for Booster   |               |           |      |      |
|     |  | Eng./Gen. for Booster  |               |           |      |      |
|     |  | Pump House for Booster   |               |           |      |      |
|     |  | Booster Tank   |               |           |      |      |
|     |  | Distribution Tank  |               |           |      |      |
|     |  | Pumping Main   |               |           |      |      |
|     |  | Distribution Main  |               |           |      |      |
|     |  | Public Tapstand  |               |           |      |      |
|     |  | House Connection   |               |           |      |      |
|     | Observations                               | Buy water from tanker at YR1,000/m3. If tanker not available, buy from Sana'a at YR3,000/m3.<br>Water from private wells and dug wells is free, carry by hand or donkey. |               |           |      |      |

### WATER SOURCE PANEL

| No. | Item                           | Description                    |              |  |  |
|-----|--------------------------------|--------------------------------|--------------|--|--|
|     | <b>[Borehole Code]</b>         |                                |              |  |  |
|     | Grid (UTM)                     | North                          | East         |  |  |
|     | Grid (Lat/Lon)                 | Lat. N                         | Lon. E       |  |  |
|     |                                | 15°19' 54.9"                   | 44°27' 48.4" |  |  |
|     | Present Condition (Pump Type)  | Capped                         |              |  |  |
|     | Elevation (m)                  | 2,603 m                        |              |  |  |
|     | Aquifer/Geological Description |                                |              |  |  |
|     | Year of Construction           | 2006                           |              |  |  |
|     | Fund                           | GARWSP                         |              |  |  |
|     | Depth (m)                      | 840 m                          |              |  |  |
|     | Casing Diameter (inch)         | 14-3/4                         | inch         |  |  |
|     | Screen                         | 10-3/4                         |              |  |  |
|     | Static Water Level (G.L.-m)    | 520 m                          |              |  |  |
|     | Dynamic Water Level (G.L.-m)   | 600 m                          |              |  |  |
|     | Drawdown (m)                   | 80 m                           |              |  |  |
|     | Discharge (g/min)              | 150 g/min                      | 9.5 L/sec    |  |  |
|     | Specific Capacity              | 0.118 L/s/m                    |              |  |  |
|     | EC (mS/m)                      | 80.6 mS/m                      |              |  |  |
|     | pH                             | 8.20                           |              |  |  |
|     | Temperature (°C)               | 54.3                           |              |  |  |
|     | Remarks                        | Pumping test carried by GARWSP |              |  |  |

## 12.4 Village Profile of Sites in Sana'a Governorate

| WATER SUPPLY PLANNING PANEL     |  |                          |                      |  |
|---------------------------------|--|--------------------------|----------------------|--|
| No.                             | Item   | Description              |                      |  |
|                                 | [Design Parameter]                               |                          |                      |  |
|                                 | No. of Villages in Total                         | 0                        |                      |  |
|                                 | No. of Villages to be Covered                    | 0                        |                      |  |
|                                 | Current Population (2006)                        | 2,047                    |                      |  |
|                                 | Design Population (2016)                         | 2,512                    |                      |  |
|                                 | Design Water Supply Rate                         | L/c/d                    | m <sup>3</sup> /day  |  |
|                                 | Type of Work Required                            | New construction         |                      |  |
|                                 | Required Facilities                              | Component                | To be Constructed by | Notes                                    |
|                                 |  | Pump for Deep Well       | Donor                | New                                      |
|                                 |  | Eng./Gen. for Deep Well  | Donor                | New                                      |
|                                 |  | Pump House for Deep Well | Donor/Village        | New                                      |
|                                 |  | Pump for Booster         | Donor                | New                                      |
|                                 |  | Eng./Gen. for Booster    | Donor                | New                                      |
|                                 |  | Pump House for Booster   | Donor/Village        | New                                      |
|                                 |  | Booster Tank             | Donor                | New                                      |
|                                 |  | Distribution Tank        | Donor                | New x 2                                  |
|                                 |  | Pumping Main             | Donor                | New                                      |
|                                 |  | Distribution Main        | Donor                | New                                      |
|                                 |  | Public Tapstand          | Donor                | New (for mosque, school and clinic only) |
|                                 |  | House Connection         | Village              | New                                      |
|                                 | Accessibility                                    |                          |                      |  |
|                                 | Security   |                          |                      |  |
|                                 | Observation                                      |                          |                      |  |
| OPERATION AND MAINTENANCE PANEL |  |                          |                      |  |
| No.                             | Item   | Description              |                      |  |
|                                 | No. of Village Head (Sheikh)                     |                          |                      |  |
|                                 | No. of Tribe                                     |                          |                      |  |
|                                 | Observation in Current Supply Scheme             |                          |                      |  |
|                                 | Mode of Ownership                                |                          |                      |  |
|                                 | Mode of Management Entity                        |                          |                      |  |
|                                 | Organizational Management                        |                          |                      |  |
|                                 | Technical Operation and Maintenance              |                          |                      |  |
|                                 | Financial Management and Transparency            |                          |                      |  |
|                                 | Stakeholder Involvement / Responsibility Sharing |                          |                      |  |
|                                 | Community Contribution                           |                          |                      |  |
|                                 | Community Contracting-Out                        |                          |                      |  |
|                                 | Conflict Resolution                              |                          |                      |  |
|                                 | Pro-Gender and Pro-Poor                          |                          |                      |  |
|                                 | Remarks  |                          |                      |  |

## 12.4 Village Profile of Sites in Sana'a Governorate

| SITE IDENTIFICATION PANEL          |  |   |   |             |                        |       |
|------------------------------------|--|---|---|-------------|------------------------|-------|
| No.                                | Item                                       | Description   |   |             |                        |       |
|                                    | Code No.                                   | S-14  |   |             |                        |       |
|                                    | Site Name                                  | Al Ghail  |   |             |                        |       |
|                                    | Sub-District (Uzlat)                       |   |   |             |                        |       |
|                                    | District                                   | Nehm  |   |             |                        |       |
|                                    | Governorate                                | Sana'a  |   |             |                        |       |
|                                    | Coordinates                                | Latitude  | Longitude                                     |             |                        |       |
|                                    |  | Coordinates (Measured Location)   |   |             |                        |       |
|                                    | Annual precipitation (rainfall)            | 300 mm  |   |             |                        |       |
|                                    | Population (2006)                          | 1,000   |   |             |                        |       |
|                                    | Population Forecast (2016)                 | 1,227   |   |             |                        |       |
|                                    | No. of Village (Qariah) in Total           |   |   |             |                        |       |
|                                    | No. of Village (Qariah) to be served       |   |   |             |                        |       |
|                                    | Village (Qariah) in the Community          | Name  | Population                                    | Household   | Coordinate (Lat / Lon) |       |
|                                    |  | Al Ghail (Ghail Al Sholif)  |   |             |                        |       |
|                                    |  | Qa'a Al Hadad   |   |             |                        |       |
|                                    |  | Qa'a Ma'arf   |   |             |                        |       |
|                                    |  | Beel Al Basal (District cen   |   |             |                        |       |
| EXISTING WATER SUPPLY SCHEME PANEL |  |   |   |             |                        |       |
| No.                                | Item                                       | Description   |   |             |                        |       |
|                                    | Functioning                                | Non-functional  |   |             |                        |       |
|                                    | Components of Existing Water Supply Scheme | Component   | Specification                                 | Condition   | Year                   | Fund  |
|                                    |  | Pump for Deep Well  | Vertical                                      |             | Broken                 | 1990  |
|                                    |  | Engine for Deep Well  | Technodrive                                   | Broken 1995 | 1990                   | GAREW |
|                                    |  | Pump House for Deep We  | Only foundation left                          |             |                        |       |
|                                    |  | Pump for Booster  |   |             |                        |       |
|                                    |  | Eng./Gen. for Booster   |   |             |                        |       |
|                                    |  | Pump House for Booster  |   |             |                        |       |
|                                    |  | Booster Tank  |   |             |                        |       |
|                                    |  | Distribution Tank   |   |             |                        |       |
|                                    |  | Pumping Main  | SGP, only to vehicle water post near borehole |             |                        |       |
|                                    |  | Distribution Main   |   |             |                        |       |
|                                    |  | Public Tapstand   |   |             |                        |       |
|                                    |  | House Connection  |   |             |                        |       |
|                                    | Observations                               | Water supply system is non-functional since 1995.<br>About 10 private wells, but onl one functions. |   |             |                        |       |
| WATER SOURCE PANEL                 |  |   |   |             |                        |       |
| No.                                | Item                                       | Description   |   |             |                        |       |
|                                    | [Borehole Code]                            |   |   |             |                        |       |
|                                    | Grid (UTM)                                 | North   | East  |             |                        |       |
|                                    |  | 1729866   | 445256  |             |                        |       |
|                                    | Grid (Lat/Lon)                             | Lat. N  | Lon. E  |             |                        |       |
|                                    |  | 15°38' 46.4"  | 44°29' 21.4"                                  |             |                        |       |
|                                    | Present Condition (Pump Type)              | Unused  |   |             |                        |       |
|                                    | Elevation (m)                              | 2,117 m   |   |             |                        |       |
|                                    | Aquifer/Geological Description             |   |   |             |                        |       |
|                                    | Year of Construction                       | 1985  |   |             |                        |       |
|                                    | Fund                                       | GAREW   |   |             |                        |       |
|                                    | Depth (m)                                  | 185 m   |   |             |                        |       |
|                                    | Casing Diameter (inch)                     | 8 inch  |   |             |                        |       |
|                                    | Screen                                     |   |   |             |                        |       |
|                                    | Static Water Level (G.L.-m)                | 130 m   |   |             |                        |       |
|                                    | Dynamic Water Level (G.L.-m)               | 160 m   |   |             |                        |       |
|                                    | Drawdown (m)                               | 30 m  |   |             |                        |       |
|                                    | Discharge (g/min)                          | 40 g/min  | 2.5 L/sec                                     |             |                        |       |
|                                    | Specific Capacity                          | 0.084 L/s/m   |   |             |                        |       |
|                                    | EC (mS/m)                                  | 133.2 mS/m  |   |             |                        |       |
|                                    | pH   | 7.79  |   |             |                        |       |
|                                    | Temperature (°C)                           | 28.3  |   |             |                        |       |
|                                    | Remarks                                    | Pumping test canceled (well collapsed?)   |   |             |                        |       |



## 12.4 Village Profile of Sites in Sana'a Governorate

| WATER SUPPLY PLANNING PANEL     |  |  |                           |
|---------------------------------|--|--|---------------------------|
| No.                             | Item   | Description                              |                           |
|                                 | [Design Parameter]                               |  |                           |
|                                 | No. of Villages in Total                         | 0  |                           |
|                                 | No. of Villages to be Covered                    | 0  |                           |
|                                 | Current Population (2006)                        | 1,000                                    |                           |
|                                 | Design Population (2016)                         | 1,227                                    |                           |
|                                 | Design Water Supply Rate                         | 40 L/c/d                                 | 49.08 m <sup>3</sup> /day |
|                                 | Type of Work Required                            | New construction                         |                           |
|                                 | Required Facilities                              | Component                                | To be Constructed by      |
|                                 |  | Pump for Deep Well                       | Donor                     |
|                                 |  | Eng./Gen. for Deep Well                  | Donor                     |
|                                 |  | Pump House for Deep We                   | Donor/Village             |
|                                 |  | Pump for Booster                         |                           |
|                                 |  | Eng./Gen. for Booster                    |                           |
|                                 |  | Pump House for Booster                   |                           |
|                                 |  | Booster Tank                             |                           |
|                                 |  | Distribution Tank                        | Donor                     |
|                                 |  | Pumping Main                             | Donor                     |
|                                 |  | Distribution Main                        | Donor                     |
|                                 |  | Public Tapstand                          | Donor                     |
|                                 |  | House Connections                        | Village                   |
|                                 | Accessibility                                    | Need to cross wadi                       |                           |
|                                 | Security   | Route to Marib: problems at check points |                           |
|                                 | Observation                                      |  |                           |
| OPERATION AND MAINTENANCE PANEL |  |  |                           |
| No.                             | Item   | Description                              |                           |
|                                 | No. of Village Head (Sheikh)                     |  |                           |
|                                 | No. of Tribe                                     |  |                           |
|                                 | Observation in Current Supply Scheme             |  |                           |
|                                 | Mode of Ownership                                |  |                           |
|                                 | Mode of Management Entity                        |  |                           |
|                                 | Organizational Management                        |  |                           |
|                                 | Technical Operation and Maintenance              |  |                           |
|                                 | Financial Management and Transparency            |  |                           |
|                                 | Stakeholder Involvement / Responsibility Sharing |  |                           |
|                                 | Community Contribution                           |  |                           |
|                                 | Community Contracting-Out                        |  |                           |
|                                 | Conflict Resolution                              |  |                           |
|                                 | Pro-Gender and Pro-Poor                          |  |                           |
|                                 | Remarks  |  |                           |

## 12.5 Village Profile of Sites in Dahmar Governorate

| SITE IDENTIFICATION PANEL |                                      |                                 |            |           |                        |
|---------------------------|--------------------------------------|---------------------------------|------------|-----------|------------------------|
| No.                       | Item                                 | Description                     |            |           |                        |
|                           | Code No.                             | D-01                            |            |           |                        |
|                           | Site Name                            | Elow Al Mikhlaf                 |            |           |                        |
|                           | Sub-District (Uzlat)                 |                                 |            |           |                        |
|                           | District                             | Jabal Al Sharq                  |            |           |                        |
|                           | Governorate                          | Dahmar                          |            |           |                        |
|                           | Coordinates                          | Latitude                        | Longitude  |           |                        |
|                           |                                      | Coordinates (Measured Location) |            |           |                        |
|                           | Annual precipitation (rainfall)      | 550 mm                          |            |           |                        |
|                           | Population (2006)                    | 926                             |            |           |                        |
|                           | Population (2016)                    | 1,249                           |            |           |                        |
|                           | No. of Village (Qariah) in Total     |                                 |            |           |                        |
|                           | No. of Village (Qariah) to be served |                                 |            |           |                        |
|                           | Village (Qariah) in the Community    | Name                            | Population | Household | Coordinate (Lat / Lon) |
|                           |                                      | Al Mahal                        | 160        | 29        |                        |
|                           |                                      | Al Ashoom                       | 312        | 57        |                        |
|                           |                                      | Magradh                         | 184        | 37        | 14°47' 53" 43°51' 26"  |
|                           |                                      | Habaqah                         | 213        | 46        | 14°47' 34" 43°50' 54"  |
|                           |                                      | Hagara                          | 57         | 9         |                        |

| EXISTING WATER SUPPLY SCHEME PANEL |  |                          |               |                  |      |      |        |
|------------------------------------|--|--------------------------|---------------|------------------|------|------|--------|
| No.                                | Item                                       | Description              |               |                  |      |      |        |
|                                    | Functioning                                | Partially existing       |               |                  |      |      |        |
|                                    | Components of Existing Water Supply Scheme | Component                | Specification | Condition        | Year | Fund |        |
|                                    |  | Pump for Deep Well       |               |                  |      |      |        |
|                                    |  | Eng./Gen. for Deep Well  |               |                  |      |      |        |
|                                    |  | Pump House for Deep Well |               |                  |      |      |        |
|                                    |  | Pump for Booster         |               |                  |      |      |        |
|                                    |  | Eng./Gen. for Booster    |               |                  |      |      |        |
|                                    |  | Pump House for Booster   |               |                  |      |      |        |
|                                    |  | Booster Tank             | RC            | 40m <sup>3</sup> |      | 2005 | GARWSP |
|                                    |  | Distribution Tank        | RC            | 50m <sup>3</sup> |      | 2005 | GARWSP |
|                                    |  | Pumping Main             |               |                  |      |      |        |
|                                    |  | Distribution Line        |               |                  |      |      |        |
|                                    |  | Public Tapstand          |               |                  |      |      |        |
|                                    | House Connection                           |                          |               |                  |      |      |        |
|                                    | Observations                               | 5 mosques and 1 school   |               |                  |      |      |        |

| WATER SOURCE PANEL |                                |              |              |  |
|--------------------|--------------------------------|--------------|--------------|--|
| No.                | Item                           | Description  |              |  |
|                    | [Borehole Code]                |              |              |  |
|                    | Grid (UTM)                     | North        | East         |  |
|                    |                                | 1636856      | 377116       |  |
|                    | Grid (Lat/Lon)                 | Lat. N       | Lon. E       |  |
|                    |                                | 14°48' 11.0" | 43°51' 28.9" |  |
|                    | Present Condition (Pump Type)  | Capped       |              |  |
|                    | Elevation (m)                  | 1,799 m      |              |  |
|                    | Aquifer/Geological Description |              |              |  |
|                    | Year of Construction           | 2000         |              |  |
|                    | Fund                           | GARWSP       |              |  |
|                    | Depth (m)                      | 273 m        |              |  |
|                    | Casing Diameter (inch)         | 8 inch       |              |  |
|                    | Screen                         |              |              |  |
|                    | Static Water Level (G.L.-m)    | 184.13 m     |              |  |
|                    | Dynamic Water Level (G.L.-m)   | 185.83 m     |              |  |
|                    | Drawdown (m)                   | 1.7 m        |              |  |
|                    | Discharge (g/min)              | 38 g/min     | 2.4 L/sec    |  |
|                    | Specific Capacity              | 1.411 L/s/m  |              |  |
|                    | EC (mS/m)                      | 89.4 mS/m    |              |  |
|                    | pH                             | 7.48         |              |  |
|                    | Temperature (°C)               | 30.2         |              |  |
|                    | Remarks                        |              |              |  |

## 12.5 Village Profile of Sites in Dahmar Governorate

| WATER SUPPLY PLANNING PANEL     |  |                                       |                        |  |
|---------------------------------|--|---------------------------------------|------------------------|--|
| No.                             | Item   | Description                           |                        |  |
|                                 | <b>[Design Parameter]</b>                        |                                       |                        |  |
|                                 | No. of Villages in Total                         | 0                                     |                        |  |
|                                 | No. of Villages to be Covered                    | 0                                     |                        |  |
|                                 | Current Population (2006)                        | 926                                   |                        |  |
|                                 | Design Population (2016)                         | 1,249                                 |                        |  |
|                                 | Design Water Supply Rate                         | 40 L/c/d                              | 50 m <sup>3</sup> /day |  |
|                                 | Type of Work Required                            | New construction                      |                        |  |
|                                 | Required Facilities                              | Component                             | To be Constructed by   | Notes                                    |
|                                 |  | Pump for Deep Well                    | Donor                  | New                                      |
|                                 |  | Eng./Gen. for Deep Well               | Donor                  | New                                      |
|                                 |  | Pump House for Deep Well              | Donor/Village          | New                                      |
|                                 |  | Pump for Booster                      | Donor                  | New x 2                                  |
|                                 |  | Eng./Gen. for Booster                 | Donor                  | New x 2                                  |
|                                 |  | Pump House for Booster                | Donor/Village          | New x 2                                  |
|                                 |  | Booster Tank No.1                     | Donor                  | New                                      |
|                                 |  | Booster Tank No.2                     | GARWSP                 | Already constructed                      |
|                                 |  | Distribution Tank                     | GARWSP                 | Already constructed                      |
|                                 |  | Pumping Main                          | Donor                  | New                                      |
|                                 |  | Distribution Main                     | Donor                  | New                                      |
|                                 |  | Public Tapstand                       | Donor                  | New (for mosque, school and clinic only) |
|                                 |  | House Connections                     | Village                | New                                      |
|                                 | Accessibility                                    | Through unpaved, rocky mountain roads |                        |  |
|                                 | Security   |                                       |                        |  |
|                                 | Observation                                      |                                       |                        |  |
| OPERATION AND MAINTENANCE PANEL |  |                                       |                        |  |
| No.                             | Item   | Description                           |                        |  |
|                                 | No. of Village Head (Sheikh)                     |                                       |                        |  |
|                                 | No. of Tribe                                     |                                       |                        |  |
|                                 | Observation in Current Supply Scheme             |                                       |                        |  |
|                                 | Mode of Ownership                                |                                       |                        |  |
|                                 | Mode of Management Entity                        |                                       |                        |  |
|                                 | Organizational Management                        |                                       |                        |  |
|                                 | Technical Operation and Maintenance              |                                       |                        |  |
|                                 | Financial Management and Transparency            |                                       |                        |  |
|                                 | Stakeholder Involvement / Responsibility Sharing |                                       |                        |  |
|                                 | Community Contribution                           |                                       |                        |  |
|                                 | Community Contracting-Out                        |                                       |                        |  |
|                                 | Conflict Resolution                              |                                       |                        |  |
|                                 | Pro-Gender and Pro-Poor                          |                                       |                        |  |
|                                 | Remarks  |                                       |                        |  |

## 12.5 Village Profile of Sites in Dahmar Governorate

| SITE IDENTIFICATION PANEL          |  |  |                            |           |                        |            |         |
|------------------------------------|--|--|----------------------------|-----------|------------------------|------------|---------|
| No.                                | Item                                       | Description  |                            |           |                        |            |         |
|                                    | Code No.                                   | D-02   |                            |           |                        |            |         |
|                                    | Site Name                                  | Hamal-Bait Al Jabar  |                            |           |                        |            |         |
|                                    | Sub-District (Uzlat)                       |  |                            |           |                        |            |         |
|                                    | District                                   |  |                            |           |                        |            |         |
|                                    | Governorate                                |  |                            |           |                        |            |         |
|                                    | Coordinates                                | Latitude   | Longitude                  |           |                        |            |         |
|                                    | Coordinates (Measured Location)            |  |                            |           |                        |            |         |
|                                    | Annual precipitation (rainfall)            | 530 mm   |                            |           |                        |            |         |
|                                    | Population (2006)                          | 2475   |                            |           |                        |            |         |
|                                    | Population Forecast (2016)                 | 3339   |                            |           |                        |            |         |
|                                    | No. of Village (Qariah) in Total           |  |                            |           |                        |            |         |
|                                    | No. of Village (Qariah) to be served       |  |                            |           |                        |            |         |
|                                    | Village (Qariah) in the Community          | Name   | Population                 | Household | Coordinate (Lat / Lon) |            |         |
|                                    |  | Bait Al Jabar  | 406                        | 54        |                        |            |         |
|                                    |  | Hamal  | 1,343                      | 192       | 14°44' 29"             | 43°56' 52" |         |
|                                    |  | Bait Ma'woodha   | 57                         | 11        | 14°44' 46"             | 43°56' 19" |         |
|                                    |  | Salemah  | 164                        | 30        |                        |            |         |
|                                    |  | Eraan  | 99                         | 22        | 14°44' 58"             | 43°56' 16" |         |
|                                    |  | Jabal Mane'e   | 34                         | 6         |                        |            |         |
|                                    |  | Bait Al Safa   | 178                        | 27        |                        |            |         |
|                                    |  | kulah  | 94                         | 20        |                        |            |         |
| EXISTING WATER SUPPLY SCHEME PANEL |  |  |                            |           |                        |            |         |
| No.                                | Item                                       | Description  |                            |           |                        |            |         |
|                                    | Functioning                                | Partially existing   |                            |           |                        |            |         |
|                                    | Components of Existing Water Supply Scheme | Component  | Specification              | Condition | Year                   | Fund       |         |
|                                    |  | Pump for Deep Well   | Vertical                   | SIMMONS   | Broken                 | 1987       | GAREW   |
|                                    |  | Engine for Deep Well   |                            | Benz      | Broken                 | 1987       | GAREW   |
|                                    |  | Pump House for Deep We   | Rock                       |           | Cannot use             | 1987       | GAREW   |
|                                    |  | Pump for Booster   |                            |           |                        |            |         |
|                                    |  | Eng./Gen. for Booster  |                            |           |                        |            |         |
|                                    |  | Pump House for Booster   |                            |           |                        |            |         |
|                                    |  | Booster Tank   |                            |           |                        |            |         |
|                                    |  | Distribution Tank  | RC                         | 75m3      |                        | 2005       | GARWSP  |
|                                    |  | Pumping Main   | SGP                        |           | Cannot use             | 1987       | Village |
|                                    |  | Distribution Main  |                            |           |                        |            |         |
|                                    |  | Public Tapstand  |                            |           |                        |            |         |
|                                    |  | House Connection   |                            |           |                        |            |         |
|                                    | Observations                               | Pipe to 2 open tanks in nearby school and 1 village, and 1 vehicle water post next to pump house.<br>Gasoline filling station and chicken breeding compound in site<br>10 mosques and 1 school |                            |           |                        |            |         |
| WATER SOURCE PANEL                 |  |  |                            |           |                        |            |         |
| No.                                | Item                                       | Description  |                            |           |                        |            |         |
|                                    | [Borehole Code]                            |  |                            |           |                        |            |         |
|                                    | Grid (UTM)                                 | North  | East                       |           |                        |            |         |
|                                    |  | 1630283  | 386534                     |           |                        |            |         |
|                                    | Grid (Lat/Lon)                             | Lat. N   | Lon. E                     |           |                        |            |         |
|                                    |  | 14°44' 38.6"   | 43°56' 45.2"               |           |                        |            |         |
|                                    | Present Condition (Pump Type)              | Not working  | Verticap pump under repair |           |                        |            |         |
|                                    | Elevation (m)                              | 2,205 m  |                            |           |                        |            |         |
|                                    | Aquifer/Geological Description             |  |                            |           |                        |            |         |
|                                    | Year of Construction                       | 1985   |                            |           |                        |            |         |
|                                    | Fund                                       | GAREW  |                            |           |                        |            |         |
|                                    | Depth (m)                                  | 310 m  |                            |           |                        |            |         |
|                                    | Casing Diameter (inch)                     | 8 inch   |                            |           |                        |            |         |
|                                    | Screen                                     |  |                            |           |                        |            |         |
|                                    | Static Water Level (G.L.-m)                | 185.8 m  |                            |           |                        |            |         |
|                                    | Dynamic Water Level (G.L.-m)               | 209.3 m  |                            |           |                        |            |         |
|                                    | Drawdown (m)                               | 23.5 m   |                            |           |                        |            |         |
|                                    | Discharge (g/min)                          | 55 g/min   | 3.5 L/sec                  |           |                        |            |         |
|                                    | Specific Capacity                          | 0.148 L/s/m  |                            |           |                        |            |         |
|                                    | EC (mS/m)                                  | 50.3 mS/m  |                            |           |                        |            |         |
|                                    | pH   | 7.83   |                            |           |                        |            |         |
|                                    | Temperature (°C)                           | 31.7   |                            |           |                        |            |         |
|                                    | Remarks                                    |  |                            |           |                        |            |         |

## 12.5 Village Profile of Sites in Dahmar Governorate

| WATER SUPPLY PLANNING PANEL     |  |                                       |                         |
|---------------------------------|--|---------------------------------------|-------------------------|
| No.                             | Item   | Description                           |                         |
|                                 | [Design Parameter]                               |                                       |                         |
|                                 | No. of Villages in Total                         | 0                                     |                         |
|                                 | No. of Villages to be Covered                    | 0                                     |                         |
|                                 | Current Population (2006)                        | 2,475                                 |                         |
|                                 | Design Population (2016)                         | 3,339                                 |                         |
|                                 | Design Water Supply Rate                         | 40 L/c/d                              | 134 m <sup>3</sup> /day |
|                                 | Type of Work Required                            | New construction                      |                         |
|                                 | Required Facilities                              | Component                             | Constructed by          |
|                                 |  | Pump for Deep Well                    | Donor                   |
|                                 |  | Eng./Gen. for Deep Well               | Donor                   |
|                                 |  | Pump House for Deep We                | Donor/Village           |
|                                 |  | Pump for Booster                      |                         |
|                                 |  | Eng./Gen. for Booster                 |                         |
|                                 |  | Pump House for Booster                |                         |
|                                 |  | Booster Tank                          |                         |
|                                 |  | Distribution Tank                     | GARWSP                  |
|                                 |  | Pumping Main                          | Donor                   |
|                                 |  | Distribution Main                     | Donor                   |
|                                 |  | Public Tapstand                       | Donor                   |
|                                 |  | House Connections                     | Village                 |
|                                 | Accessibility                                    | Through unpaved, rocky mountain roads |                         |
|                                 | Security   |                                       |                         |
|                                 | Observation                                      |                                       |                         |
| OPERATION AND MAINTENANCE PANEL |  |                                       |                         |
| No.                             | Item   | Description                           |                         |
|                                 | No. of Village Head (Sheikh)                     |                                       |                         |
|                                 | No. of Tribe                                     |                                       |                         |
|                                 | Observation in Current Supply Scheme             |                                       |                         |
|                                 | Mode of Ownership                                |                                       |                         |
|                                 | Mode of Management Entity                        |                                       |                         |
|                                 | Organizational Management                        |                                       |                         |
|                                 | Technical Operation and Maintenance              |                                       |                         |
|                                 | Financial Management and Transparency            |                                       |                         |
|                                 | Stakeholder Involvement / Responsibility Sharing |                                       |                         |
|                                 | Community Contribution                           |                                       |                         |
|                                 | Community Contracting-Out                        |                                       |                         |
|                                 | Conflict Resolution                              |                                       |                         |
|                                 | Pro-Gender and Pro-Poor                          |                                       |                         |
|                                 | Remarks  |                                       |                         |

## 12.5 Village Profile of Sites in Dahmar Governorate

| SITE IDENTIFICATION PANEL          |  |                         |                         |             |                        |         |
|------------------------------------|--|-------------------------|-------------------------|-------------|------------------------|---------|
| No.                                | Item                                       | Description             |                         |             |                        |         |
|                                    | Code No.                                   | D-03                    |                         |             |                        |         |
|                                    | Site Name                                  | Hegrat Al A'sham        |                         |             |                        |         |
|                                    | Sub-District (Uzlat)                       |                         |                         |             |                        |         |
|                                    | District                                   | Jabal Al Sharq          |                         |             |                        |         |
|                                    | Governorate                                | Dahmar                  |                         |             |                        |         |
|                                    | Coordinates                                | Latitude                | Longitude               |             |                        |         |
|                                    | Coordinates (Measured Location)            |                         |                         |             |                        |         |
|                                    | Annual precipitation (rainfall)            | 480 mm                  |                         |             |                        |         |
|                                    | Population (2006)                          | 1,592                   |                         |             |                        |         |
|                                    | Population (2016)                          | 2,148                   |                         |             |                        |         |
|                                    | No. of Village (Qariah) in Total           |                         |                         |             |                        |         |
|                                    | No. of Village (Qariah) to be served       |                         |                         |             |                        |         |
|                                    | Village (Qariah) in the Community          | Name                    | Population              | Household   | Coordinate (Lat / Lon) |         |
|                                    |  | Hegrat Al A'sham        | 1,592                   | 190         |                        |         |
| EXISTING WATER SUPPLY SCHEME PANEL |  |                         |                         |             |                        |         |
| No.                                | Item                                       | Description             |                         |             |                        |         |
|                                    | Functioning                                | Partially existing      |                         |             |                        |         |
|                                    | Components of Existing Water Supply Scheme | Component               | Specification           | Condition   | Year                   | Fund    |
|                                    |  | Pump for Deep Well      |                         |             |                        |         |
|                                    |  | Eng./Gen. for Deep Well |                         |             |                        |         |
|                                    |  | Pump House for Deep We  | Rock under construction |             | 2006                   | Village |
|                                    |  | Pump for Booster        |                         |             |                        |         |
|                                    |  | Eng./Gen. for Booster   |                         |             |                        |         |
|                                    |  | Pump House for Booster  | Rock under construction |             | 2006                   | Village |
|                                    |  | Booster Tank            | RC 25m3                 |             | 2005                   | GARWSP  |
|                                    |  | Distribution Tank       | RC 40m3                 | 3m Elevated | 2005                   | GARWSP  |
|                                    |  | Pumping Main            |                         |             |                        |         |
|                                    | Distribution Main                          |                         |                         |             |                        |         |
|                                    | Public Tapstand                            |                         |                         |             |                        |         |
|                                    | House Connection                           |                         |                         |             |                        |         |
|                                    | Observations                               |                         |                         |             |                        |         |
| WATER SOURCE PANEL                 |  |                         |                         |             |                        |         |
| No.                                | Item                                       | Description             |                         |             |                        |         |
|                                    | [Borehole Code]                            |                         |                         |             |                        |         |
|                                    | Grid (UTM)                                 | North                   | East                    |             |                        |         |
|                                    |  | 1626967                 | 392157                  |             |                        |         |
|                                    | Grid (Lat/Lon)                             | Lat. N                  | Lon. E                  |             |                        |         |
|                                    |  | 14°42' 51.6"            | 43°59' 53.7"            |             |                        |         |
|                                    | Present Condition (Pump Type)              | Capped                  |                         |             |                        |         |
|                                    | Elevation (m)                              | 2,041 m                 |                         |             |                        |         |
|                                    | Aquifer/Geological Description             |                         |                         |             |                        |         |
|                                    | Year of Construction                       | 1999                    |                         |             |                        |         |
|                                    | Fund                                       | GAREW                   |                         |             |                        |         |
|                                    | Depth (m)                                  | 320 m                   |                         |             |                        |         |
|                                    | Casing Diameter (inch)                     | 8 inch                  |                         |             |                        |         |
|                                    | Screen                                     |                         |                         |             |                        |         |
|                                    | Static Water Level (G.L.-m)                | 163.1 m                 |                         |             |                        |         |
|                                    | Dynamic Water Level (G.L.-m)               | 184 m                   |                         |             |                        |         |
|                                    | Drawdown (m)                               | 20.9 m                  |                         |             |                        |         |
|                                    | Discharge (g/min)                          | 79 g/min                | 5.0 L/sec               |             |                        |         |
|                                    | Specific Capacity                          | 0.239 L/s/m             |                         |             |                        |         |
|                                    | EC (mS/m)                                  | 44.5 mS/m               |                         |             |                        |         |
|                                    | pH   | 7.12                    |                         |             |                        |         |
|                                    | Temperature (°C)                           | 29.2                    |                         |             |                        |         |
|                                    | Remarks                                    |                         |                         |             |                        |         |

## 12.5 Village Profile of Sites in Dahmar Governorate

| WATER SUPPLY PLANNING PANEL     |  |                                       |                        |
|---------------------------------|--|---------------------------------------|------------------------|
| No.                             | Item   | Description                           |                        |
|                                 | [Design Parameter]                               |                                       |                        |
|                                 | No. of Villages in Total                         | 0                                     |                        |
|                                 | No. of Villages to be Covered                    | 0                                     |                        |
|                                 | Current Population (2006)                        | 1,592                                 |                        |
|                                 | Design Population (2016)                         | 2,148                                 |                        |
|                                 | Design Water Supply Rate                         | 40 L/c/d                              | 86 m <sup>3</sup> /day |
|                                 | Type of Work Required                            | New construction                      |                        |
|                                 | Required Facilities                              | Component                             | To be Constructed by   |
|                                 |  | Pump for Deep Well                    | Donor                  |
|                                 |  | Eng./Gen. for Deep Well               | Donor                  |
|                                 |  | Pump House for Deep Well              | Donor/Village          |
|                                 |  | Pump for Booster                      | Donor                  |
|                                 |  | Eng./Gen. for Booster                 | Donor                  |
|                                 |  | Pump House for Booster                | Donor/Village          |
|                                 |  | Booster Tank                          | GARWSP                 |
|                                 |  | Distribution Tank                     | GARWSP                 |
|                                 |  | Pumping Main                          | Donor                  |
|                                 |  | Distribution Main                     | Donor                  |
|                                 |  | Public Tapstand                       | Donor                  |
|                                 |  | House Connections                     | Village                |
|                                 | Accessibility                                    | Through unpaved, rocky mountain roads |                        |
|                                 | Security   |                                       |                        |
|                                 | Observation                                      |                                       |                        |
| OPERATION AND MAINTENANCE PANEL |  |                                       |                        |
| No.                             | Item   | Description                           |                        |
|                                 | No. of Village Head (Sheikh)                     |                                       |                        |
|                                 | No. of Tribe                                     |                                       |                        |
|                                 | Observation in Current Supply Scheme             |                                       |                        |
|                                 | Mode of Ownership                                |                                       |                        |
|                                 | Mode of Management Entity                        |                                       |                        |
|                                 | Organizational Management                        |                                       |                        |
|                                 | Technical Operation and Maintenance              |                                       |                        |
|                                 | Financial Management and Transparency            |                                       |                        |
|                                 | Stakeholder Involvement / Responsibility Sharing |                                       |                        |
|                                 | Community Contribution                           |                                       |                        |
|                                 | Community Contracting-Out                        |                                       |                        |
|                                 | Conflict Resolution                              |                                       |                        |
|                                 | Pro-Gender and Pro-Poor                          |                                       |                        |
|                                 | Remarks  |                                       |                        |

## 12.5 Village Profile of Sites in Dahmar Governorate

| SITE IDENTIFICATION PANEL          |   |   |                        |           |                        |
|------------------------------------|---|---|------------------------|-----------|------------------------|
| No.                                | Item  | Description   |                        |           |                        |
|                                    | Code No.                                    | D-04  |                        |           |                        |
|                                    | Site Name                                   | Al Kuob   |                        |           |                        |
|                                    | Sub-District (Uzlat)                        | Al Kuob   |                        |           |                        |
|                                    | District                                    | Duran   |                        |           |                        |
|                                    | Governorate                                 | Dahmar  |                        |           |                        |
|                                    | Coordinates                                 | Latitude  | Longitude              |           |                        |
|                                    | Coordinates (Measured Location)             |   |                        |           |                        |
|                                    | Annual precipitation (rainfall)             | 440 mm  |                        |           |                        |
|                                    | Population (2006)                           | 3,526   |                        |           |                        |
|                                    | Population Forecast (2016)                  | 4,393   |                        |           |                        |
|                                    | No. of Village (Qariah) in Total            |   |                        |           |                        |
|                                    | No. of Village (Qariah) to be served        |   |                        |           |                        |
|                                    | Village (Qariah) in the Community           | Name  | Population             | Household | Coordinate (Lat / Lon) |
|                                    |   | Al Nasami   |                        |           | 14°44' 31" 44°10' 51"  |
|                                    |   | Bait Al Showish   |                        |           |                        |
|                                    |   | Al Hamra'a  |                        |           |                        |
|                                    |   | Gharbeen  |                        |           |                        |
|                                    |   | Al Marqaab  |                        |           |                        |
|                                    |   | Al Koub   |                        |           |                        |
|                                    |   | Al Selaf  |                        |           | 14°42' 10" 44°10' 08"  |
|                                    |   | Al Demna  |                        |           |                        |
|                                    |   | Al Mifa'ah  |                        |           |                        |
|                                    | Al Hafah                                    |   |                        |           |                        |
| EXISTING WATER SUPPLY SCHEME PANEL |   |   |                        |           |                        |
| No.                                | Item  | Description   |                        |           |                        |
|                                    | Functioning                                 | No existing   |                        |           |                        |
|                                    | Components of Existing Water Supply Scheme: | Component   | Specification          | Condition | Year                   |
|                                    |   | Pump for Deep Well  |                        |           |                        |
|                                    |   | Eng./Gen. for Deep Well   |                        |           |                        |
|                                    |   | Pump House for Deep We  |                        |           |                        |
|                                    |   | Pump for Booster  |                        |           |                        |
|                                    |   | Eng./Gen. for Booster   |                        |           |                        |
|                                    |   | Pump House for Booster  |                        |           |                        |
|                                    |   | Booster Tank  |                        |           |                        |
|                                    |   | Distribution Tank   |                        |           |                        |
|                                    |   | Pumping Main  |                        |           |                        |
|                                    |   | Distribution Main   |                        |           |                        |
|                                    |   | Public Tapstand   |                        |           |                        |
|                                    |   | House Connection  |                        |           |                        |
|                                    | Observations                                | 18 mosques, 10 schools, 2 health centers  |                        |           |                        |
| WATER SOURCE PANEL                 |   |   |                        |           |                        |
| No.                                | Item  | Description   |                        |           |                        |
|                                    | <b>{Borehole Code}</b>                      |   |                        |           |                        |
|                                    | Grid (UTM)                                  | North<br>1631619  | East<br>411900         |           |                        |
|                                    | Grid (Lat/Lon)                              | Lat. N<br>14°45' 25.7"  | Lon. E<br>44°10' 53.3" |           |                        |
|                                    | Present Condition (Pump Type)               | Capped  |                        |           |                        |
|                                    | Elevation (m)                               | 2,237 m   |                        |           |                        |
|                                    | Aquifer/Geological Description              |   |                        |           |                        |
|                                    | Year of Construction                        | 1999  |                        |           |                        |
|                                    | Fund  | GAREW   |                        |           |                        |
|                                    | Depth (m)                                   | 152 m   |                        |           |                        |
|                                    | Casing Diameter (inch)                      | 8 inch  |                        |           |                        |
|                                    | Screen                                      |   |                        |           |                        |
|                                    | Static Water Level (G.L.-m)                 | 90 m  |                        |           |                        |
|                                    | Dynamic Water Level (G.L.-m)                | 120 m   |                        |           |                        |
|                                    | Drawdown (m)                                | 30 m  |                        |           |                        |
|                                    | Discharge (g/min)                           | 57 g/min  |                        | 3.6 L/sec |                        |
|                                    | Specific Capacity                           | 0.120 L/s/m   |                        |           |                        |
|                                    | EC (mS/m)                                   | 45.5 mS/m   |                        |           |                        |
|                                    | pH  | 7.23  |                        |           |                        |
|                                    | Temperature (°C)                            | 28.6  |                        |           |                        |
|                                    | Remarks                                     | 3 boreholes drilled by GAREW, but only 1 successful. 5 private boreholes drilled, but 2 successful. |                        |           |                        |



## 12.5 Village Profile of Sites in Dahmar Governorate

| WATER SUPPLY PLANNING PANEL     |  |   |                         |
|---------------------------------|--|---|-------------------------|
| No.                             | Item   | Description   |                         |
|                                 | [Design Parameter]                               |   |                         |
|                                 | No. of Villages in Total                         | 0   |                         |
|                                 | No. of Villages to be Covered                    |   |                         |
|                                 | Current Population (2006)                        | 3,526   |                         |
|                                 | Design Population (2016)                         | 4,393   |                         |
|                                 | Design Water Supply Rate                         | 40 L/c/d  | 176 m <sup>3</sup> /day |
|                                 | Type of Work Required                            | New construction  |                         |
|                                 | Required Facilities                              | Component   | To be Constructed by    |
|                                 |  | Pump for Deep Well  | Donor                   |
|                                 |  | Eng./Gen. for Deep Well   | Donor                   |
|                                 |  | Pump House for Deep We  | Donor/Village           |
|                                 |  | Pump for Booster  | Donor                   |
|                                 |  | Eng./Gen. for Booster   | Donor                   |
|                                 |  | Pump House for Booster  | Donor/Village           |
|                                 |  | Booster Tank  | Donor                   |
|                                 |  | Distribution Tank   | Donor                   |
|                                 |  | Pumping Main  | Donor                   |
|                                 |  | Distribution Main   | Donor                   |
|                                 |  | Public Tapstand   | Donor                   |
|                                 |  | House Connections   | Village                 |
|                                 | Accessibility                                    | Good, next to paved road, but access inside site through mountainous road |                         |
|                                 | Security   |   |                         |
|                                 | Observation                                      |   |                         |
| OPERATION AND MAINTENANCE PANEL |  |   |                         |
| No.                             | Item   | Description   |                         |
|                                 | No. of Village Head (Sheikh)                     |   |                         |
|                                 | No. of Tribe                                     |   |                         |
|                                 | Observation in Current Supply Scheme             |   |                         |
|                                 | Mode of Ownership                                |   |                         |
|                                 | Mode of Management Entity                        |   |                         |
|                                 | Organizational Management                        |   |                         |
|                                 | Technical Operation and Maintenance              |   |                         |
|                                 | Financial Management and Transparency            |   |                         |
|                                 | Stakeholder Involvement / Responsibility Sharing |   |                         |
|                                 | Community Contribution                           |   |                         |
|                                 | Community Contracting-Out                        |   |                         |
|                                 | Conflict Resolution                              |   |                         |
|                                 | Pro-Gender and Pro-Poor                          |   |                         |
|                                 | Remarks  |   |                         |

## 12.5 Village Profile of Sites in Dahmar Governorate

| SITE IDENTIFICATION PANEL          |  |   |                     |                        |                        |              |
|------------------------------------|--|---|---------------------|------------------------|------------------------|--------------|
| No.                                | Item                                       |   |                     | Description            |                        |              |
|                                    | Code No.                                   | D-05  |                     |                        |                        |              |
|                                    | Site Name                                  | Mayfa'at Yaer   |                     |                        |                        |              |
|                                    | Sub-District (Uzlat)                       |   |                     |                        |                        |              |
|                                    | District                                   | Ans   |                     |                        |                        |              |
|                                    | Governorate                                | Dahmar  |                     |                        |                        |              |
|                                    | Coordinates                                | Latitude  | Longitude           |                        |                        |              |
|                                    | Coordinates (Measured Location)            |   |                     |                        |                        |              |
|                                    | Annual precipitation (rainfall)            | 470 mm  |                     |                        |                        |              |
|                                    | Population (2006)                          | 1,515   |                     |                        |                        |              |
|                                    | Population Forecast (2016)                 | 2,044   |                     |                        |                        |              |
|                                    | No. of Village (Qariah) in Total           |   |                     |                        |                        |              |
|                                    | No. of Village (Qariah) to be served       |   |                     |                        |                        |              |
|                                    | Village (Qariah) in the Community          | Name  | Population          | Household              | Coordinate (Lat / Lon) |              |
|                                    |  | Al Hesn   | 387                 | 57                     |                        |              |
|                                    |  | Al Mayfa'a  | 1,128               | 159                    |                        |              |
| EXISTING WATER SUPPLY SCHEME PANEL |  |   |                     |                        |                        |              |
| No.                                | Item                                       |   |                     | Description            |                        |              |
|                                    | Functioning                                | Functional  |                     |                        |                        |              |
|                                    | Components of Existing Water Supply Scheme | Component   | Specification       | Condition              | Year                   | Fund         |
|                                    |  | Pump for Deep Well  | Vertical            | CAPRARI                | 1984                   | GAREW        |
|                                    |  | Engine for Deep Well  | Diesel              | Interschalt            | 1984                   | GAREW        |
|                                    |  | Pump House for Deep Well  | Rock                |                        | 1984                   | Village      |
|                                    |  | Pump for Booster No.1   | Horizontal          | KSB                    | 1984                   | GAREW        |
|                                    |  | Engine for Booster No.1   |                     | MWM Motores            | 1984                   | GAREW        |
|                                    |  | Pump House for Booster No.1   | Rock                |                        | 1984                   | GAREW        |
|                                    |  | Booster Tank No.1   | Steel panel         | 25m3                   | Leaking                | 1985 GAREW   |
|                                    |  | Booster Tank No.2   | Steel panel         | 25m3                   | Now as main            | 1985 GAREW   |
|                                    |  | Distribution Tank   | Steel panel         | 25m3                   | Not used               | 1985 GAREW   |
|                                    |  | Pumping Main  | SGP                 |                        |                        | 1985 GAREW   |
|                                    |  | Distribution Main   | SGP                 |                        |                        | 1985 GAREW   |
|                                    |  | Public Tapstand   | 1 Stand with 6 taps |                        |                        | 2001 Village |
|                                    |  | House Connection  |                     |                        |                        |              |
|                                    | Observations                               | When borehole pump became weak, booster tank 2 was used as distribution tank and stopped using original main distribution tank. All tanks are deteriorated. In 1985, GAREW constructed 6 public tapstands (4 tap type), but stopped using them when pump became weak. |                     |                        |                        |              |
| WATER SOURCE PANEL                 |  |   |                     |                        |                        |              |
| No.                                | Item                                       |   |                     | Description            |                        |              |
|                                    | [Borehole Code]                            |   |                     |                        |                        |              |
|                                    | Grid (UTM)                                 | North   | East                |                        |                        |              |
|                                    |  | 1609810   | 417769              |                        |                        |              |
|                                    | Grid (Lat/Lon)                             | Lat. N  | Lon. E              |                        |                        |              |
|                                    |  | 14°33' 39.9"  | 44°14' 12.3"        |                        |                        |              |
|                                    | Present Condition (Pump Type)              | Working   | Vertical pump       |                        |                        |              |
|                                    | Elevation (m)                              | 2,176 m   |                     |                        |                        |              |
|                                    | Aquifer/Geological Description             |   |                     |                        |                        |              |
|                                    | Year of Construction                       | 1984  |                     |                        |                        |              |
|                                    | Fund                                       | GAREW   |                     |                        |                        |              |
|                                    | Depth (m)                                  | 127 m   |                     |                        |                        |              |
|                                    | Casing Diameter (inch)                     | 8 inch  |                     |                        |                        |              |
|                                    | Screen                                     |   |                     |                        |                        |              |
|                                    | Static Water Level (G.L.-m)                | 59.6 m  |                     |                        |                        |              |
|                                    | Dynamic Water Level (G.L.-m)               | 62.8 m  |                     |                        |                        |              |
|                                    | Drawdown (m)                               | 3.2 m   |                     |                        |                        |              |
|                                    | Discharge (g/min)                          | 41 g/min  | 2.6 L/sec           |                        |                        |              |
|                                    | Specific Capacity                          | 0.807 L/s/m   |                     |                        |                        |              |
|                                    | EC (mS/m)                                  | 53.2 mS/m   |                     |                        |                        |              |
|                                    | pH   | 7.28  |                     |                        |                        |              |
|                                    | Temperature (°C)                           | 30.4  |                     |                        |                        |              |
|                                    | Remarks                                    |   |                     |                        |                        |              |
| WATER SUPPLY PLANNING PANEL        |  |   |                     |                        |                        |              |
| No.                                | Item                                       |   |                     | Description            |                        |              |
|                                    | [Design Parameter]                         |   |                     |                        |                        |              |
|                                    | No. of Villages in Total                   | 0   |                     |                        |                        |              |
|                                    | No. of Villages to be Covered              | 0   |                     |                        |                        |              |
|                                    | Current Population (2006)                  | 1,515   |                     |                        |                        |              |
|                                    | Design Population (2016)                   | 2,044   |                     |                        |                        |              |
|                                    | Design Water Supply Rate                   | 40 L/c/d  |                     | 82 m <sup>3</sup> /day |                        |              |
|                                    | Type of Work Required                      | Partial construction  |                     |                        |                        |              |

## 12.5 Village Profile of Sites in Dahmar Governorate

| Required Facilities                      | Component  | To be Constructed by | Notes                         |
|--|--|----------------------|-------------------------------|
|  | Pump for Deep Well                                   | Donor                | Replace                       |
|  | Eng./Gen. for Deep Well                              | Donor                | Replace                       |
|  | Pump House for Deep Well                             | Donor/Village        | Rehabilitation                |
|  | Pump for Booster No.1                                | Donor                | Replace                       |
|  | Eng./Gen. for Booster No.1                           | Donor                | Replace                       |
|  | Pump House for Booster No.1                          | Donor/Village        | Rehabilitation                |
|  | Pump for Booster No.2                                | Donor                | New                           |
|  | Eng./Gen. for Booster No.2                           | Donor                | New                           |
|  | Pump House for Booster No.2                          | Donor/Village        | New                           |
|  | Booster Tank   | Donor                | Replace or Rehabilitation x 2 |
|  | Distribution Tank                                    | Donor                | Replace or Rehabilitation     |
|  | Pumping Main   | Donor                | Rehabilitation and New        |
|  | Distribution Main                                    | Donor                | New                           |
|  | Public Tapstand                                      | Donor                | New                           |
|  | House Connections                                    | Village              | New                           |
| Accessibility<br>Security<br>Observation | Very difficult, approach through rocky mountain road |                      |                               |

### OPERATION AND MAINTENANCE PANEL

| No. | Item   | Description   |
|-----|--|---|
|     | No. of Village Head (Sheikh)                     | ?   |
|     | No. of Tribe                                     | 1   |
|     | Observation in Current Supply Scheme             | <p>Power down of pump unit in borehole is observed since 10 years ago.</p> <p>Borehole pump unit has been frequently repaired and maintained, which cost YR 50,000 – 70,000 per maintenance 5 – 10 years ago. However, problem has not been solved.</p> <p>Borehole pump unit has been also taken to the workshop for overhaul maintenance, but problem is not also solved.</p> <p>Spare parts of borehole unit are purchased in Sana'a by the community.</p> <p>Community members mentioned borehole pump units has been repaired more than 50 times for the last 10 years.</p> <p>Cost for maintenance and repair of borehole pump units are mostly borne by Sheikh.</p> <p>Borehole pump unit is operated for 6 hours.</p> <p>Another borehole is drilled in the village by Sheikh, but dry.</p> |
|     | Mode of Ownership                                | <p>No legal arrangement for community ownership is made.</p> <p>No handing-over document is prepared.</p>   |
|     | Mode of Management Entity                        | <p>There is no CBO setting. The scheme is managed by Aqil (as scheme manager) and Sheikh, with pump operator appointed by Sheikh (Nephew of Sheikh).</p> <p>Financial and administrative management is also carried out by Aqil and Sheikh.</p> <p>Decision in the scheme management is largely made by the Sheikh and Aqil, through village authority meetings.</p>  |
|     | Organizational Management                        | <p>No constitution for the scheme management is prepared.</p> <p>No legal status is provided for the management body (Sheikh and Aqil management in traditional setting).</p> <p>Manager (Aqil), Sheikh, and operator are work on voluntary base.</p>   |
|     | Technical Operation and Maintenance              | <p>No technical manual is prepared.</p> <p>No operation and maintenance record is kept.</p> <p>Major repair: Borehole pump overhaul was carried out, hiring contractor (C/A to Existing Scheme Management Panel).</p> <p>Funding for major repair and maintenance is borne by Sheikh.</p>   |
|     | Financial Management and Transparency            | <p>Daily operation cost is borne by the community (users), by raising fund selling cut and vegetable when available.</p> <p>Daily operation cost is collected by Aqil (Scheme Manager).</p> <p>Scheme Manager (Aqil) and operator works on voluntary basis.</p>   |
|     | Stakeholder Involvement / Responsibility Sharing | <p>No training had been provided by stakeholders.</p> <p>No assistance by District Council and GARWSP are mentioned.</p>  |
|     | Community Contribution                           | <p>There was no community contribution in the construction of existing scheme.</p> <p>Pipe transportation and laying is prepared by the community in future project.</p>  |
|     | Community Contracting-Out                        | <p>Ad hoc contract for borehole pump maintenance (overhaul) is concluded with contractor.</p> <p>There is no other community contracting-out setting.</p>   |
|     | Conflict Resolution<br>Pro-Gender and Pro-Poor   | <p>No conflict cases are mentioned.</p>   |
|     | Remarks  | <p>There is another water source (borehole?) available about 3 km away from the community. However, it is located in another village, which can not be shared with the community due to tribal conflict in usage.</p> <p>Spring water is also available in distance (3-4 km away form the community) located in another village, which can not shared with. Water is not reliable and amount is little.</p> <p>Six to seven households installed private water tank connecting existing water scheme. Water from those private tanks are provided to the community at free, and used only for</p> <p>This community is located on the top of mountain in the remote area from the main road. It is observed that the community is relatively poor.</p>  |

## 12.5 Village Profile of Sites in Dahmar Governorate

| SITE IDENTIFICATION PANEL          |  |   |               |           |                        |      |         |
|------------------------------------|--|---|---------------|-----------|------------------------|------|---------|
| No.                                | Item                                       | Description   |               |           |                        |      |         |
|                                    | Code No.                                   | D-06  |               |           |                        |      |         |
|                                    | Site Name                                  | Wardasan  |               |           |                        |      |         |
|                                    | Sub-District (Uzlat)                       |   |               |           |                        |      |         |
|                                    | District                                   | Ans   |               |           |                        |      |         |
|                                    | Governorate                                | Dahamar   |               |           |                        |      |         |
|                                    | Coordinates                                | Latitude  | Longitude     |           |                        |      |         |
|                                    |  | Coordinates (Measured Location)   |               |           |                        |      |         |
|                                    | Annual precipitation (rainfall)            | 480 mm  |               |           |                        |      |         |
|                                    | Population (2005)                          | 2,146   |               |           |                        |      |         |
|                                    | Population Forecast (2016)                 | 2,895   |               |           |                        |      |         |
|                                    | No. of Village (Qariah) in Total           |   |               |           |                        |      |         |
|                                    | No. of Village (Qariah) to be served       |   |               |           |                        |      |         |
|                                    | Village (Qariah) in the Community          | Name  | Population    | Household | Coordinate (Lat / Lon) |      |         |
|                                    |  | Jabal Al Sharq  |               |           |                        |      |         |
| EXISTING WATER SUPPLY SCHEME PANEL |  |   |               |           |                        |      |         |
| No.                                | Item                                       | Description   |               |           |                        |      |         |
|                                    | Functioning                                | Partially existing  |               |           |                        |      |         |
|                                    | Components of Existing Water Supply Scheme | Component   | Specification | Condition | Year                   | Fund |         |
|                                    |  | Pump for Deep Well  | Vertical      | CAPRARI   |                        | 2002 | Private |
|                                    |  | Engine for Deep Well  |               | Kubota    |                        | 2002 | Private |
|                                    |  | Pump House for Deep We  |               |           |                        |      |         |
|                                    |  | Pump for Booster  |               |           |                        |      |         |
|                                    |  | Engl./Gen. for Booster  |               |           |                        |      |         |
|                                    |  | Pump House for Booster  |               |           |                        |      |         |
|                                    |  | Booster Tank  |               |           |                        |      |         |
|                                    |  | Distribution Tank   | RC            | 50m3      |                        | 2005 | GARWSP  |
|                                    |  | Pumping Main  |               |           |                        |      |         |
|                                    |  | Distribution Main   |               |           |                        |      |         |
|                                    |  | Public Tapstand   |               |           |                        |      |         |
|                                    | House Connection                           |   |               |           |                        |      |         |
|                                    | Observations                               | Private borehole to be used for project was handed over to the community. |               |           |                        |      |         |
| WATER SOURCE PANEL                 |  |   |               |           |                        |      |         |
| No.                                | Item                                       | Description   |               |           |                        |      |         |
|                                    | [Borehole Code]                            |   |               |           |                        |      |         |
|                                    | Grid (UTM)                                 | North   | East          |           |                        |      |         |
|                                    |  | 1593048   | 429221        |           |                        |      |         |
|                                    | Grid (Lat/Lon)                             | Lat. N  | Lon. E        |           |                        |      |         |
|                                    |  | 14°24' 32.5"  | 44°20' 36.4"  |           |                        |      |         |
|                                    | Present Condition (Pump Type)              | Working   | Vertical pump |           |                        |      |         |
|                                    | Elevation (m)                              | 2,118 m   |               |           |                        |      |         |
|                                    | Aquifer/Geological Description             |   |               |           |                        |      |         |
|                                    | Year of Construction                       | 1998  |               |           |                        |      |         |
|                                    | Fund                                       | Private   |               |           |                        |      |         |
|                                    | Depth (m)                                  | 220 m   |               |           |                        |      |         |
|                                    | Casing Diameter (inch)                     | 8 inch  |               |           |                        |      |         |
|                                    | Screen                                     |   |               |           |                        |      |         |
|                                    | Static Water Level (G.L.-m)                | 89.65 m   |               |           |                        |      |         |
|                                    | Dynamic Water Level (G.L.-m)               | 131.9 m   |               |           |                        |      |         |
|                                    | Drawdown (m)                               | 42.25 m   |               |           |                        |      |         |
|                                    | Discharge (g/min)                          | 8 g/min   | 0.5 L/sec     |           |                        |      |         |
|                                    | Specific Capacity                          | 0.012 L/s/m   |               |           |                        |      |         |
|                                    | EC (mS/m)                                  | 143.1 mS/m  |               |           |                        |      |         |
|                                    | pH   | 8.18  |               |           |                        |      |         |
|                                    | Temperature (°C)                           | 32.5  |               |           |                        |      |         |
|                                    | Remarks                                    |   |               |           |                        |      |         |

## 12.5 Village Profile of Sites in Dahmar Governorate

| WATER SUPPLY PLANNING PANEL     |  |                         |                       |  |
|---------------------------------|--|-------------------------|-----------------------|--|
| No.                             | Item   | Description             |                       |  |
|                                 | [Design Parameter]                               |                         |                       |  |
|                                 | No. of Villages in Total                         | 0                       |                       |  |
|                                 | No. of Villages to be Covered                    | 0                       |                       |  |
|                                 | Current Population (2006)                        | 2,146                   |                       |  |
|                                 | Design Population (2016)                         | 2,895                   |                       |  |
|                                 | Design Water Supply Rate                         | L/c/d                   | 0 m <sup>3</sup> /day |  |
|                                 | Type of Work Required                            | New construction        |                       |  |
|                                 | Required Facilities                              | Component               | To be Constructed by  | Notes                                    |
|                                 |  | Pump for Deep Well      | Donor                 | Replace                                  |
|                                 |  | Eng./Gen. for Deep Well | Donor                 | Replace                                  |
|                                 |  | Borehole Pump House     | Donor/Village         | New                                      |
|                                 |  | Pump for Booster        |                       |  |
|                                 |  | Eng./Gen. for Booster   |                       |  |
|                                 |  | Pump House for Booster  |                       |  |
|                                 |  | Booster Tank            |                       |  |
|                                 |  | Distribution Tank       |                       | Already constructed                      |
|                                 |  | Pumping Main            | Donor                 | New                                      |
|                                 |  | Distribution Main       | Donor                 | New                                      |
|                                 |  | Public Tapstand         | Donor                 | New (for mosque, school and clinic only) |
|                                 |  | House Connections       | Village               | New                                      |
|                                 | Accessibility                                    |                         |                       |  |
|                                 | Security   |                         |                       |  |
|                                 | Observation                                      |                         |                       |  |
| OPERATION AND MAINTENANCE PANEL |  |                         |                       |  |
| No.                             | Item   | Description             |                       |  |
|                                 | No. of Village Head (Sheikh)                     |                         |                       |  |
|                                 | No. of Tribe                                     |                         |                       |  |
|                                 | Observation in Current Supply Scheme             |                         |                       |  |
|                                 | Mode of Ownership                                |                         |                       |  |
|                                 | Mode of Management Entity                        |                         |                       |  |
|                                 | Organizational Management                        |                         |                       |  |
|                                 | Technical Operation and Maintenance              |                         |                       |  |
|                                 | Financial Management and Transparency            |                         |                       |  |
|                                 | Stakeholder Involvement / Responsibility Sharing |                         |                       |  |
|                                 | Community Contribution                           |                         |                       |  |
|                                 | Community Contracting-Out                        |                         |                       |  |
|                                 | Conflict Resolution                              |                         |                       |  |
|                                 | Pro-Gender and Pro-Poor                          |                         |                       |  |
|                                 | Remarks  |                         |                       |  |

## 12.5 Village Profile of Sites in Dahmar Governorate

| SITE IDENTIFICATION PANEL          |  |  |               |           |                        |      |        |
|------------------------------------|--|--|---------------|-----------|------------------------|------|--------|
| No.                                | Item                                       | Description  |               |           |                        |      |        |
|                                    | Code No.                                   | D-07   |               |           |                        |      |        |
|                                    | Site Name                                  | Al Asakera   |               |           |                        |      |        |
|                                    | Sub-District (Uzlat)                       |  |               |           |                        |      |        |
|                                    | District                                   | Mayfa'a  |               |           |                        |      |        |
|                                    | Governorate                                | Dahmar   |               |           |                        |      |        |
|                                    | Coordinates                                | Latitude   | Longitude     |           |                        |      |        |
|                                    | Coordinates (Measured Location)            |  |               |           |                        |      |        |
|                                    | Annual precipitation (rainfall)            | 440 mm   |               |           |                        |      |        |
|                                    | Population (2006)                          | 1,944  |               |           |                        |      |        |
|                                    | Population Forecast (2016)                 | 2,623  |               |           |                        |      |        |
|                                    | No. of Village (Qariah) in Total           |  |               |           |                        |      |        |
|                                    | No. of Village (Qariah) to be served       |  |               |           |                        |      |        |
|                                    | Village (Qariah) in the Community          | Name   | Population    | Household | Coordinate (Lat / Lon) |      |        |
|                                    |  | Al Asakera   | 5,072         | 501       |                        |      |        |
| EXISTING WATER SUPPLY SCHEME PANEL |  |  |               |           |                        |      |        |
| No.                                | Item                                       | Description  |               |           |                        |      |        |
|                                    | Functioning                                | Partially existing                                   |               |           |                        |      |        |
|                                    | Components of Existing Water Supply Scheme | Component  | Specification | Condition | Year                   | Fund |        |
|                                    |  | Pump for Deep Well                                   |               |           |                        |      |        |
|                                    |  | Eng./Gen. for Deep Well                              |               |           |                        |      |        |
|                                    |  | Pump House for Deep We                               |               |           |                        |      |        |
|                                    |  | Pump for Booster                                     |               |           |                        |      |        |
|                                    |  | Eng./Gen. for Booster                                |               |           |                        |      |        |
|                                    |  | Pump House for Booster                               |               |           |                        |      |        |
|                                    |  | Booster Tank   | RC            | 40m3      |                        | 2005 | GARWSP |
|                                    |  | Distribution Tank                                    | RC            | 50m3      |                        | 2005 | GARWSP |
|                                    |  | Pumping Main   |               |           |                        |      |        |
|                                    |  | Distribution Main                                    |               |           |                        |      |        |
|                                    |  | Public Tapstand                                      |               |           |                        |      |        |
|                                    | House Connection                           |  |               |           |                        |      |        |
|                                    | Observations                               | Now using 8 private wells drilled about 7 years ago. |               |           |                        |      |        |
| WATER SOURCE PANEL                 |  |  |               |           |                        |      |        |
| No.                                | Item                                       | Description  |               |           |                        |      |        |
|                                    | [Borehole Code]                            |  |               |           |                        |      |        |
|                                    | Grid (UTM)                                 | North  | East          |           |                        |      |        |
|                                    |  | 1607499  | 464141        |           |                        |      |        |
|                                    | Grid (Lat/Lon)                             | Lat. N   | Lon. E        |           |                        |      |        |
|                                    |  | 14°32' 24.8"   | 44°40' 01.7"  |           |                        |      |        |
|                                    | Present Condition (Pump Type)              | Capped   |               |           |                        |      |        |
|                                    | Elevation (m)                              | 2,589 m  |               |           |                        |      |        |
|                                    | Aquifer/Geological Description             |  |               |           |                        |      |        |
|                                    | Year of Construction                       | 1999   |               |           |                        |      |        |
|                                    | Fund                                       | GARWSP   |               |           |                        |      |        |
|                                    | Depth (m)                                  | 304 m  |               |           |                        |      |        |
|                                    | Casing Diameter (inch)                     | 8 inch   |               |           |                        |      |        |
|                                    | Screen                                     |  |               |           |                        |      |        |
|                                    | Static Water Level (G.L.-m)                | 193.58 m   |               |           |                        |      |        |
|                                    | Dynamic Water Level (G.L.-m)               | 195.13 m   |               |           |                        |      |        |
|                                    | Drawdown (m)                               | 1.55 m   |               |           |                        |      |        |
|                                    | Discharge (g/min)                          | 71 g/min   | 4.5 L/sec     |           |                        |      |        |
|                                    | Specific Capacity                          | 2.903 L/s/m  |               |           |                        |      |        |
|                                    | EC (mS/m)                                  | 100.4 mS/m   |               |           |                        |      |        |
|                                    | pH   | 7.07   |               |           |                        |      |        |
|                                    | Temperature (°C)                           | 37.7   |               |           |                        |      |        |
|                                    | Remarks                                    |  |               |           |                        |      |        |

## 12.5 Village Profile of Sites in Dahmar Governorate

| WATER SUPPLY PLANNING PANEL     |  |   |                         |
|---------------------------------|--|---|-------------------------|
| No.                             | Item   | Description                                 |                         |
|                                 | [Design Parameter]                               |   |                         |
|                                 | No. of Villages in Total                         | 0   |                         |
|                                 | No. of Villages to be Covered                    | 0   |                         |
|                                 | Current Population (2006)                        | 1,944                                       |                         |
|                                 | Design Population (2016)                         | 2,623                                       |                         |
|                                 | Design Water Supply Rate                         | 40 L/c/d                                    | 105 m <sup>3</sup> /day |
|                                 | Type of Work Required                            | New construction                            |                         |
|                                 | Required Facilities                              | Component                                   | To be Constructed by    |
|                                 |  | Pump for Deep Well                          | Donor                   |
|                                 |  | Eng./Gen. for Deep Well                     | Donor                   |
|                                 |  | Pump House for Deep We                      | Donor/Village           |
|                                 |  | Pump for Booster                            | Donor                   |
|                                 |  | Eng./Gen. for Booster                       | Donor                   |
|                                 |  | Pump House for Booster                      | Donor/Village           |
|                                 |  | Booster Tank No.1                           | GARWSP                  |
|                                 |  | Booster Tank No.2                           | Donor                   |
|                                 |  | Distribution Tank                           | GARWSP                  |
|                                 |  | Pumping Main                                | Donor                   |
|                                 |  | Distribution Main                           | Donor                   |
|                                 |  | Public Tapstand                             | Donor                   |
|                                 |  | House Connections                           | Village                 |
|                                 | Accessibility                                    | Access by unpaved dirt road                 |                         |
|                                 | Security   | Active volcano between Dahmar city and site |                         |
|                                 | Observation                                      |   |                         |
| OPERATION AND MAINTENANCE PANEL |  |   |                         |
| No.                             | Item   | Description                                 |                         |
|                                 | No. of Village Head (Sheikh)                     |   |                         |
|                                 | No. of Tribe                                     |   |                         |
|                                 | Observation in Current Supply Scheme             |   |                         |
|                                 | Mode of Ownership                                |   |                         |
|                                 | Mode of Management Entity                        |   |                         |
|                                 | Organizational Management                        |   |                         |
|                                 | Technical Operation and Maintenance              |   |                         |
|                                 | Financial Management and Transparency            |   |                         |
|                                 | Stakeholder Involvement / Responsibility Sharing |   |                         |
|                                 | Community Contribution                           |   |                         |
|                                 | Community Contracting-Out                        |   |                         |
|                                 | Conflict Resolution                              |   |                         |
|                                 | Pro-Gender and Pro-Poor                          |   |                         |
|                                 | Remarks  |   |                         |

## 12.5 Village Profile of Sites in Dahmar Governorate

| SITE IDENTIFICATION PANEL          |  |                                      |                |           |                        |         |
|------------------------------------|--|--------------------------------------|----------------|-----------|------------------------|---------|
| No.                                | Item                                       | Description                          |                |           |                        |         |
|                                    | Code No.                                   | D-08                                 |                |           |                        |         |
|                                    | Site Name                                  | Masneat Abdul Aziz                   |                |           |                        |         |
|                                    | Sub-District (Uzlat)                       |                                      |                |           |                        |         |
|                                    | District                                   | Mayfa'a                              |                |           |                        |         |
|                                    | Governorate                                | Dahmar                               |                |           |                        |         |
|                                    | Coordinates                                | Latitude                             | Longitude      |           |                        |         |
|                                    | Coordinates (Measured Location)            |                                      |                |           |                        |         |
|                                    | Annual precipitation (rainfall)            | 460 mm                               |                |           |                        |         |
|                                    | Population (2006)                          | 406                                  |                |           |                        |         |
|                                    | Population Forecast (2016)                 | 548                                  |                |           |                        |         |
|                                    | No. of Village (Qariah) in Total           |                                      |                |           |                        |         |
|                                    | No. of Village (Qariah) to be served       |                                      |                |           |                        |         |
|                                    | Village (Qariah) in the Community          | Name                                 | Population     | Household | Coordinate (Lat / Lon) |         |
|                                    |  | Masna'at Abdulazeez                  | 406            | 53        |                        |         |
| EXISTING WATER SUPPLY SCHEME PANEL |  |                                      |                |           |                        |         |
| No.                                | Item                                       | Description                          |                |           |                        |         |
|                                    | Functioning                                | Partially existing                   |                |           |                        |         |
|                                    | Components of Existing Water Supply Scheme | Component                            | Specification  | Condition | Year                   | Fund    |
|                                    |  | Pump for Deep Well                   |                |           |                        |         |
|                                    |  | Eng./Gen. for Deep Well              |                |           |                        |         |
|                                    |  | Pump House for Deep We               | Concrete block |           | 2004                   | Village |
|                                    |  | Pump for Booster                     |                |           |                        |         |
|                                    |  | Eng./Gen. for Booster                |                |           |                        |         |
|                                    |  | Pump House for Booster               |                |           |                        |         |
|                                    |  | Booster Tank                         |                |           |                        |         |
|                                    |  | Distribution Tank                    | RC             | 25m3      | 2005                   | GARWSP  |
|                                    |  | Pumping Main                         |                |           |                        |         |
|                                    |  | Distribution Main                    |                |           |                        |         |
|                                    |  | Public Tapstand                      |                |           |                        |         |
|                                    |  | House Connection                     |                |           |                        |         |
|                                    | Observations                               | Distribution tank requires painting. |                |           |                        |         |
| WATER SOURCE PANEL                 |  |                                      |                |           |                        |         |
| No.                                | Item                                       | Description                          |                |           |                        |         |
|                                    | [Borehole Code]                            |                                      |                |           |                        |         |
|                                    | Grid (UTM)                                 | North                                | East           |           |                        |         |
|                                    |  | 1597208                              | 449464         |           |                        |         |
|                                    | Grid (Lat/Lon)                             | Lat. N                               | Lon. E         |           |                        |         |
|                                    |  | 14°26' 49.2"                         | 44°31' 51.8"   |           |                        |         |
|                                    | Present Condition (Pump Type)              | Capped                               |                |           |                        |         |
|                                    | Elevation (m)                              | 2,508 m                              |                |           |                        |         |
|                                    | Aquifer/Geological Description             |                                      |                |           |                        |         |
|                                    | Year of Construction                       | 2004                                 |                |           |                        |         |
|                                    | Fund                                       | GARWSP                               |                |           |                        |         |
|                                    | Depth (m)                                  | 268 m                                |                |           |                        |         |
|                                    | Casing Diameter (inch)                     | 8 inch                               |                |           |                        |         |
|                                    | Screen                                     |                                      |                |           |                        |         |
|                                    | Static Water Level (G.L.-m)                | 62 m                                 |                |           |                        |         |
|                                    | Dynamic Water Level (G.L.-m)               | 123.7 m                              |                |           |                        |         |
|                                    | Drawdown (m)                               | 61.7 m                               |                |           |                        |         |
|                                    | Discharge (g/min)                          | 71 g/min                             | 4.5 L/sec      |           |                        |         |
|                                    | Specific Capacity                          | 0.073 L/s/m                          |                |           |                        |         |
|                                    | EC (mS/m)                                  | 34.2(39)                             | mS/m           |           |                        |         |
|                                    | pH   | 8.25(6)                              |                |           |                        |         |
|                                    | Temperature (°C)                           | 33.5                                 |                |           |                        |         |
|                                    | Remarks                                    |                                      |                |           |                        |         |



## 12.5 Village Profile of Sites in Dahmar Governorate

| WATER SUPPLY PLANNING PANEL     |  |  |                        |
|---------------------------------|--|--|------------------------|
| No.                             | Item   | Description  |                        |
|                                 | [Design Parameter]                               |  |                        |
|                                 | No. of Villages in Total                         | 0  |                        |
|                                 | No. of Villages to be Covered                    | 0  |                        |
|                                 | Current Population (2006)                        | 406  |                        |
|                                 | Design Population (2016)                         | 548  |                        |
|                                 | Design Water Supply Rate                         | 40 L/c/d   | 22 m <sup>3</sup> /day |
|                                 | Type of Work Required                            | New construction   |                        |
|                                 | Required Facilities                              | Component  | To be Constructed by   |
|                                 |  | Pump for Deep Well   | Donor                  |
|                                 |  | Eng./Gen. for Deep Well  | Donor                  |
|                                 |  | Pump House for Deep Well   | Village                |
|                                 |  | Pump for Booster   |                        |
|                                 |  | Eng./Gen. for Booster  |                        |
|                                 |  | Pump House for Booster   |                        |
|                                 |  | Booster Tank   |                        |
|                                 |  | Distribution Tank  | GARWSP                 |
|                                 |  | Pumping Main   | Donor                  |
|                                 |  | Distribution Main  | Donor                  |
|                                 |  | Public Tapstand  | Donor                  |
|                                 |  | House Connections  | Village                |
|                                 | Accessibility                                    |  |                        |
|                                 | Security   |  |                        |
|                                 | Observation                                      |  |                        |
| OPERATION AND MAINTENANCE PANEL |  |  |                        |
| No.                             | Item   | Description  |                        |
|                                 | No. of Village Head (Sheikh)                     | 1  |                        |
|                                 | No. of Tribe                                     | 1  |                        |
|                                 | Observation in Current Supply Scheme             | <p>New scheme is under construction.</p> <p>Pump house is constructed by the community.</p> <p>Arrangement for further scheme construction and community contribution is not consulted nor agreed, so that some confusion among community and conflict/distrust with GARWSP is observed.</p> <p>Pipeline installation is promised in 2005 by GARWSP, although currently prolonged to Feb. GARWSP insists the trench digging for pipeline be done by the community for GARWSP installing pipelines.</p> <p>Community members refuse the trench digging due to hard rocks in the ground, insisting it is responsibility of GARWSP.</p> <p>Community members further mentioned trench digging is not necessary if galvanized pipelines are used.</p> <p>No organized community dialogue and consultation is made by GARWSP, although community is prepared in other form of contribution such as pipe transportation from GARWSP Branch Office and pipe laying.</p> |                        |
|                                 | Mode of Ownership                                | N/A  |                        |
|                                 | Mode of Management Entity                        | Community representatives, one each from sub-village, are selected by community recommendation.  |                        |
|                                 | Organizational Management                        | Representatives are further planning to evolve them to the management body/committee.  |                        |
|                                 | Technical Operation and Maintenance              | Constitution will be prepared after formation of management body/committee   |                        |
|                                 | Financial Management and Transparency            | N/A  |                        |
|                                 | Stakeholder Involvement / Responsibility Sharing | Water tariff will be set by reviewing actual expense after operation of the scheme.  |                        |
|                                 | Community Contribution                           | No Local Council involvement is observed.  |                        |
|                                 | Community Contracting-Out                        | No organized and written arrangement for further construction and community contribution is made between GARWSP and the community.   |                        |
|                                 | Conflict Resolution                              | Community refuses trench digging for pipeline installation, although the provision of pipe transportation and laying is agreeable.   |                        |
|                                 | Pro-Gender and Pro-Poor                          | N/A  |                        |
|                                 | Remarks  | Organized community consultation and dialogue is highly required to define responsibilities of both community and GARWSP in construction of scheme.  |                        |

## 12.6 Village Profile of Sites in Ibb Governorate

| SITE IDENTIFICATION PANEL          |  |  |               |           |                        |
|------------------------------------|--|--|---------------|-----------|------------------------|
| No.                                | Item                                       | Description  |               |           |                        |
|                                    | Code No.                                   | I-01   |               |           |                        |
|                                    | Site Name                                  | Asfal Bani Saba  |               |           |                        |
|                                    | Sub-District (Uzlat)                       | Bani Saba  |               |           |                        |
|                                    | District                                   | Al Qafr  |               |           |                        |
|                                    | Governorate                                | Ibb  |               |           |                        |
|                                    | Coordinates                                | Latitude   | Longitude     |           |                        |
|                                    | Coordinates (Measured Location)            |  |               |           |                        |
|                                    | Annual precipitation (rainfall)            | 750 mm   |               |           |                        |
|                                    | Population (2006)                          | 9,311  |               |           |                        |
|                                    | Population Forecast (2016)                 | 11,884   |               |           |                        |
|                                    | No. of Village (Qariah) in Total           |  |               |           |                        |
|                                    | No. of Village (Qariah) to be served       |  |               |           |                        |
|                                    | Village (Qariah) in the Community          | Name   | Population    | Household | Coordinate (Lat / Lon) |
|                                    |  | Mamsa Al Suna  | 2,621         | 471       |                        |
|                                    |  | Mamsa Hamas  | 1,011         | 104       |                        |
|                                    |  | Mamsa Al Majarah   | 3,657         | 763       |                        |
|                                    |  | Mamsa Waqah  | 2,022         | 381       |                        |
| EXISTING WATER SUPPLY SCHEME PANEL |  |  |               |           |                        |
| No.                                | Item                                       | Description  |               |           |                        |
|                                    | Functioning                                | No existing  |               |           |                        |
|                                    | Components of Existing Water Supply Scheme | Component  | Specification | Condition | Year                   |
|                                    |  | Pump for Deep Well   |               |           |                        |
|                                    |  | Eng./Gen. for Deep Well  |               |           |                        |
|                                    |  | Pump House for Deep We   |               |           |                        |
|                                    |  | Pump for Booster   |               |           |                        |
|                                    |  | Eng./Gen. for Booster  |               |           |                        |
|                                    |  | Pump House for Booster   |               |           |                        |
|                                    |  | Booster Tank   |               |           |                        |
|                                    |  | Distribution Tank  |               |           |                        |
|                                    |  | Pumping Main   |               |           |                        |
|                                    |  | Distribution Main  |               |           |                        |
|                                    |  | Public Tapstand  |               |           |                        |
|                                    |  | House Connection   |               |           |                        |
|                                    | Observations                               | Composed of 5 Mamsas. Two private wells are located in the wadi between Asfal Bani Saba and Al Sana, which are used by both sites. |               |           |                        |
| WATER SOURCE PANEL                 |  |  |               |           |                        |
| No.                                | Item                                       | Description  |               |           |                        |
|                                    | [Borehole Code]                            |  |               |           |                        |
|                                    | Grid (UTM)                                 | North  | East          |           |                        |
|                                    |  | 1573168  | 418538        |           |                        |
|                                    | Grid (Lat/Lon)                             | Lat. N   | Lon. E        |           |                        |
|                                    |  | 14°13' 43.8"   | 44°14' 41.8"  |           |                        |
|                                    | Present Condition (Pump Type)              | Capped   |               |           |                        |
|                                    | Elevation (m)                              | 1,812 m  |               |           |                        |
|                                    | Aquifer/Geological Description             |  |               |           |                        |
|                                    | Year of Construction                       | 2005   |               |           |                        |
|                                    | Fund                                       | GARWSP   |               |           |                        |
|                                    | Depth (m)                                  | 305 m  |               |           |                        |
|                                    | Casing Diameter (inch)                     | 8-5/8 inch   |               |           |                        |
|                                    | Screen                                     |  |               |           |                        |
|                                    | Static Water Level (G.L.-m)                | 107.4 m  |               |           |                        |
|                                    | Dynamic Water Level (G.L.-m)               | 210 m  |               |           |                        |
|                                    | Drawdown (m)                               | 6.3 m  |               |           |                        |
|                                    | Discharge (g/min)                          | 71 g/min   | 4.5 L/sec     |           |                        |
|                                    | Specific Capacity                          | 0.714 L/s/m  |               |           |                        |
|                                    | EC (mS/m)                                  | 43.4 mS/m  |               |           |                        |
|                                    | pH   | 8.40   |               |           |                        |
|                                    | Temperature (°C)                           | 30.1   |               |           |                        |
|                                    | Remarks                                    |  |               |           |                        |

## 12.6 Village Profile of Sites in Ibb Governorate

| WATER SUPPLY PLANNING PANEL |                               |  |                         |
|-----------------------------|-------------------------------|--|-------------------------|
| No.                         | Item                          | Description  |                         |
|                             | <b>[Design Parameter]</b>     |  |                         |
|                             | No. of Villages in Total      | 0  |                         |
|                             | No. of Villages to be Covered | 0  |                         |
|                             | Current Population (2006)     | 9,311  |                         |
|                             | Design Population (2016)      | 11,884   |                         |
|                             | Design Water Supply Rate      | 25 L/c/d   | 297 m <sup>3</sup> /day |
|                             | Type of Work Required         | New construction   |                         |
|                             | Required Facilities           | Component  | To be Constructed by    |
|                             |                               |  | Notes                   |
|                             |                               | Pump for Deep Well   | Donor                   |
|                             |                               | Eng./Gen. for Deep Well  | Donor                   |
|                             |                               | Pump House for Deep We   | Donor/Village           |
|                             |                               | Pump for Booster   | Donor                   |
|                             |                               | Eng./Gen. for Booster  | Donor                   |
|                             |                               | Pump House for Booster   | Donor/Village           |
|                             |                               | Booster Tank   | Donor                   |
|                             |                               | Distribution Tank  | Donor                   |
|                             |                               | Pumping Main   | Donor                   |
|                             |                               | Distribution Main  | Donor                   |
|                             |                               | Public Tapstand  | Donor                   |
|                             |                               | House Connection   | Village                 |
|                             | Accessibility                 | Approach to site is difficult in rainy season, across wadi from I-02 Al Sana. Access inside of site is difficult due to steep hillsides. |                         |
|                             | Security                      |  |                         |
|                             | Observation                   |  |                         |

| OPERATION AND MAINTENANCE PANEL |  |             |  |
|---------------------------------|--|-------------|--|
| No.                             | Item   | Description |  |
|                                 | No. of Village Head (Sheikh)                     |             |  |
|                                 | No. of Tribe                                     |             |  |
|                                 | Observation in Current Supply Scheme             |             |  |
|                                 | Mode of Ownership                                |             |  |
|                                 | Mode of Management Entity                        |             |  |
|                                 | Organizational Management                        |             |  |
|                                 | Technical Operation and Maintenance              |             |  |
|                                 | Financial Management and Transparency            |             |  |
|                                 | Stakeholder Involvement / Responsibility Sharing |             |  |
|                                 | Community Contribution                           |             |  |
|                                 | Community Contracting-Out                        |             |  |
|                                 | Conflict Resolution                              |             |  |
|                                 | Pro-Gender and Pro-Poor                          |             |  |
|                                 | Remarks  |             |  |

## 12.6 Village Profile of Sites in Ibb Governorate

| SITE IDENTIFICATION PANEL          |  |                         |               |             |                        |            |
|------------------------------------|--|-------------------------|---------------|-------------|------------------------|------------|
| No.                                | Item                                       |                         |               | Description |                        |            |
|                                    | Code No.                                   | I-02                    |               |             |                        |            |
|                                    | Site Name                                  | Al Sana                 |               |             |                        |            |
|                                    | Sub-District (Uzlat)                       |                         |               |             |                        |            |
|                                    | District                                   | Al Makhader             |               |             |                        |            |
|                                    | Governorate                                | Ibb                     |               |             |                        |            |
|                                    | Coordinates                                | Latitude                | Longitude     |             |                        |            |
|                                    | Coordinates (Measured Location)            |                         |               |             |                        |            |
|                                    | Annual precipitation (rainfall)            | 750 mm                  |               |             |                        |            |
|                                    | Population (2006)                          | 6,026                   |               |             |                        |            |
|                                    | Population Forecast (2016)                 | 7,691                   |               |             |                        |            |
|                                    | No. of Village (Qariah) in Total           |                         |               |             |                        |            |
|                                    | No. of Village (Qariah) to be served       |                         |               |             |                        |            |
|                                    |  | Name                    | Population    | Household   | Coordinate (Lat / Lon) |            |
|                                    | Village (Qariah) in the Community          | Najd Sahib              | 2,589         | 379         | 14°12' 50"             | 44°15' 12" |
|                                    |  | Madar                   | 1,697         | 247         |                        |            |
|                                    |  | Al San'a                | 1,740         | 253         |                        |            |
| EXISTING WATER SUPPLY SCHEME PANEL |  |                         |               |             |                        |            |
| No.                                | Item                                       |                         |               | Description |                        |            |
|                                    | Functioning                                | No existing             |               |             |                        |            |
|                                    | Components of Existing Water Supply Scheme | Component               | Specification | Condition   | Year                   | Fund       |
|                                    |  | Pump for Deep Well      |               |             |                        |            |
|                                    |  | Eng./Gen. for Deep Well |               |             |                        |            |
|                                    |  | Pump House for Deep We  |               |             |                        |            |
|                                    |  | Pump for Booster        |               |             |                        |            |
|                                    |  | Eng./Gen. for Booster   |               |             |                        |            |
|                                    |  | Pump House for Booster  |               |             |                        |            |
|                                    |  | Booster Tank            |               |             |                        |            |
|                                    |  | Distribution Tank       |               |             |                        |            |
|                                    |  | Pumping Main            |               |             |                        |            |
|                                    |  | Distribution Main       |               |             |                        |            |
|                                    |  | Public Tapstand         |               |             |                        |            |
|                                    |  | House Connection        |               |             |                        |            |
|                                    | Observations                               |                         |               |             |                        |            |
| WATER SOURCE PANEL                 |  |                         |               |             |                        |            |
| No.                                | Item                                       |                         |               | Description |                        |            |
|                                    | [Borehole Code]                            |                         |               |             |                        |            |
|                                    | Grid (UTM)                                 | North                   | East          |             |                        |            |
|                                    |  | 1572955                 | 417341        |             |                        |            |
|                                    | Grid (Lat/Lon)                             | Lat. N                  | Lon. E        |             |                        |            |
|                                    |  | 14°13' 36.9"            | 44°14' 01.5"  |             |                        |            |
|                                    | Present Condition (Pump Type)              | Capped                  |               |             |                        |            |
|                                    | Elevation (m)                              | 1,741 m                 |               |             |                        |            |
|                                    | Aquifer/Geological Description             |                         |               |             |                        |            |
|                                    | Year of Construction                       | 2005                    |               |             |                        |            |
|                                    | Fund                                       | GARWSP                  |               |             |                        |            |
|                                    | Depth (m)                                  | 272 m                   |               |             |                        |            |
|                                    | Casing Diameter (inch)                     | 8-5/8 inch              |               |             |                        |            |
|                                    | Screen                                     |                         |               |             |                        |            |
|                                    | Static Water Level (G.L.-m)                | 36.1 m                  |               |             |                        |            |
|                                    | Dynamic Water Level (G.L.-m)               | 201 m                   |               |             |                        |            |
|                                    | Drawdown (m)                               | 104.9 m                 |               |             |                        |            |
|                                    | Discharge (g/min)                          | 62 g/min                | 3.9 L/sec     |             |                        |            |
|                                    | Specific Capacity                          | 0.037 L/s/m             |               |             |                        |            |
|                                    | EC (mS/m)                                  | 49.6 mS/m               |               |             |                        |            |
|                                    | pH   | 7.99                    |               |             |                        |            |
|                                    | Temperature (°C)                           | 31.2                    |               |             |                        |            |
|                                    | Remarks                                    |                         |               |             |                        |            |

## 12.6 Village Profile of Sites in Ibb Governorate

| WATER SUPPLY PLANNING PANEL     |  |   |  |
|---------------------------------|--|---|--|
| No.                             | Item   | Description   |  |
|                                 | <b>[Design Parameter]</b>                        |   |  |
|                                 | No. of Villages in Total                         | 0   |  |
|                                 | No. of Villages to be Covered                    | 0   |  |
|                                 | Current Population (2006)                        | 6,026   |  |
|                                 | Design Population (2016)                         | 7,691   |  |
|                                 | Design Water Supply Rate                         | 30 L/c/d  | 231 m <sup>3</sup> /day                        |
|                                 | Type of Work Required                            | New construction  |  |
|                                 | Required Facilities                              | Component   | To be Constructed by Notes                     |
|                                 |  | Pump for Deep Well  | Donor New                                      |
|                                 |  | Eng./Gen. for Deep Well   | Donor New                                      |
|                                 |  | Pump House for Deep We  | Donor/Village New                              |
|                                 |  | Pump for Booster  | Donor New × 2                                  |
|                                 |  | Eng./Gen. for Booster   | Donor New × 2                                  |
|                                 |  | Pump House for Booster  | Donor/Village New × 2                          |
|                                 |  | Booster Tank  | Donor New × 2                                  |
|                                 |  | Distribution Tank   | Donor New                                      |
|                                 |  | Pumping Main  | Donor New                                      |
|                                 |  | Distribution Main   | Donor New                                      |
|                                 |  | Public Tapstand   | Donor New (for mosque, school and clinic only) |
|                                 |  | House Connection  | Village New                                    |
|                                 | Accessibility                                    | Approach to site is difficult, from top of mountain. Access inside of site is difficult due to steep hillsides. |  |
|                                 | Security   |   |  |
|                                 | Observation                                      | Since borehole is located in wadi, need to consider protection from flood.                                      |  |
| OPERATION AND MAINTENANCE PANEL |  |   |  |
| No.                             | Item   | Description   |  |
|                                 | No. of Village Head (Sheikh)                     |   |  |
|                                 | No. of Tribe                                     |   |  |
|                                 | Observation in Current Supply Scheme             |   |  |
|                                 | Mode of Ownership                                |   |  |
|                                 | Mode of Management Entity                        |   |  |
|                                 | Organizational Management                        |   |  |
|                                 | Technical Operation and Maintenance              |   |  |
|                                 | Financial Management and Transparency            |   |  |
|                                 | Stakeholder Involvement / Responsibility Sharing |   |  |
|                                 | Community Contribution                           |   |  |
|                                 | Community Contracting-Out                        |   |  |
|                                 | Conflict Resolution                              |   |  |
|                                 | Pro-Gender and Pro-Poor                          |   |  |
|                                 | Remarks  |   |  |

## 12.6 Village Profile of Sites in Ibb Governorate

| SITE IDENTIFICATION PANEL |                                      |                  |            |           |                        |
|---------------------------|--------------------------------------|------------------|------------|-----------|------------------------|
| No.                       | Item                                 | Description      |            |           |                        |
|                           | Code No.                             | I-03             |            |           |                        |
|                           | Site Name                            | Mamsa al Marqab  |            |           |                        |
|                           | Sub-District (Uzlat)                 | Al Marqab        |            |           |                        |
|                           | District                             | AL Makhader      |            |           |                        |
|                           | Governorate                          | Ibb              |            |           |                        |
|                           | Coordinates                          | Latitude         | Longitude  |           |                        |
|                           | Coordinates (Measured Location)      |                  |            |           |                        |
|                           | Annual precipitation (rainfall)      | 920 mm           |            |           |                        |
|                           | Population (2006)                    | 2,810            |            |           |                        |
|                           | Population Forecast (2016)           | 3,587            |            |           |                        |
|                           | No. of Village (Qariah) in Total     |                  |            |           |                        |
|                           | No. of Village (Qariah) to be served |                  |            |           |                        |
|                           | Village (Qariah) in the Community    | Name             | Population | Household | Coordinate (Lat / Lon) |
|                           |                                      | Al Dar           |            |           |                        |
|                           |                                      | Al Dakl          |            |           |                        |
|                           |                                      | Al Marqab        |            |           | 14°11' 11" 44°12' 57"  |
|                           |                                      | Al Mady          |            |           |                        |
|                           |                                      | Haronah          |            |           |                        |
|                           |                                      | Al Mardam        |            |           |                        |
|                           |                                      | Hara             |            |           |                        |
|                           |                                      | Al Madrsah       |            |           |                        |
|                           |                                      | Shab-Zaid        |            |           |                        |
|                           |                                      | Najd Al Meryamah |            |           |                        |
|                           |                                      | Al Meryamah      |            |           |                        |
|                           |                                      | Kolah Al Merymah |            |           |                        |
|                           |                                      | Najd Ibbn Alwaan |            | 250-300   | 14°11' 35" 44°12' 02"  |
|                           |                                      | Al Hotetah       |            |           |                        |
|                           |                                      | Al Mashrag       |            |           |                        |
|                           |                                      | Al Airtha        |            |           |                        |
|                           |                                      | Bait Massoud     |            |           |                        |
|                           |                                      | Hathanah         |            |           |                        |

| EXISTING WATER SUPPLY SCHEME PANEL |  |                          |               |           |      |              |
|------------------------------------|--|--------------------------|---------------|-----------|------|--------------|
| No.                                | Item                                       | Description              |               |           |      |              |
|                                    | Functioning                                | No existing              |               |           |      |              |
|                                    | Components of Existing Water Supply Scheme | Component                | Specification | Condition | Year | Fund         |
|                                    |  | Pump for Deep Well       | Vertical      | Engine    | 2006 | Private, Tem |
|                                    |  | Eng./Gen. for Deep Well  |               |           |      |              |
|                                    |  | Pump House for Deep Well |               |           |      |              |
|                                    |  | Pump for Booster         |               |           |      |              |
|                                    |  | Eng./Gen. for Booster    |               |           |      |              |
|                                    |  | Pump House for Booster   |               |           |      |              |
|                                    |  | Booster Tank             |               |           |      |              |
|                                    |  | Distribution Tank        |               |           |      |              |
|                                    |  | Pumping Main             |               |           |      |              |
|                                    |  | Distribution Main        |               |           |      |              |
|                                    |  | Public Tapstand          |               |           |      |              |
|                                    |  | House Connection         |               |           |      |              |
|                                    | Observations                               |                          |               |           |      |              |

| WATER SOURCE PANEL |                                |                    |              |  |  |
|--------------------|--------------------------------|--------------------|--------------|--|--|
| No.                | Item                           | Description        |              |  |  |
|                    | [Borehole Code]                |                    |              |  |  |
|                    | Grid (UTM)                     | North              | East         |  |  |
|                    |                                | 1568624            | 413955       |  |  |
|                    | Grid (Lat/Lon)                 | Lat. N             | Lon. E       |  |  |
|                    |                                | 14°11' 15.3"       | 44°12' 09.1" |  |  |
|                    | Present Condition (Pump Type)  | Working (vertical) |              |  |  |
|                    | Elevation (m)                  | 1,648 m            |              |  |  |
|                    | Aquifer/Geological Description |                    |              |  |  |
|                    | Year of Construction           | 2005               |              |  |  |
|                    | Fund                           | GARWSP             |              |  |  |
|                    | Depth (m)                      | 78 m               |              |  |  |
|                    | Casing Diameter (inch)         | 8 inch             |              |  |  |
|                    | Screen                         |                    |              |  |  |
|                    | Static Water Level (G.L.-m)    | 47.78 m            |              |  |  |
|                    | Dynamic Water Level (G.L.-m)   | 54.35 m            |              |  |  |
|                    | Drawdown (m)                   | 6.57 m             |              |  |  |
|                    | Discharge (g/min)              | 25 g/min           | 1.6 L/sec    |  |  |
|                    | Specific Capacity              | 0.243 L/s/m        |              |  |  |
|                    | EC (mS/m)                      | 69.4 mS/m          |              |  |  |
|                    | pH                             | 7.12               |              |  |  |
|                    | Temperature (°C)               | 30.6               |              |  |  |
|                    | Remarks                        |                    |              |  |  |

## 12.6 Village Profile of Sites in Ibb Governorate

| WATER SUPPLY PLANNING PANEL     |  |  |                         |  |
|---------------------------------|--|--|-------------------------|--|
| No.                             | Item   | Description                                    |                         |  |
|                                 | [Design Parameter]                               |  |                         |  |
|                                 | No. of Villages in Total                         | 0  |                         |  |
|                                 | No. of Villages to be Covered                    | 0  |                         |  |
|                                 | Current Population (2006)                        | 2,810  |                         |  |
|                                 | Design Population (2016)                         | 3,587  |                         |  |
|                                 | Design Water Supply Rate                         | 40 L/c/d                                       | 143 m <sup>3</sup> /day |  |
|                                 | Type of Work Required                            | New construction                               |                         |  |
|                                 | Required Facilities                              | Component                                      | Constructed by          | Notes                                    |
|                                 |  | Pump for Deep Well                             | Donor                   | New                                      |
|                                 |  | Eng./Gen. for Deep Well                        | Donor                   | New                                      |
|                                 |  | Pump House for Deep We                         | Donor/Village           | New                                      |
|                                 |  | Pump for Booster                               | Donor                   | New                                      |
|                                 |  | Eng./Gen. for Booster                          | Donor                   | New                                      |
|                                 |  | Pump House for Booster                         | Donor/Village           | New                                      |
|                                 |  | Booster Tank                                   | Donor                   | New                                      |
|                                 |  | Distribution Tank                              | Donor                   | New                                      |
|                                 |  | Pumping Main                                   | Donor                   | New                                      |
|                                 |  | Distribution Main                              | Donor                   | New                                      |
|                                 |  | Public Tapstand                                | Donor                   | New (for mosque, school and clinic only) |
|                                 |  | House Connection                               | Donor                   | New                                      |
|                                 | Accessibility                                    | Difficult in rainy season, access through wadi |                         |  |
|                                 | Security   |  |                         |  |
|                                 | Observation                                      |  |                         |  |
| OPERATION AND MAINTENANCE PANEL |  |  |                         |  |
| No.                             | Item   | Description                                    |                         |  |
|                                 | No. of Village Head (Sheikh)                     |  |                         |  |
|                                 | No. of Tribe                                     |  |                         |  |
|                                 | Observation in Current Supply Scheme             |  |                         |  |
|                                 | Mode of Ownership                                |  |                         |  |
|                                 | Mode of Management Entity                        |  |                         |  |
|                                 | Organizational Management                        |  |                         |  |
|                                 | Technical Operation and Maintenance              |  |                         |  |
|                                 | Financial Management and Transparency            |  |                         |  |
|                                 | Stakeholder Involvement / Responsibility Sharing |  |                         |  |
|                                 | Community Contribution                           |  |                         |  |
|                                 | Community Contracting-Out                        |  |                         |  |
|                                 | Conflict Resolution                              |  |                         |  |
|                                 | Pro-Gender and Pro-Poor                          |  |                         |  |
|                                 | Remarks  |  |                         |  |

## 12.6 Village Profile of Sites in Ibb Governorate

| SITE IDENTIFICATION PANEL          |  |                                 |               |           |                        |      |
|------------------------------------|--|---------------------------------|---------------|-----------|------------------------|------|
| No.                                | Item                                       | Description                     |               |           |                        |      |
|                                    | Code No.                                   | I-04                            |               |           |                        |      |
|                                    | Site Name                                  | Al Jahlah & Al Meshraq          |               |           |                        |      |
|                                    | Sub-District (Uzlat)                       |                                 |               |           |                        |      |
|                                    | District                                   | Ibb                             |               |           |                        |      |
|                                    | Governorate                                | Ibb                             |               |           |                        |      |
|                                    | Coordinates                                | Latitude                        | Longitude     |           |                        |      |
|                                    |  | Coordinates (Measured Location) |               |           |                        |      |
|                                    | Annual precipitation (rainfall)            | 1,000 mm                        |               |           |                        |      |
|                                    | Population (2006)                          | 10,467                          |               |           |                        |      |
|                                    | Population Forecast (2016)                 | 13,359                          |               |           |                        |      |
|                                    | No. of Village (Qariah) in Total           |                                 |               |           |                        |      |
|                                    | No. of Village (Qariah) to be served       |                                 |               |           |                        |      |
|                                    | Village (Qariah) in the Community          | Name                            | Population    | Household | Coordinate (Lat / Lon) |      |
|                                    |  | Al Jahlah                       | 1,700         | 211       |                        |      |
|                                    |  | Al Nafesh                       | 450           | 69        |                        |      |
|                                    |  | Al Sulq                         | 412           | 77        |                        |      |
|                                    |  | Al Jah                          | 1,121         | 139       |                        |      |
|                                    |  | Al Meshraq                      | 1,994         | 220       |                        |      |
|                                    |  | Thy Ajzab                       | 1,815         | 186       |                        |      |
|                                    |  | Al Jasha                        | 2,975         | 307       |                        |      |
| EXISTING WATER SUPPLY SCHEME PANEL |  |                                 |               |           |                        |      |
| No.                                | Item                                       | Description                     |               |           |                        |      |
|                                    | Functioning                                | No existing                     |               |           |                        |      |
|                                    | Components of Existing Water Supply Scheme | Component                       | Specification | Condition | Year                   | Fund |
|                                    |  | Pump for Deep Well              |               |           |                        |      |
|                                    |  | Eng./Gen. for Deep Well         |               |           |                        |      |
|                                    |  | Pump House for Deep We          |               |           |                        |      |
|                                    |  | Pump for Booster                |               |           |                        |      |
|                                    |  | Eng./Gen. for Booster           |               |           |                        |      |
|                                    |  | Pump House for Booster          |               |           |                        |      |
|                                    |  | Booster Tank                    |               |           |                        |      |
|                                    |  | Distribution Tank               |               |           |                        |      |
|                                    |  | Pumping Main                    |               |           |                        |      |
|                                    |  | Distribution Main               |               |           |                        |      |
|                                    |  | Public Tapstand                 |               |           |                        |      |
|                                    | House Connection                           |                                 |               |           |                        |      |
|                                    | Observations                               |                                 |               |           |                        |      |
| WATER SOURCE PANEL                 |  |                                 |               |           |                        |      |
| No.                                | Item                                       | Description                     |               |           |                        |      |
|                                    | [Borehole Code]                            |                                 |               |           |                        |      |
|                                    | Grid (UTM)                                 | North                           | East          |           |                        |      |
|                                    |  | 1540017                         | 5418783       |           |                        |      |
|                                    | Grid (Lat/Lon)                             | Lat. N                          | Lon. E        |           |                        |      |
|                                    |  | 13°55' 44.8"                    | 44°14' 53.4"  |           |                        |      |
|                                    | Present Condition (Pump Type)              | Capped                          |               |           |                        |      |
|                                    | Elevation (m)                              | 1,803 m                         |               |           |                        |      |
|                                    | Aquifer/Geological Description             |                                 |               |           |                        |      |
|                                    | Year of Construction                       | 2005                            |               |           |                        |      |
|                                    | Fund                                       | GARWSP                          |               |           |                        |      |
|                                    | Depth (m)                                  | 305 m                           |               |           |                        |      |
|                                    | Casing Diameter (inch)                     | 8-5/8 inch                      |               |           |                        |      |
|                                    | Screen                                     |                                 |               |           |                        |      |
|                                    | Static Water Level (G.L.-m)                | 14.9 m                          |               |           |                        |      |
|                                    | Dynamic Water Level (G.L.-m)               | 110.2 m                         |               |           |                        |      |
|                                    | Drawdown (m)                               | 95.3 m                          |               |           |                        |      |
|                                    | Discharge (g/min)                          | 65 g/min                        | 4.1 L/sec     |           |                        |      |
|                                    | Specific Capacity                          | 0.043 L/s/m                     |               |           |                        |      |
|                                    | EC (mS/m)                                  | 64.6 mS/m                       |               |           |                        |      |
|                                    | pH   | 8.32                            |               |           |                        |      |
|                                    | Temperature (°C)                           | 27.0                            |               |           |                        |      |
|                                    | Remarks                                    |                                 |               |           |                        |      |



## 12.6 Village Profile of Sites in Ibb Governorate

| WATER SUPPLY PLANNING PANEL     |  |   |                         |  |
|---------------------------------|--|---|-------------------------|--|
| No.                             | Item   | Description   |                         |  |
|                                 | <b>[Design Parameter]</b>                        |   |                         |  |
|                                 | No. of Villages in Total                         | 0   |                         |  |
|                                 | No. of Villages to be Covered                    | 0   |                         |  |
|                                 | Current Population (2006)                        | 10,467  |                         |  |
|                                 | Design Population (2016)                         | 13,359  |                         |  |
|                                 | Design Water Supply Rate                         | 25 L/c/d  | 334 m <sup>3</sup> /day |  |
|                                 | Type of Work Required                            | New construction  |                         |  |
|                                 | Required Facilities                              | Component   | To be Constructed by    | Notes                                    |
|                                 |  | Pump for Deep Well  | Donor                   | New                                      |
|                                 |  | Eng./Gen. for Deep Well   | Donor                   | New                                      |
|                                 |  | Pump House for Deep We  | Donor/Village           | New                                      |
|                                 |  | Pump for Booster  | Donor                   | New x 2                                  |
|                                 |  | Eng./Gen. for Booster   | Donor                   | New x 2                                  |
|                                 |  | Pump House for Boosler  | Donor/Village           | New                                      |
|                                 |  | Booster Tank  | Donor                   | New                                      |
|                                 |  | Distribution Tank   | Donor                   | New x 2                                  |
|                                 |  | Pumping Main  | Donor                   | New x 2                                  |
|                                 |  | Distribution Main   | Donor                   | New x 2                                  |
|                                 |  | Public Tapstand   | Donor                   | New (for mosque, school and clinic only) |
|                                 |  | House Connections   | Village                 | New                                      |
|                                 | Accessibility                                    | Approach to site is good, next to paved road, but access in site through rugged mountain road |                         |  |
|                                 | Security   |   |                         |  |
|                                 | Observation                                      |   |                         |  |
| OPERATION AND MAINTENANCE PANEL |  |   |                         |  |
| No.                             | Item   | Description   |                         |  |
|                                 | No. of Village Head (Sheikh)                     |   |                         |  |
|                                 | No. of Tribe                                     |   |                         |  |
|                                 | Observation in Current Supply Scheme             |   |                         |  |
|                                 | Mode of Ownership                                |   |                         |  |
|                                 | Mode of Management Entity                        |   |                         |  |
|                                 | Organizational Management                        |   |                         |  |
|                                 | Technical Operation and Maintenance              |   |                         |  |
|                                 | Financial Management and Transparency            |   |                         |  |
|                                 | Stakeholder Involvement / Responsibility Sharing |   |                         |  |
|                                 | Community Contribution                           |   |                         |  |
|                                 | Community Contracting-Out                        |   |                         |  |
|                                 | Conflict Resolution                              |   |                         |  |
|                                 | Pro-Gender and Pro-Poor                          |   |                         |  |
|                                 | Remarks  |   |                         |  |

## 12.7 Village Profile of Sites in Taiz Governorate

| SITE IDENTIFICATION PANEL          |  |  |               |                   |                        |       |
|------------------------------------|--|--|---------------|-------------------|------------------------|-------|
| No.                                | Item                                       | Description  |               |                   |                        |       |
|                                    | Code No.                                   | T-01   |               |                   |                        |       |
|                                    | Site Name                                  | Muayteeb   |               |                   |                        |       |
|                                    | Sub-District (Uzlat)                       |  |               |                   |                        |       |
|                                    | District                                   | Mawiyah  |               |                   |                        |       |
|                                    | Governorate                                | Taiz   |               |                   |                        |       |
|                                    | Coordinates                                | Latitude   | Longitude     |                   |                        |       |
|                                    | Coordinates (Measured Location)            |  |               |                   |                        |       |
|                                    | Annual precipitation (rainfall)            | 800 mm   |               |                   |                        |       |
|                                    | Population (2006)                          | 2,432  |               |                   |                        |       |
|                                    | Population Forecast (2016)                 | 3,104  |               |                   |                        |       |
|                                    | No. of Village (Qariah) in Total           |  |               |                   |                        |       |
|                                    | No. of Village (Qariah) to be served       |  |               |                   |                        |       |
|                                    | Village (Qariah) in the Community          | Name   | Population    | Household         | Coordinate (Lat / Lon) |       |
|                                    |  | Al Muayteeb  | 2,432         | 304               |                        |       |
| EXISTING WATER SUPPLY SCHEME PANEL |  |  |               |                   |                        |       |
| No.                                | Item                                       | Description  |               |                   |                        |       |
|                                    | Functioning                                | Non-functional   |               |                   |                        |       |
|                                    | Components of Existing Water Supply Scheme | Component  | Specification | Condition         | Year                   | Fund  |
|                                    |  | Pump for Deep Well   | Submersible   |                   | 1985                   | Japan |
|                                    |  | Generator for Deep Well  | 20HP          | Jianghuai         | 2004                   |       |
|                                    |  | Pump House for Deep We   |               |                   |                        |       |
|                                    |  | Pump for Booster   |               |                   |                        |       |
|                                    |  | Eng./Gen. for Booster  |               |                   |                        |       |
|                                    |  | Pump House for Booster   |               |                   |                        |       |
|                                    |  | Booster Tank   |               |                   |                        |       |
|                                    |  | Distribution Tank  | Steel panel   | 100m3 elevated 1m | 1985                   | Japan |
|                                    |  | Pumping Main   | SGP           | Removed           | 1985                   | Japan |
|                                    |  | Distribution Main  | SGP           | Removed           | 1985                   | Japan |
|                                    |  | Public Tapstand  |               |                   |                        |       |
|                                    |  | House Connection   | All houses    |                   |                        |       |
|                                    | Observations                               | Japanese grant project. Original borehole dried up in 1995, but when it rains, some water can be pumped. Now, using private well of sheikh drilled in 2004. Original borehole generator installed in 1985 by Japan, but burned and replaced in 2004. |               |                   |                        |       |
| WATER SOURCE PANEL                 |  |  |               |                   |                        |       |
| No.                                | Item                                       | Description  |               |                   |                        |       |
|                                    | [Borehole Code]                            | T-01 New   |               |                   |                        |       |
|                                    | Grid (UTM)                                 | North  | East          |                   |                        |       |
|                                    |  | 1510149  | 415656        |                   |                        |       |
|                                    | Grid (Lat/Lon)                             | Lat. N   | Lon. E        |                   |                        |       |
|                                    |  | 13°39' 32.5"   | 44°13' 12.6"  |                   |                        |       |
|                                    | Present Condition (Pump Type)              | Capped   |               |                   |                        |       |
|                                    | Elevation (m)                              | 1291 m   |               |                   |                        |       |
|                                    | Aquifer/Geological Description             |  |               |                   |                        |       |
|                                    | Year of Construction                       | 2005   |               |                   |                        |       |
|                                    | Fund                                       | GARWSP   |               |                   |                        |       |
|                                    | Depth (m)                                  | 300 m  |               |                   |                        |       |
|                                    | Casing Diameter (inch)                     | 8 inch   |               |                   |                        |       |
|                                    | Screen                                     | 56m-68m, 164m-?, 194m-248m   |               |                   |                        |       |
|                                    | Static Water Level (G.L.-m)                | 157.24 m   |               |                   |                        |       |
|                                    | Dynamic Water Level (G.L.-m)               | 200 m  |               |                   |                        |       |
|                                    | Drawdown (m)                               | 42.76 m  |               |                   |                        |       |
|                                    | Discharge (g/min)                          | 95 g/min   |               |                   |                        |       |
|                                    | Specific Capacity                          | 0.14 L/s/m   |               |                   |                        |       |
|                                    | EC (mS/m)                                  | 252.0 mS/m   |               |                   |                        |       |
|                                    | pH   | 7.22   |               |                   |                        |       |
|                                    | Temperature (°C)                           | 61.1   |               |                   |                        |       |
|                                    | Remarks                                    |  |               |                   |                        |       |
|                                    | [Borehole Code]                            | T-01/2 Old   |               |                   |                        |       |
|                                    | Grid (UTM)                                 | North  | East          |                   |                        |       |
|                                    |  |  |               |                   |                        |       |
|                                    | Grid (Lat/Lon)                             | Lat. N   | Lon. E        |                   |                        |       |
|                                    |  | 13°39' 47"   | 44°12' 58"    |                   |                        |       |
|                                    | Present Condition (Pump Type)              | Working only when it rains Submersible pump  |               |                   |                        |       |
|                                    | Elevation (m)                              | 1,295 m  |               |                   |                        |       |
|                                    | Aquifer/Geological Description             |  |               |                   |                        |       |
|                                    | Year of Construction                       | 1985?  |               |                   |                        |       |
|                                    | Fund                                       | Japan  |               |                   |                        |       |
|                                    | Depth (m)                                  | m  |               |                   |                        |       |
|                                    | Casing Diameter (inch)                     | inch   |               |                   |                        |       |
|                                    | Screen                                     |  |               |                   |                        |       |
|                                    | Static Water Level (G.L.-m)                | m  |               |                   |                        |       |
|                                    | Dynamic Water Level (G.L.-m)               | m  |               |                   |                        |       |
|                                    | Drawdown (m)                               | m  |               |                   |                        |       |
|                                    | Discharge (g/min)                          | g/min  |               |                   |                        |       |
|                                    | Specific Capacity                          | L/s/m  |               |                   |                        |       |
|                                    | EC (mS/m)                                  | mS/m   |               |                   |                        |       |
|                                    | pH   |  |               |                   |                        |       |
|                                    | Temperature (°C)                           |  |               |                   |                        |       |
|                                    | Remarks                                    |  |               |                   |                        |       |

## 12.7 Village Profile of Sites in Taiz Governorate

| WATER SUPPLY PLANNING PANEL     |  |   |  |
|---------------------------------|--|---|--|
| No.                             | Item   | Description   |  |
|                                 | [Design Parameter]                               |   |  |
|                                 | No. of Villages in Total                         | 0   |  |
|                                 | No. of Villages to be Covered                    | 0   |  |
|                                 | Current Population (2006)                        | 2,432   |  |
|                                 | Design Population (2016)                         | 3,104   |  |
|                                 | Design Water Supply Rate                         | L/c/d   | m <sup>3</sup> /day                            |
|                                 | Type of Work Required                            | Component   | To be Constructed by                           |
|                                 | Required Facilities                              |   | Notes  |
|                                 |  | Pump for Deep Well  | Donor New                                      |
|                                 |  | Eng./Gen. for Deep Well   | Donor New                                      |
|                                 |  | Pump House for Deep We  | Donor/Village New                              |
|                                 |  | Pump for Booster  |  |
|                                 |  | Eng./Gen. for Booster   |  |
|                                 |  | Pump House for Booster  |  |
|                                 |  | Booster Tank  |  |
|                                 |  | Distribution Tank   |  |
|                                 |  | Pumping Main  | Donor New                                      |
|                                 |  | Distribution Main   | Donor New                                      |
|                                 |  | Public Tapstand   | Donor New (for mosque, school and clinic only) |
|                                 |  | House Connection  | Village  |
|                                 | Accessibility                                    | Good, near paved road, but access between villages through wadi   |  |
|                                 | Security   |   |  |
|                                 | Observation                                      |   |  |
| OPERATION AND MAINTENANCE PANEL |  |   |  |
| No.                             | Item   | Description   |  |
|                                 | No. of Village Head (Sheikh)                     | 1   |  |
|                                 | No. of Tribe                                     | 1   |  |
|                                 | Observation in Current Supply Scheme             | <p>Pump unit (submersible pump) for borehole was malfunctioned in 1988, possibly because of operation in the condition that the water level became considerably lower than the depth where the submersible pump was installed.</p> <p>Pump unit was replaced by GARWSP in 1989. However, the replaced one also broken down soon in the same year, possibly because of the same reason for the malfunction of the first pump unit.</p> <p>Private well (borehole) was constructed in 2005 for irrigation purpose in fifty (50) meters away from the borehole constructed in 1984. The private well has depth of 400m with good yield capacity, equipped with vertical pump unit. However, water yielded from the borehole is hot and not suitable for irrigation. The private well is currently providing water for the community for domestic use at free of charge, while selling water for water truck (water venders) at YR 400 per tank. The pump unit is installed and operation cost (fuel) is borne by the well owner.</p> |  |
|                                 | Mode of Ownership                                | <p>There was no legal ownership arrangement in the scheme management.</p> <p>Any handing-over document and agreement was not prepared.</p>  |  |
|                                 | Mode of Management Entity                        | <p>The supply scheme during its operation had been managed by the following three (3) persons appointed by community authority, former GARWES and former Local Council; a) Manager, b) Financial Manager/Accountant, and c) Operator/Watchman.</p>  |  |
|                                 | Organizational Management                        | <p>No constitution for CBO scheme management was prepared.</p>  |  |
|                                 | Technical Operation and Maintenance              | <p>Pump unit for borehole was replaced by the former GARWE, instead of the community.</p> <p>Tariff structure: YR 20-40/households/month in mid-late 80s.</p>   |  |
|                                 | Financial Management and Transparency            | <p>Water tariff charge is not metered.</p> <p>Water through a public stand was provided at free of charge.</p> <p>Income and expenditure had been balanced during the scheme was operated.</p>  |  |
|                                 | Stakeholder Involvement / Responsibility Sharing | <p>Former GARWE and Local Council involved in appointment of community-based management body (management members).</p> <p>Current Sheikh of the community is Director of Financial Affairs in Local Council.</p>  |  |
|                                 | Community Contribution                           | <p>No community contribution was provided in existing scheme construction.</p> <p>Willingness to contribute in future project is observed.</p>  |  |
|                                 | Community Contracting-Out                        | <p>N/A</p>  |  |
|                                 | Conflict Resolution                              | <p>No community conflict cases were mentioned.</p>  |  |
|                                 | Pro-Gender and Pro-Poor                          | <p>Water through a public stand was provided at free of charge mainly for the poor who could not afford house connection.</p>   |  |
|                                 | Remarks  | <p>Land for new borehole constructed by GARWSP in 2005 was donated by Sheikh. Written agreement for land ownership is not confirmed.</p> <p>Water yielded from the borehole constructed in 2005 is also hot. Water quality shall be properly analyzed.</p>  |  |

## 12.7 Village Profile of Sites in Taiz Governorate

| SITE IDENTIFICATION PANEL |                                      |                        |                       |
|---------------------------|--------------------------------------|------------------------|-----------------------|
| No.                       | Item                                 | Description            |                       |
|                           | Code No.                             | T-02                   |                       |
|                           | Site Name                            | Bani Al Suror          |                       |
|                           | Sub-District (Uzlat)                 |                        |                       |
|                           | District                             | Al Ma'afer             |                       |
|                           | Governorate                          | Taiz                   |                       |
|                           | Coordinates                          | Latitude               | Longitude             |
|                           | Coordinates (Measured Location)      |                        |                       |
|                           | Annual precipitation (rainfall)      | 550 mm                 |                       |
|                           | Population (2006)                    | 9,385                  |                       |
|                           | Population Forecast (2016)           | 11,978                 |                       |
|                           | No. of Village (Qariah) in Total     | 6                      |                       |
|                           | No. of Village (Qariah) to be served | 6                      |                       |
|                           | Village (Qariah) in the Community    | Name                   | Population            |
|                           |                                      | Bani Suror             | 1,525                 |
|                           |                                      | Al Suliyah             | 2,170                 |
|                           |                                      | Wadi Mahjar            | 1,008                 |
|                           |                                      | Athkar                 | 2,499                 |
|                           |                                      | Al Sharaf              | 1,546                 |
|                           |                                      | Al Souk (Al Nashama)   | 637                   |
|                           |                                      | Household              | 1,043                 |
|                           |                                      | Coordinate (Lat / Lon) | 13°22' 07" 43°59' 04" |
|                           |                                      |                        | 13°22' 49" 43°57' 55" |
|                           |                                      |                        | 13°23' 13" 43°58' 51" |
|                           |                                      |                        | 13°23' 13" 43°56' 59" |
|                           |                                      |                        | 13°23' 13" 43°58' 04" |

| EXISTING WATER SUPPLY SCHEME PANEL |  |   |  |             |          |         |         |
|------------------------------------|--|---|--|-------------|----------|---------|---------|
| No.                                | Item   | Description   |  |             |          |         |         |
|                                    | Functioning Components of Existing Water Supply Scheme | Functional Component  | Specification                                  | Condition   | Year     | Fund    |         |
|                                    |  | Pump for Deep Well (Bir 1)  | Submersible                                    |             | 1994     | Village |         |
|                                    |  | Generator for Deep Well (160kVA)  | Meco allied spa                                |             | 1994     | Village |         |
|                                    |  | Pump House for Deep We RC   |  |             | 1994     | GAREW   |         |
|                                    |  | Pump for Deep Well (Bir 2)  | Vertical                                       | AI-Kohali   | Seasonal | 1994    | GAREW   |
|                                    |  | Engine for Deep Well (Bir 405kVA)   |  | BGICEP      |          | 1994    | GAREW   |
|                                    |  | Pump House for Deep We RC   |  |             | 1994     | GAREW   |         |
|                                    |  | Pump for Deep Well (Bir 3)  | Vertical                                       | GRUNDFOS    |          | 2002    | GARWSP  |
|                                    |  | Engine for Deep Well (Bir 84kW)   |  | John Deere  |          | 2003    | GARWSP  |
|                                    |  | Pump House for Deep We RC   |  |             | 2001     | GARWSP  |         |
|                                    |  | Pump for Booster No.1   | Horizontal                                     | HM          |          | 2000    | GARWSP  |
|                                    |  | Engine for Booster No.1   |  | IVECO       |          | 2000    | GARWSP  |
|                                    |  | Pump House for Booster RC   |  |             | 2000     | GARWSP  |         |
|                                    |  | Pump for Booster No.2   | Horizontal                                     | HM          |          | 2004    | Village |
|                                    |  | Engine for Booster No.2   |  | Technodrive |          | 2004    | Village |
|                                    |  | Pump House for Booster RC   |  |             | 2004     | Village |         |
|                                    |  | Booster Tank No.1   | RC   | 25m3        |          | 1994    | GAREW   |
|                                    |  | Booster Tank No.2   | RC   | 50m3        |          | 2000    | GARWSP  |
|                                    |  | Sub-Main Tank No.1  | RC   | 25m3        |          | 1994    | GAREW   |
|                                    |  | Sub-Main Tank No.2  | RC   | 150m3       |          | 1998    | GAREW   |
|                                    |  | Distribution Tank No.1  | RC   | 150m3       |          | 1994    | GAREW   |
|                                    |  | Distribution Tank No.2  | RC   | 100m3       |          | 2000    | GARWSP  |
|                                    |  | Pumping Main  | SGP  |             |          | 1994    | GAREW   |
|                                    |  | Distribution Main   | SGP  |             |          | 1994    | GAREW   |
|                                    |  | Public Tapstand   | 16 for mosques, 4 for schools, all with meters |             |          |         |         |
|                                    |  | House Connection  | 1,499 with meters                              |             |          |         |         |
|                                    | Observations   | If resident used water for irrigation, he is fined YR500/m <sup>3</sup> +penalty and supply is stopped. Residents buy water for irrigation. |  |             |          |         |         |

| WATER SOURCE PANEL |                                |                       |                  |
|--------------------|--------------------------------|-----------------------|------------------|
| No.                | Item                           | Description           |                  |
|                    | [Borehole Code]                | T-01/1 Bir 1          |                  |
|                    | Grid (UTM)                     | North                 | East             |
|                    | Grid (Lat/Lon)                 | Lat. N                | Lon. E           |
|                    |                                | 13°22' 51.9"          | 43°58' 00.7"     |
|                    | Present Condition (Pump Type)  | Working               | Submersible pump |
|                    | Elevation (m)                  | 1,271 m               |                  |
|                    | Aquifer/Geological Description |                       |                  |
|                    | Year of Construction           | 1982                  |                  |
|                    | Fund                           | Iraq (Drilled by NGO) |                  |
|                    | Depth (m)                      | 230 m                 |                  |
|                    | Casing Diameter (inch)         | inch                  |                  |
|                    | Screen                         |                       |                  |
|                    | Static Water Level (G.L.-m)    | 183.9 m               |                  |
|                    | Dynamic Water Level (G.L.-m)   | 186.4 m               |                  |
|                    | Drawdown (m)                   | 2.5 m                 |                  |
|                    | Discharge (g/min)              | 41 g/min              | 2.6 L/sec        |
|                    | Specific Capacity              | 2.04 L/s/m            |                  |
|                    | EC (mS/m)                      | 113.3 mS/m            |                  |
|                    | pH                             | 7.05                  |                  |
|                    | Temperature (°C)               | 37.5                  |                  |
|                    | Remarks                        |                       |                  |

## 12.7 Village Profile of Sites in Taiz Governorate

|                                |                    |                  |  |
|--------------------------------|--------------------|------------------|--|
| <b>【Borehole Code】</b>         | T-02/2 Bir 2       |                  |  |
| Grid (UTM)                     | North              | East             |  |
|                                | Lat. N             | Lon. E           |  |
| Grid (Lat/Lon)                 | 13°22' 34.8"       | 43°57' 39.2"     |  |
| Present Condition (Pump Type)  | Working (seasonal) | Vertical pump    |  |
| Elevation (m)                  | 1,250 m            |                  |  |
| Aquifer/Geological Description |                    |                  |  |
| Year of Construction           | 1984               |                  |  |
| Fund                           | LCCD               |                  |  |
| Depth (m)                      | 60 m               |                  |  |
| Casing Diameter (inch)         | inch               |                  |  |
| Screen                         |                    |                  |  |
| Static Water Level (G.L.-m)    | m                  |                  |  |
| Dynamic Water Level (G.L.-m)   | m                  |                  |  |
| Drawdown (m)                   | m                  |                  |  |
| Discharge (g/min)              | g/min              | 0.0 L/sec        |  |
| Specific Capacity              | L/s/m              |                  |  |
| EC (mS/m)                      | 100.2 mS/m         |                  |  |
| pH                             | 7.19               |                  |  |
| Temperature (°C)               | 28.8               |                  |  |
| Remarks                        | Seasonal           |                  |  |
| <b>【Borehole Code】</b>         | T-02/3 Bir 3       |                  |  |
| Grid (UTM)                     | North              | East             |  |
|                                | Lat. N             | Lon. E           |  |
| Grid (Lat/Lon)                 | 13°23' 52.6"       | 43°58' 25.6"     |  |
| Present Condition (Pump Type)  | Working            | Submersible pump |  |
| Elevation (m)                  | 1,209 m            |                  |  |
| Aquifer/Geological Description |                    |                  |  |
| Year of Construction           | 2001               |                  |  |
| Fund                           | GARWSP             |                  |  |
| Depth (m)                      | 251 m              |                  |  |
| Casing Diameter (inch)         | 8 inch             |                  |  |
| Screen                         |                    |                  |  |
| Static Water Level (G.L.-m)    | 117.62 m           |                  |  |
| Dynamic Water Level (G.L.-m)   | 138.73 m           |                  |  |
| Drawdown (m)                   | 21.11 m            |                  |  |
| Discharge (g/min)              | 41 g/min           | 2.6 L/sec        |  |
| Specific Capacity              | 0.123 L/s/m        |                  |  |
| EC (mS/m)                      | 122.4 mS/m         |                  |  |
| pH                             | 7.42               |                  |  |
| Temperature (°C)               | 39.2               |                  |  |
| Remarks                        |                    |                  |  |
| <b>【Borehole Code】</b>         | T-02/4 Bir 4       |                  |  |
| Grid (UTM)                     | North              | East             |  |
|                                | 1477678            | 388826           |  |
| Grid (Lat/Lon)                 | Lat. N             | Lon. E           |  |
|                                | 13°21' 52.2"       | 43°58' 24.2"     |  |
| Present Condition (Pump Type)  | Capped             |                  |  |
| Elevation (m)                  | 1226 m             |                  |  |
| Aquifer/Geological Description |                    |                  |  |
| Year of Construction           | 1998               |                  |  |
| Fund                           | Village            |                  |  |
| Depth (m)                      | 190 m              |                  |  |
| Casing Diameter (inch)         | 8 inch             |                  |  |
| Screen                         |                    |                  |  |
| Static Water Level (G.L.-m)    | 137.2 m            |                  |  |
| Dynamic Water Level (G.L.-m)   | 139.5 m            |                  |  |
| Drawdown (m)                   | 2.3 m              |                  |  |
| Discharge (g/min)              | 86 g/min           | 5.4 L/sec        |  |
| Specific Capacity              | 2.348 L/s/m        |                  |  |
| EC (mS/m)                      | 98.8 mS/m          |                  |  |
| pH                             | 6.96               |                  |  |
| Temperature (°C)               | 29.5               |                  |  |
| Remarks                        |                    |                  |  |

## 12.7 Village Profile of Sites in Taiz Governorate

| WATER SUPPLY PLANNING PANEL     |                                      |   |                                      |
|---------------------------------|--------------------------------------|---|--------------------------------------|
| No.                             | Item                                 | Description   |                                      |
|                                 | <b>[Design Parameter]</b>            |   |                                      |
|                                 | No. of Villages in Total             | 6   |                                      |
|                                 | No. of Villages to be Covered        | 6   |                                      |
|                                 | Current Population (2006)            | 9,385   |                                      |
|                                 | Design Population (2016)             | 11,978  |                                      |
|                                 | Design Water Supply Rate             | 40 L/c/d  | 479 m <sup>3</sup> /day              |
|                                 | Type of Work Required                | Rehabilitation  |                                      |
|                                 | Required Facilities                  | Component   | Construction                         |
|                                 |                                      | Pump for Deep Well (Bir 1)  | Donor Replace                        |
|                                 |                                      | Eng./Gen. for Deep Well (1)   | Donor Replace                        |
|                                 |                                      | Pump for Deep Well (Bir 3)  | Donor Replace                        |
|                                 |                                      | Eng./Gen. for Deep Well (1)   | Donor Replace                        |
|                                 |                                      | Pump for Deep Well (Bir 4)  | Donor New                            |
|                                 |                                      | Eng./Gen. for Deep Well (1)   | Donor New                            |
|                                 |                                      | Pump House for Deep We  | Donor/Village New                    |
|                                 |                                      | Pump for Booster No.1   | Donor Replace                        |
|                                 |                                      | Eng./Gen. for Booster No.   | Donor Replace                        |
|                                 |                                      | Pump for Booster No.2   | Donor Replace                        |
|                                 |                                      | Eng./Gen. for Booster No.   | Donor Replace                        |
|                                 |                                      | Pump for Booster  | Donor New                            |
|                                 |                                      | Eng./Gen. for Booster   | Donor New                            |
|                                 |                                      | Pump House for Booster  | Donor/Village New                    |
|                                 |                                      | Booster Tank  | Donor New                            |
|                                 |                                      | Distribution Tank   |                                      |
|                                 |                                      | Pumping Main  | Donor New (from new deep well bir 4) |
|                                 |                                      | Distribution Main   |                                      |
|                                 |                                      | Public Tapstand   |                                      |
|                                 |                                      | House Connection  |                                      |
|                                 | Accessibility                        |   |                                      |
|                                 | Security                             |   |                                      |
|                                 | Observation                          |   |                                      |
| OPERATION AND MAINTENANCE PANEL |                                      |   |                                      |
| No.                             | Item                                 | Description   |                                      |
|                                 | No. of Village Head (Sheikh)         | 1   |                                      |
|                                 | No. of Tribe                         | 1   |                                      |
|                                 | Observation in Current Supply Scheme | <p>Pump unit for borehole constructed in 1984 has broken down. The unit, which is made in China, is not repaired due to unavailability of spare parts in Yemen.</p> <p>Bani-Surwr is one of village in the served area/community.</p> <p>Water shortage is observed. In some area, particularly in Bani-Surwr, the community depends on water truck, which costs YR 1,600/m3.</p> <p>The scheme covering area of 6km x 7km.</p>   |                                      |
|                                 | Mode of Ownership                    | <p>Legal ownership is vested to the community-based organization with written agreement /memorandum concluded with Local Council and GARWSP Branch Office.</p>  |                                      |
|                                 | Mode of Management Entity            | <p>Administrative Boar for Water is established, of which membership is consisted of; a) chairperson (1), b) vice chairperson (1), c) financial manager (1), d) accountant (1), e) administrative clerk (1), and f) board member (5).</p> <p>General Assembly, in which all users participate, elected sixty five (65) user representatives (one (1) representative each from twenty (20) users). The user representatives of General Assembly further elected Administrative Board for Water among them.</p> <p>First CBO is established in 1985 (Current CBO setting is established in 2002?)</p> <p>Terms of office for the Administrative Board are four (4) years. Last election was conducted in 2002.</p> <p>The Administrative Board is hiring the following operational staff; a) operators/watchman (3), b) meter reader (1), c) bill distributor/pipeline foreman (2).</p> |                                      |
|                                 | Organizational Management            | <p>The Administrative Board is registered under the Ministry of Social Affairs, with supervision of Local Council and GARWSP Branch Office.</p> <p>Administrative Board holds monthly meetings. The Board members mentioned that all decisions in the scheme management are made by the Board.</p> <p>General Assembly is supposed to call meetings once in a year, if necessary.</p> <p>General Assembly meeting is called once in four (4) years for election of user representatives and Administrative Board.</p>   |                                      |

## 12.7 Village Profile of Sites in Taiz Governorate

|                         |   |   |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
|-------------------------|---|---|-------------------------|---------|-----------|--|---------|-----------|--|-------|-----------|-----------------------|--------------|---------------------|------------|-----------------|------------------|----------------------|------------------|------------------------|------------|------------------|------------|------|------------|-------------|-----------|---|------------------|-------------|-----------------------------------|------------------|-----------------------------------|------------|-----------------|-----------|-----------------|----------|-----------------|---------------|----------------------------------|
|                         | <p>Technical Operation and Maintenance</p>              | <p>Technical manual is prepared.</p> <p>Operation records are kept for pump operation hours and consumption at each household (meter reading). Both records are compared to check water losses.</p> <p>Service restriction and water rationing is undertaken, providing water for two (2) days in a week for each village, due to water shortage.</p> <p>Water shortage is observed due to borehole capacity. New borehole is constructed in 1998, but it is not connected to the scheme yet.</p> <p>One of whole pump unit was replaced six (6) years ago, of which cost is funded by Pipeline was extended five (5) years ago, funded by GARWSP.</p> <p>Two (distribution ?) tanks were constructed by GARWSP.</p> <p>One of submersible pump is replaced in 2002, of which costs were borne by the community (Administrative Board).</p>   |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
|                         | <p>Financial Management and Transparency</p>            | <table border="1"> <tr> <td>Water Tariff Structure:</td> <td>1-3 m3:</td> <td>YR 130/m3</td> </tr> <tr> <td></td> <td>4-10m3:</td> <td>YR 160/m3</td> </tr> <tr> <td></td> <td>11m3:</td> <td>YR 190/m3</td> </tr> </table> <p>The above tariff structure has been effective since August 2005.</p> <p>Water bills are prepared by Administrative Board and distributed to each household. Users make their payments at the Office of Administrative Board.</p> <p>Administrative Board owns (purchased) the following assets; a) second-hand pick-up truck (1) purchased in 2004, b) office constructed, c) land for new well ('98) purchased from land owner, and d) store house constructed in the Board office.</p> <p>Financial records are kept.</p> <table border="1"> <tr> <td>Income in last month:</td> <td>YR 1,850,700</td> </tr> <tr> <td>Expenditure in last</td> <td>YR 807,073</td> </tr> </table> <p>Income in last month is considerably high, due to the disconnection campaign for defaulters conducted by the Administrative Board.</p> <table border="1"> <tr> <td>Average Income:</td> <td>YR 900,000/month</td> </tr> <tr> <td>Average Expenditure:</td> <td>YR 750,000/month</td> </tr> </table> <table border="1"> <tr> <td rowspan="4">Expenditure Breakdown:</td> <td>YR 258,000</td> <td>Salary/Allowance</td> </tr> <tr> <td>YR 300,000</td> <td>Fuel</td> </tr> <tr> <td>YR 200,000</td> <td>Maintenance</td> </tr> <tr> <td>YR 40,000</td> <td>Donation (for the poor, widows, mosque, and</td> </tr> </table> <table border="1"> <tr> <td rowspan="6">Personnel Costs:</td> <td>Chairperson</td> <td>YR 16,000-20,000/month (as Bonus)</td> </tr> <tr> <td>Vice Chairperson</td> <td>YR 16,000-20,000/month (as Bonus)</td> </tr> <tr> <td>Accountant</td> <td>YR 40,000/month</td> </tr> <tr> <td>Treasurer</td> <td>YR 20,000/month</td> </tr> <tr> <td>Operator</td> <td>YR 31,000/month</td> </tr> <tr> <td>Meter Reader:</td> <td>YR 22,000/month, YR 19,000/month</td> </tr> </table> <p>Administrative Board members except Accountant and Treasurer is working without salary. Chairperson and Vice-Chairperson are get bonus paid, according to management performance (possibly according to the income/profit in the scheme management), while all board members are paid with meeting allowance.</p> | Water Tariff Structure: | 1-3 m3: | YR 130/m3 |  | 4-10m3: | YR 160/m3 |  | 11m3: | YR 190/m3 | Income in last month: | YR 1,850,700 | Expenditure in last | YR 807,073 | Average Income: | YR 900,000/month | Average Expenditure: | YR 750,000/month | Expenditure Breakdown: | YR 258,000 | Salary/Allowance | YR 300,000 | Fuel | YR 200,000 | Maintenance | YR 40,000 | Donation (for the poor, widows, mosque, and | Personnel Costs: | Chairperson | YR 16,000-20,000/month (as Bonus) | Vice Chairperson | YR 16,000-20,000/month (as Bonus) | Accountant | YR 40,000/month | Treasurer | YR 20,000/month | Operator | YR 31,000/month | Meter Reader: | YR 22,000/month, YR 19,000/month |
| Water Tariff Structure: | 1-3 m3:   | YR 130/m3   |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
|                         | 4-10m3:   | YR 160/m3   |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
|                         | 11m3:   | YR 190/m3   |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
| Income in last month:   | YR 1,850,700  |   |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
| Expenditure in last     | YR 807,073  |   |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
| Average Income:         | YR 900,000/month  |   |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
| Average Expenditure:    | YR 750,000/month  |   |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
| Expenditure Breakdown:  | YR 258,000  | Salary/Allowance  |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
|                         | YR 300,000  | Fuel  |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
|                         | YR 200,000  | Maintenance   |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
|                         | YR 40,000   | Donation (for the poor, widows, mosque, and   |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
| Personnel Costs:        | Chairperson   | YR 16,000-20,000/month (as Bonus)   |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
|                         | Vice Chairperson  | YR 16,000-20,000/month (as Bonus)   |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
|                         | Accountant  | YR 40,000/month   |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
|                         | Treasurer   | YR 20,000/month   |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
|                         | Operator  | YR 31,000/month   |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
|                         | Meter Reader:   | YR 22,000/month, YR 19,000/month  |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
|                         | <p>Stakeholder Involvement / Responsibility Sharing</p> | <p>GARWSP, Local Council and Ministry of Social Affairs are involved in handing-over and registration process.</p>  |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
|                         | <p>Community Contribution</p>                           | <p>No community mobilization and training is provided by Local Council and GARWSP. C/A Existing Supply Scheme Panel and Financial Management Panel.</p>   |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
|                         | <p>Community Contracting-Out</p>                        | <p>Contract arrangement is made for Operators and Meter Readers.</p> <p>There is no other private contracting-out.</p>  |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
|                         | <p>Conflict Resolution</p>                              | <p>No conflict cases are mentioned.</p>   |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
|                         | <p>Pro-Gender and Pro-Poor</p>                          | <p>N/A</p>  |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |
|                         | <p>Remarks</p>  | <p>Economic scale merit in the scheme management is observed with served population of 12,000, which enables rehabilitation and expansion of the scheme and purchase of a vehicle, land for borehole construction, and storehouse construction with spare parts.</p>  |                         |         |           |  |         |           |  |       |           |                       |              |                     |            |                 |                  |                      |                  |                        |            |                  |            |      |            |             |           |   |                  |             |                                   |                  |                                   |            |                 |           |                 |          |                 |               |                                  |

## 12.7 Village Profile of Sites in Taiz Governorate

| SITE IDENTIFICATION PANEL                              |  |   |            |              |                        |         |
|--|--|---|------------|--------------|------------------------|---------|
| No.  | Item                                       | Description   |            |              |                        |         |
|  | Code No.                                   | T-03  |            |              |                        |         |
|  | Site Name                                  | Sheb Humran   |            |              |                        |         |
|  | Sub-District (Uzlat)                       | Al Shua'abah  |            |              |                        |         |
|  | District                                   | Al Ma'afer  |            |              |                        |         |
|  | Governorate                                | Taiz  |            |              |                        |         |
|  | Coordinates                                | Latitude  | Longitude  |              |                        |         |
|  | Coordinates (Measured Location)            |   |            |              |                        |         |
|  | Annual precipitation (rainfall)            | 600 mm  |            |              |                        |         |
|  | Population (2006)                          | 23,732  |            |              |                        |         |
|  | Population Forecast (2016)                 | 30,290  |            |              |                        |         |
|  | No. of Village (Qariah) in Total           |   |            |              |                        |         |
|  | No. of Village (Qariah) to be served       |   |            |              |                        |         |
|  | Village (Qariah) in the Community          | Name  | Population | Household    | Coordinate (Lat / Lon) |         |
|  |  | Sha'ab Al Aridha  | 1,737      | 226          |                        |         |
|  |  | Jahesa  | 3,697      | 585          |                        |         |
|  |  | Al Dhahrah  | 1,804      | 287          |                        |         |
|  |  | Al Awabel   | 614        | 94           |                        |         |
|  |  | Al Janh   | 777        | 144          |                        |         |
|  |  | Al Deer   | 651        | 88           |                        |         |
|  |  | Khawah  | 2,802      | 383          |                        |         |
|  |  | Al Anbooh   | 879        | 140          |                        |         |
|  |  | Al Kunaina  | 636        | 96           |                        |         |
|  |  | Al Waheez   | 960        | 130          |                        |         |
|  |  | Shaisaran   | 718        | 114          |                        |         |
|  |  | Sura'an   | 861        | 133          |                        |         |
|  |  | Essab   | 1,241      | 185          |                        |         |
|  |  | Kawkab  | 756        | 111          |                        |         |
|  |  | Nakha'an  | 414        | 60           |                        |         |
|  |  | Thy Habeel  | 4,006      | 615          |                        |         |
|  |  | Souq Al Ahad  | 529        | 97           |                        |         |
|  | Sheb Hemran                                | 650   | 123        |              |                        |         |
|  | Al Masha'er                                |   |            |              |                        |         |
|  | Al Messar                                  |   |            |              |                        |         |
| EXISTING WATER SUPPLY SCHEME PANEL                     |  |   |            |              |                        |         |
| No.  | Item                                       | Description   |            |              |                        |         |
| Functioning Components of Existing Water Supply Scheme | Functional Component                       | Specification   |            | Condition    | Year                   | Fund    |
|  |  |   |            |              |                        |         |
|  | Pump for Deep Well (2) Al Mahas            | Vertical  | CAPRARI    | Seasonal     | 1990                   | GAREW   |
|  | Engine for Deep Well (2) Al Mahas          |   | AIFO       | Replaced     | 2004                   | GAREW   |
|  | Pump House for Deep Well (2) Al Mahas      | RC  |            |              | 2004                   | village |
|  | Pump for Deep Well (3) Teres               | Vertical  |            | Not used     | 1980                   | village |
|  | Engine for Deep Well (3) Teres             |   |            | Not used     | 1980                   | village |
|  | Pump House for Deep Well (3) Teres         | RC  |            |              | 1998                   | GAREW   |
|  | Pump for Deep Well (4) Al Me'asha'ar       | Submersible   | GRUNDFOS   |              | 1996                   | GAREW   |
|  | Generator for Deep Well (4) Al Me'asha'ar  | 84kW  | John Deere |              | 1996                   | GAREW   |
|  | Pump House for Deep Well (4) Al Me'asha'ar | RC  |            |              | 1997                   | GAREW   |
|  | Pump for Booster No.1                      | Horizontal  | LANDINI    |              | 1994                   | GAREW   |
|  | Engine for Booster No.1                    |   | John Deere | Replaced     | 2004                   | GARWSP  |
|  | Pump House for Booster No.1                | RC  |            |              | 1994                   | GAREW   |
|  | Pump for Booster No.2                      | Horizontal  | LANDINI    |              | 2004                   | GARWSP  |
|  | Engine for Booster No.2                    | 142kW   | John Deere |              | 2004                   | GARWSP  |
|  | Pump House for Booster No.2                | RC  |            |              | 2004                   | GARWSP  |
|  | Booster Tank No.1                          | RC  | 25m3       |              | 1994                   | GAREW   |
|  | Booster Tank No.2                          | RC  | 75m3       |              | 2000                   | GARWSP  |
|  | Distribution Tank No.1                     | RC  | 75m3       | Deteriorated | 1986                   | village |
|  | Distribution Tank No.2                     | RC  | 75m3       | Too small    | 1988                   | village |
|  | Present Main Tank                          | RC  | 75m3       |              | 2000                   | GARWSP  |
|  | New Main Tank                              | RC  | 75m3       |              | 2006                   | village |
|  | Pumping Main                               | SGP   |            |              |                        |         |
|  | Distribution Main                          | SGP   |            |              |                        |         |
|  | Public Tapstand                            | 15 for mosques, 12 for schools, 2 to clinics, all with meters |            |              |                        |         |
|  | House Connection                           | 1,278   |            |              |                        |         |
| Observations   |  |   |            |              |                        |         |



## 12.7 Village Profile of Sites in Taiz Governorate

| WATER SOURCE PANEL |                                |                         |              |               |
|--------------------|--------------------------------|-------------------------|--------------|---------------|
| No.                | Item                           | Description             |              |               |
|                    | [Borehole Code]                | T-03/1 Al Jah           |              |               |
|                    | Grid (UTM)                     | North                   | East         |               |
|                    |                                | 1475729                 | 396972       |               |
|                    | Grid (Lat/Lon)                 | Lat. N                  | Lon. E       |               |
|                    |                                | 13°20' 50.1"            | 44°02' 55.2" |               |
|                    | Present Condition (Pump Type)  | Capped                  |              |               |
|                    | Elevation (m)                  | 1,257 m                 |              |               |
|                    | Aquifer/Geological Description |                         |              |               |
|                    | Year of Construction           | 2005                    |              |               |
|                    | Fund                           | GARWSP                  |              |               |
|                    | Depth (m)                      | 400 m                   |              |               |
|                    | Casing Diameter (inch)         | 12 inch                 |              |               |
|                    | Screen                         |                         |              |               |
|                    | Static Water Level (G.L.-m)    | 22.22 m                 |              |               |
|                    | Dynamic Water Level (G.L.-m)   | 44.51 m                 |              |               |
|                    | Drawdown (m)                   | 22.29 m                 |              |               |
|                    | Discharge (g/min)              | 63 g/min                | 4.0 L/sec    |               |
|                    | Specific Capacity              | 0.179 L/s/m             |              |               |
|                    | EC (mS/m)                      | 102.5 mS/m              |              |               |
|                    | pH                             | 6.97                    |              |               |
|                    | Temperature (°C)               | 27.0                    |              |               |
|                    | Remarks                        |                         |              |               |
|                    | [Borehole Code]                | T-03/2 Al Mahas         |              |               |
|                    | Grid (UTM)                     | North                   | East         |               |
|                    | Grid (Lat/Lon)                 | Lat. N                  | Lon. E       |               |
|                    |                                | 13°20' 56.7"            | 44°02' 53.6" |               |
|                    | Present Condition (Pump Type)  | Working                 | Seasonal     | Vertical pump |
|                    | Elevation (m)                  | 1,274 m                 |              |               |
|                    | Aquifer/Geological Description | Working                 | Seasonal     | Vertical pump |
|                    | Year of Construction           | 1986                    |              |               |
|                    | Fund                           | GAREW                   |              |               |
|                    | Depth (m)                      | 208 m                   |              |               |
|                    | Casing Diameter (inch)         | inch                    |              |               |
|                    | Screen                         |                         |              |               |
|                    | Static Water Level (G.L.-m)    | m                       |              |               |
|                    | Dynamic Water Level (G.L.-m)   | m                       |              |               |
|                    | Drawdown (m)                   | m                       |              |               |
|                    | Discharge (g/min)              | g/min                   | 0.0 L/sec    |               |
|                    | Specific Capacity              | L/s/m                   |              |               |
|                    | EC (mS/m)                      | 112.1 mS/m              |              |               |
|                    | pH                             | 7.14                    |              |               |
|                    | Temperature (°C)               | 28.5                    |              |               |
|                    | Remarks                        | Seasonal                |              |               |
|                    | [Borehole Code]                | T-03/3 Teres            |              |               |
|                    | Grid (UTM)                     | North                   | East         |               |
|                    | Grid (Lat/Lon)                 | Lat. N                  | Lon. E       |               |
|                    | Present Condition (Pump Type)  | Dried up after 6 months |              |               |
|                    | Elevation (m)                  | m                       |              |               |
|                    | Aquifer/Geological Description |                         |              |               |
|                    | Year of Construction           | 1980                    |              |               |
|                    | Fund                           | Village                 |              |               |
|                    | Depth (m)                      | 220 m                   |              |               |
|                    | Casing Diameter (inch)         | inch                    |              |               |
|                    | Screen                         |                         |              |               |
|                    | Static Water Level (G.L.-m)    | m                       |              |               |
|                    | Dynamic Water Level (G.L.-m)   | m                       |              |               |
|                    | Drawdown (m)                   | m                       |              |               |
|                    | Discharge (g/min)              | g/min                   | 0.0 L/sec    |               |
|                    | Specific Capacity              | L/s/m                   |              |               |
|                    | EC (mS/m)                      | mS/m                    |              |               |
|                    | pH                             |                         |              |               |
|                    | Temperature (°C)               |                         |              |               |
|                    | Remarks                        |                         |              |               |

## 12.7 Village Profile of Sites in Taiz Governorate

|                                |                      |                  |
|--------------------------------|----------------------|------------------|
| [Borehole Code]                | T-03/4 Al Me'asha'ar |                  |
| Grid (UTM)                     | North                | East             |
|                                | Lat. N               | Lon. E           |
| Grid (Lat/Lon)                 | 13°23' 54.8"         | 44°01' 07.0"     |
| Present Condition (Pump Type)  | Working              | Submersible pump |
| Elevation (m)                  | 1,366 m              |                  |
| Aquifer/Geological Description |                      |                  |
| Year of Construction           | 1998                 |                  |
| Fund                           | GAREW                |                  |
| Depth (m)                      | 260 m                |                  |
| Casing Diameter (inch)         | inch                 |                  |
| Screen                         |                      |                  |
| Static Water Level (G.L.-m)    | 24.19 m              |                  |
| Dynamic Water Level (G.L.-m)   | 28.21 m              |                  |
| Drawdown (m)                   | 4.02 m               |                  |
| Discharge (g/min)              | 67 g/min             | 4.2 L/sec        |
| Specific Capacity              | 1.044 L/s/m          |                  |
| EC (mS/m)                      | 93.9 mS/m            |                  |
| pH                             | 7.37                 |                  |
| Temperature (°C)               | 26.3                 |                  |
| Remarks                        |                      |                  |

### WATER SUPPLY PLANNING PANEL

| No. | Item                          | Description                                |                                |
|-----|-------------------------------|--|--------------------------------|
|     | [Design Parameter]            |  |                                |
|     | No. of Villages in Total      | 0  |                                |
|     | No. of Villages to be Covered | 0  |                                |
|     | Current Population (2006)     | 23,732                                     |                                |
|     | Design Population (2016)      | 30,290                                     |                                |
|     | Design Water Supply Rate      | 25 L/c/d                                   | 757 m <sup>3</sup> /day        |
|     | Type of Work Required         | Rehabilitation                             |                                |
|     | Required Facilities           | Component                                  | Construction Notes             |
|     |                               | Pump for Deep Well (1) Al Donor            | New                            |
|     |                               | Eng./Gen. for Deep Well (1) Donor          | New                            |
|     |                               | Pump House for Deep Well Donor/Village     | New                            |
|     |                               | Pump for Deep Well (4) Al Donor            | Replace                        |
|     |                               | Eng./Gen. for Deep Well (4) Donor          | Replace                        |
|     |                               | Pump House for Deep Well (4) Al Me'asha'ar |                                |
|     |                               | Pump for Booster No.1 Donor                | Replace                        |
|     |                               | Eng./Gen. for Booster No.1 Donor           | Replace                        |
|     |                               | Pump House for Booster No.1                |                                |
|     |                               | Pump for Booster No.2 Donor                | Replace                        |
|     |                               | Eng./Gen. for Booster No.2 Donor           | Replace                        |
|     |                               | Pump House for Booster No.2                |                                |
|     |                               | Pump for Booster No.3 Donor                | New                            |
|     |                               | Eng./Gen. for Booster No.3 Donor           | New                            |
|     |                               | Pump House for Booster No.3 Donor/Village  | New                            |
|     |                               | Booster Tank No.1                          |                                |
|     |                               | Booster Tank No.2                          |                                |
|     |                               | Booster Tank No.3 Donor                    | New                            |
|     |                               | Distribution Tank No.1                     |                                |
|     |                               | Distribution Tank No.2                     |                                |
|     |                               | Present Main Tank                          |                                |
|     |                               | New Main Tank                              |                                |
|     |                               | Pumping Main Donor                         | New, from deep well (1) Al Jah |
|     |                               | Distribution Main                          |                                |
|     |                               | Public Tapstand                            |                                |
|     |                               | House Connection                           |                                |
|     | Accessibility                 |  |                                |
|     | Security                      |  |                                |
|     | Observation                   |  |                                |

### OPERATION AND MAINTENANCE PANEL

| No. | Item                                 | Description   |
|-----|--------------------------------------|---|
|     | No. of Village Head (Sheikh)         | 1   |
|     | No. of Tribe                         | 1   |
|     | Observation in Current Supply Scheme | Water level in the borehole constructed in 1982 becomes very low in summer seasons. In January 2006, when this survey was conducted, pump unit on the borehole was operated for three (3) hours. Pipeline with booster pump unit from the borehole constructed in 2005 to the tank constructed also in 2005 is not installed yet. The pipelines and booster pump are provided by Netherlands cooperation, but they are still under GARWSP registration and procurement. New installation of pipeline and booster pump to the tank constructed in 2005 will serve additional seven (7) villages. |

## 12.7 Village Profile of Sites in Taiz Governorate

|  |   |                                   |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
|--|---|-----------------------------------|--------------------|--------|-------------------|------------|-----------------------------------|--------|-----------|--|--|--|--------------------|------------------|--|-------------------------|------------------|--|------------------------|------------------|------------------|------------------|------|-----------------|--------------------------------|-----------------|------------------|-----------------|-----------------------|-----------------|-----------------|----------|-----------------|------------|-----------------|-------------------|-----------------|-----------|-----------------|---------|-----------------|----------|-----------------|--------------|--|-----------------------|----------------------------|
| Mode of Ownership                                | Legal ownership is arranged by written agreement with Local Council and GARWSP.<br>The scheme management CBO is registered under Ministry of Social Affairs.  |                                   |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
| Mode of Management Entity                        | Administrative Board for the scheme management is established in 2004.<br>General Assembly, composed of users, elect thirty five (35) User Representatives. Among User Representatives, Directorial Board members were elected. Administrative Board members are further elected among Directorial Board members.<br>Administrative Board is composed of; a) director (1), b) financial manager (1), c) treasurer (1), and d) accountant (1).<br>Administrative Board employs the following operational staff; a) plumber/bill distributor (2), b) operator/watchman (4), c) meter reader (1), plumber/foreman for water rationing (2).<br>Until the Administrative and Directorial Boards were established, the scheme had been managed by the individual (i.e. traditional Sheikh management). With recognition of problems in the scheme management by Sheikh, new CBO settings with registration under Ministry of Social Affairs were decided.<br>Local Council was involved in the registration process for CBO management entities.  |                                   |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
| Organizational Management                        | Current CBO management entities are registered under Ministry of Social Affairs.<br>Constitution for the scheme management has been prepared.<br>Terms of office for Administrative and Directorial Boards are set for three (3) years by their constitution.<br>Important decisions in the scheme management are made in Directorial Board, while Administrative Board is responsible daily operation and maintenance of the scheme.<br>Directorial Board is calling regular meetings once in a month.<br>User Representative meeting is held once in a year.  |                                   |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
| Technical Operation and Maintenance              | In summer seasons, supply rationing is carried out due to water shortage, supplying two (2) days in a week in each supply area zone.<br>Borehole cleaning and pump house construction, contracting with local contractor, were undertaken by the community (scheme management), which cost YR 1.5 million.<br>Rehabilitation of water tank and most of pipelines were carried out by the community.   |                                   |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
| Financial Management and Transparency            | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"></td> <td style="width: 25%;">Fixed Contribution</td> <td style="width: 25%;">YR 100</td> </tr> <tr> <td rowspan="2">Tariff Structure:</td> <td>Up to 3 m3</td> <td>YR 450/3 m3 as fixed/basic charge</td> </tr> <tr> <td>&gt; 3 m3</td> <td>YR 150/m3</td> </tr> <tr> <td colspan="3">Tariff setting was decided by Directorial Board.</td> </tr> <tr> <td>Income in average:</td> <td colspan="2">YR 850,000/month</td> </tr> <tr> <td>Expenditure in average:</td> <td colspan="2">YR 650,000/month</td> </tr> <tr> <td rowspan="5">Expenditure breakdown:</td> <td>YR 245,000/month</td> <td>Salary/Allowance</td> </tr> <tr> <td>YR 300,000/month</td> <td>Fuel</td> </tr> <tr> <td>YR 35,000/month</td> <td>Operation and maintenance cost</td> </tr> <tr> <td>YR 25,000/month</td> <td>Fuel for Vehicle</td> </tr> <tr> <td>YR 60,000/month</td> <td>Tax for Local Council</td> </tr> <tr> <td rowspan="7">Personnel Cost:</td> <td>YR 30,000/month</td> <td>Director</td> </tr> <tr> <td>YR 20,000/month</td> <td>Accountant</td> </tr> <tr> <td>YR 25,000/month</td> <td>Financial Manager</td> </tr> <tr> <td>YR 25,000/month</td> <td>Treasurer</td> </tr> <tr> <td>YR 15,000/month</td> <td>Plumber</td> </tr> <tr> <td>YR 12,000/month</td> <td>Operator</td> </tr> <tr> <td>YR 12,000/month</td> <td>Meter Reader</td> </tr> <tr> <td></td> <td>YR 8,000-12,000/month</td> <td>Staff for supply rationing</td> </tr> </table> |                                   | Fixed Contribution | YR 100 | Tariff Structure: | Up to 3 m3 | YR 450/3 m3 as fixed/basic charge | > 3 m3 | YR 150/m3 | Tariff setting was decided by Directorial Board. |  |  | Income in average: | YR 850,000/month |  | Expenditure in average: | YR 650,000/month |  | Expenditure breakdown: | YR 245,000/month | Salary/Allowance | YR 300,000/month | Fuel | YR 35,000/month | Operation and maintenance cost | YR 25,000/month | Fuel for Vehicle | YR 60,000/month | Tax for Local Council | Personnel Cost: | YR 30,000/month | Director | YR 20,000/month | Accountant | YR 25,000/month | Financial Manager | YR 25,000/month | Treasurer | YR 15,000/month | Plumber | YR 12,000/month | Operator | YR 12,000/month | Meter Reader |  | YR 8,000-12,000/month | Staff for supply rationing |
|  | Fixed Contribution  | YR 100                            |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
| Tariff Structure:                                | Up to 3 m3  | YR 450/3 m3 as fixed/basic charge |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
|  | > 3 m3  | YR 150/m3                         |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
| Tariff setting was decided by Directorial Board. |   |                                   |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
| Income in average:                               | YR 850,000/month  |                                   |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
| Expenditure in average:                          | YR 650,000/month  |                                   |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
| Expenditure breakdown:                           | YR 245,000/month  | Salary/Allowance                  |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
|  | YR 300,000/month  | Fuel                              |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
|  | YR 35,000/month   | Operation and maintenance cost    |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
|  | YR 25,000/month   | Fuel for Vehicle                  |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
|  | YR 60,000/month   | Tax for Local Council             |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
| Personnel Cost:                                  | YR 30,000/month   | Director                          |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
|  | YR 20,000/month   | Accountant                        |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
|  | YR 25,000/month   | Financial Manager                 |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
|  | YR 25,000/month   | Treasurer                         |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
|  | YR 15,000/month   | Plumber                           |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
|  | YR 12,000/month   | Operator                          |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
|  | YR 12,000/month   | Meter Reader                      |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
|  | YR 8,000-12,000/month   | Staff for supply rationing        |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
| Stakeholder Involvement / Responsibility Sharing | Netherlands supports provision of booster pump and pipeline materials from the borehole to the distribution tank newly constructed in 2005.<br>Netherlands further supports training provision for four (4) Board members in technical, administrative, and financial management. The training workshop is held in Hodeida, of which duration is for one (1) week.<br>Local Council was involved in the CBO registration procedures, and provides regular on-site monitoring once in every three (3) month to check administrative management and GARWSP provides (technical) supervision.  |                                   |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
| Community Contribution                           | Pumping house was constructed by the community in 1984.<br>Administrative Board rents their office and storehouse at their expense.<br>One (1) pick-up truck is owned by the Administrative Board.  |                                   |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
| Community Contracting-Out                        | There is no private contracting-out setting for regular management, operation and maintenance of the scheme.<br>Ad hoc contracts were concluded for major maintenance, extension, and rehabilitation.   |                                   |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
| Conflict Resolution                              | No conflict cases are mentioned.  |                                   |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
| Pro-Gender and Pro-Poor                          | One (1) female member is participating in Directorial Board (30 years old).   |                                   |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |
| Remarks  | There are needs perceived by the Board members that increase of tank capacity and submersible and booster pump installations.   |                                   |                    |        |                   |            |                                   |        |           |  |  |  |                    |                  |  |                         |                  |  |                        |                  |                  |                  |      |                 |                                |                 |                  |                 |                       |                 |                 |          |                 |            |                 |                   |                 |           |                 |         |                 |          |                 |              |  |                       |                            |

## 12.7 Village Profile of Sites in Taiz Governorate

| SITE IDENTIFICATION PANEL          |  |                          |  |                   |                           |              |
|------------------------------------|--|--------------------------|--|-------------------|---------------------------|--------------|
| No.                                | Item                                       | Description              |  |                   |                           |              |
|                                    | Code No.                                   | T-04                     |  |                   |                           |              |
|                                    | Site Name                                  | Yafiq Bani Hamad         |  |                   |                           |              |
|                                    | Sub-District (Uzlat)                       | Bani Hamad               |  |                   |                           |              |
|                                    | District                                   | Al Mawaset               |  |                   |                           |              |
|                                    | Governorate                                | Taiz                     |  |                   |                           |              |
|                                    | Coordinates                                | Latitude                 | Longitude  |                   |                           |              |
|                                    | Coordinates (Measured Location)            |                          |  |                   |                           |              |
|                                    | Annual precipitation (rainfall)            | 550 mm                   |  |                   |                           |              |
|                                    | Population (2006)                          | 6,844                    |  |                   |                           |              |
|                                    | Population Forecast (2016)                 | 8,735                    |  |                   |                           |              |
|                                    | No. of Village (Qariah) in Total           |                          |  |                   |                           |              |
|                                    | No. of Village (Qariah) to be served       |                          |  |                   |                           |              |
|                                    | Village (Qariah) in the Community          | Name                     | Population   | Household         | Coordinate (Lat / Lon)    |              |
|                                    |  | Bani Hasan               | 399  | 57                |                           |              |
|                                    |  | Deer Al Shareef          | 301  | 43                |                           |              |
|                                    |  | Bardad                   | 455  | 65                |                           |              |
|                                    |  | Nama'a                   | 420  | 30                |                           |              |
|                                    |  | Al Thaibah               | 273  | 39                |                           |              |
|                                    |  | Al Mashgob               | 910  | 130               |                           |              |
|                                    |  | Al Lukaimah              | 1,099  | 157               |                           |              |
|                                    |  | Al Ashraf                | 161  | 23                |                           |              |
|                                    |  | Thy Al Bali              | 63   | 9                 |                           |              |
|                                    |  | Al Kahfah                | 140  | 20                |                           |              |
|                                    |  | Al Lafag                 | 98   | 14                |                           |              |
|                                    |  | Al Suna'                 | 140  | 20                |                           |              |
|                                    |  | Al Roseen                | 91   | 13                |                           |              |
|                                    |  | Al Nagad                 | 77   | 11                |                           |              |
|                                    |  | Bahama                   | 168  | 24                |                           |              |
|                                    |  | Al Sdad                  | 70   | 10                |                           |              |
|                                    |  | Al Kibab                 | 49   | 7                 |                           |              |
|                                    |  | Al Nutaa                 | 140  | 20                |                           |              |
|                                    |  | Al Nowiardah             | 161  | 23                |                           |              |
|                                    |  | Al Makateen              | 119  | 17                |                           |              |
|                                    |  | Al Ayen                  | 210  | 30                |                           |              |
|                                    |  | Dar Al Nakeel            | 42   | 6                 |                           |              |
|                                    |  | Yafiq                    | 210  | 30                |                           |              |
|                                    |  | Kubaishah                | 238  | 34                |                           |              |
|                                    |  | Mahareer                 | 210  | 30                |                           |              |
|                                    |  | Dar Al Shareef           | 600  | 50                |                           |              |
|                                    | Al Nakeel                                  |                          |  |                   |                           |              |
|                                    | Qasat Al Shareef                           |                          |  |                   |                           |              |
|                                    | Al Ribat                                   |                          |  |                   |                           |              |
|                                    | Akamat Al Suna'                            |                          |  |                   |                           |              |
|                                    | Al Thahrah                                 |                          |  |                   |                           |              |
|                                    | Goa  |                          |  |                   |                           |              |
|                                    | Qahareer                                   |                          |  |                   |                           |              |
|                                    | Zabad                                      |                          |  |                   |                           |              |
|                                    | Al Kabah                                   |                          |  |                   |                           |              |
| EXISTING WATER SUPPLY SCHEME PANEL |  |                          |  |                   |                           |              |
| No.                                | Item                                       | Description              |  |                   |                           |              |
|                                    | Functioning                                | Functional               |  |                   |                           |              |
|                                    | Components of Existing Water Supply Scheme | Component                | Specification  |                   | Condition                 | Year Fund    |
|                                    |  | Pump for Deep Well       | Submersible  | Scheckti          |                           | 1993 GAREW   |
|                                    |  | Generator for Deep Well  | 48kW   | IVECO             |                           | 1993 GAREW   |
|                                    |  | Pump House for Deep Well | RC   |                   |                           | 1993 Village |
|                                    |  | Pump for Booster         | Horizontal   | Luigi Biraghi     | 20m <sup>3</sup> /hr, 400 | 1993 GAREW   |
|                                    |  | Engine for Booster       |  | IVECO             |                           | 1993 GAREW   |
|                                    |  | Pump House for Booster   | Concrete   |                   |                           | 1993 Village |
|                                    |  | Booster Tank             | RC   | 25m <sup>3</sup>  |                           | 1995 GAREW   |
|                                    |  | Distribution Tank        | RC   | 100m <sup>3</sup> |                           | 1995 GAREW   |
|                                    |  | Pumping Main             | SGP  |                   |                           | 1995 GAREW   |
|                                    |  | Distribution Main        | SGP  |                   |                           | 1995 GAREW   |
|                                    |  | Public Tapstand          | 13 mosques, 2 schools, 1 clinic, 1 booster station, 1 borehole; only mosques with meters |                   |                           |              |
|                                    |  | House Connection         | 400  |                   |                           |              |
|                                    | Observations                               |                          |  |                   |                           |              |

## 12.7 Village Profile of Sites in Taiz Governorate

| WATER SOURCE PANEL              |                                      |  |                         |
|---------------------------------|--------------------------------------|--|-------------------------|
| No.                             | Item                                 | Description  |                         |
|                                 | <b>[Borehole Code]</b>               |  |                         |
|                                 | Grid (UTM)                           | North<br>147197  | East<br>402125          |
|                                 | Grid (Lat/Lon)                       | Lat. N<br>13°18' 46.5"   | Lon. E<br>44°05' 46.8"  |
|                                 | Present Condition (Pump Type)        | Working  | Submersible pump        |
|                                 | Elevation (m)                        | 1,381 m  |                         |
|                                 | Aquifer/Geological Description       |  |                         |
|                                 | Year of Construction                 | 1982   |                         |
|                                 | Fund                                 | Village  |                         |
|                                 | Depth (m)                            | 220 m  |                         |
|                                 | Casing Diameter (inch)               | 8 inch   |                         |
|                                 | Screen                               |  |                         |
|                                 | Static Water Level (G.L.-m)          | 124.1 m  |                         |
|                                 | Dynamic Water Level (G.L.-m)         | 126.01 m   |                         |
|                                 | Drawdown (m)                         | 1.91 m   |                         |
|                                 | Discharge (g/min)                    | 48 g/min   | 3.0 L/sec               |
|                                 | Specific Capacity                    | 1,571 L/s/m  |                         |
|                                 | EC (mS/m)                            | 87.7 mS/m  |                         |
|                                 | pH                                   | 7.27   |                         |
|                                 | Temperature (°C)                     | 28.1   |                         |
|                                 | Remarks                              |  |                         |
| WATER SUPPLY PLANNING PANEL     |                                      |  |                         |
| No.                             | Item                                 | Description  |                         |
|                                 | <b>[Design Parameter]</b>            |  |                         |
|                                 | No. of Villages in Total             | 0  |                         |
|                                 | No. of Villages to be Covered        | 0  |                         |
|                                 | Current Population (2006)            | 6,844  |                         |
|                                 | Design Population (2016)             | 8,735  |                         |
|                                 | Design Water Supply Rate             | 25 L/c/d   | 218 m <sup>3</sup> /day |
|                                 | Type of Work Required                | Rehabilitation   |                         |
|                                 | Required Facilities                  | Component  | Constructed by          |
|                                 |                                      | Pump for Deep Well   | Donor                   |
|                                 |                                      | Eng./Gen. for Deep Well  | Donor                   |
|                                 |                                      | Pump House for Deep Well   |                         |
|                                 |                                      | Pump for Booster   | Donor                   |
|                                 |                                      | Eng./Gen. for Booster  | Donor                   |
|                                 |                                      | Pump House for Booster   |                         |
|                                 |                                      | Booster Tank   | Donor/GARWSP/Village    |
|                                 |                                      | Distribution Tank  | Donor/GARWSP/Village    |
|                                 |                                      | Pumping Main   |                         |
|                                 |                                      | Distribution Main  | Village                 |
|                                 |                                      | Public Tapstand  |                         |
|                                 |                                      | House Connection   |                         |
|                                 | Accessibility                        |  |                         |
|                                 | Security                             |  |                         |
|                                 | Observation                          |  |                         |
| OPERATION AND MAINTENANCE PANEL |                                      |  |                         |
| No.                             | Item                                 | Description  |                         |
|                                 | No. of Village Head (Sheikh)         | 1  |                         |
|                                 | No. of Tribe                         | 1  |                         |
|                                 | Observation in Current Supply Scheme | <p>The existing supply scheme was completed in 1995, although the borehole was constructed in 1982. Until 1995, there had been no supply system, and supply service had not been available.</p> <p>Borehole pump unit (submersible pump) was inspected by the contractor hired by the community (Administrative Board for the scheme management). It was reported that overhaul and considerable maintenance is necessary, otherwise it would be not operational after six (6) months. The cost for overhaul and maintenance is estimated at RY 230,000. Pump unit for borehole is currently operating 8-10 hours in a day.</p> <p>Capacity/Force power (48 KW) of generator for borehole pump unit is not enough to satisfy the current demand.</p> <p>Capacity/Force power (26KW) of generator for booster pump is not enough to satisfy the current demand.</p> <p>Diameter of pipeline installed is not large enough to satisfy the current demand.</p> <p>Thirty seven (37) (sub-) villages, each village consisting of 15-40 households, are currently served. With extension plan, additional thirteen (13) (sub-) villages would be covered.</p> |                         |
|                                 | Mode of Ownership                    | <p>Legal ownership is not arranged with written agreement/memorandum.</p> <p>Agreement/Memorandum for handing-over was prepared by GARWSP.</p>   |                         |

## 12.7 Village Profile of Sites in Taiz Governorate

|                         |  |  |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
|-------------------------|--|--|-------------------|--------|-----------------------------------|--|--------|-----------|--------------------|------------------|--|-------------------------|------------------|--|-------------------------|------------|------|-----------|-------------------------------|-----------|------------------|----------|-------|-----------------|-----------------|--------------------------------|-----------------|---------|-----------------|--------------|----------------|--------------|----------------|-------------------------------------|
|                         | Mode of Management Entity                        | <p>Local Council, under direction of Governor, appointed Monitoring/Consulting Committee formed by twenty one (21) community members in 1999.</p> <p>In the same year, the Monitoring/Consulting Committee appointed Administrative Board consisted of five (5) community members as followed; a) director (1), b) financial manager (1), c) treasure (1), d) technical supervisor (1), e) accountant (1).</p> <p>Administrative Board membership is recognized by Local Council.</p> <p>Administrative Board further appointed two (2) operators.</p> <p>Before 1999, the scheme had been managed by one (1) Aqil.</p>  |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
|                         | Organizational Management                        | <p>Constitution for CBO scheme management is not prepared.</p> <p>Managerial decisions entailed with expense more than RY 100,000 is made by Monitoring/Consulting Committee, while decision entailed with cost less than it can be made by Administrative Board.</p> <p>Terms of office for Administrative Board are decided for two (2) years.</p> <p>After terms of office for current Administrative Board, election of the Board members, instead of appointment, is planned.</p>   |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
|                         | Technical Operation and Maintenance              | <p>Extension of pipeline (6 m x 200 pipes) was carried out by the community.</p> <p>Maintenance of submersible pump for borehole was carried out in 2003 replacing impeller and rods, of which cost amounting to YR 1.2 million borne by the scheme account.</p> <p>Maintenance of generator was undertaken by the community.</p>  |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
|                         | Financial Management and Transparency            | <p>No bank account is opened. The revenues are kept by Financial Manager.</p> <table border="1"> <tr> <td>Tariff Structure:</td> <td>1-3 m3</td> <td>YR 180 as fixed charge up to 3 m3</td> </tr> <tr> <td></td> <td>3 m3 -</td> <td>YR 200/m3</td> </tr> </table> <p>Water provided through public stands are free, located at school, mosque, and other public</p> <p>Water is provided at free of charge for the poor (e.g. female headed families), probably obtaining water from public stands.</p> <p>Water bills are prepared at Administrative Board Office, then, distributed to each user households. Revenue collector visits each village, calls user households, and collects revenue.</p> <p>The scheme account is audited by Monitoring/Consulting Committee each after three (3) to six (6) months.</p> <table border="1"> <tr> <td>Income in average:</td> <td colspan="2">YR 250,000/month</td> </tr> <tr> <td>Expenditure in average:</td> <td colspan="2">YR 210,000/month</td> </tr> <tr> <td rowspan="4">Expenditure break down:</td> <td>YR 130,000</td> <td>Fuel</td> </tr> <tr> <td>YR 10,000</td> <td>Communication, transportation</td> </tr> <tr> <td>YR 51,000</td> <td>Salary/Allowance</td> </tr> <tr> <td>YR 7,000</td> <td>Bonus</td> </tr> </table> <p>One (1) percent of income is paid to Local Council as tax.</p> <table border="1"> <tr> <td rowspan="5">Personnel Cost:</td> <td>YR 15,000/month</td> <td>Manager, and Financial Manager</td> </tr> <tr> <td>YR 12,000/month</td> <td>Plumber</td> </tr> <tr> <td>YR 15,000/month</td> <td>Operator (a)</td> </tr> <tr> <td>YR 9,000/month</td> <td>Operator (b)</td> </tr> <tr> <td>YR 7,000/month</td> <td>Accountant, and other Board Members</td> </tr> </table> | Tariff Structure: | 1-3 m3 | YR 180 as fixed charge up to 3 m3 |  | 3 m3 - | YR 200/m3 | Income in average: | YR 250,000/month |  | Expenditure in average: | YR 210,000/month |  | Expenditure break down: | YR 130,000 | Fuel | YR 10,000 | Communication, transportation | YR 51,000 | Salary/Allowance | YR 7,000 | Bonus | Personnel Cost: | YR 15,000/month | Manager, and Financial Manager | YR 12,000/month | Plumber | YR 15,000/month | Operator (a) | YR 9,000/month | Operator (b) | YR 7,000/month | Accountant, and other Board Members |
| Tariff Structure:       | 1-3 m3   | YR 180 as fixed charge up to 3 m3  |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
|                         | 3 m3 -   | YR 200/m3  |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
| Income in average:      | YR 250,000/month                                 |  |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
| Expenditure in average: | YR 210,000/month                                 |  |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
| Expenditure break down: | YR 130,000                                       | Fuel   |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
|                         | YR 10,000  | Communication, transportation  |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
|                         | YR 51,000  | Salary/Allowance   |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
|                         | YR 7,000   | Bonus  |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
| Personnel Cost:         | YR 15,000/month                                  | Manager, and Financial Manager   |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
|                         | YR 12,000/month                                  | Plumber  |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
|                         | YR 15,000/month                                  | Operator (a)   |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
|                         | YR 9,000/month                                   | Operator (b)   |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
|                         | YR 7,000/month                                   | Accountant, and other Board Members  |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
|                         | Stakeholder Involvement / Responsibility Sharing | <p>Local Council undertook community mobilization to form CBO (Monitoring/Consulting Committee and Administrative Board).</p> <p>The scheme account is audited by Local Council every 3 months.</p> <p>GARWSP provides (technical) supervision.</p>  |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
|                         | Community Contribution                           | <p>Community contributed as followed; 1) construction of pump house, 2) house connection, 3) installation of five (5) public stands, 4) extension of pipelines.</p>  |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
|                         | Community Contracting-Out                        | <p>There is no regular private contracting-out settings.</p> <p>The Administrative Board hired engineering company to investigate generator and submersible pump.</p>  |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
|                         | Conflict Resolution                              | <p>No conflict cases are reported.</p>   |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |
|                         | Pro-Gender and Pro-Poor Remarks                  | <p>The community requestd additional water tank and pipeline extension.</p>  |                   |        |                                   |  |        |           |                    |                  |  |                         |                  |  |                         |            |      |           |                               |           |                  |          |       |                 |                 |                                |                 |         |                 |              |                |              |                |                                     |

## 12.7 Village Profile of Sites in Taiz Governorate

| SITE IDENTIFICATION PANEL |                                 | Description                 |            |           |                        |
|---------------------------|---------------------------------|-----------------------------|------------|-----------|------------------------|
| No.                       | Item                            |                             |            |           |                        |
|                           | Code No.                        | T-05                        |            |           |                        |
|                           | Site Name                       | Al Azaz                     |            |           |                        |
|                           | District                        | Al Shamayaten               |            |           |                        |
|                           | Governorate                     | Taiz                        |            |           |                        |
|                           | Annual precipitation (rainfall) | 470 mm                      |            |           |                        |
|                           | Population (2006)               | 11,784                      |            |           |                        |
|                           | Population Forecast (2016)      | 15,040                      |            |           |                        |
|                           |                                 | Name                        | Population | Household | Coordinate (Lat / Lon) |
|                           |                                 | Deabash                     |            |           |                        |
|                           |                                 | Al Najd                     |            |           |                        |
|                           |                                 | Manjara                     |            |           |                        |
|                           |                                 | Al Kareef                   |            |           |                        |
|                           |                                 | Al Maidan                   |            |           |                        |
|                           |                                 | Al Sharaf                   |            |           |                        |
|                           |                                 | Al Darkama                  |            |           |                        |
|                           |                                 | Al Dhua'a                   |            |           |                        |
|                           |                                 | Al Zareebah                 |            |           |                        |
|                           |                                 | Dar Al Beer                 |            |           |                        |
|                           |                                 | Al Suqam                    |            |           |                        |
|                           |                                 | Al Saraha                   |            |           |                        |
|                           |                                 | Nawbat Al Beer              |            |           |                        |
|                           |                                 | Hushaifa                    |            |           |                        |
|                           |                                 | Al Dumna                    |            |           |                        |
|                           |                                 | Kuraiker                    |            |           |                        |
|                           |                                 | Al Qubah                    |            |           |                        |
|                           |                                 | Al Me'alaf                  |            |           |                        |
|                           |                                 | Hawob Ana'am                |            |           |                        |
|                           |                                 | Akmat Al Aumq               |            |           |                        |
|                           |                                 | Al Aumq                     |            |           |                        |
|                           |                                 | Al Tayari                   |            |           |                        |
|                           |                                 | Al Kadarah                  |            |           |                        |
|                           |                                 | Al Qawoz                    |            |           |                        |
|                           |                                 | Muhaiseran                  |            |           |                        |
|                           |                                 | Al Jame'e                   |            |           |                        |
|                           |                                 | Al Khazega                  |            |           |                        |
|                           |                                 | Al Maqla                    |            |           |                        |
|                           |                                 | Hadha                       |            |           |                        |
|                           |                                 | Al Matnah                   |            |           |                        |
|                           |                                 | Al Musalfer                 |            |           |                        |
|                           |                                 | Al Sawon                    |            |           |                        |
|                           |                                 | Al Akami Al Sawda           |            |           |                        |
|                           |                                 | Al Rehnat                   |            |           |                        |
|                           |                                 | Al Maznam                   |            |           |                        |
|                           |                                 | Haigat Al Howb              |            |           |                        |
|                           |                                 | Sha'ab Rashed               |            |           |                        |
|                           |                                 | Al Hahrain                  |            |           |                        |
|                           |                                 | Al Ta'won                   |            |           |                        |
|                           |                                 | Qama'rah                    |            |           |                        |
|                           |                                 | Qahfat Alyash               |            |           |                        |
|                           |                                 | Al Showaib                  |            |           |                        |
|                           |                                 | Al Kadrah                   |            |           |                        |
|                           |                                 | Al Janad                    |            |           |                        |
|                           |                                 | Al Makhbey                  |            |           |                        |
|                           |                                 | Al She'bain                 |            |           |                        |
|                           |                                 | Al Nazeeha                  |            |           |                        |
|                           |                                 | Al Door                     |            |           |                        |
|                           |                                 | Sha'ab Al Saif              |            |           |                        |
|                           |                                 | Sha'ab Ateyah               |            |           |                        |
|                           |                                 | Al Rawo                     |            |           |                        |
|                           |                                 | Sakrah                      |            |           |                        |
|                           |                                 | Al Qefqaf                   |            |           |                        |
|                           |                                 | Al Mebraa                   |            |           |                        |
|                           |                                 | Al Haleeh                   |            |           |                        |
|                           |                                 | Al Mansourah                |            |           |                        |
|                           |                                 | Manaha Al Olya              |            |           |                        |
|                           |                                 | Manaha Al Sufla             |            |           |                        |
|                           |                                 | Al Jandain & Makshara       |            |           |                        |
|                           |                                 | Al Shareja                  |            |           |                        |
|                           |                                 | Khalala                     |            |           |                        |
|                           |                                 | Al Mehaal                   |            |           |                        |
|                           |                                 | Al Asalam                   |            |           |                        |
|                           |                                 | Ma'bal                      |            |           |                        |
|                           |                                 | Saferah                     |            |           |                        |
|                           |                                 | Qahfat Al Safa & Al Moqahwi |            |           |                        |
|                           |                                 | Al Marow                    |            |           |                        |
|                           |                                 | Al Kamar                    |            |           |                        |
|                           |                                 | Hakeema                     |            |           |                        |
|                           |                                 | Al Sha'ab                   |            |           |                        |
|                           |                                 | Al Kharoot                  |            |           |                        |
|                           |                                 | Al Humor                    |            |           |                        |
|                           |                                 | Muhaileqa                   |            |           |                        |
|                           |                                 | Al Maqsoos                  |            |           |                        |
|                           |                                 | Al Arazah                   |            |           |                        |
|                           |                                 | Al Qowab                    |            |           |                        |
|                           |                                 | Al Awass                    |            |           |                        |
|                           |                                 | Al Adana                    |            |           |                        |
|                           |                                 | Al Neqaq                    |            |           |                        |
|                           |                                 | Al Khad                     |            |           |                        |
|                           |                                 | Al Suqd                     |            |           |                        |
|                           |                                 | Al Maqareedh                |            |           |                        |

Village (Qariah) in the Community

## 12.7 Village Profile of Sites in Taiz Governorate

| EXISTING WATER SUPPLY SCHEME PANEL |  |  |                |                               |                  |           |             |
|------------------------------------|--|--|----------------|-------------------------------|------------------|-----------|-------------|
| No.                                | Item                                       | Description  |                |                               |                  |           |             |
|                                    | Functioning                                | Functional   | Specification  |                               | Condition        | Year      | Fund        |
|                                    | Components of Existing Water Supply Scheme | Component  |                |                               |                  |           |             |
|                                    |  | Pump for Deep Well (1) Marda'a Alhomary  | Vertical       | CAPRARI                       | Overhaul free    | 1985      | SHC         |
|                                    |  | Engine for Deep Well (1) Marda'a Alhomary  |                | Perkins                       |                  | 2004      | Village     |
|                                    |  | Pump House for Deep Well (1) Marda'a   | RC             |                               |                  | 1985      | Village     |
|                                    |  | Pump for Deep Well (2) Sohayb  | Vertical       | CAPRARI                       | Overhaul free    | 1993      | Min. Agric  |
|                                    |  | Engine for Deep Well (2) Sohayb  |                | Technodrive                   |                  | 1993      | Min. Agric  |
|                                    |  | Pump House for Deep Well (2) Sohayb  | RC             |                               |                  | 1992      | Village     |
|                                    |  | Pump for Deep Well (3) Wadi Masan  | Submersible    |                               | GRUNDFOS         | 2003      | GARWSP      |
|                                    |  | Generator for Deep Well (3) Wadi Masan   | 116KVA         | John Deere                    |                  | 2003      | GARWSP      |
|                                    |  | Pump House for Deep Well (3) Wadi Masan  | RC             |                               |                  | 1996      | VGAREW      |
|                                    |  | Pump for Spring (1)  | Vertical       | GRUNDFOS                      |                  | 1979      | Village     |
|                                    |  | Engine for Spring (1)  |                | Lister                        |                  | 1979      | Village     |
|                                    |  | Pump for Spring (2)  | Vertical, 30 r | GRUNDFOS                      |                  | 1979      | SHC         |
|                                    |  | Engine for Spring (2)  |                | DORMAN                        |                  | 2003      |             |
|                                    |  | Pump House for Spring (1&2)  | RC             |                               |                  | 1980      | Village     |
|                                    |  | Pump for Booster   | Horizontal     | CAPRARI                       |                  | 1995      | Village     |
|                                    |  | Engine for Booster   |                | Perkins                       |                  | 2002      | Village     |
|                                    |  | Pump House for Booster   | RC             |                               |                  | 1995      | Village     |
|                                    |  | Booster Tank   | RC             | 60m3                          | Also distributed | 1985      | SHC         |
|                                    |  | Distribution Tank No.1   | RC             | 30m3                          | Not used now     | 1979      | SHC         |
|                                    |  | Distribution Tank No.2   | RC             | 200m3                         | Now too small    | 1985      | SHC         |
|                                    |  | Pumping Main   | SGP            |                               |                  | 1979-1996 | *           |
|                                    |  | Distribution Main  | SGP            |                               |                  | 1979 on   | Village+SHC |
|                                    |  | Public Tapstand  |                | 22 for mosques, 7 for schools |                  |           |             |
|                                    |  | House Connection   |                | 1,501                         |                  |           |             |
|                                    | Observations                               | SHC: Southern Highlands Corporation.<br>*Pumping main: spring to tank, 1979 by SHC; Borehole 1 to booster and main tank, 1985 by SHC; Borehole 2 to borehole 1, 1985 by village; Borehole 3 to tank, 1996 by GAREW |                |                               |                  |           |             |

| WATER SOURCE PANEL |                                |                           |              |  |  |  |
|--------------------|--------------------------------|---------------------------|--------------|--|--|--|
| No.                | Item                           | Description               |              |  |  |  |
|                    | <b>[Borehole Code]</b>         | T-05/1 Marda'a Alhomary   |              |  |  |  |
|                    | Grid (UTM)                     | North                     | East         |  |  |  |
|                    |                                | 1462356                   | 395783       |  |  |  |
|                    | Grid (Lat/Lon)                 | Lat. N                    | Lon. E       |  |  |  |
|                    |                                | 13°13' 34.5"              | 44°02' 17.8" |  |  |  |
|                    | Present Condition (Pump Type)  | Not working Vertical pump |              |  |  |  |
|                    | Elevation (m)                  | 1,377 m                   |              |  |  |  |
|                    | Aquifer/Geological Description |                           |              |  |  |  |
|                    | Year of Construction           | 1985                      |              |  |  |  |
|                    | Fund                           | Southern Highlands Corp.  |              |  |  |  |
|                    | Depth (m)                      | 120 m                     |              |  |  |  |
|                    | Casing Diameter (inch)         | 8-5/8 inch                |              |  |  |  |
|                    | Screen                         |                           |              |  |  |  |
|                    | Static Water Level (G.L.-m)    | 8.2 m                     |              |  |  |  |
|                    | Dynamic Water Level (G.L.-m)   | 53.39 m                   |              |  |  |  |
|                    | Drawdown (m)                   | 45.19 m                   |              |  |  |  |
|                    | Discharge (g/min)              | 32 g/min                  | 2.0 L/sec    |  |  |  |
|                    | Specific Capacity              | 0.044 L/s/m               |              |  |  |  |
|                    | EC (mS/m)                      | 167.5 mS/m                |              |  |  |  |
|                    | pH                             | 7.03                      |              |  |  |  |
|                    | Temperature (°C)               | 27.0                      |              |  |  |  |
|                    | Remarks                        | High Fe content(?)        |              |  |  |  |



## 12.7 Village Profile of Sites in Taiz Governorate

|                                |   |                   |
|--------------------------------|---|-------------------|
| <b>[Borehole Code]</b>         | T-05/2 Sohayb   |                   |
| Grid (UTM)                     | North   | East              |
|                                | 1462113   | 396109            |
| Grid (Lat/Lon)                 | Lat. N  | Lon. E            |
|                                | 13°13' 27.2"  | 44°02' 28.4"      |
| Present Condition (Pump Type)  | Working   | Vertical pump     |
| Elevation (m)                  | 1,379 m   |                   |
| Aquifer/Geological Description |   |                   |
| Year of Construction           | 1992  |                   |
| Fund                           | Village   |                   |
| Depth (m)                      | 120 m   |                   |
| Casing Diameter (inch)         | 8-5/8 inch  |                   |
| Screen                         |   |                   |
| Static Water Level (G.L.-m)    | 9 m   |                   |
| Dynamic Water Level (G.L.-m)   | 50 m  |                   |
| Drawdown (m)                   | 41 m  |                   |
| Discharge (g/min)              | 32 g/min  | 2.0 L/sec         |
| Specific Capacity              | 0.049 L/s/m   |                   |
| EC (mS/m)                      | 82 mS/m   |                   |
| pH                             | 6.9   |                   |
| Temperature (°C)               | 28.1  |                   |
| Remarks                        | High Fe content, cannot use                                 |                   |
| <b>[Borehole Code]</b>         | T-05/3 Wadi Masan   |                   |
| Grid (UTM)                     | North   | East              |
|                                | 1460825   | 396602            |
| Grid (Lat/Lon)                 | Lat. N  | Lon. E            |
|                                | 13°12' 45"  | 44°02' 45"        |
| Present Condition (Pump Type)  | Working   | Submersible pump  |
| Elevation (m)                  | 1,418 m   |                   |
| Aquifer/Geological Description |   |                   |
| Year of Construction           | 1996  |                   |
| Fund                           | GARWSP  |                   |
| Depth (m)                      | 160 m   |                   |
| Casing Diameter (inch)         | 8-5/8 inch  |                   |
| Screen                         |   |                   |
| Static Water Level (G.L.-m)    | 80?   | m                 |
| Dynamic Water Level (G.L.-m)   | 120?  | m                 |
| Drawdown (m)                   | 40 m  |                   |
| Discharge (g/min)              | 132 g/min   | 8.3 L/sec         |
| Specific Capacity              | 0.208 L/s/m   |                   |
| EC (mS/m)                      | mS/m  |                   |
| pH                             |   |                   |
| Temperature (°C)               |   |                   |
| Remarks                        | Impeller dropped in well, but does not affect pumping rate? |                   |
| <b>[Spring Code]</b>           | Spring (Al Hagareen)  |                   |
| Grid (UTM)                     | North   | East              |
|                                | 1462162   | 400154            |
| Grid (Lat/Lon)                 | Lat. N  | Lon. E            |
|                                | 13°13' 28.9"  | 44°04' 42.7"      |
| Present Condition (Pump Type)  | Working   | Vertical pump × 2 |
| Elevation (m)                  | 1,569 m   |                   |
| Aquifer/Geological Description |   |                   |
| Year of Construction           | 1979  |                   |
| Fund                           | Village30% and SHC70%                                       |                   |
| Depth (m)                      | m   |                   |
| Casing Diameter (inch)         | inch  |                   |
| Screen                         |   |                   |
| Static Water Level (G.L.-m)    | 0.0 m   |                   |
| Dynamic Water Level (G.L.-m)   | m   |                   |
| Drawdown (m)                   | m   |                   |
| Discharge (g/min)              | g/min   | 0.0 L/sec         |
| Specific Capacity              | L/s/m   |                   |
| EC (mS/m)                      | 109.3 mS/m  |                   |
| pH                             | 7.12  |                   |
| Temperature (°C)               | 24.3  |                   |
| Remarks                        |   |                   |

## 12.7 Village Profile of Sites in Taiz Governorate

| WATER SUPPLY PLANNING PANEL     |                                      |   |                         |
|---------------------------------|--------------------------------------|---|-------------------------|
| No.                             | Item                                 | Description   |                         |
|                                 | <b>[Design Parameter]</b>            |   |                         |
|                                 | No. of Villages in Total             |   |                         |
|                                 | No. of Villages to be Covered        |   |                         |
|                                 | Current Population (2006)            | 11,784  |                         |
|                                 | Design Population (2016)             | 15,040  |                         |
|                                 | Design Water Supply Rate             | 30 L/c/d  | 451 m <sup>3</sup> /day |
|                                 | Type of Work Required                | Rehabilitation  |                         |
|                                 | Required Facilities                  | Component   | Constructed by          |
|                                 |                                      | Pump for Deep Well (1) Marda'a Alhomary   | Donor                   |
|                                 |                                      | Engine for Deep Well (1) Marda'a Alhomary   | Donor                   |
|                                 |                                      | Pump House for Deep Well (1) Marda'a  |                         |
|                                 |                                      | Pump for Deep Well (2) Sohayb   | Donor                   |
|                                 |                                      | Engine for Deep Well (2) Sohayb   | Donor                   |
|                                 |                                      | Pump House for Deep Well (2) Sohayb   |                         |
|                                 |                                      | Pump for Deep Well (3) Wadi Masan   |                         |
|                                 |                                      | Generator for Deep Well (3) Wadi Masan  |                         |
|                                 |                                      | Pump House for Deep Well (3) Wadi Masan   |                         |
|                                 |                                      | Pump for Spring (1)   | Donor                   |
|                                 |                                      | Engine for Spring (1)   | Donor                   |
|                                 |                                      | Pump for Spring (2)   | Donor                   |
|                                 |                                      | Engine for Spring (2)   | Donor                   |
|                                 |                                      | Pump House for Spring (1&2)   |                         |
|                                 |                                      | Pump for Booster  | Donor                   |
|                                 |                                      | Eng./Gen. for Booster   | Donor                   |
|                                 |                                      | Pump House for Booster  |                         |
|                                 |                                      | Booster Tank  |                         |
|                                 |                                      | Distribution Tank   |                         |
|                                 |                                      | Pumping Main  |                         |
|                                 |                                      | Distribution Main   |                         |
|                                 |                                      | Public Tapstand   |                         |
|                                 |                                      | House Connection  | Village                 |
|                                 | Accessibility                        |   |                         |
|                                 | Security                             |   |                         |
|                                 | Observation                          |   |                         |
| OPERATION AND MAINTENANCE PANEL |                                      |   |                         |
| No.                             | Item                                 | Description   |                         |
|                                 | No. of Village Head (Sheikh)         |   |                         |
|                                 | No. of Tribe                         |   |                         |
|                                 | Observation in Current Supply Scheme | <p>Pipeline from spring and borehole constructed in '85 to the water tank was installed by Ministry of Agriculture and Irrigation, while one from borehole of '93 to the tank was installed. The served area is divided into three (3) zones for operational purpose.</p> <p>The scheme is covering two thirds (2/3) of whole Uzula.</p> <p>There are 82 sub-villages or Mahal, each of which is composed of 10-15 households. The scheme operation was commenced serving 300 households. The scheme has been extended as population increases, not considering the capacity of water source and tank, pipe diameter and undulation in pipe installation, and other technical factors in the scheme Al-Azaiz is name of Uzula</p>   |                         |
|                                 | Mode of Ownership                    | <p>Legal ownership is arranged by written agreement with GARWSP.</p> <p>Administrative Board has been established and responsible for the scheme management.</p> <p>General Assembly, composed of 1,500 users, is called and elected fifteen (15) Directorial Board members.</p> <p>Directorial Board appointed four (4) Administrative Board members, which is composed of; a) director (1), b) accountant (2), and c) Treasurer (1).</p> <p>Administrative Board is employing the following operational staff on contract bases; a) operator/watchman/bill distributor (4), b) plumber (4), c) meter reader (1).</p> <p>First CBO was established in 1979 and the same CBO setting had been continued till 2005. In 2005, first election was conducted under current CBO setting. In January 2006, second election was conducted (Director is unchanged) following procedures for CBO registration under Ministry of Social Affairs.</p> <p>Current CBO setting is registered under Ministry of Social Affairs.</p> <p>Monitoring Committee (15 members) is also elected by General Assembly.</p> |                         |
|                                 | Mode of Management Entity            |   |                         |

## 12.7 Village Profile of Sites in Taiz Governorate

|  |   |  |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
|--|---|--|--------|------------------------|--|---------|-----------|--|--------|-----------|---------------------------------------|------------|------|------------|--------|-----------|-----------|-----------|--|-----------|-------------|-----------------|-----------------|---------|-----------------|-----------|-----------------|------------|-----------------|---------|-----------------|------------------------------------|--|-----------------|--------------|
| Organizational Management                        | <p>The Administrative Board and other CBO setting for the scheme management are registered under Ministry of Social Affairs, with supervision of Local Council and GARWSP. Constitution of Administrative and Directorial Board is prepared.</p> <p>Important decisions in the scheme management are made in the Directorial Board members, while Administrative Board is responsible for daily operation and maintenance.</p> <p>The Administrative Board members mentioned that the all managerial decisions are made by Directorial Board (not by calling General Assembly). It gives impression that the Board is somehow dictating.</p> <p>Terms of Office for Administrative and Directorial Board are set for three (3) years under their constitution. However, extension of terms of office is currently under consideration, prolonging them for six (6) years in accordance with ones for parliament</p>   |  |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
| Technical Operation and Maintenance              | <p>Spring/Dam with pump unit is operated for 15 hours, while borehole with pump unit is operated for 20 hours.</p> <p>A Borehole was constructed and pump unit was installed by the community (the scheme management).</p> <p>Booster pumps have been replaced six (6) times, with the cost borne by the community (the scheme account). Last replacement was carried out in 2005.</p> <p>Maintenance of main pipeline from boreholes (constructed in '85 and '92) was carried out by the community (the scheme management).</p>  |  |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
| Financial Management and Transparency            | <p>General Assembly meeting is first called in Jan 2006 as the registration process of CBO for water scheme management. In the meeting, financial status of the scheme was reported.</p> <table border="1"> <tr> <td>Tariff Structure:</td> <td>1-3 m3</td> <td>YR 450 as basic charge</td> </tr> <tr> <td></td> <td>3-14 m3</td> <td>YR 120/m3</td> </tr> <tr> <td></td> <td>&gt; 15m3</td> <td>YR 150/m3</td> </tr> </table> <p>Income in last month: YR 1,171,440</p> <p>Expenditure in last month: YR 687,215</p> <table border="1"> <tr> <td rowspan="5">Expenditure break down in last month:</td> <td>YR 219,000</td> <td>Fuel</td> </tr> <tr> <td>YR 293,000</td> <td>Salary</td> </tr> <tr> <td>YR 16,000</td> <td>Allowance</td> </tr> <tr> <td>YR 15,000</td> <td>Others (Communication, electricity, transport, etc.)</td> </tr> <tr> <td>YR 35,000</td> <td>Maintenance</td> </tr> </table> <p>Income in average: YR 1,000,000</p> <p>Expenditure in average: YR 700,000</p> <table border="1"> <tr> <td rowspan="5">Personnel Cost:</td> <td>YR 50,000/month</td> <td>Manager</td> </tr> <tr> <td>YR 27,500/month</td> <td>Treasurer</td> </tr> <tr> <td>YR 27,500/month</td> <td>Accountant</td> </tr> <tr> <td>YR 24,000/month</td> <td>Plumber</td> </tr> <tr> <td>YR 24,000/month</td> <td>Operator/watchman/bill distributor</td> </tr> <tr> <td></td> <td>YR 24,000/month</td> <td>Meter reader</td> </tr> </table> <p>Pick-up truck was purchased by the scheme account.</p> <p>Water bills are prepared by the Administrative Board and distributed to each user household by Bill Distributors. Revenue is collected at the office of Administrative Board.</p> <p>Monitoring Committee is formed for auditing the scheme account.</p> | Tariff Structure:                                    | 1-3 m3 | YR 450 as basic charge |  | 3-14 m3 | YR 120/m3 |  | > 15m3 | YR 150/m3 | Expenditure break down in last month: | YR 219,000 | Fuel | YR 293,000 | Salary | YR 16,000 | Allowance | YR 15,000 | Others (Communication, electricity, transport, etc.) | YR 35,000 | Maintenance | Personnel Cost: | YR 50,000/month | Manager | YR 27,500/month | Treasurer | YR 27,500/month | Accountant | YR 24,000/month | Plumber | YR 24,000/month | Operator/watchman/bill distributor |  | YR 24,000/month | Meter reader |
| Tariff Structure:                                | 1-3 m3  | YR 450 as basic charge                               |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
|  | 3-14 m3   | YR 120/m3  |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
|  | > 15m3  | YR 150/m3  |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
| Expenditure break down in last month:            | YR 219,000  | Fuel   |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
|  | YR 293,000  | Salary   |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
|  | YR 16,000   | Allowance  |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
|  | YR 15,000   | Others (Communication, electricity, transport, etc.) |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
|  | YR 35,000   | Maintenance  |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
| Personnel Cost:                                  | YR 50,000/month   | Manager  |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
|  | YR 27,500/month   | Treasurer  |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
|  | YR 27,500/month   | Accountant   |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
|  | YR 24,000/month   | Plumber  |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
|  | YR 24,000/month   | Operator/watchman/bill distributor                   |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
|  | YR 24,000/month   | Meter reader   |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
| Stakeholder Involvement / Responsibility Sharing | <p>GARWSP and Local Council were involved in the CBO registration process under Ministry of Social Affairs.</p>   |  |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
| Community Contribution                           | <p>The scheme management (Administrative and Directorial Boards) owns the following assets; a) office, b) store room in each pump house, c) main storehouse beside the office, d) stock of spare parts, e) pick-up truck.</p> <p>House connections were carried out by the users.</p> <p>One borehole with pump unit is constructed in 1992 by the scheme management.</p>   |  |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
| Community Contracting-Out                        | <p>Operation workers are hired on contract bases.</p> <p>There is no private contracting-out setting.</p>   |  |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
| Conflict Resolution                              | <p>No conflict cases are mentioned.</p>   |  |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
| Pro-Gender and Pro-Poor                          | <p>N/A</p>  |  |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |
| Remarks  | <p>There are needs perceived by the Board members that increase of tank capacity and enlargement of pipeline diameter.</p>  |  |        |                        |  |         |           |  |        |           |                                       |            |      |            |        |           |           |           |  |           |             |                 |                 |         |                 |           |                 |            |                 |         |                 |                                    |  |                 |              |

## 12.7 Village Profile of Sites in Taiz Governorate

| SITE IDENTIFICATION PANEL |                                      |                      |            |           |                        |            |
|---------------------------|--------------------------------------|----------------------|------------|-----------|------------------------|------------|
| No.                       | Item                                 | Description          |            |           |                        |            |
|                           | Code No.                             | T-06                 |            |           |                        |            |
|                           | Site Name                            | Al Khunha            |            |           |                        |            |
|                           | Sub-District (Uzlat)                 | Al Khunha            |            |           |                        |            |
|                           | District                             | Al Wazieyah          |            |           |                        |            |
|                           | Governorate                          | Taiz                 |            |           |                        |            |
|                           | Coordinates                          | Latitude             | Longitude  |           |                        |            |
|                           | Coordinates (Measured Location)      |                      |            |           |                        |            |
|                           | Annual precipitation (rainfall)      | 250 mm               |            |           |                        |            |
|                           | Population (2006)                    | 1,579                |            |           |                        |            |
|                           | Population Forecast (2016)           | 2,015                |            |           |                        |            |
|                           | No. of Village (Qariah) in Total     |                      |            |           |                        |            |
|                           | No. of Village (Qariah) to be served |                      |            |           |                        |            |
|                           | Village (Qariah) in the Community    | Name                 | Population | Household | Coordinate (Lat / Lon) |            |
|                           |                                      | Al Khunha            | 550        | 106       | 13°06' 15"             | 43°44' 48" |
|                           |                                      | Al Karbah Al Sufia   | 144        | 28        | 13°05' 01"             | 43°44' 59" |
|                           |                                      | Al Hayemah           | 577        | 104       | 13°06' 54"             | 43°44' 00" |
|                           |                                      | Al Karabah Al Uliyah | 308        | 64        |                        |            |

| EXISTING WATER SUPPLY SCHEME PANEL |  |                         |               |           |      |      |
|------------------------------------|--|-------------------------|---------------|-----------|------|------|
| No.                                | Item                                       | Description             |               |           |      |      |
|                                    | Functioning                                | No existing             |               |           |      |      |
|                                    | Components of Existing Water Supply Scheme | Component               | Specification | Condition | Year | Fund |
|                                    |  | Pump for Deep Well      |               |           |      |      |
|                                    |  | Eng./Gen. for Deep Well |               |           |      |      |
|                                    |  | Pump House for Deep We  |               |           |      |      |
|                                    |  | Pump for Booster        |               |           |      |      |
|                                    |  | Eng./Gen. for Booster   |               |           |      |      |
|                                    |  | Pump House for Booster  |               |           |      |      |
|                                    |  | Booster Tank            |               |           |      |      |
|                                    |  | Distribution Tank       |               |           |      |      |
|                                    |  | Pumping Main            |               |           |      |      |
|                                    |  | Distribution Main       |               |           |      |      |
|                                    |  | Public Tapstand         |               |           |      |      |
|                                    |  | House Connection        |               |           |      |      |
|                                    | Observations                               |                         |               |           |      |      |

| WATER SOURCE PANEL |                                |                             |              |           |  |  |
|--------------------|--------------------------------|-----------------------------|--------------|-----------|--|--|
| No.                | Item                           | Description                 |              |           |  |  |
|                    | [Borehole Code]                |                             |              |           |  |  |
|                    | Grid (UTM)                     | North                       | East         |           |  |  |
|                    |                                | 1449177                     | 364618       |           |  |  |
|                    | Grid (Lat/Lon)                 | Lat. N                      | Lon. E       |           |  |  |
|                    |                                | 13°06' 21.0"                | 43°45' 03.9" |           |  |  |
|                    | Present Condition (Pump Type)  | Capped (Flowing)            |              |           |  |  |
|                    | Elevation (m)                  | 539 m                       |              |           |  |  |
|                    | Aquifer/Geological Description |                             |              |           |  |  |
|                    | Year of Construction           | 2004                        |              |           |  |  |
|                    | Fund                           | GARWSP                      |              |           |  |  |
|                    | Depth (m)                      | 200 m                       |              |           |  |  |
|                    | Casing Diameter (inch)         | 8 inch                      |              |           |  |  |
|                    | Screen                         | 50m-56m, 83m-98m, 116m-188m |              |           |  |  |
|                    | Static Water Level (G.L.-m)    | -0.53 m                     |              |           |  |  |
|                    | Dynamic Water Level (G.L.-m)   | 5.14 m                      |              |           |  |  |
|                    | Drawdown (m)                   | 5.67 m                      |              |           |  |  |
|                    | Discharge (g/min)              | 140 g/min                   |              | 8.8 L/sec |  |  |
|                    | Specific Capacity              | 1.552 L/s/m                 |              |           |  |  |
|                    | EC (mS/m)                      | 123.3 mS/m                  |              |           |  |  |
|                    | pH                             | 7.21                        |              |           |  |  |
|                    | Temperature (°C)               | 39.5                        |              |           |  |  |
|                    | Remarks                        |                             |              |           |  |  |

## 12.7 Village Profile of Sites in Taiz Governorate

| WATER SUPPLY PLANNING PANEL     |  |  |  |
|---------------------------------|--|--|--|
| No.                             | Item   | Description  |  |
|                                 | [Design Parameter]                               |  |  |
|                                 | No. of Villages in Total                         | 0  |  |
|                                 | No. of Villages to be Covered                    | 0  |  |
|                                 | Current Population (2006)                        | 1,579  |  |
|                                 | Design Population (2016)                         | 2,015  |  |
|                                 | Design Water Supply Rate                         | 40 L/c/d   | 81 m <sup>3</sup> /day                         |
|                                 | Type of Work Required                            | New construction   |  |
|                                 | Required Facilities                              | Component  | To be Constructed by Notes                     |
|                                 |  | Pump for Deep Well   | Donor New                                      |
|                                 |  | Eng./Gen. for Deep Well                                    | Donor New                                      |
|                                 |  | Pump House for Deep We                                     | Donor/Village New                              |
|                                 |  | Pump for Booster   |  |
|                                 |  | Eng./Gen. for Booster                                      |  |
|                                 |  | Pump House for Booster                                     |  |
|                                 |  | Booster Tank   |  |
|                                 |  | Distribution Tank  | Donor New                                      |
|                                 |  | Pumping Main   | Donor New                                      |
|                                 |  | Distribution Main  | Donor New                                      |
|                                 |  | Public Tapstand  | Donor New (for mosque, school and clinic only) |
|                                 |  | House Connection   | Village New                                    |
|                                 | Accessibility                                    | Site approached through wadi, so difficult in rainy season |  |
|                                 | Security   |  |  |
|                                 | Observation                                      |  |  |
| OPERATION AND MAINTENANCE PANEL |  |  |  |
| No.                             | Item   | Description  |  |
|                                 | No. of Village Head (Sheikh)                     |  |  |
|                                 | No. of Tribe                                     |  |  |
|                                 | Observation in Current Supply Scheme             |  |  |
|                                 | Mode of Ownership                                |  |  |
|                                 | Mode of Management Entity                        |  |  |
|                                 | Organizational Management                        |  |  |
|                                 | Technical Operation and Maintenance              |  |  |
|                                 | Financial Management and Transparency            |  |  |
|                                 | Stakeholder Involvement / Responsibility Sharing |  |  |
|                                 | Community Contribution                           |  |  |
|                                 | Community Contracting-Out                        |  |  |
|                                 | Conflict Resolution                              |  |  |
|                                 | Pro-Gender and Pro-Poor                          |  |  |
|                                 | Remarks  |  |  |