<table>
<thead>
<tr>
<th>Tables</th>
<th>Title</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Tentative succession of stratigraphy, structure, Igneous, metamorphic and metallogeny.</td>
<td>28, 29, 30</td>
</tr>
<tr>
<td>II</td>
<td>Stratigraphic succession of the study area</td>
<td>36</td>
</tr>
<tr>
<td>III</td>
<td>Rainfall data pertaining to the Salem District.</td>
<td>82</td>
</tr>
<tr>
<td>IV</td>
<td>Resistivities of Rocks and minerals adopted by Edge and Laby.</td>
<td>86</td>
</tr>
<tr>
<td>V</td>
<td>Applied Aspects of electrical method in solving groundwater geological problems.</td>
<td>88</td>
</tr>
<tr>
<td>VI</td>
<td>Vertical electrical sounding data locations.</td>
<td>96-124</td>
</tr>
<tr>
<td>VII</td>
<td>Inferred lithology from vertical electrical sounding interpretation.</td>
<td>126</td>
</tr>
<tr>
<td>VIII</td>
<td>The thickness and resistivities of different Layers.</td>
<td>127</td>
</tr>
<tr>
<td>IX</td>
<td>World health organisation drinking water standards - international standards (1963).</td>
<td>137</td>
</tr>
<tr>
<td>X</td>
<td>Quality - classification for irrigation water.</td>
<td>138</td>
</tr>
<tr>
<td>XI</td>
<td>Quality of water for industrial use.</td>
<td>139</td>
</tr>
<tr>
<td>XII</td>
<td>Recommended range of hardness in groundwater.</td>
<td>141</td>
</tr>
<tr>
<td>XIII</td>
<td>Values of Geochemical Analysis of water samples.</td>
<td>133</td>
</tr>
<tr>
<td>XIV</td>
<td>Hydrogeochemical classifications of water. samples.</td>
<td>154</td>
</tr>
<tr>
<td>XV</td>
<td>Details of Handa's classifications of water.</td>
<td>155</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

Fig.1. Transition zone Allen et.al, 1985. 2
Fig.2 Location of the study area. 4
Fig.3 Accessibility map of the study area. 6
Fig.4 Photogeotectonic map of Attur valley and the adjoining areas. (After V. Srinivasan, 1974) 8
Fig.5 Physiographic division of the study area. 14
Fig.6 Drainage pattern of the study area. 16
Fig.7 Soil map of the study area. 20
Fig.8 Gopalakrishnan et.al, 1975 map showing distribution of Sathyamangalam super groups of Rock in Tamil Nadu. 26
Fig.9 Pristine sutures in granulite-gneiss terrain of Tamil Nadu, India. 32
Fig.10 Spatial relationship of carbonatite complexes with lineaments Ahmed et.al (1986). 34
Fig.11 Geological map of the study area. 35
Fig.12 Structural map of the study area. 50
Fig.13 General tectonic map of the pre-cambrian of south India - Sri Lanka showing craton-mobile belt relations (after Katz 1978). 53
Fig.14 Interpretative tectonic map of the mobile belt of south India based on Landsat-I Imagery (after M.B. Katz, 1978). 54
Fig. 15  Diapiric-domal structural style of the aulacogene stage (source M.B. Katz, 1978).

Fig. 16  Schematic evolution of high-grade mobile belts (source M.B. Katz, 1978).

Fig. 17  Progressive dextral simple shear showing relationship of strain ellipse to the structural elements.

Fig. 18  Aulacogenes of south India-Sri Lanka (source M.B. Katz, 1978).

Fig. 19  Tectonic analysis of Landsat-I Imagery of the Nilgiris (NL), Biligirirangan Hills (BG) and the Shevaroys (Sh) of Tamil Nadu (after Katz, 1978).

Fig. 20  Structural elements in the Attur valley fault zone (source M.B. Katz, 1978).

Fig. 21  Deep main faults in Tamil Nadu (after Grady, 1971).

Fig. 22  Lineaments across Shevaroy-Chitteri-Kalrayan-Kollaimalai and Pachaimalai Hills Based on Landsat Imagery Interpretation (after Subramanian et. al, 1979).

Fig. 23  Permanent Geomagnetic observation stations magnetometer array station (Jayakumar et. al, 1981, 1984).

Fig. 24  Tectonic map of South India (after S.A. Drury et. al, 1984).
Fig. 25 Sketch showing crustal section from north or south illustrating and thickening in south India before the development of major transcurrent shear belts (after Drury et. al, 1984).

Fig. 26 Total magnetic intensity magnetic map suggesting "moho" (after Reddi et. al, 1988).

Fig. 27 Bouger Anamely map of high-grade terrain of south India by (D.C. Mishra, 1988).

Fig. 28 Rainfall details in Salem District.

Fig. 29 Wenner electrode arrangements.

Fig. 30 Schlumberger electrode arrangements.

Fig. 31 Map shows vertical electrical sounding locations.

Fig. 32 Inverse slope curve (VES Schlumberger) Station: Kavurukalpatti.

Fig. 33 Inverse slope curve (VES Schlumberger) Station: Chenrayanpalayam.

Fig. 34 Inverse slope curve (VES Schlumberger) Station: Seshanchavadi.

Fig. 35 Inverse slope curve (VES Schlumberger) Station: Muttampatti.

Fig. 36 Inverse slope curve (VES Schlumberger) Station: Valapady.

Fig. 37 Inverse slope curve (VES Schlumberger) Station: Sarkar Valapady.

Fig. 38 Inverse slope curve (VES Schlumberger) Station: Pudupalayam.
Fig. 39 Inverse slope curve (VES Schlumberger) Station: Singipuram

Fig. 40 Inverse slope curve (VES Schlumberger) Station: Mannarpalayam

Fig. 41 Inverse slope curve (VES Schlumberger) Station: Vilaripalayam

Fig. 42 Inverse slope curve (VES Schlumberger) Station: Palaniyapuram

Fig. 43 Inverse slope curve (VES Schlumberger) Station: Ponnarampatti

Fig. 44 Inverse slope curve (VES Schlumberger) Station: Mudiyanur

Fig. 45 Inverse slope curve (VES Schlumberger) Station: Veppilaipatti

Fig. 46 Inverse slope curve (VES Schlumberger) Station: Vellalagundam

Fig. 47 Map showing water sample locations.

Fig. 48 Collins Vertical Bar graphs representing the Analysis of Groundwater quality.

Fig. 49 Stiff's pattern diagram representing the Analysis of Groundwater quality.

Fig. 50 Piper's Trilinear diagram with plots.

Fig. 51 Modified Hill piper diagram, Handa (1964 with plots).

Fig. 52 U.S.S.L. diagrams with plots.
LIST OF PLATES

PLATE-I

Fig 1 Panoramic view of Isolated Hillock (.593)
Fig 2 A northern view of Godumalai (.438) from Seshanchavadi.

PLATE-II

Fig 1 Southern view of the hillock .654 near Vellalagundam Reserved Forest.
Fig 2 Small Rocky knobs and boulders near Vellalagundam.

PLATE-III

Fig 1 Magnetite quartzites occupying the mounds NE of Seshanchavadi.
Fig 2 The occurrence of pyroxene granulite rocks near southern part of the study area.

PLATE-IV

Fig 1 An occurrence of garnetiferous pyroxene granulite near south-eastern part of the study area.
Fig 2 A charnockite working exposure near Seshanchavadi.

PLATE-V

Fig 1 A fresh charnockite outcrop with foliation near Singipuram.
Fig 2 The pegmatoidal granites are found at hill (.419) west of Singipuram.
PLATE-VI

Fig 1  A dolerite dyke running N.E.-S.W. in direction on the southern flanks of hill 413.

Fig 2  Biotite gneiss affected by F2 minor folds seen near Valapady.

PLATE-VII

Fig 1  A charnockite outcrop with quartz veins near Vilaripalayam.

PLATE-VIII

Fig 1  Hornblende gneiss showing F1 folds west of Muttampatti.

Fig 2  Pink granitic-gneiss showing F2 folds near Mudiyanur.

PLATE-IX

Fig 1  Hornblende biotite gneiss showing F3 folds west of Vellagundam.

PLATE-X

Fig 1  The flow of Singipuram Aru (River)

Fig 2  A well cutting near Seshanchavadi.