**APPENDIX A1**

**BACKGROUND ON DEVELOPMENT OF HYDROGEOLOGIC-FRAMEWORK MODELS OF BASIN-FILL AQUIFER SYSTEMS IN THE RG-RIFT REGION**

**John W. Hawley, Ph.D., Visiting Sr. Hydrogeologist,**

**New Mexico Water Resources Research Institute, NMSU**

**Emeritus Sr. Environmental Geologist, NM Bureau of Geology & Mineral Resources,**

**NM Institute of Mining & Technology** **hgeomatters@gmail.com**

**1**APPENDIX A *in* Hawley, J.W., Swanson, B.H., Walker, J.S., and Glaze, S.H., 2025, Hydrogeologic Framework of the Mesilla Basin Region of New Mexico, Texas, and Chihuahua (Mexico)—Advances in Conceptual and Digital Model Development: NM Water Resources Research Institute, NMSU, Technical Completion Report No. 363

**A1. EARLY-STAGE HYDROGEOLOGIC-FRAMEWORK MODELS OF BASIN-FILL AQUIFER SYSTEMS IN THE BASIN AND RANGE (B&R) PROVINCE** 1

A1.1. Early Stages of Hydrogeologic-Framework Model Development in the Great Basin
Section of the Basin and Range (B&R) Province 1

A1.2. Early stages of hydrogeologic-framework model development in the Mexican Highland Section of the B&R Province 4

A1.2.1. Initial development of conceptual hydrogeologic-framework models
(1964-1980) 4

A1.2.2. Note on Contributions by Clyde Wilson-USGS (1932-1980) 10

A1.2.3. Introduction of the Lithofacies Assemblage Classification System to Conceptual Hydrogeologic-Framework Models (1981-1985) 10

**A2. HYDROGEOLOGIC-FRAMEWORK-MODEL DEVELOPMENT AND APPLICATION (1986-2010)** 15

A2.1. Initial Stages of digital framework-model development and application
(1986-1996; *cf*. A5) 15

A2.1.1. Hydrostratigraphic Units (HSUs) 15

A2.1.2. Development of an Integrated LFA and HSU Classification System 15

A2.2. First digital compilations of hydrogeologic-framework information on the Mesilla
and Southern Jornada Basins, and adjacent bedrock uplands (1997-2010) 25

 A2.2.1. Introduction 25

 A2.2.2. Early HAWLEY GEOMATTERS Collaborations (1998-2009) 32

A2.2.3. Commemorative Remarks by John W. Hawley at Dr. Bobby J. Creel’s
Celebration of Life, February 19, 2010: “Some Memories of Bobby Joe Creel

(1943-2010; Fig. A2-8)” 38

**A3. ADVANCES IN HYDROGEOLOGIC-FRAMEWORK CHARACTERIZATION**

**(2010-PRESENT)** 40

A3.1. Background on the Transboundary Aquifer Assessment Program (TAAP) 40

A3.2. Background of Recent Advances in Hydrogeologic-Framework Characterization 41

A3.3. Hydrogeologic Mapping of the Study Area in a Southern RG-Rift Basin Context 43

**A4. BACKGROUND ON GIS-SHAPEFILE AND METADATA COMPILATIONS,
WITH EXAMPLES IN PART A6B PART A4. CITED REFERENCES;
AND APPENDIX B TOPIC/CATEGORY CODES (P. 54)** 47

**A5. HYDROGEOLOGIC MAP AND CROSS-SECTIONS OF THE WEST MESA**

**AND MESILLA VALLEY AREAS OF THE MESILLA GW BASIN**

**(HAWLEY AND KENNEDY 2004, PLS. A1-A9)** 55

**\**PDF format that includes summaries of hydrostratigraphic interpretations of geophysical and sample logs
for boreholes and cross sections shown on Plate A1***