9.4 **Geology and Oil Shale Resource Characterization of the Green River Formation in the Northern Piceance Creek Basin, Colorado – A Shell ICP Perspective**

Mark Picha[1], Steve Cameron[2], Gerald Daub[3]

[1]Shell Oil Company, Houston, Texas, United States, [2]Norwest Corporation, Calgary, Alberta, Canada, [3]Daub & Associates, Inc., Grand Junction, Colorado, United States

Since the mid-1990's, Shell has been conducting various RD&D studies and field pilots in the Piceance Creek basin, hoping to someday commercialize oil shale using its proprietary In situ Conversion Process (ICP). To maximize the chances for successful application of this technology, Shell conducted a geology and oil shale resource characterization study of the Green River Formation in the northern Piceance Creek basin. This presentation summarizes some of the subsurface work and findings. The study area covers approximately 750 square miles in the northern Piceance Creek basin. Over 500 wells and coreholes were included for structural control and over 300 coreholes were used for characterizing the stratigraphy and oil shale resources of the Green River Formation. The primary data used for correlation and resource estimates are Fischer Assay Oil Yield (gallons/ton) measured from continuous cores. Basinwide structural and stratigraphic cross sections were constructed by correlating alternating rich zones and lean zones in the formation. The individual rich and lean zones were characterized for stratigraphic variations, structure, overburden, thickness, oil yield (gallons/ton), and richness (barrels/acre). The results of this study enabled Shell to identify high-grade ICP oil shale resource areas that formed the basis for selecting its three RD&D sites in the basin.