

## **Estimates of In-Place Oil Shale of Various Grades on Federal Lands, Piceance Basin, Colorado**

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The Eocene Green River Formation in the Piceance Basin of western Colorado contains the largest oil shale deposits in the world. The U.S. Geological Survey (USGS) recently completed a comprehensive assessment of in-place oil resources, regardless of richness, incorporating the considerable amount of oil-yield data collected since a 1989 USGS in-place assessment. The new estimate of in-place oil in the Piceance Basin is about 1.5 trillion barrels, an increase of 50 percent over the previous in-place assessment. Most of this increase is due to: (1) additional areas being assessed that previously had too little data for assessment purposes; and (2) new intervals being assessed.

The entire oil shale interval in the Piceance Basin is subdivided into seventeen “rich” and “lean” zones that were assessed separately. These zones are roughly time-stratigraphic units consisting of distinctive, laterally continuous sequences of oil shale beds that can be traced throughout much of the Piceance Basin. Several subtotals of the 1.5 trillion barrels total were calculated: (1) about 920 billion barrels (60 percent) exceed 15 gallons per ton (GPT); (2) about 352 billion barrels (23 percent) exceed 25 GPT; (3) more than one trillion barrels (70 percent) underlie Federally-managed lands; and (4) about 689 billion barrels (75 percent) of the 15 GPT total and about 284 billion barrels (19 percent) of the 25 GPT total are under Federal mineral (subsurface) ownership. These 15 and 25 GPT estimates include only those areas where the weighted average of an entire zone exceeds those minimum cutoffs. In areas where the entire zone does not meet the minimum criteria, some oil shale intervals of significant thicknesses could exist within the zone that exceed these minimum cutoffs. For example, a 30-ft interval within an oil shale zone might exceed 25 GPT but if the entire zone averages less than 25 GPT, these resources are not included in the 15 and 25 GPT subtotals, although they might be exploited in the future.