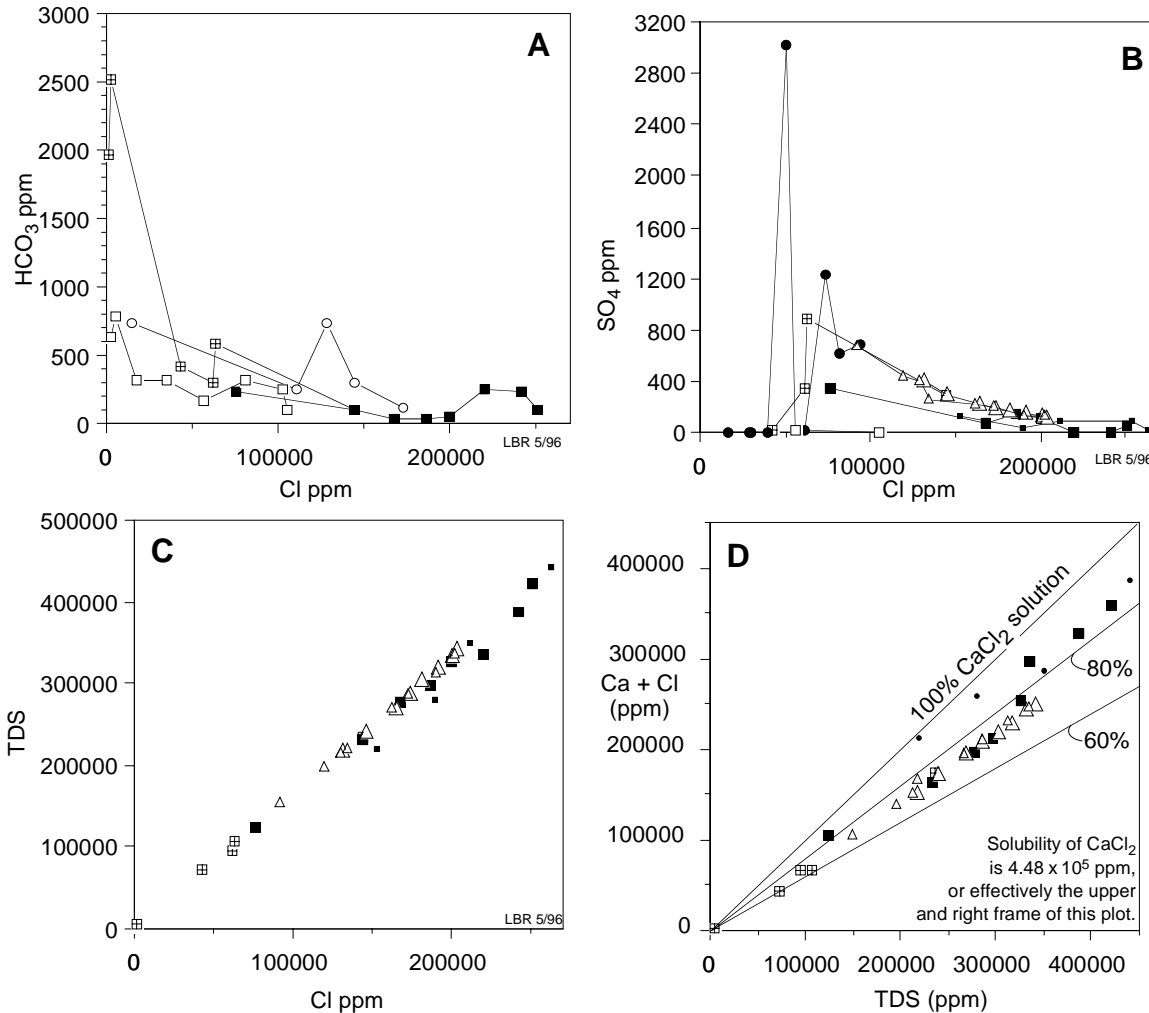


Deep-basin brines IV: Dominance of Cl⁻ among anions



The plots below show that Cl⁻ is the dominant anion in deep-basin brines. Concentrations of HCO₃⁻ and SO₄²⁻ are high in some of the more dilute examples of deep-basin waters (Plots A & B) but they are proportionately scarce in the true brines (waters with TDS > 100,000 ppm), for reasons we will see in Part V of this series. As a result, Cl⁻ can be used as a proxy for TDS (Plot C), as noted in Part I of this series. Furthermore, combination of these observations with Part III's regarding the dominance of Ca²⁺ leads to the observation that the brines approach being pure CaCl₂ solutions (Plot D).

Data are from sedimentary basins in the US., Canada, and the North Sea. The legend for the symbols is shown on "Deep-basin brines I: Density, TDS, and chloride".