VERTICAL DATUMS

A *vertical datum* is a set of fundamental *elevations* to which other elevations are referenced. Elevation, orthometric height, is the distance along the plumb line from sea level to the bench mark. Sea level is almost an equipotential surface which approximates the geoid.

Mean Sea Level Datum of 1929:

- **Elevation held fixed at 26 tide gages in the US & Canada.**
- **Mean is average over time - 18.6 years before repeat of conjunction of sun/moon with respect to the earth.**
- **Name is a technical misnomer, so it was changed to:**

National Geodetic Vertical Datum of 1929:

- **Name change effective May 10, 1973.**
- **Elevations remain unchanged. Only the name is different.**

International Great Lakes Datum:

- **Established jointly in 1955 by Canada & United States & readjusted in 1985, i.e. IGLD 55 and IGLD 85.**
- **Published as dynamic elevations to provide more accurate hydraulic head computations in the Great Lakes System.**

North American Vertical Datum of 1988:

- **Minimum-constraint (1 Bench Mark) adjustment of level loops in Canada, USA and Mexico. No longer tied to mean sea level.**
- **NAVD88 & IGLD85 are the same except for published units.**
  - **IGLD85 is published in dynamic heights.**
  - **NAVD88 is published in orthometric heights.**

VERTCON: The difference between NGVD29 elevations and NAVD88 elevations can be computed within 2 cm (1 sigma) using NGS program, VERTCON, Version 2.0.

