

CIRCULAR LETTER NO. 464

March 25, 2014

TO ALL BRITISH COLUMBIA LAND SURVEYORS

Re: Official Vertical Datums for Legal Surveys in British Columbia

The General Survey Instruction Rules (GSIR) 4-4(2) and 12-2(1) require an approved vertical datum to be specified by the Surveyor General, and GSIR 12-2(3) requires that an acceptable geoid model also be specified by the Surveyor General. Additionally, the *Land Title Act* (Part 9 - Air Space Titles - Section 138) defines the term "geodetic elevation" as "an elevation derived from a source approved by the Surveyor General".

It is the responsibility of the land surveyor to ensure that they are using the approved vertical datum and geoid model for all legal surveys requiring elevations within British Columbia. This circular letter is provided to specify the approved vertical datum and geoid model for those surveys.

In November of 2013 Natural Resources Canada (NRCan) introduced a new vertical datum for all of Canada known as the Canadian Geodetic Vertical Datum of 2013 (CGVD2013). While this is officially the current vertical datum for Canada the previous datum known as Canadian Geodetic Vertical Datum of 1928 (CGVD28) will continue to be the established datum for use on legal surveys within British Columbia.

GeoBC has announced a phased rollout of the new vertical datum (CGVD2013) in which it will publish, through the MASCOT website, the CGVD2013 elevations of all Provincial and Federal Control Points, as well as maintain the ability to access the CGVD28 elevations.

Until this transition has been completed by GeoBC, and an update to this Circular Letter is issued, the approved vertical datum for legal surveys in the province is *CGVD28* and the acceptable geoid model is *HTv2.0*.

If elevations are derived from passive control points being either Integrated Survey Area (ISA) monuments, Provincial control points or federal vertical benchmarks the published CGVD28 elevations from the MASCOT database are to be used.

GNSS observations can be used to determine ellipsoidal heights anywhere in BC and the accepted geoid model, HTv2.0 (for CGVD28), can be applied to determine orthometric heights. The geoid model CCG2013 can be used to determine elevations relative to the CGVD2013 datum, but this is not yet the adopted vertical datum for British Columbia. Both geoid models are available for download on NRCan's Geoid Models webpage.

When using Natural Resource Canada's Precise Point Positioning (PPP) service to process GNSS observations to determine elevations there are now two choices under the 'Vertical Datum' menu, namely CGVD28 (HT2_0) and CGVD2013. Please ensure you select the CGVD28 (HT2_0)

option in order to get elevations of your survey points in the approved vertical datum and geoid model.

It is critical that your plan clearly label the vertical datum (CGVD28), the control points (noting published elevation) and where applicable, the geoid model (HTv2.0) that has been used.

Yours sincerely,

Original signed by Mike Thomson

Mike Thomson, BCLS
Surveyor General of British Columbia

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