

From the Mineral Inventory Files

Jamesonite at Lansdowne, Digby County

The Sb-Pb-bearing sulphide mineral jamesonite ($Pb_4FeSb_6S_{14}$) is found at only a handful of localities in Canada, mostly in minor amounts. Lansdowne, Digby County (Fig. 1), however, is a site where jamesonite is the major component of several quartz-carbonate veins that have produced some of the most spectacular specimens to be found.

In 1949, NE-trending quartz-carbonate veins carrying jamesonite and arsenopyrite were found intruding Ordovician Halifax Group slates along Walsh Brook (Fig. 1). In 1950, Conwest Exploration diverted the stream and dug several trenches as well as a large pit in the former stream bed. They also drilled two short diamond-drill holes. Excavation exposed the veins and produced an abundance of spectacularly mineralized samples, many of which were discarded around the pit dug into the original stream bed (note: following exploration, the stream was allowed to return to its original course). Conwest's

drilling also intersected the veins and, interestingly, granite underlying the property at 35 m depth. Although the exploration identified mineralized veins, the property was abandoned.

The prospect lay dormant until DNR drilled four holes there in 1992 (Fig. 1) to investigate a possible genetic relationship between Lansdowne and a series of deposits throughout the Annapolis Valley with an elemental association of Pb-Sb-Co-Ni-Ag-Au (see *Nova Scotia Minerals Update*, v. 6, p. 3). These deposits share a similar elemental assemblage and association with shear and fault structures and, at least spatially, with small mafic plugs and dykes. The DNR drilling confirmed that the elemental assemblage at Lansdowne conforms to the other occurrences. The drillholes also intersected two, NE-trending, 35 m thick mafic dykes, one of which contains an 8 m thick, highly carbonate-altered zone containing three quartz-

carbonate veins with jamesonite, arsenopyrite, sphalerite and pyrite. Carbonate alteration completely replaces the original mafic mineral textures in thick sections of both dykes, and imparts a leucocratic look to the rock. It was probably this leucocratic appearance that led Conwest to interpret the rock as granite. Samples collected from the waste dumps and DNR drill core returned impressive analytical results: up to 12.9% Sb, 11.5% Pb, 1.33% Zn, 0.13% Cu, 88 ppm Ag and 0.57 ppm Au.

The elemental assemblage and association with mafic dykes at Lansdowne suggest a primitive, deep crustal source of the mineralizing fluids. Like much of the Annapolis Valley, the Lansdowne area is intruded by numerous NE-trending mafic dykes and sills (Fig. 1). Not only do the dykes hosting the Lansdowne veins need a closer look, but so do other dykes throughout the region.

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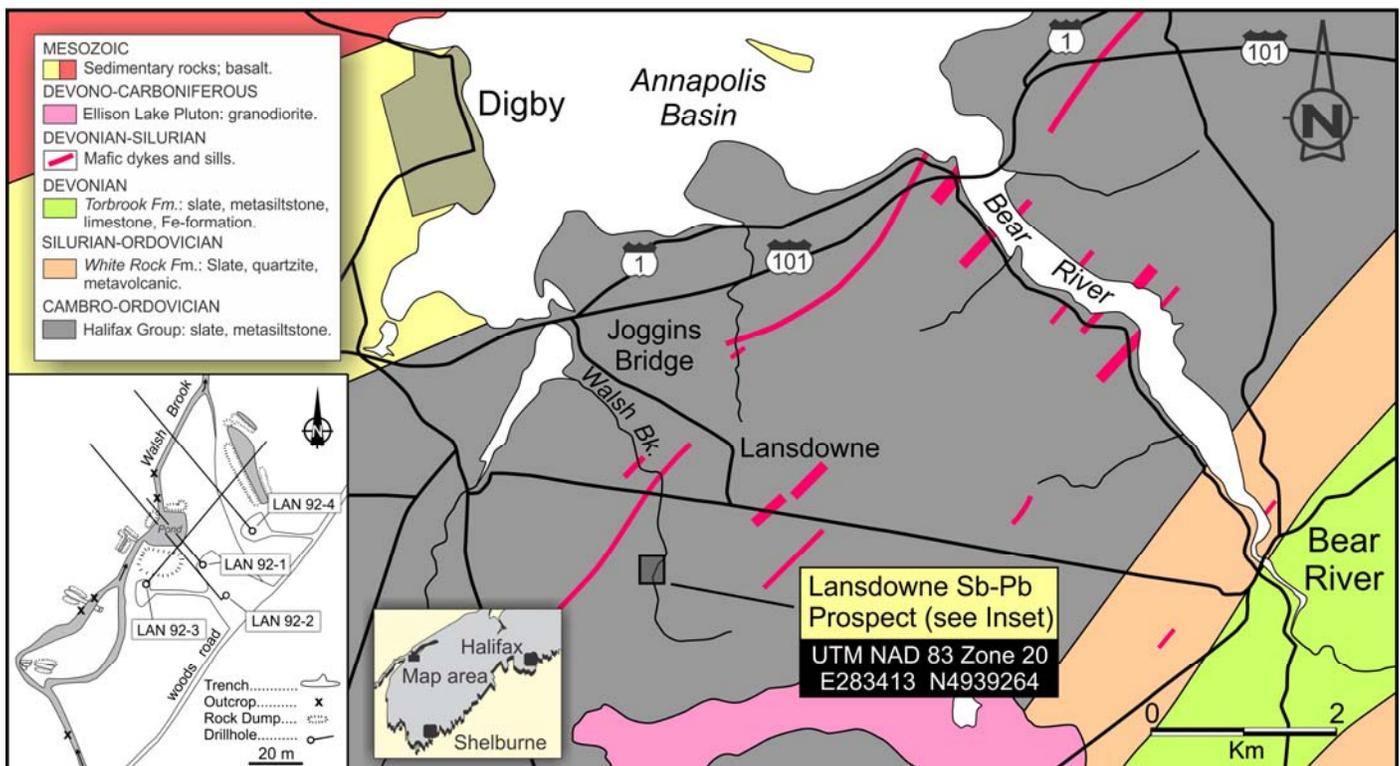


Figure 1. Geology of the Bear River-Digby area showing the location of the Lansdowne Sb-Pb-Zn-Ag-Au Prospect and a swarm of Ordovician-Devonian mafic dykes. The inset shows exploration workings at the Lansdowne Prospect.