

Anhydrite distribution in the Pugwash Salt Mine – 830' Level

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The Canada Salt Company began producing salt at Pugwash, Nova Scotia in 1959 following the closure of the Malagash, Nova Scotia mine in the same year. Interpretation of the initial drilling at Pugwash suggested a simple flat-lying salt deposit. However, production work very quickly revealed that the deposit was a complex series of steeply dipping anhydrite units interstratified with halite. The anhydrite units are isolated in a matrix of halite by boudin development. Within the evaporite sequence, bedding dips from 30° ('flat lying') to sub-vertical.

Published geological reports on the Pugwash mine have been limited to the 630 foot level workings and have discussed the origin and lithology of

the anhydrite, and the stratigraphy and geometry of what was interpreted to be a complex salt diapir. Subsequently, mining on the 630 foot level has been completed and production is now from the 830 and 730 foot levels. Investigations of the latter levels have not been attempted prior to this study.

Although the evaporites are structurally complex, individual anhydrites and ultimately the intervening halite units can be identified and correlated. There are two or possibly three lithologically distinct anhydrite members exposed in the 830 foot level workings. The two recognizable members (ranging 15–30 m in thickness) have been termed informally the main anhydrite and the borate anhydrite. There is possibly a

third anhydrite member which does not exhibit internal markers. However, it is suspected that further detailed investigations will identify the currently unnamed anhydrite units as fragments of one of the above. The potash

(carnallite and sylvite)-bearing halite and mudstone present on the 830 foot level probably occur within an upper stratigraphic portion of the evaporite sequence, as exposed in the present workings.