

intrusion, based on one drillhole (A-19) and geophysical work (O. 1989). Tin mineralization occurs as (1) stratabound, chloritized Ford, K. L. and O'Reilly, G. A. 1985. Airborne gamma ray Exploration Ltd.; Nova Scotia Department of Mines and Energy, Bonham, personal communication, 1989). This area represents an zones, (2) quartz-chlorite-cassiterite-pyrite veins and veinlets and spectrometric surveys as an indicator of granophile element Assessment Report 88 376. anomaly on the vertical gradient map and similar anomalies occur (3) silicified and sericitized zones containing pyrite and base specialization and associated The Wentworth Lake map area has attracted considerable work in the Davis Lake Pluton. The drill core (A-19) is intensely metals (Kontak et al., 1990). The highest tin values are associated of the Meguma Zone of Nova Scotia; in High Heat Production O'Donnell, A. J. 1989a: East Kemptville project, Solomon Lake and interest because of the presence of the East Kemptville Sn deformed and sheared, contains albite and magnetite (as with chloritic alteration, with other forms of alteration (i.e. (HHP) Granites, Hydrothermal Circulation and Ore Genesis; area, Yarmouth County, Nova Scotia, diamond-drilling report, Zn-Cu-Ag) deposit (56 million tonnes of 0.165% Sn; Moyle, secondary euhedral grains in veins) and geochemically the rocks alkalic, argillic, sericitic and hematitic) locally pervasive. Meeting of Institution of Mining and Metallurgy, St. Austell, Granges Exploration Ltd.; Nova Scotia Department of Mines and 985), the only primary producer of tin in North America. The

> the South Mountain Batholith (Ham et al., 1989, 1990). However, the authors interpret this phenomenon to reflect locally intense (3) Ike's Ridge: Lacana Mining Corporation drilled holes (K1 and airborne gamma-ray spectrometric colour maps; Davis Lake area, Yarmouth County, Nova Scotia, diamond-drilling report, hydrothermal alteration and deformation. Drillhole A-20 K2, total depth 264.4 m) in 1978 on Ike's Ridge, 4 km southwest Complex, East Kemptville area, Nova Scotia (parts of 20P/13, Granges Exploration Ltd.; Nova Scotia Department of Mines and immediately south of drillhole A-19) is strongly sheared and of the East Kemptville deposit, following prospecting, stream 21A/3, 4, 5, 6); Geological Survey of Canada, Open File Release Energy, Assessment Report 89 243. deformed (bent and dislocated albite twins), and portions of geochemistry, and ground and airborne geophysical surveys 1784; 8 maps, scale 1:100 000. drillholes to the north (e.g. drillhole A-15) are altered (argillic, . (Pichette, 1978). Polymetallic tin mineralization occurs as chloritic and silicic). Other drillholes display both brittle and disseminations and in quartz-sulphide-cassiterite veins within Geological Survey of Canada 1990: Advance release of high Digby County, southwestern Nova Scotia; in Mineral Resources ductile deformation in other areas of the unit (e.g. drillhole 82- albitized rocks of the Davis Lake leucomonzogranite. Sulphide resolution 1:20 000 aeromagnetic vertical gradient, total field and Division, Report of Activities 1977, eds. D. G. Gregory, Nova shearing, brecciation, aplite veins up to 2.5 cm wide offset by sphalerite, bornite, bismuthinite, molybdenite and rare Survey of Canada, Open File Release 2218. chloritized fractures, and localized extensive chloritization). wolframite (Chatterjee, 1981a). Accessory minerals include topaz,

> mapped on the southern contact of the Davis Lake Pluton in the generally 50 cm wide but up to 2 m wide. Flintstone Rock area (Richardson, 1988a). Similar albite-quartz breccia has been documented in the Rockyshore Lake area (4) Gardners Meadow Brook: The showing is hosted by a D. B. Clarke; Nova Scotia Department of Mines and Energy, (O'Reilly, 1988). We consider the rocks to be a product of the sequence of greywacke and argillite of the Goldenville Formation, preprint of paper 85-3, p. 233-248. intense deformation and hydrothermal alteration related to the cut by a series of narrow, subvertical chloritic zones (up to 60 cm Rushmere Lake Shear Zone documented by Smith (1985, see wide) which contain weak sulphide mineralization (pyrite, Grant, R. 1948: Lead, Snare Lake, Yarmouth County, Nova mineral exploration: case studies from granitic rocks within the structure section) and, therefore, not a separate unit. Highly altered (greisenized, silicified, hematized, chloritized, argillized, argillized, argillized, and Sketches; Nova Scotia (Geology, v. 24, p. 47-60.
>
> Scotia, Miscellaneous Memos and Sketches; Nova Scotia (Meguma Zone, Nova Scotia) Meguma Zone, Nova Scotia (Meguma Zone, Nova Scotia) Meguma Zone, Nova Scotia (Geology, v. 24, p. 47-60.

megacrysts which are often blue-grey) than the Davis Lake indicated tin values. Granges intersected narrow bands of pyrite, in contents of 1-2% and minor blocky cordierite occurs. 1989a, 1989b). Cataclastic zones with chlorite stringers and calcite occur.

been modified after Taylor (1969) and contacts have been further modified from an airborne vertical gradiometer survey (Geological Survey of Canada, 1990; G. A. O'Reilly, personal Geological mapping focused on the granitic rocks of the South Mountain Batholith with only cursory investigations of the surrounding country rocks. In the southwestern portion of the province the batholith is composed of several granitoid types, which collectively are termed the Davis Lake Pluton (DLP previously referred to as both the Davis Lake Pluton: McAuslan et al., 1980; and the Davis Lake Complex: Ford and O'Reilly, eastward onto 21A/3 (Corey and Horne, 1990) and has a southwestern appendage that extends into NTS sheet 20P/13. In 21A/4, six different granitoid units were identified based on Scrag Lake biotite monzogranite (DCmgSG) - The Scrag Lake

plagioclase - potassium feldspar (excluding albite) proportions in between this unit and the Davis Lake leucomonzogranite are west shore of Kempt Snare Lake, approximately 3 km southwest each unit and the proper classification according to the scheme of based on limited exposure, till clast information (P. W. Finck, of the Davis Lake Pluton (Jensen, 1987; Soehl, 1988). GalenaJensen, L. R. 1987: Diamond-drill program, Kempt Snare Lake Outcrop in the map area, particularly in the East Kemptville deposit area, is scarce, so drill core and till clast lithology information (P. W. Finck, personal communication, 1990) were used extensively. Drillholes examined in the course of the shell Canada Resources Limited and Rio Algom Limited (Fig. 1) Contacts between the granitic rocks and the surrounding country

Davis Lake Pluton, and not observed between the pluton and are all developed to varying degrees. other adjoining rocks of the South Mountain Batholith, although the Davis Lake Pluton is inferred to be intrusive into the rest of the batholith based on the curvilinear nature of its contacts. at East Kemptville to be ca. 295 Ma. Richardson (1988a) suggested that the Davis Lake Pluton intrudes and is younger than the SMB and Richardson et al. (1988, 1989) obtained a date of 330 + 7 Ma for the Davis Lake monzogranite, and a date of 337

A small (1.7 km²) digrite to monzonite - quartz monzonite pluton outcrops along the shore and on some of the islands of Wentworth Lake (Taylor, 1969: O'Reilly, 1978), 45 km north of

(listed in order of increasing mafic mineral content)

East Kemptville leucogranite (DClgEK) - The East Kemptville the Big Meadow Brook area, 3 km southwest of the deposit, (2) the leucogranite in the deposit area and (3) a small body north of blastomylonite, fluidized breccia; O'Reilly, 1988). This alteration are described briefly. Dog Lake, 5 km northeast of the deposit area.

Biotite content is low (trace) compared with other rocks on map sheet 21A/4 and muscovite content in hand specimen is 2-6. Quartz grains are locally blue, with a zonation to most intense in the centre of the grain. Topaz, presumed to be of magmatic origin (Kontak, 1990b), occurs within all rocks of this

Lake leucomonzogranite are present on the Rockyshore Lake and

Muscovite and biotite, minerals include spodumene (up to 60 cm Scotia: implications for tin metallogeny in the Meguma Terrane, leucogranite cupola, Yarmouth County, Nova Scotia; in Mines and unit. The fresh leucogranite in the area of the deposit contains an

Dog Lake shores and are highly deformed. Drill core south of

Nova Scotia; in Minerals Branch, Report of Activities

Minerals Branch, Report of Activities

Nova Scotia; in Minerals Branch, Report of Activities average of 5% topaz (D. J. Kontak, personal communication, and cassiterite (Hutchison, 1982). This pegmatite, discovered in and cassiterite (Hutchison, 1982). This pegmatite, discovered in 1989, Part B, ed. D. R. MacDonald, Nova Scotia Department of Mines are found within the leucogranite. Considerable amounts of towards the southeast (O'Reilly, 1978). Slight brecciation occurs wolframite, molybdenum, sphalerite, galena) are also found and east. Miarolitic cavities and pegmatite dykes are southeast-dipping, northeast-striking faults along the Tusket

The leucogranite in the Big Meadow Brook area is variably

AIRBORNE GEOPHYSICS fracture zones with chlorite, and joints are all present within the

The configuration of a small (1 km x 1.5 km) body of East suggest that the Davis Lake Pluton is separate and not related to listed as 3134 ounces (Faribault, 1919; Malcolm, 1929). Gold McAuslan, D. A., Dickie, G. B., Sarkar, P. K., Sinclair, P. E. and Kemptville leucogranite mapped north of Dog Lake is based on the SMB. However, the boundaries of the pluton (particularly occurs in quartz veins, both interbedded and cross veins, Wilson, B. H. 1980: The history of discovery and description of After Streckeisen (1976). the occurrence of locally-derived leucogranite boulders, one where the body extends to the north and west of 21A/4; Fig. 2) developed along a zone of shearing and fracturing within the East Kemptville tin deposit, southwest Nova Scotia; Canadian probable outcrop, till clast information (P. W. Finck, personal are not defined on any of the airborne radiometric maps quartzite and slate of the Goldenville Formation. At least eight Institute of Mining and Metallurgy, v. 73, p. 78-79. (Geological; Survey of Canada, 1988). An aplitic chilled margin up to 3 m wide occurs at the

Within the Davis Lake Pluton, certain portions have unique

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Area was worked until the 1940s with minor work undertaken in

Depositor of Minor and France Assessment Report 214 (04B)

netasediment/granite contact and is best seen in drillhole 82-028 (Fig. 1). Drillhole 83-18 (1.5 km northeast of the deposit area) western portion of the extension (Fig. 2a) relative to both the coarsens to a medium grained, equigranular leucogranite toward

South Mountain Batholith. Additionally, equivalent pyrrhotite) quartz, but insignificant gold. One hole (EMI) the bottom of the hole (ca. 50 m). Along Big Meadow Brook, the
metasediment/granite contact can be traced to within several
metasediment/granite contact can be traced to within several can be traced to within several metasediment/granite contact can be traced to within several uranium/thorium) spectrometric responses outline a semi-circular metres. The metasedimentary rocks in this area are silicified and structure in the Davis Lake area. These responses may be a result cut by numerous fine grained, equigranular granitic dykes (4-14 of late- and/or post-magmatic alteration and/or the presence of

darker colours (grey, green). In the deposit area, the East amounts crudely corresponding to the anomalous areas. Kemptville leucogranite is cut by numerous greisen zones of variable width (generally 10 cm to 2 m; Kontak et al., 1986) MINERAL OCCURRENCES which are locally cored by cassiterite-topaz veins (Richardson, 1988a). In the Big Meadow Brook area, the leucogranite is cut by A linear belt of granite- and metasediment-hosted deposits grain size is locally modified (reduced) within shear zones and (1983) who referred to this belt as a polymetallic tin domain. other textural modifications (to slightly megacrystic or Recent investigations (Kontak, 1987; O'Reilly, 1988; Kontak et porphyritic³) are seen. In addition, there is variable deformation al., 1990) have shown that many of these tin and associated base in the deposit area with a dominant northeast-trending fracture metal and precious metal deposits are spatially associated with the leucogranite in the Dog Lake area is also strongly foliated and gradiometer data (Geological Survey of Canada, 1990). deformed; see structure section for additional details of

Dog Lake leucomonzogranite (DClmDO) - This unit occurs production of 3800 metric tons Sn, 305 metric tons Cu, 421 metric portion of the Davis Lake Pluton. A small body located 3.5 km is in the form of cassiterite with the base metals contained in northeast of the deposit area is outlined on drill core information. chalcopyrite, sphalerite, pyrite and pyrrhotite. Stannite, personal communication, 1990). The leucomonzogranite is feldspar. Biotite content ranges from 4-6% and muscovite from Dominique south of Yarmouth. Shell Oil Resources Limited intense blue. Disseminated minerals (cassiterite, arsenopyrite, metals throughout the region. Their regional heavy mineral

grained Davis Lake leucomonzogranite and may therefore mineralized zone 1500 m x 500 m x 100 m deep was determined 51-R-25(05). represent, at least in part, an alteration product or a texturally using a cutoff grade of 0.05% Sn. East Kemptville Tin modified version of the latter. Similar textural modification by Corporation (a consortium of Rio Algom Limited and several alteration is also observed in the East Kemptville leucogranite in banks including the Bank of America) purchased the property in the deposit area (Kontak et al., 1986), and elsewhere in drill core 1982 and production (ca. 10 000 tonnes/day) commenced in

areas (e.g. drillhole 83-16). Boulders on the shores of both lakes market price for tin, the mine is scheduled to close in January, 68. are highly deformed with mylonitic and gneissic textures.

1992. The mine's long-term future is uncertain. Davis Lake leucomonzogranite (DClmDL) - The Davis Lake Davis Lake leucomonzogranite (DClmDL) - The Davis Lake leucomonzogranite (DClmDL) - The Davis Lake leucomonzogranite is the main granitic unit on 21A/4. The The deposit is located at the contact of Meguma Group Scotia; Nova Scotia Department of Mines and Energy, Published leucomonzogranite is best exposed on the northern shores of metasedimentary rocks and granitoid rocks of the Davis Lake Map, Scale 1:500 000. Oakland Lake in the northeastern portion of the map sheet and Pluton, and consists of two zones, the Main Zone and the Baby poorly exposed in the southern portion. Small bodies mapped as Zone. The Baby Zone is an elliptical (approximately 300 m x 100 Chatterjee, A. K. and Cormier, R. F. 1991: An Rb/Sr Davis Lake leucomonzogranite to the north of the main unit (west m) lens of leucogranite and is suggested to be continuous with the geochronological study of the Davis Lake Pluton, South Mountain of Dog Lake) are outlined on the basis of drill core information. main East Kemptville leucogranite at depth (Richardson, 1988a); Batholith, southern Nova Scotia: evidence for a 375 Ma time of The unit is medium to coarse-grained and megacrystic (5-15%) however, recent drilling suggests that the Baby Zone is a separate emplacement; in Program and Summaries, Fifteenth Annual Open with biotite (average 4-6%, locally contents range up to 8%), leucogranite body (D. J. Kontak, personal communication, 1990). House and Review of Activities, Nova Scotia Department of muscovite (<1-1%) and trace cordierite. Megacrysts (up to 10 cm Much of the deposit area is underlain by relatively fresh, Natural Resources, ed. D. R. MacDonald, in preparation. in length) of mainly alkali feldspar (commonly with albite rims) unmineralized leucogranite that is variably deformed (Kontak et generally have a characteristic blue-grey mottled colour and can al., 1986). Tin occurs in (1) massive greisens (topaz-muscovitebe rimmed by biotite and chlorite. Quartz grains can have a blue cassiterite-sulphide-graphite) which are confined to the East the South Mountain Batholith, Nova Scotia; in Mines and tinge. Cordierite (up to 9 mm) is found in rocks and drill core Kemptville leucogranite/metasediment contact zone and (2) Minerals Branch, Report of Activities 1990, ed. D. R. close to the southern and western granite/metasediment contacts coarse, zoned cassiterite-topaz-quartz-sulphide greisens MacDonald; Nova Scotia Department of Mines and Energy, (e.g. Flintstone Rock in the south, and southwest of Nepsedek throughout the leucogranite (Kontak, 1990c; Richardson, 1988b). Report 91-1, p. 76. Lake - drillhole 80-21). Inclusions within biotite include zircon, The highest grades and the majority of tin are found disseminated monazite and epidote; epidote is not observed in the rest of the within massive greisen zones of variable width (10 cm to 2 m) and Chatterjee, A. K. and Horne, R. J. 1991: Variations in LIL South Mountain Batholith. Secondary minerals in the granite length (Kontak et al., 1986). Tin values diminish inward from elements, HFS elements and REE's within the Davis Lake Pluton, include sericite and fluorite. Fluorite also occurs within vuggy the contact such that the central part of the ore body is dominated southwestern Nova Scotia; in Mines and Minerals Branch, Report quartz veins (up to 20 cm) and within quartz veins close to by unmineralized leucogranite. Substantial amounts of finer of Activities 1990, ed. D. R. MacDonald; Nova Scotia Department contact areas (e. g. drillhole 80-21). Sulphide minerals (pyrite, grained, paragenetically earlier tin is also found outside of the of Mines and Energy, Report 91-1, p. 77. arsenopyrite) also occur within these vuggy quartz veins. In the greisen veins. The greisen-style ore is crosscut by a succession of small protuberance 3 km west of Dog Lake, sulphide minerals veins that contain apatite, fluorite, triplite and vivianite Chatterjee, A. K. and Muecke, G. K. 1982: Geochemistry and (pyrite, arsenopyrite) are found within a 30 mm quartz vein. (Richardson, 1988a). Later stages of mineralization include a the distribution of uranium and thorium in the granitic rocks of Calcite veinlets (up to 1.5 cm) occur throughout the unit (e.g. major sulphide (pyrite, pyrrhotite, chalcopyrite, sphalerite ± the South Mountain Batholith, Nova Scotia: some genetic and

development of porphyritic texture (e.g. in drillhole 82-18 there Lake, Ike's Ridge) and other companies (e.g. Lacana Mining East Kemptville tin deposit, Nova Scotia, Canada; Transactions of is an abrupt but feathery contact with a porphyry). Additionally, Corporation) in addition to Shell Canada Resources Limited and shear zones and mylonite zones are developed as a result of Rio Algom Limited have drilled in various locations immediately surrounding the deposit area.

The westernmost extension of the Davis Lake Pluton in the (2) Duck Pond Deposit. The Duck Pond deposit is a vein and Geological Survey of Canada, 1988) and there is evidence for the area of the showing. chemical (e.g. K/Rb) and isotopic differences (Chatterjee and grained than the main body but mineralogically is similar to the in rocks of the transition zone between the Goldenville and Mines and Energy, Assessment Report 85-083. rest of the Davis Lake leucomonzogranite and, thus, we interpret Halifax formations. These metasedimentary rocks consist of the two areas to be the same unit. Preliminary point counting of grey-green argillite interbedded with minor amounts of wacke

Egner, M. C. 1987: The geophysical signature of the South

(Richardson, 1988a) and interpreted to represent a separate x 1.2 km), defined on the basis of drilling (O'Reilly, 1988; Hattie,

are markedly different (depleted K, enriched Na) from the rest Base metal (Cu, Zn) mineralization is contemporaneous with and Cornwall, England, 1985, p. 113-133. of the Davis Lake leucomonzogranite and, indeed, other units of post-dates the cassiterite stage.

the soil sampling. Shell Canada Resources Limited drilled two 27-R-15(00). Sabeans Lake leucomonzogranite (DCImSB) - This (0.2% Sn over 2 m; 0.36% Sn over 2 m; 0.36 leucomonzogranite unit occurs along the southern contact of the backhoe trenching program then exposed tin and base metal MacDonald, M. A. 1989: Lithogeochemistry of the eastern metal mineralization, southwest Nova Scotia; in Program and Davis Lake Pluton. Boulders of this unit are found on the shore mineralization. Analysis of channel samples from backhoe work portion of the South Mountain Batholith, Nova Scotia, NTS map Summaries, Fourteenth Annual Open House and Review of of Sabeans Lake and definition of the unit is based on drill core returned 3.4% Sn over 50 cm with other zones returning 0.3 to sheets 11D/05, 11D/12, 11D/13, 21A/09, 21A/10, 21A/15, Activities, Nova Scotia Department of Mines and Energy, Report information as there are no outcrops. The Sabeans Lake 0.6% Sn over 50 cm (Bonham, 1983). Granges Exploration 21A/16 and parts of 21H/01 and 21H/02; Nova Scotia 90-3, ed. D. R. MacDonald, p. 24. leucomonzogranite is white-grey and more porphyritic (fine- to Limited drilled one hole in 1988 and three holes in 1989 (location Department of Mines and Energy, Open File Report 89-001, 65 medium-grained matrix with coarse grained alkali-feldspar 4a and 4b) to test strike and depth extensions of previouslyleucomonzogranite. Biotite contents are 5-6%, muscovite occurs pyrrhotite, arsenopyrite and sparse chalcopyrite (O'Donnell, 1988, Ham, L. J., Corey, M. C., Horne, R. J., and MacDonald, M. A. (5) Fanning Lake Prospect (A04-02): The Fanning Lake Cu-Pb- 21A/5, 21A/6, 21A/11, 21A/12 and 21A/14; Nova Scotia of Mines and Energy, Report 89-3, p. 71-74. Solomon Lake muscovite-biotite monzogranite (DCmgSO) - The Zn-Sb-Ag-Au prospect is located 1 km north of Carleton in the Department of Mines and Energy, Open File Report 90-007, 31

biotite monzogranite occurs in the north-central portion of the relations; these units include monzogranite¹, leucomonzogranite² map sheet and is poorly exposed. The unit is white-grey, (6) Kempt Snare Lake (A04-04): A small (minimum size 130 x cobaltinitrite solution was used to determine the quartz
has a high biotite content (12-18%) and trace muscovite. Contacts

intrudes greywacke of the Goldenville Formation on the south
Honours thesis, Dalhousie University, Halifax, Nova Scotia.

mica, and development (extensive in localized areas) of sericite

+ 5 Ma for the greisens at the deposit. However, Chatterjee and Shear Zone (Giles, 1985; Corey et al., 1990), has a width of 1.5

cm) zones of ultramylonite are found both within the granitoid the border of the granite/metasediment contact. Mapping with intersect two VLF conductors in the areas of Dog and Rockyshore 1981b). this study has modified the boundaries of the leucogranite and Lakes northeast of the East Kemptville tin mine. Their drilling

(chalcopyrite, pyrite), evidence of shearing (slickensides), narrow mapping within the South Mountain Batholith is outlined by Chatterjee and Muecke (1982), Ford and O'Reilly (1985) and (12) Kemptville (A04-03): Gold was first discovered in the area

Malcolm, W. 1929: Gold Fields of Nova Scotia; Geological

unexposed porphyry bodies. The latter is suggested by an 1886 in three parallel, interbedded quartz veins which contain increased amount of porphyry clasts in the till (P. W. Finck, The leucogranite in all three areas is variably greisenized to personal communication, 1990), with the areas of increased

deformation in the map area. Dykes (up to 3 m wide) of finer (1) East Kemptville tin deposit (A04-09'): Initial reserves at the East Kemptville Sn (Zn-Cu-Ag) deposit are estimated at 56 million tonnes grading 0.165% Sn (Moyle, 1985), with 1988

pyrite) occur within this leucomonzogranite as do quartz stringers geochemical till surveys outlined several Sn and W anomalies near East Kemptville. Follow-up prospecting discovered Sn-bearing greisen boulders and subsequent diamond- drilling resulted in In drill core, the unit is gradational with the more coarse definition of the East Kemptville tin deposit by 1980. A October 1985. Rio Algom Limited withdrew from the project in 1986 and the remainder of the consortium took control. In 1988, grains, mineral fabric bending around larger grains, tension Kemptville Tin Corporation. In 1990, Rio Kemptville Tin

as a result of deformation includes grain size reduction and areas outside of the deposit area (e.g. Big Meadow Brook, Davis element variations in greisens and other granites associated with

area of Nepsedek Lake has been mapped as a separate unit (coarse stratabound tin prospect initially discovered in 1978 by a till grained biotite monzogranite) by Richardson (1988a, 1988b). geochemistry survey conducted by Shell Canada Resources Corey, M. C., Horne, R. J. and Smith, P. K. 1990: Geology and This unit was separated from the eastern portion of the Davis Limited. Subsequent work included geochemical and geophysical mineralization associated with the Tobeatic Lake Shear Zone, Lake leucomonzogranite (classified as a biotite-chlorite- (magnetometer, induced polarization) surveys and diamondmuscovite monzogranite) on the basis of replacement of biotite by drilling. Rio Algom Limited purchased the property in 1982 and 2, p. 168. chlorite and the presence of muscovite. This area has a different carried out additional diamond-drilling. A total of twenty-six airborne radiometric response (e.g. equivalent uranium; holes (totalling 791 m) have been drilled by the two companies in Duncan, D. R. 1986: Kempt Snare Lake area project 15-015, Horne, 1991). The unit in the Nepsedek Lake area is locally finer

The deposit is located 2 km west of the East Kemptville mine

Nova Scotia, Falconbridge Limited; Nova Scotia Department of

rocks from both areas did not differentiate the areas in terms of and siliceous material (Hattie, 1989; Pitre and Richardson, 1989).

Mountain batholith, Davis Lake complex and the East Kemptville Mineralization is predominantly fine grained cassiterite ± tin deposit; B.Sc. thesis, Carleton University, Ottawa, Ontario. sphalerite, pyrite, chalcopyrite, pyrrhotite and arsenopyrite. A small unit (approximately 500 m x 500 m) located There are three parallel zones of low-grade tin mineralization Faribault, E. R. 1919: Investigations in southwestern Nova aproximately 4.5 km southeast of the East Kemptville deposit was oriented in the same direction as bedding. Probable and inferred Scotia; Summary Report 1919, Part F, Geological Survey of previously mapped as an albite-magnetite monzogranite reserves total 5.1 million tonnes of 0.129% Sn (area outlined 1.5 Canada, 1920.

diamond-drill holes in 1982 and intersected tin mineralization

unit occurs along the northern margin of the extension of the south-central portion of the map sheet. Mineralization at the p. Davis Lake Pluton and consists of two variants. The Fanning Lake prospect (also known as North Carleton and Hilton haracterized by a finer grain size and higher biotite content (8- when an 18 m shaft was sunk, trenching was undertaken exposing Pond Zone sediment-hosted tin prospect, Yarmouth County, 0%) than the nearby Davis Lake leucomonzogranite. Variant (a) sulphide-rich and barren quartz veins, and a stamp mill erected Nova Scotia; B.Sc. thesis, Mount Allison University, Sackville, R-02(02). is buff to white, fine grained and equigranular. Variant (b) is on the property. Channel sampling of veins returned average buff, fine- to medium-grained and moderately equigranular or values of Au (17.4 g/tonne), Ag (131.8 g/tonne), Pb 1.82%, Zn slightly porphyritic). Biotite grains are larger than those in the prospect is hosted by fine- to medium-grained greywacke, slate 21-R-10(01). Davis Lake leucomonzogranite (1-2 mm versus <1-5 mm). and argillite overprinted by several zones of alteration (e.g. eastern half of 21A/4, extends northward onto 21A/5 of feldspars. Variable greisenization produces a dark green to sphalerite/tetrahedrite, minor amounts of native Bi, a Bi-Te of Mines and Energy, Open File Map 89-013, scale 1:50 000. (MacDonald and Ham, 1990) and 21A/6 (Horne and Corey, 1990),
grey matrix and chlorite stringers are common throughout the mineral and stibnite) occurs in zones of intense silicification and

> diamond-drilling of three holes to test a geophysical anomaly Energy, Assessment Report 87-121, 39 p. (Taylor, 1969; Duncan, 1986; Jensen, 1987). Various types of grey to black quartz-feldspar and muscovite-bearing greisens and Kontak, D. J. 1987: East Kemptville leucogranite: a possible

geological mapping were compiled from assessment reports by

Deformational fabrics, both brittle and ductile, are pervasively relatively fresh granites similar to the Davis Lake mid-Carboniferous topaz granite; in Mines and Minerals Branch, rocks are rarely exposed, but where seen (mainly in drill core) undulose extinction, quartz sub-grain development, embayed coloration to fine grained graphite pervasively distributed 81-94. they are sharp and intrusive. In addition, contact relationships minerals, kinking of albite twin planes, kinking and bending of throughout the rock (Soehl et al., 1989). The granite cupola is complexly deformed (sheared, faulted, brecciated) and altered (hematized, greisenized). Polymetallic mineralization (W-Pb-Zn-Cu-As-Ag) occurs in quartz veins with m

zones along the northern margin of the southwestern extension, termed the East Kemptville Shear Zone (O'Reilly, 1988), and solution and 153 ppm Ag (Grant, 1948), but Jensen (1987) was unable to 83-96. along the southern contact of the South Mountain Batholith and confirm the anonamlous gold values. Mineralization the Davis Lake Pluton, termed the Rushmere Lake Shear Zone (arsenopyrite, sphalerite, galena, scheelite, chalcopyrite, Fe- Kontak, D. J. 1990a: A sulfur isotope study of main-stage tin (Smith, 1985). The East Kemptville Shear Zone is a 1-4 km wide zone and extends for approximately 40 km (O'Reilly, 1988). The swarms (1 mm to 1 m wide; Kontak et al., 1990) and is related to swarms (1 mm to 1 m wide; Kontak et al., 1990) and is related to Rushmere Lake Shear Zone, an extension of the Tobeatic Lake fluids in a major southwest-trending shear zone (Soehl, 1988). origin of metals and sulfur; Economic Geology, v. 85, p. 399-407. Cormier (1991), Chatterjee and Ham (1991), and Kontak and km and minimum length of 10 km. Zones of shearing have been (7) Wentworth Lake (A04-05): Copper mineralization is Chatterjee (1991), using mineral separates and whole-rock isotope plotted on the map using drill core, outcrop and airborne vertical associated with a small (1.7 km²) pluton outcropping in the area Kontak, D. J. 1990b: The East Kemptville topaz-muscovite iometer information (Geological Survey of Canada, 1990; G. of Wentworth Lake. This pluton is termed the Wentworth Lake leucogranite, Nova Scotia. I. Geological setting and whole-rock Richardson, J. M., Bell, K., Blenkinsop, J. and Watkinson, D. H. Batholith are contemporaneous (age of the Davis Lake Pluton ca.

A. O'Reilly, personal communication, 1990). O'Reilly and Pluton and ranges in composition from the geochemistry; Canadian Mineralogist, v. 28, part 4, p. 787-825. Kontak (1990) have used these airborne vertical gradiometer data quartz monzonite. Additionally, in the Wentworth Lake area, to determine the regional extent of the shear and fault systems.

mineralized (pyrrhotite, chalcopyrite, pyrite and magnetite) calc
Kontak, D. J. 1990c: A geological and geochemical study of the

Research, Part B, Geological Survey of Canada, Paper 88-1B, p. silicate layers are found within quartzite boulders of the East Kemptville Sn-Zn-Cu-Ag deposit, southern Nova Scotia, 163-171.

Shear zones (0.1-1.0 m wide) have developed and thin (1-10 Goldenville Formation (O'Reilly, 1978).

Yarmouth. This body is termed the Wentworth Lake Pluton and rocks and metasedimentary rocks at the deposit. Several other lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading to the lake (A04-06): Polymetallic sulphides (including tin) leading mineral occurrences (see mineral occurrences section) in the map are hosted by an interbedded sequence of slate and quartzite.

Canada, 1990, p. A53-54. area are also associated with substantial shearing, brecciation and Minerals occur erratically in fracture fillings and veins (1 cm to Iteration (e.g. silicic, argillic, chloritic). The Duck Pond 18 cm), characterized by extensive silica and chlorite alteration, Kontak, D. J. 1991: The East Kemptville topaz-muscovite Canadian Journal of Earth Sciences, v. 26, p. 2044-2061. prospect, northeast of the East Kemptville deposit area (mineral and consist of varying amounts of pyrrhotite, chalcopyrite, leucogranite, Nova Scotia. II. Mineral Chemistry; Canadian arrence #2), lies within the East Kemptville Shear Zone. The arsenopyrite, cassiterite, sphalerite and native bismuth. Mineralogist, v. 29, p. 37-60. Kempt Snare Lake cupola (mineral occurrence #6), southwest of Geological, geochemical and geophysical surveys have been leucogranite was named by Kontak (1987) for the buff to cream,
the East Kemptville mine, is suggested to have been emplaced conducted and diamond-drilling, selected on mineralized float
Kontak, D. J. and Chatterjee, A. K. 1991: The East Kemptville large tonnage, low grade, greisen-hosted deposit in the long faults, based on the presence of a geophysical anomaly that and/or good geophysical anomalies, intersected tin mineralization tin deposit, Yarmouth County, Nova Scotia. III. A Pb isotope endocontact zone of a granite batholith; in Current Research, Part topaz leucogranite that hosts the East Kemptville tin deposit.

trends northeast, shear zones, abundant faults and veins that cut

(0.52% Sn over 2.93 m; MacLeod, 1982). Additionally, in the study of the leucogranite and mineralized greisen; evidence for a

B, Geological Survey of Canada, Paper 82-1B, p. 27-32. the cupola, and both ductile and brittle deformation (Soehl, 1988). Pearl Lake area (e.g. Calling Meadows, 1.5 km southwest of Pearl

365 Ma metallogenic event; Canadian Mineralogist, v. 29. The Fanning Lake Prospect (mineral occurrence #5) has wide Lake) anomalous tin values (up to 93 ppm Sn) have been defined (>70 m) northeast-trending breccia zones (O'Reilly, 1988) which in whole till and mineralized (chalcopyrite, sphalerite, malachite Kontak, D. J. and Cormier, R. F. 1991: Preliminary results of geochemical surveys, Yarmouth County, Nova Scotia, 21A/04B; northern margin of the southwest extension of the Davis Lake

are interpreted to represent zones of Fe and K metasomatism

and pyrite) boulders have been discovered in this area on the Rb/Sr and Ar/39Ar geochronological investigations, East

Nova Scotia Department of Mines and Energy, Assessment Report Pluton. Richardson (1988a) interpreted the leucogranite as a blue

along faults related to movement along the East Kemptville Shear

banks of the Tusket River (Sexton, 1985). Tin-bearing veins

Kemptville leucogranite, southwestern Nova Scotia: evidence for 84-115. leucomonzogranite that developed as an alteration product along

Zone. Rio Algom Limited drilled several holes in 1985 to studied in the Pearl Lake area are also enriched in F (Chatterjee, a ca. 370 Ma age of emplacement and multiple tectono-thermal distinguished three bodies of leucogranite: (1) a leucogranite in located a thick (>30 m) quartz-kaolin dyke, and intensely altered

Several other mineral occurrences are listed on the Nova Scotia

> and deformation likely marks the northeast extension of the East Kemptville Shear Zone and is identical to those rocks found at
>
> (9) Brazil Lake pegmatite: The Brazil Lake zoned pegmatite and D. R. MacDonald; Nova Scotia Department of Mines and granitic cupola, Kempt Snare Lake, Yarmouth County, Nova Scotia Department of Mines and granitic cupola, Kempt Snare Lake, Yarmouth County, Nova Scotia Department of Mines and granitic cupola, Kempt Snare Lake, Yarmouth County, Nova Scotia Department of Mines and granitic cupola, Kempt Snare Lake, Yarmouth County, Nova Scotia Department of Mines and granitic cupola, Kempt Snare Lake, Yarmouth County, Nova Scotia Department of Mines and granitic cupola, Kempt Snare Lake, Yarmouth County, Nova Scotia Department of Mines and granitic cupola, Kempt Snare Lake, Yarmouth County, Nova Scotia Department of Mines and granitic cupola, Kempt Snare Lake, Yarmouth County, Nova Scotia Department of Mines and granitic cupola, Kempt Snare Lake, Yarmouth County, Nova Scotia Department of Mines and granitic cupola, Kempt Snare Lake, Yarmouth County, Nova Scotia Department of Mines and granitic cupola, Kempt Snare Lake, Yarmouth County, Nova Scotia Department of Mines and granitic cupola, Kempt Snare Lake, Yarmouth County, Nova Scotia Department of Mines and granitic cupola, Kempt Snare Lake, Yarmouth County, Nova Scotia Department of Mines and granitic cupola, Kempt Snare Lake, Yarmouth County, Nova Scotia Department of Mines and granitic cupola, Mines and Granitic cupo Flintstone Rock within the Rushmere Lake Shear Zone (Smith, intrudes amphibolite and orthoquartzite of the White Rock Energy, Information Series No. 12, p. 97-103. Formation (OSw: Taylor, 1969). The occurrence is actually

991), whereas to the west and east of the deposit the leucogranite brecciated. Wentworth Lake Pluton (mineral occurrence #7)

1960 by a local prospector, is the only spodumene-bearing Mines and Energy, Report 90-1, p. 13-31. contains only trace amounts. Fluorite (purple and green) occurs along a north-northeast trending shear that extends north pegmatite in Nova Scotia. Geological prospecting, geochemical ooth disseminated in the groundmass and along fracture and joint toward Weymouth on map sheet 21A/5 (MacDonald and Ham, L. J. 1990: Preliminary geological Streckeisen, A. L. 1976: To each plutonic rock its proper name; faces. Trace amounts of andalusite, triplite, clay and carbonate 1990) and has a locally developed foliation which intensifies undertaken within the last twenty years. disseminated minerals (cassiterite, pyrite, chalcopyrite, locally in Pearl Lake drill core (mineral occurrence #8), the rock (10) Oakland Lake (A04-08): An occurrence of cassiterite, is heavily fractured (MacLeod, 1982) and major faults are pyrite, trace sphalerite and fluorite in thin quartz veins within MacLeod, J. L. 1982: Report of geological, till and heavy mineral area, Queens, Shelburne, and Yarmouth Counties, Nova Scotia; within the quartz veins and rocks of this unit, particularly in the intersected in both the Pearl Lake area and in drillholes south of geochemical surveys and drilling, Tusket, Yarmouth County, Esso Geological Survey of Canada, Memoir 349. deposit area but also in the smaller leucogranite bodies to the west

Tusket River (MacLeod, 1983). Taylor (1969) also documented

Lake (Chatterjee, 1983). (11) Tusket (A04-11): In 1983 Esso Resources Limited

River near North Kemptville. cut by numerous small (20-50 cm) greisen zones. Sulphides The application of airborne spectrometric data in geological values ranged between 0.27 and 0.77% tin.

O'Reilly et al. (1988). Richardson (1988a) and Egner (1987) in 1881, development of the property began in 1885 and it was Survey of Canada, Memoir 156, p. 68. nterpreted airborne spectrometric data and geophysical data to worked in the early 1900s with total production from the area spectrometric responses. Total count response is elevated in the 1940s. In 1975, Millmor Syndicate drilled six diamond-drill

Department of Mines and Energy, Assessment Report 21A/04B

LEUCOGRANITE: A rock of monzogranitic composition with the 1960s. In 1975, Millmor Syndicate drilled six diamond-drill intersects a fine grained, equigranular leucogranite which western portion of the Davis Lake Pluton and the rest of the sections of sulphide-rich (up to 75% pyrite, arsenopyrite and

g/tonne). (13) Carleton District (A04-01): Gold was initially discovered in
O'Donnell, A. J. 1988: East Kemptville project, Solomon Lake

O'Donnell, A. J. 1988: East Kemptville project, Solomon Lake gold, arsenopyrite, pyrite, galena, sphalerite and chalcopyrite (Faribault, 1919; Malcolm, 1929). The largest of these veins (the Carleton) has been traced for 96.9 m and ranges in width from 1 to 20 cm. Other metals include lead (up to 7.7%), copper (up to 0.4%), zinc (up to 7%) and arsenic (up to 2.6%; Miscellaneous

holes (1651 m) in 1987 and intersected coarse visible gold (0.68 numerous small (20-50 cm) greisen zones. In all three areas, the (granophile and base metals) was first recognized by Chatterjee to 57.5 g/tonne) in five holes with the mineralization occurring in narrow, discontinuous horizons (Rankin, 1988b). cleavage that develops into C-S fabrics, and mylonite, East Kemptville Shear Zone; O'Reilly and Kontak (1990) have The authors were assisted in the field by Don Weir, Clair ultramylonite, and mylonitic zones approximately 0.5-1.5 m wide determined that many of the mineralized sites show a consistent Cormier, Dave Ritcey, Howard Pancura and Colin MacDonald. and indicative of intense deformation (Kontak, 1987). The relationship to regional shear systems, as outlined by the vertical Colleagues at the Nova Scotia Department of Mines and Energy

and A.K. Chatterjee) are thanked for their discussion and assistance. The authors would particularly like to acknowledge the assistance and numerous discussions with D. J. Kontak about adjacent to the East Kemptville leucogranite in the central tons Zn and 14,836 oz. Ag (Kontak, 1990a). Tin mineralization C. Paulin, mine geologist at East Kemptville, is thanked for providing access to the drill core and for his interest and Contacts of the Dog Lake leucomonzogranite are based on wolframite, molybdenite, sphalerite and galena are also present in with Rio Algom Limited (G. Kooiman, O. Bonham) are thanked drillhole information, and boulder and till clast data (P. W. Finck, minor amounts (Richardson, 1988a) and topaz is recovered. porphyritic with a fine- to medium-grained matrix with quartz

In 1976, Merton Stewart, a prospector with Maritime assistance of D. R. MacDonald, P. Belliveau, J. Webster, C. project. Map preparation was only possible with the capable eyes and coarse grained, poorly developed megacrysts of alkali

Exploration (MEX), discovered tin-bearing boulders around

Murphy and R. Morrison. <1-2%. Quartz grains have a blue tinge, locally developed to optioned the ground from MEX and explored for tin and base REFERENCES

Bonham, O. J. H. 1983: Report on geochemical surveying, auger drilling and trenching, Gardners Meadow Brook area, East Kemptville property, Yarmouth County, Nova Scotia; Nova Scotia Department of Mines and Energy, Assessment Report 21A/04B Chatteriee, A. K. 1981a: Polymetallic tin mineralization related to acid magmatism, southwestern Nova Scotia; Department of Mines and Energy, Report of Activities 80-1, Mineral Resources

Division, 1979, ed. K. A. McMillan, p. 59-65. gashes) are well developed within the unit, with the most intense Corporation amalgamated with Rio Algom Limited and Rio Scotia Department of Mines and Energy, Report of Activities 80-Lake area, Yarmouth County, southwestern Nova Scotia; Nova deformation occurring in the Dog Lake and Rockyshore Lake

Algom Limited manages the property. Due to a continued low

1, Mineral Resources Division, 1979, ed. K. A. McMillan, p. 67-

drillhole 82-12). Fine grained, equigranular leucogranite cuts the cassiterite) stage, an albite-phosphate (± sulphides) stage, and exploration implications; in Uranium in Granites, ed. Y. T Textural modification of the Davis Lake leucomonzogranite Similar types of mineralization have been reported in several Chatterjee, A. K. and Strong, D. F. 1984: Rare earth and other

> the Institute of Mining and Metallurgy, Section B, B59-B70. Corey, M. C. and Horne, R. J. 1990: Preliminary geological map of Rossingnol (west half) 21A/03; Nova Scotia Department of Mines and Energy, Open File Map 89-010, scale 1:50 000. southwestern Nova Scotia; abstract in Atlantic Geology, v. 26, no.

assessment report of geological, geochemical and geophysical surveys, general exploration license 11394, Yarmouth County, Geological Survey of Canada 1988: Preliminary release of O'Donnell, A. J. 1989b: East Kemptville project, Solomon Lake

Energy, Assessment Report 89 150

O'Reilly, G. A. 1978: Copper mineralization at Wentworth Lak

, 2 km west of Nepsedek Lake; drill core 83-12 exhibits mineralization includes pyrite, chalcopyrite, pyrrhotite, VLF-EM survey of the Yarmouth area, Nova Scotia; Geological Scotia Department of Mines and Energy, Report 78-1, p. 67-76. fluorite along seams, and minor opaques. Shearing and Giles, P. S. 1985: A Major Post-Visean sinistral shear zone - deposit studies; in Mines and Minerals Branch, Report of Additionally, a small unit of albite-quartz breccia was brecciation are apparent throughout the core and occur in zones new perspectives on Devonian and Carboniferous rocks of Activities 1988, Part A, eds. D. R. MacDonald and Y. Brown, Southern Nova Scotia; in Guide to the granites and mineral Nova Scotia Department of Mines and Energy, Report 88-3, p. deposits of southwestern Nova Scotia, eds. A. K. Chatterjee and 105-107. O'Reilly, G. A., Corey, M. C. and Ford, K. L. 1988: The role of

airborne gamma-ray spectrometry in bedrock mapping and

O'Reilly, G. A. and Smith, P. K. 1989: Metasediment-hoste 1990: Lithogeochemistry of the western portion of the South Mines and Minerals Branch, Report of Activities 1989, Part A Mountain Batholith, Nova Scotia, NTS map sheets 21A/3, 21A/4, eds. D. R. MacDonald and K. A. Mills, Nova Scotia Department monzogranite is generally buff to white to blue-grey and gold prospect) has been known since at least the early 1900s, Hattie, K. J. 1989: Petrography and surface geology of the Duck ground magnetic and ground VLF surveys; Nova Scotia L. 1982: Report on geological, till and rock geochemical survey Department of Mines and Energy, Assessment Report 21A/0429-

porphyritic. This variant is greisenized with grain size reduction 1.96% and trace Cu (Henderson, 1937). Acadia Mineral Ventures

Henderson, E. H. 1937: Report on the North Carleton mining and airborne radiometric surveys and drilling, East Kemptville, Pichette, R. J. 1978: Report on geological, radon geochemical probably caused by secondary alteration (fine grained, moderately equigranular or fine grained equigranular or medium grained, moderately equigranular or medium grained, moderately equigranular or medium grained, moderately expected the limits of the previously property, Carleton, Yarmouth County, Nova Scotia; Nova Feldspar cores are commonly replaced by green or white sericite. silicification, sericitization, hematization, hem 1985; Richardson, 1985). This circular pluton underlies the

Fluorite occurs in quartz veins, in fractures and within the cores

Mineralization (pyrite, arsenopyrite, chalcopyrite, galena and of Kejimkujik Lake, NTS sheet 21A/06; Nova Scotia Department

Nova Scotia; Canadian Journal of Earth Sciences, v. 26, p. 2032-

shearing. Analysis revealed concentrations of Au up to 3732 ppb

Hudgins, A. D. 1975: Drilling program report and logs, gold,

Rankin, L. D. 1988a: Base metals, precious metals, Fanning and Ag up to 412 ppm (O'Reilly and Smith, 1989; Rankin, 1988a). Kemptville, Yarmouth County; Nova Scotia Department of Mines Lake, Yarmouth County, Nova Scotia, report on drilling and dri and Energy, Assessment Report 21A/04B 21-R-07(03). core assays; Nova Scotia Department of Mines and Energy, Assessment Report 88 173. medium- to coarse-grained, seriate or megacrystic (5-15%), and 250 m) greisenized leucogranite and leucomonzogranite cupola.

Rankin, L. D. 1988b: Gold, Carleton, Yarmouth County, Nova Scotia; B.Sc.

Rankin, L. D. 1988b: Gold, Carleton, Yarmouth County, Nova Scotia; B.Sc. Scotia; report on drilling and drill core assays, 1988; Nova Scotia Department of Mines and Energy, Assessment Report 88 177. personal communication, 1990) and airborne radiometric response and sphalerite-bearing black granitic boulders were discovered in property project #015, exploration license #11394 Yarmouth Richardson, J. M. 1983: Geology and geochemistry of the East (i.e. equivalent thorium/potassium; Geological Survey of Canada, the 1920s and subsequent work included the sinking of a shaft, county, Nova Scotia, NTS 21A/04D, 20P/03C, Falconbridge Kienardson, J. M. 1983. Geology and geochemistry of the Last county, Nova Scotia, NTS 21A/04D, 20P/03C, Falconbridge geological and till geochemical surveys, geophysical work and

Limited, Nova Scotia; Nova Scotia Department of Mines and

Scotia; M.Sc. thesis, University of Toronto, Toronto, Ontario. developed within all rock types of the Davis Lake Pluton. leucomonzogranite and the East Kemptville leucogranite were Report of Activities 1986, eds. J. L. Bates and D. R. MacDonald, batholith; in Guide to the granites and mineral deposits of Mylonites, ultramylonites, fluidized breccias, grain size reduction,

Mylonites, ultramylonites, fluidized breccias, grain size reduction,

Mylonites, ultramylonites, fluidized breccias, grain size reduction,

Nova Scotia Department of Mines and Energy, Report 87-1, p. Nova Scotia Department of Mines and Energy, Preprint of Paper

> alteration and greisen-hosted mineralization at the East Kemptville tin deposit, Davis Lake Complex, southwest Nova Scotia; in Recent advances in the geology of granite-related mineral deposits, eds. R. P. Taylor and D. F. Strong, Canadian Institute of Mining and Metallurgy, Special Volume 39, p. 265-

Canada: mineralization hosted by ca. 370 Ma topaz-muscovite Carboniferous tin-bearing Davis Lake complex and the Devonian South Mountain Batholith, Meguma Terrane, Nova Scotia; Richardson, J. M., Spooner, E. T. C. and McAuslan, D. A. 1982: Sexton, A. J. 1985: Yarmouth tin project 967, geological and

overprinting events: Canadian Journal of Earth Sciences, v. 29, p. Smith P. K. 1985: Mylonitization and fluidized brecciation is southern Nova Scotia: in Mines and Minerals Branch, Report of Activities 1984, eds. K. A. Mills and J. L. Bates, Nova Scotia (silicic, argillic) and deformed granitic rock (e.g. mylonite, Department of Mines and Energy mineral occurrence cards and Kontak, D. J., Mulja, T. and Hingston, R. 1986: The East Department of Mines and Energy, Report 85-1, p. 119-133. Kemptville Sn deposit: preliminary results from recent mapping: in Tenth Open House and Review of Activities, eds. J. L. Bates Soehl, T. P. 1988: Geological investigation of a mineralized

Scotia; B.Sc. thesis, Dalhousie University, Halifax, Nova Scotia. located on map sheet 20P/13, immediately south of the southwest Kontak, D. J., O'Reilly, G. A. and Chatterjee, A. K. 1990: The Soehl, T. P., O'Reilly, G. A., Clarke, D. B. and Reynolds, P. H. As discussed under the rock unit section, boulders of the Dog corner of 21A/4 by Brazil Lake. In addition to quartz, feldspar, southwest Nova Scotia tin domain, Yarmouth County, Nova 1989: The graphite-bearing Kempt Snare Lake greisenized and Energy, Report 89-1, p. 51-69.

Kontak, D. J. 1988: The East Kemptville project: whole-rock

map of Weymouth, NTS sheet 21A/05; Nova Scotia Department Earth Science Reviews, v. 12, p. 1-33. of Mines and Energy, Open File Map 89-012, scale 1:50 000. Taylor, F. C. 1967: Reconnaissance geology of Shelburne map-Resources Canada Limited; Nova Scotia Department of Mines and Energy, Assessment Report 21A/04B 51-R-28(02). Taylor, F. C. 1969: Geology of the Annapolis-St. Mary's map area, Nova Scotia; Geological Survey of Canada, Memoir 358. discovered a medium grained, subangular boulder of Goldenville MacLeod, J. L. 1983: Report of geological, rock and till Formation quartzite which contained disseminated sulphides geochemical surveys, drilling and trenching, Tusket, Yarmouth Zentilli, M. and Reynolds, P. H. 1985: **Ar/3*Ar dating of micas (pyrite, chalcopyrite, bornite, arsenopyrite and malachite). Assay County, Esso Resources Canada Limited; Nova Scotia Department from the East Kemptville tin deposit, Yarmouth County, Nova of Mines and Energy, Assessment Report 20P/13C 51-R-10(03). Scotia; Canadian Journal of Earth Sciences, v. 22, p. 1546-1548.

²LEUCOMONZOGRANITE: A rock of monzogranitic occurring at intersections of stratabound and cross veins. The

Miscellaneous 1936-1964: Miscellaneous memos and plans, gold, composition with less than 6% combined mafic minerals. less than 2% combined mafic minerals. Moyle, J. E. 1985: East Kemptville tin project; in Guide to the 4PORPHYRY: A rock with a predominantly finer grained A. K. Chatterjee and D. B. Clarke; Nova Scotia Department of bimodal grain size distribution). Phenocrysts rarely exceed 25 cm Mines and Energy, preprint of paper 85-3, p. 199-200. (adj. porphyritic)

area, Yarmouth County, Nova Scotia, diamond-drilling, Granges larger than the surrounding groundmass.

OPEN FILE MAP 91-020 PRELIMINARY GEOLOGICAL MAP OF WENTWORTH LAKE

NTS SHEET 21A/4 (and part of 20P/13) L.J. HAM and M.A. MacDONALD

kilometres Nova Scotia Department of Natural Resources Honourable C.W. MacNeil, M.D., Minister

Scale 1:50 000

1 2 3 4

Halifax, Nova Scotia 1991