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White Hills Lake to Meadowbank River area, Rae Province,
Nunavut, Canada**

W.J. Davis, E. Zaleski, and Q. Emon

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Introduction

U-Pb ages are reported for eleven samples from the Woodburn Lake area, within the Rae Province, approximately 50 to 100 km north of Baker Lake (Figure 1, Figure 2). The samples were collected during regional mapping by Dr. Eva Zaleski as part of the NRCAN Western Churchill NATMAP project in the late 1990's and early 2000's (Zaleski et al. 1999a,b; Zaleski et al. 2001; Zaleski, 2005; Zaleski and Pehrsson, 2005; Zaleski et al. 2005). Subsequent geological work in the area is summarized in Jefferson et al. (in prep), to which the reader is referred for current geological context.



Figure 1. Location map of study area north of Baker Lake.

Analytical Methods

U-Pb isotopic data were determined by isotope dilution thermal ionization mass spectrometry at the Geochronology laboratory, Geological Survey of Canada in the late 1990's and early 2000's. Sample dissolution and chemical methods are described in Parrish et al. (1987). Individual crystals were selected under binocular microscope to avoid inclusions and other imperfections, mechanically abraded (Krogh, 1982) and spiked with a mixed ^{205}Pb - ^{233}U - ^{235}U tracer solution calibrated to $\pm 0.1\%$ against a gravimetric solution, and dissolved in

high-pressure bombs in HF-HNO₃. Data reduction and error propagation follow methods outlined in Roddick (1987) and linear regressions use formulation of York (1969). U and Pb isotopic ratios were measured using a Finnigan Mat 261 mass spectrometer operated in either static multi-collection mode or using a secondary electron multiplier. The ^{205}Pb , ^{206}Pb , ^{207}Pb , and ^{208}Pb isotopes were measured simultaneously in Faraday collectors, with ^{204}Pb in an axial secondary electron multiplier. Faraday-multiplier gain was monitored and corrected by peak jumping ^{205}Pb into the axial cup. A Pb mass fractionation correction of $0.09 \pm 0.04\%/amu$ was applied as determined by replicate analyses of the NBS981 standard. U fractionation was corrected using the ^{233}U - ^{235}U double spike and was typically in the range of $0.12\%/amu$.

Sample Description and Results

Sample locations are shown on a geological map in Figure 2. The U-Pb data are presented in Appendix 1 and a summary of ages in Table 1.

Plutonic rocks

ZB99-420CZ and ZB00-118CZ:

Two samples were collected to evaluate the age of an intrusive body that outcrops in the Halfway Hills area (Figure 2). The plutonic body has been interpreted as basement to the supracrustal rocks (Zaleski et al. 2001). Sample ZB99-420CZ, was sampled near the southern contact of the complex adjacent to the quartz breccia zone that forms the fault contact with the Paleoproterozoic White Hills quartzite (Sequence 1, Figure 2), and a second sample, ZB00-118CZ, was collected from the northwest side of the body near the contact with the volcanic belt, within an area where the body is cut by mafic dykes. Both samples are petrographically similar, white-weathering, leucocratic, quartz-rich, medium grained, strongly foliated, granodiorite to tonalite with porphyroclastic plagioclase and perthitic microcline. Mafic minerals are retrograded to chlorite and deformed fractures within the body

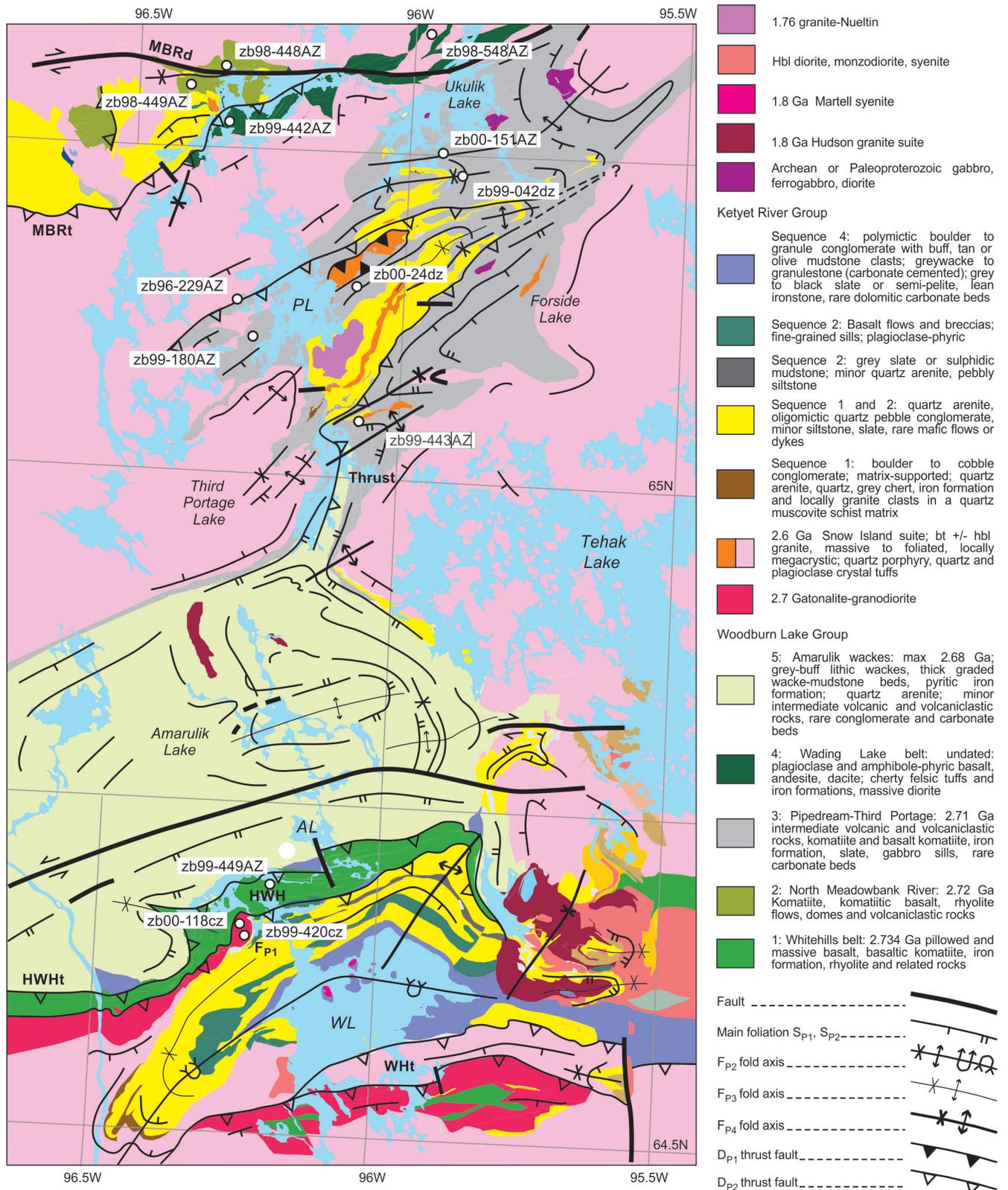


Figure 2. Map of the Woodburn Lake area, Nunavut showing sample locations for this study. HWH = Halfway Hills; HWHt = Halfway Hills thrust; MBRd = Meadowbank River fault dextral; MBRt Meadowbank River thrust; PL = Pipedream Lake; WL = Woodburn Lake; WHt = White Hills thrust. Map after Pehrsson et al. (2013).

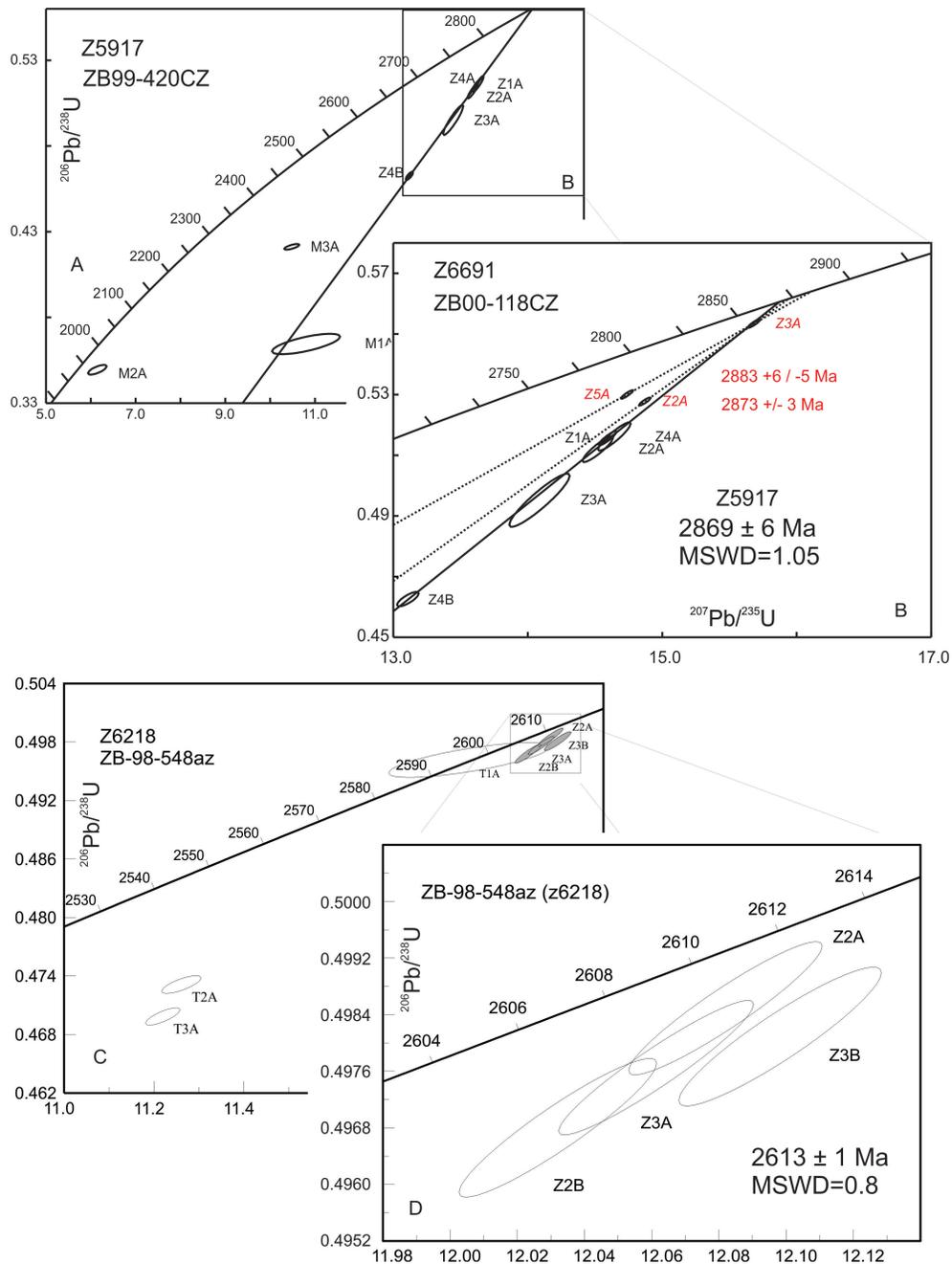


Figure 3. Concordia diagrams for plutonic rocks. Error ellipses and ages are reported at the 2σ confidence interval. A) Results for sample ZB99-420CZ. Monazite fractions labelled with “M”, zircon fractions labelled with “Z”. B) Detail of results for sample ZB99-420CZ (black) and ZB00-118CZ (red). C) Results for sample ZB98-548az. Titanite fractions labelled with “T”, zircon fractions labelled with “Z”. D) Detail of results for sample ZB9-548az.

contain white mica, carbonate and chlorite. Based on the similar petrographic characteristics, the samples are interpreted to be from the same intrusive body.

Zircon in sample ZB99-420CZ is generally of poor quality and comprised of light brown, subhedral prisms to anhedral fragments. Most grains are extensively fractured. Five analyses,

each consisting of between 1 and 4 prismatic grains, are discordant with $^{207}\text{Pb}/^{206}\text{Pb}$ ages between 2869 and 2877 Ma (Appendix 1; Figure 3A). The five analyses define a linear regression with an upper intercept age of 2869 \pm 6 Ma and a lower intercept of -27 Ma (MSWD = 1.05) (Table 1).

Zircon in sample ZB00-118CZ, from the northwestern part of the body consists of euhedral, elongate (3-4:1) and multifaceted equant prisms. Three analyses yield discordant ages of 2840 to 2871 Ma (Appendix 1; Red points Figure 3B). The three analyses do not plot along a linear array indicating complex Pb-loss and/or mixing of more than one age. Two-point reference lines constructed through the two most concordant fractions yield upper age intercept estimates of 2873 and 2883 (Figure 3B), similar to the upper intercept age determined for sample ZB99-420CZ. Fraction Z3A, the least discordant analyses plots on the same regression defined by zircon from sample ZB99-420CZ consistent with both samples having similar ages of 2870 Ma and forming part of the same plutonic basement complex.

ZB-98-548AZ – “Pencil” Granite

This sample is representative of a granite sheet, approximately 1000 metres thick in map view, folded together with amphibolite-facies supracrustal rocks. Contacts were not observed. The granite is generally homogeneous, medium grained, pink in colour, and contains accessory biotite, titanite and magnetite and, in some cases, retrograde chlorite. The most notable field characteristic is a strong subhorizontal L>>S lineation defined by quartz and feldspars and interpreted to be coaxial with the dominant folds in the area (F2 or F3). Accordingly, the crystallization age of this granite will provide a maximum age of folding.

Three of four multi-grain zircon analyses yield slightly discordant ages (0.3-0.5%) with overlapping $^{207}\text{Pb}/^{206}\text{Pb}$ ages with a weighted mean of 2613 ± 1 Ma (Appendix 1, Figure 3C, Table 1). The fourth multigrain analysis (Z3B) has a slightly older $^{207}\text{Pb}/^{206}\text{Pb}$ age of 2617 ± 1.7 Ma indicating some component of inherited material. Three multi-grain analyses of titanite yield a range of variably discordant ages (Figure 3C). One fraction has an imprecise concordant age of 2596 ± 20 Ma and the other two yield highly discordant results indicative of significant Pb-loss or mixing.

Volcanic Rocks

ZB99-449AZ: Felsic volcanic rock, Whitehills belt

Sample ZB99-449AZ is a plagioclase quartz porphyritic felsic volcanic rock collected from a 120 metre thick felsic unit in the northern part of the Whitehills volcanic belt, near the contact with the Amarulik wacke to the north (Figure 2). Felsic rocks in this area are typically fissile and schistose with only locally preserved tuffaceous textures indicative of a volcanic protolith. The sample collected for geochronology contains embayed quartz phenocrysts (1-4 mm), with lesser euhedral, to subeuhedral plagioclase phenocrysts (3 mm) in a fine grained, micaceous matrix. Minor carbonate alteration is present.

Zircons are dominated by euhedral, well faceted, pale brown equant to prismatic grains, typical of volcanic rocks. Cores were observed in a minority of the grains and were carefully excluded from the analysis. Six of seven analyses are within 0.5% of concordia (Appendix 1; Figure 4A) and yield a weighted mean age of 2734.2 ± 1.8 Ma (MSWD =2.8), interpreted to be the crystallization age of the volcanic rock (Table 1). Multigrain fraction Z1A (not shown) yielded an imprecise and slightly older age of 2761 ± 24 Ma indicative of an inherited component with a minimum age of ca. 2761 Ma.

ZB-96-229AZ: West Pipedream Lake crystal tuff

Sample ZB-96-229AZ was taken from the west side of Pipedream Lake in an area characterized by spinifex-textured komatiitic flows associated with quartz + plagioclase porphyritic felsic rocks and local quartz-rich felsic volcanoclastic rocks, spinifex-textured komatiitic basalt and oxide- and sulphide-facies iron formation (Kerswill et al., 1998). The sample is a light grey, fine-grained reworked quartz feldspar crystal tuff several metres south of the covered contact with spinifex-textured komatiite. Younging indicates that the tuff overlies the komatiite (Kjarsgaard et al., 1997). Sample ZB-

96-229AZ contains abundant irregular to angular monocrystalline quartz (0.4-1 mm) and coarser subhedral anhedral plagioclase crystal clasts (0.4-1.5 mm) in a fine grained quartzofeldspathic matrix.

Zircon grains are typically euhedral, elongate to stubby, prismatic grains of uniform morphological type. Five multi-grain fractions consisting of 2 to 6 grains yield concordant to discordant $^{207}\text{Pb}/^{206}\text{Pb}$ ages between 2704 and 2713 Ma (Appendix 1, Figure 4B). The five analyses define a regression line with an upper intercept age of 2710.3 \pm 4.3/-2.7 Ma (MSWD 1.1; Table 1). Concordant fractions Z1A and Z3A lie just outside of analytical uncertainties possibly indicating inclusion of an older zircon component. Regression of the data excluding Z3A gives a similar age of 2709 \pm 3.9/-2.4 Ma. We adopt the 2710.3 \pm 4.3/-2.7 Ma age as the age of the volcanic rock (Table 1).

ZB-99-180AZ: West Pipedream Lake quartz + plagioclase porphyritic sill

A second sample was collected from the west Pipedream Lake area within the komatiite sequence. The sample is a massive, several metre wide, dyke-like porphyritic intrusion within massive komatiite and spinifex-textured komatiitic basalt. The sample is white to buff weathering with sulphides along fractures, embayed quartz phenocrysts to 8 mm, plagioclase phenocrysts and glomeroporphyritic clusters in very fine grained matrix.

Zircon grains are dominated by small (<100 μm), colourless, euhedral, prisms. Seven multi-grain analyses are all discordant and do not define a simple discordia line. Five of the analyses define a regression line with an upper intercept at 2711.4 \pm 7/-5.8 Ma (MSWD = 2.64; Appendix 1, Figure 4C; Table 1), which is taken as the best estimate of the age of the porphyritic intrusion, and a minimum age of the associated komatiitic flows. Fraction ZB8 plots to the right

of the regression indicating a component of older zircon in the rock.

ZB00-24DZ: Felsic volcanic tuff, east of Pipedream Lake

Sample ZB00-24DZ was collected from a unit of felsic tuff, lapilli tuff and volcanic breccia about 400 metres structurally above a panel of quartz arenite (Figure 2). Although this felsic volcanic unit occurs structurally above the quartzite, younging indicators suggest that the stratigraphy is overturned in this area and the volcanic rocks are older, and stratigraphically below, the quartzite. The sample is a plagioclase + amphibole porphyritic volcanic breccia with light buff, flattened amygdaloidal clasts (5-20 cm) in slightly darker matrix. Textures suggest pyroclastic welding and the sample is interpreted to be a pyroclastic tuff.

On the order of several hundred zircon grains were recovered from this sample. The zircon comprise generally small prisms with a subordinate number of rounded grains. The latter type are interpreted to be xenocrystic and no further work was carried out on them. Two analyses of prismatic crystals yielded overlapping concordant results with a weighted mean $^{207}\text{Pb}/^{206}\text{Pb}$ age of 2712.7 \pm 1.4 Ma (MSWD=0.79; Appendix 1, Figure 4D, Table 1), interpreted as the crystallization age of the volcanic rock.

ZB00-151AZ Felsic volcanic rock Ukulik Lake area

Sample ZB00-151AZ (z6689) was taken from an exposure of felsic volcanic rocks about 1.5 km north of quartzite and komatiite, and about 3 km east of a fine- to medium-grained subvolcanic tonalite intrusion interpreted as a volcanic center. The sample is buff to light green lapilli tuff with plagioclase porphyritic lapilli supported in a slightly darker matrix. No zircons were recovered from the sample.

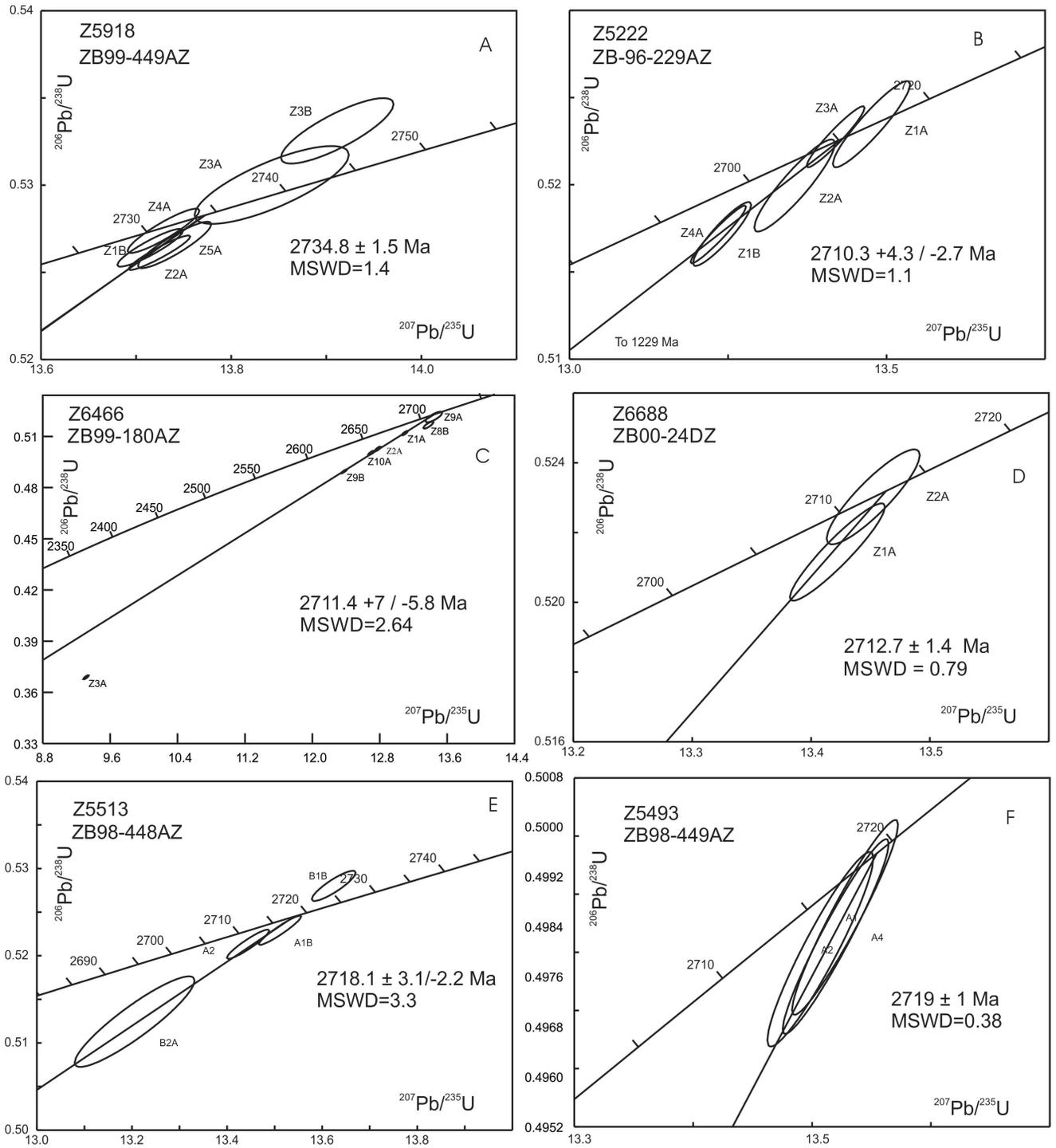


Figure 4. Concordia diagrams for volcanic rocks. Error ellipses and ages are reported at the 2σ confidence interval.

ZB98-448AZ: Felsic volcanic rock, Meadowbank River

Sample ZB98-448AZ is a plagioclase + quartz porphyritic felsic volcanic rock interlayered with ultramafic flows on 3-5 metre scale. Felsic rocks show variable phenocryst content and size from very fine or aphyric to sparse embayed quartz phenocrysts (2-4 mm), as well as larger round quartz grains to 8 mm.

Zircon are dominated by short to elongate, colourless to pale brown prisms. Most grains are fractured and cloudy. Four analyses of optically-clear, non-fractured grains yielded concordant to discordant $^{207}\text{Pb}/^{206}\text{Pb}$ ages of 2715 to 2719 Ma (Appendix 1; Figure 4E). Regression of the four analyses yields an upper intercept age $2718.1 \pm 3.1/-2.2$ Ma (MSWD=3.3, Table 1), interpreted to be the crystallization age of the rhyolite. In addition to the igneous zircon, a population of large, colourless, resorbed grains are present. These grains are interpreted to represent an inherited component but were not analyzed.

ZB98-449AZ: Plagioclase-quartz porphyritic felsic volcanic, north Meadowbank River

Sample ZB98-449AZ was collected from the North Meadowbank River belt from an extensive area of plagioclase + quartz porphyritic felsic volcanic rocks about 1 km south of the unconformable contact with overlying quartzite. The locality sampled was specifically selected to be as close as could be determined to the site of a previously analysed dacite porphyry with a reported age of $2798 \pm 24/21$ Ma (Tella et al., 1985), in order to reassess the presence of ca. 2.8 Ga volcanic belt. Similar to the previously analysed sample, sample ZB98-449AZ is a massive, buff weathering unit containing 20% white, sausseritized plagioclase phenocrysts to 3 mm, 5% embayed quartz phenocrysts to 4 mm, white mica, chlorite, epidote, mafic clots of mostly chlorite with relatively abundant tourmaline.

Zircon in sample ZB98-449AZ are dominantly euhedral, oscillatory-zoned prismatic grains with length to breadth ratios of 2 to 3:1. Needle-like fluid inclusions are common parallel to growth zones. Three multi-grain analyses (6-8 μg) of clear, colourless prismatic zircon yield overlapping concordant ages of 2718 to 2719 Ma, with a weighted mean $^{207}\text{Pb}/^{206}\text{Pb}$ age of 2719 ± 1 Ma (MSWD = 0.38, Figure 4F, Appendix 1), interpreted as the crystallization age of the volcanic rock (Table 1). No evidence for a significant inherited zircon population was noted. The previous age estimate of this unit of ca. 2.8 Ga (Tella et al., 1985) using bulk zircon fractions (2-5 mg size) was not reproduced. The simplest interpretation is that the older, bulk zircon analyses incorporated a significant inherited component that was successfully excluded in this study. Accordingly, the previously reported ca. 2.8 Ga age for this dacitic volcanic unit should be abandoned in favour of the 2719 ± 1 Ma age reported here (Table 1). Furthermore, the Tella et al. (1985) data could suggest that ca. 2.87 Ga basement, documented here by samples ZB99-420CZ could extend northward to the Amer Lake region.

ZB99-442AZ: Cherty tuff layer

Sample ZB99-442AZ was collected from thinly bedded (mm scale) tuff interlayered with iron formation on cm scale, within mafic volcanic rocks on the southeast side of the Meadowbank River. The sample is an orange weathering, fine-grained tuff with plagioclase phenocrysts and lithic fragments including trachytic plagioclase porphyry and possible mafic fragments. Zircon recovery was insufficient to provide an age.

ZB99-042DZ: Quartz-K-feldspar porphyry

In the Ukulik Lake area, a distinctive metre-thick, buff-coloured quartz-K-feldspar porphyritic layer, originally interpreted to be a volcanic tuff horizon occurs within the quartzite (Figure 2). The layer was sampled for geochronological analysis to provide a

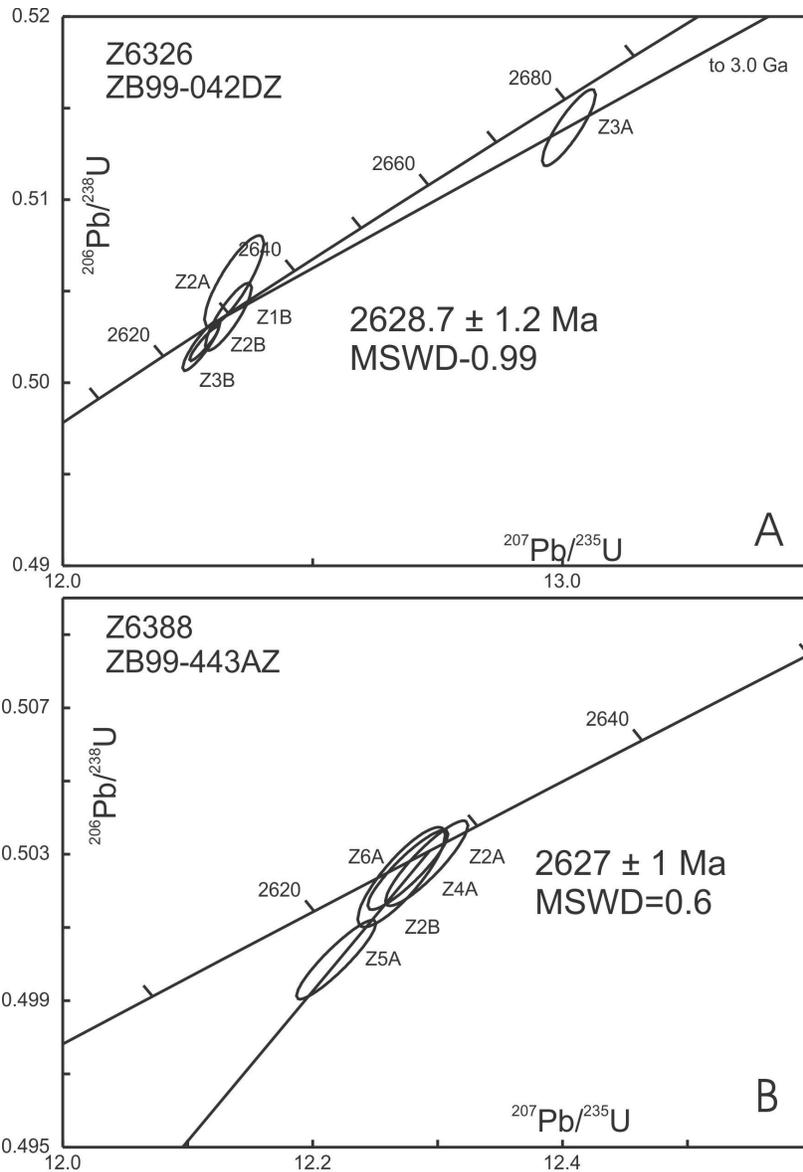


Figure 5. Concordia diagrams for quartz-K-feldspar porphyritic rocks. Error ellipses and ages are reported at the 2σ confidence interval.

depositional age for the adjacent quartzite. Subsequent work re-interpreted the unit to be an infolded layer of underlying porphyritic rocks (Jefferson et al. in prep).

The sample yielded a large number of zircon with a dominant population comprised of euhedral, well-faceted, prisms typical of zircon in volcanic rocks. The majority of grains are broken, and many contain c-axis-parallel fluid inclusions. A subordinate population of zircon is anhedral and rounded and is interpreted to either be inherited or incorporated within the sample from the adjacent sedimentary rocks.

Four of the five analyses, including both single-grain and multi-grain fractions yield concordant ages of 2626 ± 5 Ma to 2630 ± 3 Ma (Figure 5A, Appendix 1). The four analyses define a single age population with a weighted mean $^{207}\text{Pb}/^{206}\text{Pb}$ age of 2628.7 ± 1.2 Ma (MSWD=0.99), interpreted to be the crystallization age (Table 1). The fifth analysis yields an older, slightly discordant $^{207}\text{Pb}/^{206}\text{Pb}$ age of 2686 Ma. Zircons in this fraction have equant euhedral morphology similar to fraction Z3B but at least one of the grains, or parts of grains must include an older component. A maximum estimate of 3.0 Ga for the older

component is given by a line that passes through the older analysis and pinned at a lower intercept of 2628 Ma.

ZB99-443AZ: Q-Kf-P porphyry – Tern Lake

Sample ZB99-443AZ is from a medium grey, quartz and two feldspar crystal-rich porphyritic rock that is interlayered with wacke and iron formation. Layering at the 0.5 metre scale in the crystal tuff is defined by gradations in phenocryst abundance (sparse - dense) and size (1-8 mm) that is interpreted as primary depositional layering indicative of either primary or reworked volcanic crystal tuffs. Granophyric intergrowths in the matrix and as fringes on K-feldspar may be relicts of devitrification. The foliation is defined by phyllosilicates (biotite, muscovite, chlorite).

The sample yielded an abundant quantity of well faceted euhedral, prismatic zircon. The grains have a very similar habit to those recovered from quartz-K-feldspar porphyry sample ZB99-042DZ, including abundant large fluid inclusions. Five analyses, each consisting of from one to five prismatic grains yield concordant ages with a weighted mean of 2627 ± 1 Ma (MSWD=0.60) (Appendix 1, Figure 5B, Table 1). This is interpreted as the igneous crystallization age.

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References

- Davis, W J; and Zaleski, E 1998. Geochronological investigations of the Woodburn Lake group, western Churchill Province, Northwest Territories: preliminary results. In Radiogenic age and isotopic studies: Report 11; by Geological Survey of Canada; Geological Survey of Canada, Current Research no. 1998-F, 1998 p. 89-97, <https://doi.org/10.4095/210060> (Open Access)
- Jefferson, C.W., Pehrsson, S., Tschirhart, V., Peterson, T., Chorlton, L.1, Bethune, K., Davis, W., McNicoll, V. and Rayner, N., in prep. Geology and metallogeny of the northeast Thelon Basin region and comparison with the Athabasca Basin; In Pehrsson and Wodicka (eds.) Rae Synthesis, GEM Program, Geological Survey of Canada Bulletin xxx, p yyy-zzz.
- Kerswill, J.A., Goff, S.P., Wilkinson, L., Jenner, G.A., Kjarsgaard, B.A., Bretzlaff, R., Samaras, C. 1998. An update on the metallogeny of the Woodburn Lake Group, western Churchill Province, Northwest Territories. In Canadian Shield / Bouclier Canadien; Geological Survey of Canada; Geological Survey of Canada, Current Research no. 1998-C, 1998 p. 29-41
- Kjarsgaard, B.A., Kerswill, J.A., and Jenner, G. A. 1997. Lithostratigraphy and metallogenic implications of komatiite - banded iron-formation - felsic volcanic rocks of the Archean Woodburn Lake group, Pipedream Lake, central Churchill Province, Northwest Territories. In Canadian Shield / Bouclier Canadien; Geological Survey of Canada; Geological Survey of

- Canada, Current Research no. 1997-C, 1997 p. 101-110
- Krogh, T.E., 1982. Improved accuracy of U-Pb ages by the creation of more concordant systems using an air abrasion technique. *Geochimica et Cosmochimica Acta*, 46: 637-649.
- Parrish, R.R., Roddick, J.C., Loveridge, W.D., and Sullivan, R.W., 1987. Uranium-lead analytical techniques at the geochronology laboratory, Geological Survey of Canada; In *Radiogenic Age and Isotopic Studies: Report 1*, Geological Survey of Canada, Paper 87-2, 3-7.
- Pehrsson, S., Berman, R.G., Davis, W.J. 2013. Paleoproterozoic orogenesis during Nuna aggregation: a case study of reworking of the Rae craton, Woodburn Lake, Nunavut. *Precambrian Research*, 1 232, p. 4-26.
- Roddick, J.C. (1987) Generalized numerical error analysis with applications to geochronology and thermodynamics. *Geochimica et Cosmochimica Acta*, 51, p. 2129-2135.
- Tella, S., Heywood, W.W., Loveridge, W. D., 1985. A U-Pb age on zircon from a dacite porphyry, Amer Lake map area, District of Keewatin, NWT In *Current Research part B / Recherche en cours partie B*; Geological Survey of Canada; Geological Survey of Canada, Paper no. 85-1B, p. 371-374.
- York, D., 1969. Least squares fitting of a straight line with correlated errors. *Earth and Planetary Science Letters*, 5(5), p. 320-324.
- Zaleski, E., 2005. Geology, Meadowbank River area, Nunavut; Geological Survey of Canada, "A" Series Map 2068A, scale 1:50000.
- Zaleski, E. and Pehrsson, S., 2005. Geology, Half Way Hills and Whitehills Lake area, Nunavut; Geological Survey of Canada, "A" Series Map 2069A scale 1:50000.
- Zaleski, E., Pehrsson, S., and Wilkinson, L., 2005. Geology, Amarulik and Tehek lakes area, Nunavut; Geological Survey of Canada, "A" Series Map 2070A, scale 1:50000.
- Zaleski, E., Pehrsson, S.J., Davis, W.J., Greiner, E., L'Heureux, R., Duke, N., and Kerswill, J.A., 2001. Geology, Half Way Hills to Whitehills Lake area, Nunavut; Geological Survey of Canada, Open File 3697 scale 1:50000.
- Zaleski, E., Duke, N., L'Heureux, R., and Wilkinson, L., 1999a. Geology, Woodburn Lake group, Amarulik Lake to Tehek Lake, Kivalliq region, Nunavut; Geological Survey of Canada, Open File 3743, scale 1:50000.
- Zaleski, E., L'Heureux, R., Duke, N., Wilkinson, L., and Kerswill, J.A., 1999b. Geology, Woodburn Lake group, Meadowbank River area, Kivalliq region, Nunavut; Geological Survey of Canada, Open File 3709, scale 1:50000.

Table 1. Summary of location information and U-Pb zircon ages for samples from the Woodburn Lake area. UTM locations in NAD27.

Sample #	Lab #	Rock Type	UTM Zone	East	North	Age (Ma)	+2 σ (Ma)	-2 σ (Ma)	Age Method	Age Interpretation
ZB96-229AZ	5222	Volcanic	14	627144	7225507	2710.3	4.3	2.7	U/Pb	Igneous Crystallization
ZB98-449AZ	5493	Volcanic	14	601814	7689284	2719	1	1	U/Pb	Igneous Crystallization
ZB98-448AZ	5513	Volcanic	14	601814	7689284	2718	3.1	2.2	U/Pb	Igneous Crystallization
ZB99-420CZ	5917	Plutonic	14	632398	7171422	2869	6	6	U/Pb	Igneous Crystallization
ZB99-449AZ	5918	Volcanic	14	634642	7176974	2734.2	1.8	1.8	U/Pb	Igneous Crystallization
ZB99-442AZ	6049	Volcanic	14	624190	7240563	NA	NA	NA	NA	No Age
ZB98-548AZ	6218	Plutonic	14	640149	7247990	2613	1	1	U/Pb	Igneous Crystallization
ZB99-042DZ	6326	Volcanic	14	643422	7238258	2628.7	1.2	1.2	U/Pb	Igneous Crystallization
ZB99-443AZ	6388	Volcanic	14	637649	7217019	2627	1	1	U/Pb	Igneous Crystallization
ZB99-180AZ	6466	Volcanic	14	628594	7223824	2711.4	7.0	5.8	U/Pb	Igneous Crystallization
ZB00-24DZ	6688	Volcanic	14	636370	7227550	2713	2	2	U/Pb	Igneous Crystallization
ZB00-151AZ	6689	Volcanic	14	636370	7227550	NA	NA	NA	NA	No Age
ZB00-118CZ	6691	Plutonic	14	631581	7172397	2869	6	6	U/Pb	see #5917