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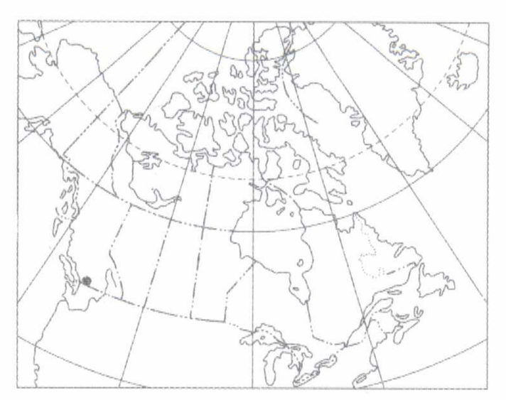

INDEX MAP

Canada

Data compiled by J.W.H. Monger and S. Lear 1989

Geological cartography by the Geological Survey of Canada

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Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

Base map at the same scale published by the Surveys and Mapping Branch in 1970. Road modifications by the Geological Survey of Canada

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Mean magnetic declination 1989, 20°39' East, decreasing 8.3' annually. Readings vary from 20°09'E in the SE corner to 21°08'E in the NW corner of the map

Elevations in feet above mean sea level

MAP 41-1989

SHEET 3

ISOTOPIC DATE LOCATIONS

HOPE

BRITISH COLUMBIA

Scale 1:250 000 - Échelle 1/250 000

Kilometres 5 0 5 10 15 20 Kilomètres

Universal Transverse Mercator Projection
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Uranium-lead ages necessitate interpretations of data; these are made by (van der Heyden) or (Parrish)

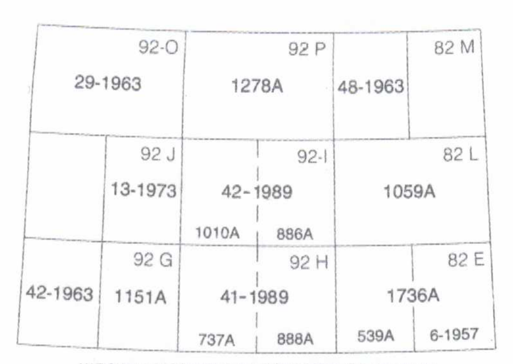
Isotopic system abbreviations:

K potassium-argon (undifferentiated)
KW (whole rock)
KB (biotite)
KH (hornblende)
KM (muscovite)
KS (sanidine)
KP (plagioclase)

Rb rubidium-strontium

U uranium-lead (until interpretations are published, dates determined by this method should be taken as approximate, but reasonable)

These sheets are of "Open-file" standard only; they show much of the data bases upon which the geological maps of 92H, 92I are founded.



NATIONAL TOPOGRAPHIC SYSTEM REFERENCE AND INDEX TO ADJOINING GEOLOGICAL SURVEY OF CANADA MAPS

The summary data below are presented generally in the same order as map units in the legend of the geological map, and are keyed to those units. In cases where the dates clearly differ from the age assigned to the map unit, this is because either the dated body is too small to show on the map (such as a dyke within a map unit), or else there are grounds for believing that there has been resetting of the isotopic system.

Each isotope date location map number consists of three parts: (1) (screened) map-unit letters; (2) (full tone) 30' by 15' map sheet number ((NTS 92/H) 1 to 16); (3) (full tone) number within the unit within the 30' by 15' sheet. For example: locations of dates from, respectively, Jura-Cretaceous granodiorite and Eocene Princeton volcanics within map sheet 92H/2 are given by: JKgd2-1, JKgd2-2; and Epv2-1, Epv2-2.

In compiling this table, extensive use has been made of the University of British Columbia geochronometry file. GSC numbers, where published, are given by e.g. GSC 87-189, or where unpublished, by lab number, e.g. 3950.

Map No.	Date (Ma)	System	Collector	Laboratory	Reference (where available)
MPv7-1	9.2 ± 0.9	KW	Evans	UBC	Church (1983); Evan (1978); Church and Brasnett (1983)
MPSv3-1	12.1 ± 0.4	KB	Mathews	UBC	Mathews et al. (1981)
MPSv3-2	13.1 ± 0.5	KP	Mathews	UBC	Mathews et al. (1981)
Mgd3-1	22 ± 0.8 / 19.9	KB / KH	Armstrong	UBC	
Mgd4-1	16 ± 1	KB	Richards	UBC	Richards and White (1970); Richards (1971) Richards and McTaggart (1976)
Mgd4-2	18 ± 1	KB	Baadsgaard et al.	U of A	Baadsgaard et al. (1961)
Mgd4-3	18 ± 1	KB	Richards	UBC	Richards and White (1970); Richards (1971) Richards and McTaggart (1976)
Mgd5-1	18 ± 1	KB	Baadsgaard et al.	U of A	Baadsgaard et al. (1961
Mgd5-2	19.28 ± .3 / 24 ± 1	KB /KH	Monger	GSC 3950	
Mgd6-1	22 ± 1	KB	Richards	UBC	Richards and White (1970); Richards (1971) Richards and McTaggart (1976)
OMcv6-1	29.3 ± 1.3	KH	Mathews	UBC	Mathews et al. (1981)
OMcv6-2	22.8 ± 0.8	KP	Mathews	UBC	Mathews et al. (1981)
OMcv6-3	22.8 ± 0.9	KP	Mathews	UBC	W.H. Mathews et al. (1981)
OMcv7-1	22.41 ± 1.1	KH	Monger	GSC 87-189	GSC Paper 87-02
OMcv11-1	21.4 ± 0.7	KB	Berman	UBC	Berman (1979); Berman & Armstrong (1980)
OMcv11-2	22.3 ± 4 / 20.0 ± 0.9	Rb / KH	Berman	UBC	Berman (1979); Berman & Armstrong (1980)
OMcv11-3	22.7 ± 0.8	KW	Berman	UBC	Berman (1979, M.Sc. thesis (UBC)
Ogd3-1	27 ± 1	KB	Richards	UBC	Richards and White (1970); Richards (1971) Richards and McTaggart (1976)
Ogd3-2	28	K			Richards and White (1970)
Ogd3-3	26	K			Richards and White (1970)
Ogd3-4	26 ± 1	KB	Richards	UBC	Richards and White (1970)
Ogd4-1	27 ± 1	KB	Richards	UBC	Richards and White (1970)
Ogd5-1	24 ± 0.7	KB	Richards	UBC	Richards and White (1970)
Ogd6-1	84 ± 4	KB	Richards	UBC	Richards and White (1970)
Ogd12-1	33.6 ± 1.1 / 31 ± 1	KB / Rb	Bartholomew	UBC	Bartholomew (1979, M.Sc. thesis UBC)
	34.4 ± 1.4	Rb	"	"	"
Ogd12-2	24.63 ± .82	KH	Monger	GSC 3913	
Ogd12-3	35 ± 0.7 / 35.1 ± 1.2	Rb / KB	Woodsworth	UBC	
Ogd14-1	35	K	Baadsgard	U of A	Baadsgaard et al. (1961)
Egd2-1	47 ± 4	KB		GSC 66-42	Wanless et al. (1968)
Egd6-1	47.94 ± 0.75	KB	Monger	GSC 87-188	GSC Paper 87-2
Egd11-1	45.8 ± 1.6 / 46.0 ± 1.6	KB / KH	Greig	UBC	Greig (in prep., M.Sc. thesis, UBC)
Egd11-2	47.85 ± .71 / 48.25 ± 1.1	KB / KH	Monger	GSC 3914/3915	
Epv1-1	49.66 ± 0.78	KW	Monger	GSC 87-187	GSC Paper 87-02
Epv1-2	49.4 ± 1.0	KH	Monger	GSC 87-195	GSC Paper 87-02
Epv2-1	45.1 ± 1.4 / 48.4 ± 1.5	KW / KW	Mathews	UBC	UBC age date file
	49.2 ± 1.7	KW	Mathews	"	"
Epv2-2	51 / 53	KA / KH	Hills / Hills	U of A	Hills and Baadsgaard (1967)
Epv2-3	49	KH	Hills	U of A	Hills and Baadsgaard (1967)
Epv2-4	51 / 48	KS / KS	Hills / Hills	U of A	Hills and Baadsgaard (1967)
Epv7-1	48	KB	Hills	U of A	Hills and Baadsgaard (1967)
Es7-1	49 ± 2	KB	Mathews and Rouse	U of A	Mathews (1964); Mathews (1963) Rouse and Mathews (1961)
Es7-2	50 / 51	K And / KB	Hills / Hills	U of A	Hills and Baadsgaard (1967) Evans (1978)
Es10-1	46.2 ± 1.9	KB	Mathews	UBC	Mathews (1978)
Es10-2	49.0 ± 1.7	KH	Church	UBC	Church et al. (1983)
eTi10-1	54.5 ± 1.9	KH	Greig	UBC	Greig (in prep. M.Sc. thesis, UBC)
eTi11-1	53.5 ± 1.9/ 49.5 ± 1.7	KB	McMillan	UBC	W.J. McMillan (MEMPR)
eTg11-2	56.1 ± 2.0	KB	McMillan	UBC	McMillan (BCMEMPR)
eTg16-1	53.1 ± .8	KB	Monger	GSC 3910	
eTg16-2	51.8 ± 1.8	K k-spar	Peto	UBC	Armstrong and Peto (1981)
eTg16-3	52.8 ± .7	KB	Monger	GSC 3904	
eTg16-4	52.0 ± 1.8	KB	Peto	UBC	Armstrong and Peto (1981)
eTgd4-1	24 ± 1	KW	Richards	UBC	Richards and White (1970); Richards (1971) Richards and McTaggart (1976)
eTgd5-1	39.2 ± 1.4 / 53.67 ± 1.7	KB / KH	Monger	GSC 3787/3788	
eTgd6-1	60 ± 2	KB	Richards	UBC	Richards and White (1970); Richards (1971) Richards and McTaggart (1976)
eTgd6-2	35 ± 2	KB	Richards	UBC	Richards and White (1970); Richards (1971) Richards and McTaggart (1976)
eTgd12-1	55.22 ± 2.8 / 78 ± 2	KH / KB	Monger	GSC 3810/3951	
KTc3-1	44 ± 3	KH	Richards	UBC	Richards and White (1970); Richards (1971)
Ms5-1	91.2 ± 3.1	KH + Px	McLeod	UBC	McLeod et al. (1976); McLeod (1975)
Ms6-1	80.7 ± 2.5 / 86.6 ± 2.8	KB / KH	McLeod	UBC	McLeod et al. (1976); McLeod (1975)
Ms12-1	94.4 ± 3.2	KH	Bartholomew	UBC	Bartholomew (1979)
MSL12-1	93.5 ± 11.4	R	Monger\1	GSC Ottawa	
lKgd12-1	79.79 ± 1.3	KB	Monger	GSC 3911	
lKgd13-1	74 ± 4	KH		GSC	Wanless et al. (1973)
lKgd13-2	72 ± 4	KB		GSC 72-5	Wanless et al. (1973)
lKgd,qm13-3	79 ± 1.5	KB	Monger	GSC 3912	
lKgd,qm13-4	84 ± 1	U	Monger	GSC	(Parrish)
lKgd13-5	74 ± 4	KH		GSC 72-8	Wanless et al. (1973)
mKg1-1	100.6 ± 1.5	KB	Monger	GSC 87-190	GSC Paper 87-02
mKg8-1	102.4 ± 4	KB	Preto	UBC	Preto et al. (1971); Preto (1972)
mKg8-2	100 ± 4	KB	Preto	UBC	Preto et al. (1971); Preto (1972)
mKg9-1	101 ± 2.6 / 99.2 ± 2.6	KB / KH	Preto	UBC	Preto et al. (1979); Preto (1977)
mKg9-2	99.1 ± 2.1	KB	Preto	UBC	Preto et al. (1979); Preto (1977)
KSB10-1	207 ± 5	KM	Preto	UBC	Preto et al. (1979) (boulder in basal
KSB10-2	104 ± 22	Rb	Preto	UBC	Preto et al. (1979) KSB cgl)
KPv6-1	84.79 ± 1.3	KH	Monger	GSC 3908	(dyke)
KPv7-1	85.65 ± 3.2	KH	Monger	GSC 3907	(dyke)
Kqd,d5-1	105 ± 3	KB	Richards	UBC	Richards and White (1970); Richards (1971) Richards and McTaggart (1976)
Kqd,d5-2	110 ± 3 / 91.3 ± 2.2	U-Pb / Rb	Armstrong	UBC	
	101 ± 3	KB	"	"	
Kqd,d5-3	91.0 ± 2.8	KH	McLeod	UBC	McLeod et al. (1976)
Kqd,d5-3	91.2 ± 3.1	KH	McLeod	UBC	McLeod et al. (1976)
Kqd,d5-4	96.4 ± 4 / 106 ± 4	KH / KH	McLeod	UBC	McLeod et al. (1976); McLeod (1975)
	112 ± 4 / 121.6 ±4	KH / KH + Px	"	"	"
Kqd,d6-1	91.0 ± 2.8	KH	Richards	UBC	Richards and McTaggart (1976)
Kqd,d6-2	80 ± 4 / 82 ± 4	KB / KH	Richards	UBC	Richards and White (1970) ; Richards (1971)·
Kqd,d12-1	102.7 ± 3.4	KH	Monger	GSC	
Kqd,d12-2	110 ± 5	U	Gabites	UBC	Gabites (1985)
Kqd,d12-3	91.05 ± .5	U	Gabites	UBC	Gabites (1985) Richards and McTaggart (1976)

Map No.	Date (Ma)	System	Collector	Laboratory	Reference (where available)
Kgd,qd6-3	91.0 ± 2.8	KH	McLeod	UBC	McLeod et al. (1976); McLeod (1975)
Kgd,qd6-4	80 ± 7 / 86.6 ± 2.8	K / K	McLeod	UBC	McLeod et al. (1976)
Kgd,qd11-1	76 ± 4 / 76 ± 4	KB / KH		GSC 72-6,7	Wanless et al. (1973)
Kgd,qd11-2	77 ± 4	KH	McTaggart and Wheeler, Harakal	UBC	McTaggart and Thompson (1967)
Kgd,qd11-3	77.3 ± 2.6	KH	Bartholomew	UBC	Bartholomew (1979, M.Sc. UBC)
Kgd,qd12-1	120.9 ± 2.7 / 77.65	KH / KB	Monger	GSC 3786/3951	
Kgd,qd12-1	79.79 ± 1.3	KB	Monger	GSC 3911	
Kgn12-1	96	U	Monger	GSC Ottawa	(Parrish)
Kgn12-2	105 / 79	U / Rb	Gabites	UBC	Gabites (1985)
JKb12-1	ca.100	U	Monger	GSC	(Parrish)
JKp5-1	24.5 ± 1	KS	Ray	UBC	(small intrusion)
JKgd1-1	109 ± 1.7	KB	Monger	GSC 87-186	GSC Paper 87-02
JKgd2-1	101 ± 6	KB		GSC	Wanless et al. (1967)
JKgd2-2	115.1 ± 1.8	KB	Roddick	Queens	Roddick and Farrar (1972)
JKgd7-1	107.2 ± 1.7	KH	Roddick	Queens	Roddick and Farrar (1972)
JKgd7-2	113.6 ± 7.4	Rb	Grieg	UBC	Greig (in prep.)
JKgd10-1	191 ± 15	KB		GSC 62-55	Wanless et al. (1963)
JKgd10-2	175.8 ± 2.6	KB		Queens	Roddick and Farrar (1971)
JKgd10-3	109.5 ± 3.6	Rb	Greig	UBC	Greig (in prep.); M.Sc. thesis, UBC
JKgd10-4	22.2		Greig	UBC	Greig (in prep.); M.Sc. thesis, UBC (dyke)
JKgd10-5	122.8 ± 4.0	Rb	Greig	UBC	Greig (in prep.); M.Sc. thesis, UBC
JKgd10-6	100.4 ± 1.2	KB		Queens	Roddick and Farrar (1972)
JKgd10-7	146 ± 12	KB		GSC 62-56	Wanless et al. (1963)
JKgd11-1	99.6 ± 3.5	KB	Greig	UBC	Greig (in prep); M.Sc. thesis, UBC
JKgd11-2	156 ± 4	U	Greig	UBC	Greig (in prep); M.Sc. thesis, UBC
JKgd11-3	135.1 ± 2.3 / 135.9 ± 3.5	U /U	Monger	UBC	van der Heyden
JKgd11-4	120 ± 4	KH	Greig	UBC	van der Heyden
JKgd11-5	89.4 ± 3.1	KM	Greig	UBC	van der Heyden
JKgd14-1	107.8 ± 1.4	KB	Monger	GSC 3906	
JKgd14-2	137.5 ± 2.5	KB	Monger	GSC 3905	
JKd7-1	73.7 ± 1.2	KM	Roddick	Queens	Roddick and Farrar (1972)
JKg7-1	87.6 ± 1.4 / 109.0 ± 1.7	KB / KB	Roddick	Queens	Roddick and Farrar (1972)
	105.8 ± 1.6	KB	Roddick	"	"
JKg7-2	104.7 ± 1.6	KB	Roddick	Queens	Roddick and Farrar (1972)
	150 ± 7	U	"	"	
JKg11-1	102.4 ± 2.1 / 104 ± 4	Rb / KM	Greig	UBC	Greig (in prep. M.Sc thesis, UBC)
JKg11-2	102.8 ± 1.5	KM	Monger	GSC 3909	
JKg11-3	135.9 ± 2.4	U	Monger	UBC	van der Heyden
JKg11-4	102.1 ± 6.6	Rb	Greig	UBC	Greig (in prep., M.Sc. thesis (UBC)
lJgd5-1	159.6 ± 2.8	KB	Monger	GSC 3952	
lJgd5-2	ca.160	U	Garrett/Monger	GSC	
lJg8-1	164.5 ± 4.8	KB		Queens	Roddick et al. (1972)
lJg9-1	145.6 ± 4.4	KB		Queens	Roddick et al. (1972)
lJg9-2	144.9 ± 4.4	KB		Queens	Roddick et al. (1972)
lJg9-3	154.5 ± 4.6	KB		Queens	Roddick et al. (1972)
lJg9-4	162.5 ± 2.5 / 154.5 ± 2.5	U	Monger	GSC 3711/	(Parrish)
	153.8 ± 2.3	KB	"	3722	
lJg9-5	166 ± 53	Rb	Peto	UBC	Peto and Armstrong (1976)
lJg9-6	154 ± 6	Rb	Peto	UBC	Peto and Armstrong (1976)
TJgd8-1	186.1 ± 5.6	KH		Queens	Roddick et al. (1972)
TJgd8-2	210.2 ± 1.6 / 206.3 ± 1.6	U	Monger	GSC 3714/	(Parrish)
	173.4 ± 4.7 / 185.7 ± 2.8	KB / KH	"	3713	
TJgd8-3	180.9 ± 5.4 / 188.1 ± 5.8	KB / KH		Queens	Roddick et al. (1972)
TJgd8-4	161.3 ± 3.4 / 162.8 ± 5.0	KB / KH		Queens	Roddick et al. (1972)
TJgd8-5	195.0 ± 6.0	K amph		Queens	Roddick et al. (1972)
TJgd8-6	158.6 ± 4.8	KB		Queens	Roddick et al. (1972)
TJgd8-7	158.4 ± 4.8	KB		Queens	Roddick et al. (1972)
TJgd8-8	159.9 ± 2.9 / 153.4 ± 4.6	KH / KB		Queens	Roddick et al. (1972)
	154.4 ± 4.6	KB		"	"
TJgd8-9	187.8 ± 5.8	KH		Queens	Roddick et al. (1972)
TJgd8-10	160.9 ± 4.8	KB		Queens	Roddick et al. (1972)
TJgd10-1	204 ± 5	KB	Preto	UBC	Preto et al. (1979)
TJgd15-1	234 ± 9	KH	Osatenko		Preto et al. (1979) (suspect)
TJgd15-2	267 ± 5	KB	Osatenko		Preto et al. (1979) (suspect)
TJgd15-3	194 ± 33	Rb	McMillan/Armstrong	UBC	
TJgd15-4	215 ± 4	KH	Osatenko	UBC	Preto et al. (1979)
TJgd16-1	200 ± 3	U	Monger	GSC	(Parrish)
TJgd16-2	143 ± 6	KB	Harakal	UBC	W.M. Oriel (1972, M.Sc. thesis, UBC)
TJgd16-3	138 ± 6	KB	Harakal	UBC	Oriel (1972, M.Sc. thesis, UBC)
TJgd16-4	156 ± 4	KB	Harakal	UBC	Oriel (1972, M.Sc. thesis, UBC)
TJgd16-5	134 ± 6	KB	Harakal	UBC	Oriel (1972, M.Sc. thesis, UBC)
TJgd16-6	177 ± 7 / 180 ± 7	KB / KH	Harakal	UBC	Oriel (1972); Christopher (1973)
TJgd16-7	147 ± 6 / 181 ± 7	KB / KH	Harakal	UBC	Oriel (1972, M.Sc. thesis, UBC)
TJgd16-8	147 ± 5 / 181 ± 8	KB / KH	Harakal	UBC	Oriel (1972, M.Sc. thesis, UBC)
TJgd16-9	151 ± 5 / 177 ± 5	KB / KH	White / Harakal	UBC	White et al. (1968); Oriel (1972)
	134 ± 5	KW	"	"	Soregaroli and Whitford (1976)
TJgd16-10	129 ± 5	KW	Harakal	UBC	Oriel (1972, M.Sc. thesis, UBC)
TJgd16-11	150 ± 6 / 175 ± 4	KB / KH	White	UBC	White et al. (1968); Oriel (197
TJs,d7-1	199 ± 8	KB	Preto	UBC	Preto et al. (1971); Preto (1972)
TJs,d7-2	203 ± 8	KB	Preto	UBC	Preto et al. (1971); Preto (1972)
TJs,d7-3	197 ± 8	KB	Preto	UBC	Preto et al. (1971); Preto (1972)
TJs,d7-4	200 ± 8	KB	Preto	UBC	Preto et al. (1971); Preto (1972)
TJs,d7-5	197 ± 8	KB	Preto	UBC	Preto et al. (1971); Preto (1972)
TJs,d7-6	153 ± 6 / 151 ± 9	KB / KCpx		UBC	Sinclair and White (1968)
TJs,d7-7	197 ± 8	KB		UBC	Sinclair and White (1968)
TJs,d7-8	204 ± 7	KB		UBC	Sinclair and White (1968)
TJs,d7-9	185 ± 8	KB		UBC	Sinclair and White (1968)
TJs,d8-1	183 ± 7	KB	Preto	UBC	Preto et al. (1971); Preto (1972)
TJs,d8-2	197 ± 7	KB	Preto	UBC	Preto et al. (1971); Preto (1972)
TJu7-1	130.8 ± 2.0	KB		Queens	Roddick and Farrar (1971)
TJu7-2	204.3 ± 1.5	KH		Queens	Roddick and Farrar (1971)
TJu7-3	293 ± 23	KH		GSC 62-57	Wanless et al. (1963)
TJu10-1	196.7 ± 1.7	KH		Queens	Roddick and Farrar (1971)
TNe7-1	198 ± 8	KB	Preto	UBC	Preto et al. (1971); Preto (1972) margins
TNe7-2	192 ± 8	KB	Preto	UBC	Preto et al. (1971); Preto (1972) margins
TNe7-3	198 ± 7	KB		UBC	Sinclair and White (1968) margins
TNs8-1	193.0 ± 6.0	·KH		Queens	Roddick et al. (1972) small intrusions
TNs8-2	175.0 ± 5.4 / 184.0 ± 7.4	KH		Queens	Roddick et al. (1972) small intrusions
TNs8-3	175.2 ± 5.2 / 180.7 ± 5.8	KH		Queens	Roddick et al. (1972) small intrusions
TNs8-4	160.4 ± 4.8	KB		Queens	Roddick et al. (1972) small intrusions
TNs8-5	174.5 ± 5.2	KH		Queens	Roddick et al. (1972) small intrusions
TNs8-6	155.9 ± 4.8	KB		Queens	Roddick et al. (1972) small intrusions
TNm7-1	181.5 ± 7.2	KW	Roddick	Queens	Roddick and Farrar (1971)
TNm7-2	101.1 ± 1.7	KB	Roddick	Queens	Roddick and Farrar (1972)
TNm7-3	155.4 ± 2.3 / 203.1 ± 3.2	KB / KW	Roddick	Queens	Roddick and Farrar (1971)
	210.0 ± 2.2	KH		"	"
TNm7-4	214.8 ± 3.5	KH	Roddick	Queens	Roddick and Farrar (1971)
TNm10-1	84.1 ± 1.3	KB		Queens	Roddick and Farrar (1971)
Tgn12-1	ca.226	U	Monger	UBC	(van der Heyden)
Pv4-1	244 ± 10	KH	Bernardi	UBC	Bernardi (1977); Armstrong et al. (no year)
Pv4-2	241 ± 9	KM	Bernardi	UBC	Bernardi (1977); Armstrong et al. (no year)

Recommended citation:
Monger, J.W.H.
1989: Isotopic date locations, Hope, British Columbia; Geological Survey of Canada, Map 41-1989, sheet 3, scale 1:250 000