Rea Gold
824420

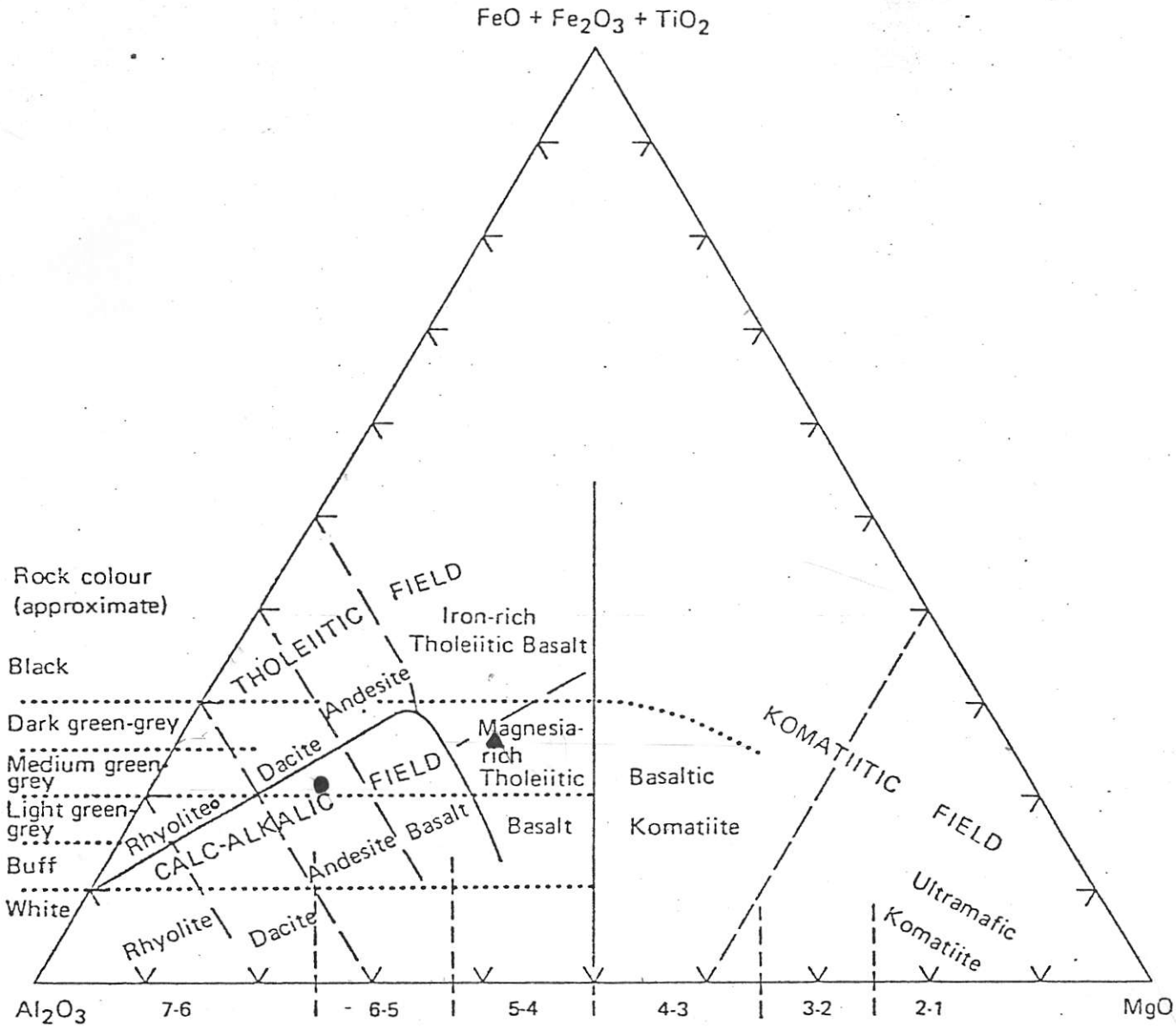


Figure 2-11. Classification of subalkaline lavas according to the Jensen cation plot (after Jensen, 1976).

● Johnson Pyroclastics

▲ Sam Pyros.

JENSEN CATION PLOT

MPLE		%		FACTOR		CATION WT%	N		AT WT		N	PLOT
	Fe_2O_3	= 7.4	X	.699 .738	=	~~5.46~~	~~308~~	÷	55.85	= ~~0.55~~ 0.58	~~17~~ 18.8	20.4
	FeO	=	X	.777	=		32.7	÷	55.85	=	~~1.6~~	
	TiO_2	= 0.72 ~~0.72~~	X	.599	=	~~0.20~~ 0.43	~~1.9~~ 2.5	÷	47.90	= ~~0.04~~ 0.05	~~1.6~~	
JPY	Al_2O_3	= 16.8 ~~15.2~~	X	.529	=	~~8.05~~ 8.89	62.6 53.2	÷	26.98	= ~~1.39~~ 1.97	~~60~~ 64.0	~~64.0~~ 64.0
	MgO	= 3.2 ~~3.80~~	X	.603	=	0.48 1.93	4.7 11.6	÷	24.32	= ~~0.19~~ 0.48	6.1 15.6	~~15.6~~ 15.6
						~~10.30~~ 16.71	100.00			~~3.10~~ 3.08	100.00	
	Fe_2O_3	= 10.4	X	.699 .738	=	~~5.33~~ 7.82	~~30.8~~	÷	55.85	= ~~0.55~~	~~15~~ 22.7	?
	FeO	=	X	.777	=			÷	55.85	= 0.68		
	TiO_2	= ~~0.76~~ 1.42	X	.599	=	~~0.58~~ 0.85	3.1	÷	47.90	= ~~0.06~~ 0.08	~~1.9~~ 2.7	~~19.4~~ 26.4
SAM.	Al_2O_3	= ~~10.0~~ 14.7	X	.529	=	~~8.99~~ 7.78	47.9	÷	26.98	= ~~1.28~~ 1.39	~~56.7~~ 46.3	~~56.7~~
	MgO	= ~~6.66~~ 7.1	X	.603	=	~~3.11~~ 4.28	18.2	÷	24.32	= ~~0.25~~ 0.85	~~23.9~~ 28.3	~~23.9~~
						~~18.77~~ 20.73	100.00			~~3.11~~ 3.00	100.00	
KL 2311												
	Fe_2O_3	=	X	.699 .738	=			÷	55.85	=		
	FeO	= 13.8	X	.777	=	10.18	43	÷	55.85	= 0.77	~~6.25~~	?
	TiO_2	= 0.80	X	.599	=	0.48	2	÷	47.90	= 0.04	2	27
	Al_2O_3	= 4.33	X	.529	=	2.29	10	÷	26.98	= 0.37	12	12
	MgO	= 17.8	X	.603	=	10.73	45	÷	24.32	= 1.85	61	61
						23.68	100.00			3.03	100.00	
KL 1540												
	Fe_2O_3	=	X	.699	=			÷	55.85	=		
	FeO	= 16.9	X	.777	=	12.47	54	÷	55.85	= 0.97	36.5	
	TiO_2	= 1.73	X	.599	=	1.04	4.5	÷	47.90	= 0.09	3	
	Al_2O_3	= 12.0	X	.529	=	6.35	27.5	÷	26.98	= 1.02	38.5	
	MgO	= 5.31	X	.603	=	3.20	14	÷	24.32	= 0.58	22	
						23.06	100.00			2.66	100.00	

~~GEOLOGY~~

	Fe	Al	Mg	Plot
Johnson Pyros.	21	65	14	2
Fennell Basalt (Bar)	27	48	26	3
Bar Basalt	34	47	19	4
cc Fennell Basalt	28	47	24	5
Rea Basalt	25	42	33	5
Rea Basalt (Alt'd)	28	48	24	6
cc Komatiite	28	25	47	7
Rea Silver Zone (high Mg) Basalts	23	35	41	
OK Rhyolite	11	83	6	
Fennel Rhyorite	8	86	6.	

JENSEN CATION PLOT

SAMPLE		%	FACTOR	CATION WT%	N	AT WT	N	PLOT
	Fe_2O_3 =		X .699 =			55.85 =		
	FeO FeO_T =	11	X .777 =	8.12	39.7	55.85 = .71	24	~~25~~ 28
	TiO_2 =	1.75	X .599 =	1.05	5.1	47.90 = .11	~~3~~ 4	
	Al_2O_3 =	15	X .529 =	7.94	38.9	26,98 = 1.44	49	49
	MgO =	5.5	X .603 =	3.32	16.3	24.32 = .67	23	23
				20.43	100.00	2.93	100.00	
Unaltd Johnson Pyro.	Fe_2O_3 =		X .699 =			55.85 =		
	FeO =	7.1	X .777 =	5.24	33.2	55.85 = .59	19	21
	TiO_2 =	.67	X .599 =	0.40	2.5	47.90 = .05	~~3~~ 2	
	Al_2O_3 =	16	X .529 =	8.46	53.6	26.98 = 1.99	65	65
	MgO =	2.8	X .603 =	1.69	10.7	24.32 = 0.44	14	14
				15.79	100.00	3.07	100.00	
	Fe_2O_3 =		X .699 =			55.85 =		
Rea FW Basalt (unaltd)	FeO =	10.5	X .777 =	7.75	37.6	55.85 = .67	22	25
	TiO_2 =	1.53	X .599 =	.92	4.5	47.90 = .09	3	
	Al_2O_3 =	13.1	X .529 =	6.93	33.6	26.98 = 1.25	42	42
	MgO =	8.3	X .603 =	5.00	24.3	24.32 = 1.00	33	33
				20.60	100.00	3.01	100.00	
	Fe_2O_3 =		X .699 =			55.85 =		
	FeO =	10.0	X .777 =	7.38	40.7	55.85 = .73	25	28
Altd	TiO_2 =	1.37	X .599 =	.82	4.5	47.90 = .09	3	
	Al_2O_3 =	13	X .529 =	6.87	37.9	26.98 = 1.40	48	48
	MgO =	5.1	X .603 =	3.08	17.0	24.32 = 0.70	24	24
				18.15	100.00	2.92	100.00	

JENSEN CATION PLOT

SAMPLE		%		FACTOR		CATION WT%	N	AT WT		N	PLOT
	Fe_2O_3 =	12.6	X	.699	=	9.30	36.2	55.85 =			
	FeO =		X	.777	=			55.85 =	.65	21	23
	TiO_2 =	1.43	X	.599	=	0.86	3.3	47.90 =	.07	2	
	Al_2O_3 =	14.3	X	.529	=	7.56	29.4	26,98 =	1.09	35	35
	MgO =	13.2	X	.603	=	7.96	31.0	24.32 =	1.27	41	41
						25.68	100.00		3.08	100.00	
	Fe_2O_3 =	2.73	X	.699	=			55.85 =			
OIC	FeO =		X	.777	=	2.01	19	55.85 =	.34	10	11
Pyro.	TiO_2 =	.17	X	.599	=	0.10	1	47.90 =	.02	1	
	Al_2O_3 =	14.9	X	.529	=	7.88	75	26.98 =	2.78	83	83
	MgO =	.83	X	.603	=	0.50	5	24.32 =	0.21	6	6
						10.49	100.00		3.35	100.00	
	Fe_2O_3 =	1.64	X	.699	=			55.85 =			
	FeO =		X	.777	=	1.21	13.8	55.85 =	.25	7	8
	TiO_2 =	.14	X	.599	=	.08	0.9	47.90 =	.02	1	
	Al_2O_3 =	13.3	X	.529	=	7.04	80.2	26.98 =	2.97	86	86
	MgO =	.74	X	.603	=	0.45	5.1	24.32 =	0.21	6	6
						8.78	100.00		3.45	100.00	
	Fe_2O_3 =		X	.699	=			55.85 =			
	FeO =		X	.777	=			55.85 =			
	TiO_2 =		X	.599	=			47.90 =			
	Al_2O_3 =		X	.529	=			26.98 =			
	MgO =		X	.603	=			24.32 =			
							100.00			100.00	

'Fennell' Basalts.

		SiO_2	Al_2O_3	CaO	MgO	Na_2O	K_2O	Fe_2O_3	MnO	TiO_2	Ba	LOI	Cu	Zn
~~[illegible]~~		~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~
BCS	2127	49.6	14.5	9.16	6.88	3.33	0.37	10.9	0.19	1.60	190	2.85	38	51
	2128	50.3	14.5	9.81	6.58	4.17	0.13	10.1	0.19	1.53	70	2.00	54	58
	2130	49.6	14.5	9.54	6.57	3.61	0.13	10.8	0.18	1.58	130	2.60	46	69
	2131	50.5	14.0	10.8	6.47	3.45	0.31	10.7	0.19	1.53	100	2.10	48	54
	2124	50.3	15.3	10.3	5.31	3.72	0.28	10.7	0.17	1.48	170	2.05	54	60
	2125	48.6	14.4	9.65	6.81	4.10	0.14	11.7	0.19	1.58	120	2.00	49	55
	$\bar{x}$	49.8	14.5	9.88	6.44	3.73	0.23	10.8	0.18	1.55	130	2.27	48	58

'Fennell' Intrusions

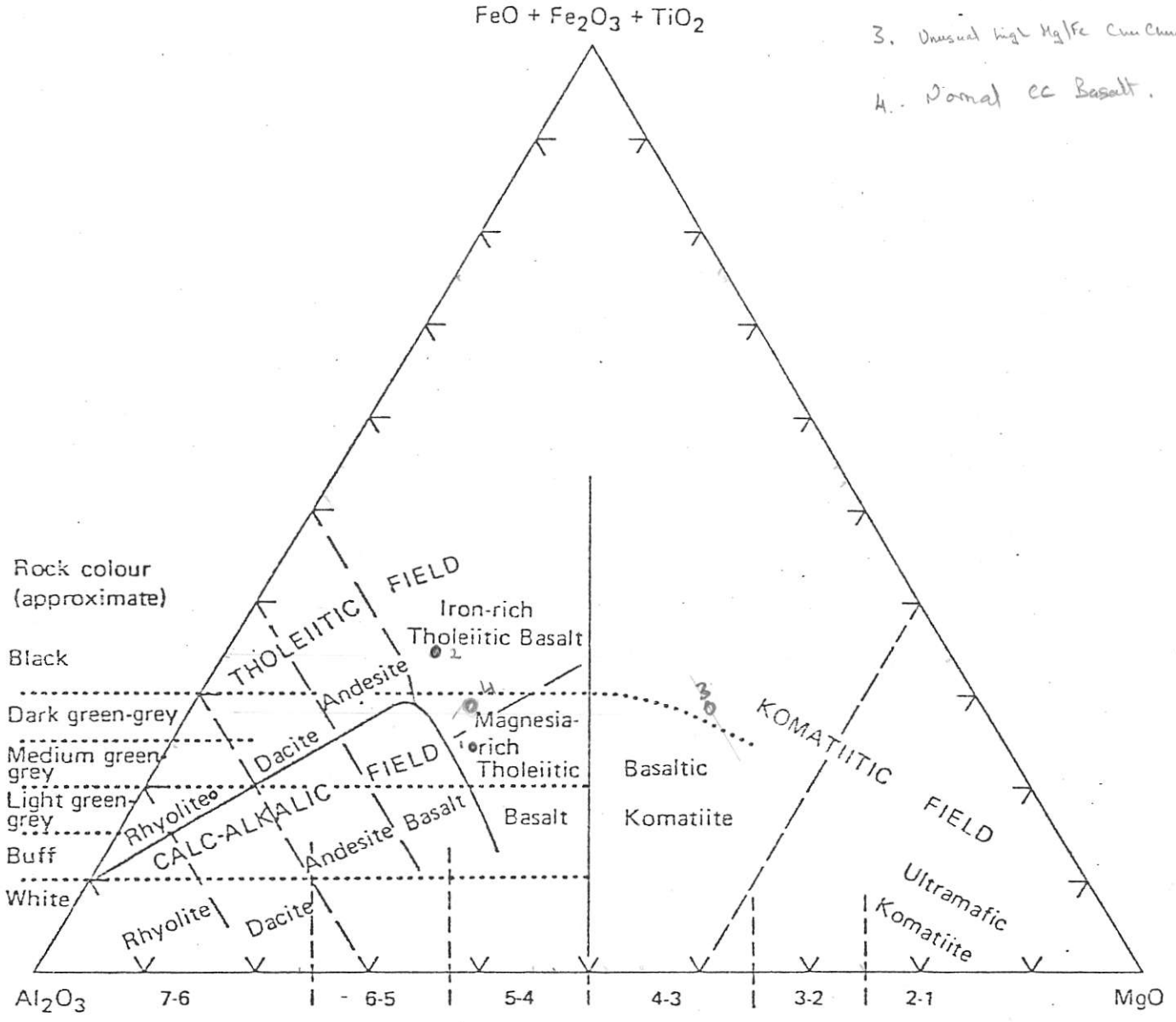
BCS	2098	59.0	14.0	5.15	2.16	5.20	057	11.2	0.24	1.17	510	1.55	–	–
	~~2133~~	47.9	20.7	12.4	4.31	3.25	0.62	6.5	0.11	0.95	370	3.45	12	30
	2132	47.1	12.8	10.5	10.5	2.52	0.11	11.4	0.19	1.20	250	3.05	150	51
	~~2094~~	51.3	11.3	11.8	12.2	1.59	0.22	9.3	0.15	0.68	170	2.80		
	7073	51.1		10.9	5.11	4.26	~~[illegible]~~			0.95	420		55	14
	6071	52.4	~~[illegible]~~	11.1 ~~[illegible]~~	~~[illegible]~~ 7.16	3.60				1.47	100		52	58
	5091	49.6		12.3	8.97	2.16				0.78	80		76	34
	5093	50.3		13.0	7.21	3.67				1.62	170		27	36

(same body 2098)

Fennell Rhyolite / QFP.

BCS	2148													QFP
	~~2158~~	72.7	13.2	0.16	0.10	3.09	7.88	1.26	0.015	0.15	760	0.45	3 26	"
	2154	65.7	17.2	006	0.77	1.31	10.9	2.09	0.005	0.22	3550	1.60	7 51	"
	2155	78.1	11.3	0.02	~~0.02~~	7.39	0.08	1.69	0.006	0.13	30	0.75	2 7	"
	2009	75.3	12.7	0.04	2.69	0.64	3.29	2.10	0.003	0.07	1280	2.75	– –	R
?	2092	~~[illegible]~~	~~7.93~~	~~0.25~~	~~0.22~~	2.43	1.93	0.76	0.01	~~0.07~~	~~900~~	~~1.00~~	~~2 7~~	R
	2159	75.1	12.3	0.27	0.10	3.73	5.63	1.04	0.013	0.15	530	0.70	4 21	QFP
			13.3											
Ave			13.3	•	•74			1.64		•14				

1. Typical Fennell basalt
2. Typical Bar Basalt (NB: prob. alkalic)
3. Unusual high Mg/Fe Cum Cmm basaltic
4. Normal cc Basalt.



Approximate hardness for low grade metamorphic mineralogy.

Figure 2-11. Classification of subalkaline lavas according to the Jensen cation plot (after Jensen, 1976).

JENSEN CATION PLOT

SAMPLE			%		FACTOR		CATION WT%	N	AT WT		N	PLOT
Typical Fenell Bas.	Fe_2O_3	=	10.8	X	.699 (.738)	=	7.97	39	55.85	=	0.70	24
	FeO	=		X	.777	=			55.85	=		27
	TiO_2	=	1.55	X	.599	=	0.93	05	47.90	=	0.10	3
	Al_2O_3	=	14.5	X	.529	=	7.67	37	26,98	=	1.37	46 46
Mg-rich tholeiitic basalt.	MgO	=	6.5	X	.603	=	3.92	19	24.32	=	0.78	26
								100.00			2.95 100.00	
Bas Basalt	Fe_2O_3	=	12.5	X	.699 (.738)	=	9.22	41	55.85	=	0.73	26
	FeO	=		X	.777	=			55.85	=		34
Alkalic	TiO_2	=	4.00	X	.599	=	2.40	11	47.90	=	0.23	8
	Al_2O_3	=	15.0	X	.529	=	7.94	35	26.98	=	1.30	47
	MgO	=	5.0	X	.603	=	3.02	13	24.32	=	0.53	19
								100.00			100.00	
Chu Chua high Mg/Fe basalt	Fe_2O_3	=	14.44	X	.699 (.738)	=	10.66	43	55.85	=	0.77	26
	FeO	=		X	.777	=			55.85	=		28
	TiO_2	=	1.18	X	.599	=	0.71	3	47.90	=	0.06	2
KOMATIITE! (basaltic)	Al_2O_3	=	9.31	X	.529	=	4.92	20	26.98	=	0.74	25
	MgO	=	14.11	X	.603	=	8.51	34	24.32	=	1.40	47
								100.00			100.00	
Reg. cc basalt	Fe_2O_3	=	12	X	.699	=	8.86	41	55.85	=	0.73	25
	FeO	=		X	.777	=			55.85	=	0	
	TiO_2	=	1.75	X	.599	=	1.05	5	47.90	=	0.10	3
	Al_2O_3	=	15	X	.529	=	7.94	37	26.98	=	1.37	47
	MgO	=	6	X	.603	=	3.62	17	24.32	=	0.70	24
								100.00			100.00	