TABLE 18.—MINERAL ANALYSES, SODIC AMPHIBOLE DIKES

	WM2			WM5
	Acmite (aegirine)	Albite	Microcline	Microcline
	V	M	M	V
SiO_2	52.4	68.2	64.6	65.2
TiO_2	2.0			
Al_2O_3	0.4	18.4	17.4	17.2
FeO	29.5	1.1	1.0	1.0
(Fe_2O_3)	(32.4)			
MnO	0.2			
MgO	0.0			
Na_2O	13.7	11.7	0.4	0.5
K_2O	-	0.3	15.1	16.7
CaO	0.3			0.03
BaO	0.1			
Total	98.7	99.7	98.5	100.6
(Total)	(101.6)			

and pure K-spar. K-spar has less than 5 mole percent Ab component, and so it must be microcline in structural state. Perthite is limited, implying that original crystallization did not occur high on the solvus. These relations are consistent with low temperatures of formation and equilibration, down to 350°C or lower.

For these reasons, the Hale Spring pegmatites are thought to be derived from hydrothermal fluids, not granitic magma. To be sure, these fluids are late-stage emanations from a granite, presumably the Quanah, but they did crystallize below the solidus. Relevant textural relations include the following: (1) strong mineralogic layering, wherein sodic amphibole layers alternate with layers dominated by the reaction products; (2) sodic amphiboles in some layers are strongly poikilitic; (3) the long axes of sodic amphiboles in some layers are perpendicular to the layering, appearing to have grown out into fluid space; and (4) amphiboles and pyroxenes in other bands lie in the plane of layering, with axes aligned in some cases and randomly oriented in others. These features are compatible with formation from water-rich fluids, pulsating in flow rate and alternating between rapidly moving and stationary as discharge and crystallization go on.

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