

151-910C-3R-1 (Piece Dropstone, 7–9 cm) OBSERVER: LLD WHERE SAMPLED: Mid-Yemak Plateau
 ROCK NAME: Phyllite schist.
 GRAINSIZE: Very fine-grained.
 TEXTURE: Foliated; granoblastic.

MINERALOGY

MINERALS	VOL. %	SIZE (mm)	MORPHOLOGY	COMMENTS
Biotite (?)	10–15	0.01–0.1	Spongy, ill formed.	Defines a foliation.
Quartz and Feldspar	≈70	0.02–0.2	Xenoblastic.	
Epidote/Zoisite	2–3	0.1	Spongy.	
Opaque minerals	1	0.2	Xenoblastic.	Zoned (pyrite cores).
Apatite	1–3	0.01–0.010	Xeno-idioblastic.	Cluster.
Calcite	5	0.01–1.0	Spongy.	
Titanite	1–2	0.01–0.04	Granular, spongy.	

ADDITIONAL COMMENTS: Two foliations. Most grain boundaries are sutured. Some have 120° grain boundaries. Really cannot tell quartz and feldspar apart without staining, nor can it be determined if two feldspars are present. No obvious intergrowths.

151-910C-3R-1 (Piece Dropstone, 11–15 cm) OBSERVER: LLD WHERE SAMPLED: Mid-Yermak Plateau
 ROCK NAME: Feldspathic wacke. Brief description.
 GRAINSIZE: Very fine-grained to medium-grained.
 TEXTURE: None.

MINERALS	VOL. %	SIZE (mm)	MORPHOLOGY	COMMENTS
Plagioclase		0.05–0.1		Twinned.
White mica		0.05–0.1		
Biotite		0.05–0.3		
Carbonate		0.05–0.2		
Amphibole				Pleochroic brown, mottled birefringence.
Quartz		to 1.0	Subangular-subrounded.	
Clinopyroxene				Dark green pleochroic (alkalic?)
Altered K-feldspar				Completely replaced by clay.
ROCK FRAGMENTS				
Chert		0.3		

ADDITIONAL COMMENTS: Angular grains. Larger grains (>0.1 mm) are rare and rounded. Immature with some reworked grains. Fairly compact with not much cement.

151-910C-4R-1 (Piece Dropstone, 97–100 cm) OBSERVER: LLD WHERE SAMPLED: Mid-Yemak Plateau
 ROCK NAME: Meta-ultramafic cumulate(?). (Deformed?). Brief.
 GRAINSIZE: to 3.0 mm.
 TEXTURE: Relict cumulate.

PORPHYROBLASTS:

MINERALS	VOL. %	SIZE	MORPHOLOGY	COMMENTS
Amphibole	20	0.1–3.0	Idioblastic to	Good cleavage; pleochroic brown; some pyroxene
			xenoblastic.	cores.
Pyroxene	10	0.3–2.0	Xenoblastic.	Only remnants remain. Colorless.

GROUNDMASS

MINERALS	VOL. %	SIZE	MORPHOLOGY	COMMENTS
Serpentine	15–20		Matted.	Very fine-grained, in clots or veins within the chlorite matrix.
Mg-Chlorite	≈60		Massive.	Very fine-grained, anomalous blue birefringence.
Opaque Minerals	<1		Elongate clots.	With Fe-Mg silicates and some is in the "groundmass".
Rutile?	<1	0.01–0.20	Xenoblastic.	
Titanite/Carbonate	<1		In veins.	
Epidote	<1	0.1	Xenoblastic.	Ragged.

ADDITIONAL COMMENTS: Pyroxene porphyroblasts are mostly altered to serpentine. Fresh pyroxene remains. The pyroxenes have exsolution lamellae. In most cases, there is a differential alteration between lamellae. The pyroxene and amphibole outlines are suggestive of cumulate minerals. Some kink-banding is discernable. Matrix has very little original texture left.

151-910C-5H-2 (Piece Dropstone, 23–33 cm) OBSERVER: LLD WHERE SAMPLED: Mid-Yermak Plateau
 ROCK NAME: Bioturbated, laminated dolostone. Badly plucked and section is too thin.
 GRAIN SIZE: Microcrystalline.

MINERALS	VOL. %	SIZE	MORPHOLOGY	COMMENTS
Dolomite	98			

ADDITIONAL COMMENTS: Contains burrows and microstylolites. Porous. Laminations observed only in hand specimen: interlayers apparently contain microcrystalline quartz and feldspar.

SITE 910

151-910C-13R-1 (Piece Dropstone, 52-53 cm) OBSERVER: LLD WHERE SAMPLED: Mid-Yermak Plateau
 ROCK NAME: Olivine basalt.
 GRAIN SIZE: to 1.8 mm.
 TEXTURE: Porphyritic, glomeroporphyritic and amygdaloidal.

PHENOCRYSTS

MINERALS	PRES%	ORIG. %	SIZE (mm)	COMP	MORPHOLOGY	COMMENTS
Plagioclase	12	-	0.2-1.8	Intermediate.	Euhedral.	Oscillatory zoning.
Altered Olivine	0	1-3	0.3-0.8	Zoned.	Euhedral.	Clay rims, calcite cores.

GROUNDMASS

MINERALS	PRES%	ORIG %	SIZE (mm)	COMP	MORPHOLOGY	COMMENTS
Plagioclase	45	-	0.01-0.02	Intermediate	Euhedral.	
Clinopyroxene	35	-	0.03-0.8	Ti-rich.	Anhedral.	Zoned; some sector-zoning.
Fe-oxide minerals	3	-	0.03-0.5	2 kinds.	Skeletal and euhedral.	Magnetite and ilmenite?
Glass	4-5	?				Brown with Fe-oxide needles

VESICLES, CAVITIES, VOIDS, VEINS, AND FRACTURES

TYPE	%	SIZE (mm)	LOCATION	FILLING	SHAPE/ ORIENTATION	COMMENTS
Amygdules	8	0.2-1	Random.	Carbonate	Irregular.	Brown clay lining.

SECONDARY MINERALS

MINERALS	%	REPLACEMENT/FILL
Brown Clay	10	Olivine and glass.
Mg-Calcite?	8	Olivine and amygdules.

ADDITIONAL COMMENTS: Plagioclase contains clinopyroxene and altered glass inclusions. Rock is 1.5X3X2 cm, with a rounded, weathered porous surface. Plagioclase and pyroxene grains with brown clay rims occur in the amygdules. Euhedral plagioclase crystal extend into vesicles.

151-910C-28R-2 (Piece Dropstone, 103-105 cm) OBSERVER: LLD WHERE SAMPLED: Mid-Yermak Plateau
 ROCK NAME: Granite.
 GRAIN SIZE: Medium-grained.
 TEXTURE: Subhedral granular.

MINERALOGY

Mineral	PRES%	ORIG %	SIZE (mm)	COMP	MORPHOLOGY	COMMENTS
Microcline	38		0.1-3.0		Subhedral to anhedral.	Dusty.
Quartz	30		0.1		Anhedral.	
White mica	1		0.01-1.0		Subhedral to anhedral.	
Biotite	<1		0.01-1.0		Subhedral.	Altering to chlorite.
Plagioclase	30		0.1-1.0		Subhedral.	Twinned.
Opaque mineral	<1	<<1	0.8		Anhedral.	Intergrown with white mica and surrounding some grains in a network.

SECONDARY MINERALS

MINERAL	%	REPLACEMENT/FILL	COMMENTS
Sulfide mineral	<1		Best seen in thin section chip.
White mica	<1		Some is primary, some secondary.
Chlorite	<1		Interlayered with biotite.

ADDITIONAL COMMENTS: Myrmekite is found, but no perthite or graphic textures. Mineralogy indicates a peraluminous composition.

151-910D-7X-CC (Piece Dropstone, 0-5 cm) OBSERVER: LLD WHERE SAMPLED: Mid-Yermak Plateau
 ROCK NAME: Feldspathic wacke. Brief description
 GRAIN SIZE: Fine-grained.

MINERALS	VOL. %	SIZE	MORPHOLOGY	COMMENTS
Plagioclase				Albitic and calcic. Quartz
Some is strained.				
K-feldspar				Some is completely altered.
Amphibole?				Perhaps tourmaline; green to amber pleochroism.

ROCK FRAGMENTS

Volcanic Trachytic texture.

ADDITIONAL COMMENTS: Feldspar >> quartz. Altered K-feldspar > plagioclase.