Jagowerite $BaAl_2(PO_4)_2(OH)_2$

Crystal Data: Triclinic. *Point Group:* $\overline{1}$ or 1. As crystalline masses, to 2.5 cm.

Physical Properties: *Cleavage:* Good on {100} and {011}; fair on {$0\overline{1}1$}. Hardness = 4.5 D(meas.) = 4.01 D(calc.) = 4.05 Fluoresces greenish white under LW UV.

Optical Properties: Translucent. *Color:* Light green. *Luster:* Vitreous.
Optical Class: Biaxial (+) [*sic*]. $\alpha = 1.672(3)$ $\beta = 1.693(3)$ $\gamma = 1.710(3)$
2V(meas.) = 80(5)°

Cell Data: *Space Group:* $P\overline{1}$ or $P1$. $a = 6.049(2)$ $b = 6.964(3)$ $c = 4.971(2)$
$\alpha = 116.51(4)°$ $\beta = 86.06(4)°$ $\gamma = 112.59(3)°$ Z = 1

X-ray Powder Pattern: Yukon Territory, Canada.
3.00 (100), 3.26 (60), 2.94 (55), 5.55 (40), 2.21 (35), 1.90 (35), 2.91 (30)

Chemistry:

	(1)	(2)
P_2O_5	31.41	34.18
Al_2O_3	25.87	24.55
Fe_2O_3	0.26	
BaO	38.41	36.93
S	0.15	
H_2O^+	4.09	4.34
Total	100.19	100.00

(1) Yukon Territory, Canada; molecular H_2O shown absent by IR; recalculated after deduction of quartz impurity, then corresponds to $Ba_{1.07}(Al_{2.15}Fe_{0.01})_{\Sigma=2.16}[(P_{0.94}S_{0.01})_{\Sigma=0.95}O_4]_2(OH)_2$.
(2) $BaAl_2(PO_4)_2(OH)_2$.

Occurrence: In quartz veins filling tension fractures in carbonaceous argillite.

Association: Pyrite, hinsdalite.

Distribution: From a locality about 25 km north of the Hess River, N.T.S. area 105–N–7, Yukon Territory, Canada.

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References: (1) Meagher, E.P., M.E. Coates and A.E. Aho (1973) Jagowerite: a new barium phosphate mineral from the Yukon Territory. Can. Mineral., 12, 135–136. (2) (1976) Amer. Mineral., 61, 175 (abs. ref. 1). (3) Meagher, E.P., C.S. Gibbons, and J. Trotter (1974) The crystal structure of jagowerite: $BaAl_2P_2O_8(OH)_2$. Amer. Mineral., 59, 291–295.