**Rossite** $\mathbf{CaV_2^{5+}O_6 \cdot 4H_2O}$



**Crystal Data:** Triclinic. *Point Group:* $\overline{1}$. In small glassy lumps surrounded by alteration rims of metarossite.

**Physical Properties:** *Cleavage:* One direction, prominent. *Tenacity:* Brittle. Hardness = 2–3 D(meas.) = 2.45 D(calc.) = 2.42 Slowly soluble in $H_2O$; transforms to metarossite in open air in a few weeks time, which is reversible.

**Optical Properties:** Transparent. *Color:* Pale yellow; yellow in transmitted light. *Luster:* Vitreous to somewhat pearly.
*Optical Class:* Biaxial (–) (recrystallized). *Orientation:* $Y \wedge b \simeq 45°$; $Z \simeq c$. *Dispersion:* Very strong. $\alpha = 1.710$ $\beta = 1.770$ $\gamma = 1.840$ 2V(meas.) = 60(15)°

**Cell Data:** *Space Group:* $P\overline{1}$ (recrystallized). $a = 8.552(2)$ $b = 8.576(2)$ $c = 7.028(2)$ $\alpha = 101.50(2)°$ $\beta = 114.96(2)°$ $\gamma = 103.39(2)°$ Z = 2

**X-ray Powder Pattern:** Yellow Cat Wash, Utah, USA; rehydrated from metarossite. 3.860 (100), 6.636 (95), 7.260 (90), 3.432 (60), 3.033 (55), 3.000 (50), 3.934 (25)

**Chemistry:**

| | (1) | (2) |
|---|---|---|
| $V_2O_5$ | 58.00 | 58.67 |
| MgO | 0.14 | |
| CaO | 18.00 | 18.09 |
| $H_2O$ | 22.90 | 23.24 |
| insol. | 1.60 | |
| Total | 100.64 | 100.00 |

(1) Bull Pen Canyon, Colorado, USA; corresponds to $Ca_{1.01}V_{1.98}O_6 \cdot 3.85H_2O$.
(2) $CaV_2O_6 \cdot 4H_2O$.

**Occurrence:** In veinlets in carnotite-bearing sandstone (Bull Pen Canyon, Colorado, USA).

**Association:** Metarossite, carnotite, gypsum (Bull Pen Canyon, Colorado, USA); huemulite, hummerite, thenardite, gypsum, epsomite (Malargüe district, Argentina).

**Distribution:** In the USA, on M.E. O'Neil's [Buckhorn] claim, Bull Pen Canyon, and at the Burro and Deremo-Snyder mines, Slick Rock district, San Miguel Co., Colorado; at Yellow Cat Wash, Thompsons district, Grand Co., Utah; and from the Mesa No. 1 mine, Lukachukai Mountains, Arizona. In the Malargüe district, Mendoza Province, Argentina.

**Name:** To honor Dr. Clarence Samuel Ross (1880–1975), American geologist and mineralogist, U.S. Geological Survey, Washington, D.C., USA.

**Type Material:** National Museum of Natural History, Washington, D.C., USA, 95331, R5707 (all type material has altered to metarossite).

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 1053–1054. (2) Ahmed, F.R. and W.H. Barnes (1963) The crystal structure of rossite. Can. Mineral., 7, 713–726. (3) Bayliss, P. (1985) Powder X-ray diffraction data of rossite. Mineral. Mag., 49, 140–141.