Okieite

\[ \text{Mg}_3[\text{V}_{10}\text{O}_{28}] \cdot 28\text{H}_2\text{O} \]

**Crystal Data:** Triclinic. *Point Group:* 1. As equant to prismatic crystals, commonly appearing like curved columns, to ~3 mm, and often exhibiting rounded faces; as drusy crusts.


**Optical Properties:** Transparent. *Color:* Bright red, red-orange, yellow-orange. *Streak:* Light orange-yellow. *Luster:* Vitreous. *Optical Class:* Biaxial (-). \( \alpha = 1.720(3) \quad \beta = 1.745(3) \quad \gamma = 1.765(3) \) \( 2V(\text{meas.}) = 84(2)^\circ \)
2V(calc.) = 82.5°  *Dispersion:* Strong, \( r < v \). *Orientation:* \( X^a = 37^\circ \), \( Y^c = 28^\circ \), \( Z^b = 31^\circ \). Nonpleochroic.

**Cell Data:** *Space Group:* \( P\bar{1} \). \( a = 10.5566(2) \)
\( b = 10.7566(2) \)
\( c = 21.355(1) \)
\( \alpha = 90.015(6)^\circ \)
\( \beta = 97.795(7)^\circ \)
\( \gamma = 104.337(7)^\circ \)  \( Z = 2 \)

**X-Ray Diffraction Pattern:** Burro mine, Slick Rock district, San Miguel Co., Colorado, USA. 9.71 (100), 8.32 (19), 11.04 (17), 6.42 (12), 2.621 (10), 3.150 (9), 3.024 (7)

**Chemistry:**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
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</thead>
<tbody>
<tr>
<td>( \text{MgO} )</td>
<td>7.52</td>
<td>7.88</td>
</tr>
<tr>
<td>( \text{V}_2\text{O}_5 )</td>
<td>59.38</td>
<td>59.25</td>
</tr>
<tr>
<td>( \text{H}_2\text{O} )</td>
<td>[33.10]</td>
<td>32.87</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.00</strong></td>
<td><strong>100.00</strong></td>
</tr>
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</table>

(1) Burro mine, Slick Rock district, San Miguel Co., Colorado, USA; average electron microprobe analysis, \( \text{H}_2\text{O} \) calculated from structure; normalized corresponds to \( \text{Mg}_{2.86}[\text{H}_{0.28}\text{V}_{10}\text{O}_{28}] \cdot 28\text{H}_2\text{O} \).
(2) \( \text{Mg}_3[\text{V}_{10}\text{O}_{28}] \cdot 28\text{H}_2\text{O} \).

**Mineral Group:** Decavanadate family.

**Occurrence:** Secondary, underground on mine walls in roll-front V-U-deposits in sandstone by the oxidation of montroseite-corvusite assemblages in a moist environment.

**Association:** Dickthomssenite, montroseite, corvusite.

**Distribution:** From the Burro mine, Slick Rock district, San Miguel Co. and the Hummer mine, Paradox Valley, Montrose Co., Colorado, USA.

**Name:** Honors Craig (‘‘Okie’’) Howell (b. 1963) of Naturita, Colorado, USA, who was instrumental in the discovery of several new mineral species at the Burro, Blue Streak, and Pickett Corral mines, including this one.

**Type Material:** Natural History Museum of Los Angeles County, Los Angeles, California, USA (66784 and 66785 Burro mine, and 66786 Hummer mine).