W3-8-1 Exact differential 1

Consider $dq = \left(\frac{RT}{P}\right) dp - RdT$
Is this an exact differential?

$dq = \left(\frac{RT}{P}\right) dP - RdT$
$\left(\frac{\partial}{\partial T}\left(\frac{RT}{P}\right)\right)_P = \frac{R}{P}$ and $\left(\frac{\partial}{\partial P}(-R)P\right)_T = 0$
The combined differentials are not equal, so dq is not an exact differential.