$$
\begin{aligned}
\nabla_\mu Q(\theta \mid \theta^{(\tau-1)}) &= \sum_{t=1}^{G} \nabla_\mu Q_t(\theta \mid \theta^{(\tau-1)}) \\
&= \sum_{t=1}^{G} \nabla_\mu \Big(-\frac{1}{2} (\widetilde{x}_t^{(\tau)} - \mu)^H \mathbf{\Lambda}^{-1} (\widetilde{x}_t^{(\tau)} - \mu) \Big) \\
&= -\frac{1}{2} \sum_{t=1}^{G} \nabla_\mu (\widetilde{x}_t^{(\tau)} - \mu)^H \mathbf{\Lambda}^{-1} (\widetilde{x}_t^{(\tau)} - \mu) \\
&= -\frac{1}{2} \sum_{t=1}^{G} 2\mathbf{\Lambda}^{-1} (\widetilde{x}_t^{(\tau)} - \mu) \nabla_\mu (\widetilde{x}_t^{(\tau)} - \mu) \\
&= -\frac{1}{2} \sum_{t=1}^{G} 2\mathbf{\Lambda}^{-1} (\widetilde{x}_t^{(\tau)} - \mu)(O - I_p) \\
&= \mathbf{\Lambda}^{-1} \sum_{t=1}^{G} (\widetilde{x}_t^{(\tau)} - \mu)
\end{aligned}
$$