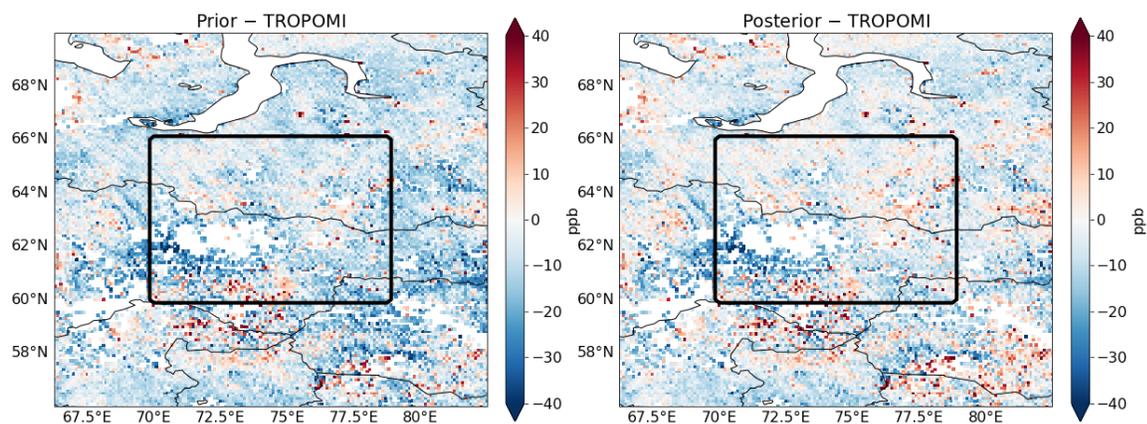


**Figure S9:** Prior and Posterior compared to TROPOMI XCH<sub>4</sub> data across the Western Siberian Lowlands for the updated prior model run.



**Figure S10:** Prior and Posterior compared to TROPOMI XCH<sub>4</sub> data across the Western Siberian Lowlands for the standard model run.