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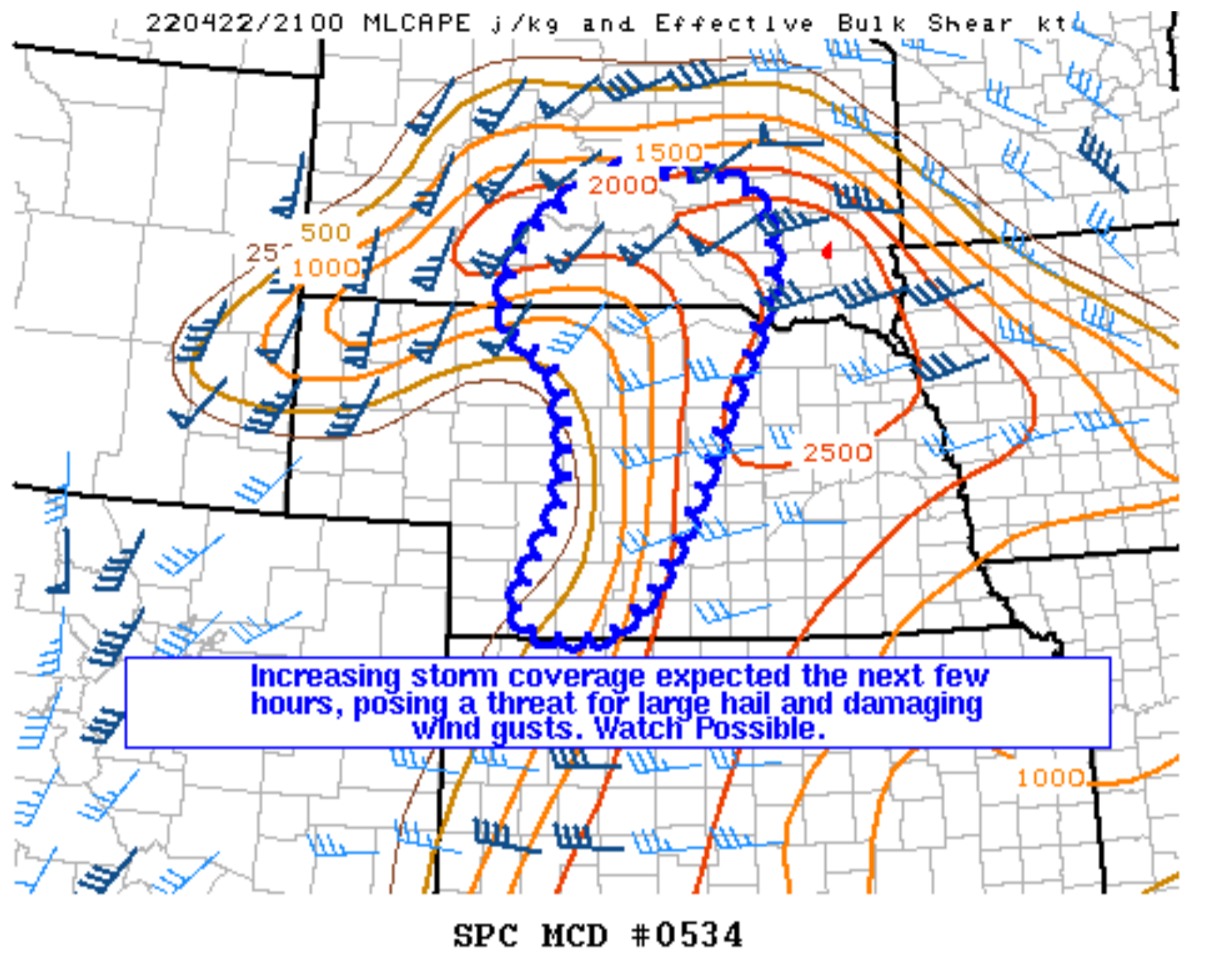
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Mesoscale Discussion 534

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Mesoscale Discussion 0534
 NWS Storm Prediction Center Norman OK
 0508 PM CDT Fri Apr 22 2022

Areas affected...Central/Western Nebraska and far Southern South Dakota

Concerning...Severe potential...Watch possible

Valid 222208Z - 222345Z

Probability of Watch Issuance...60 percent

SUMMARY...Increasing storm coverage is anticipated over the next few hours. These storms will pose a threat for large hail and damaging wind gusts. Watch issuance is possible.

DISCUSSION...Regional satellite depicts a broad area of developing cumulus over portions of central Nebraska into far southern South Dakota. Surface observations depict a well-mixed boundary layer, with temperatures mid-90s F and dew point temperatures in 30s-40s F south of an east-west oriented warm front along portions of southern South Dakota. Nevertheless, diurnal heating and forcing for ascent from the approaching upper trough has led to sufficient destabilization (MLCAPE 2000-2500 J/kg) with steep low- and mid-level lapse rates (8-9 C/km). Despite strong southerly low-level flow, deep-layer shear remains somewhat marginal (25-30 kt) across central Nebraska. However, deep-layer shear increases with northern extent, particularly across south-central South Dakota along a surface warm front, approaching 35-40 kt.

The current expectation is for storm coverage to generally increase across the region. Given the aforementioned environmental indices, storm mode may be a bit unorganized initially across central Nebraska, with more organized supercell modes possible along the Nebraska/South Dakota border. Storms that develop should pose a threat for large hail and damaging wind gusts. Thus, the area will be monitored for possible watch issuance over the next few hours.

..Karstens/Thompson.. 04/22/2022

...Please see www.spc.noaa.gov for graphic product...

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