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Mesoscale Discussion 967

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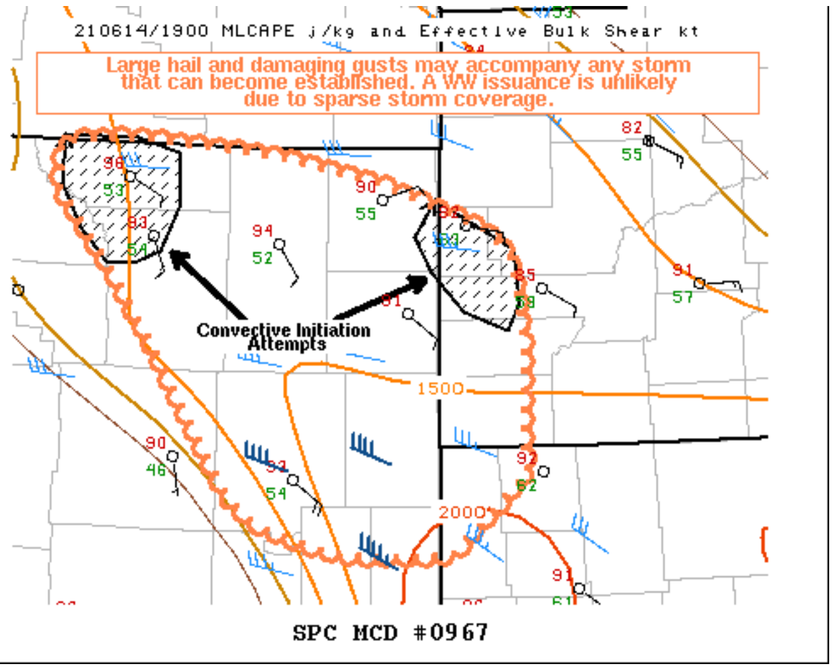

Mesoscale Discussion 0967
NWS Storm Prediction Center Norman OK
0224 PM CDT Mon Jun 14 2021

Areas affected...portions of eastern Wyoming...western South Dakota...far northwest Nebraska

Concerning...Severe potential...Watch unlikely

Valid 141924Z - 142200Z

Probability of Watch Issuance...20 percent

SUMMARY...Isolated strong thunderstorms are expected to gradually develop and intensify over the next few hours. Large hail and damaging gusts appear to be the primary threats with these storms. Storm coverage is expected to be too sparse to warrant a WW issuance.

DISCUSSION...Visible satellite and MRMS mosaic radar data show convective initiation underway in proximity to the Big Horn Mountains in northern WY, and Lawrence County, SD. Across portions of eastern WY into western SD and far northwest NE, diurnal heating is gradually eroding MLCINH per 15-19Z mesoanalysis trends. Moist upslope low-level flow should also support isolated thunderstorm development through the afternoon/early evening hours. Upper 50s/near 60 F surface dewpoints have been advecting northwestward beneath 7.5-8.5 C/km low and mid-level lapse rates, contributing to 1500+ J/kg MLCAPE. While wind speeds are rather weak in the surface-500 mb layer, gradual veering with height, along with some speed shear above 500 mb, are contributing to 30-45 kts of effective bulk shear. Transient supercells may manifest from the longer lasting storms given the expected isolated coverage and aforementioned thermodynamic/kinematic environment.

The steep mid-level lapse rates will support large hail with any robust updraft that can become established. Damaging gusts may also occur with the stronger storm cores given the somewhat dry, mixed boundary layer/steep low-level lapse rates. Still, a WW issuance appears unlikely given the anticipated low storm coverage.

..Squitieri/Grams.. 06/14/2021

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

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