

Panhandle Groundwater Conservation District

SEEDING REPORT - July 02, 2024

SYNOPTIC/MESOSCALE CONDITIONS:

A cold front will move into the Panhandle from the north this afternoon, bringing with it a chance of showers and thunderstorms. Along with the front, a shortwave will also migrate in from the west. The combination of these two should be sufficient for convective development with strong to severe storms a possibility. Looking at severe parameters, MLCAPE is not overly impressive but has increased somewhat since yesterday's run with MLCAPE values close to 1,500 J/kg. This will be enough for storms to produce locally damaging winds and marginal hail. Shear is low so organized cells may be difficult to form keeping the tornado potential close to zero. The most likely area to see severe storms will be just north of the district where forcing is greatest. This is also where the SPC has a slight risk for severe weather. For the district, a marginal risk has been issued. As far as timing is concerned, both the HRRR and NAM have activity forming after 22Z with the best chance over the northern half of the district (north of I40).

LIFTING MECHANISM:

Shortwave/Front

THERMODYNAMIC INDICES (12Z NAM valid at 21Z KAMA)

Freezing Level (m,MSL)	5182	LCL (m,MSL)	3871
-5°C Height (m,MSL)	6005	CCL (m,MSL)	3688
-10°C Height (m,MSL)	6797	ML CAPE (J/kg)	1487
Cloud Base (m,MSL)	3179	SB CAPE (J/kg)	2074
Warm Cloud Depth (m)	2003	CINH (J/kg)	0
Cloud Base Temp (°C)	13	LI (°C)	-6
Precipitable Water (in)	1.62	Shear 0-6 km	16

Seeding Operations:

Convection moved into southeast Donley County after 22Z. Therefore, N5359P was put on alert at 2213Z and became airborne from TDW at 2254Z. Shortly after takeoff, activity started to approach southwest Armstrong County where six AgI bips and one hygro were used between 2312Z-2315Z. After this area was worked, the aircraft continued to its original target. Once at the intended target south of Clarendon, eight AgI bips and one hygro were used between 2329Z-2338Z. The aircraft was then directed back to Armstrong County at 2340Z. Here, a cell was seeded with eight AgI bips and one hygro (2352Z-2358Z). Since all workable targets have been seeded in these areas, the aircraft was directed to Wheeler County at 0005Z where a target was found. Four AgI bips were lit northeast of the city of Wheeler at 0028Z with two more at 0032Z. Due to low fuel, N5359P RTB at 0047Z and landed at TDW at 0130Z.

WATCHES/WARNINGS:

Severe Thunderstorm Warning- Armstrong, Potter

SEEDED CELL IDS: HERE

375	243/344	243/386	300/308	441/518
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FLIGHT INFORMATION:

TIME (Z)	Plane	Flare Location	County
2254	N5359P	IN AIR	

2312	N5359P	140° @ 28 nm	Armstrong
2313	N5359P	141° @ 29 nm	Armstrong
2315	N5359P	141° @ 28 nm	Armstrong
2329	N5359P	113° @ 48 nm	Donley
2332	N5359P	113° @ 48 nm	Donley
2333	N5359P	113° @ 48 nm	Donley
2338	N5359P	107° @ 49 nm	Donley
2352	N5359P	126° @ 25 nm	Armstrong
2354	N5359P	126° @ 25 nm	Armstrong
2355	N5359P	127° @ 26 nm	Armstrong
2358	N5359P	124° @ 26 nm	Armstrong
0028	N5359P	71° @ 75 nm	Wheeler
0032	N5359P	70° @ 78 nm	Wheeler
0047	N5359P	RTB	

Panhandle Groundwater Conservation District

SEEDING REPORT - July 06, 2024

SYNOPTIC/MESOSCALE CONDITIONS:

With the upper-level trough to the east, northwest flow has entered the Panhandle bringing cooler conditions. Within this flow, a disturbance will enter eastern New Mexico this afternoon. The NAM indicates that isolated storms will develop sometime after 22Z, mainly over the western areas (west of Carson County). However, the HRRR does not have any activity developing due to a stronger cap. Either way, there remains at least a slight chance of a storm or two this evening.

LIFTING MECHANISM:

Shortwave

THERMODYNAMIC INDICES (12Z NAM valid at 21Z KAMA)

Freezing Level (m,MSL)	4724	LCL (m,MSL)	3109
-5°C Height (m,MSL)	5486	CCL (m,MSL)	2957
-10°C Height (m,MSL)	6096	ML CAPE (J/kg)	1808
Cloud Base (m,MSL)	2847	SB CAPE (J/kg)	2318
Warm Cloud Depth (m)	1877	CINH (J/kg)	0
Cloud Base Temp (°C)	12	LI (°C)	-8
Precipitable Water (in)	1.25	Shear 0-6 km	29

Seeding Operations:

Activity developed in Potter County around 21Z so N5359P was put on alert at 2122Z. The aircraft was launched once the pilot arrived at the airport and then became airborne from TDW at 22Z. The aircraft found a workable base at the intended target north of Amarillo where two AgI bips and one hygro were lit at 2215Z. Due to the large size of the cell, 22 total AgI bips and two hygros were used between 2215Z-2240Z. During this time, at 2222Z, the pilot reported rain falling out of the seeded location. Inflow also increased from 500 fpm to 2,000 fpm. Then, at 2241Z, the aircraft was directed to the Claude area where six AgI bips and one hygro were used within a four-minute period (2259Z-2303Z). Another cloud was seeded a few miles southeast of this target at 2307Z with a total of six AgI bips between then and 2313Z. All cells then became warned which prompted the pilot to RTB at 2356Z. N5359P landed at TDW at 00Z.

WATCHES/WARNINGS:

Severe Thunderstorm Warning- Armstrong, Carson, Potter

SEEDED CELL IDS: HERE

599/604	599/613	599/618	599/623	599/627	599/641	599/643	599/649
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FLIGHT INFORMATION:

TIME (Z)	Plane	Flare Location	County
2200	N5359P	IN AIR	
2215	N5359P	333° @ 9 nm	Potter
2216	N5359P	331° @ 10 nm	Potter
2218	N5359P	331° @ 9 nm	Potter
2219	N5359P	331° @ 10 nm	Potter
2224	N5359P	323° @ 10 nm	Potter
2226	N5359P	321° @ 12 nm	Potter
2228	N5359P	333° @ 9 nm	Potter
2230	N5359P	240° @ 9 nm	Potter

2232	N5359P	316° @ 9 nm	Potter
2234	N5359P	331° @ 8 nm	Potter
2238	N5359P	319° @ 9 nm	Potter
2240	N5359P	329° @ 8 nm	Potter
2259	N5359P	102° @ 11 nm	Armstrong
2301	N5359P	94° @ 12 nm	Armstrong
2303	N5359P	96° @ 12 nm	Armstrong
2307	N5359P	105° @ 18 nm	Armstrong
2309	N5359P	104° @ 19 nm	Armstrong
2313	N5359P	97° @ 18 nm	Armstrong
2356	N5359P	RTB	

Panhandle Groundwater Conservation District

SEEDING REPORT - July 11, 2024

SYNOPTIC/MESOSCALE CONDITIONS:

Northwesterly upper-level flow remains as the Panhandle is situated between a trough over the Ohio Valley and a strong ridge to the west. Weak PVA, along with monsoonal moisture, will make its way into the area this afternoon, bringing slight chances of showers and a thunderstorm. In addition, a surface low over south central Kansas may allow for enhanced forcing as a convergence zone will trail the low to the southwest. Where this zone sets up is where the greatest chances of convection will reside (10-20%). As of the 12Z NAM run, it looks to be positioned somewhere over our southern counties, south of I40. North of here, chances still remain, but they will be less (<10%). There are a few things going against deep convection. First, there is little instability (MLCAPE <500 J/kg) and a decent cap. The reason for this is that the best dynamics will be closer to the low. Second, moisture will be lacking as dewpoints are forecast to only be in the lower 50s. The HRRR, however, has much drier air with dewpoints in the middle 40s. Therefore, activity is likely to be high based with LCLs near 14 kft. Third, shear is very low. As far as timing is concerned, activity, if it develops, will occur after 20Z.

LIFTING MECHANISM:

Shortwave

THERMODYNAMIC INDICES (12Z NAM valid at 21Z KAMA)

Freezing Level (m,MSL)	4572	LCL (m,MSL)	4572
-5°C Height (m,MSL)	5212	CCL (m,MSL)	4389
-10°C Height (m,MSL)	6187	ML CAPE (J/kg)	526
Cloud Base (m,MSL)	3810	SB CAPE (J/kg)	1043
Warm Cloud Depth (m)	762	CINH (J/kg)	0
Cloud Base Temp (°C)	5	LI (°C)	-3
Precipitable Water (in)	0.90	Shear 0-6 km	9

Seeding Operations:

Weak, pulse activity developed in Roberts and Donely Counties after 1830Z. The pilot was informed of a possible launch but was not available until after 19Z. Once the pilot arrived at the airport, he was instructed to launch and became airborne at 1955Z from TDW en route to the Groom area. At 2018Z, a workable base was found (not on radar) just to the east of Claude, at which time seeding commenced with two AgI bips. Two more AgI bips were used here (2020Z) before another target was seeded with two AgI bips at 2029Z to the west of Claude. Around this time (2028Z), the first target showed an increase in reflectivity and became a TITAN cell at 2036Z. Then, at 2050Z, a cell was seeded over the southeast part of Armstrong County with three AgI bips. The pilot was redirected to the north at 2053Z where an additional cell was seeded (2101Z-2109Z) with 10 AgI bips along the Armstrong/Donley County line. After this target was finished, the aircraft was directed back to the west of Claude (2126Z-2128Z) where a target was seeded with four AgI bips. Five miles north of this location, another cell was seeded with 10 AgI bips from 2134Z-2201Z. Finally, the last target of the day was seeded (2209Z-2211Z) with four AgI bips northeast of AMA. The pilot RTB at 2212Z due to the flare rack shortening out and landed at TDW at 2230Z. The pilot remained on alert while the aircraft was refueled and rechemed. However, by the time the pilot was ready to launch, activity weakened. Therefore, no other flights were conducted.

WATCHES/WARNINGS:

None

SEEDED CELL IDS: HERE

190	215	216	268	277	340
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FLIGHT INFORMATION:

TIME (Z)	Plane	Flare Location	County
1955	N5359P	IN AIR	
2018	N5359P	100° @ 21 nm	Armstrong
2020	N5359P	99° @ 21 nm	Armstrong
2029	N5359P	113° @ 12 nm	Armstrong
2050	N5359P	122° @ 36 nm	Armstrong
2101	N5359P	103° @ 32 nm	Armstrong
2104	N5359P	103° @ 31 nm	Armstrong
2106	N5359P	105° @ 33 nm	Armstrong
2107	N5359P	104° @ 32 nm	Armstrong
2109	N5359P	103° @ 32 nm	Armstrong
2126	N5359P	113° @ 13 nm	Armstrong
2128	N5359P	105° @ 13 nm	Armstrong
2134	N5359P	76° @ 13 nm	Carson
2136	N5359P	81° @ 13 nm	Carson
2138	N5359P	71° @ 14 nm	Carson
2159	N5359P	71° @ 13 nm	Carson
2201	N5359P	71° @ 13 nm	Carson
2209	N5359P	18° @ 17 nm	Potter
2211	N5359P	24° @ 6 nm	Potter
2212	N5359P	RTB	