**Panhandle Groundwater Conservation District**

**SEEDING REPORT – September 3, 2025**

**SYNOPTIC/MESOSCALE CONDITIONS:**
Northwest flow aloft is occurring as the region is between a split flow pattern with a jet to the north and one to the south/east. The one to the north is rounding the base of a strong synoptic low responsible for fall like conditions over Michigan where some areas will stay in the 40s. Closer to our area, this system will drag a cold front through this evening. However, due to the weak dynamics associated with the front this far southwest, convection looks rather limited. Additionally, temperatures will not be affected much. Heading into this afternoon, isolated, weak convection is expected to develop along the front over the Oklahoma and northern Texas Panhandle, north of the district. As the boundary moves south, this activity will as well, mainly after 22Z. Chances of rainfall look limited with chances in the 10-20% range. In fact, the HRRR does not have any precipitation moving through the district, whereas the NAM has a couple of weak cells. It is likely that the HRRR is more accurate due to the scarcity of moisture and lack of instability. Pwat will be on the low side with values ranging from 0.8 to 1.0 inches. Dew points will also be in the upper 40s to near 50°F, further indicating the stability of the airmass. Speaking of stability, MLCAPE is only progged to be around 500 J/kg, along with a weak cap. Furthermore, dew point depressions could be as high as 45°F. Therefore, if anything does manage to form, most of it will likely be virga as cloud bases could approach 14 kft. The front should then be south of the district near sunset.

**LIFTING MECHANISM**
Cold Front

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

| | | | |
|---|---|---|---|
| Freezing Level (m,MSL) | 4542 | LCL (m,MSL) | 4176 |
| -5°C Height (m,MSL) | 5212 | CCL (m,MSL) | 4267 |
| -10°C Height (m,MSL) | 5913 | ML CAPE (J/kg) | 454 |
| Cloud Base (m,MSL) | 4054 | SB CAPE (J/kg) | 937 |
| Warm Cloud Depth (m) | 488 | CINH (J/kg) | 0 |
| Cloud Base Temp (°C) | 1 | LI(°C) | -5 |
| Precipitable Water (in) | 0.81 | Shear 0-6 km | 22 |

**Seeding Operations:**
N5359P was already in the air for a maintenance flight when a cell moved south into Roberts County around 00Z. Therefore, the aircraft was directed to this storm at 2354Z. It was noticed that the plane went as far west as New Mexico, so it was not until 0050Z when they reached the target. Once at the target, bases were reported high, above 13 kft, but since rainfall was seen reaching the surface, it was decided to seed. Seeding then commenced at 0051Z with two AgI bips. Ten additional AgI bips were used over the next 14 minutes. The aircraft RTB'd at 0106Z due to no other targets within the distrit. They landed at TDW at 0136Z.

**WATCHES/WARNINGS:**
None

**SEEDED CELL IDS:**

| |
|---|
| 30 |

**FLIGHT INFORMATION:**

| TIME (Z) | Plane | Flare Location | County |
|---|---|---|---|
| **2318** | **N5359P** | IN AIR | |
| **0051** | **N5359P** | 37° @ 45 nm | **Roberts** |
| **0052** | **N5359P** | 37° @ 47 nm | **Roberts** |
| **0055** | **N5359P** | 37° @ 47 nm | **Roberts** |
| **0058** | **N5359P** | 44° @ 44 nm | **Roberts** |
| **0059** | **N5359P** | 40° @ 44 nm | **Roberts** |
| **0105** | **N5359P** | 46° @ 40 nm | **Roberts** |
| **0136** | **N5359P** | RTB | |

**Panhandle Groundwater Conservation District**

**SEEDING REPORT – September 9, 2025**

**SYNOPTIC/MESOSCALE CONDITIONS:**
Another shortwave will enter this afternoon, but like yesterday, chances of convection will be conditional. With the ridge progressing farther east, heights will increase, allowing the mid-levels to warm and creating stronger subsidence. Even with these negating factors, it is still possible that a couple of isolated cells could form. Anything that does manage to develop will have the potential of becoming strong to severe as sufficient instability will be in place. However, shear will be slightly less than yesterday. Activity will then weaken once we approach sunset as we lose daytime heating.

**LIFTING MECHANISM**
Shortwave

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

| | | | |
|---|---|---|---|
| Freezing Level (m,MSL) | 4637 | LCL (m,MSL) | 3658 |
| -5°C Height (m,MSL) | 5486 | CCL (m,MSL) | 3658 |
| -10°C Height (m,MSL) | 6096 | ML CAPE (J/kg) | 2071 |
| Cloud Base (m,MSL) | 3265 | SB CAPE (J/kg) | 2647 |
| Warm Cloud Depth (m) | 1372 | CINH (J/kg) | 0 |
| Cloud Base Temp (°C) | 9 | LI(°C) | -7 |
| Precipitable Water (in) | 1.12 | Shear 0-6 km | 27 |

**Seeding Operations:**
A cu field started to rapidly develop around 22Z, so N5359P was put on standby 2210. Once the aircraft was ready at 2238Z, they were launched towards Claude and became airborne from TDW by 2252Z. On arrival, good, seedable conditions were met with seeding commencing at 2302Z. A total of 16 AgI bips and one hygro were used on this storm between 2302Z-2327Z. At 2330Z, N5359P RTB'd due to all activity being severe warned. They landed at H81 (because of cells near TDW) at 2338Z. The were then airborne from H81 at 0121Z and landed at TDW at 0129Z.

**WATCHES/WARNINGS:**
Severe Thunderstorm Warning- Armstrong, Carson, Potter
Flash Flood Warning- Armstrong, Carson, Potter

**SEEDED CELL IDS:**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 1/126 | 1/142 | 1/154 | 1/157 | 1/159 | 1/166 | 1/178 |

**FLIGHT INFORMATION:**

| TIME (Z) | Plane | Flare Location | County |
|---|---|---|---|
| **2252** | **N5359P** | IN AIR | |
| **2302** | **N5359P** | 140° @ 20 nm | **Armstrong** |
| **2304** | **N5359P** | 140° @ 22 nm | **Armstrong** |
| **2306** | **N5359P** | 140° @ 21 nm | **Armstrong** |
| **2308** | **N5359P** | 140° @ 21 nm | **Armstrong** |
| **2312** | **N5359P** | 130° @ 21 nm | **Armstrong** |
| **2314** | **N5359P** | 130° @ 20 nm | **Armstrong** |
| **2316** | **N5359P** | 120° @ 21 nm | **Armstrong** |
| **2327** | **N5359P** | 150° @ 24 nm | **Armstrong** |
| **2330** | **N5359P** | RTB | |

**Panhandle Groundwater Conservation District**

**SEEDING REPORT – September 15, 2025**

**SYNOPTIC/MESOSCALE CONDITIONS:**
The area will be between a ridge to the south and a low to the northwest. Extending south of this low is an upper-level trough with its axis west over the Rockies. At 500 mb, the northern extent of the ridge creeps into the Panhandle today with increasing heights. Within this flow, a shortwave is expected to move through this afternoon and into the evening. In conjunction with this wave, subtle surface convergence will also exist. Instability parameters are impressive with MLCAPE values of 2,000-3,000 J/kg over the eastern half of the district. This, combined with high water content (dew points in the mid-60s), will give way to a few isolated showers and storms this afternoon. The main caveat for convection will be the ridge. The ridge will likely keep activity isolated and short-lived. In any case, any storms that manage to develop will have the potential to become strong to marginally severe. As far as location, the best chance will be east of Potter County where the dryline/convergence zone will be. Timing looks to be after 19Z.

**LIFTING MECHANISM**
Shortwave

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

| | | | |
|---|---|---|---|
| Freezing Level (m,MSL) | 4755 | LCL (m,MSL) | 3231 |
| -5°C Height (m,MSL) | 5486 | CCL (m,MSL) | 3170 |
| -10°C Height (m,MSL) | 6005 | ML CAPE (J/kg) | 1080 |
| Cloud Base (m,MSL) | 2822 | SB CAPE (J/kg) | 1825 |
| Warm Cloud Depth (m) | 1933 | CINH (J/kg) | 0 |
| Cloud Base Temp (°C) | 10 | LI(°C) | -5 |
| Precipitable Water (in) | 0.95 | Shear 0-6 km | 21 |

**Seeding Operations:**
FIRST FLIGHT- A line of cells started to develop along a convergence zone in Gray County shortly after 19Z. Therefore, N5359P was launched to Lefors at 19Z and became airborne from TDW at 2007Z. On approach, the aircraft was redirected to a cell near Miami where seeding commenced at 2045Z with two AgI bips. Six additional AgI bips and one hygro were used over the next 11 minutes. At 2059Z, they were directed back towards Lefors, but the pilot reported activity was weakening, so they were redirected to southwest Wheeler County. Here, activity was also weakening. At 2152Z, they RTB'd and landed at TDW at 2223Z.

SECOND FLIGHT- A couple of cells developed along an OFB that was kicked off the activity in Wheeler County. Therefore, N5359P was launched for a second flight at 2246Z to the Groom area. On approach, good, seedable conditions were met, so six AgI flares were used between 2315Z-2320Z. Activity then started weakening, so the aircraft RTB'd at 2338Z and landed at TDW at 0111Z.

**WATCHES/WARNINGS:**
Severe Thunderstorm Warning- Wheeler

**SEEDED CELL IDS:**

| | | |
|---|---|---|
| 427/466 | 427/516 | 650 |

**FLIGHT INFORMATION:**

| TIME (Z) | Plane | Flare Location | County |
|---|---|---|---|
| **2007** | **N5359P** | IN AIR | |
| **2045** | **N5359P** | 55° @ 62 nm | **Roberts** |
| **2052** | **N5359P** | 50° @ 60 nm | **Roberts** |
| **2054** | **N5359P** | 58° @ 60 nm | **Roberts** |
| **2056** | **N5359P** | 55° @ 60 nm | **Roberts** |
| **2152** | **N5359P** | RTB | |
| **2302** | **N5359P** | IN AIR | |
| **2315** | **N5359P** | 76° @ 30 nm | **Carson** |
| **2317** | **N5359P** | 80° @ 32 nm | **Carson** |
| **2320** | **N5359P** | 80° @ 28 nm | **Carson** |
| **2338** | **N5359P** | RTB | |

**Panhandle Groundwater Conservation District**

**SEEDING REPORT – September 17, 2025**

**SYNOPTIC/MESOSCALE CONDITIONS:**
The deep upper-level low that is currently spinning over Wyoming will progress east today. As it does so, it will become slightly negatively tilted, bringing better dynamics into the area. However, the best dynamics look to reside just to our north closer to the Oklahoma border where MLCAPE could reach 2,000 J/kg. For our area, forcing will be less with MLCAPE on the order of 500-1,000 J/kg. At the surface, the front associated with the low will also be to our north and will migrate south/east through tomorrow. This is mainly where the best forcing, and thus convection will occur. Convection is expected to develop near the northern OK/TX border early this afternoon with precipitation moving into a little farther south through the rest of the afternoon and evening. The best chance of rainfall will remain over our northern areas (north of I40). Some of the convection may become strong to severe.

**LIFTING MECHANISM**
Front

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

| | | | |
|---|---|---|---|
| Freezing Level (m,MSL) | 4389 | LCL (m,MSL) | 2957 |
| -5°C Height (m,MSL) | 5090 | CCL (m,MSL) | 2987 |
| -10°C Height (m,MSL) | 5913 | ML CAPE (J/kg) | 1090 |
| Cloud Base (m,MSL) | 2966 | SB CAPE (J/kg) | 1680 |
| Warm Cloud Depth (m) | 1423 | CINH (J/kg) | 0 |
| Cloud Base Temp (°C) | 7 | LI(°C) | -6 |
| Precipitable Water (in) | 1.23 | Shear 0-6 km | 23 |

**Seeding Operations:**
FIRST FLIGHT- Convection started to develop around 18Z along a frontal boundary draped from north of Amarillo northeast to Miami. Therefore, N5359P was put on standby at 1812Z and was directed to launch when the plane was ready. At 1915Z, the plane was ready and took off from TDW en route to the northwest of Amarillo with seeding commencing at 1917Z. This quickly developed into an E-W line, so the pilot started moving east as they continued seeding. A total of 32 AgI bips and one hygro were used between the northwest of Amarillo and Panhandle from 1917Z-1957Z. The pilot was then directed to the Gray/Donley County line where 15 AgI bips and two hygros were lit between here and Clarendon from 2011Z-2031Z. The pilot reported that they were out of flares at 2032Z, at which point they RTB'd to reflare and refuel for a potential relauch. N5359P landed at TDW at 2101Z.

SECOND FLIGHT- N5359P became airborne from TDW for the second flight at 2208Z to Clarendon. Stratiform precipitation was reported on approach, so they were redirected towards northern Carson County. Here, seeding commenced at 2316Z with two AgI bips. Like the first flight, activity formed into an E-W line, so the pilot was directed to continue seeding as they headed west into Potter County. A total of 38 AgI bips and one hygro were used within this line as continuous inflow was found over the stretch of 20 miles. At 2354Z, N5359P RTB'd due to all targets either severe warned or seeded. They landed at TDW at 0026Z.

**WATCHES/WARNINGS:**

Severe Thunderstorm Warning- Armstrong, Carson, Potter, Roberts

**SEEDED CELL IDS:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 441/503 | 441/513 | 441/519 | 441/537 | 441/556 | 441/574 | 441/584 | 441/590 | 441/634 |
| 441/651 | 441/682 | 441/694 | 441/704 | 441/1233 | 441/1256 | 441/1263 | 441/1300 | 441/1284 |
| 441/1331 | 441/1216 | | | | | | | |

**FLIGHT INFORMATION:**

| TIME (Z) | Plane | Flare Location | County |
|---|---|---|---|
| **1915** | **N5359P** | IN AIR | |
| **1917** | **N5359P** | 300° @ 12 nm | **Potter** |
| **1922** | **N5359P** | 300° @ 13 nm | **Potter** |
| **1924** | **N5359P** | 320° @ 8 nm | **Potter** |
| **1926** | **N5359P** | 315° @ 10 nm | **Potter** |
| **1928** | **N5359P** | 290° @ 10 nm | **Potter** |
| **1929** | **N5359P** | 300° @ 9 nm | **Potter** |
| **1931** | **N5359P** | 315° @ 10 nm | **Potter** |
| **1934** | **N5359P** | 330° @ 8 nm | **Potter** |
| **1935** | **N5359P** | 330° @ 9 nm | **Potter** |
| **1941** | **N5359P** | 30° @ 13 nm | **Carson** |
| **1943** | **N5359P** | 290° @ 10 nm | **Carson** |
| **1945** | **N5359P** | 290° @ 10 nm | **Carson** |
| **1949** | **N5359P** | 290° @ 10 nm | **Carson** |
| **1951** | **N5359P** | 290° @ 10 nm | **Carson** |
| **1953** | **N5359P** | 290° @ 10 nm | **Carson** |
| **1956** | **N5359P** | 290° @ 10 nm | **Carson** |
| **1957** | **N5359P** | 290° @ 10 nm | **Carson** |
| **2011** | **N5359P** | 290° @ 10 nm | **Carson** |
| **2012** | **N5359P** | 290° @ 10 nm | **Carson** |
| **2013** | **N5359P** | 290° @ 10 nm | **Carson** |
| **2017** | **N5359P** | 290° @ 10 nm | **Carson** |
| **2020** | **N5359P** | 290° @ 10 nm | **Carson** |
| **2023** | **N5359P** | 290° @ 10 nm | **Carson** |
| **2030** | **N5359P** | 290° @ 10 nm | **Donley** |
| **2031** | **N5359P** | 290° @ 10 nm | **Donley** |
| **2032** | **N5359P** | RTB | |
| **2208** | **N5359P** | IN AIR | |
| **2316** | **N5359P** | 30° @ 26 nm | **Carson** |
| **2318** | **N5359P** | 33° @ 26 nm | **Carson** |
| **2320** | **N5359P** | 10° @ 23 nm | **Carson** |
| **2321** | **N5359P** | 15° @ 22 nm | **Carson** |
| **2323** | **N5359P** | 20° @ 21 nm | **Carson** |
| **2324** | **N5359P** | 15° @ 21 nm | **Carson** |
| **2327** | **N5359P** | 20° @ 22 nm | **Carson** |
| **2331** | **N5359P** | 7° @ 19 nm | **Carson** |
| **2333** | **N5359P** | 355° @ 19 nm | **Potter** |
| **2338** | **N5359P** | 360° @ 21 nm | **Potter** |
| **2340** | **N5359P** | 355° @ 22 nm | **Potter** |
| **2342** | **N5359P** | 345° @ 23 nm | **Potter** |
| **2344** | **N5359P** | 340° @ 24 nm | **Potter** |
| **2345** | **N5359P** | 338° @ 25 nm | **Potter** |
| **2346** | **N5359P** | 335° @ 25 nm | **Potter** |
| **2348** | **N5359P** | 335° @ 18 nm | **Potter** |
| **2349** | **N5359P** | 340° @ 19 nm | **Potter** |
| **2351** | **N5359P** | 335° @ 16 nm | **Potter** |
| **2353** | **N5359P** | 345° @ 19 nm | **Potter** |
| **0009** | **N5359P** | RTB | |

**Panhandle Groundwater Conservation District**

**SEEDING REPORT – September 20, 2025**

**SYNOPTIC/MESOSCALE CONDITIONS:**
A shortwave will move through the upper-level flow today, bringing a chance of showers and storms. Convection is expected to develop along the associated frontal boundary over the central to northern parts of the district and then trek southeast. As far as timing is concerned, the best chance will occur with peak heating after 20Z. There could be a small severe threat with any storms as CAPE may approach 1,000 J/kg, especially to the north. Moisture is not too impressive (dew points in the middle 50s) but enough for strong to low-end severe storms to materialize. Weak shear should also minimize the overall severe threat. Convection could then continue over our eastern counties through the early morning hours.

**LIFTING MECHANISM**
Front

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

| | | | |
|---|---|---|---|
| Freezing Level (m,MSL) | 4572 | LCL (m,MSL) | 3139 |
| -5°C Height (m,MSL) | 5304 | CCL (m,MSL) | 3078 |
| -10°C Height (m,MSL) | 6096 | ML CAPE (J/kg) | 1330 |
| Cloud Base (m,MSL) | | SB CAPE (J/kg) | 1757 |
| Warm Cloud Depth (m) | | CINH (J/kg) | 0 |
| Cloud Base Temp (°C) | | LI(°C) | -6 |
| Precipitable Water (in) | 1.20 | Shear 0-6 km | 24 |

**Seeding Operations:**
FIRST FLIGHT- Isolated convection started developing in Potter County just before 20Z. Therefore, N5359P was put on standby at 1954Z. They were then launched at 2119Z when the airplane was ready and became airborne from TDW at 2130Z en route to the north of Amarillo. Seeding commenced when the pilot reached the target at 2135Z. Shortly after seeding, at 2139Z, a severe thunderstorm warning was issued for this area. A total of 13 AgI bips and two hygros were used within this cell from 2135Z-2152Z. N5359P RTB'd at 2154Z due no flares left (was not reflared after last flight). They landed at 22Z and were instructed to reflare for a potential second flight.

SECOND FLIGHT- N5359P became airborne from TDW for the second flight at 2304Z to the north of Amarillo. Once at the intended target, two AgI bips were lit. A total of eight AgI bips were used within this cell. At 2328Z, the pilot reported that the cell was weakening, so they switched to recon. They continued to recon for the next thirty minutes until they were directed to RTB (0001Z) due to no seedable targets. N5359P landed at TDW at 0012Z.

**WATCHES/WARNINGS:**
Severe Thunderstorm Warning- Carson, Potter

**SEEDED CELL IDS:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 30 | 30/86 | 30/125 | 30/172 | 30/193 | 30/214 | 30/267 | 30/297 | 30/301 |
| 30/445 | 30/465 | 30/476 | 30/546 | 30/565 | 30/585 | 30/639 | 30/658 | 30/672 |

**FLIGHT INFORMATION:**

| TIME (Z) | Plane | Flare Location | County |
|---|---|---|---|
| **2130** | **N5359P** | IN AIR | |

| | | | |
|---|---|---|---|
| **2135** | **N5359P** | 310° @ 10 nm | **Potter** |
| **2137** | **N5359P** | 320° @ 11 nm | **Potter** |
| **2138** | **N5359P** | 320° @ 10 nm | **Potter** |
| **2140** | **N5359P** | 315° @ 11 nm | **Potter** |
| **2142** | **N5359P** | 330° @ 9 nm | **Potter** |
| **2144** | **N5359P** | 335° @ 7 nm | **Potter** |
| **2146** | **N5359P** | 346° @ 6 nm | **Potter** |
| **2149** | **N5359P** | 350° @ 7 nm | **Potter** |
| **2152** | **N5359P** | 10° @ 6 nm | **Potter** |
| **2154** | **N5359P** | RTB | |
| **2304** | **N5359P** | IN AIR | |
| **2310** | **N5359P** | 330° @ 13 nm | **Potter** |
| **2313** | **N5359P** | 330° @ 15 nm | **Potter** |
| **2319** | **N5359P** | 340° @ 14 nm | **Potter** |
| **2324** | **N5359P** | 335° @ 11 nm | **Potter** |
| **0001** | **N5359P** | RTB | |