

SOUTH TEXAS WEATHER MODIFICATION ASSOCIATION - Pleasanton, TEXAS

SEEDING REPORT - April 9, 2020

SYNOPTIC/MESOSCALE CONDITIONS:

Upper air analysis shows a closed low over the Southwest and a longwave trough over the northeastern quadrant of the country. Surface analysis shows a strong low pressure across the Northeast with an extended cold front reaching Texas and a low across the southwestern Rockies with associated fronts. The flow at upper levels is mainly southwesterly with it mainly calm to light and variable at the surface. The current dew point temperature is in the upper 60s and middle 70s and the environmental temperature more or less the same with broken clouds to clear skies across the area. For today, quiet weather is anticipated this morning transitioning a very active and noisy afternoon due to an approaching cold front and an unstable atmosphere. The CAPE values will range between 2000 and 4000 J/kg in an uncapped atmosphere. There will be a mid-level lapse rate of about 7°C/km and a deep shear layer around 50KT. The cold front is currently across north-central Texas that is expected to progress southward and should reach the Bandera county by around 5 p.m. and then slide south towards the McMullen and Bee counties by 8 p.m. Expect showers and thunderstorms ahead and along the front with some storm being strong to severe. The Strom Prediction Center places the western half of the target area under a slight risk and the eastern half under an enhanced risk. The storms will have to potential of producing large hail with strong gusty downdraft winds. Can't rule out an isolated tornado but this remains low due to weak low-level directional shear. Showers and storms continue at least until or before midnight. There may be a few lingering showers on Friday especially across southern and western areas. Overnight, we transition to a southeasterly flow increasing moisture that will give way to showers and thunderstorms after early Saturday morning. The upper level closed low across the Southwest will open up into a wave and track eastward. Embedded shortwaves within the southwesterly flow ahead of the upper low combined with sufficient instability, a deep shear layer and a decent mid-level lapse rate of about 8°C/km could aid in the development of another round of strong to severe thunderstorms across the region on Saturday. By Sunday rain chances come to an end as another front pushes over the area with drier and cooler air mass settling in. The highs are progged to be in the lower 70s and upper 80s with the lows in the middle 50s and middle 60s through the end of the forecast period.

LIFTING MECHANISM:

Short-wave trough, Cool Air Aloft, Cold Front

THERMODYNAMIC INDICES (12Z KCRP)

Freezing Level (m)	4650.39	CAPE (J/Kg)	1798.4
Precipitable Water (inches)	1.45	CINH (J/Kg)	322.63
LCL	1008.38	LI (°C)	-4.45
CCL	2248.83	PB	-4.45
CRP ICA	-19.05	Cloud Base Temp (°C)	21.5
Cloud Base (meters)	1563.32		
Warm Cloud Depth (meters)	3087.07		

DISCUSSION:

Mainly, quiet conditions this morning across the target area with some activities to our west and northwest. However, an early unexpected cell developed near our area with its edge that moved in over Bandera County. I had 57AA go and take a look at it. 57AA was able to seed that cell successfully. 57AA returned to base with the intention of heading back out before the day ends. Another cell developed west of the Mexico/Texas border that began to move into to Frio County. I had 57AA investigate it. However, when it reached that cell, it had a hard time getting inflow; thus, it was only able to release a couple of the seeding materials in that cell while another cell developed across the Medina County. I also, had 57AA head that way to try and target that cell. The pilot was only able to release one dosage of the seeding material as much of a better part of the cell was already into the non-seeding zone and over the San Antonio area. After seeding that cell, 57AA headed to Medina County for another seeding opportunity but by the time 57AA got there the new cell over the Medina County merged with the old cell across the Frio County; thus, I had the pilot release only two dosages of seeding materials to complete the set. 57AA then headed to the northeastern side of the Medina County as a cell looked favorable for seeding. 57AA was successful in seeding that cell over the northeastern side and into the Bexar County. 47P was launched across Wilson County as a cell was moving out of the Bexar County. 57AA was done with the cell across the Bexar County, it headed for base. However, on its way to base it had the opportunity to seed another cell across Medina County while 47P took care of the cell across Wilson County. After 57AA and 47P seeded the cells, I had them return to base as a severe thunderstorm was heading Pleasanton and for my safety and due to the time of the evening headed out the door before just before the storm approached my area. Both aircraft landed safely and before dark.

WATCHES/WARNINGS:

Severe Thunderstorms and Hail

SEEDED CELL ID'S:

30	149	189	472	791				
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FLIGHT INFORMATION:

TIME (Z)	Plane	Flare Location	County
18:18	57AA	In Air	
18:38	57AA	312° @ 58 nm	Bandera
18:39	57AA	314° @ 59 nm	Bandera
18:40	57AA	316° @ 58 nm	Bandera
18:41	57AA	317° @ 58 nm	Bandera
18:42	57AA	318° @ 58 nm	Bandera
18:50	57AA	313° @ 59 nm	Bandera
18:59	57AA	312° @ 58 nm	Bandera
19:25	57AA	Recon	
21:20	57AA	In Air	
22:15	57AA	246° @ 42 nm	Frio
22:16	57AA	248° @ 43 nm	Frio
22:18	57AA	247° @ 41 nm	Frio
22:44	57AA	329° @ 28 nm	Bexar
23:02	57AA	285° @ 28 nm	Medina
23:03	57AA	288° @ 28 nm	Medina
23:18	47P	In Air	
23:20	57AA	332° @ 43 nm	Bexar
23:22	57AA	335° @ 43 nm	Bexar
23:26	57AA	342° @ 42 nm	Bexar
23:29	57AA	347° @ 42 nm	Bexar
23:34	47P	30° @ 24 nm	Wilson

23:37	47P	29° @ 24 nm	Wilson
23:40	47P	25° @ 21 nm	Wilson
23:52	57AA	286° @ 46 nm	Medina
23:53	57AA	287° @ 46 nm	Medina
23:44	57AA	288° @ 46 nm	Medina
23:45	57AA	287° @ 47 nm	Medina
24:12	57AA	Landed	
24:16	47P	Landed	

Seeding operations were conducted in Bandera (14+0H), Bexar (10+0H), Frio (6+0H), Medina (12+0H), and Wilson (6+0H) Counties. 48 flares plus 0 hygroscopic flares were burned within 4 clouds. This is the 1st day for seeding in April and the 1st day for seeding during the season.