SOUTH TEXAS WEATHER MODIFICATION ASSOCIATION – Pleasanton, TEXAS

SEEDING REPORT – August 24, 2019

SYNOPTIC/MESOSCALE CONDITIONS:

Upper air analysis shows a trough over the Rockies, shortwave impulses over the Central Plains and an inverted trough over the northwestern Gulf of Mexico. At the surface, low/trough axes across much of the southern and western half of the country with two fronts extending through the middle of the country. The flow at upper levels is mainly light and variable with it light and east southeasterly at the surface. The current dew point temperature is in the lower to middle 70s and environmental temperature in the middle to upper 70s with scattered to broken clouds in our area. For today, expect another uptick in moisture that will lead to afternoon and evening thunderstorms due to an area of disturbed weather off the Gulf coast and an outflow boundary across west-central Texas. With daytime heating, weakness in the upper levels and available moisture along a sea-breeze courtesy of the inverted trough off-shore will provide the necessary ingredients for convection later in the day. I'm not expecting widespread coverage, but a couple isolated to scattered thunderstorms are forecast for areas east of the I-37. A few storms could also make their way south across the southern Hill Country over the Bandera and Uvalde Counties this afternoon from a line of weakness extending all the way from northeastern Mexico to the Texas Panhandle. Any storms from this over our area could produce gusty winds from downdrafts. Overnight, thunderstorms decrease due to the loss of heating. However, there still could be a few storms lingering near the coast and over parts of the Hill Country. For Saturday, active weather to continue as the inverted trough over the Gulf of Mexico shifts eastward and upstream trough slide across West Texas. The moisture level will be high enough and with daytime heating, another round of showers and thunderstorms is expected by then. For Sunday, the axis of the trough moves over our region with much of the moisture to our east. Any storm activities will be confined to the coastal plains and the eastern zone. A subtropical ridge of high pressure begins to build in from the west that will dry us out early next week. Expect Monday to be mainly dry with the highs getting back into the triple digits. The highs are progged to be in the middle 90s and lower 100's with the lows in the middle to upper 70s through the end of the forecast period.

LIFTING MECHANISM:
Upper Leve Trough, Inverted Trough, Sea-Breeze

THERMODYNAMIC INDICES (12Z KCRP)

Freezing Level (m)	5447.86	CAPE (J/Kg)	2530.1
Precipitable Water (inches)	2.13	CINH (J/Kg)	71.13
LCL	624.35	LI(°C)	-4.42
CCL	784.40	PB	-4.42
CRP ICA	-22.00	Cloud Base Temp (°C)	27
Cloud Base (meters)	1238.12		
Warm Cloud Depth (meters)	4209.74		

DISCUSSION:
There were a lot of small areal cells that developed mid-morning and early afternoon. This was due to an inverted trough off the Gulf, moisture, daytime

heating, and an upper-level trough over the west and central Texas. 57AA was launched from Uvalde to the target a couple of early small cells. Keep in mind we only had one pilot available for operations today. 57AA seeded a few cells at first over northern McMullen and southern Atascosa counties. There were a few other cells that developed but most of them were in the non-seeding zone across the McMullen county with a few just outside of it. A decent cell developed across the Medina/Bexar/Bandera county; thus, 57AA was launched from southern Atascosa to seed that cell. However, due to the long-distance, it took a while for the aircraft to get there. I had 57AA over the Medina and Bandera Counties for a while taking care of that area. The aircraft was then ordered to go over the Frio County as a cell had developed. Unfortunately, it had the same cell number as the one that was seeded already seeded because it had merged before the aircraft got to it therefore, 57AA did release the full dosages of seeding material in that cell. The aircraft then left for the McMullen County as a cell was coming out of the non-seeding zone to possibly seed it. 57AA release a few sets of the seeding materials before heading to southeast Atascosa county. From there, I had 57AA go to the eastern side of the Wilson county where it seeded another cell. 57AA return to Pleasanton to refuel and to take a break before heading back out for more operations. While 57AA was on its way to Uvalde it was able to release one dosage of seeding material across the southern border of the Medina County. It tried for a while to get more good inflow, but it was unsuccessful in doing that. The aircraft then headed to Uvalde as there were potentially a couple of good cells to be seeded. 57AA was able to seed a big strong cell over the Uvalde County. However, the pilot reported violent turbulence and had to struggle to get some flares into that cell. The aircraft was then sent to the western side of the Frio County as there was a cell just to the west of it and south of the Uvalde County. While on the way there, the cell had already weakened. 57AA returned to base just in time before that cell it was seeding moved over the airport that could have prevented the aircraft form landing. The cells were pretty much weak to near-extinct thereafter and so 57AA was not recalled to perform any more operations for the evening.

WATCHES/WARNINGS:
Hail

SEEDED CELL ID'S:

1384	1652	1553	1313	2461	1951	2749	2937	2058	

FLIGHT INFORMATION:

TIME (Z)	Plane	Flare Location	County
19:20	57AA	In Air	
19:47	57AA	202° @ 23 nm	McMullen
19:47	57AA	198° @ 23 nm	McMullen
19:49	57AA	200° @ 23 nm	McMullen
19:50	57AA	205° @ 23 nm	McMullen
19:55	57AA	208° @ 16 nm	Atascosa
19:59	57AA	207° @ 16 nm	Atascosa
20:29	57AA	29.53N, 98.86W	Medina
20:41	57AA	325° @ 39 nm	Medina
20:44	57AA	325° @ 43 nm	Medina
20:46	57AA	327° @ 41 nm	Medina
21:09	57AA	266° @ 22 nm	Frio
21:10	57AA	265° @ 23 nm	Frio
21:12	57AA	269° @ 23 nm	Frio
21:42	57AA	172° @ 28 nm	McMullen
21:44	57AA	172° @ 27 nm	McMullen
21:52	57AA	164° @ 18 nm	Atascosa
21:53	57AA	156° @ 19 nm	Atascosa

22:11	**57AA**	**98˚ @ 17 nm**	**Atascosa**
22:15	**57AA**	**107˚ @ 16 nm**	**Atascosa**
22:34	**57AA**	**50˚ @ 35 nm**	**Wilson**
22:35	**57AA**	**48˚ @ 34 nm**	**Wilson**
22:38	**57AA**	**46˚ @ 32 nm**	**Wilson**
22:39	**57AA**	**43˚ @ 30 nm**	**Wilson**
23:00	**57AA**	**Refueled**	
23:30	**57AA**	**In Air**	
23:45	**57AA**	**274˚ @ 35 nm**	**Medina**
24:10	**57AA**	**29.29N, 99.88W**	**Uvalde**
24:11	**57AA**	**29.28N, 99.93W**	**Uvalde**
24:18	**57AA**	**29.25N, 99.91W**	**Uvalde**
24:19	**57AA**	**29.25N, 99.87W**	**Uvalde**
24:22	**57AA**	**29.23N, 99.90W**	**Uvalde**
24:45	**57AA**	**Landed**	

Seeding operations were conducted in Atascosa (12+0H), Frio (6+0H), Medina (10+0H), McMullen (12+0H), Uvalde (10+0H) and Wilson (8+0H) Counties. 58 flares plus 0 hygroscopic flares were burned within 9 clouds. This is the 7th day for seeding in August and the 27th day for seeding during the season.