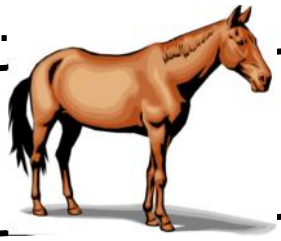
Notes from....



Serrano Creek Ranch Equestrian Center

JANUARY 2013

25201 Trabuco Road, Lake Forest, CA 92630
Office Phone 949-768-5921
Email: <SerranoCreekRanch@msn.com>

From The Editor's Desk:

While the newspaper industry is laying reports off left and right, your hometown SCR newsletter this month is publishing its largest edition ever. Never mind the pages of oversized graphics and meaningless wire copy. This is news you can use!

From our family to yours, we wish you a warm and peaceful holiday, and may 2013 be a great year for everyone.

Best Regards
Matt Rayl
Publisher

In the years past we only carried the birds eye during the short winterization process. We'll now keep a load on hand so that we can have material to top your stall. We won't be carrying decomposed granite between now and April. Adding it to a stall's footing produces a nice mocha frappicciono that just doesn't work in this case.

Liza Hillman has purchased the stable's fledging riding academy. The daily workload of the stable and compost business prevented me from being able to concentrate on writing the curriculum. While I could grab small blocks of time, it proved impossible to get the big blocks of time necessary to really dig in and develop a strong program. Nothing like youth and its high energy able to devote to the program. Starting January 1, 2013 will be Silver Stirrup Riding Academy. Here's a link to Liza's web site:

http://www.silverstirrupridingacademy.com/home

The monthly "Open Ranch Days" will continue as well starting in February

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Ever wonder what goes on in the "black box" to decide if the arena should be closed? Now's your chance to peek inside the secret algorithm your analytical SCR management team uses to base it's decision.

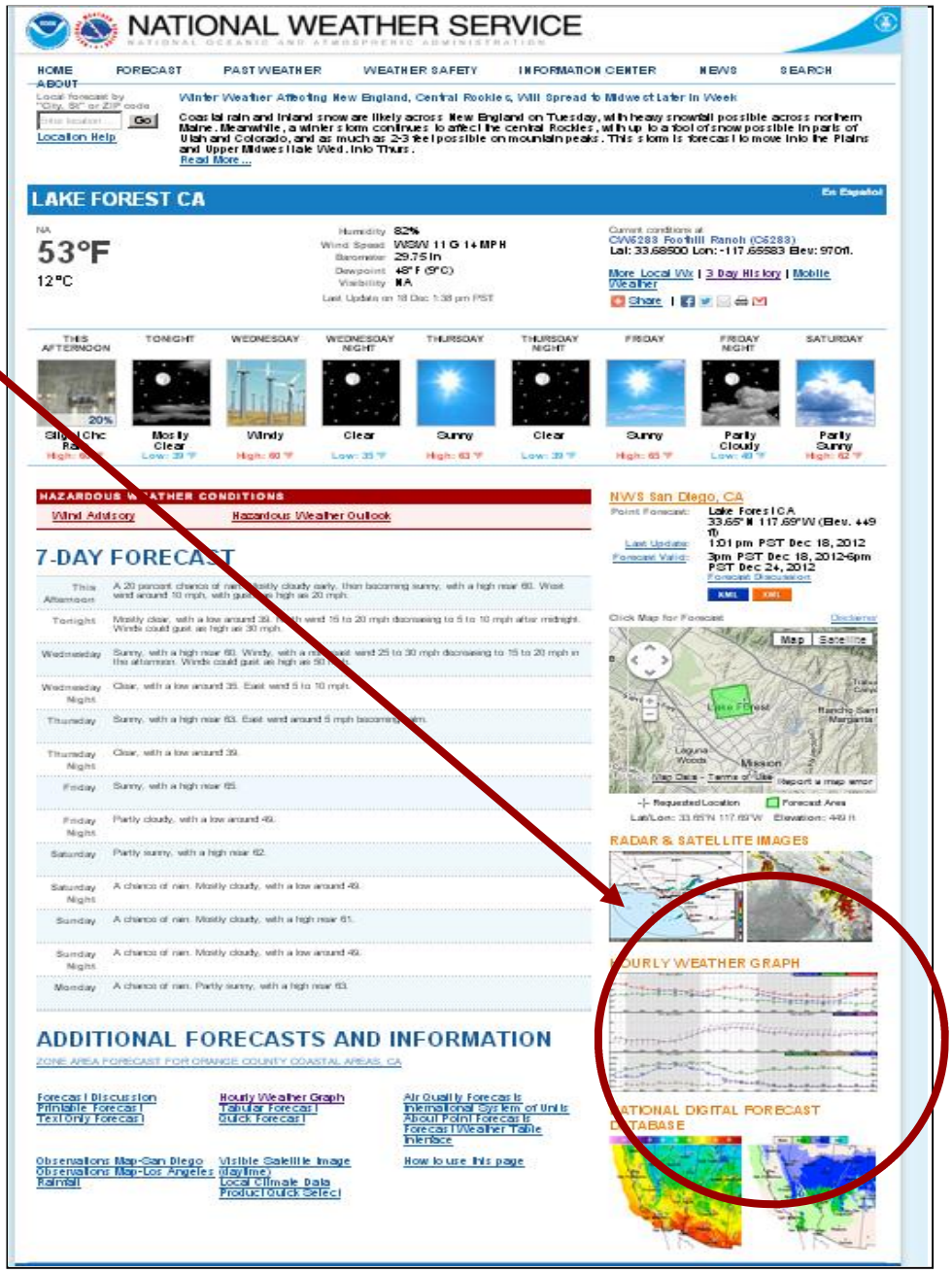
First of all is to acknowledge the wealth of information that is available on the National Weather Service Website.

http://www.weather.gov/

While there are many weather sources that give summaries with cute icons, and short-skirted weather girls; all their forecasts are drawn from the data available on this website. As a rule I stay away from celebrity newscasters and instead rely on the nameless and dedicated civil servants who toil endlessly with supercomputers. As an aside note, the number of variables in weather prediction are unfathomly huge. Of course, more data means better prediction. Only the latest supercomputers are able to run the newest models, and still a significant amount of data must be left out. Followers of chaos or complexity theory understand the absurdity of expecting perfect predictions.

I n predicting the course of the next few days for the stable, we start with hourly forecasts for our region. Here is the website you want to go to:
http://forecast.weather.gov/MapClick.php?lat=33.64475&lon=-117.68455080000001&unit=0&lg=english&FcstType=graphical
This will take you to Lake Forest, CA Hopefully the

page should look something like this:



In the bottom right corner (see circle) is the hourly predictions page link. Again forget all the pretty graphics for the illiterate, you're running a major equestrian facility and have no need for such superficiality.

Click on this chart, and it will take you to the hourly prediction page. What is shown is a truncation of the page you'll get. See the next page for an example.

Can't get to the stable, but want to tell your steed that "I'm thinking of you.". Better than flowers, candy, or pajamas, nothing says "I love you" more than shavings. A quick call to the stable, or email to the stable is all it takes to make sure that those dearest to you are not forgotten.

In prior years, shavings were discouraged during the rainy winter. But now as we have enlarged the shelters, there is ample coverage to keep shavings from getting into the wet, exposed portion. A bag or two under the shelter goes far to providing a good night's rest. They also provide a warm place for your horse to catch a few cozy zzzz's.

Ceadarest	9.49
Drystall	10.80
Rice Hulls	7.74
Micro Shavings	5.71
Mini Shavings	6.96
Regular Shavings	7.49

There's room on the sled for a few more bags!

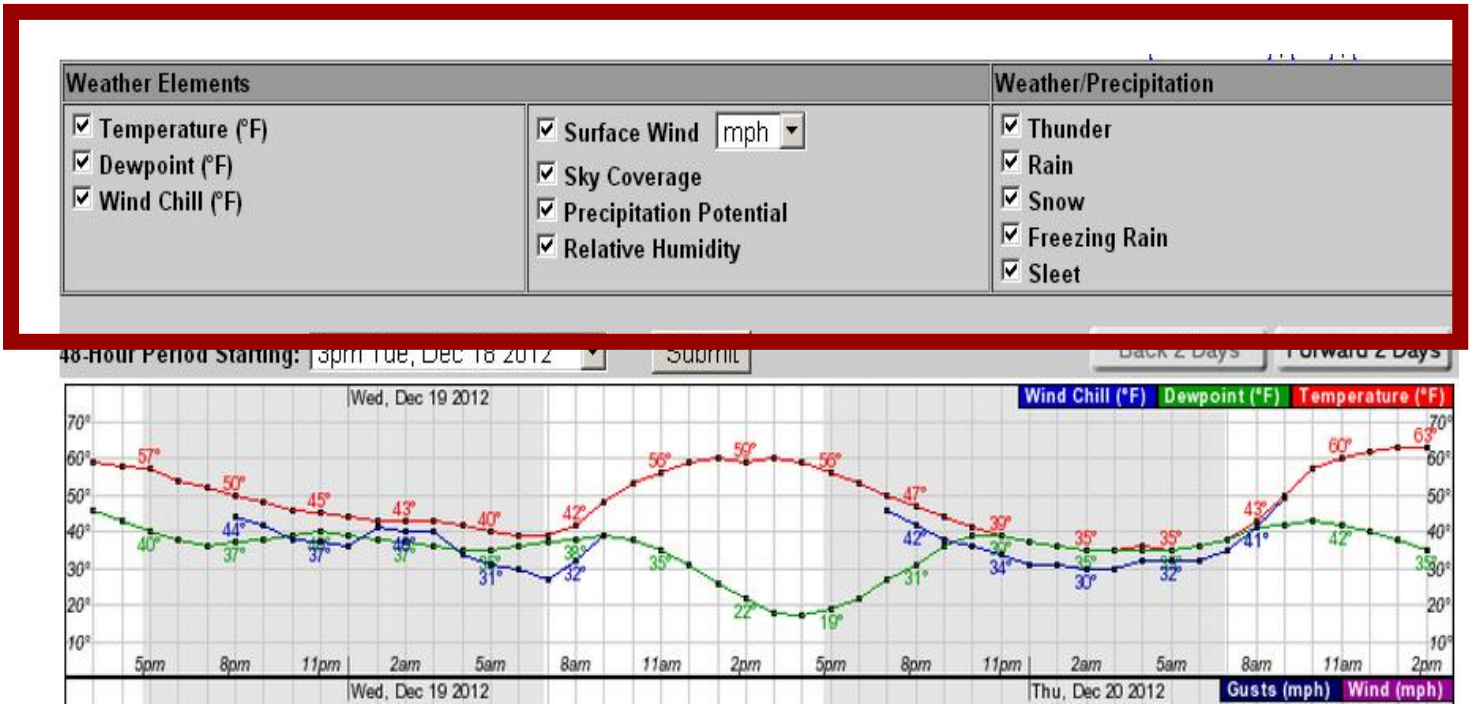
What can be easier than:

store@serranocreekranch.com

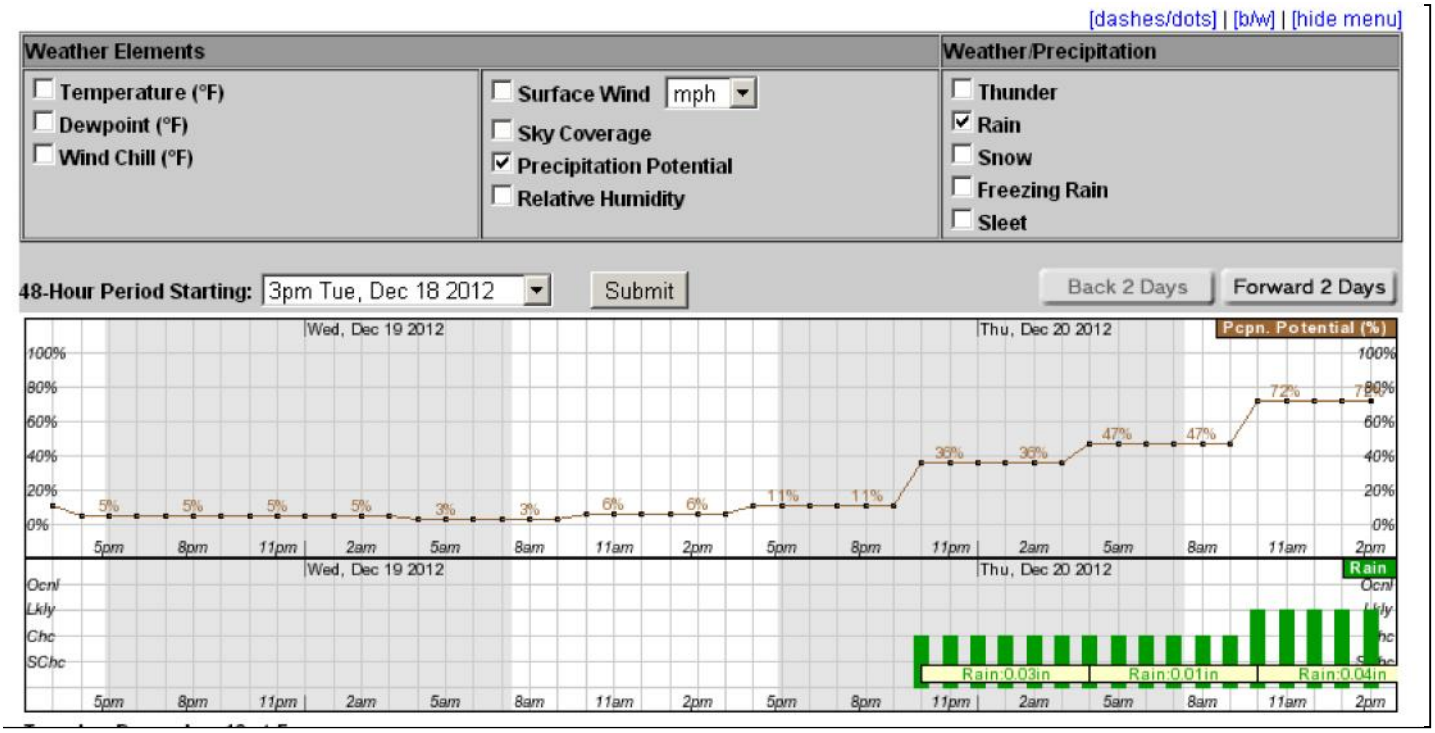
or

949-768-5055

http://www.serranocreekranch.com/Bedding.html



Because we're looking for a rain forecast, I've checked the box for "Precipitation Potential", and "Rain". All others are unchecked. After pressing submit, I receive an hourly prediction. While the pretty icons may say rain today, we like to know exactly when the rain will begin in order to maximize the available arena time; yet still leave time for their compaction. For example, if the hourly rain graph is predicting that the rain will begin slowly, we'll extend the riding time. If it appears that the storm will begin strongly, then we'll make sure that adequate time is available before it's arrival. In the example below it seems that the rain it will come in gradually between 11pm and 2 pm.



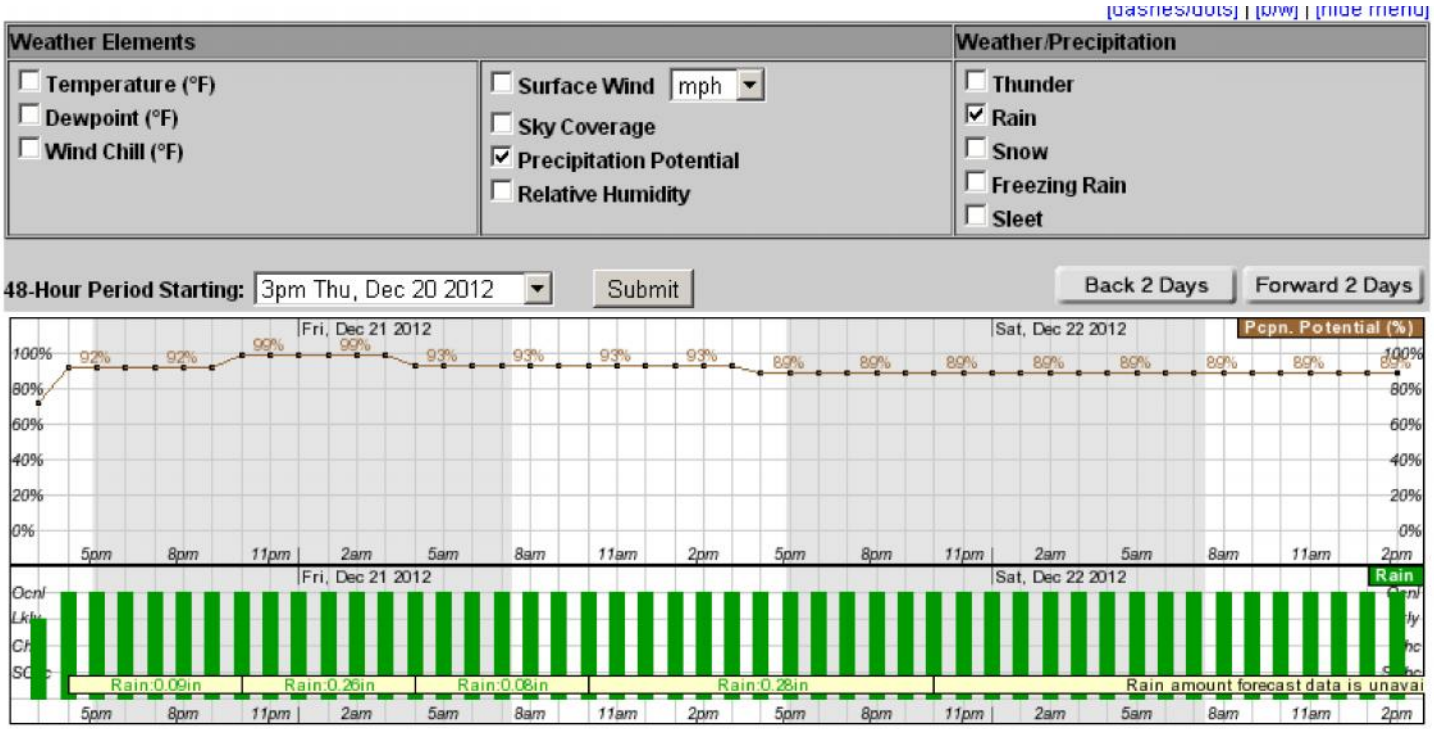
Now it is not enough to rely on the prediction of a given amount of rain. We have to also look at the "probability" of the rain fall happening. In this case I multiply the predicted rain fall (green bars) by the probability brown line for each time

period. So in truth the expected rainfall would be: 11pm - 4am = .01",

4am -10am = .05"

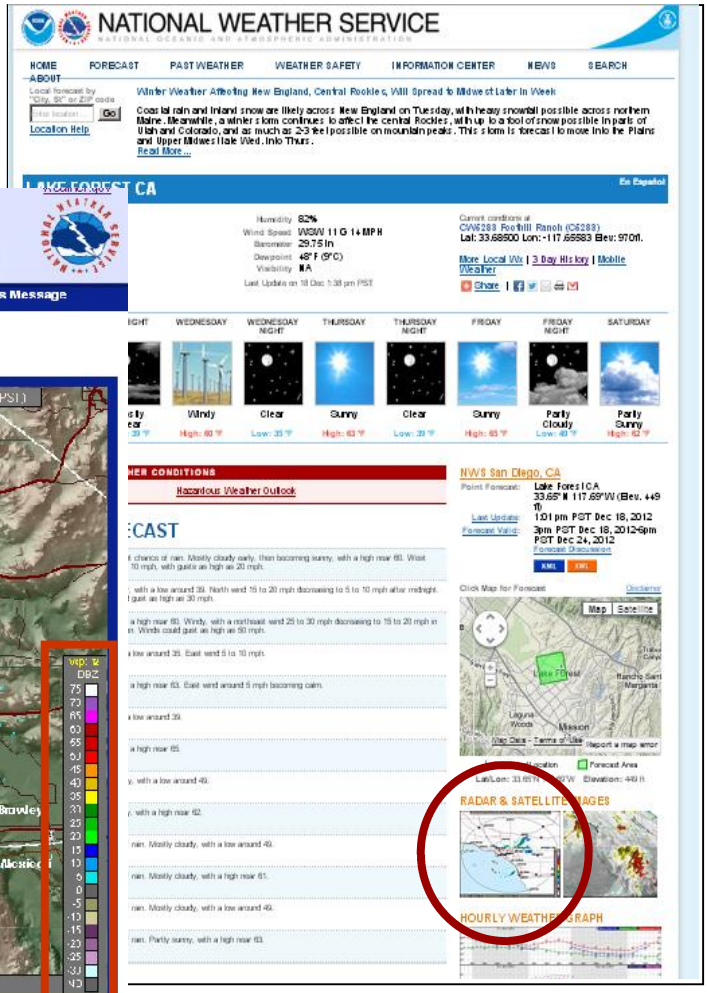
10am - 2pm = .03".

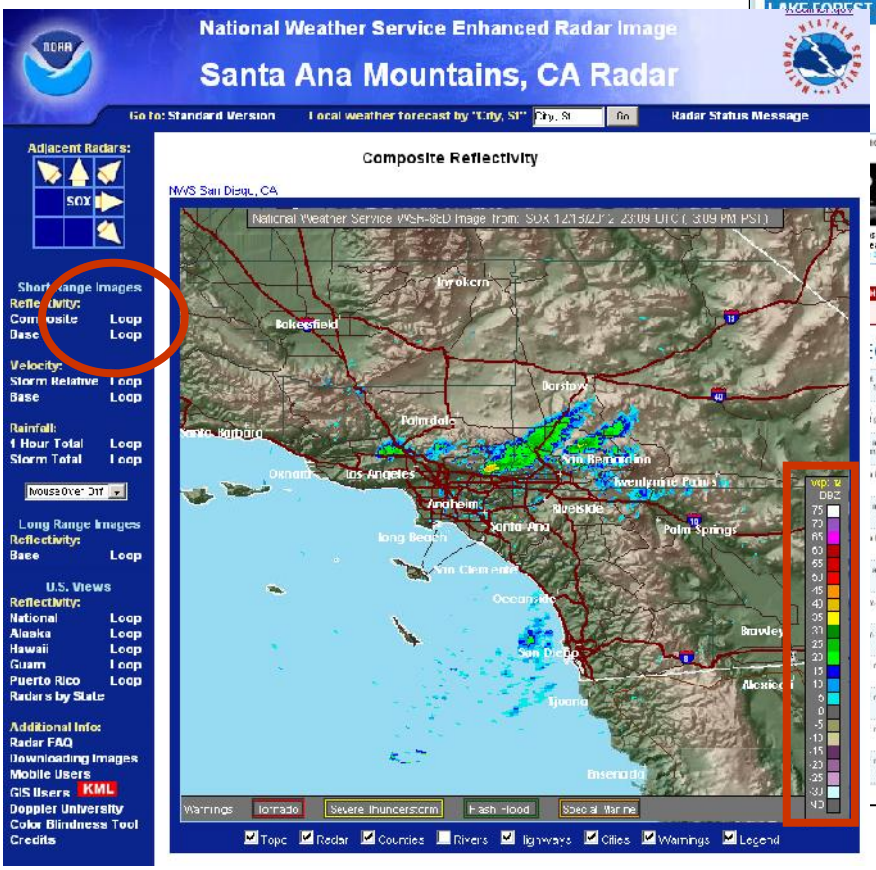
Thus the expect rainfall for this 13 hour period is .045". If this were the entire predicted rain, the arenas would be left open, as the amount is quite low. Let's see what the next two days has in store before we leave decide to leave the arenas open. I'll press the "Forward 2 Days" button.



Now that we see that a significant amount rainfall is predicted, we'd better get on the tractor and start preparing. The forecast calls for rain to begin in earnest by 3pm. Since it takes about 4 hours to compact the arenas, and we don't want to get caught with an earlier than expected arrival, we'll plan on beginning compaction and start closing 6 hours prior. That means around 9 a.m. we should start. Since the initial bands of rain are typically fragmented, we can be even better managers by consulting the Weather Service's radar. This will tell us if Serrano is getting rain or will it begin, say, by passing a little north at first?

On the right is the NWS home page that we've seen before. Instead we'll click on the radar link. I've highlighted with a red circle. Click on here and you'll land on the radar page below.





On that page (see red circle) you'll want to click the composite loop button. This will then play a series a radar images taken within the last hour. This will give you an idea how fast the storm is moving in and where its going. Now you'll be able to determine in real time if you're behind or ahead of schedule

You notice that the radar images are colored. These correspond to the colors on the chart to the right of the web page (my highlighted red box) These colors correspond to the amount of water in the clouds. Using the handy radar decoder to the right, anything lower than green— "Forget about it". As you move up the chart into the yellows and oranges, rain is definitely coming. If you're into the magentas or purple area, "Adios, it was a nice life". Knowing exactly the storm's intensity and speed, allows us to possibly have one or two arenas open a little longer with confidence.

Radar Decoder

dBZ	Rain Rate (in/hr)
65	16+
60	8.00
55	4.00
52	2.50
47	1.25
41	0.50
36	0.25
30	0.10
20	Trace
< 20	No rain

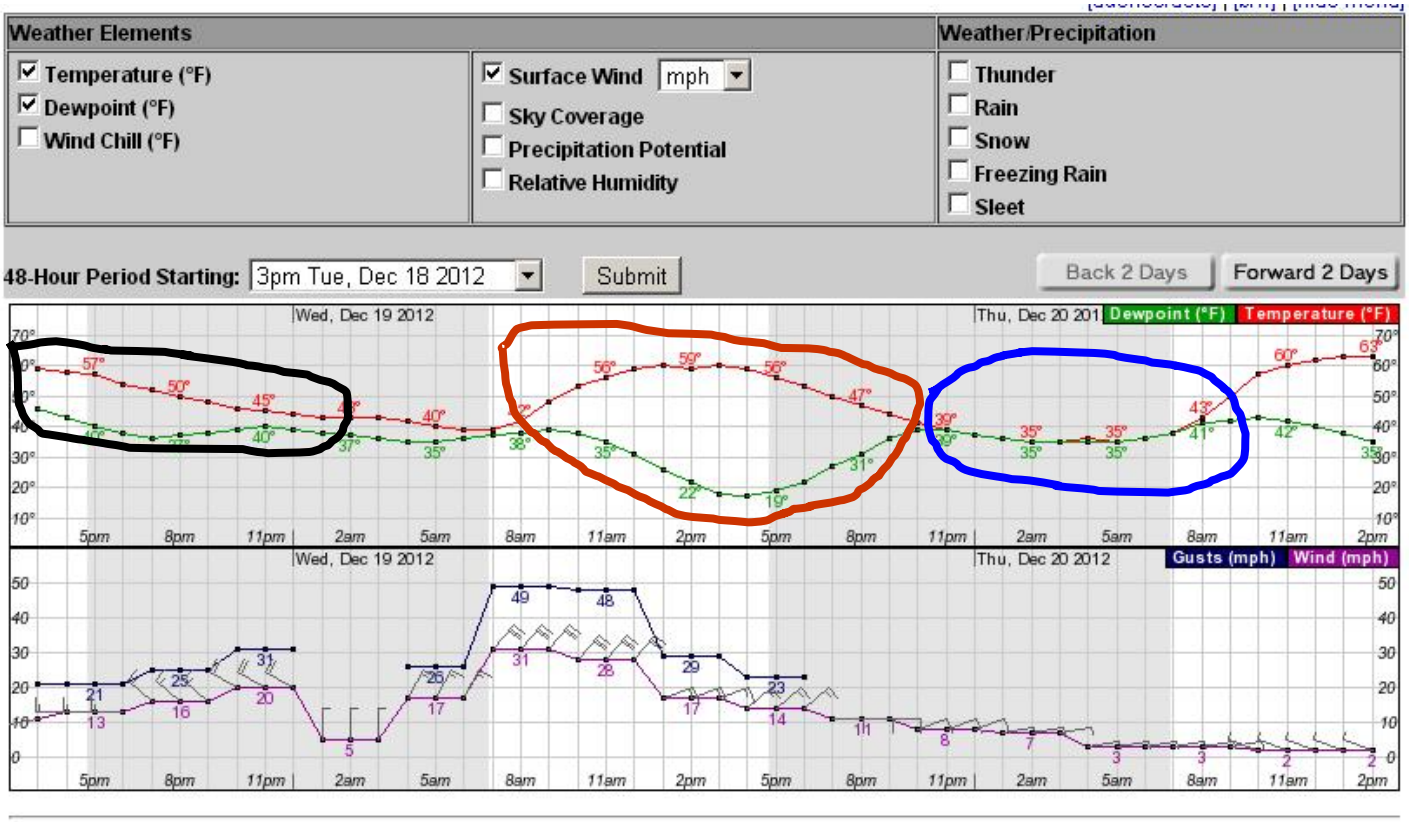
The value of the radar allows us to go beyond looking at the sky and determining if the storm is done. This is especially important if the arenas are marginal. Nothing is worse than thinking that the rain has finished, folks start riding, then another big rain band comes through. Then water that would have run off is now caught in the thousands of hoof prints / divots– thus necessitating closing the arena and adding days until it can be reopened.

Intermission

While the rain may have stopped, the reopening of the arenas is still another decision to make. This has to do with the ability of the arenas and the stable in general to dry out post-storm.

First some science. Air can hold a certain amount of water based on its temperature. As the temperature is lowered, the capacity goes down. This is why moisture forms on a side of a glass of iced water. While the air in the room is warm and easily holds all the available water vapor, around the glass the air is much cooler and the water vapor condenses. The term "relative humidity" is the percentage of water holding capacity being consumed by current conditions.

The term "dew point" is the temperature when the relative humidity exceed 100%, and water goes from a vapor to a liquid. So if we're in the desert where the conditions are very dry, the air will have little water vapor, and the temperature must really drop before dew forms. Conversely if we live along the beach, the air that comes off the ocean



is mush wetter, and thus the temperature need not drop as much for dew to form.

We're concerned about the dew point because as we near this dew point temperature less and less moisture will evaporate. This means that the stable will remain wet = muddy forming.

Going back to the hourly forecast page on the Weather Service we can change our selection to :Temperature, Dew Point, and Surface Wind. When the temperature line and dew point line are close (see black circle on left), very little water will evaporate and the stable will remain damp. This was the case in the first storm we had in November where there was little rain but it was followed by a week of very humid / high dew point weather. In the circle in the center (red) the dew point will fall considerably and create a potential for much more water evaporation. In this case there was a Santa Ana condition. With the high winds, the transfer from soil moisture to air moisture is even faster. Within a day the stable was fully functional. In the blue circle, we see that temperature and dew point are exactly the same so we can expect zero evaporation during this period. While not shown, when the temperature falls below the dew point, moisture will condense and the ground will then become wetter.

If the arenas are marginal we may keep them closed a little longer when the conditions of the black circle are forecasted. The stomping of the horses hooves will create a deep mush that will greatly lengthen the time required to dry out because moisture will be driven deeper into the footing. With the conditions of the red circle, we know that the arenas will dry up quickly, and may let riders in sooner. Also we can plan to dedicate more tractor time since very quickly any turned footing will dry out. The forecasted wind will mix up the air and further dry out the footing by constantly bringing drier air to the soil / air interface. This would be in addition to the dew point / temperature

differential.

So that's the science, now for the art.

If the arenas have been open for several days, then all the horses have had the opportunity to be exercised and are assumed to be in a mellow state. In this case we might close the arenas a little earlier when the next storm is to arrive. Conversely, if there has been a series of storms, and the horses are getting wound-up from being in their stalls for a long time, then we'll close later with the idea that a lunge today is worth a lot more. Doing so knowing that we risk getting caught from an earlier arriving storm The opposite holds true for opening.

A single storm event means that we might wait longer to open. Yet if the horses have been stall bound, then they need to get out as soon as possible and we'll risk an arena becoming torn up and being lost to the next storm.

You might see us watering the arenas before a storm. So why add water when everything is about minimizing the water staying on the footing? Compacting the arenas has two functions. The first is to restore the grade to a smooth, angled surface so that the rain fall runs off as quickly as possible. The other benefit is to remove as much air from the footing as possible. If not done, then the rain will soak into these spaces and add a significant time to dry out. Not only is there a greater volume of water to evaporate, but by being in the footing, the sun and wind can not get to it.

If you have tried to compact dry flour, you see that no amount of kneading will compress it. Yet add a little water, and quickly the material sticks together and can become compressed. The same is true with the arena footing. The moisture allows the smaller particles to get into the voids between the larger particles and lock into place. The net effect is that the amount of air in the footing has been replaced by non water absorbing particles that displace the air spaces. Less water-holding capacity means that more water will run off the arena surface.

Another decision is to what degree should the footing be loosened. If the window between storms is short, we may open an arena but keep the footing hard. That way the arena can remain open longer, and then closed much closer to the storm. The worst thing that we can do is loosen the footing, and then get hit with rain. Unfortunately, there is a certain unpredictability both by the weather service as well as SCR, and we err. It is very hard to go from fully fluffed footing to compaction without hours of work just for a single arena. Thus we tend to err on the side of caution.

Lastly, our work day ends around 4:30. If a storm is coming in the evening, we have to decide, and then act all before quitting time. Previously we could start on the arena compaction very early in the morning. It now seems that we have a neighbor that sends the Sherriff for any work prior to 7:00 a.m. So we try to balance the accessibility for those who come in the evening, and may compact an arena but leave it open. Knowing that this will come at the cost of the "day timers".

When arenas are closed, we'll lock them. There may be times when the "lock" is just a hay string. Please rest assured that quite a bit of consideration and labor went into preparing for the storms.

Thank you for your understanding and support as we enter the next few months of rain. We try and be sensitive for those who work. Please know that we do our best to maximize the time arenas are open, and that all users have an opportunity to exercise their horses during the wet months.