SERRANO CREEK RANCH EQUESTRIAN CENTER

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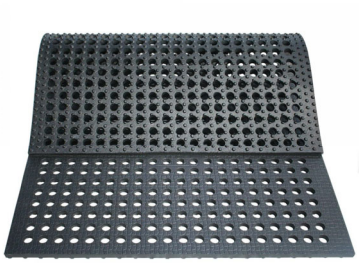
Stall Mats Update



As part of our effort to keep the stables open this year, we developed a first-of-its-kind stormwater computer model. Its function is to quantitatively determine the greatest and least sources of pollutants at a horse facility typical of SCR. Using this model, we assessed the costs of various pollution reduction strategies in different stable areas. Our analyses allowed us to be the first-ever stable to quantify what previously had been a guesstimated amount of pollutants. With certainty, we now know that the exposed portion of the stalls where rain can fall onto, and then run out of, is the significant source and by how much.

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Arena Fencing Replacement

If you haven't noticed yet, just about every stable operation is seeing changes due to water quality issues. The training arena (the one next to the wash rack) will be the first arena to see these effects. The most significant change most will see will be new fencing replacing the 30+ year old that is there today. Other, more subtle changes will be made to facilitate water quality improvements.

Historically we have graded our arenas with a 1.5-1.6% slope to facilitate the quick shedding of rain so that riding can resume quickly. Over the last rainy season, our measured sediment discharges to the creek sometimes exceeded allowable levels. By lowering the arenas' slope to 1.1%, both the total amount of rain leaving the arenas and the speed that the water leaves, will be reduced. Therefore far less sediment will be carried to the creek. As a test, last year, we re-graded the front arena to this flatter slope.

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Stall Mats *Continued from page 1)*

We also did percolation testing in several stalls to determine what amount of rain would soak into the stall footing and what portion would runoff. Incorporating rainfall data from our onsite rain gauge, we developed a mathematical relationship between varying rain amounts & intensities and the portion that would soak into the stall footing and what amount would run off to the creek.

By building infiltration trenches in each stall, we will capture that portion that otherwise would have exited the stall and flowed into the creek. Knowing what amount would soak into the stall footing allowed us to determine the infiltration trench's proper size. We are expecting that the construction of all these trenches will be $225,000. Again, the size, and hence the trench's cost, incorporates a portion of rain that must soak into the stall footing and not reach the infiltration trench. These trenches would need to be much larger and more expensive if the stall footing didn't absorb a significant rainfall portion of a typical storm event. Therefore, it made economic sense to ensure that the stall footing would absorb its required amount of rain.

If the stall's exposed portion is covered with mats, less rainfall will land on the exposed stall footing, and subsequently, less would soak in. This would result in more rain flowing to the infiltration trench. The effect would be that the trench would be overwhelmed- and our design would be considered a failure. State regulators require us to ensure that all the stall trenches will work 100% of the time. So if just a few trenches fail from being matted, then the analysis of all stalls is assumed to have failed, and all installed trenches will be determined as a failure. So, in short, every stall must work. From now on, solid stall mats are forbidden in exposed stall areas to make sure that the trenches are 100% successful.

We understand that there is a real value to providing footing support for horses that wander about their stall. Thrush and scratches are just two of the many ailments that come from muddy stalls. After much research, we found a perforated stall mat explicitly designed to support horses' and cows' heavy weights. And yet these mats allow the rain to soak into the stall footing, so the trenches are not overwhelmed.

Cutting holes in rubber mats is surprisingly difficult. The thicker the mat (and thus the better for your application), the more expensive they are. While there are cheap mats made for restaurant kitchens and thin, perforated rubber mats, we have sourced the absolute best mat we could find. They are not cheap, but the joy of short- term savings will quickly fade during the midst of a rainstorm when the cheap mats fail to work. To assist boarders this first year, we will be selling these mats at SCR's cost ($92 plus tax.) If you wish to put any mats in the exposed area of your horse's stall, you might consider these and take advantage of SCR's bulk wholesale purchase to get the lowest price possible.

Arena Replacement *(Continued from page 1)*

While the drying time was slightly extended, the "costs" of the delay in opening, proved to be the cheapest method at reducing the sediment leaving the arena.

We will also be changing the footing material to washed sand from the current fine native sand. The larger particle size from the washed sand will more likely stay in place during rainstorms, further reducing arena sediment discharges. The larger particle size will also provide better weight support for horses and allow us to open arenas even though the total moisture levels will be higher than the historical standard. This will compensate for the flatter arena slope.

A special notice will be sent out when the exact schedule is determined. One should expect about 7-10 days of the arena being out of service.

SCR Fire Prevention

Approximately ten years ago, I walked the stable with a firefighter that had over 30 years' experience. He gave several recommendations regarding locating fire hydrants to ensure there was adequate water access to attack a fire in its early stage. He identified five areas of concern. These being the: creek, SCR office building, hay & shavings storage, self-storage, and compost. In the succeeding years, we installed hydrants for these areas when we re-piped the stable.

As we all know, a fire in the creek started early this month. The good news was our staff was on it in just a few minutes with our firefighting hoses & access to a high-pressure water connection, all thanks to Fireman Jim. When the real fire department arrived, they were very congratulatory of how our "department" prevented the fire from spreading. Our success was only possible due to Fireman Jim's suggestion of placing private fire hydrants throughout the stable in critical spots. What seemed like a farfetched concern ten years ago, paid off handsomely that day. Seeing the value of these hydrants, we will be adding a sixth to complete the coverage. You probably haven't noticed these, but here is an aerial photo showing their locations for your comfort.

These locations are part of our master fire prevention plan. In aerial photo #2 (next page), we have drawn a circle showing each hydrant's area that it can supply water to. The coverage is quite extensive.

The lesson learned from the creek fire was that valuable seconds were lost as our staff gathered up the hoses from other locations throughout the stable. To improve our performance, we will be adding storage boxes that will house fire hoses and nozzles for the hay/shavings and bullpen areas to reduce this time lost. The equipment will now be there, ready to go.

It was fireman Jim's opinion that our most significant risk will be during a Santa Ana episode. During these weather-driven fires, the fire department will be typically stretch quite thin. By having the firefighting equipment and a water source on-site, the fire department only needs to leave one or two firefighters to man these hoses. There will be no need to station their precious equipment at SCR when it might be more needed elsewhere.

Aerial Photo #2- Coverage area from each hydrant

Fires need three ingredients: oxygen, fuel, and heat. By spraying the creek vegetation, the heat portion is reduced and a conflagration is far less likely. Even if there are no firefighters available, this work is easily accomplished by our staff members.

A few years ago, the fire department toured our facility to understand any potential risks. They were in full agreement with fireman Jim's assessment and were quite impressed with our connection points and equipment. Their review made special note that there were hydrants available for them if a fire came through the creek.

Other than these five areas, SCR has little combustible fuel on our property, as it is mostly metal and dirt. The surrounding areas are also low fuel areas. Trabuco road is a massive fire break, the self-storage is all metal with interior fire sprinklers, and the school across the street has a large playground. The greatest threat would come from the creek east to west due to the blowing Santa Ana winds. The hydrants are ready to deal with the creek. Because of our unique and safe location, SCR will remain an evacuation point for the many horses that live in more rural areas.