

LARGE SCALE field painting: doing more with less

The Blue Valley School District is made up of 35 schools spread over about 100 square miles. The athletic field crew is responsible for about 100 natural grass and five synthetic fields. Due to limited staff, all grounds maintenance and athletic field work is done by mobile crews. Since none of this work is site based, materials management and transportation can be challenging. Jim Wilson, Assistant Grounds Supervisor, runs the crew that is responsible for painting about 30 football and soccer fields each week, along with many other responsibilities. Mixing and transporting paint for all these fields is truly one of our most difficult challenges, or I should say it used to be.

We generally dilute the paint 1:1 with water. Each field requires an average of two buckets of diluted turf paint. Crews used to spend many hours on Mondays mixing paint for the week. Carrying and opening five-gallon buckets of paint, pouring half the paint into an empty bucket, adding water and then mixing each one with a drill and paddle. Then the mixed buckets were sealed and carried to the trailer for transport to the field to be painted. Multiply this times 30! After arriving, the 40-pound buckets were lifted for the third time to be poured into the striper to paint the

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➤ **BROCK SMOTHERS** prepares to transfer paint from the barrel to the mix tank.





» Jim Wilson loads a striper with diluted turf paint.

field. Handling 60 or more buckets per week is not only exhausting but it can be hazardous. There is a risk of injury to employees due to the repetitive motion and lifting. There is also risk of spillage and bucket tip over in transport.

Imagine spilling just one five-gallon bucket of paint and the time it would take to clean it up. Some of us know first hand how frustrating and time consuming that can be. Even after the painting is complete each week, there is the problem of dealing with hundreds and hundreds of empty buckets. Our paint suppliers would take some of them if we cleaned them, prepped them for shipping and paid the freight costs. Even if I specified that the paint supplier was required to take the empty buckets, we were paying more for the paint to cover this additional cost to the supplier.

Our landfill would take them only if the lids were removed and the residual paint was completely dry. It just never seemed right to send all those perfectly good buckets to the

landfill but what were we supposed to do with them? I asked some of our suppliers if they could supply our paint in 55-gallon drums. That doesn't seem like an unreasonable request when you are buying several thousand gallons of paint per year. They agreed to find a way to do this. Now we had to find a way to efficiently handle and prepare concentrated turf paint in drums.

Anytime you can reduce the overall number of containers through bulk purchasing, there must be cost savings. Buying paint in 55-gallon drums provided us about a 25% savings just on paint. Another benefit is that this is a great source for new trash cans. Have you priced commercial trash containers recently? How about \$300 and up!

We have discovered a great way to convert our ordinary 55-gallon drum bulk paint containers into durable and inexpensive trash containers. We specify that the drums used to ship our turf paints are new or reconditioned barrels. They must be open top so we don't have to cut off the top. They

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still have a steel lid, but the lid is clamped on. When the lid is removed, the upper edge of the barrel is rounded, smooth and ready to hold a trash liner in place without tearing it. They must also be painted inside and out to prevent corrosion. For trash can use, we install a flat top, galvanized lid on the barrel. The lid has a 6-inch opening with a spring loaded lid to limit the size of litter going in to the barrel to that of typical hand carry items. How many times have you had to send someone out to empty a trash can prior to the scheduled dump date because someone has stuffed a large, empty cardboard box inside or one of your neighbors needed a place to put a full lawn and leaf bag? This lid prevents that from happening. The lids are padlocked to the barrel to prevent theft.

DEALING WITH 55 GALLONS OF PAINT

So, how do we deal with 55 gallon barrels of paint? We came up with the idea for a high volume, turf paint pumping system several years before the development of the bulk paint mixing system. We have been growing and maintaining bermudagrass fields in Kansas City since 1996. During the early years of our bermuda program, we were painting stadium fields green during early winter dormancy. In an effort to paint faster, we experimented with using a 15-foot boom sprayer to paint the fields. Through trial and error, we discovered that using low pressure diaphragm pumps would be the most efficient method of pumping large volumes of paint. Also, the diaphragm pump was less likely to plug up and very easy to clean and service.

For painting fields, pump capacity of 10 gallons per minute was adequate. During

development of the paint mixing system, we determined that while the 10 gpm pump would be enough to keep the paint in suspension in the tank, it was not capable of efficiently transferring paint from a barrel to the tank. After discussing the situation with our pump supplier, we determined that a 20 gpm pump should do the job.

The system we designed has worked very well for many years now. We used the frame of an old three point hitch spray rig with a 110 gallon tank. Everything was removed from the frame except the tank. The diaphragm pump and engine combination was mounted. Attached to the outlet side of the pump are two, one inch pressure hoses. One hose is plumbed into the mixing tank to provide paint circulation and agitation. One pressure hose is an open ended coil with an inline ball valve. This hose is used to fill the stripers with diluted paint in the field. Two suction hoses tee into the inlet side of the pump. Each two inch hose has an inline ball valve.

One hose is attached to the bottom of the paint mixing tank and the other is an open ended coil to be dropped into the 55-gallon barrel to transfer the paint into the mixing tank. When we transfer paint from the barrel to the mixing tank, the ball valve on the open ended hose is opened after the hose is inserted into the barrel. Then the ball valve on the hose from the mixing tank is closed. This creates the suction needed to pull the undiluted paint into the mixing tank. While the undiluted paint is transferring, we are adding 55 gallons of water to the mixing tank to achieve our 1:1 dilution. When the barrel is emptied of paint, we rinse the barrel with water and continue transferring this residual paint rinse to the mix tank. When the barrel is empty, we open the ball valve on the mixing tank suction hose and close the ball valve on the open ended hose. This begins the paint mixing and agitation process. By the time the crew arrives at the first stop, the paint is mixed and ready for use.

The paint mixing tank is mounted in the front of a 24-foot enclosed gooseneck trailer. There is a walk through door on the passenger side near the tank and a fold down ramp in the rear of the trailer for stripers and other equipment loading. We installed cabinets, tool racks, tool boxes, trimmer and blower brackets and loaded the trailer with all the equipment necessary for Jim and his crew to take care of the routine maintenance on all their fields. The trailer is towed by a crew cab truck so there is plenty of room for transporting the crew.

This bulk paint system is just one of many creative labor and cost saving ideas developed by the Blue Valley grounds crew. Many thanks to John Peterman, Jim Wilson and all the members of our crew for their creativity and innovative thinking. ■

Jody Gill, CSFM, is the Grounds Coordinator, Blue Valley Schools, Overland Park, KS.

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