President’s Message: Button Up Your Construction Sites - Winter is Coming

If you are in the construction industry, you are probably preparing for the slow-down caused by winter weather. I am sure you have heard someone say “There isn’t any storm water runoff in the winter, everything is frozen!” As many of you know that scenario is not always the case. Controlling stormwater pollution is a year round concern and this year we have again had a “relatively” warm start to winter here in the Midwest. These reasonably warm days and cold nights pose many challenges when it comes to NPDES compliance on our active winter jobsites.

Doing our best to minimize the amount of stormwater pollution from an active construction site in winter can be a trying endeavor. Usually the site is frozen in the early morning hours and eventually turns into a large mud bog in the late afternoon on a sunny day. Generally, track-out is regarded as the main culprit and sweeping with a water attachment is not a good idea for obvious reasons such creating icy road conditions. The solution I have found useful is to limit traffic at the site to the morning hours. However, that is not always practical so regular maintenance of your erosion and sediment control devices will help, in addition to planting a winter ground cover to reduce erosion. Now is the time to make sure that all controls are working and ready for winter thaws and spring rains.

Do not overlook street intakes either. Some intake protection devices can cause problems with snow plows and create ice dams in the public right of ways. You may have to change the type of practice that you use during the winter to avoid these issues. Again, regular maintenance and monitoring of your controls on your construction site will prevent an illicit discharge before it can happen. The old saying “An ounce of prevention, is worth a pound of cure” is not only true in the medical field but, in construction as well. If you properly manage your erosion and sediment controls, you can save yourself a lot of trouble at your sites and get through the winter with relative ease.

Before I sign off, I’d like to introduce myself as this year’s President of the Great Rivers Chapter of the IECA. I have served on the board of Great Rivers Chapter since 2007.

I am an alumna from the University of Iowa where I completed a double major in Environmental Science and Geoscience. I am an Environmental Specialist for the UI’s Environmental Services as their stormwater inspector. My primary job responsibility is to oversee stormwater quality compliance at construction sites and to review, approve
and propose modifications to our Storm Water Pollution Preventions Plans (SWPPPs) that are implemented during construction projects. As such, I am an integral part of the construction process of all new buildings at the University of Iowa. I have assessed each new building or remodeling project that disturbed one acre or more of land. During the construction phase, I conduct weekly inspections of each site for stormwater compliance. I also encourage stormwater post-construction practices such as Bio-Retention cells, Bio-Swales, Rain Gardens, Water Quality Units, Green Roofs and other Low Impact Development practices on campus and recommend the best management practices for the specific sites.

I am a Certified Inspector of Erosion and Sediment Control (CISEC). My other duties include asbestos testing. I am also certified in asbestos abatement practices, which include identification and testing of suspect materials known to contain asbestos and managing the subsequent abatement project.

In my free time I enjoy creating stained glass windows, biking, watching Iowa football, gardening and spending time in the outdoors with my husband Jason, our son Kade, and our two Akitas Kai & Kirin.

~Darice Baxter
For the past ten years, the product and technique of choice in my area (Omaha-Lincoln) for permanent vegetative establishment on slopes has been the use of erosion control blankets. When everything is done correctly—proper seed bed preparation, soil quality assurance, proper blanket installation—it’s a very effective BMP for assuring erosion protection and keeping those precious seeds in place for germination. Of course, there are instances where things go awry and a step in the process goes overlooked or is poorly executed. But for the most part, contractors seem to like working with rolled erosion control products, and their clients seem satisfied with the end results. It’s certainly not the only way to achieve erosion control and achieve a green site, however.

Hydraulic mulch (a catch-all term for this article, includes hydroseeding, bonded fiber matrix, and flexible growth medium) has its proponents and its detractors. Many of its detractors have had poor experiences with hydromulch, mainly due to observed failures where it has been applied, leading to poor erosion control or ineffective seed germination. I’ve seen on many occasions where a poor hydromulch application has been replaced with erosion control blanket. But does that have to be the case? With advances in technology, and with product options for almost any job, the case for hydromulch is stronger than ever.

So why does it get a bad rap? The main failures I’ve seen with hydromulch applications are due to improper applications of the recommended or specified application rates. It’s one thing for a contractor/applicator to come up short on his applied amount, by simple mistake or otherwise. But, if a site superintendent or an erosion control inspector doesn’t know what the proper application rate is, doesn’t know what that rate should look like when applied, or doesn’t know how to determine the actual amount applied, then who is going to catch the mistake? If left unchecked, the application will likely lead to failure, and a client who is left with a bad taste in his mouth about the perceived effectiveness of hydromulch. Each hydromulch product should be specified to the conditions of where it will be applied. With that selection comes a recommended application rate. This should be closely observed, documented, and confirmed through the application process. Otherwise, a simple stabilization job just got a lot more expensive for someone.

One common application technique that is often overlooked is the assurance of uniform hydromulch coverage. Whenever possible, the contractor should be using the hose apparatus from his hydromulch applicator and be shooting the soil to insure even coverage at the proper rate. For contractors with larger machines, it is easy to be tempted to finish a linear jobsite by driving down the street and shooting from the top of the rig, or from the turret, to areas that are immediately back of curb, or in areas otherwise easily accessible to a contractor to use the hose to apply. While this can save on time, and in some cases be the preferred application technique (steep
slopes, lack of site access), it can lead to inadequate installation rates and lack of even coverage of the hydromulch product. If proper seed bed preparation has also not been done, a “shadowing” effect can happen by only applying hydromulch from one angle, as seen in these two pictures. If not applied from two directions, the mulch coverage may only be 50%, certainly not what the client expected or paid for, and definitely not providing the erosion control expected.

The technology of hydromulch has advanced so much in recent years that I’m not sure I’m even calling it by its preferred industry name. Wood & paper mulches, bonded fiber matrix, and flexible growth medium are all under this hydraulically applied classification. But they certainly are not all alike. One thing is for sure, the hydromulch industry has come light years in the past decade, and designers and contractors would be wise to become familiar with how to select, specify and install these effective, dynamic products. Rarely is it the product’s fault when there is a failure. When selected and installed correctly, hydromulch can compete financially and perform in the field just as well as rolled erosion control products. It’s another tool in a contractor’s arsenal that can give them an edge, and can please a client when they are not only in compliance, but when they have a site that’s clean and green.

Meet Your Board Member: Patty Ogle

Patty Ogle is the Erosion and Sediment Control Coordinator for the City of Overland Park, KS. Joining the City in 2009, Patty is responsible for coordinating all aspects of the City’s erosion and sediment control program related to site development and building construction. Duties include plan review, monitoring compliance with Federal and State requirements, review of field operations, technical support and educational outreach and training. She responds to individual citizens, coordinates with other City departments and assists the development community. She also chairs the Johnson County Stormwater Management Advisory Council’s Erosion and Sediment Control Committee.

Patty received a BS in Biology from the University of Kansas. She initially worked in the Animal Science Industry. Her water quality career started over 20 years ago when she was employed with the Natural Resources Conservation Service. Through the years, her experience has evolved from soil conservation to water quality and from rural to urban. She was employed by the Douglas County Conservation District as Field Technician / Water Quality Specialist / Buffer Coordinator for 10 years. Prior to coming to Overland Park, she was the Stormwater Quality Technician for the City of Lawrence, KS overseeing their Phase II MS4 permit and program.

Patty has 2 children, Will, 29 and Erica, 27. She lives on a 120 acre farm in southwest Douglas County with 2 dogs, 2 cats, 2 donkeys and a handful of chickens. Although a vegetable and flower gardener most of her life, the farm’s virgin tallgrass prairie inspired her ongoing interest in native plants and prairie management. She has been an Extension Master Gardener since 1996. Patty spends most of her free time “working” on the farm but also enjoys long walks in the country with her dogs, exploring new places or relaxing in the hammock with a good book.
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Practical Data Collection: Establishing Methods and Procedures for measuring water clarity and turbidity of stormwater runoff from active major highway construction sites.

In the spring of 2012, a new project launched at the University of Northern Iowa (UNI) in collaboration with the Iowa Department of Transportation (DOT). Through an agreement with the Iowa DOT Office of Construction, UNI is working on a water monitoring project related to stormwater runoff from active construction sites. The goal is to establish a protocol for regular sampling by DOT and its partners, as well as determine a cost-effective means of data collection that can be applied on an agency-wide scale.

Background: In 2009, the US Environmental Protection Agency (EPA) proposed including effluent limitation guidelines, or ELGs, regarding the amount of sediment allowed to discharge from an active construction site. Initially, this guideline came with a numerical standard, however no such number currently exists in the federal administrative ruling.

Since then, many departments of transportation across the US, as well as equipment manufacturers and proprietary product developers have been working to determine how best to achieve, measure and apply a numerical standard to construction site runoff. In 2011, Iowa DOT contacted UNI to initiate such an effort based on existing partnerships and collaboration with the Iowa Department of Natural Resources – Watershed Assessment and Monitoring Section, including the Iowa Geological and Water Survey.

The project currently consists of three main goals:

1. **Develop monitoring protocols initiated by ≥ 0.25 inch rainfall events.** This involves collection of water samples from active construction sites, analyzing the samples and reporting based on existing and developing protocols.

2. **Develop appropriate documentation.** Documentation includes reports on samples, as well as information on appropriate tools and equipment to gather data over time in a cost-effective manner.

3. **Produce instruction materials.** Results and recommendations will be presented to Iowa DOT as resources.
for ongoing data collection and monitoring from active construction sites.

On-site data collection is occurring through the 2012 construction season on three major DOT construction sites in Polk and Bremer Counties. Discrete samples are collected from the adjacent stream after .25” rainfall events. Samples are also collected from “passive” stormwater collectors mounted on fence posts. Stream stage is being monitored by pressure transducers, and rainfall is recorded and reported based on the .25” threshold through an email-based alarm system. UNI Earth Science students are assisting with lab analysis, comparing turbidimeter measurements with transparency tubes. On-site monitoring includes similar measurements, as well as pH, dissolved oxygen, and habitat assessments based on IOWATER protocols.

To learn more about this project: rebecca.kauten@uni.edu, 319-273-3856

Figure 3: A "stilling well" holds a pressure transducer. This device measures stream stage in 15-minute increments.
To see more pictures of our Field Tour from this year’s annual fall conference in KC, click on the link below.

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