

Zach Beasley – Tippecanoe County Surveyor

Kerry, Jay believes according to the new language that Professional Surveyors will no longer be able to sign and seal Rule 5 permits. They can now and if this is true it is a big problem. Please verify and fight this issue if needed.

Samantha Brown - Contech

1. Section 3.F.1

- a. If my review is correct, it appears a new requirement from the old permit is the defined requirement to provide 80% TSS reduction for runoff associated with the first one inch of rainfall. I think this standard is reasonable and in line with other “first flush” requirements we see in the region. A defined performance metric for treatment of a standard water quality volume or flow is encouraged. Our suggestion isn’t so much about this standard, but rather Indiana’s Storm Water Quality Manual. Several of the post-construction BMP guidance documents may benefit from updates based on more recent BMP performance data and design standards/trends. Specific examples include the discussions on “Proprietary Measures” in Chapter 8. The manual places an emphasis on catch basin inserts, oil & grit separators and hydrodynamic separation. Since the manual was written, several communities have started to move towards more advanced forms of treatment including filtration and biofiltration. Inclusion of these technologies would provide more standard guidance for MS4s, designers and owners. Additionally, more BMP research has been performed on practices like bioretention that would be useful for inclusion in the manual.
- b. Definition of a water quality volume in this same section will be helpful for designers and reviewers. Several BMPs utilized for water quality treatment are flow-based rather than volume-based. Designers may convert a water quality volume to a flow using various methods that aren’t always consistent with one another. Some communities have adopted a water quality flow calculation in addition to a water quality volume calculation for flow-based BMPs. There are two common means of doing this; Prescribe a method such as the graphical peak discharge method to convert the water quality volume to a water quality flow rate, or if an intensity value is provided, the rational method can be used to calculate the required treatment flow. Using this approach ensures that all technologies and flow-based BMPs are calculating an equivalent amount of flow for treatment.

2. **Section 3.F.2:** This section states that the water quality standard must be achieved as part of a treatment train consisting of at least two or more post-construction BMPs. While treatment trains are a best practice and encouraged, it is not always appropriate for all sites to adopt this requirement. One BMP may be able to meet the water quality standard on its own; pretreatment should be encouraged to protect downstream BMPs, reduce maintenance and increase longevity. Multiple BMPs may be implemented to meet the 80%

TSS reduction, but individually may not meet this requirement. If one BMP fails, the other BMP that is part of the system will not meet the water quality standard on its own. If treatment trains are to be mandatory, perhaps consider requiring pretreatment for any/all BMPs used to meet the water quality requirements, regardless if one or more BMPs are to be used to meet the 80% reduction requirement.

3. **Maintenance:** Section 6.1.b and 6.1.c discuss maintenance of post-construction BMPs after an NOT has been submitted. Maintenance is also loosely addressed in the state's MS4 permit. Consider strengthening maintenance requirements to include items such as a maintenance agreement that may be tied to a property deed to ensure ongoing, long-term maintenance and to provide MS4s leverage to enforce maintenance. These sections utilize terminology such as failure to maintain may result in the requirement to obtain permit coverage or implementation of a compliance plan. Maintenance is such a key piece of the long-term performance and success of post-construction BMPs. Maintenance and lifecycle costs should be considered during the design phase of a project. Ensuring inclusion of clear, specific maintenance expectations and clear enforcement actions is critical to meeting water quality goals. Section 7.10.E does require an O&M manual be provided for all post-construction BMPs and be made available to future parties who will assume maintenance responsibility, but how is this ensured and enforced? Additionally, 7.10.F states that the entity to be responsible for maintenance of the system should be identified, if known. Consider requiring identification of the entity (owner, MS4, etc.) at the time the permit is closed.

I realize implementation of maintenance programs is something many municipalities struggle with because of lack of resources, and it can be argued that enforcement should be implemented at the local level rather than the state level. With the maintenance language that is included in this draft permit, I do think there is room for strengthening to further emphasize and ensure long-term O&M of these BMPs.

Susan Bodkin – Hancock County Surveyor

1. Natural Buffer requirement – adjacent to waters of state. This should not include Regulated Drains.
2. What is considered stabilize basin outfall and pipes within 24 hours of installation – does that mean rip-rap, netting, grass, etc.?
3. Construction going to agriculture – why do we need this if agriculture is exempt?
4. Fertilizer application is too much especially around pond areas.
5. Added restrictions for 303(d) list – too restrictive.
6. Project logs – too much reporting and record keeping. If they have to repair something repair but why have all this reporting that people doesn't do.
7. Wetlands – avoid them but no good mapping of wetland locations.
8. If we have plans they can be 24 x 36 – I don't need another set at 11 x 17.

9. I don't want to regulate off-road recreation – no need to add this.

Carrie Parmenter – Posey County SWCD District Technician

3.0 PERFORMANCE STANDARDS

(3) Maintain pre-existing natural buffers up to fifty (50) foot in width that are adjacent to waters of the state to promote infiltration and provide protection of the water resource, unless infeasible.

I think the words “pre-existing” and “up to” need removed. It should read Maintain a natural buffer of fifty (50) foot in width... Most of our areas that are being developed are cropland that have no pre-existing buffer. If you say “up to” that sounds like anything less than that is okay, but you can't exceed that width.

(5) (F) 4) on pg 9 : Implement and manage channel protection volume measures where possible to protect stream channels impacted by construction and urbanization. Practices should be designed to accommodate and retain a 1-year 24-hour storm event. I would recommend that this be changed to “must be”. All other requirements in this section use the terminology “must be” except this one. Anytime there's a “should be” that's a chance for the contractors to say it isn't a requirement so they don't have to do it!

(26) (B) 7) on pg 14: Washing of applicators and containers used for paint, concrete, or other materials. I would like masonry added to this list. I have issues with brick layers washing out on the ground instead disposing of it properly. They claim they aren't pouring concrete so it doesn't have to go in the concrete washout.

(28) on pg 16: Inform personnel associated with the project of the terms and conditions of this permit, and the conditions and standards of the SWPPP and the schedule for proposed implementation. It is recommended...

Change “It is recommended” to “it is required”. And who is responsible for informing the personnel? How is this monitored? I really like this new requirement because it's needed, but I think it needs to be clarified as to who the responsible parties are and make the documentation of who has been informed a requirement instead of recommendation. Otherwise, no one will actually follow through with it. And if there is no responsible party listed, everyone will say it's someone else's responsibility.

7.0 CONSTRUCTION PLAN CONTENT AND REQUIREMENTS

(7) on pg 28: A drainage plan which must include:

Our community does not have any drainage ordinance and we are not a MS4. So I would like to see this section have more details about pre and post construction run-off rates. Preferably with an allowable increase spelled out in detail. Should this section include the 1 year 24-hour storm event language?

(10) (B) 3) on pg 30: Storm water management measures that will address the potential impacts of increased run-off from the project. Measures must be designed and approved according to current local requirements and drainage ordinances. An engineer must certify that the design meets the local requirement.

Again, can you add language for communities that don't have their own drainage ordinances.

Appendix A: (a) (7) (G): Other infrastructure.

Does this include BMP's such as WASCOBs, Grassed Waterways, tile drains etc.? If not, should those be listed as an exemption?

Siavash Beik – CBBEL

I only looked at the Post-construction provision (copied below). Obviously, they are adopting our recommended approach. So, I am very pleased with it. The only comment I have is that it seems they are being very cautious regarding requiring Channel Protection Volume. Given the importance of streambank protection and controlling erosion, my suggestion is to delete the "where possible" loophole and also change "should" to "must", similar to the language they used for other provisions. I have highlighted those words I am suggesting to change. Thanks, Siavash.

- (F) Post-construction storm water management measures must be designed and implemented in accordance with the following standards:
- 1) The expected total suspended solid (TSS) load in run-off associated with a one (1) inch rainfall must be reduced by a minimum of eighty (80) percent including floatable debris, oil, and petroleum products.
 - 2) The standard in 1) above must be achieved as part of a treatment train by utilizing two (2) or more post-construction measures working in tandem to treat storm water run-off and increasing the overall efficiency of individual and specialized measures. Consideration must be given to measures that function in low-flow conditions to remove pollutants and reduce the burden of treatment for shorter and more intense storm events
 - 3) In combination with proper post-construction measure selection, design and development strategies must be selected and incorporated into the plan to reduce the overall run-off contribution of pollutants from the project area to the post-construction measures. These strategies include, but are not limited to Low Impact Development (LID) and green infrastructure.
 - 4) Implement and manage channel protection volume measures **where possible** to protect stream channels impacted by construction and urbanization. Practices **should** be designed to accommodate and retain a 1-year 24-hour storm event.

- 5) Infiltration measures must take into consideration the pollutants associated with run-off and the potential to contaminate ground water resources. Where there is a potential for contamination, pre-treatment of run-off must be utilized to eliminate or reduce the pollutants of concern.

Michael Dorsett – Indiana University Water Resources Specialist

Page 18 (31) “Qualified Individuals”, as defined in Appendix A,
Correction = *Appendix B*

Page 43 Appendix B (aa) “Qualified individual” means an individual who is trained and obtains a professional certification in sediment and erosion and maintains said certification through continuing education requirements established by the certifying organization.

Bryan Grotz – HWC Engineering

Section 3.0 (c) (3) – will the 50-foot wide buffer along streams count towards the permanent BMP requirement?

Section 3.0 (c) (4) (D) – Are we expected to use Stokes’ law to calculate sediment removal? This will likely lead to BMP’s being larger and more costly. Especially when considering the removal of clay due to the tiny particle size’s time for settlement, which happens to make up most of Indiana.

Section 3.0 (c) (5) – This section seems more appropriate for urban communities and largely inappropriate for rural communities.

Section 3.0 (c) (5) (D) – I can agree that they must be stabilized and non-erosive within 24 hours, but do we really want energy dissipation at all pipes leaving a site? How about for a 3” outlet, do we still need energy dissipation? How about for pipes discharging to a culvert or other structure? How about for pipes with discharge velocities less than 1fps?

Section 3.0 (c) (5) (E) – Polymers, flocculants, etc should only be used as a last resort sediment removal. Do we really want to introduce additional chemicals into the environment? Is the damage to the environment from slightly more sediment laden flow really worth the risk of chemical addition to the environment?

Section 3.0 (c) (5) (F) 1) – This requirement will likely lead to IDEM requiring ADS units for every project. Do we really want to require that costly addition? How about for a rural stormwater improvements project? Are we going to hinder a community from improving their drainage because we have added an additional cost?

Section 3.0 (c) (5) (F) 2 – See comment for number 1. How will 80 percent reduction be achieved or measured without the use of tested products? Can the removal efficiency claim of product manufacturers be verified accurately? What testing will need to be done to verify that non-mechanical BMPs provide 80 percent reduction? What will qualify as a post construction BMP? the interpretation of the plan requirements is critical. Some reviewers may allow two permanent BMPs in series as inlet grates and outlet riprap armoring, while others may require an ADS unit along with a pond or forebay.

Section 3.0 (c) (5) (F) 4 – This should refer to a water quality control volume not channel protection volume. This will lead to costly designs when considering some projects that disturb more than one acre.

Section 3.0 (c) (12) – Design should dictate soil compaction not the permit. A designer would not have a contractor compact an area of infiltration. There may be cases where compaction in these areas is desired.

Section 3.0 (c) (13) – It should be up to the designer and/or owner whether they want new or old top soil.

Section 3.0 (c) (14) – Directly contradicts what is said above that all outlets should discharge to energy dissipation. Most commonly outlets will be to riprap pads.

Section 3.0 (c) (21) – Fertilizer should not be used in the floodway/floodplain due to the potential for it to be washed away by the stream.

Section 3.0 (c) (27) (C) – Can a report template be provided herein? Or as a companion document or appendix? A template will make it easier for both SWQMs and Reviewers of these reports.

Section 3.0 (c) (28) – Recommendation will not be completed in general. I think this should be a requirement. The owner has to sign the NOI now and that should be the time when the importance of the SWPPP is conveyed. The designer should also convey the importance of the SWPPP to the contractor. I think the contractor that receives the job should be required to sign that they have read and understood the SWPPP. This would be especially helpful for EC sequencing. The plan sheets don't convey sequencing as easily as the narrative. Contractors need to read the narrative.

Section 3.0 (c) (28) (E) – These are called Storm Water Quality Managers (SWQM) now (at least for INDOT jobs). Every project requiring this permit should have one. They should be required to have some minimal erosion control training as INDOT has required. The SWAPP administer should not be just anybody the contractor provides.

Section 3.0 (c) (29) (A) 3 – Contacts listed should be an owner representative, the SWQM and the Superintendent.

Section 3.0 (c) (30) – This should all be a part of the SWAPP process. I think this info could be placed under section 3.0 (27)

Section 3.1 (a) (2) (D) – Temporary seeding should be completed for any area to be inactive for 7 days or more. Why does this note need to be added? If the site is an individual active residential building site during the period when accessibility to the building site is a necessity, then it is not expected to be inactive for 7 days and does not need temporary seeding anyway.

Section 4.1 (a) – Not just for one acre or more land disturbances, but also for projects part of a larger common plan of development that will disturb one acre or more.

Section 4.2 (d) – So, we will allow erosion control plans to go unreviewed, but still be approved? I think the review process needs to be changed. Some communities are very strict in review, while there is no review done in other communities. All these requirements and updates will be useless without a standardized review process where permits applications actually get reviewed. This process should be more like a 401/404 submittal with designated representatives to review these applications under the same set of rules. Additionally, the interpretation of the plan requirements is critical. Some reviewers may allow two permanent BMPs in series as inlet grates and outlet riprap armoring, while others may require an ADS unit along with a pond or forebay.

Section 5.4 (a) (1) – Do we really need to submit for an amendment when we change the name of a project? What is required for an amendment? A full resubmittal? A letter of notification? A new NOI application and Processing Fee?

Section 5.5 – And the letter from the reviewing agencies that says to go ahead with submittal of the NOI.

Section 5.5 – It's acceptable to develop an electronic submission format. I find it unacceptable to make that format a requirement. Currently the NOI submitted must be a signed original. Will that still be the requirement?

Section 5.6 – Section 4.2 says that if a SWPPP plan is deficient it can be resubmitted within 14 days if land disturbance has commenced. So, land disturbance could have begun by the time an NOI is submitted. No additional time should be given for resubmittal of the NOI even if they need to change SWPPP if land disturbing activities have begun.

Section 6.1 – When the potential for erosion and sedimentation from construction and land disturbing activities has been eliminated, the site is stabilized, temporary BMPs have been removed,

and no future land disturbing activities will occur. Stormwater will continue to discharge from permanent BMPs and from the finished site. This doesn't make it clear that the site must be stabilized completely before NOT will be accepted.

Section 7.0 (c) (3) (L) – For all water bodies? For all submittals? Even ones that don't discharge to Waters of the US?

Section 7.0 (c) (8) (H) (I) – These are usually generated by contractors who know what materials they will need a handling and spill prevention for. The plan is developed by the contractor because they dictate where items to handle these materials, eg concrete washouts or fueling locations/methods, will go and what size they will need to be based on the amount of concrete needed for the job.

Section 7.0 (c) (9) (A) – If a ditch is reconstructed is maintenance of the ditch not required? That should be part of the post construction SWPPP.

Section 8.0 (a) (6) (I) – Construction activities or land disturbing activities?

Section 8.0 (a) (7) – The ultimate receiving water could be difficult to identify if the outlet is to a storm sewer. Will the designer be required to follow the storm sewer until a receiving water is identified?

Section 8.0 (a) (8) (9) – For all submittals?

Section 10.0 (a) – New operators? Do we need to modify a SWPPP for unforeseen subcontractors? Designers do not know who will be the contractor for the job until it is bid (after obtaining permits). Therefore, a designer will not be able to foresee subcontractors to be used on the project and therefore all projects will require a resubmittal for contractor identification.

Section 11.3 (d) – So, if a Mayor or elected official signs this document and his/her term comes to an end, the documents will need to be resubmitted with the signature of the new elected official? This will be an issue following elections, especially since the new elected official may not sign the permit reapplication for a project that is currently underway.

Appendix B Definitions (aa) - Could this be more clearly defined? Certain degrees? Certain certifications? Certain coursework? This has been a topic of contention. What does qualified individual mean? Is a Mechanical Engineer qualified? Is an individual qualified simply because they say they are? Will there be any checking of whether the individuals submitting and implementing these plans are actually qualified to do so? INDOT requires the CPESC, but that seems wrong too. The CPESC is a proprietary certification and therefore, EnviroCert is given a lot of business by designers in Indiana to be able to meet the requirement. That seems like a conflict of interest.

Indiana should use IDEM to administer a course and exam similar to the CPESC that is not proprietary so the State can capture that revenue and use it to make improvements to its stormwater quality policies. The CPESC should be an accepted certification though.

Jon Gotz – Whitley County SWCD

When EPA and IDEM first began to address non-point source pollution from construction sites, it made some sense to enlist the knowledge and resources of SWCDs because the focus was on soil erosion and sedimentation. Now the addition of post-construction and storm water management requirements and the push for low impact development and green infrastructure design is blurring that focus, especially in non-MS4 communities. Local governing agencies, whether County Engineers or Surveyors, Drainage Boards, Planning & Development Departments or new MS4s, must assume responsibility for the post-construction and storm water management requirements and for implementing LID and green infrastructure design. Generally, these matters are out of scope for SWCDs.

My review comments for the draft CGP follow:

1.0 General Permit Coverage

1.2 Include a definition of “waters of the state” in Appendix B. All of the parties involved in design, construction and permitting need a common understanding of this term.

1.3(b) Measurements of “ambient concentrations of pollutants” are lacking for many of Indiana’s impaired waters. Suggested wording: *Discharges to a receiving stream when the discharge results in an increase of a pollutant which contributes to the impairment of the receiving stream by that pollutant as identified on the current 303(d) list of impaired waters.*

3.0 Performance Standards

(c)(2) The formation and sustenance of a wetland depends on the hydrology of its watershed. Absent measures to preserve existing hydrology, development of the uplands in a watershed will impact its wetlands. In the long run, this impact may be greater than the impact of a pollutant discharge during construction.

(c)(3) Remove the phrase “... unless infeasible”. Designers and developers are likely to decide without sufficient consideration that it’s not feasible for my project.

It will be difficult to apply this provision consistently if local governing agencies don’t enact and enforce provisions for natural buffers. A subdivision developed on agricultural land adjacent to wetland may have a very narrow natural buffer. A subdivision developed in woodland adjacent to a

wetland may have a wide natural buffer, but without an enforceable setback a lot owner or operator may disregard the buffer. County drainage boards can control construction of permanent structures within the 75 foot easement of their legal drains, but they often permit construction within 25 to 30 feet of the drain. Such construction projects often disturb less than one acre, but there may be many such projects adjacent to the legal drains.

(c)(5)(D) A swale might need energy dissipation at its outlet. Maybe, the word “Pipe” should be replaced with the words “*Storm water*”.

(c)(5)(F) 2) The meaning of the second sentence is unclear. What is “the burden of treatment”? Can the sentence be eliminated or re-worded? Suggested wording: *Post-construction measures must remove pollutants in low-flow conditions.*

(c)(5)(F) 3) It will be difficult to apply this provision consistently if local governing agencies don’t adopt design and development codes and ordinances that require LID and green infrastructure.

(c)(5)(F) 4) This provision may conflict with the current local requirements and drainage ordinances cited in provision 7.0(c)(10)(B) 3). Maybe, requirements for stream channel protection measures should be decided by local governing agencies. County drainage boards are responsible for maintaining many of the ditches and streams in the state. Robinson’s report, (Recent Channel-Migration Rates of Selected Streams in Indiana) shows that the susceptibility of stream channels to fluvial erosion varies widely across the state depending on the regional geology. Furthermore, Beyerlein in a recent editorial (Stormwater July/August 2016) raised a number of questions about the workability and efficacy of a requirement such as “retain a 1-year 24-hour storm event”. Reducing effective impervious by adopting LID (Grant, et al., Environmental Science & Technology, Aug. 2015) or implementing erosion control detention (Hawley et al, Watershed Science Bulletin, Spring 2012) might be preferred by local agencies as alternatives to Beyerlein’s recommendation of regulating by continuous simulation modeling.

In any case, retaining the 1-year 24-hour storm event may be requiring more than is necessary. According to NOAA Atlas 14, the 1-year 24-hour rainfall for Columbia City is 2.26 inches. Previously, when I simulated a residential rain garden using EPA’s National Storm Water Calculator (Release 1.0.0.9) with ten years of Columbia City precipitation data, the 95th percentile daily rainfall was calculated to be 1.37 inches.

(c)(8) Can the second sentence be removed? The local jurisdiction may not have such standards.

(c)(10) Remove the phrase “...where possible”. Designer and developers are likely to decide quickly that it’s not possible for my project.

(c)(19)(A) Should “impaired biotic communities” be included in the list of sediment related parameters?

(c)(22) The opening sentence is convoluted. Suggested wording: *Ground water from dewatering excavations, trenches, foundations, etc. must not be discharged when the discharge:*

4.0 Construction Plan

4.1(a)(1) What qualifications are required in order to be a plan reviewer for an SWCD or an MS4? Provision 7.0(b) requires the construction plan to be developed and signed by a “Qualified Individual”. Should the reviewer also be a qualified individual?

6.0 Requesting Termination of Coverage

6.1(c) Who will determine there has been a failure to maintain? Will the required permit coverage be an individual NPDES permit? Who will monitor implementation of the compliance plan? This provision might work in an MS4 community, but generally, local governing agencies in communities without an MS4 don’t monitor post-construction measures and the contractor, developer and SWCD all end their involvement when project is terminated.

7.0 Construction Plan Content and Requirements

(c)(7)(A) Are estimates of the ten year peak discharges the appropriate metric to use to encourage the adoption of LID and green infrastructure design? The average annual rainfall and the average annual runoff for both preconstruction and post-construction conditions might be better.

(c)(10)(B) 3) Local requirements and drainage ordinances may not adequately address the potential impacts of increased run-off. This is not so much an issue for MS4 communities, but it is an issue for many non-MS4 communities.

Appendix A

(a)(2) In Whitley County, a landowner may subdivide a large parcel of land to create a two or three acre lot for a child or grandchild to build a single family residence. I reviewed nine such plats of subdivision in 2016. So far, I’ve reviewed seven such plats in 2017. All these plats met the disturbing less than five acres provision which, it appears, is being eliminated. In each case, I’ve attached a copy of the provisions cited in Rule 5 Section 2(i) to a review letter for the Planning & Building Department to give to the landowner/developer.

The Whitley County Planning & Building Department does not submit construction plans for single family residences to the SWCD for review. I don’t believe the Department calculates or estimates

disturbed areas currently nor do I believe that landowners or builders currently calculate or estimate disturbed areas for the construction of single family residences.

I think it would be better to keep the current Rule 5 less than five acres provision as is as much as possible. If necessary, the provisions required for this type of construction could be specified separately without reference to other provisions in the draft general permit.