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November 23, 2009

Michael Adackapara
Division Chief
California Regional Water Quality Control Board
Santa Ana Region

RE: NPDES Permit ORDER NO. R8-2009-0036

Dear Mr. Adackapara,

Thank you for the opportunity to comment on the second draft of the San Bernardino County area NPDES permit. Please accept the following comments regarding new development requirements.

Specific comments:

Page 80, Section XI.E.3
Suggested Change:
Replace the third mitigative BMP option with a requirement that "any portion of the water quality event that can not be retained on site must be treated by BMPs demonstrated in the field to be highly effective for primary pollutants of concern, and at least moderately effective for secondary pollutants of concern expected to be generated on site."

Justification:
The third "mitigative" BMP option given is "Vegetated BMPs that promote evapotranspiration, including bioretention, biofiltration and bio-treatment". These are all descriptive BMP terms that have no specific performance based connotations. This is not adequately protective of water quality and unnecessarily limits the treatment options available to stormwater treatment system designers.

Page 80, Section XI.E.4
Suggested Change:
Replace the word "biotreat" with "treat with BMPs demonstrated in the field to be highly effective for primary pollutants of concern, and at least moderately effective for secondary pollutants of concern expected to be generated on site."

Justification:
Currently there is no performance standard set for "biotreatment" BMPs in this permit. Instead, "biotreatment" BMPs must simply be properly engineered and maintained. The current draft leaves open the possibility that properly designed and maintained vegetated controls such as filter strips and swales will be considered adequate treatment even where pollutants of concern include nutrients, trash, bacteria or other pollutants that are not adequately addressed by these technologies. Comments submitted by CONTECH on the first draft Riverside NPDES permit pointed out that many "biotreatment" BMPs are more likely to be sources of bacteria, nutrients, pesticides and herbicides than to reduce them. Flow through BMP selection and design must be based on an inventory of pollutants of concern likely to be generated on site, and then selection of BMPs based on their demonstrated ability to affect those pollutants. This permit section as written simply requires that the BMPs have some vegetated or biological component and requires no specific level of performance.

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For further discussion on the importance of designing BMPs with regard to pollutants of concern expected to be generated on site and the unit processes demonstrated to be effective in controlling them, please refer to the Blue Ribbon Panel report on the Feasibility of Numeric Effluent Limits commissioned by the State Water Board[1], or the 2005 Water Environment Research Federation Publication entitled "Critical Assessment of Stormwater Treatment and Control Selection Issues[2]".

As written, a BMP with incidental infiltration or evapotranspiration and little effect on pollutants of concern could be approved. Alternately, the use of non-vegetated BMPs, for example sub-surface media filters would trigger participation in in-lieu programs even if those BMPs are demonstrated to be more effective for pollutants of concern like sediment, trash, nutrients and bacteria. This violates the maximum extent practicable standard and common sense.

The intent of this section seems to be to encourage the use of vegetated BMPs since some runoff reduction is assumed to occur. However, most landscape based BMPs are regularly irrigated and may actually generate more runoff volume than they prevent either through irrigation overspray, or loss of irrigation water through under drains. Regular irrigation also effectively fills the void space in soil which is then unavailable for runoff reduction. Non-vegetated surface filters would avoid both of these issues, would use no potable water and would perform similarly to their vegetated counterparts. Unfortunately, as written, this section does not allow the use of non-vegetated BMPs.

A more reasonable approach to treatment control prioritization has been taken in the Chesapeake Bay area where "The Runoff Reduction Method[3]" has been developed by the Center for Watershed Protection. In simple terms, it evaluates the effectiveness of BMPs based on both their ability to reduce the concentration of pollutants in stormwater and their ability to reduce runoff volumes. For example if a swale reduces runoff volume by 20% and reduces sediment concentrations by 50%, the total sediment load removal attributable to the BMP would be 60%.

Applying this method of BMP evaluation would effectively prioritize BMPs that reduce runoff, but not blindly and potentially at the expense of better performing but non-vegetated BMPs.

The equation used by the method calculates the "total removal" attributable to a BMP as follows:
TR=RR + (100-RR) +PR

Where:
TR = Total Removal
RR = Runoff Reduction
PR = Pollutant Removal

Page 81, Section XI.E.5.c.ii

[1] California State Water Resources Control Board. 2006. "The Feasibility of Numeric Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial and Construction Activities" Available at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/numeric/swpanel_final_report.pdf
[2] WERF. 2005. "Critical Assessment of Stormwater Treatment and Control Selection Issues". Available at: http://www.iwapublishing.com/template.cfm?name=isbn1843397412
[3] Center for Watershed Protection. 2008. "Technical Memorandum: The Runoff Reduction Method". Available at: http://www.dcr.virginia.gov/documents/stmrunredmethmemo.pdf

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Suggested Change:
Change to "…based on their effectiveness in pollutant removal **and runoff reduction** and require project proponents…

Justification:
The pollutant load reduction attributable to a treatment control depends both on its ability to reduce pollutant concentrations and its ability to reduce runoff volumes.

General Change Suggestion:
Replace "reuse" with "use" throughout the permit where it is used to refer to water harvest.
Justification:
The word "reuse" is borrowed from wastewater reuse discussions and is not appropriate for stormwater harvest applications. Harvested stormwater has no prior use.

Conclusion
As subsequent changes are made to this permit I welcome the opportunity to expand on or clarify the comments made in this letter. Please consider CONTECH to be a partner in the quest for clearer, more effective stormwater regulation.

Sincerely,

Vaikko P. Allen II, CPSWQ, LEED-AP

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