The Rain Events

February 2010

California Edition

Some Like it Hot!

There is nothing like a steaming hot bowl of chili to warm you up after a cold February day of storm water sampling. If you are like me, the hotter the better! So we want to share one of our favorite chili recipes with you to try out on your next storm water sampling day, or this weekend for the Big Game, or as a surprise for your sweetheart on Valentine's Day. And in honor of February 14th, our recipe is heart-friendly. Check it out only 6.7 grams of fat!

WGR's Benchmark Exceedance Chili

Ingredients:

2 pounds ground turkey meat
OR
24 ounces cooked turkey
1 1/2 cup chopped onion
1 cup chopped green pepper
2-4 roasted jalapenos chopped (optional)
3 cloves garlic
2 cans (28 oz. each size) low sodium tomatoes in puree, chopped
2 cups water
1 can (6 oz. size) low sodium tomato paste
8 teaspoons low sodium beef bouillon
2 tablespoons chili powder
1 tablespoon ground cumin
2 teaspoons oregano leaves
2 teaspoons sugar
1/2 cup dried lentils
2 cans kidney beans, drained and rinsed

Directions:

1. In large kettle, brown turkey and pour off fat.
2. Add onion, green pepper, and garlic. Cook and stir until tender. Add remaining ingredients. Cover. Bring to boil.
3. Reduce heat and simmer for 1 1/2 hours.

NUTRITION INFO (per serving) Calories: 299.6 Fat: 6.7 g Carbohydrates: 38.1 g Protein: 24.9 g
Source:

February's "To Do List":

- February Storm Water Observations (Form 4) at all of your outfalls.
- Storm Water Sampling – You need two for each representative outfall. (Don't forget to sample releases from tank farms and storm water ponds.)
- Quarterly Non-Storm Water Observations between now and March 31 (Forms 2 & 3)
- Review your analytical results. Submit a letter to the appropriate RWQCB for any benchmark exceedances.

The Compliance Corner . . .

Unlocking the Mysteries of BOD, COD, and TOC (part 2)

Many facilities are required to analyze their storm water discharges for BOD or COD. In California, Industrial General Permittees are given the option of sampling for oil & grease or total organic carbon (TOC). But, often there is confusion or misunderstandings about these tests and how to interpret the data derived from them. Last month, in part 1 of this two-part series, we looked at the BOD and COD analyses including the differences of the two tests, and potential causes of elevated BOD and COD. This month we are going to look at TOC and the relationship between it and BOD/COD.

TOC is a measure of the organic matter in water. Sources of TOC in storm water include decaying natural organic matter (NOM) such as plant and animal detritus (humic acid, fulvic acid, and amines); and urea. TOC may also be caused by man-made substances that come into contact with storm water such as detergents, pesticides, fertilizers, herbicides, industrial chemicals (including ethanol), and chlorinated organics. The benchmark for TOC according to the USEPA's Multisector General Permit is 100 mg/l, other State of California references list it at 110 mg/l. TOC is a significant parameter to monitor for storm water discharges because elevated organic matter left untreated will compete with fish and organisms in the receiving water for oxygen.

Ratios of COD to TOC can provide a valuable forensic tool in determining the source of TOC in storm water. Because BOD, COD, and TOC are more indicators than analyses of a specific chemical, it is sometimes difficult to know what to do when there is a benchmark exceedance. A high result will not pinpoint the cause but just shows there is a problem. However, some additional clues can be learned by evaluating the COD to TOC ratio. A high COD to TOC ratio (or BOD to TOC ratio) may indicate that the source of the organic material is easily oxidizable (such as alcohols or sugars). For example, if the COD is greater than 100 mg/l and the TOC is also greater than 100 mg/l, we should look for short carbon-length easily oxidizable substances. If we were at a petroleum bulk terminal, this ratio might lead us to suspect ethanol as a possible cause. But, if the COD was relatively low and the TOC was above 100 mg/l, at the same facility, we would look for a less readily oxidizable source of TOC; such as a fuel or lubricant.

TOC, BOD and COD have been around a long time in the drinking water and sanitary wastewater fields, but you can expect to start seeing them more and more in the storm water arena. Federal and State sponsored studies are currently being done to identify natural and man-made sources of TOC. As more information comes out on TOC in storm water, WGR will keep you updated on developments and how it will impact your storm water program.

We Have a Winner !!!

Congratulations to Ruthanne Walker, the winner of the January 2010 storm water contest!

True or False? – Storm water released from impounded areas (such as a tank farm) may be subject to other Federal or State requirements. If true, name what requirements apply.

The answer is "True":

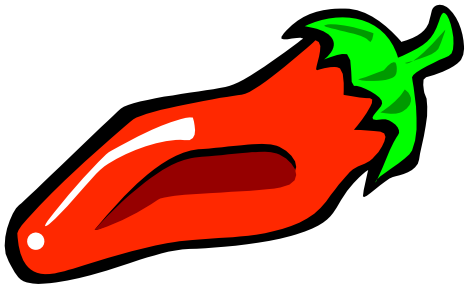
- All storm water released from tank farms that have oil or fuel storage greater than 1,400 gallons is subject to Spill Prevention Control and Countermeasure (SPCC) regulations found in 40 CFR Part 112. These types of facilities must visually inspect *every* discharge of impounded storm water for the presence of a sheen and document when the discharge valve was opened and closed.

Ruthanne will be sent a $25 gift card to Borders to purchase her very own copy of the SPCC regulations or something else she would rather have, like a chili recipe cookbook.

February STORM WATER CONTEST

OK, enough of the tough questions. By popular demand, here is an easy one. Everyone should be able to answer this. By **February 28**, submit a response for the following.

During the required monthly visual inspections of the outfalls, what must you be looking for and record on your visual observation form?



All persons submitting correct answers will be placed in a drawing. The winner will receive a $25 gift card to **Chili's** to warm up after your next sampling event. Please submit your entries to jteravskis@wgr-sw.com .

Please contact us if you have any questions …

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