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**Subject:** Comments on CAFO NPDES Permit  
**Date:** Friday, October 02, 2015 11:46:27 AM  
**Attachments:** [Final Comments on CAFO General Permit Sept 2015 WSU-OSU.docx](#)

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Greetings

Please find attached comments for the current draft version of the CAFO NPDES permit.

Joe

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Livestock and Poultry Environmental Learning Center hosts monthly live web cast seminars (viewable from your computer) on animal manure management issues. Go to

<http://www.extension.org/animal+manure+management>

to learn more and sign up for a monthly newsletter during your web site visit .

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I've learned that I can't go looking for happiness. I have to pack it in my suitcase with my other stuff and take it with me."

-anonymous from person age 63

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National Livestock and Poultry Environmental Learning Center

<http://www.extension.org/animal+manure+management>

Comments on CAFO General Permit – Draft Version released August 2015

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The following comments are from:

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**Item 1) Matrix table – page 19**

Comments – 3 ft samples is not an agronomic approach, variability in values goes up with depth, therefore, a 2<sup>nd</sup> and 3<sup>rd</sup> ft sample are more variable and less valuable from an information stand point

Matrix table deviates from guidance in Post-harvest Soil nitrate testing bulletin – EM88320-E

Suggested matrix is not substantiated with science – (not documented)

Suggestions –

Use bulletin entitled “Managing soil nutrients using a management unit approach” – PNW570

Use “Post-harvest Soil Nitrate Testing for manured cropping systems West of the Cascades” EM 88320-E

**Item 2) - Manure test – page 23** - Fertilizing with Manure (Bary, A., Cogger, C., Sullivan, D. (2000). Fertilizing with Manure. Pacific Northwest Extension, WSU Food and Farm Connections Team. PNW053) is designed primarily for small scale farmer that is not under a permit. Likely not an appropriate publication for a permitted situation.

Consider U of I stockpiled manure pub. PNW 673, Sampling Dairy Manure and Compost for Nutrient Analysis, has been published online at this

URL: <http://www.cals.uidaho.edu/edcomm/pdf/PNW/PNW673.pdf>

Difficulty in measuring manure prior to application, getting an analyses, and then is it accurate when applied? Would take at least a week to get analyses. Variability in dealing with weather and timeline.

Possible simple scenario could be – I would like to apply manure this week as the weather is predicted to be good for 4 days, I take my manure sample today and I don't get results back for 3 days, now the weather has turned bad for the next 8 days, I guess I will have to stir the lagoon or float the lagoon again after the weather passes and get another manure sample and try again. When will I be able to apply manure?

**Item 3) Soil Testing - Page 25**

Page 25 – Total Kjeldahl Nitrogen is not routinely analyzed and not routinely used for agronomic purposes, no data is available in fertilizer guides to suggest how to use a Total Kjeldahl Nitrogen value if it were available.

As far as the soil testing goes, Ecology has chosen to extend the utility of the soil nitrate test far beyond the test “calibration”. Fall soil nitrate testing is not a quantitative tool, but rather a rough performance index. Interpretative values given in postharvest soil nitrate publication are valid only for the top foot of soil. Extending interpretations beyond the measured data (to 2 and 3 ft) is unlikely to result in more accurate assessment of N management success. As the title of the postharvest soil nitrate Extension publication suggests, data to support the use of fall soil nitrate testing comes only from agronomic studies conducted west of the Cascades.

If I was asked to increase the required soil testing for dairies (to improve N management), I would recommend a pre-sidedress nitrate test on silage corn to justify application of additional in-season manure application to corn, or to justify sidedress N fertilizer application to corn. Agronomic data exists to support this recommendation.

**Suggested soil test interpretation guide** - Soil Test Interpretation Guide. D.A. Horneck, D.M. Sullivan, J.S. Owen, and J.M. Hart. EC 1478 • Revised July 2011 Oregon State University

### **Attachments**

PNW 673, Sampling Dairy Manure and Compost for Nutrient Analysis, has been published online at this URL: <http://www.cals.uidaho.edu/edcomm/pdf/PNW/PNW673.pdf>

EM 8768 – April 2015 - Calculating Dairy Manure Nutrient Application Rates

EM 8585-E – July 2007 - Manure application rates for forage production

PNW 673 – July 2015 – Sampling dairy manure and compost for nutrient analysis

PNW570 – October 2003 - “Managing soil nutrients using a management unit approach”

EM 88320-E “Post-harvest Soil Nitrate Testing for manured cropping systems West of the Cascades”

EC 1478 - Soil Test Interpretation Guide. D.A. Horneck, D.M. Sullivan, J.S. Owen, and J.M. Hart. • Revised July 2011 Oregon State University

### **Economics of installation of lagoon liners**

I (Joe Harrison) collected information on lagoon liner installation for a presentation in Boise, ID for a region 10 CAFO roundtable meeting in September 2015. The economic impact to dairies of installation of a double liner system with leak detection is significant.

Based on data collected from 3 dairies that had installed single layer liners to their lagoons, the price ranged from \$ 15 to \$ 62 to \$333 per cow, and was dependent on how much retrofitting was required in terms of engineering, manure removal, and dirt work. These numbers would need to be multiplied by a factor of 6.5 for installation of a double-liner system and leak detection.

Below is a table that serves as a reference for minimum costs of liner installation based on materials and installation only. The costs in the table would need to be adjusted up based on the amount of expense involved with retrofitting to an existing lagoon. Estimates for retrofitting could run as much as \$300 per cow.

Western Washington – Lagoon Liners  
(a bit more water to handle)

Size of Dairy (cows)	Single Liner	Double Liner with Leak Detection (6.5 multiplier)
500	\$26,130	\$ 169,845
1000	\$52,272	\$ 339,690
2000	\$104,544	\$ 679,380