SENATE NATURAL RESOURCES
EXHIBIT NO. 11
DATE Jan. 30. 2009
BILL NO. SB 200

Montana Department of
ENVIRONMENTAL QUALITY

Brian Schweitzer, Governor

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TO: **Senate Natural Resources Committee**

FROM: **George Mathieus, DEQ**

RE: **Senator Perry's question following SB 200 testimony**

DATE: **January 29, 2009**

Question: *"Can you compare the impact of dish washer detergent and phosphorus versus phosphorous from lawn fertilizers and the runoff that would carry to the river?"*

Key points:

- In Montana, lawns probably make up less than 2% of the land area. However lawn land use percentage increases in the highly populated areas. Therefore, focusing on urban areas is more applicable.
- Timing of fertilizers is critical. Typically lawn fertilizers are applied during the algal growing season (spring & summer months) when nutrient inputs have the greatest impact. Additionally, storm runoff events closely following fertilizer application, have a higher chance of transporting nutrients to streams and rivers.
- Determining reductions from fertilizer bans is highly variable. However, it appears as though the reductions from dish soap bans versus fertilizer bans are roughly the same.
- However, dish washing detergent bans may have a higher success rate of reducing phosphorus loading to streams than do lawn fertilizer bans because:
    - Dish soaps are applied directly into a drain and subsequently treated in some fashion, by either septic systems or a waste water treatment plant.
    - Lawn fertilizers are not consistently applied, are applied on various soil types, and are used at different agronomic uptake rates. Therefore, lawn fertilizers, and the associated phosphorus, can become more readily absorbed by soil particles.

Additional information:

- Manitoba predicts approximately equal reductions of P-loading to Lake Winipeg of 1% each from lawn fertilizer and detergent P bans.

- Wisconsin predicts reductions in overall P-loading from fertilizer bans:
    - Lake Wingra: 5%
    - Lake Mendota: 1%

- For Michigan, lawn fertilizer ban expected to reduce P loading to Huron River by about 22%

- Minnesota found 23% reduction in loading due to lawn fertilizer ban.

- From EPA "National Management Measures guidance to Control NPS Pollution from Urban Areas "

    - "One study in Marquette, Michigan indicated that nitrogen and phosphorus concentrations in runoff from lawns were five to ten times higher than runoff from other land uses (Schueler and Swann, 2000e)."

    - "Studies on the characteristics of urban lawns have shown that the soils are often compacted , increasing runoff to the point that it is comparable to runoff on some pavements (NCSCS, 2000)"

    - "The City of Austin .. commissioned Texas A&M to conduct a study of the potential effects of residential lawn care products on water quality in Stillhouse Spring... The study resulted in a reevaluation of recommended fertilization practices for citizens... advised to use low phosphate fertilizers (Provin, 2002)"

If you have any additional questions, please contact me at 444-7423, or gemathieus@mt.gov.