

# Dairy Nutrient Management Program Regulatory Framework Workgroup August 12, 2015

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## Study of the Existing Regulatory Infrastructure Within the Ground Water Management Area

Regulations applicable within the Lower Yakima Valley Ground Water Management Area are identified in the Ground Water Advisory Committee Applicable Regulation Spreadsheet. Representatives of the regulatory agencies responsible for administration of those regulations will be invited to a study session conducted by the Regulatory Framework Work Group of the GWAC in order to learn more about how the existing regulations address potential sources of nitrates to groundwater: what is working, what isn't working and how the regulations or implementation might be improved. The term "regulation" should be understood to mean "statute, regulation, or ordinance," as well as advisory guidance such as "best management practices." It is, of course, legally correct to distinguish between legislation, agency promulgated regulations, and agency-produced recommended behaviors. The more generic "regulations" is used here, however, so as to encourage consideration of the effectiveness of all the governmental management relevant to the groundwater contamination problem.

The following questions are intended to inform and stimulate the thinking of invited representatives in preparation for the study session. While we do not intend to go question by question with each presenter, we ask that presenters review the questions and be as prepared as possible to address them if asked.

1. Which specific regulation are you addressing? Provide the citation where it may be found. Identify the responsible agency personnel.

[RCW 90.64](#), the dairy nutrient management act (DNMA), with cross-over to [RCW 90.48](#), the water pollution control act.

[WAC 16-611](#), nutrient management (rule)

[RCW 43.05](#) Technical Assistance

WSDA DNMP Staff:

Virginia Prest, Program Manager;

Chery Sullivan, Compliance and Technical Specialist;

Dan McCarty, Eastern WA Region Inspector

2. What issue or problem is the regulation designed to solve? What activity does the regulation limit, regulate or control? How is that activity related to the potential for nitrate to be discharged to groundwater? Does the activity contribute to the increase or decline of groundwater contamination?

DNMA addresses water quality issues associated with dairy nutrient management. At the time that RCW 90.64 was enacted (1998) the primary issue of concern was surface water.

The program was transferred by the legislature in 2003 from Ecology to WSDA. At that time, the agencies were directed to work on two things:

- 1) delegating WSDA to provide oversight of the CAFO permit, and
- 2) WSDA authority to provide regulatory oversight for all confined animal feeding operations, not just dairies.

While agencies and stakeholders discussed this for several years, a decision to not continue in this direction was made when the 2006 CAFO permit required only facilities that discharged (to surface water) to obtain and retain a CAFO permit. The 2006 CAFO decision resulted in a greatly reduced number of permitted facilities.

RCW 90.64 was updated in 2009 to require records to demonstrate agronomic application, and the law was updated again in 2010 to provide for penalties for lack of recordkeeping.

All dairies with a grade “A” license are required to develop a nutrient management plan (NMP) that is approved and certified by local conservation district. The elements contained in the NMP are developed by the WA State Conservation Commission.

The primary elements required in a nutrient management plan include a suite of best management practices that meet NRCS practice standards regarding:

- 1) Collection, conveyance and storage of dairy nutrients and process waste water (nutrients) (i.e. milk house, silage, etc), and
- 2) Land applications of all nutrients to prevent discharge to waters of the state including timing, locations and amount (agronomic applications).
- 3) The agronomic application of nutrients decreases the potential for pollutants (nutrients and pathogens) move to surface and ground water.

3. How does the regulation work, i.e., through licensing, registration, standard setting, recommendation of best management practices, reporting, technology, performance monitoring, planning, funding, other approach?

All grade “A” licensed dairies must:

- a. register with DNMP (\$100 penalty for failure to register)
- b. develop a Nutrient Management Plan (NMP) that is approved and certified by the local conservation district (penalties assessed at \$100 per month to a maximum of \$5000)
- c. not discharge to waters of the state (penalties assessed up to \$10,000 per violation per day, matrix in WAC 16-611)
- d. maintain the last five years-worth of required records to demonstrate agronomic application of nutrients (penalties assessed up to \$5000 annually, matrix in WAC 16-611)

NMP standards are set by WA State Conservation Commission

Local conservation districts approve and certify NMP; most of the plans are also developed by local district as well.

WSDA’s DNMP must:

- a. Inspect dairies – Currently we conduct routine inspections every 18 to 22 months in addition to focused inspections (lagoon assessments, in-depth recordkeeping, follow ups) which results in most dairies inspected annually (this does not include investigations).
- b. Monitor development of NMP
- c. Investigate WQ complaints and violations
- d. Maintain a database
- e. Maintain a penalty grant account to be used for education and research to help dairies

4. What metrics does the agency use to measure whether the regulation is effective in reducing nitrate concentrations in groundwater? What means are used to apply those metrics, e.g. inspection programs, monitoring reports, field samples? What data is available reflecting the application of those metrics?

- a. Routine inspections and investigations review required records to determine if nutrients were applied at agronomic levels. Nutrients applied at agronomic rates should be protective of groundwater. DNMP does not have a groundwater monitoring component.
- b. Three of the last five years-worth of soil sample results must show soil nitrate levels below 45 ppm. If above 45 ppm, DNMP will initiate a compliance action.
- c. Records of inspection reports and compliance actions demonstrate the application of 90.64 RCW and 16-611 WAC.

5. What does the agency do to inform the regulated community or the public of the existence of the regulation? What is the agency doing to make it easier for the public to contact the agency (ensure that it is accessible) in order to learn what to do about groundwater contamination? How much has education of the regulated community improved regulatory effectiveness? How is this measured?
- When notified by Food Safety of a new dairy, DNMP notifies dairy of requirement to register, to develop NMP, and of recordkeeping requirements.
  - Maintain a public website, attend public meetings, participate in stakeholder groups, respond to public requests for information
  - Program Effectiveness - Statewide
    - Report quarterly to OFM - Percent of licensed dairy farms and permitted concentrated animal feeding operations (CAFO's) in compliance with their Nutrient Management Plan – Target is 90% for state based Enforcement actions and inspections

<i>Statewide QTR End Date</i>	<i>Target 90% Actual</i>	<i>Percent of dairies and permitted CAFOs in compliance with NMP. (24 month rolling average= Compliance/RT Inspections) Compliance actions/RT Inspections (penalties, notices, orders)</i>	
6/30/2015	<b>94%</b>	394 RT Inspections	
3/31/2015	<b>89%</b>	461 RT Inspections	
12/31/2014	<b>86%</b>	409 RT Inspections	
9/30/2014	<b>87%</b>	447 RT Inspections	
6/30/2014	<b>87%</b>	436 RT Inspections	
3/31/2014	<b>95%</b>	431 RT Inspections	
12/31/2013	<b>91%</b>	551 RT Inspections	
9/30/2013	<b>88%</b>	422 RT Inspections	

- Effectiveness of Agronomy and Recordkeeping
  - Steady increase in compliance. In 2004 approximately 45% maintained **any** records.
  - Recordkeeping required in statute beginning July 2009 but recordkeeping requirements not specified in WAC (rule) until Oct 2012
  - Recent review of inspection report data show an **increase to 92% compliance meeting soil test levels lower than 45 ppm**. Producers have asked for us to develop some recordkeeping forms and to provide training in topics that range from agronomic rate calculation, irrigation water management, how to interpret a soil sample, etc...
    - Two well attended workshops were conducted in January 2015, largely paid for by DNMP Penalty grant funds. Attendees (mostly dairy producers) asked for more training.

	<i>NMP Acres</i>	<i>Actual Acres</i>	<i>Soil N &gt;45ppm</i>	<i>Acres need attention</i>	<i>Comments</i>
<b>2014/15</b>	18,604	21,561(↑16%)	1616	7.5%	
<b>2012/13</b>	19,420	25,596(↑31%)	3143	12.3%	Acreage acquisition, some with elevated soil nitrate levels
<b>2010/11</b>	15,693	14,637(↓7%)	445	3%	Records required as of 2009

6. Is the regulatory activity coordinated or integrated with that of other agencies? Does it conflict with any other agency's requirements? Where coordination, integration or assistance from other agencies' programs are important, has that been forthcoming? Was it helpful? If not, why not?
- WSDA works with its sister agencies, Ecology, WSCC, and DOH, to develop strategies to and identify gaps in authorities. While DNMP implements the DNMA, we coordinate with Ecology through guidance of MOU.
  - WSDA also coordinates with EPA to conduct inspections, primarily in north Puget Sound counties.
  - WSDA's implementation of the DNMA does not conflict with Ecology's requirements.
  - Ecology reviews recommendations for enforcement in case involving a discharge to surface waters.
  - Relationships with Ecology are generally good, particularly in the regional offices.
  - DNMP has assisted ECY in work with non-dairy producers, primarily in North Puget Sound counties.
7. Does the general authorizing statute of the agency provide any overarching or guiding principles or purposes that are incorporated within the regulatory approach taken by those responsible for administering the regulations? If so, what are they?
- a. RCW 43.23 does not clearly address the regulation of water quality issues.
8. Would the regulation be more effective if administered by a different agency?
- a. No
- WSDA has the expertise to assist dairy producers and non-dairy producers to meet the water quality regulatory requirements. DNMP can not only point out what the issue is but also provide teach the why and the how to fix.
- DNMP has consistently taken a proactive approach with the dairy industry and progress has continued as is evident by compliance data.
- In the last 5 years, markets have increased the use of manure to meet nutrient needs and improve soil health in many cropping systems including tree fruit, grape and organic crop production. Manure and manure products provide N,P,K nutrients and trace/micro nutrients. Manure and manure products build organic matter, increase soil and water holding capacities, decrease water input needs and increase water conservation.
9. How much voluntary compliance with the regulation occurs? If the regulation is advisory, as with recommendation of best management practices, how is voluntary compliance measured or monitored?
- a. Although it is required for everyone to protect surface and ground water, the majority of compliance with water quality regulations is voluntary.
- b. Dairy operations are the only industry that is required by statute to develop a nutrient management plan and maintain records to demonstrate agronomic applications.
- c. The regulation is both advisory, requiring dairies to adhere to best management practices, and directive, requiring dairies to prevent discharges to waters of the state, and to have a certified and updated nutrient management plan that provides best management practice (NRCS practice standards) to meet the requirements of RCW 90.64.

10. What reasons are given by those who do not comply? Standard set too high/unachievable? Regulation too complex/not understandable? Rapidly changing regulatory environment? Time needed to realize compliance? Necessary technology not available? Economic infeasibility? Money management/availability (grants/funding)? Opposition to governmental interference? Opportunism/assessment of risk of enforcement? Regulatory aggressiveness?
- a. Accidental, unintentional, equipment failure, ignorance of the laws, rules, and BMPs, economics, opportunities missed, aging infrastructure, shrinking land application acreage
11. Are you aware of examples of enforcement actions taken within the GWMA that have reduced nitrate levels in groundwater? Which agency was involved and when did they occur? Is it possible to quantify those reductions?
- a. Enforcement actions taken within the GWMA include:
    - i. Warning letter for nutrient balance
    - ii. Notice of Correction for nutrient balance
    - iii. Notice of Correction for recordkeeping
    - iv. Notice of Penalty for recordkeeping

See tables with Yakima County data towards end of document
  - b. WSDA issues compliance actions and provides copies to Ecology, EPA, and the local conservation districts.
  - c. The program's goal is to reduce the source of pollution by requiring nitrate losses below the root zone to be minimized and prevented. **Additional data is provided in the table under Question 5 that shows an increase in acreage overall and a reduction in acreage that have soil test levels in excess of 45 ppm (~160#/A) (less than 8% in the last two years, down from 12% the previous two years).** As this trend continues, the potential for negative impacts from land application of dairy nutrients to groundwater will continue to decline.
    - i. Changes to RCW 90.64 in 2009 to require recordkeeping to demonstrate agronomic applications were a major step taken by the dairy industry and the legislature toward our goal to reduce nitrate levels in groundwater.
    - ii. Recordkeeping requirements were finalized in rule (WAC 16-611) in Oct 2012.
12. Are you aware of examples where education, outreach or enforcement actions within the GWMA have had positive or persuasive influence on other members of the regulated community resulting in greater voluntary compliance? Is it possible to quantify that greater voluntary compliance? Which approach has the most positive results?
- a. In January, 2015, education was provided to approximately 50 people, including dairy producers and their key staff, regarding agronomy and recordkeeping.
  - b. Recently dairy producers asked for additional information regarding their recordkeeping requirements.
  - c. Dairy producers are participating in DSSP through GWMA.
  - d. The 2015 budget includes additional money to DNMP for the next biennium to increase inspections, provide additional educational opportunities for all farmers and evaluate existing regulatory requires to identify gaps. See additional information in the section regarding the 2015 Proviso.

13. Does compliance differ in different subareas or different subgroups within the GWMA? If so, why?
  - a. Yes. Most producers are complying with the requirements of the DNMA and following their NMP, however a small percentage does not. This percentage continues to shrink. In many cases, they tell us they did not know that their actions were negatively impacting water quality, so DNMP has had to do a much better job of using the tools we have available including education, technical assistance, and taking consistent and timely enforcement actions.
14. Were existing practices or facilities permitted to continue when the regulation was adopted? If so, do the continuing facilities or practices represent a significant potential source of nitrates?
  - a. Some NRCS practices are “grandfathered” in which may not be as protective of the groundwater as current practices.
  - b. Generally, I don’t believe the continued practices represent a significant potential source of nitrates.
15. Does the regulation establish penalties for non-performance?
  - a. Yes, for discharge to waters of the state (generally surface water) and lack of recordkeeping
16. What is the litigative exposure of parties that do not comply with the regulation?
  - a. It depends...litigation happens.
17. Does the regulation use any complaint or notice process to cause the agency to take action?
  - a. Yes, complaints via public to DNMP are one way to trigger an investigation, as are complaints received through Ecology’s Environmental Report Tracking System.
18. What course of action does the agency take when made aware of cases where the regulation is not being followed?
  - a. DNMP conducts inspections and investigations. If an issue is identified, our path is as follows:
    - i. Regulatory technical assistance
    - ii. Warning Letter
    - iii. Notice of Correction
    - iv. Notice of Penalty (Administrative Order is also possible, but infrequently used)
19. Does the regulation identify a method to prioritize agency actions in responding to cases where the regulation is not being followed? How does the agency prioritize its response if the regulation does not identify a method?
  - a. Yes, see compliance path above. If a discharge occurs, WSDA *could* go straight to formal enforcement (Penalty or Order) if it meets the criteria as outlined in [RCW 43.05](#).
20. How far is it between the agency or its personnel and the GWMA? Does the physical distance affect the ability of personnel within the agency to be “in the field,” to be aware of public concern within the area, to know the regulated community, to understand the difficulty of compliance with the statute or regulation?
  - a. DNMP has a field inspector located in Yakima.

21. What level of education, training or special knowledge is necessary to implement the agency's regulatory authority?
  - a. Bachelor's Degree involving a major study in environmental, physical or one of the other natural sciences, environmental planning or other allied field, and two years of professional level experience in environmental analysis. Understand and be able to clearly communicate the rules and regulations associated with the position. Collect, analyze, evaluate, and interpret data.
22. Is the current organization or management of the agency structured to enhance administration of the regulation?
  - a. Generally yes.
23. How is the regulatory activity funded? Is it certain and predictable (e.g., tax revenue) or unpredictable (e.g., legislative appropriation)?
  - a. General fund
  - b. It is predictable
24. Is the agency fully capable, due to availability of personnel, training or funding, to respond in cases when the regulation is implicated? If not, what additional personnel, training or funding are needed? If additional personnel or funding were available what would the agency do that it is not now doing?
  - a. The DNMP has 5 FTEs including 1 program manager and 4 inspectors. 1 FTE is assigned to conduct inspections and investigations east of the Cascades. The program can and does respond to discharges to surface waters.
  - b. Issues around agronomic application of nutrients are generally identified during routine inspections and record reviews. When adequate records are not available, it is difficult to determine if the applications are at or below crop needs. **It is a slow process, but good progress has been made in keeping records from less than 45% in 2004 to its current level of 82%.** The biggest increases have come after the program identified what records are required to determine agronomic applications in WAC 16-611 in late 2012.
  - c. Agricultural producers who apply nutrients would benefit from a better understanding of how nutrients impact water quality; this could be provided by additional education or they could work with professionals with agronomy expertise.
  - d. Agricultural producers could benefit from online recordkeeping tools and programs to track and calculate agronomic applications.
  - e. Additional DNMP staff could increase oversight and provide additional regulatory technical assistance to dairies. The agency would benefit from additional funding for database development to track information.
25. Does the regulation provide incentives or disincentives to induce preferred performance?
  - a. It depends on your point of view. A penalty is a negative incentive, but sometimes effective at inducing preferred performance.
26. Has the regulation caused opposition or dissatisfaction within the regulated community?
  - a. Yes, some in the regulated community have expressed their frustration about being singled out as an industry. It is well accepted that a molecule of nitrogen is a molecule of



- nitrogen, regardless of source (out of the back end of a cow or a bag of commercial fertilizer), but dairy producers continue to be the only agricultural producers that are required to be accountable for their nutrient applications.
27. Does the regulation cause economic dislocation in the GWMA community? To the regulated parties? To others?
    - a. Not as it currently stands.
  28. Does the agency currently contemplate any alterations to the regulation?
    - a. Yes, several strategies are being evaluated:
      - i. Improvements to RCW 90.64 to include requirements to follow NMP, specifically regarding lagoon operation and maintenance, requirements to apply all nutrient at the right time, in the right place, and in the right amount to prevent discharges to surface water and to minimize impacts to ground water with penalty for lack of compliance.
      - ii. Improvements to WAC 16-611 to include additional requirements including deeper soil sampling, additional soil testing parameters, and extended weather recordkeeping requirements.
      - iii. Providing additional education opportunities and tools to help producers make more informed decisions regarding land applications of nutrients to ensure they do not exceed crop needs.
  29. Is the regulation current? Is it adequate to address the problem it was designed to solve? If not, do you have any ideas on how it could be changed to be more effective or to improve compliance, e.g. modification of standard, modification of penalty, etc.?
    - a. The regulation could be improved to address all nutrient applications on all fertilized crop land.
  30. Are you aware of regulatory or non-regulatory approaches utilized in other areas with similar problems that could be utilized in this GWMA?
    - a. There are many states looking at a wide variety of strategies to reduce the negative impacts of over-applications of nutrients.
  31. Are you aware of proponents for alternative regulatory or non-regulatory approaches, including the development of public infrastructure, that would address the same problem or the same regulated community? Who are they? What alternatives do they recommend? Do you agree with the recommendations, or do you have other ideas for alternative regulatory or non-regulatory approaches to achieve better results?

## Inspection/Compliance Yakima County

### Path to Compliance

Potential to Pollute      Warning Letter→Notices→Penalty for recordkeeping only  
 Discharge, Surface              Notices→Penalty for discharge

### Last 5 years (July 1, 2010 through June 30, 2015) Yakima County Data

<b>Inspections</b>	Routine	167	
	Follow-up	10	
	Investigations	50	
	Focused (lagoon, etc)	47	
	<b>Total</b>	<b>274</b>	
<b>Compliance</b>	Penalties	4	1 AMM 3 LARK
	Notices	19	1 AMM 7 LARK 7 LAFC/NB 3 LS/CS 1 MT
	Warning Letters	45	1 AMM 26 LARK, 16 LAFC/NB 2 LS/CS
	<b>Total</b>	<b>65</b>	35 producers, primarily regarding recordkeeping  15 producers with more than 1 compliance actions

AA: Animal Access	0
AD: Access Denied	0
AMM: Animal Mortality Management	3
LS: Lagoon Storage/CS: Collection System	5
LAFC: Land Application: Field Conditions/Nutrient Balance	23
LARK: Land Application: Recordkeeping	36
MT: Manure Transport Issues	1

## Budget Update – Proviso 2015 Budget

The proviso made it through the budget process. Below is the language with **tasks highlighted**  
My notes and dates are in red.

- **\$575,000** of the state toxics control account—state appropriation is provided **solely to implement a nutrient management training program for farmers that provides training in agronomic application of dairy nutrients**, as defined in RCW 90.64.010. The department shall **develop an accreditation process to track completion of training by individuals who apply manure**. The department shall also **offer to willing farms to review agronomic application of dairy nutrients**, as defined in RCW 90.64.010, used in crop production, including **when, where, and how much manure to apply to meet crop nutrient requirements and to protect waters of the state**.
  - These funds may also be used to **increase inspection activities in watersheds, including those areas with impaired surface or ground water impairment**. *DNMP plans to fill the two temporary positions, one to be housed in Lynden and one will be housed in Yakima. Expect to be completed by September 15, 2015*
- **The department in consultation with interested stakeholders shall identify gaps** in the manure management program, including existing rules and statutory language, and report on a strategy to address those gaps. *The department will develop and begin a process to discuss gaps. To be included in discussion. To be included:*
  - WSCC – Jan 2016 meeting?
  - Ag & Water Quality Committee – September 29 Yakima ?
  - WADF Annual Meeting Nov 9-11 Wenatchee
  - Farm Bureau (prefers to engage in already established committees like Ag & WQ)
  - Far West Agribusiness
  - Whatcom Clean Water/Portage Bay Shellfish
  - Lower Yakima GWMA
  - WACD, Whatcom, Skagit, Snohomish, Yakima, Othello, and Franklin County Conservation Districts
  - Commodity groups – Wheat Growers, Wine Grape Growers, Tree Fruit Growers, Hop Growers, Vegetable Growers, Berry Growers
  - Tribes: Lummi, Nooksack, Yakima, Samish, NWIFC
  - Environmental stakeholders: Shellfish Coordination group, PSP, PugetSoud Keepers, People for Puget Sound, WA Environmental Council, CARE, Friends of Toppenish Creek

**Expected start date: October 2015**  
**Completion date: December 2016**  
**Report to Legislators: June 2017**
- This program shall be a two-year pilot and the **department shall report to the governor and the legislature** by December 31, 2015, June 30, 2016, and on June 30, 2017, on the level of participation and results of the program.

**Report to Legislators: Formally Dec 2015, June 2016 and June 2017**  
**Will report quarterly to Senate and House AG committees, Governors policy office**
- **In developing the curriculum for agronomic education and certification programs, the department will provide opportunity for input from interested parties** including: Washington State University, state conservation commission, department of ecology, conservation district staff, representatives from agricultural, livestock, and crop organizations, environmental organizations, tribal government representatives, and certified crop advisers. *There is approximately \$75K per fiscal year. Initial suggestions for curriculum below. Input will be sought from*
  - WSU: Joe Harrison, Troy Peters✓, others

- Technical assistance providers: Commission, local conservation districts✓, private consultants
- Manure brokers and 3<sup>rd</sup> party land applicators
- Farm Bureau, Far West Agribusiness✓
- Commodity groups – WA Dairy Federation✓, Cattlemans, CattleFeeders, Wheat Growers, Wine Grape Growers, Tree Fruit Growers, Hop Growers, Vegetable Growers
- Tribes: Lummi, Nooksack, Yakima, Samish, NWIFC
- Environmental stakeholders: Shellfish Coordination group, PSP, PugetSound Keepers, People for Puget Sound, WA Environmental Council, CARE, Friends of Toppenish Creek

**Expected start date: Discussions regarding curriculum July 2015; Solicit grant proposals Oct 2015 and again Oct 2016, First year of training sessions Jan – April 2016, Second year training sessions Jan – April 2017**

#### Curriculum

1. *Agronomic rate - What do I need to calculate? Crop needs? What is available in the soil? How much is available in the manure? How do you calculate?*
2. *Agronomic rate - Equipment calibration*
3. *Agronomic rate - Soil testing protocols, manure testing protocols*
4. *Irrigation - scheduling methods, irrigation system calibrations, nozzles, eT/soil water measurements, scheduling, records*
5. *Weather – forecast*
6. *Setbacks –*
7. *Risk analysis*
8. *Recordkeeping*
9. *? Feed Management*
10. *Manure separation strategies*
11. *CAFO Permit*

## **DNMP – Implementation Progression (Timelines)**

### **1998**

Act establishing program requiring nutrient management plans to be developed, approved and certified, establishing NRCS practice standards as the default technical standards and requiring inspections. Compliance is performance based so field enforcement is tied to having a discharge.

### **1998-99**

Conservation Commission established 20 minimum elements required for the plans to be approved. Elements included both infrastructure and management elements to protect both surface and groundwater.

### **1999- July 2002** CD and NRCS: Plan development and approval required

- Infrastructure investment by state and NRCS: State funding provided to conservation districts to develop the plans and for cost share to dairies to implement the plans. Implementation included construction or improvements of infrastructure for manure collection and storage in lagoons, concrete pads and curbing to contain contaminated water, gutters and downspouts to keep clean water clean, pumps and irrigation equipment.
- Planning and various calculations were done to balance and properly manage nutrient storage capacity and proper applications on land managed by the dairies. Generally, implementation of agronomic management practices was postponed while focus was on getting infrastructure in place.

### **1998-July 2002** Ecology inspections, compliance and CAFO permit

- Up to 7 inspectors located in Yakima, Lacey, Bellevue and Bellingham spent some part of their time on systematic inspections of dairies, identifying and documenting surface water quality issues from facilities and fields.
- Close to 100 dairies had documented discharges and were put under the Dairy General CAFO permit which required full implementation of their dairy nutrient management plan.
- As infrastructure improvements were constructed and most plans were completed.

### **July 2002-Dec. 2003** Plan certification (implementation) required

- Implementation requires ongoing facility management and agronomic applications. Districts and NRCS continued with infrastructure improvements and worked to some extent with operators on soil and manure testing, cropping, application methods and timing to ensure agronomic applications.
- Compliance continued to focus on surface water impacts.
- Ecology tracked plan approvals and certification.

### **July 2003**

- Program shifted to WSDA with half the inspection resources (2 ½ inspectors).
- Initial program organization was slow but in place by spring 2004 and fully functional by July 2004.
  - WSDA led meetings and discussions of the Development and Oversight Committee (DOC) and sub-committees on state livestock and CAFO program elements, including compliance with water quality standards surface and ground, technical standards and regulatory requirements to meet EPA delegation requirements.

### **2004** WSDA implementation

- WSDA staff looked closely at records and discussed with operators the need to keep and use them. Inspectors identified need for operators to have good direction on soil and manure testing. They noted informally that maybe only 15% were keeping and using records to manage agronomic applications.

- Program determined that 2 ½ inspectors was insufficient to cover all of Puget Sound and Whatcom. Consequently staff coordinated with industry leaders and other stakeholders in order to get funding for additional Puget Sound inspector.
  - Ecology begins new CAFO permit development and includes groundwater monitoring, Ecology negotiated with stakeholders to drop monitoring wells from the permit, to include an element focused on lagoons for potential leaking and to increase emphasis on records under the permit. Ecology agreed to put more emphasis on groundwater in Whatcom and Yakima.
  - DOC meetings continued and draft legislation was developed expanding dairy act to all livestock Animal Feeding Operations, outlining CAFO program to be consistent with federal program and incorporating necessary authority for WSDA.

#### **2005 WSDA program development**

- Developed fact sheet for operators on soil and manure testing in cooperation with other technical staff from WSU, Ecology, NRCS and CDs.
- Program implementation issues raised by inspectors:
  1. Some plans were not very detailed, difficult for operators to use or did not seem to adequately address WQ issues at operations. Discussions with operators and CD planners did result in some improvements.
  2. Identified state limitation to require ongoing DNMP implementation once certification was achieved, and need to update plans as operations changed. Determined state did not have authority to write rules to improve situation.
  3. Lagoon management issues resulted in ‘emergency’ need for winter applications to protect integrity of lagoons.
  4. 3<sup>rd</sup> party applicators noted as not getting the same message on agronomic applications and field conditions. Did some communication with them on a case by case basis.
  5. Lack of authority to gain access to a dairy site if access was denied
- Fall 2005 – Lagoon sweeps started this and every fall to check lagoon management and capacity going into winter, primarily in North Puget Sound counties.
- Groundwater nitrate issues in Lower Yakima were raised through complaints on condition of some private wells. WSDA organized some meetings among Ecology, WSDA and local Health with minimal outcomes for homeowner involved.
  - DOC legislative compromise negotiated out but smaller targeted bill was passed
  - EPA CAFO rule court decision limited permits to facilities with actual discharges

#### **2006 Expanded technical assistance role**

- Initiated ‘Inter-agency Livestock Technical Assistance Committee’ with cross agency representation. Over two years group assisted Ecology in identifying process to evaluate CAFO lagoons for possible leakage, developed a Technical Assistance Referral process and form for WSDA to use with Conservation Districts and further discussed soil and manure testing and use of data to make management decisions on crop applications.
- Soil test data use: Due to variability in soil testing results, determination was to look at data from at least 3 years to get sense of trend. Soil test trigger numbers were set at: 45ppm N as needing attention to reduce levels, used 30 ppm as a level of concern; 100 ppm P for Eastern WA and 120ppm P for Western WA as the level requiring attention. These levels became regular part of inspection discussions when records were reviewed.

- Expanded DOC discussed state livestock program and WSDA delegation in terms of the federal court decision. After starting all over with a new statute, decision was made to go forward with a split state program that had Ecology responsible for the permit and non-dairy AFOs and WSDA responsible for the dairy program

## **2007**

- Staff noted seeing soil N and P levels dropping at some sites, comments made by some dairy operators that they realized they did not need to buy any or as much fertilizer

## **2008**

- After a series of compliance actions related to poor management of silage, staff worked with other partners to develop a fact sheet on the WQ impacts of silage leachate and better management.
- Discussed with dairy industry the need for record keeping in order to ensure operators have the tools to make agronomic applications.
- WSDA began discussions with Ecology on updating the MOU
  - Oct 2008 Yakima Herald series on groundwater prompted new discussions with dairy industry on groundwater protection and importance of records and agronomic applications
  - DOC sunset

## **2009**

- Legislation passed amending statute to establish warrant authority to access dairies and all records and making it a violation of the statute to not keep records required to show agronomic applications.
- Fact sheet on new records requirement developed and mailed to all dairies.
- WSDA held livestock stakeholder meeting with some discussion regarding implementation of the split livestock program.
- New MOU with Ecology was finally completed and signed
- WSDA began developing records rule to define required records and establish a penalty matrix and worked with local state and federal technical staff on language and approach.
  - Meetings among state and local agencies and public held discussing the groundwater issues in Lower Yakima Valley.
  - WSDA volunteered to pull together initial overview of what was then known about the valley ground water and uses.
  - 3 years of annual reports from permitted CAFOs confirmed there were high nitrate levels at some dairy facilities
  - Ecology initiated effort to move dairy program back to Ecology (Natural Resource Reset)
- Changed program name from 'Livestock Nutrient' to 'Dairy Nutrient' to reflect statutory program focus on dairies
- Range rules to be used during public disclosure process were finalized and adopted as required by RCWs 43.17, 42.56, and 34.05.

## **2010 Program constraints, compliance issues and best management practices**

- A summary of statutory constraints on program effectiveness was developed in preparation for legislative discussions
- Legislation amended statute to establish penalty for records violation and the Natural Resources Reset effort to move the program was dropped

- As a part of cross agency discussions regarding the dairy program and possible improvements, program enforcement actions were analyzed. Nine main categories of compliance issues were identified. Four related to field applications three related to facility infrastructure, one for animal access to surface water and one for problems with nutrient management plan. Applications made with improper field conditions were the single most common problem.
- After a series of compliance actions related to improperly managed filter strips, staff worked with other agency technical staff to develop a fact sheet on proper conditions and use to be effective for both surface and ground water protection.
- Worked with Ecology and NRCS on Bartelheimer lagoon failure in Snohomish Co.
- Worked with stakeholders on Samish River Watershed bacteria issues.
- Participated in various discussions regarding Best Management Practices to protect water quality triggered in part by Ecology's riparian manual
  - Ecology issued compliance order to several permitted dairies with high nitrates
  - Puget Sound funding by EPA to address nutrients and bacteria among other items – discussion among agencies on nutrient management
  - EPA carried out extensive groundwater and source sampling as part of effort to better inform groundwater protection efforts in Lower Yakima Valley

## 2011

- Expanded activity in Samish Watershed to include some non-dairy work to support Ecology and County in response to Governor's directive to make better progress.
- WSDA coordinated with Ecology on review of NRCS lagoon assessment tool developed partly in response to Bartelheimer failure and partly due to aging of early lagoons. Later signed a grant contract with NRCS to use the tool to do lagoon assessments in Puget Sound. Assessment discussions included concerns over difficulty to evaluate groundwater impact of existing structures.
- Completed draft records and penalty rule revised after input from technical and dairy stakeholders but held back to resolve certain issues with Ecology regarding the penalty matrix
  - 3DT talks rise out of BMP discussions, coordination opportunities regarding Samish work, MOA development between Skagit CD and Ecology and communication issues around the [Ecology and WSDA MOU](#)

## 2012 Lagoon assessment focus

- Mar- Dec – Lagoon assessments conducted in North Puget Sound counties to field test lagoon assessment process for NRCS
- Sep-Dec - 3DT committee work to evaluate the technical and policy gaps to prevent negative impacts from land applications of manure (WSCC, ECY, WSDA)
- Oct – [WAC 16-611 Nutrient Management](#) finalized