Rule Analysis
Fiscal Impacts of Proposed Rules 15A NCAC 02T .1310-.1311

Environmental Management Commission
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Impacts are expected to reach both private industry and state government.

Program Description
The animal waste management program involves the permitting of waste management systems for animal feeding operations. The animal waste management program was created in 1993 with the modification of 15A NCAC 02H .0217(a). This rule was updated in 2006 and 2008 with 15A NCAC 02T .1300. The permitting requirements have also been ratified in the general statutes. There are two main types of permits within the program, State non-discharge permits and federal NPDES non-discharge permits. Nearly all affected parties are currently covered by a general state or federal permit, with a small number covered by individual permits. According to the Division of Water Quality's (Division) database, there are 2,486 permitted animal feeding operations in the state. These proposed rules would affect the 2,185 animal feeding operations in the ten watersheds specified in 15A NCAC 02T .1311(c), as well as any new or expanding operations throughout the state.

Program Description
The farms currently permitted under the general permits use a lagoon/waste storage pond and spray field system. Waste from the confinement area is flushed into the lagoon. The waste is stored in the lagoon or storage pond, and then applied onto land for use as a fertilizer. In 1997, a moratorium was passed that prohibited the construction of a new or expanding swine farm that used a lagoon and spray field system.

The total number of permitted operations has remained fairly static over the last five years due to the moratorium, and has actually decreased slightly due to farm closures. Session Law 2007-523 made the prohibition on lagoons for new or expanding swine farms permanent. It does allow new or expanded swine farms that do not use lagoons, provided that the farm meets the performance standards of 15A NCAC 02T .1307.

<u>Description of Proposed Rules</u>
In September and October 2007, the Waterkeeper Alliance filed Petitions for Rulemaking with the Environmental Management Commission (EMC). At the May 2008 meeting, the EMC approved the petitions and directed the Division to conduct stakeholder meetings and to develop a proposed rule based on the stakeholder input. Four stakeholder meetings were conducted, with stakeholders representing industry, environmental groups, university staff, and other state and federal agencies.

Based on stakeholder input and the two petitions, the Division has developed proposed rules 15A NCAC 02T .1310-.1311. The EMC voted to send the proposed rules to the public comment process at the November 13, 2008 meeting.

The rationale for submission of the Rulemaking Petitions is summarized below:

- "There is considerable evidence that discharges of swine waste pollutants from the tile drain outlets occur regularly, often in dry weather following the application of liquefied waste to crop fields, and have significantly detrimental effect on the quality of North Carolina's streams and rivers."
- "Without requirements to inspect and monitor these discharge points before, during, immediately after land application, neither the facility operator nor DWQ has any assurances that the discharge prohibition is being achieved on a facility by facility basis. As a result, it is impossible to verify that discharges of swine waste have been effectively prevented from entering waters of the State, with attendant negative impacts on water quality."

Rule .1310(a) addresses visual observations that the farm owners (or Operators in Charge) will conduct, as well as required sampling if an unpermitted discharge is discovered. If an unpermitted discharge is discovered, sampling of the discharge will be required. Six (6) parameters would be sampled; 5-day Biochemical Oxygen Demand (BOD_5), Total Kjeldahl Nitrogen (TKN), Ammonia Nitrogen (NH_3-N), Nitrate Nitrogen (NO_3-N), Fecal Coliform, and Chloride.

For facilities with known subsurface drains, this rule also calls for visual observations of drain outlets during all land application events to check for the presence of waste. The rule also calls for observation of drain tile outlets once per year after a land application event and once after a subsequent rainfall event. If waste is observed, the sampling requirements above would apply.

Rule .1310(b) addresses the routine surface water sampling plan requirements. Under the proposed rules, the Division would select up to three monitoring locations per farm site. One location will be upstream, to give an indication of background conditions. Two locations will be located at or near the downstream property boundary of the farm site. There are several advantages to the Division selecting monitoring sites. First, the farm owner will not need to hire a consultant to help with selection. Second, each farm is inspected annually by the Division. The inspectors can work with central office staff to help select sites that are useful and easily accessible for the person collecting samples. There are situations where a farm site may not be required to sample from three locations. Factors influencing this decision include topography, proximity to surface waters, and land application practices.

Samples will be collected three times per year, to account for different weather patterns and land application practices. Five parameters will be collected; Ammonia Nitrogen (NH_3-N), Nitrate Nitrogen (NO_3-N), 5-day Biochemical Oxygen Demand (BOD_5), Fecal Coliform, and Chloride.

Rule .1310(c) allows for the formation of monitoring coalitions, similar to those used in the NPDES discharge program. This would allow groups of nearby farms to join together to identify monitoring sites. Monitoring coalition plans would be approved by the Division, and if a farm dropped out of the coalition, it would revert to the requirements of .1310(b). In general, Monitoring Coalitions will not save the farm owner any money. They will take the sampling out of the farm owner's hands, as Coalitions typically contract the sampling duties out to a certified lab.

Rule .1310(d) establishes in Rule the Division's groundwater monitoring policy. The Division has had a written policy for groundwater monitoring at animal feeding operations in place since 2002. The proposed rule is essentially a reflection of the written policy.

Rule .1311 establishes a schedule for implementation of Rule .1310. The monitoring requirements of .1310(b) would be immediate for any new or expanding animal operation in the State. For existing facilities, .1311(c) establishes an order in which facilities will have to implement a monitoring plan. The proposed schedule starts with the Neuse, then the Tar-Pam and White Oak river basins. These basins currently have identified impairment due to nutrients. Other basins included are the Cape Fear, Chowan, Lumber, Roanoke, and Pasquotank. The rule allows the basin order to be changed or added on to if additional river basins have future issues with nutrients. The rule also allows for individual facilities to be required to institute a monitoring plan out of the basin order on a case-by-case basis. This would be done only for facilities with on-going compliance issues.

Why is the Regulatory Proposal Needed?

These proposed rules are the result of petitions for rulemaking filed in accordance with G.S. 150B-20(a) of the Administrative Procedures Act by the Waterkeepers Alliance in September and October 2007. The EMC approved the petition in May 2008 and directed the Division to develop rule language utilizing the stakeholder process.

After four stakeholder meetings, a proposed rule has been developed. In November 2008, the Division received approval from the EMC to proceed to the public comment process.

Affected Parties

These proposed rules are anticipated to affect owners of permitted animal feeding operations in North Carolina that are in the ten watersheds listed in rule 15A NCAC 02T .1310(c). Any new or expanding animal feeding operations, regardless of location, will also be affected by the rule.

An economic impact is also expected for state agencies that operate animal feeding operations. A total of twelve operations are currently owned by one of three state agencies or departments. No economic impact is expected for local governments or other private citizens.

Basic Economic Impact

Baseline / Assumptions

The total number of animal feeding operations in the targeted watersheds is 2,185 including twelve facilities owned by state agencies. The rules call for up to three sampling locations per farm site to be sampled three times per year. Some permitted facilities may have more than one farm site – these would be larger complexes that may cover large areas and may drain to more than one hydrologic feature. These facilities may then have more than three sampling locations. Also, some facilities may require less than three sampling locations, depending on topography and proximity to surface waters.

The Division will develop monitoring plans for each facility and determine the number of facilities that require additional sampling sites or require a reduction in sampling sites. For the purpose of estimating economic impact, it is assumed that each of the 2,185 permitted facilities will sample for five parameters at three locations, three times per year. All 2,185 farms will not be implementing monitoring plans at the same time. For the purpose of this fiscal evaluation, the Division is assuming that plans will be developed for twenty percent of the farms per year for five years. As a result, it will take five years to reach the full fiscal impact of the rule.

Methodology to estimate routine monitoring costs:

The Division conducted a survey of ten state certified laboratories to determine sampling and analysis costs. The laboratories queried are all located in the watersheds affected by the rule. Appendix A shows the laboratory cost data. The greatest variability exists in the costs for sample pick-up and sample collection costs. Costs for these services depend greatly on the travel distance and the ability to have sample pick-up occur on a route versus a separate dedicated trip.

Laboratories will typically ship the sample bottles, preservative, and a cooler to the facility owner ahead of time. The owner would then coordinate with the laboratory to schedule a pick-up time. Samples would be taken on the scheduled day, preserved, placed in the cooler with ice, and the lab would pick them up. For an additional fee, most laboratories will also perform the sampling themselves if desired by the farm owner.

Average analysis costs of $21.57 per constituent and an estimated $100 collection fee per farm per sampling event were used. With five parameters per sample location proposed, three sampling locations per event, and three events per year, the projected cost to each affected farm site is $1,271 per year.

If farms elect to contract out both the sample collection and transportation, the cost will increase. The Division estimated a cost of $250 for sample collection and transportation. As a result, the cost per sampling event will increase to $574 for these farms, with an annual cost of $1,722.

There are approximately 2,185 farms located in the ten river basins listed in .1311(c). If all of these farms perform their own sampling, and only contract out the transportation, the

projected cost is $2.9 million annually, with a cost of $15,863 to the 12 state-owned facilities. If all farms elected to contract out the transportation and the sample collection, the cost would rise to $3.75 million, with a cost of $20,652 to the state-owned facilities.

For the purposes of this fiscal analysis, it is estimated that 75 percent of farms will perform their own sample collection, and 25 percent of farms will contract out both the collection and transportation. The estimated financial impact in this scenario is $3.02 million annually, with a cost of $16,602 to state-owned facilities. It will take approximately five years to reach the full fiscal impact, at a rate of 20 percent annually.

Methodology to estimate unpermitted discharge monitoring costs:
The Division prepares a compliance and inspection report annually that keeps track of known unpermitted discharges. Over the past 5 years, there has been an annual average of 25.6 discharges to waters of the State. Using the information generated for the routine monitoring cost estimate, this proposed rule will cost farm owners approximately $13,000 annually, and is detailed in Appendix B. This number will change from year to year, depending on the number of unpermitted discharges that are discovered.

Groundwater monitoring costs:
In 2002, the Division developed a written policy outlining groundwater monitoring requirements for animal operations. The proposed rules essentially bring this written policy into rule.

Groundwater monitoring will be required when down-gradient off-site water supply wells are impacted due to activities at the animal operation. When the farm is notified by the Division, they will have to develop the plan, taking into account factors such as application rates, site-specific hydrogeology and soils, likelihood of secondary impacts, and pollutants known to be in the waste stream. The plans can be modified over time to further study the extent of a groundwater issue, or to reduce monitoring if warranted.

Because this proposed rule is a reflection of our current policy, there will be little if any impact to the regulated community. But for the purposes of the fiscal note, the projected costs are detailed below.

Currently, twelve farms are required to perform groundwater monitoring. The permitting program has been in place since 1997 (12 years). For the purposes of the fiscal note, the Division is assuming that one farm per year will be required to initiate groundwater monitoring.

A typical groundwater monitoring well setup would have one up-gradient well, and two down-gradient wells. The Underground Storage Tank (UST) Section of the Division of Waste Management has a trust fund that is used to pay contractors who install monitoring wells at UST sites. Based on their data, the cost to install three monitoring wells is approximately $4,800. This is a one-time cost, and will likely be done at a rate of one farm per year.

Groundwater will typically be sampled for the same parameters as surface water, and will typically be sampled three times per year. In other programs, groundwater sampling is generally performed by a contractor, and the Division expects that farms will also have this service performed by a contractor. Therefore, the annual sampling cost is projected to be $1,722, at a rate of one new farm per year (the same as surface water monitoring).

Visual observation costs:
The existing State and NPDES non-discharge permits require that the Operator in Charge (or person under their supervision) conduct inspections of the land application site at a minimum of every 120 minutes while land application is taking place. It is assumed that ditches and tile drain outlets at the field edges are part of this inspection, but it was never specifically required in writing. Because the inspections required by proposed Rules .1310(a)(2) and (3) are already taking place at defined intervals, there is no projected cost impact.

Training Costs:
Sample collection is an activity that farm owners and operators have not been responsible for previously. As a result, training will be needed to teach sample collectors the proper techniques.

Multiple opportunities currently exist for operators to receive training. All operators are required to attend a 10-hour training class, and to pass an examination prior to becoming certified. Certified operators are also required to attend six hours of training classes over every three-year period. Training on basic sampling techniques such as wearing of gloves, preservation, ice, and holding times could easily be taught in a one-to-two hour period.

The Division anticipates conducting several "train the trainer" classes. The instructors of the classes described above can receive training by the Division, and use that training to teach operators during their typical training classes.

The total cost of training is anticipated to be approximately $17,000, and is detailed in Appendix D. The cost would likely decrease over time, because operators will not need annual training. However for the purposes of the fiscal analysis, the Division is using an annual cost of $17,000. It is assumed that this cost will be to the State.

Time:
There is also a cost for the time the sample collection will take. The Division estimates that each sampling event will take approximately 5 hours of time between preparation, sample collection, and follow-up paperwork. This would translate to approximately 15 hours per year per farm site.

It can be difficult to estimate the value of a person's time, especially because farm owners are self-employed. The NC Employment Security Commission maintains a database that approximates the salary of various job classes in the State. They estimate the entry rate, average rate, and experienced rate for each class. Self-employed individuals are not included in the ESC estimates. However, the ESC does have a salary estimate for "First

Line Supervisors/Managers of Farming, Fishing." Because farm owners are generally self-employed, the fiscal note uses this salary class to determine cost information.

Because the farm owners and operators are generally experienced, this fiscal note uses the experienced rate. For farm managers, the estimated experienced wage is $24.93 per hour. At 15 hours per year, the estimated cost of the sampling time is $373.95 per farm site. With 2,185 projected farm sites conducting monitoring, the statewide fiscal impact is projected to be $817,081 annually. Of this annual cost, $4,487 will be to the twelve state-owned farms. As with the surface water monitoring cost, it will take approximately five years to reach the full fiscal impact, at a rate of 20 percent annually. The breakdown of the cost for sampling time is presented in Appendix E.

Minor Costs:
There are some other minor costs associated with the proposed rule. The Division estimated increased postage costs of about $2,000 annually. This would be the cost of notifying the permittee that a plan is being developed, the permittee's response, the Division's final plan, and the annual report submittal by the permittee. The cost would likely be evenly split between the Division and the permittees.

Total Fiscal Impact:
The total fiscal impact is estimated by adding the costs of routine monitoring, unpermitted discharge monitoring, training costs, farm owner/operator time, and minor costs. After a five-year implementation period, the total fiscal impact is estimated to be $3,884,345 annually.

Benefits

The benefits of these rules include a better understanding of the effectiveness of Certified Animal Waste Management Plans. Animal operations in North Carolina have been required to apply wastewater at agronomic rates since 1997. 15A NCAC 02T .0103(1) defines "agronomic rate" as, "the amount of waste and other materials applied to meet the nitrogen needs of the crop, but does not overload the soil with nutrients or other constituents that cause or contribute to a contravention of surface or groundwater standards, limit crop growth, or adversely affect soil quality."

There exists a good deal of published data on the amount of nitrogen needed to meet the growth needs of crops. However, there is very little data available that documents the impact to surface waters when waste is applied to meet the nitrogen needs of the crop.

Other benefits include a better accounting of subsurface drainage at animal operations, and a better understanding of pollutants that may or may not be reaching surface waters through them. If issues are discovered at farms that conduct sampling, Division staff can work with farm owners to identify the cause and reduce the impact through Best Management Practices (BMPs) or reduced application rates.

While it is difficult to quantify these benefits monetarily, the improved environmental

conditions near these farms are tangible benefits to be considered.

Risks

Cost Estimate Risks

These rules are designed to stand alone as minimum standards for surface water monitoring at animal feeding operations. Since many of these estimates are based on budget projections due to a lack of existing hard data, there is always the risk that the estimated financial impact of these proposed rule revisions could be substantially different than that listed in this analysis. However, reasonable attempts were made to make estimates on the conservative (high) side, rather than basing the estimates on the low side.

Summary Table - Annual Cost Estimates (Also see Appendix F)

YEARS OF ANALYSIS (State Fiscal Years)

	FY 2010-2011	FY 2011-2012	FY 2012 - 2013	FY 2013-2014	FY 2014-2015
State	$21,217	$25,436	$29,653	$33,872	$38,089
Local Government	$0	$0	$0	$0	$0
Private (Capital)	$0	$0	$0	$0	$0
Private (Operating)	$785,092	$1,550,382	$2,315,674	$3,080,695	$3,846,256
Private (Benefit)	$0	$0	$0	$0	$0
Total	$806,309	$1,575,818	$2,345,327	$3,114,567	$3,884,345

NOTES FOR TABLE:

1 - The State Fiscal year begins on July 1, 2010 and ends on June 30, 2011. Assuming the rule becomes effective on January 1, 2010, the first year of economic impact will be the 2010-2011 fiscal year.

Based on the results of this fiscal analysis, it is expected that these proposed rule revisions will have a substantial economic impact. The primary reason that these rule revisions are projected to have a substantial economic impact, is that there will be an expenditure of over $3 million in any 12-month period. Additionally, the proposed rules will result in an increased expenditure of state funds, due to state ownership of 12 permitted animal operations, and training costs for farm operators.

Appendix A. Lab Fee Survey - January 2009

Lab	Location	Parameters						Travel Cost	
		NH3	NO3	TKN	Fecal	BOD	Chloride	Pickup Only (Assume 2 hours of time)	Sample Collection (Assume 2 additional hours over pickup only)
Environment 1, Inc.	Greenville	**16**	**16**	**16**	**17**	**21**	**12**	Bottles w/ cooler included in costs. $20 pickup fee - coordinate w/ lab ahead of time.	$50/hr from office to return.
Tritest, Inc.	Raleigh	**20**	**20**	**25**	**30**	**25**	**20**	Bottles w/ cooler included in costs. $10 - mileage charge if a long trip.	$50/hr. will split mileage if can do grouping. @$0.35/mi
Mircobac Labs	Wilson	**22**	**22**	**26**	**26**	**27**	**22**	Bottles (labeled) w/return cooler included in costs. Pick-up varies, $50/hr - $0.50/mi.	Door-to door $50/hr - $0.50/mi
Mircobac Labs	Fayetteville	**35**	**40**	**42**	**30**	**40**	**35**	Bottles provided. $75 per hour (pickup + collection) - Can split cost if part of a route.	$75 per hour (pickup + collection)
Carolina Env. Labs, LLC	Sanford	**10**	**15**	**15**	**15**	**20**	**10**	Bottles w/ cooler included in costs. Limited pickup - If on a scheduled route = $20.	$60/hr door-to-door.
TBL	Lumberton	**17**	**15**	**16**	**25**	**20**	**14**	Sends bottles w/ cooler for additional cost. Pickup available based on location and timing ($20-$40).	Does not typically provide sampling service
Tritest, Inc.	Wilmington	**20**	**20**	**25**	**30**	**25**	**20**	Not picking up or sampling currently $70 or $80 + $50/hr	Not picking up or sampling currently $70 or $80 + $50/hr
Vann Laboratories	Wallace	**15**	**28**	**20**	**17**	**17**	**22**	Bottles w/ cooler included in costs. Limited pickup - If on a scheduled route = $15.	Likely negotiated for collection - $35 or $40 per hour
Beacham Laboratory	Jacksonville	**15**	**25**	**30**	**21**	**21**	**20**	Does not typically do pick-ups. Sends out bottles (not in cooler) labeled w/ preservatives. Included in cost	Does not typically provide sampling service
Envirochem	Wilmington	**16**	**16**	**18**	**20**	**20**	**16**	Bottles (in cooler provided) $50/hour (1 hour min.) for pickup	No collection typically - bottles provided $50-$60/hr door to door
Average Cost		**$18.60**	**$21.70**	**$23.30**	**$23.10**	**$23.60**	**$19.10**	$100 (estimate)	$250 (estimate)

ANNUAL COST PER FARM SITE:
Average sample cost = $21.57

Sample Pickup Only:		**Sample Pickup + Collection:**	
5 samples per sampling location =	**$107.83**	5 samples per sampling location =	**$107.83**
3 locations per sampling event =	**$323.50**	3 locations per sampling event =	**$323.50**
$100 fee for sample pickup =	**$423.50**	$250 fee for pickup + collection =	**$573.50**
3 sample events per year =	**$1,270.50**	3 sample events per year =	**$1,720.50**

IF 2,185 FARM SITES:
Pickup only: $2,776,043 **Pickup + Collection: $3,759,293**

75% Pickup Only, 25% Pickup + Collection = $3,021,855

Appendix B. Unpermitted Discharge Sample Cost Estimate

Parameter	Average Cost
NH3	$18.60
NO3	$21.70
TKN	$23.30
Fecal Coliform	$23.10
BOD	$23.60
Chloride	$19.10
Average Sample Cost	**$21.57**

Year	Discharges to Waters of the State
2007-2008	18
2006-2007	34
2005-2006	27
2004-2005	25
2003-2004	24
Average	**25.6**

ANNUAL COST

Average sample cost = $21.57

6 samples per sampling location = $21.57 * 6 = $129.42

3 locations per sampling event = $113.55 * 3 = $388.26

$100 fee for sample pickup = $408.78 + 100 = $488.26

Cost per Year = Average discharges * Average Cost

Cost per Year = 25.6 * $488.26 = $12,499.46

Appendix C. Groundwater Monitoring Cost Estimate

Sampling Costs (From Appendix A)

Parameter	Average Cost
NH3	$18.60
NO3	$21.70
TKN	$23.30
Fecal Coliform	$23.10
BOD	$23.60
Chloride	$19.10
Average Sample Cost	**$21.57**

Monitoring Well Installation

One monitoring well (assume 25' depth) =	$4,000	per monitoring well
3 wells per farm site =	$12,000	per farm site
One new farm site per year =	**$12,000**	**per year**

ANNUAL COST

Average sample cost = $21.57

6 samples per sampling location = $21.57 * 6 =	$129.42	
3 locations per sampling event = $113.55 * 3 =	$388.26	
$250 fee for sample collection = $388.26 + 250 =	**$638.26**	**per year**

TOTAL COST:

Year 1 cost = $12,000 + $638.26 =	**$12,638.26**
Year 2 cost = $12,000 + $1276.52 =	$14,176.52

Add an additional $638.26 for each subsequent year

Appendix D. Estimated Training Costs - Sample Collection and Preparation

Train the Trainer Sessions

Instructors (DWQ Staff)	$0.00		
30 attendees per Session Assume 200 miles round trip * .40/mile =	$80.00	mileage/attendee	
Total travel cost = 30 attendees * $80/attendee =	$2,400.00	per class	
Equipment (bottles & preservative)	$100.00	per class	
Cost per Session = $2,400 + $300 =	$2,500.00		
Assume 3 Sessions - Total Cost =	**$7,500.00**		

Operator Training Sessions

Number of Farms affected by Rulemaking =	2185		
Assume one trained sample collector per farm =	2185	Trainees	
Assume 30 students per training class 2185 students / 30 students/class =	73	Classes	(Round up to 80)
Instructor Travel Assume 50 miles round trip * $0.40/mile =	$20.00	per class	
Total travel = 80 classes * $20/class =	$1,600.00		
Equipment	$100.00	per class	
Total Equipment Cost = 80 classes * $100/class =	$8,000.00		
Total Operator Training Cost = $8,000 + $1,600 =	**$9,600.00**		

Total Training Cost = $9,600 + $7,500 = $17,100.00

Appendix E. Employment Security Commission Estimated Wages - Year 2008 - Agriculture Related Industries

SOC Code	Farming, Fishing, and Forestry Occupations	Estimated Employment	Response Rate	Estimated Entry Wage	Estimated Avg. Wage	Estimated Experienced Wage
45-0000	Farming, Fishing, and Forestry Occupations (Average)	8,060	95	$7.21	$11.85	$14.17
45-1011	**First-Line Supervisors/Managers of Farming, Fishing**	**590**	**95**	**$13.52**	**$21.13**	**$24.93**
45-2011	Agricultural Inspectors	470	100	$13.84	$18.14	$20.29
45-2041	Graders and Sorters, Agricultural Products	1,030	100	$6.89	$8.55	$9.38
45-2091	Agricultural Equipment Operators	310	94	$6.97	$10.19	$11.80
45-2092	Farmworkers & Laborers, Crop, Nursery & Greenhouse	2,810	89	$6.80	$8.63	$9.54
45-2093	Farmworkers, Farm and Ranch Animals	460	97	$8.02	$10.15	$11.21
45-2099	Agricultural Workers, All Other	90	100	$8.55	$11.37	$12.78
45-4021	Fallers	480	96	$11.43	$14.96	$16.72
45-4022	Logging Equipment Operators	1,580	97	$9.87	$13.81	$15.79
45-4023	Log Graders and Scalers	160	100	$11.23	$14.17	$15.65

Assume 15 hours of annual sampling time per farm site

Annual time cost = $24.93/hour * 15 hours = $373.95

Statewide annual cost = 2185 farm sites * $373.95 = $817,080.75

Cost to Private Industry = 2173 farm sites * $373.95 = $812,593.35

Cost to the State = 12 farm sites * $373.95 = $4,487.40

Appendix F. Final Cost Breakdown

Cost Item	Year 1	Year 2	Year 3	Year 4	Year 5
Routine Sampling Cost	$604,371	$1,208,742	$1,813,113	$2,417,484	$3,021,855
Sampling Time	$163,416	$326,832	$490,248	$653,665	$817,081
Training Costs	$17,000	$17,000	$17,000	$17,000	$17,000
Groundwater Monitoring	$6,522	$8,244	$9,966	$11,688	$13,410
Unpermitted Discharges	$13,000	$13,000	$13,000	$13,000	$13,000
Minor Costs	$2,000	$2,000	$2,000	$2,000	$2,000
Annual Cost	**$806,309**	**$1,575,818**	**$2,345,327**	**$3,114,837**	**$3,884,346**

DENR Rulemaking Impact Analysis Form
Developed January, 2009

Division/Section	Water Quality/Aquifer Protection		
Prepared by	Keith Larick	Phone no.: 715-6697	Email: keith.larick@ncmail.net
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Subject of Rules	Petition for Rule-Making : Water Quality Monitoring at Animal Feeding Operations		
Admin. Code Citation	15A NCAC 02T .1310-.1311	101 Log Number	

Types of Impact		Types of Impact, cont.	
None		Private Sector	x
Local Government		Fee Increase	
State Government	X	Substantial (>$3,000,000)	x
DOT		OSBM: Not Significant	
Federal Government		OSBM: Significant	x

Fiscal Impact (Round to nearest $100)	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15
Local Government Impact	$ -	$ -	$ -	$ -	$ -
State Government Impact	$ 21,217	$ 25,436	$ 29,653	$ 33,872	$ 38,089
Federal Government Impact	$ -	$ -	$ -	$ -	$ -
Private Sector Impact	$ 785,092	$ 1,550,382	$ 2,315,674	$3,080,965	$ 3,846,256
Total Impact	$ 806,309	$ 1,575,818	$ 2,345,327	$3,114,837	$ 3,884,345

	Cost- Net Present Value (NPV)	Cost- Annualized NPV
Local Government Impact	$ -	$ -
State Government Impact	$ 366,592	$ 18,330
Federal Government Impact	$ -	$ -
Private Sector Impact	$ 34,123,413	$ 1,706,171
Total Impact	$ 34,490,005	$ 1,724,500

	Benefit- Net Present Value (NPV)	Benefit- Annualized NPV
Local Government Impact	$ -	$ -
State Government Impact	$ -	$ -
Federal Government Impact	$ -	$ -
Private Sector Impact	$ -	$ -
Total Impact	$ -	$ -

Discount rate = 7% and 20 year time horizon

Division of Budget, Planning, and Analysis Review

Signature _____ Date _____ Approved ☐ Denied ☐

Director, BPA

OSBM Review

Signature _____ Date _____ Approved ☐ Denied ☐

OSBM Designee