



Minnesota Pollution Control Agency

520 Lafayette Road North | St. Paul, MN 55155-4194 | 651-296-6300 | 800-657-3864 | 651-282-5332 TTY | www.pca.state.mn.us

April 17, 2009

TO: INTERESTED PARTIES

RE: Dollymount Dairy, LLP

Enclosed is the Environmental Assessment Worksheet (EAW) for the proposed Dollymount Dairy, LLP, Traverse County. The EAW was prepared by the Minnesota Pollution Control Agency (MPCA) and is being distributed for a 30-day review and comment period pursuant to the Environmental Quality Board (EQB) rules. The comment period will begin the day the EAW availability notice is published in the EQB Monitor, which will likely occur in the April 20, 2009, issue.

Comments received on the EAW will be used by the MPCA in evaluating the potential for significant environmental effects from this project and deciding on the need for an Environmental Impact Statement (EIS). Written comments on the EAW should be submitted to Laura Hysjulien and will be accepted until 4:30 p.m. on May 20, 2009.

A final decision on the need for an EIS will be made by the MPCA Commissioner after the end of the comment period. If a request for an EIS is received during the comment period, or if the Commissioner recommends the preparation of an EIS, the MPCA Citizens' Board (Board) will make the final decision. The final EIS need decision will also be made by the Board if so requested by the project proposer, other interested parties or MPCA staff and if this request is agreed to by one or more members of the Board or the MPCA Commissioner. The Board meets once a month, usually the fourth Tuesday of each month, at the MPCA office in St. Paul. Meetings are open to the public and interested persons may offer testimony on Board agenda items. A listing of Board members is available on request by calling 651-296-7306.

Please note that comment letters submitted to the MPCA do become public documents and will be part of the official public record for this project.

If you have any questions on the EAW, please contact Laura Hysjulien at 651-757-2455.

Sincerely,

A handwritten signature in black ink that reads "Craig Affeldt".

Craig Affeldt
Supervisor, Environmental Review Unit
St. Paul Office
Regional Division

CA:mbo

Enclosure

Alternative EAW Form for Animal Feedlots

ENVIRONMENTAL ASSESSMENT WORKSHEET

Note to reviewers: The Environmental Assessment Worksheet (EAW) provides information about a project that may have the potential for significant environmental effects. This EAW was prepared by the Minnesota Pollution Control Agency (MPCA), acting as the Responsible Governmental Unit (RGU), to determine whether an Environmental Impact Statement (EIS) should be prepared. The project proposer supplied reasonably accessible data for, but did not complete the final worksheet. Comments on the EAW must be submitted to the MPCA during the 30-day comment period which begins with notice of the availability of the EAW in the *Minnesota Environmental Quality Board (EQB) Monitor*. Comments on the EAW should address the accuracy and completeness of information, potential impacts that are reasonably expected to occur that warrant further investigation, and the need for an EIS. A copy of the EAW may be obtained from the MPCA by calling 651-757-2101. An electronic version of the completed EAW is available at the MPCA Web site <http://www.pca.state.mn.us/news/eaw/index.html#open-eaw>.

1. Basic Project Information.

A. **Feedlot Name:** Dollymount Dairy, LLP

Feedlot

B. **Proposer:** Dollymount Dairy, LLP C. **RGU:** Minnesota Pollution Control Agency

Technical

Contact Person Steve Westerbuhr

Contact

Person Laura Hysjulien

and Title P.E., Settje Agri-Services and Engineering, Inc.

and Title Project Manager

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D. **Reason for EAW Preparation:** (check one)

EIS Scoping _____ Mandator: EAW Citizen Petition _____ RGU Discretion _____ Proposer Volunteered _____

If EAW or EIS is mandatory give EQB rule category subpart number and name: Minn. R. 4410.4300, subp. 29. Animal Feedlots

E. Project Location: County Traverse Twp Dollymount
SW 1/4 Section 4 Township 126N Range 45W

Watershed (name and 4-digit code): Bois de Sioux River
54032

F. Attach each of the following to the EAW:

- Exhibit 1 State map showing general location
- Exhibit 2 Map of the Traverse County, showing general location of the project
- Exhibit 3 Site plan, showing significant project features, such as barns, manure storage basin, and stormwater sedimentation and erosion control basins
- Exhibit 4 U.S. Geological Survey (USGS) topographic map showing project site location and neighbors within one-mile radius of the proposed feedlot
- Exhibit 5 Minnesota Historical Society Letter
- Exhibit 6 Minnesota Department of Natural resources (DNR), Natural Heritage letter
- Exhibit 7 DNR, Aquifer test analysis
- Exhibit 8 Digester information
- Exhibit 9 Aerial photos of the manure application acres
- Exhibit 10 Air Emission Modeling Report
- Exhibit 11 Traffic map
- Exhibit 12 Impaired waters map

The National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Permit Application and associated documents, which include the Air Emission Plan, Emergency Response Plan, Manure Management Plan (MMP), and a copy of this EAW are all available for review at the following locations:

- The MPCA’s St. Paul Office, 520 Lafayette Rd. North, St. Paul, Minnesota
- The MPCA’s Willmar Office, 1601 Highway 12 East, Suite 1, Willmar, Minnesota
- Wheaton Community Library, 901 1st Avenue North, Wheaton, Minnesota

G. Project summary of 50 words or less to be published in the *EQB Monitor*.

Dollymount Dairy, LLP (Dollymount Dairy) is proposing to construct a new dairy facility in Section 4 of Dollymount Township in Traverse County. The facility would accommodate 6,640 head of livestock, totaling approximately 7,350 animal units. Dollymount Dairy would include one 1,200-foot long by 512-foot wide barn, one 228-foot long by 134-foot wide calf barn, two 80-foot wide by 216-foot long calf barns, and one 425-foot long by 95-foot wide milking parlor/holding pen. Manure will be processed in an anaerobic digester. Once digested, a separator will remove the solids from the liquid. The solids will be used for animal bedding and the liquid will be stored in two 690-foot long by 450-foot wide by 20-foot deep clay-lined earthen basins, where the gasses will be captured to produce electricity. Also planned is a 700-foot long by 400-foot wide covered feed storage pad. The entire site is 120 acres. If approved, work at the site will begin early summer 2009.

Dollymount Dairy was previously proposed in 2005; however, the process was not completed. The current proposal involves the same site but some different plans and construction details.

H. Please check all boxes that apply and fill in requested data:

Animal Type	Number Proposed	Type of Confinement
<input type="checkbox"/> Finishing hogs		
<input type="checkbox"/> Sows		
<input type="checkbox"/> Nursery pigs		
<input checked="" type="checkbox"/> Dairy cows	6,640	Total Confinement
<input type="checkbox"/> Beef cattle		
<input type="checkbox"/> Turkeys		
<input type="checkbox"/> Layer hens		
<input type="checkbox"/> Chickens		
<input type="checkbox"/> Pullets		
<input type="checkbox"/> Other (Please identify species)		

I. Project magnitude data.

Total acreage of farm: 120
Number of animal units proposed in this project: 7,350
Total animal unit capacity at this location after project construction: 7,350
Acreage required for manure application: Approximately 3,700/year

J. Describe construction methods and timing.

Dollymount Dairy plans to begin dirt work in the summer of 2009, assuming all applicable permits have been obtained. Dirt work will include hauling in a gravel base for the barns and driveways and building the manure basins to MPCA and project engineer specifications. The top of the containment berms around the manure basins will equal the high water elevation along the roadways surrounding the project site to protect against overland flooding. There will also be one stormwater retention pond built to hold all of the runoff water from the feed pad. Perched water table conditions will be managed around the manure storage areas with perimeter tile to ensure that ground water does not damage manure storage liners and cause leakage.

Construction crews will work on the milking parlor through the summer and fall. Construction on the anaerobic digester, freestall barns, and feed center will also begin in the summer of 2009. When all of the barns have been completed, milking capacity will be 4,313 head of Holstein milked twice a day. There will be additional capacity for 622 dry cows, 200 heifers and 1,505 calves. Milking will begin winter of 2009. When completed, the dairy will include an asphalt storage pad for silage, haylage, and earlage; a shop; a roofed commodity shed for ground straw and hay; and several small bins for other feed products.

A Stormwater Pollution Prevention Plan (SWPPP) has been submitted as a requirement of the NPDES/SDS Permit. During construction, the holding ponds will be constructed to contain the sediment from inside slopes of the ponds and the sediment from the outside slopes will be contained by bale checks. Sediment basins and bale checks will be used to control the sediment from the construction of the pad for barns, feed storage area, digester, and day-pit.

K. Past and future stages.

Is this project an expansion or addition to an existing feedlot? Yes No

Are future expansions of this feedlot planned or likely? Yes No

If either question is answered yes, briefly describe the existing feedlot (species, number of animals and animal units, and type of operation) and any past environmental review or the anticipated expansion.

The proposed project is not an addition or expansion of an existing feedlot; however, permit applications had been submitted and an environmental assessment worksheet prepared in February 2006 for a Dollymount Dairy project. That project has been modified and resubmitted as the current proposal. The revised project includes new features, such as an anaerobic digester to treat all manure generated at the proposed dairy, electricity generation, synthetic basin covers, and cross-ventilated barns, which the proposer intends to address concerns that were voiced to the 2006 proposal.

2. Land uses and noteworthy resources in proximity to the site.

A. Adjacent land uses. Describe the uses of adjacent lands and give the distances and directions to nearby residences, schools, daycare facilities, senior citizen housing, places of worship, and other places accessible to the public (including roads) within one mile of the feedlot and within or adjacent to the boundaries of the manure application sites.

The proposed project is situated in an agricultural area in Dollymount Township. There are no schools, known daycares, or places of worship adjacent to the proposed site.

There are four residences within one mile of the feedlot site

- The closest residence is 2,342 feet west of the site.
- The second residence is 3,756 feet east of the site.
- The third residence is 4,858 feet west of the site.
- The fourth residence is 5,038 feet northeast of the site.

The two residences closest to the project belong to and are occupied by project proposers.

The project site is bordered by Traverse County Road 70 to the south and 740th Avenue to the west. There will be a setback from the west side of the calf barns to County Road 77 of 962 feet and a setback from the south side of the parlor/holding pen to the Traverse County Road 70 of 598 feet. The distance from the west side of the runoff basin to Traverse County Road 70 will be 500 feet.

Please see Exhibit 4 for a map showing residences and roads within one mile of the feedlot.

All of the land proposed for manure application is currently in agricultural crop production, with rural residential households scattered across the landscape. There are no low or high density residential subdivisions located adjacent to these sites.

There are no water features on the proposed site and the topography is predominantly level. Scattered groves of trees spread out across the landscape may represent rural residential homesteads or abandoned farmyards.

B. Compatibility with plans and land use regulations. Is the project subject to any of the following adopted plans or ordinances? Check all that apply:

- local comprehensive plan
- land use plan or ordinance
- shoreland zoning ordinance
- flood plain ordinance
- wild or scenic river land use district ordinance
- local wellhead protection plan

Traverse County requires the following setback and separation distances for feedlots:
One mile from public parks; one mile from city or ten or more residential dwellings located within a radius of one mile from the site; one-half mile from a neighboring residence; prohibited within shoreland or floodplain; 100 feet from all public drainage ditches. A Conditional Use Permit will be required.

Is there anything about the proposed feedlot that is not consistent with any provision of any ordinance or plan checked? Yes No.

Are there any lands in proximity to the feedlot that are officially planned for or zoned for future uses that might be incompatible with a feedlot (such as residential development)? Yes No

C. Nearby resources. Are any of the following resources on or in proximity to the feedlot, manure storage areas, or within or adjacent to the boundaries of the manure application sites?

- **Drinking Water Supply Management Areas designated by the Minnesota Department of Health?** Yes No
- **Public water supply wells (within two miles)?** Yes No
- **Archaeological, historical or architectural resources?** Yes No
- **Designated public parks, recreation areas or trails?** Yes No
- **Lakes or Wildlife Management Areas?** Yes No
- **State-listed (endangered, threatened or special concern) species, rare plant communities or other sensitive ecological resources such as native prairie habitat, colonial waterbird nesting colonies or regionally rare plant communities?** Yes No
- **Scenic views and vistas?** Yes No
- **Other unique resources?** Yes No

If yes, describe the resource and identify any project-related impacts on the resource. Describe any measures to minimize or avoid adverse impacts.

The city of Dumont has two wells located about 1.25 miles west of three manure application areas. These wells are about five miles from the dairy site. Manure application requirements in the permit will be in place to prevent adverse impacts to these wells.

The Minnesota Natural Heritage Information System has been queried to determine if any rare species are known to occur within an approximate one-mile radius of the project or adjacent to proposed manure application sites. Some rare species have been identified on land adjacent to manure application sites.

The Natures Conservancy's Miller Prairie is located in T147N R45 Sections 33 and 35 adjacent to some of the proposed manure application sites. Miller Prairie supports several rare birds, native prairie and Sullivan's Milkweed, a state-listed threatened plant species. Due to this finding, it is important that manure application rates and timing of application are carefully considered in order to prevent negative impacts to the native prairie. See Section D of this document for manure application specifics. See Exhibit 6 for the Natural Heritage information and Exhibit 9 for location of the manure application sites.

3. Geologic and soil conditions.

A.

Approximate depth (in feet) to:	Feedlot	Manure Storage Area	Manure Application Sites
Ground Water*(minimum)	2.5	2.5	2.5
(average)	5	5	5
Bedrock (minimum)	>150	>150	>150
(average)			

B.

NRCS*** Soil	Feedlot	Manure Storage Area	Manure Application Sites
Classifications** (if known)	56	56	26, 34, 46, 47, 51, 56, 57, 58, 60, 67A, 67B, 108, 141, 171B, 184, 236, 245B, 276, 293, 343, 344, 371, 418, 434, 437E, 450, 494B, 582, 642, 646B, 698, 814, 816, 821, 822B, 900, 915B, 915C2, 922, 948, 1020, 1030, 1916, 1918, 1933, 1940, 1947, 1948, 1949, 1950

- * The depth to ground water is based upon soil borings that were completed for the proposed project. The soil boring records are included as part of the NPDES/SDS Permit Application for the project and are available upon request.
- ** Based upon review of the Traverse County Soil Survey, the soils at location 56 are Fargo silty clay loam. The manure application site soils are identified as various types of loamy soil. Soil maps are available upon request.
- *** Natural Resources Conservation Service

C. Indicate with a yes or no whether any of the following geologic site hazards to ground water are present at the feedlot, manure storage area, or manure application sites.

	Feedlot	Manure Storage Area	Manure Application Sites
Karst features (sinkhole, cave, resurgent spring, disappearing spring, karst window, blind valley, or dry valley)	No	No	No
Exposed bedrock	No	No	No
Soils developed in bedrock (as shown on soils maps)	No	No	No

4. Water Use, Tiling and Drainage, and Physical Alterations.

A. Will the project involve installation or abandonment of any water wells, appropriation of any ground or surface water (including dewatering), or connection to any public water supply?

Yes No

If yes, as applicable, give location and purpose of any new wells; the source, duration, quantity and purpose of any appropriations or public supply connections; and unique well numbers and the Department of Natural Resources (DNR) appropriation permit numbers, if available. Identify any existing and new wells on the site map. If there are no wells known on-site, explain methodology used to determine that none are present.

Three existing wells on the site were installed in December 2006 for test pumping and in anticipation of a dairy being built on that site. The Well and Boring Records for those three wells were submitted to the DNR. Water from the wells will be used as drinking water for the livestock and as wash water. Dollymount Dairy has applied to the DNR for a water appropriation permit.

A permit is required for the use of more than 10,000 gallons per day or one million gallons per year, which includes agricultural uses. The purpose of the permit program is to ensure water resources are managed so that adequate supply is provided to long-range seasonal requirements for domestic, agricultural, fish and wildlife, recreational, power, navigational, and quality control. The permit program balances competing management objectives including both the development and protection of water resources. Minn. Stat § 103G.261 establishes domestic water use as the highest priority of the state's water when supplies are limited. Any well interference or water use conflict concerns must be addressed before the water appropriation permit can be issued. If a well interference issue arises, the DNR has a standard procedure for investigating the matter. If a commercial operator is found to be causing the problem, the operator must work with the DNR to rectify the situation.

The anticipated DNR permit for the project will be for 80 million gallons per year. Dollymount Dairy intends to utilize any feasible water conservation and re-use practices available to continually lower water usage. For example, parlor wash water will be captured and re-used to flush holding pen floors. Feed pad runoff will be captured and stored to avoid discharge of this water. This practice also allows this rainwater to be re-used through irrigators on cropland in place of ground water.

A pump test has been completed to demonstrate the presence of adequate water in the area. The test has been reviewed by the DNR to establish that sufficient water is available before a water appropriation permit for Dollymount Dairy is granted. Based upon the review of the pump test and ground-water information, the DNR has stated that the proposed project water use is sufficient to operate the facility as proposed and will not impact other water users in the area. In addition, surface waters are not likely to be impacted by proposed water use. Additional information in the DNR Aquifer Test is provided in Exhibit 7.

B. Will the project involve installation of drain tiling, tile inlets or outlets? Yes No
If yes, describe.

Drain tile will be installed around the perimeter of the manure storage basin to control hydrostatic water pressure on the bottom and side slope of the basin. The tile will be installed two to four feet deeper than the bottom of the manure storage basin and will drain to County Ditch 2, which is 2,600 feet northwest of the proposed project site. County Ditch 2 drains approximately 1.5 miles west of the site into Twelve Mile Creek. Twelve Mile Creek then drains into the Mustinka River, approximately nine miles away.

Dollymount Dairy will do weekly visual tests of the perimeter tile line drainage through a manhole access adjacent to the manure storage basin. If any signs of discoloration or odor in any water flowing into the drain tile occur, the MPCA Feedlot Program will be notified. The system will be easily modified to pump the perimeter tile drainage back into the manure storage basin if needed.

In addition, the Minnesota Department of Public Safety Duty Office must be notified of any discharge no later than 24 hours after the event started as required by the State of Minnesota General Livestock Production Permit MNG440000. This permit is pending completion of the environmental review process.

- C. Will the project involve the physical or hydrologic alteration — dredging, filling, stream diversion, outfall structure, diking or impoundment — of any surface waters such as a lake, pond, wetland, stream or drainage ditch? Yes No

5. Manure management.

- A. Check the box or boxes below which best describe the manure management system proposed for this feedlot.

- Stockpiling for land application
- Containment storage under barns for land application
- Containment storage outside of barns for land application
- Dry litter pack on barn floors for eventual land application
- Composting system
- Treatment of manure to remove solids and/or to recover energy
- Other (please describe)

- B. Manure collection, handling, and storage.

Quantities of manure generated: total 6,951,389 cubic feet/year 52,000,000 gallons/year

Frequency and duration of manure removal: once per year for 21 days

Total days per year: 21

Give a brief description of how manure will be collected, handled (including methods of removal), and stored at this feedlot:

The freestall barn alleys will be scraped twice each day. The manure will then be flushed to a fully enclosed, pre-cast concrete holding tank (day pit) located on the north side of the freestall barn. Gas emitted from the day pit will pass through a bio-filter to mitigate odors. Manure from the day pit will be pumped to an anaerobic digester, where it is retained for a 21-day digestion period.

Anaerobic digestion will convert the dairy wastes into more valuable and manageable byproducts. In the anaerobic digester, the manure will be mixed and heated to a temperature of 100° Fahrenheit. In the second stage of the digester vessel, bacteria will convert the volatile fatty acids produced in the first stage into a biogas, which consists primarily of methane (equivalent to natural gas) and carbon dioxide that are collected and used to fuel generator engines to produce electricity to be sold to the grid.

For further information on the digester system, see Exhibit 8.

After digestion, the solids will be separated for re-use as bedding and the liquid effluent will be pumped to the smaller, uncovered manure storage basin, where any remaining solid particles in the manure can settle out before the liquid flows to one of the larger, covered storage basins. If needed, the system can bypass the small, uncovered basin and go directly to the larger covered basins. The large basins are covered by impermeable synthetic covers that are permanently anchored around the top of the basin berms. A manhole will be installed on the top of the lagoon, which allows access under the cover for pump-out.

This information is included as part of the NPDES/SDS Permit Application for the project and is available upon request

Odor reduction is achieved with the digestion of manure due to the transformation of organic compounds from the manure to combustible gas is directed to the generator engines. Sealed pumping ports will allow the manure to be managed without exposing the manure to an open air environment during pumping from the large covered basins to the land application equipment.

C. Manure utilization.

Physical state of manure to be applied: liquid solid other, describe: _____

D. Manure application.

1. Describe application technology, technique, frequency, time of year and locations.

The managing partner of Dollymount Dairy, Riverview LLP, will oversee and manage the application of liquid manure. This will include ensuring that the appropriate samples are taken, agronomic rates are followed, appropriate application setbacks are followed, and any appropriate clean-up measures are taken, if needed.

Manure will be pumped out of the lagoons through a draghose and injected in the fall following forage harvest. Forage harvest will typically be completed by September 15. During the fall application period, manure will be applied 24 hours per day. Dollymount Dairy currently has 7,483 acres available for manure application. The location of each of the manure land application sites is identified in the aerial photographs in Exhibit 9.

Manure may also be applied during the summer months after alfalfa harvest. There will typically be about 1,600 acres of alfalfa ground surrounding the dairy. If conditions do not allow for sufficient volumes of manure to be applied during the summer and fall, application will occur during the spring.

To insure safety during nighttime operation, all equipment will have adequate lighting and all operators will need adequate rest. In addition, pressure gauges and flow meters will be used on each applicator. A hose break can be immediately detected because of a loss of pressure and volume. An individual will also be stationed at each pump site. If any problems occur, the pumps can immediately be shut down. Applicator operators also have the ability to shut down pumps from the tractor cab by remote shut-off control.

There will be up to seven applicators available at any given time when manure is being applied. Each applicator is capable of pumping approximately one million gallons per day.

Weather data from the University of Minnesota, Morris show that an average of 6.4 days in the month of October receive at least .01 inches of rain. The earliest soil freeze date in Morris, Minnesota is November 7 and the average is November 24 according to University of Minnesota Extension Service weather statistics. Assuming this information is very similar to the actual conditions at the project site, the proposer believes there will be sufficient time from September 15 until freeze up to land apply manure and compensate for down time due to wet weather. Application in the spring will only be used if weather conditions do not allow the basin to be completely emptied in the fall.

The Minnesota Natural Heritage Information System has been queried to determine if any rare species are known to occur within an approximate one-mile radius of the project or adjacent to proposed manure application sites. Some rare species have been identified on land adjacent to manure application sites. See Exhibit 6.

As such, strict adherence to setback requirements will be implemented by Dollymount Dairy and all parties contracted to apply manure for them. Over-application or improper application of liquid manure can result in a transport of nutrients through surface water or overland flow, which can pose a threat to ecosystems. Proper caution must be taken in manure application to avoid nutrient loading or any detrimental impacts to surface waters and ecosystems. All manure application equipment must be calibrated to apply manure at agronomic rates to provide only the nutrients needed for crop production. With the presence of rare species and native prairie, diligence and care must be employed in all application of manure. Manure will be incorporated into the ground at all application sites to minimize runoff and manure application will be avoided when precipitation is imminent.

More information from the manure plan is available upon request.

2. Describe the agronomic rates of application (per acre) to be used and whether the rates are based on nitrogen or phosphorus. Will there be a nutrient management plan? Yes No

Manure applications rates will be based on the nitrogen needs of the crop. University of Minnesota recommendations will be used for determining allowable nitrogen application rates. Each manure applicator will be equipped with a flow meter to accurately measure the amount of manure being applied and ensure the desired manure application rate is achieved. Calibration of equipment used for manure application will be conducted on a regular basis. Manure will be applied in place of commercial fertilizer and manure samples will be analyzed to determine the nutrient value of each manure source. Samples will be taken daily during application.

Soil testing will be incorporated into the management of fields receiving manure. Soil samples will be collected to a depth of two feet as recommended by the University of Minnesota document "Using the Soil Nitrate Test in Minnesota." This document contains a flow chart that explains when the soil nitrate test can be used reliably for making nitrogen recommendations.

Care must be taken in the management and application of manure to avoid phosphorus build-up in soils. Phosphorus management begins before manure is generated. Dollymount Dairy will balance feed rations in an effort to control the level of phosphorus in the manure and has indicated that this practice has been proven to be successful in other similar dairy facilities managed by Riverview, LLP. Studies have shown that phosphorus levels can be reduced to approximately 6 pounds per 1,000 gallons of manure. Removal of solids from the manure will further reduce

phosphorous concentrations in the liquid slurry. The goal is to reduce the phosphorus levels in the manure so that application rates based on nitrogen do not over-supply phosphorus. At expected levels of phosphorus, build-up in soils can be avoided if manure is applied at rates based on crop nitrogen needs. The MMP uses an average of 6 lbs of phosphorous per 1,000 gallons of liquid dairy manure in manure planning, in line with other dairies with similar feed rations.

Soil phosphorus levels will also be monitored. Soil samples will be collected in the fall after harvest and before manure application. Samples will be taken using the methods described in “Soil Sampling and Fertilizer Recommendations” (Fact Sheet MN-NUTR3), a document published by the NRCS.

If soil phosphorus levels are greater than 21 parts per million (ppm) Bray in special protection areas, as identified in the dairy’s MMP, manure will be applied at rates that do not allow soil phosphorus levels to increase over a six-year period. If fields with soil phosphorus levels greater than 75 ppm Bray are identified, the history of the field will be reviewed and the potential for soil erosion evaluated before making a decision on whether the field will be used for manure applications.

3. Discuss the capacity of the sites to handle the volume and composition of manure. Identify any improvements necessary.

The basins to be used to store manure, digester effluent and other waste water have over 15 months of storage capacity. The maximum storage capacity of the runoff basin is 16,235,480 gallons. This will hold runoff from approximately 13 acres of feed pad area. Using 24 inches as average precipitation, there will be 8,473,843 gallons of feedpad runoff to store. This water will be pumped out through irrigators as the cropland needs water.

To apply the manure and wastewater at proper agronomic rates, approximately 3,700 acres of land will be needed per year. The proposers currently have 7,483 acres of land available for manure application. The soil at these application sites has been tested and found suitable for the application of organic fertilizer. The sites have the capacity to receive fertilizer application as described in the MMP for the replacement of crop nutrient needs. Soil nutrient levels will continually be monitored. Required setbacks to special protection areas, waters, and tile intakes must be observed.

4. Describe any required setbacks for land application systems.

The MPCA feedlot regulation setbacks are in Minn. R. 7020.2225 and presented below in Table 1. Manure incorporation methods are designed not compromise erosion control practices. Additionally, application of manure is not to be applied when precipitation is likely within 24 hours.

Table 1 - MPCA Animal Waste Land Application Setback Distances (in feet)

Feature	Winter	Non-Winter With Immediate Incorporation (<24 hours)		Non-Winter Not Incorporated within 24 hours	
		With P Mgmt.	No P Mgmt.	With Vegetated Buffer	Inadequate Vegetated Buffer
Lake, Stream	300	25	300	100	300
Intermittent Stream* DNR protected wetlands** Drainage ditch w/o berms	300	25	300	50	300
Open tile intake	300	25	25	300	300
Well, mine, or quarry	300	50	50	50	50

* Intermittent streams and ditches pertain to those identified on USGS quadrangle maps, excluding ditches with berms that protect from runoff into the ditch and segments of intermittent streams that are grassed waterways. USGS quadrangle maps can be found at County Soil and Water Conservation District Offices or can be viewed on the internet at: <http://www.terraserver.microsoft.com> (August 17, 2004).

** Wetland setbacks pertain to all protected wetlands identified on DNR protected waters and wetlands maps (these maps are often located in County Soil and Water Conservation offices and typically include all wetlands over ten acres).

*** The setback for open tile intakes is at least 25 feet unless they are able to achieve 75 percent settling of solids prior to entering the intake. This is most often accomplished using a riser pipe, such as a Hickenbottom riser.

E. Other methods of manure utilization. If the project will utilize manure other than by land application, please describe the methods.

Before basin storage and land application, manure will go through an anaerobic digestion process to capture gases to be burned in generator engines. The renewable electricity produced will then be sold to the power grid. Manure retention time in the digester tank will be approximately 21 days. In total, the digestion process and the generator engines will substantially reduce manure-related odors, remove most fecal bacteria (e.g., *E. coli*), reduce green house gas emissions, and mitigate potential water quality impacts.

The solids portion of the manure will be separated from the liquid after the anaerobic digestion process by a screw-press separator system. Separated solids will be re-used in the barns as bedding for the cattle. Dollymount Dairy is currently working to develop markets to handle excess solids that may build up over time. If excess solids become a problem at the dairy, the screw-press separators can be bypassed temporarily.

6. Air/odor emissions.

A. Identify the major sources of air or odor emissions from this feedlot.

The cross-ventilated, freestall barn will be the major source of odor emissions from the proposed dairy. The types of materials emitted will include dust, non-odorous gases, and odorous gases. These types of emissions are common to dairy farms.

Some odors may occur from the manure coming out of the anaerobic digester into the uncovered settling basin; however, the digestion process is expected to greatly reduce these odors typically associated with dairy manure.

The larger manure storage basins will be covered with impermeable synthetic covers to significantly reduce odor emissions from these basins. These covers will eliminate the odors typically associated with basin agitation during application as there will be no straw crust to agitate and break up.

Some odorous gases (e.g., ammonia) will be emitted during the land application of manure. Injecting the manure into the soil below the surface will minimize the release of these odorous gases as it minimizes any manure exposure to the air.

Spilled feed and dead animal carcasses can also be a source of odor.

The project proposer has completed an applicability analysis of air emissions for the digester and the engine generators to determine if an air emissions permit would be required. They have determined that the state thresholds will not be exceeded for any criteria pollutant or hazardous air pollutant and that a permit is not required by applicable Minnesota rules. The proposed engines will need to be operated and maintained according to the manufacturer's instructions and records of the manufacturer's emission standards compliance certification must be kept on file to meet the New Source Performance Standards (NSPS) and National Emissions Standards for Hazardous Air Pollutants (NESHAPs) requirements. A copy of the applicability study is available upon request.

B. Describe any proposed feedlot design features or air or odor emission mitigation measures to be implemented to avoid or minimize potential adverse impacts and discuss their anticipated effectiveness.

Operational and design features proposed to be implemented to avoid and minimize adverse air and odor emissions include good house-keeping practices, an anaerobic digester, synthetically covered basins, and a bio-filter on the day pit. These features are described below. The proposer intends to incorporate the following odor-control good housekeeping practices into the operation of the dairy:

- Mortalities will be stored in a scavenger-proof shaded area and removed by frequent pickup within 48 hours, which is a requirement of the Minnesota Board of Animal Health. Frequent pickup minimizes the emission of odor.
- Spilled feed will be promptly cleaned up. This will prevent the fermentation of the spilled feed and reduce the emission of odor.
- The separation of solids from the manure and the use of synthetic covers will eliminate the need for agitation of the two large basins, eliminating agitation-associated odors.
- Manure will be injected beneath the soil surface during land application. Subsurface incorporation of manure helps retain the nutrient value of the manure (e.g., reduces ammonia volatilization) and reduces the emission of odorous gases (e.g., ammonia).
- The land application of the manure will be performed by a licensed custom manure applicator who has the proper equipment for the subsurface incorporation of the manure.
- The freestall barns will be cleaned twice daily. Frequent cleaning prevents the accumulation of manure in the barn, reduces the potential for excessive fermentation and mitigates emission of adverse odors.

The anaerobic digestion process captures methane gas from the manure and utilizes it to power generator engines that produce electricity. Methane gas is a particularly potent greenhouse gas, which will now be captured and destroyed. Through this process, many of the odorous gases typically associated with dairy manure will be reduced. Digester bypasses will be built in (and will be easily accessible to personnel) to route manure directly from the day pit into storage basins should that ever be needed.

The impermeable synthetic covers on the two large manure storage basins will trap gases and minimize the release of adverse air and odor emissions.

A bio-filter will be installed to treat the gases emitted from the concrete manure holding tank used to collect and store the barn manure before it is pumped to the digester. Organic-media bio-filters have the ability to remove hydrogen sulfide, ammonia, dust, and odors from air removed from manure storage facilities. The proposed bio-filter will be similar to the organic-media bio-filter successfully used to control odorous emissions from the manure holding tank at other dairies of similar design.

Operationally, the bio-filter will receive odorous air from the concrete holding tank via a 24-inch diameter fan. The odorous air will be forced upward by the fan through the organic media (compost, wood chips, roots, soil) that has been colonized by aerobic micro-organisms. These micro-organisms oxidize the odorous gases into carbon dioxide, sulfate, nitrate, and other odor-free compounds.

C. Provide a summary of the results of an air emissions modeling study designed to compare predicted emissions at the property boundaries with state standards, health risk values, or odor threshold concentrations. The modeling must incorporate an appropriate background concentration for hydrogen sulfide to account for potential cumulative air quality impacts.

Two air quality assessments were conducted for this project. The first is an ambient air quality modeling analysis that was completed by a consultant for the project to account for potential ambient air concentrations of hydrogen sulfide, ammonia, and odor. The second is an air quality applicability determination for the two-engine generator sets that will be used to combust biogas from the digester systems. The results of this analysis are included in this section.

Ambient air quality modeling

Air quality modeling estimated the atmospheric concentrations of hydrogen sulfide, ammonia, and selected odorous gases at the property lines for the proposed Dollymount Dairy and at 13 of the proposed feedlot's nearest neighbors. A complete report of the air quality modeling findings is found in Exhibit 10.

Hydrogen Sulfide

The *CALPUFF* modeling results indicate that the Dollymount Dairy feedlot will comply with the Minnesota ambient air quality standard for hydrogen sulfide. *CALPUFF* predicted a maximum hourly property-line hydrogen sulfide concentration of 14.2 parts per billion (ppb) from project-related emissions sources. When a background concentration of 17 ppb is added to the *CALPUFF* prediction, the maximum estimated property-line hydrogen sulfide concentration is 31.2 ppb. The ambient standard is a concentration of 30 ppb over a half-hour period not to be exceeded more than two times in any five-day period. Since the estimated maximum concentration is greater than the ambient standard, a time-series analysis was conducted to further evaluate the potential for violation of the standard. This

analysis indicated that less than three exceedances of the 30 ppb concentration within any five-day period were modeled for any property line receptor. Thus, no violation of the 30 ppb ambient hydrogen sulfide standard was modeled for the proposed Dollymount Dairy.

The *CALPUFF* results also indicate that the proposed feedlot and the two neighboring cattle feedlots will not create exceedances of the subchronic hydrogen sulfide inhalation health risk value (iHRV) at the neighboring residences. The estimated maximum 13-week time-averaged hydrogen sulfide concentration for the feedlot's neighbors is 0.91 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). When a background concentration of 1.00 $\mu\text{g}/\text{m}^3$ is added to the *CALPUFF* estimate, the maximum 13-week neighbor hydrogen sulfide concentration is 1.38 $\mu\text{g}/\text{m}^3$, which is below the subchronic hydrogen sulfide iHRV of 10 $\mu\text{g}/\text{m}^3$.

Ammonia

The modeling results suggest that the proposed Dollymount Dairy feedlot will not create exceedances of the acute ammonia iHRV. *CALPUFF* predicted a maximum hourly property-line ammonia concentration of 866 $\mu\text{g}/\text{m}^3$. When a background concentration of 148 $\mu\text{g}/\text{m}^3$ is added to the *CALPUFF* prediction, the maximum property line ammonia concentration is 1,014 $\mu\text{g}/\text{m}^3$, which is below the acute ammonia iHRV of 3,200 $\mu\text{g}/\text{m}^3$.

The *CALPUFF* results also indicate that the proposed Dollymount Dairy feedlot and two neighboring cattle feedlots will not create exceedances of the chronic ammonia iHRV at the neighboring residences. The estimated maximum one-year time-averaged ammonia concentration for the feedlot's neighbors is 33.10 $\mu\text{g}/\text{m}^3$. When a background ammonia concentration of 5.72 $\mu\text{g}/\text{m}^3$ is added to the *CALPUFF* estimate, the maximum annual ammonia concentration for a neighbor is 38.82 $\mu\text{g}/\text{m}^3$, which is below the chronic ammonia iHRV of 80 $\mu\text{g}/\text{m}^3$.

Odor

This modeling exercise took into account two nearby feedlots to better represent the potential air quality impacts. The results indicate that the estimated frequency at which "faint" odors will occur off-site is less than ten percent. Moderate odors will be virtually confined to within the dairy's effective property lines.

In summary, the *CALPUFF* modeling results suggest that the proposed project will comply with the ambient air quality standard for hydrogen sulfide and will not exceed the applicable inhalation health risk values for ammonia or hydrogen sulfide. In addition, off-site odors would be greater than the "faint" threshold less than ten percent of the time.

The following table provides a summary of the air quality modeling findings:

Dollymount Dairy Project Modeling Results

Property Boundary	Hydrogen Sulfide Results (ppb) ¹ (Includes a 17 ppb background concentration)	Acute Ammonia Results (µg/m ³) ² (Includes a 148 µg/m ³ background concentration)	Odor Results (OU) ³ (Maximum hourly odor intensity)
North	22.53	414	92
East	20.53	378	80
South	27.71	928	111
West	31.21	1,014	273

¹ State ambient hydrogen sulfide air quality standard: 30 ppb half-hour average

² Acute inhalation health risk value for ammonia: one hour average of 3,200 µg/m³

³ Odor impact assessment based on odor units. A value of 83 odor units is considered to be a “faint” odor and “moderate” odor is 244 odor units for cattle.

ppb = parts per billion

µg/m³ = micrograms per cubic meter

OU=odor units

Air Quality Permit Applicability Determination

The project proposer completed an applicability study using MPCA protocol to provide a record of determinations made regarding the applicability of state and federal air quality regulations for Dollymount Dairy. Equipment considered in this determination were two Guascor engine generators, two boilers on site, and a waste gas flare.

The assessment of air permitting requirements for these sources is based on a theoretical “potential to emit” calculation, which assumes continuous operation (8,760 hours per year) at maximum emission rates (lb/hr pollutant x 8,760 hours/yr/2000 lb/ton = tons per year emitted). It was determined that the estimated annual emissions potentials are below the state and federal permitting thresholds.

Based on the estimates provided by the Dollymount Dairy, the facility’s emissions for all emission units that are on site, the dairy does not require an air emissions permit. The facility does need to operate and maintain the engines according to the manufacturer’s instructions and keep a record of the manufacturer’s emissions standards compliance certification on file to meet the NSPS and NESHAP requirements. The applicability study is available upon request.

D. Describe any plans to notify neighbors of operational events (such as manure storage agitation and pumpout) that may result in higher-than-usual levels of air or odor emissions.

The operators will notify neighbors within one-half mile of the manure storage basin prior land application of manure.

E. Noise and dust. Describe sources, characteristics, duration, quantities or intensity and any proposed measures to mitigate adverse impacts.

Most of the site itself will be paved with asphalt so there will not be a significant amount of dust coming from the dairy lot. The access road will not be an asphalt road, so there will be some dust created by traffic going to and from the dairy. If dust becomes an issue, a dust suppressant will be used to eliminate the problem.

Sources of noise will be feed trucks, tractors in the feedlot area and truck traffic entering and leaving the site. The truck traffic will primarily be during the day, and the majority of the equipment will be running inside of the barns. This will keep noise to a minimum.

7. Dead Animal Disposal

Describe the quantities of dead animals anticipated, the method for storing and disposing of carcasses, and frequency of disposal.

The estimated number of dead animals per year is 350 cows and 350 calves.

All mortalities will be picked up by a rendering service within 48 hours. Until they are picked up, mortalities will be stored in a roofed building with concrete side walls and floors. The building is designed after a similar building at the University of Minnesota, Morris that is designed for composting. Therefore, in the event that a rendering service is no longer available, this building would be used for composting. If composting is implemented, the procedures outlined by the Minnesota Board of Animal Health will be followed. If there is a catastrophic die-off, the State of Minnesota Emergency Response Plan will be followed.

8. Surface Water Runoff.

Compare the quantity and quality of site runoff before and after the project. Describe permanent controls to manage or treat runoff.

An SWPPP has been prepared as part of the NPDES/SDS Permit Application required for this project. The SWPPP addresses the need for temporary and permanent erosion control measures. Originally, the land was cultivated cropland. The quantity of stormwater runoff generated at the site will increase as a result of the construction of barns and other impervious surfaces at the site; however, the rate of runoff will be reduced as all stormwater will be collected in a stormwater basin. All runoff from the feed pad will flow to a “grit pit” located directly in front of the stormwater basin. This grit pit will capture low-flow runoff from small rains and feed pile leeching and pump it to the day pit to be stored with manure. In heavy rains, the grit pit will not be able to keep up and the diluted high-flow runoff will overflow into a stormwater pond that can be pumped to the runoff basin. The runoff basin, with a total capacity of 16,235,480 gallons, will provide ample storage for any runoff water, which will allow all particles to settle out over time. This contained rainwater can then be pumped out through an irrigator onto neighboring cropland. See Exhibit 3 for the location of the basins.

The feed piles will be covered with impermeable plastic on an asphalt pad to minimize rain water contact with the feed. All cattle will be housed inside a building and all manure will be contained within the barns, reception pits, or storage basin. Therefore, no contaminated runoff will be generated at the site from the feed, manure, or animal holding areas.

The impact to surface-water resources from the project's land application activities will be mitigated by the requirements of the NPDES/SDS Permit, the MMP, and general good housekeeping practices. Manure will be incorporated into the soil at agronomic rates, thus, only the amount of manure that supplies the crop nutrients needs will be applied to the cropland. The agronomic rate is based on the type of crop to be grown, the soil type, and the soil chemistry. In addition, most land application will occur during the fall of the year after crops have been removed from the field, rather than in the spring when runoff potential is greater due to increased precipitation and soil moisture. The MMP will be an enforceable provision of the NPDES/SDS Feedlot Permit for the project.

Manure application land is currently all cultivated cropland. The quantity and quality of surface runoff from these areas will remain unchanged.

9. Traffic and Public Infrastructure Impacts.

The Traverse County Board of Commissioners has requested that Dollymount Dairy, LLC prepare a traffic management plan and present it to the County Board of Commissioners on or before June 2, 2009.

A. Estimate the number of heavy truck trips generated per week and describe their routing over local roads. Describe any road improvements to be made.

When Dollymount Dairy is operating at full capacity, there will be approximately 36 semi loads of milk per week going to Milbank, South Dakota. There will be an average of nine semi loads of feed delivered to the site each week and an average two loads of cattle. The driveways into the dairy are planned for the south side of the site. Trucks will enter/exit the site from 610th Street (five-ton in the spring, nine-ton in winter) and typically use 740th Avenue South (seven-ton in spring and nine-ton in winter) to go to County Road 6. See road map, Exhibit 11.

Forage harvest traffic and other traffic related to crop production on fields will be typical farm traffic such as that which is currently occurring. Additional traffic of this nature will not occur due to the project.

Dollymount Dairy, LLC has indicated an intent to work with Traverse County as needed to ensure all road restrictions are followed and any issues regarding county road use will be addressed in the traffic management plan that will be reviewed and approved by Traverse County.

**B. Will new or expanded utilities, roads, other infrastructure, or public services be required to serve the project? Yes No
If yes, please describe.**

The owners will make arrangements with Traverse Electric Cooperative for power.

There will be a 1,000-gallon propane tank on site for heating the parlor/holding pen and a 10,000-gallon diesel fuel tank for fueling equipment.

10. Permits and approvals required. Mark required permits and give status of application:

Unit of government	Type of Application	Status
<input checked="" type="checkbox"/> MPCA	NPDES/SDS Feedlot Permit	Pending with this EAW
<input checked="" type="checkbox"/> County/twp/city	Conditional use or other land use permit	Contingent upon receipt of environmental review and all State permits.
<input checked="" type="checkbox"/> DNR	Water Appropriation	Final action following EAW
<input checked="" type="checkbox"/> Watershed Dist	Discharge of surface waters	To be applied for
<input checked="" type="checkbox"/> Minnesota Board of Animal Health	Notification to compost dairy cattle	Upon completion of environmental review

11. Other potential environmental impacts, including cumulative impacts. If the project may cause any adverse environmental impacts not addressed by items 1 to 10, identify and discuss them here, along with any proposed mitigation. This includes any cumulative impacts caused by the project in combination with other existing, proposed, and reasonably foreseeable future projects that may interact with the project described in this EAW in such a way as to cause cumulative impacts. Examples of cumulative impacts to consider include air quality, stormwater volume or quality, and surface water quality.

The effects of the project that may not individually have the potential to cause significant environmental effects but that could be significant when considered along with other projects are known as cumulative potential effects. In order to assess the project’s cumulative potential effects, the MPCA conducted several types of analysis that addressed other projects or operations in context to the potential direct or indirect impacts of the proposed project that 1) are already in existence or planned in the future; 2) are located in the surrounding area; or 3) might reasonably be expected to affect the same natural resources.

The following is a review of the analysis conducted to determine if the proposed project would contribute to an adverse cumulative potential effect.

The MPCA reviewed projects that “are already in existence or planned for the future” and “are located in the surrounding area.” The MPCA reviewed existing public data to identify the number of feedlots and other projects within the same sub watersheds of the proposed project. The public data reviewed included the most recent MPCA feedlot registration database and related project or permit databases for other operations that may hold an air quality, water quality, hazardous waste, or solid waste permit.

There were a total of 12 livestock operations identified within the manure application watershed area. There is no other project pending within the project boundaries of this proposal. No other non-feedlot projects were identified during the search.

The proposed livestock production facility and land application acres are located within seven minor watersheds within the Mustinka River major watershed in the Red River basin. See Exhibit 12 for a map of the impaired waters for the Red River Basin, and the surface-water information below for more details.

Lastly, the MPCA reviewed the proposed and existing projects to determine whether collectively they “might reasonably be expected to affect the same natural resources.” The natural resources of concern included ground water, surface waters, air quality, and land use. The following is a brief discussion of each.

Ground-water Appropriations

The DNR indicated that there was an adequate supply of ground water for the project, as proposed. See Exhibit 7 for more information.

The local ground-water users in and around the proposed project area are predominantly domestic users. Minn. Stat. § 103G.261 establishes domestic water use as the highest priority of the state's water when supplies are limited.¹ In addition, the proposed project will be required to obtain a Water Appropriation Permit from the DNR for the use of more than 10,000 gallons per day or one million gallons per year, which includes agricultural uses. The purpose of the permit program is to ensure water resources are managed so that adequate supply is provided to long-range seasonal requirements for domestic, agricultural, fish and wildlife, recreational, power, navigational, and quality control. The program exists to balance competing management objectives, including both the development and protection of water resources. In light of the projected project water use, aquifer characteristics, existing water uses, the analysis of pump test data, and the water appropriation statute, the proposed project is not expected to contribute to an adverse or irreversible cumulative potential impact of ground-water resources.

Ground-Water Quality

Ground-water resources can be adversely impacted by land application activities where ground-water resources are at or near the surface or are accessible through conduits and fractures commonly associated with karst topography or through the texture and structure of soils and sediment. The 1989 Minnesota Ground Water Protection Act authorized the DNR to map geographic areas defined by natural features where there is risk to ground water from activities conducted at or near the land surface.² MPCA staff has reviewed the information compiled by the DNR to determine whether the proposed project has the potential to contribute pollutants to the underlying aquifer creating an adverse cumulative potential effect.

Contamination of ground-water resources is evaluated through a number of factors, including the depth to ground water, the porosity and permeability of the overlying media, and characteristics of the pollutant. MPCA staff reviewed the Land Application Plan, along with soil data, in order to determine the potential ground-water contamination risk presented by the project. MPCA has concluded that the project will not contribute to an adverse cumulative potential effect to ground-water quality in the area based on the potential risk of contamination to ground-water resources, characteristics of the aquifer and overlying media, and the manner in which land application of manure will be managed.

Depth to seasonal high water table is approximately 2.5 feet based on the NRCS soil classification and borings conducted at the proposed project site. The seasonal high water table may represent a perched water table condition where low permeability soils result in seasonal periods of saturation of sufficient duration for mottled soil conditions. Water level measurements in soil borings conducted at the site during October 2005 indicate an average depth to ground water of approximately five feet. Because of these characteristics, measures will be implemented to prevent negative impacts. This perched water table condition will be controlled around the manure storage areas with perimeter tile to ensure that ground water does not damage manure storage liners and cause leakage. The soil borings identify Fargo silty clay loam, which is considered a low permeable soil. Soil boring logs and Traverse County Soil Survey Data are available upon request. The soil characteristics and controlled conditions around the manure storage areas will protect against negative impacts.

¹ http://www.dnr.state.mn.us/waters/watermgmt_section/appropriations/interference.html (retrieved April 25, 2007).

² See generally Minn. Stat. § 103H.

The city of Dumont has two wells located about 1.25 miles west of 320 acres of land that may receive manure. These wells are nearly five miles from the dairy site and not considered to be vulnerable to surface contamination due to thick clayey tills that protect the aquifer. Proper manure application practices previously described will be utilized to minimize or eliminate any risk to these wells.

Surface-Water Quality

The land application areas are located within seven minor watersheds located within the Mustinka major watershed. A review of the 2008 MPCA Impaired Waters List indicated that Twelve Mile Creek is listed as impaired for biological integrity, affecting fish. The Mustinka River, downstream from the outlet of Twelve Mile Creek is listed as impaired for turbidity. See Exhibit 12 for a map of the impaired waters for the Red River Basin.

Other point sources in the area include the Dumont wastewater treatment facility which discharges into Twelve Creek. This facility has an NPDES/SPS Permit with the MPCA.

A Total Maximum Daily Load (TMDL) study is scheduled to start in 2010 for Twelve Mile Creek. This is to be completed by the MPCA and approved by the U.S. Environmental Protection Agency. This will be followed by the preparation of an implementation plan by local project partners (governmental entities) and submitted to the MPCA for approval within one year after approval of the TMDL. The pollutants and sources responsible for the impairment will be determined during the TMDL project. The implementation plan will specify the types of corrective measures that must be undertaken to improve the quality of the fish community to an acceptable level. In the interim, before the TMDL and implementation plan are completed, any new activity that could be a potential contributor to the impairment must implement best management practices to prevent further impairment.

The proposed project is not expected to contribute to the existing conditions discussed above. The project will minimize its potential impact to surface-water quality through the required manure storage and land application practices, which include storage in engineered concrete and earthen lined structures, fall land application, injection of manure, and observation of setback distances, as well as the use of an agronomic rate for land application. These practices will be included in the project's NPDES/SPS Permit. As a result, the project is not expected to contribute to an adverse cumulative effect on surface-water quality.

Air Quality

Air quality computer modeling was performed that estimated ambient air concentrations for hydrogen sulfide, ammonia, and selected odorous gases from the proposed project, along with two other feedlots identified in the area. The model estimated pollutant concentrations from the proposed project and the two other feedlots, along with an ambient hydrogen sulfide and ammonia background concentration, to account for any off-site air emission sources or activities. A background concentration is the amount of pollutants already in the air from other sources and is used in this evaluation to address cumulative air effects.

Hydrogen sulfide and ammonia could be present from other feedlot barns, the agitation, pump out and land application activities of a neighboring feedlot. Air emissions from other emission sources may affect the compliance status of the proposed facility, or impact downwind human and environmental receptors. The background level for hydrogen sulfide that was used in the computer model was derived from monitoring at other feedlot facilities in Minnesota. The modeling adds the background air pollutant concentration to the emission concentration predicted from the proposed project. The results of the modeling study indicate that no significant air quality impacts are expected from the proposed project and that the proposed project will not contribute to any adverse cumulative potential effects of air quality as described in Exhibit 10.

Land Use

The land identified for the purpose of this project includes the site of the project property, along with the land application acreage. The overall project, including land application sites, is reviewed in context to other existing or proposed projects within the watershed. Three issues have been identified with respect to land resources – wildlife habitat, row crop agriculture, and traffic.

Wildlife Habitat

There is a competing issue in rural landscapes to maintain a balance between agricultural demands and preserving natural resources. In this case, the location of the proposed project is in an area that is currently being used for agricultural production. All land, including land application areas, has been used for agricultural purposes for more than 20 years. The proposed project will not displace or disrupt any wildlife habitat and, as a result, will not contribute to an adverse cumulative effect related to habitat fragmentation and loss.

Row Crop Agriculture

The project is designed to utilize existing row crop feedstock, rather than to cultivate fallow or marginal land to meet crop use needs. As a result, existing row crop agriculture practices are not expected to create an additional new impact to environmental quality. There is no indication that any other projects in the area will be converting fallow or marginal cropland into row crop production within the project area. The proposed project will not modify land use and will not contribute to an adverse cumulative potential effect related to row crop agriculture.

Traffic

When Dollymount Dairy is operating at full capacity, there will be approximately 36 semi loads of milk per week. There will be an average of nine semi loads of feed delivered to the site each week and an average two loads of cattle. The driveways into the dairy are planned for the south side of the site. Trucks will enter/exit the site from 610th Street (five-ton in the spring, nine-ton in winter) and typically use 740th Avenue South.

Dollymount Dairy will work with Traverse County as needed to ensure all road restrictions are followed and any improvements that are required will be completed per the traffic management plan that will be reviewed and approved by Traverse County.

The Traverse County Board of Commissioners has requested that Dollymount Dairy proposers prepare a traffic management plan and present to the County Board of Commissioners on or before June 2, 2009.

12. Summary of issues. List any impacts and issues identified above that may require further investigation before the project is begun. Discuss any alternatives or mitigative measures that have been or may be considered for these impacts and issues, including those that have been or may be ordered as permit conditions.

No additional issues.

Other information pertaining to the operation that minimizes or limits environmental impacts:

- Antibiotics will only be used therapeutically at this site.
- The need for fly control in the barn will be reduced as the cross-ventilated barn will maintain a four to six-mile per hour breeze during the summer, greatly reducing the presence of flies. In addition to cross-ventilation, flies will be reduced by the use of chemical-free, biological fly control if needed.

RGU CERTIFICATION.

I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as "phased actions," pursuant to Minn. R. 4410.0200, subp. 60, 4410.1000, subp. 4, and 4410.4300, subp. 1.
- Copies of this EAW are being sent to the entire EQB distribution list.

Name and Title of Signer:

Craig Affeldt

**Craig Affeldt, Supervisor, Environmental Review Unit
St. Paul Office
Regional Division**

Date:

4-16-09

The format for the alternative Environmental Assessment Worksheet form has been approved by the Chair of the Environmental Quality Board pursuant to Minn. R. 4410.1300 for use for animal feedlot projects. For additional information contact: Environmental Quality Board, Room 300, 658 Cedar St., St. Paul, Minnesota, 55155, 651-201-2492, or voice mail: 800-657-3794. For TTY, call 800-627-3529 and ask for Minnesota Planning. This form can be made available in an alternative format, such as audiotape. This form is available at <http://www.eqb.state.mn.us/review.html>.