ARTICLE IV. COMPREHENSIVE NUTRIENT MANAGEMENT AND OPERATIONS

Sec. 27-400. Comprehensive Nutrient Management and Operations

(a) Before applying for a building permit for a new facility, significantly expanding (250 animals or 10% increase in mature animals, which ever is less) an existing facility, adding or deleting manure application areas, or constructing a retention pond(s) or settling basin(s) the property owner or operator shall submit to the Environmental Health Services Division, a new or revised Comprehensive Nutrient Management Plan (CNMP) in a format approved by the Environmental Health Services Division. The baseline for the 10% increase will be based on the number of animals existing on the facility on the adoption date of this chapter. The amount of land that can be irrigated with treated wastewater shall not exceed the ratio of 2.5 mature milked cows per acre, except the Department may grant the facility to use a higher ratio if the facility can prove its operational practices and/or specific site characteristics justify that the higher application ratio will not be detrimental to the environment.

(b) All existing Large Confined Animal Facility operators and/or owners must have completed a Comprehensive Nutrient Management Plan by December 31, 2006. The plan must be reviewed and approved by the Environmental Health Services Division. The preparer of the CNMP must be appropriately qualified to prepare such plans, as determined by the Environmental Health Services Division or RWQCB. For calculations in the CNMP for existing facilities, the actual nitrogen and salt content of liquid and dry manure shall be determined by a state certified laboratory using EPA approved test methods or other methods approved by the Environmental Health Services Division. The values obtained from the laboratory analysis shall be used to assure proper application to crops at agronomic rates.

(c) The CNMP shall contain the following components and other information as required by the Environmental Health Services Division:

(1) Facility and Owner/Operator Information:

(A) Names, addresses and phone numbers of the owner and operator.

(B) Site address and assessor's parcel numbers.

(C) An emergency action plan covering: fire, personal injury, manure storage and handling and, if applicable, land application operations.

(2) Production and nutrient information:

(A) Animal types and numbers.

(B) Calculated manure and wastewater volumes for the facility.

(3) Applicable permits or certifications:

(A) Local use permit, State permit and Federal permit.

(B) Record of inspections or site assessments.

(C) Changes made to the CNMP.

(4) Land application site information, if applicable:

(A) Written manure application agreements (if required).

(B) Dry and liquid manure application worksheets indicating how manure will be applied at agronomic rates.

(C) Assessors parcel number of all land application sites.

(D) Crop types, actual yields and expected nutrient uptake amounts.

(E) Soil analysis results.

(F) Manure analysis results.

(G) Groundwater analysis results.

(H) Plant tissue analysis results (if required).

(I) Methods of application.

(J) Weather conditions during application;

(K) Soil types.

(M) Highest groundwater depth, groundwater elevation and elevation of the bottom of the retention pond and settling basin.

(N) Flood plain designation.

(5) Liquid manure irrigation application.

(6) Dry manure application.

(7) Dead animal disposal - Describe how dead animals are disposed and frequency of removal.

(8) Facility operation and maintenance information:

(A) Odor control management plan describing odor control measures.

(B) Dust control management plan describing dust control measures.

(C) A vector control management plan that includes a description of how often corrals, retention ponds, settling basins, milk barn, watering areas, calf areas, freestalls, flush lanes, shades, feed storage and feeding areas are checked for vectors, frequency of cleaning feeding areas, a description of types of vector control that will be utilized (biological, chemical or cultural) and other information needed to prevent vector problems.

(D) An irrigation management plan for the storage and application of wastewater to cropland at agronomic levels. (Include size of retention ponds/settling basins, mixing procedures, expected application times and amounts of nitrogen applied etc.).

(E) A manure (liquid and dry) monitoring program. The manure monitoring program must demonstrate compliance with the following minimum criteria:

(i) Liquid manure shall be sampled and analyzed at least three (3) times a year prior to land application by a state-certified laboratory or other methods approved by the Environmental Health Services Division.

(ii) Dry manure shall be sampled and analyzed at least two (2) times a year prior to land application by a state-certified laboratory or other methods approved by the Environmental Health Services Division.

(iii) Specific constituents required for analysis and locations shall be determined by the Environmental Health Services Division. At a minimum, liquid manure shall be analyzed for total Kjeldahl nitrogen, ammonia-nitrogen, phosphorus, potassium, electrical conductivity and pH. At a minimum, dry manure shall be analyzed for moisture, organic nitrogen, nitrate nitrogen, phosphorus, potassium, electrical conductivity, total dissolved solids, selenium and pH. The Environmental Health Services Division may require analysis of other constituents including pharmaceuticals.

(iv) Description of the sampling techniques, equipment, sample preservation, analysis, the name of the laboratory, name of the sampler, and other information as required by the Environmental Health Services Division.

(F) A soil monitoring program. The soil monitoring program must demonstrate compliance with the following minimum criteria:

(i) Maps and drawings that identify the locations of soil sampling at existing or proposed uncovered animal housing (corrals/pens), manure storage areas, and cropland that will receive manure.

(ii) A description of how representative soil samples will be collected from each

location and at what depth.

(iii) Specific constituents required for analysis, number of samples and sampling frequency shall be as determined by the Environmental Health Services Division. At a minimum, soil samples for cropland shall be sampled for ammonium, calcium, magnesium, potassium, sodium, nitrate, cation exchange capacity, percent base saturation, soluble salts, selenium, total Kjeldahl nitrogen, phosphorus and pH. At a minimum, soil samples for non-cropland shall be sampled for ammonium, nitrate, soluble salts, total Kjeldahl nitrogen and pH. The Environmental Health Services Division may require analysis of other constituents including pharmaceuticals.

(iv) Sampling shall follow EPA procedures and test methods for soil sampling and analysis.

(v) The time of year when sampling will take place and who is responsible for taking the samples shall be identified.

(vi) Soil sample results, for the initial sampling, shall be submitted within 90 days of the start of operations at the site.

(vii) Sampling techniques, equipment, sample preservation, analysis, the name of the laboratory and the name of the sampler shall be provided.

(G) A groundwater monitoring program.
The number of monitoring wells and frequency shall be sufficient to adequately characterize and represent background water quality as well as monitor groundwater impacts from the Large Confined Animal Facility. A minimum of eight (8) monitoring wells shall be installed. Additional wells may be required and are based on the following criteria: soil type(s), groundwater depth, existing groundwater quality, the number of animals, location and construction of water supply wells, previous test results, location of potential areas of contamination and development of the facility. The groundwater monitoring program shall be prepared and signed by a California registered civil engineer or registered geologist and include a statistically significant sampling plan. At least 7 samples shall be collected from each well prior to the operation of the facility to provide an adequate number of background water samples for statistical analysis. Existing facilities shall collect 7 samples from each well prior to the approval of the CNMP. All groundwater samples shall be collected at the groundwater interface. The groundwater monitoring program shall be prepared and submitted for review and approval to the Environmental Health Services Division and shall provide the following minimum information:

(i) A description of groundwater conditions beneath the site including expected depths to the shallow and deep groundwater, expected direction(s) of groundwater flow, and the source of groundwater information (irrigation/water district maps, measurements of on site wells, and highest anticipated groundwater elevation). First encountered groundwater will be used to determine compliance with groundwater

testing of this Chapter.

(ii) A map showing the location of all the proposed monitoring wells and existing on-site wells relative to operations. Provide a separate map showing wells within 1,000 feet of the site.

(iii) Compliance with Solano County Code Chapter 13.10 (Wells), including obtaining monitoring well permits from the Environmental Health Services Division.

(iv) Description of sampling techniques, equipment, sample preservation, analysis, the name of the laboratory and the name of the sampler, shall be provided.

(v) Frequency of groundwater monitoring shall be quarterly and analyzed at a state certified laboratory. The Environmental Health Services Division may require more frequent analysis on a site specific basis.

(vi) Sampling constituents required for analysis shall be as determined by the Environmental Health Services Division. At a minimum, groundwater sampling shall include the following constituents: ammonium, calcium, potassium, magnesium, sodium, chloride, bicarbonate, selenium, nitrate, sulfate, ammonia, total dissolved solids, total Kjeldahl nitrogen and pH. The Environmental Health Services Division may add or delete specific constituents, including pharmaceuticals, based on previous sampling results or new information and/or other potential threats to groundwater or public health.

(vii) Two (2) monitoring wells shall be placed up gradient of the facility and three (3) monitoring wells shall be placed down gradient of the facility. Additionally, monitoring wells shall be placed both up and down gradient of the settling basins and retention ponds, areas of high animal density such as corrals and freestall barns, areas of potential contamination, and fields that are receiving wastewater irrigation. Monitoring wells shall be screened at the shallowest aquifer.

(viii) Sampling shall follow EPA procedures and test methods (or "Standard Methods For Examination of Water and Wastewater" 18th Edition or its revisions).

(ix) Groundwater depth, groundwater elevation and direction of flow shall be determined.

(x) For new confined animal facilities, initial water samples shall be taken prior to the start of operation to establish background water quality information.

(xi) Within 30 days after completion of the monitoring system, a report signed by a registered geologist or civil engineer must be submitted to the Environmental Health Services Division. The report shall include a map showing the location of all wells (including monitoring, domestic and irrigation wells) and all off site wells within 1,000 feet of the facility; well logs of the monitoring wells and on-site wells, if available; a description of how the wells were developed; the surveyed elevation of each monitoring

well taken from a clearly marked and adequately described benchmark (including GPS coordinates); and lithologic logs, if available.

(xii) In site-specific cases, where the water table is more than 100 feet below ground surface, the Environmental Health Services Division may allow soil monitoring to be substituted for groundwater monitoring.

(H) A plant tissue monitoring program (if required). Plant tissue monitoring may be required by the Environmental Health Services Division as part of the CNMP on a site specific basis. Monitoring will be based on the following criteria: soil type(s), groundwater depth, existing groundwater quality, the number of animal units, application area and previous test results. Sampling constituents shall be determined by the Environmental Health Services Division.

(I) An employee environmental and safety training program.

(J) The CNMP shall have a scaled site plan or aerial photograph and a topographic map with elevations which shows the following information:

(i) Buildings, corrals, lanes, retention ponds/settling basins, irrigation ditches, drainage and pipelines (private and community), silage storage, manure solids storage areas, tile drains, and tailwater return system.

(ii) On-site and off-site wastewater and manure application areas. Surface waterways on or near the facility, such as rivers, canals, sloughs and intermittent streams.

(iii) Slope of the land, by field.

(iv) USGS and Assessor's parcel maps.

(v) A list of all locations from which wastewater, storm water runoff and irrigation runoff can leave the property under control of the operator/owner.

(vi) A list of all structures located within the setback area of the facility as described by this code.

(vii) Public facilities such as roads and easements. Access points to public roads.

(9) Feed management/diet optimization plan. Animal feed and diet shall not provide more nutrients than are necessary for optimal growth and production.

(10) Activity records include, but are not limited to, manure production, recommended and actual application rates, dates and location of application, crops planted, harvest dates, crop yields.

(11) Other utilization options include a description of air emission controls and composting information.

(12) Water, soil, manure and plant tissue monitoring results shall be kept at the facility and sent to the Environmental Health Services Division and Regional Board within 10 days of receipt of results from the laboratory. Monitoring results shall be made available for public review.

Sec. 27-410. Large Confined Animal Facility (CAF) operational permits

(a) All Large Confined Animal Facilities shall be required to obtain a Large Confined Animal Facility operational permit by December 31, 2006. Environmental Health Services Division shall issue a Large Confined Animal Facility operational permit provided the facility meets the standards contained in Section 27-420 below.

(b) A Large Confined Animal Facility shall be operated, maintained, and monitored pursuant to the requirements of these standards and the operational permit. Under terms of the operational permit, the operator shall self monitor and record the operations occurring at the Large Confined Animal Facility and Division personnel may conduct inspections at the site and review the self monitoring reports and security plan.

(c) The Large Confined Animal Facility operational permit shall be renewed annually and any required fees shall be paid. The operator shall keep the Large Confined Animal Facility operational permit valid for the life of the facility.

(d) The property owner or his/her agent must submit an annual report to the Environmental Health Services Division for review with the information from the self monitoring reports and all water, soil, plant, manure, wastewater, and, if required, air sampling results.

Sec. 27-420. Operation

(a) Dead animals shall be removed from the site within three (3) days and be disposed at a licensed rendering facility or by other methods approved by the Environmental Health Services Division. Dead animals shall not create a nuisance prior to their removal. Storage and removal of dead animals shall be accomplished in such a manner to prevent cross contamination with other animals and feed.

(b) All areas and practices of the Large Confined Animal Facility shall be managed in such a manner as to minimize a nuisance caused by rodent, fly or mosquito breeding, dust and/or odors.

(c) All contaminated storm water that is or has been in contact with manure or wastewater shall be maintained on-site and directed to the manure management system.

(d) Application of liquid manure or wastewater to fields or crop lands shall be applied in accordance with Best Management Practices which to reduce odor emission, air emission and prevent vector attraction. This may require direct injection into the soil or other methods that provide equivalent results approved by the Environmental Health

Services Division. Application of manure (liquid and dry) wastewater to fields or crop lands shall be applied at rates and times which are reasonable for the crop, soil, climate, special local situations, management system and type of manure. Applications shall be timed and managed to minimize nitrogen movement below the root zone and to minimize percolation of waste constituents to groundwater. Application of liquid or dry manure to frozen or saturated ground is prohibited.

(e) Within four hours of discovery the operator shall notify the Environmental Health Services Division and Regional Water Quality Control Board of any off-property discharge of facility wastewater. This notification will be followed by a written report that shall be submitted to the Environmental Health Services Division within 48 hours of the start of the discharge. The written report shall contain:

(1) The date the discharge began;

(2) Duration and estimated volume of the discharge;

(3) Point of discharge;

(4) Specific source of discharge (e.g., overflow from holding pond, rainfall runoff from manure storage areas, etc);

(5) Steps taken to mitigate the effects of the discharge;

(6) Steps taken to prevent such a discharge in the future.

(f) Liquid wastes from humans or human activities shall not be commingled with manure or wastewater from Large Confined Animal Facility operations. Refer to Solano County Code, Chapter 6.4 for disposal requirements for liquid wastes from humans or human activity.

(g) Only locations specifically permitted in a valid Large Confined Animal Facility operational permit and included in the Confined Animal Facilities CNMP may use manure (liquid or dry) or wastewater from the Large Confined Animal Facility. If dry or liquid manure is transported off-site as allowed by an approved and valid Large Confined Animal Facility operational permit and CNMP, the most recent analysis shall be provided, in writing, to the recipient.

(h) If dry or liquid manure is transported offsite as allowed by an approved and valid Large Confined Animal Facility operational permit and CNMP, the most recent analysis shall be provided, in writing, to the recipient.

(i) Neither the storage nor the discharge of manure shall create a condition of nuisance or pollution as defined by California Water Code section 13050.

(j) The compliance officer shall conduct an adequate number of routine inspections

to ensure that the facility is properly maintained and operated in conformance with these standards. Inspections shall be documented and minimally include the date of inspection, the area, component or process inspected, the result of the inspection and corrective actions taken. The following inspections are required on a daily basis:

(1) Weather:

(A) Temperature, wind velocity and direction;

(B) 5 day forecast.

(2) Odors and Vectors:

(A) Areas of high animal concentration;

(B) Wastewater holding ponds;

(C) Areas that have received wastewater application within the last 5 days;

(D) The perimeter of the developed facility and at the property boundaries;

(E) Feed stock storage areas.

(3) Storm water, irrigation and drainage systems:

(A) Collection system inlets, channels and conduits;

(B) Tailwater systems;

(C) Offsite drainage points and control structures.

(4) Wastewater systems:

(A) Collection systems, pumps, sumps and pump vaults, piping, treatment and recycling systems;

(B) Elevation of water and freeboard in holding settling basins or retention ponds;

(C) Holding pond seepage, erosion, vegetation and animal access.

(5) On-site water and monitoring wells:

(A) Structural integrity and potential for contamination;

(B) Water lines.

(k) The compliance officer shall also inspect all channels that convey storm water such as roof gutters that could interfere with the diversion of clean storm water following routine inspections and maintenance of the facility between November and April.

(l) Any deficiencies found as a result of these inspections shall be expeditiously corrected. Records of inspection activities shall be kept in the CNMP.

(m) Manure (liquid or dry) or wastewater shall not be applied, stored or accumulated within 100 feet of any domestic well, irrigation well or surface water body. Adequate protection of surface water bodies or irrigation wells shall prevent discharge or infiltration of manure constituents to the water body or well.

(n) Manure application equipment must be calibrated annually if used for land application of dry manure and/or wastewater. Records of calibration shall be kept in the CNMP.

(o) If a Large Confined Animal Facility is permanently closed, all liquid and dry manure must be removed from the facility within 120 days (weather conditions permitting) and soil samples taken beneath the retention pond, settling basin and corral areas to determine the levels of nitrogen in the soil. The specific constituents to be sampled, number of samples and sample depths will be determined by the Environmental Health Services Division on a site-specific basis.

(p) When groundwater pollution or the discharge of manure from the operation of a Large Confined Animal Facility or application area causes groundwater to contain manure constituents in concentrations statistically greater than background water quality, except as provided for in section 27-420(r)(1), the property owner shall, within sixty days of detection by the owner, his/her agents, or the Division:

(1) Determine the source and the lateral and vertical extent of the degradation;

(2) Identify steps necessary to prevent further degradation;

(3) Submit a remediation plan, prepared by a licensed civil engineer or registered geologist, for review and approval to the Environmental Health Services Division;

(4) Initiate groundwater remediation within 30 days of plan approval by the Environmental Health Services Division.

(q) Groundwater remediation required under section 27-420(q) shall return groundwater quality to the lower of (1) the levels established prior to the initiation of operations at the Large Confined Animal Facility or (2) background levels established by on site monitoring wells with the following exception.

(1) If a chemical constituent is specifically listed in a NPDES permit or WDR issued by the RWQCB, then the concentration of that constituent only requires remediation to

the level of compliance with the NPDES permit or WDR. No plan or remediation is required for the regulated constituent unless the concentration of the specific chemical constituent(s) listed in the NPDES permit or WDR is exceeded.

(r) A licensed civil engineer or registered geologist shall certify that the groundwater remediation plan has fully mitigated the groundwater degradation, and that further degradation has been prevented.

(s) Concentrations greater than background will be determined by statistically evaluating groundwater monitoring results in monitoring wells down gradient of potential sources relative to background groundwater quality as represented by monitoring wells up gradient of potential sources.

(t) The Large Confined Animal Facility shall meet the requirements of the appropriate irrigation and/or drainage district for issues related to the Large Confined Animal Facility operation including, but not limited to, meeting discharge requirements of drainage water from cropland application areas.

(u) Manure solids and silage shall be stored on impervious surfaces and protected from storm water run-on. Corrals are excluded from this requirement. Manure shall be removed from corrals and freestall barns and exercise pens at least three times per year (Spring, Summer and Fall).

(v) Dry manure shall be uniformly applied and immediately incorporated into the soil (excluding pasture) at the appropriate agronomic rates. Dry manure shall be stored and applied in a manner that prevents a vector or odor nuisance and/or groundwater or surface water contamination.

(w) Dry manure with less than 75% moisture shall not be applied during periods when the surface wind speed exceeds 25 miles per hour for thirty minutes. The operator shall use an approved wind speed monitoring device.

(x) Manure removed from the bottom of a settling basin or retention pond shall be analyzed at a frequency determined by the Environmental Health Services Division for total dissolved solids, total nitrogen and other constituents as determined by the Environmental Health Services Division.

(y) Sprinkler irrigation of liquid manure or wastewater is allowed only under the following conditions:

(1) Extent of sprinkler irrigation water is no closer than 500 feet from the nearest property line.

(2) Wind speeds do not exceed 15 mph.

(3) All sprinkler irrigation including spray shall remain on the facility property.

(z) The off-site discharge of tailwater is prohibited.

(aa) Large Confined Animal Facilities shall meet applicable Air Quality Management District requirements.

(bb) Spreading of manure (liquid or dry) on soil, when frozen or saturated soil conditions, is prohibited.

(cc) Samples of water, wastewater, soil, manure, air or plant tissue may be collected periodically during inspections.

(1) The number of samples of water, wastewater, soil manure, air or plant tissue taken and analyzed shall be determined by the Environmental Health Services Division during field inspections, complaint investigations, or from requests by other permitting authorities. This determination shall take into consideration existing site operations, previous sampling results, the frequency of sampling and analysis conducted by the Large Confined Animal Facility operator or other applicable agencies. The intent of the sampling program is to verify that the monitoring reports and sampling results submitted to the Department are in compliance with this Code and any other Federal or State requirements.

(2) Additional analysis may be conducted if, in the opinion of the Division, conditions exist that may promulgate public concern or where there is potential for a public health hazard.

(3) The Division shall at no time be limited as to sampling location or number of samples obtained.

(4) Analysis of samples collected by the Environmental Health Services Division shall not be limited as to the constituents analyzed by the Large Confined Animal Facility operator and can include constituents which may be of concern in protection of the public health and/or the environment.

(dd) Any storm water monitoring required NPDES permit, General Order, or WDR shall also be submitted to Environmental Health Services Division.

Sec. 27-430. Compliance Officer

All Large Confined Animal Facilities shall designate one person as the compliance officer. The officer may be the owner, operator or other qualified person capable of supervising the operations of the facility. The compliance officer shall be responsible for ensuring that the facility is meeting the requirements of this code. Nothing in this section shall prevent the compliance officer from fulfilling other facility duties as appropriate.