COMMONWEALTH of VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY
PERMIT
TO WITHDRAW GROUNDWATER
(FOR USE IN GROUNDWATER MANAGEMENT AREAS

Permit Number: GW0053900
Effective Date: August 1, 2012
Modified Date: March 31, 2014
Expiration Date: July 31, 2022

Pursuant to Section 62.1-256 of the Ground Water Management Act of 1992 (Chapter 25, Title 62.1 of the Code of Virginia) and the Groundwater Withdrawal Regulation (9VAC25-610-10 et seq.), the State Water Control Board hereby authorizes

Permittee Perdue Farms, Inc.

Address 22520 Lankford Highway

Accomac, Virginia, 23301

Facility Perdue Farms, Inc.

to withdraw and use groundwater in accordance with this permit and the application received April 26, 2007 and subsequently amended.

The permittee is authorized to withdraw 700,000,000 gallons per year.

The permittee shall comply with all requirements contained on this cover page, Part I - Permit Standards, Limitations, and Conditions, Part II - Special Conditions, the Ground Water Management Act of 1992 (Chapter 25, Title 62.1 of the Code of Virginia), and the Groundwater Withdrawal Regulation (9VAC25-610-10 et seq.). Nothing in this permit or this regulation shall be construed to relieve the permittee of the duty to comply with all applicable Federal and State statutes and regulations.

The permitted withdrawal will be used to provide an industrial water supply for the processing of chickens, including clean up and rendering operations along with the potable water needs of the facility. Other beneficial uses are not authorized by this permit.

Any noncompliance with permit conditions, the Groundwater Withdrawal Regulation (9VAC25-610-10 et seq.) or the Ground Water Management Act of 1992 (Chapter 25, Title 62.1 of the Code of Virginia) is a violation of the regulation and law, and is grounds for enforcement action, permit termination, revocation, amendment, or denial of a permit renewal application.

By direction of the State Water Control Board, this Permit is granted by:

Signed _____ Date 4/29/14

For the State Water Control Board

Part I
Permit Standards, Limitations and Conditions

1. The withdrawal of groundwater shall originate from the following withdrawal points:

Owner Well Name	DEQ Well #	Depth	Aquifer	Latitude	Longitude
P-1	100-00030	310'	Middle and Lower Yorktown Eastover	37°44'08.6"	75°38'58.3"
P-2	100-00026	300'	Middle and Lower Yorktown Eastover	37°44'19.1"	75°39'9.6"
P-3	100-00029	310'	Middle and Lower Yorktown Eastover	37°44'30.1"	75°39'20.9"
P-4A	100-00020	280'	Upper, Middle, Lower, Yorktown Eastover	37°44'02.7"	75°39'39.0"
P-4R	100-00904	308'	Middle and Lower Yorktown Eastover	37°44'19.1"	75°39'38.4"
P-5	100-00531	310'	Middle and Lower Yorktown Eastover	37°44'24.6"	75°39'29.4"

2. Withdrawals from the well system are limited as follows:
In a calendar month: Total pumpage from these wells shall not exceed 78,000,000 gallons. The permittee shall report any amount in excess of the monthly withdrawal limit by the fifth day of the month following the month of over withdrawal.

3. Water use from each well and total system water use shall be recorded monthly and reported on forms provided by the Department of Environmental Quality (Department or DEQ) to the Tidewater Regional Office of the Department by the tenth day of each January, April, July and October for the respective previous standard quarter. Records of water use shall be maintained by the permittee as required in Section 9VAC25-610-130(F).

4. Permitted users shall install in-line totalizing flow meters to read gallons, cubic feet or cubic meters on each well prior to beginning the permitted use. Meters shall be tested in accordance with American Water Works Association (AWWA) Manual M-6, "Water Meters - Selection, Installation, Testing, and Maintenance". Such meters shall produce volume determinations within plus or minus 10% of actual flows. A defective meter or other device must be repaired or replaced within 30 days. A defective meter is not grounds for not reporting withdrawals. During any period when a meter is defective generally accepted engineering methods shall be used to estimate withdrawals and the period during which the meter was defective must be clearly identified in groundwater withdrawal reports.

5. Each permitted well shall be equipped in a manner such that water levels can be measured during pumping and non-pumping periods without dismantling any equipment. Any opening for tape measurement of water levels shall have an inside diameter of 0.5 inches and be sealed by a removable plug or cap. The permittee shall provide a tap for taking raw water samples from each permitted well.

6. The permittee shall not place a pump or water intake device lower than the top of the uppermost confined aquifer that a well utilizes as a groundwater source or lower than the bottom of an unconfined aquifer that a well utilizes as a groundwater source.

7. Each well that is included in this groundwater withdrawal permit shall have affixed to the well casing, in a prominent place, a permanent well identification plate that records the DEQ well identification number, the groundwater withdrawal permit number, the total depth of the well and the screened intervals in the well, at a minimum. Such well identification plates shall be in a format specified by the Department and are available from the Department.

8. The Water Conservation and Management Plan as described in the application received April 26, 2007 and subsequently amended is incorporated into this permit and included as Attachment A. Requirements in the Water Conservation and Management Plan shall have the same effect as any condition contained in this permit and may be enforced as such. Records of activities conducted pursuant to the Plan are to be submitted to Department upon request.

9. This permit may be reopened for the purpose of amending the conditions of the permit to meet new regulatory standards duly adopted by the Board.

10. A new permit application must be submitted 270 days before the expiration date of this permit.

11. A new permit application must be submitted 270 days prior to any proposed modification to this permit that will result in an increase of withdrawal above permitted limits or violate the terms and conditions of this permit.

12. This permit may be reopened for amendment, transfer, or revocation as described in Part VI of the Groundwater Withdrawal Regulation.

13. The permittee must notify the Department in writing and obtain staff approval of any change in the status, construction or pump setting of wells included in this permit. A revised GW-2 form must be submitted to the Department within 30 days in the event that the physical construction of a well is altered or the pump setting in the well is changed.

14. The permittee must notify the Department in writing of any change of contact person, address, or phone number that is contained in the application received April 26, 2007.

15. Upon presentation of credentials the Board or Department, or any duly authorized agent, shall have the power to enter, at reasonable times and under reasonable circumstances, any establishment or upon any property, public or private, located anywhere in the Commonwealth for the purposes of obtaining information, conducting surveys or inspections, or inspecting wells and springs to ensure compliance with any permits, standards, policies, rules, regulations, rulings and special orders which the Board or Department may adopt, issue or establish to carry out the provisions of the Ground Water Management Act of 1992 and the Groundwater Withdrawal Regulation.

Part II
Special Conditions

1. **Withdrawals from individual wells are limited as follows:**

Maximum Pumping Rates

Group Number	Model Cell Row	Model Cell Column	DEQ Well Number	Perdue Farms, Inc. Well Name	Aggregate Limit per Cell	
					Gallons/Mo	Gallons/Yr
1	122	54	100-00030	Well #1	8,500,000	73,000,000
2	121	52	100-00026	Well #2	18,500,000	175,000,000
3	121	51	100-00029	Well #3	22,500,000	208,000,000
4	124	51	100-00020	Well #4A	3,500,000	23,000,000
5	123	50	100-00904	Well #4R	12,000,000	110,000,000
6	122	51	100-00531	Well #5	13,000,000	111,000,000

2. **Mitigation Plan**
The Mitigation Plan, as described in the application received April 26, 2007 and subsequently amended, is incorporated into this permit and included as Attachment B. Requirements in the Mitigation Plan and subsequent revisions shall have the same effect as any condition contained in this permit and may be enforced as such.

3. **Health Department Permit**
Daily withdrawals shall be consistent with the requirements and conditions of the Virginia Department of Health (VDH) Waterworks Operation Permit (WWOP) 3001700. The permittee shall submit copies of WWOP and the associated Engineering Description Sheets to DEQ within 30 days of an upgrade.

4. **Additional Wells**
A minor amendment to this permit must be made to include additional wells. Additional wells may be permitted under a minor amendment if the total withdrawal does not exceed the permitted amount contained in this permit, the withdrawal from all additional wells originates from the Middle or Lower Yorktown Eastover Aquifers, and the location of the wells are approved by Department staff prior to construction. Additionally, a complete suite of geophysical logs (Spontaneous Potential, Single Point Resistance, 16/64 Short and Long Normal, Natural Gamma) shall be submitted to the Department prior to setting the pump intake.

5. **Water Quality Monitoring**
The permittee shall collect a groundwater quality sample from MYETW (100-01266) completed in the *Middle Yorktown Eastover Aquifer* and LYETW (100-01267) completed in the *Lower Yorktown Eastover Aquifer* on a quarterly basis. Prior to collecting the sample, the well shall be pumped sufficiently to withdraw at least three well volumes and the Ph, temperature, and conductivity of the discharge shall be stabilized. The sample shall be analyzed for, at a minimum, chloride, sulfate, alkalinity, fluoride, calcium, magnesium, zinc, sodium, iron, and potassium content, and an anion-cation balance (as described in Part 1030 F.1 of "Standard Methods for the Examination of Water and Wastewater") shall be performed on the results. A report of the results shall be submitted quarterly with the withdrawal reports required in Condition 3 of Part I - Permit Standards, Limitations and Conditions. Records of groundwater quality sampling results including documentation of Ph, temperature, and conductivity

stabilization prior to sampling shall be maintained by the permittee as required in 9VAC25-610-130 (F).

Water quality analyses with cation-anion imbalances greater than the recommended limits as described in the Standard Method are considered suspect and the reason for the excessive imbalance must be explained in writing by the laboratory at the time of report submittal or the sample re-tested or the well re-sampled and tested within 30-days of the initial test result that fell outside of the recommended limits. The Department reserves the right to require a re-test or re-sample and test after review of the laboratory's explanation for the excessive imbalance.

The permittee shall also collect a groundwater quality sample from MYETW (100-01266) completed in the *Middle Yorktown Eastover Aquifer* and LYETW (100-01267) completed in the *Lower Yorktown Eastover Aquifer* on a monthly basis. Prior to collecting the sample, the well shall be pumped sufficiently to withdraw at least three well volumes and the Ph, temperature, and conductivity of the discharge shall be stabilized. The sample shall be analyzed for chlorides. This monthly requirement will be satisfied in those months when a quarterly sample is collected since chloride is one of the analytes in the quarterly sample. The monthly samples shall be submitted quarterly with the quarterly water quality reports. Records of groundwater quality sampling results including documentation of Ph, temperature, and conductivity stabilization prior to sampling shall be maintained by the permittee as required in 9VAC25-610-130(F).

6. **Water Quality Reopener**
If the monitoring information required in Condition 4, above, indicates the potential for adverse impacts on groundwater quality due to this withdrawal, this permit may be reopened to include groundwater quality action levels.

7. **Pump Intake Settings**
Pump settings in individual wells are limited as follows:

Owner Well Name (or #)	DEQ Well#	Max Pump Setting (ft below land surface)
Well #1	100-00030	200
Well #2	100-00026	200
Well #3	100-00029	200
Well #4A	100-00020	120
Well #4R	100-00904	210
Well #5	100-00531	200

The permittee may provide additional information regarding the depth of the top of the Upper and Middle Yorktown Eastover Aquifers to justify pump settings different from those listed above. Any change in the pump settings must receive prior approval by Department staff and be included in this permit as a minor amendment.

8. **Existing Monitoring Wells to Remain**
The permittee monitors Observation Wells MYEOW 1 (100-01068) and LYEOW 1 (100-01067). Any monitoring data obtained from these wells shall be made available to the Department upon request. Should the permittee determine that they no longer need to monitor these wells they shall be abandoned in accordance with VDH requirements with concurrence of the DEQ and abandonment reports shall be submitted to the DEQ within 30 days of abandonment.

9. **Permit Reopener**
This permit may be reopened if the issuance of groundwater withdrawal permits required by the Ground Water Management Act of 1992 for existing permitted or certificated users indicate that the basis used for predicting compliance with regulatory drawdown criteria was inaccurate

ATTACHMENT A

WATER CONSERVATION AND MANAGEMENT PLAN

ATTACHMENT B

MITIGATION PLAN

ATTACHMENT 13
WATER CONSERVATION AND MANAGEMENT PLAN

1. Water Saving Plumbing and Processes

Equipment used in the processing facility is continually upgraded and effectively reduces the amount of water required to perform similar operations in the past. All new equipment is evaluated with regards to its economical use of water, and outside sources are continually brought in to discuss new technologies. Some of the upgrades that Perdue has implemented to save water include the following:

- Installed main shut off valves in key department to aid in quickly turning off water.
- Installed a water pressure control system to regulate the inlet pressure of all potable water users at the facility and control water use.
- 24-hour chart recorder being used to understand water pressure variations and enable adjustments to be made.
- Replaced screens at Offal area which reduced loads to wastewater facility and allowed for more efficient use of water.
- Replaced 90 nozzles on bird washers rated at 1 gpm with nozzles rated at 0.5 gpm (save 45 gpm).
- Installed flow restricting orifices on 16 high pressure hoses in Evisceration, reducing the flow from 12.5 gpm to 7.5 gpm (save 80 gpm).
- Replaced the medium pressure storage tank that was leaking approximately 60 gpm (save 60 gpm).
- Installed check valves on the medium pressure lines which prevented water from overflowing out of the medium pressure tank during the weekends due to gravity
- Installed flow restricting orifices on three wash tables, reducing the flow from 12.5 gpm to 5 gpm (save 22.5 gpm).
- Replaced 12 shower heads rated 2.2 gpm with heads rated 1 gpm (save 14.4 gpm).
- Replaced 30 nozzles in Cut-up belt washers that reduced water usage by 40,000 gallons per day.
- Replaced 35 nozzles in Thigh Deboning that were using 20 gpm with new nozzles which are using only 4.2 gpm (save 15.8 gpm).
- Replaced old cooling towers at Rendering (save 60,000 gallons per day).

Additional water saving efforts being considered by Perdue Farms, Inc. include the following:

- Determine where more dry cleanup can occur.
- Seek alternative process to handle spent ice.
- Inside/Outside Birdwasher water reuse.
- Install additional meters to quantify water use.
- Reuse condenser blowdown water.

- Vacuum product to Offal.
- Use higher pressure water and less volume.
- Processing and Rendering to use heat exchangers, thereby reducing boiler operations and water use.

Should renovations at the facility occur, any domestic plumbing fixtures replaced will meet the most recent Uniform Statewide Building Code for ultra low water consumption.

2. **Water Loss Reduction Program**

To ensure water is used in the most efficient and effective way, Perdue Farms, Inc. formed a Water Conservation Team. Team members include representatives from the different areas of the facility, including First Processing, Further Processing, Maintenance, Sanitation, and all facility department managers. Duties of team members include the following:

- Audit meters and graph water usage daily
- Report leaks
- Report unnecessary use of water
- Turn water on just before start-up
- Turn water off at breaks and lunch
- Turn water off at conclusion of processing day
- End of day report of any water left on
- Report any belt washer or hose that is missing nozzle
- Maintain and monitor heavy water users in each area
- Attend a Water Conservation Team meeting every two weeks

The facility processing and plumbing systems are inspected and maintained on a regular basis. Any leaks are repaired promptly. The plant manager and water system maintenance supervisor are instructed to note areas where changes in the operating procedure and/or equipment setup will help to conserve water, or reduce losses.

3. **Water Use Education Program**

Employees receive instruction as to the importance of efficient water use and conservation methods during their orientation. Ownership by all is stressed.

The Wastewater Manager and Environmental Manager attend production and staff meetings to report on water related activities and concerns. Continued improvements are stressed as part of management goals. All managers within the facility have signed a water economy pledge stating: **We as managers of our areas support efforts to use water in the most efficient and effective way. It is realized that our customers will not pay for our inefficiencies. We will strive to be the leaders in water conservation within the industry.**

Perdue Farms, Inc. has a water conservationist to expedite reductions in water use at the facility. Meters have been installed to quantify water use in various areas of the facility including:

- Entry points to Processing Plant
- Rendering
- Chiller water
- Inside/Outside Birdwasher machines
- Medium pressure pumps
- High pressure pumps
- Breast Debone Room
- Thigh Debone Room
- Evisceration chlorinated lines
- GIB systems
- Garage
- Wastewater discharge
- Sanitation

Individual departments graph and chart water use in their areas, and graphs and charts of facility water use are posted daily. Additional meter locations are pending.

- **Evaluation of Potential Water Reuse Options**

Process wastewater is collected and pumped to the facility wastewater treatment plant where it is treated and is either discharged to nearby Parker Creek, or is reclaimed for use (average 1,370,000 gpd) in the facility yard washdown, rendering area, offal operation, first wash down of Live Receiving areas, and in the wastewater treatment area as dilution water in the lime mixer and wash water on the sludge belt presses. Wastewater from sinks and restrooms at the facility also drains to the wastewater treatment plant.

Various projects have been undertaken to reduce water use at the facility, and Perdue Farms, Inc. is committed to identifying areas where additional treated wastewater can be reused.

- **Requirements for Mandatory Water Use Reductions**

Perdue Farms, Inc. will comply with any mandatory water use reductions during water shortage emergencies declared by the State government, local governing body, or the Director of VA DEQ. This will include provision of requirements for mandatory water use restrictions to employees and prohibiting all non-essential uses. Perdue Farms, Inc. agrees to pay any penalties assessed for failure to comply with mandatory water use restrictions during water shortage emergencies declared by the State government, local governing body, or the Director of VA DEQ.

ATTACHMENT 15
MITIGATION PLAN

INTRODUCTION

Perdue Farms, Inc. (Perdue) has been operating on the Eastern Shore since 1971, and has applied for a renewal with modification of Groundwater Withdrawal Permit No. ES-044 to withdraw groundwater at a rate of 2,637,850 gallons per day, or 700,000,000 gallons per year, with a monthly maximum withdrawal of 78,333,333 gallons. The water is used primarily in the industrial process with a small portion supplying water for consumption by plant employees.

The purpose of this Mitigation Plan is to provide existing groundwater users with a method to resolve claims that may arise due to the impact of the withdrawal from the existing wellfield located at the Perdue facility. Projected drawdown of water levels due to the annual average withdrawal in the Middle and Lower Yorktown-Eastover Aquifers will be modeled by the VADEQ.

It is expected that modeled impacts will extend beyond the boundary of the Perdue facility. Perdue recognizes that there will be a rebutable presumption that water level declines that cause adverse impacts to existing groundwater users within the projected area of impact are due to this withdrawal. However, Perdue will have the right to rebut claims within the area impacted by the withdrawal. Claims may be made by groundwater users outside this area, however, in that case there is a rebuttable presumption that Perdue has not caused the adverse impact. Perdue proposes this plan to mitigate impacts to existing groundwater users and excludes impacts to wells constructed after the effective date of this permit.

CLAIMANT REQUIREMENTS

To initiate a claim, the claimant must provide written notification of the claim to Perdue together with the following documentation: (a) a deed or other available evidence that the claimant is the owner of the well and that the well was constructed and operated prior to the effective date of this Permit; (b) all available information related to well construction, water levels, historic yield, water quality, and the exact location of the well sufficient to allow Perdue to locate the well on the claimant's property; (c) the reasons the claimant believes that the Perdue withdrawal has caused an adverse impact on the claimant's well(s); (d) whether other mitigation claims have been made to other GWW Permittees for the same well.

CLAIM RESOLUTION

Perdue will review any claim within five (5) days. If Perdue determines that no rebuttal will be made and accepts the claim as valid, Perdue will so notify the claimant and will implement mitigation within thirty (30) business days.

If the claim is not accepted as valid, Perdue will notify the claimant that (a) the claim is denied or (b) that additional documentation from the claimant is required in order to evaluate the claim. Within fifteen (15) business days of receiving additional documentation from the claimant, Perdue will notify the claimant (a) that Perdue agrees to mitigate adverse impacts or (b) the claim is denied. If the claim is denied, the claimant will be notified that the claimant may request the claim be evaluated by a three (3) member committee. This committee will consist of one (1) representative selected by Perdue, one (1) representative selected by the claimant, and one (1) representative mutually agreed upon by the claimant and Perdue.

Any claimant requesting that a claim be evaluated by the committee should provide the name and address of their representative to Perdue. Within five (5) business days of receipt of such notification, Perdue will notify the claimant and claimant's representative of the identity of Perdue's representative and instruct the representatives to select a third representative within ten (10) business days. Representatives should be a professional engineer or hydrogeologist with experience in the field of groundwater evaluations and extraction. Perdue agrees to reimburse the members of the committee for reasonable time spent, at a rate prevailing in the area for experts in the above listed fields, and for direct costs incurred in administering the plan. The claimant may, at his or her option, choose to provide the reimbursement for the member of the committee selected by the claimant and up to half of the reimbursement for the mutual representative.

Within ten (10) business days of selection of the third representative, the committee will establish a reasonable deadline for submission of all documentation it needs to evaluate the claim. Both the claimant and Perdue will abide by this deadline.

Within fifteen (15) business days of receipt of documentation, the committee will evaluate the claim and reach a decision by majority vote. The committee will notify the claimant and Perdue regarding its decision to (a) deny or (b) approve the claim. If the claim is approved, Perdue will mitigate the adverse impacts within thirty (30) business days of making the decision or as soon as practical. If the claim is denied by the committee, Perdue may seek reimbursement from the claimant for the claimant's committee representative and one half of the third representative on the committee.

If a claimant within the indicated area of impact indicates that they are out of

water, Perdue will accept the responsibility of providing water for human consumptive needs within seventy-two (72) hours and to cover the claim review period. Perdue reserves the right to recover the cost of such emergency water supply if the claim is denied by Perdue or found to be fraudulent or frivolous. If Perdue denies a claim and the claimant elects to proceed with the three (3) member committee, Perdue will continue the emergency water supply at the claimants request during the committee's deliberations, but reserves the right to recover the total costs of emergency water supply in the case that the committee upholds the denial of the claim. Similarly, Perdue reserves the right to recover costs associated with the claim process if a claim is found to be fraudulent or frivolous.

If it is determined by the Committee or shown to the Committee's satisfaction that a well operating under a mitigation plan similar to Perdue's plan, other than those owned and operated by Perdue, has contributed to the claimed adverse impact, Perdue's share of the costs associated with mitigation will be allocated in proportion to its share of the impact. Such a determination shall be made by the Committee after notification of the third party well owner, giving the third party well owner the opportunity to participate in the proceedings of the Committee. Should such a third party decline to participate, the claimant will be advised to submit a claim to the third party. Perdue will provide its prorated share of the costs in proportion to its share of the impact as described above.

PLAN ADMINISTRATION

1. Any notice required under this Plan may be served by hand or sent by regular mail addressed to:

Paul Bruce Roberts, Environmental Manager
Perdue Farms, Inc.
22520 Lankford Highway
Accomac, Virginia 23301

2. Nothing in the Plan shall be construed to prevent the VA DEQ Staff from providing information needed for resolution of claims by the Committee.