STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES &
ENVIRONMENTAL CONTROL
DIVISION OF WATER
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

First Class Mail and
CERTIFIED MAIL # 7014 1820 0000 5868 0495

November 2, 2017

NOTICE OF VIOLATION
W-17-GWD-13

Mike W. Tirrell, Executive Vice President of Business Strategy & Administration
Mountaire Farms of Delaware, Inc
PO Box 1320
Millsboro DE 19966

Re: Notice of Violation –Mountaire Farms of Delaware, Inc.
State of Delaware Spray Irrigation Permit Number 359191-04
State of Delaware Agricultural Utilization Permit AGU 1402-S-03

Dear Mr. Tirrell,

Pursuant to the authority in *7 Del.C.* § 6005, this **Notice of Violation (NOV)** is being issued to Mountaire Farms of Delaware, Inc. (Mountaire) for violation of *7 Del.C.*, Chapter 60, 7 Del.Admin. C. § 7101 *Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems* (the On-Site Regulations), State Permit 359191-04 (Permit), 7 Del.Admin. C. § 7103 *Guidance and Regulations Governing the Land Treatment of Wastes* (the Biosolids Regulations) and State Permit AGU 1402-S-03 as documented below.

Part I. Spray Irrigation Permit Number 359191-04

SPRAY IRRIGATION - BACKGROUND

Mountaire is permitted to treat and spray irrigate reclaimed wastewater onto agricultural farmland divided into 13 spray zones located north and south of State Route 24, Millsboro, Delaware. Approximately 542 acres of the 928 acre farmland is permitted for wet and cold weather use. The facility is permitted to dispose of a monthly average quantity of 2.6 million gallons per day at a rate not to exceed 2.5 inches per acre averaged over a 7 day period. The facility has been designed for a monthly effluent Total Nitrogen concentration of 15.6 mg/L. The total amount of nitrogen that may be applied to each spray field acre annually is 320 lbs.

Increase in Total Nitrogen Effluent Concentrations

On September 7, 2010, Mountaire received a Non-Compliance Notice from the Groundwater Discharges Section related to the assessment of nitrates found in numerous monitoring wells and the groundwater impact associated with spray irrigation. At the time of the assessment, infield monitoring wells showed nitrate levels averaging 25 mg/L. The permittee was required to install lysimeters and provide monthly Nitrogen Balance Spreadsheets demonstrating the nitrate concentration did not exceed 10 mg/L.

In an effort to improve wastewater treatment processes and overall effluent water quality, in 2011 the permittee proposed the installation of a Dissolved Air Floatation Unit (DAF), a Modified Ludzack-Ettinger Unit (MLE) and anaerobic lagoons to improve biological nutrient removal. The December 7, 2010 *Design Development Report Addendum 2011 Wastewater Treatment Improvements (DER)* submitted by CABE Associates, Inc. on behalf of Mountaire specifically stated on Page 2 and Attachment B Page 1 and 2 that the proposed upgrades would provide the necessary treatment technology to achieve an effluent concentration of 15.6 mg/L of Total Nitrogen. Following construction of the proposed upgrades in 2012, effluent quality had shown improvement for Total Nitrogen until early 2015. However, since early 2015 effluent quality has exceeded the 2010 design criteria.

The 2017 Annual Compliance Inspection performed by GWDS staff on July 20, 2017 noted an increase in the effluent Nitrogen concentrations on page 8 of the report. The previous permit and renewal permit both require Mountaire to operate in accordance with the December 7, 2010 Design Development Report which indicates the effluent will be 15.6 mg/L. A data analysis of the effluent indicated Total Nitrogen concentrations in the effluent has been as high as 76.75 mg/L in April 2017. The On-Site Regulations, 7 Del.Admin C. § 7101 - 6.5.3.2.1.1, requires "If there has been significant increase (> 25%) in the characterization of any one parameter of the effluent wastewater as established in the Design Engineer Report, the permittee shall resample the wastewater and submit the additional analyses to the Department. The permittee shall re-characterize the wastewater to determine if a change in treatment is required and/or if the land limiting constituent has changed. If a change in treatment is required and/or if the land limiting constituent has changed, a revised Design Engineer Report shall be submitted to the Department." This regulatory requirement was also iterated in the previous permit in Part I.I.1 and in the renewal permit in Part I.D.8 and Part II.B.1.

Because the facility is currently exceeding the design value by more than 25%, and in an attempt to gain voluntary compliance in accordance with 7 Del. Admin C. § 7101, the GWDS issued Mountaire's 2017 renewal permit with a Schedule of Compliance, Part I.F.1 of the permit, requiring Mountaire to investigate the cause of the elevated effluent Nitrogen, propose remedial action, and return the facility to compliance within 90 days. The Schedule of Compliance required a Corrective Action Plan be submitted to the GWDS by August 31, 2017 addressing the elevated Total Nitrogen concentration in the effluent. To date, Mountaire has not provided a Corrective Action Plan to the GWDS nor has Mountaire requested an extension. In addition to the effluent Nitrogen concentration trending upward, Mountaire has had an increase in non-compliant BOD, TSS and Fecal Coliform concentrations.

On August 18, 2017, Mountaire appealed the 2017 renewal permit to the Environmental Appeals Board. The appeal disputes the above mentioned Schedule of Compliance and is pending a hearing.

Recent Wastewater Treatment Plant (WWTP) System Upset

On September 5, 2017, the GWDS received a notice via cover letter attached to Mountaire's July Discharge Monitoring Report (DMR) indicating operations staff discovered that effluent composite samples were being collected at an invalid sampling point. The letter further noted:

1. The composite sampler only collected from clarifier A. Clarifier B was noted as containing a greater concentration of solids carry over.
2. The composite sampler was moved to a wet well to better represent effluent parameter concentrations from both clarifiers.
3. The facility had enlisted the services of Tidewater Utilities to restore system functionality and Reid Engineering Co. Inc., to evaluate the system and provide engineering services related to system upgrades, if needed.

On September 7, 2017, the GWDS received verbal notice from the facility's operational staff regarding the discovery of additional non-compliance items:

1. Two grab samples were collected at spray pivots over a 2 day back-to-back period for September 2017.
2. Fecal Coliform on 8/31/17 exceeded 1,000,000 col/100 ml.
3. Total chlorine residual was 0.2 mg/L.
4. Not all flow from the clarifiers discharges into the storage lagoon. Their investigation found lines bypassing the lagoon and discharging directly to central pivots.
5. Preliminary tests and evaluation conducted by the facility and contractors indicate that the system needs to be reseeded.

On September 8, 2017, the GWDS provided Mountaire with written notice (email) regarding their non-compliant Fecal Coliform and outlining required minimum mitigation efforts, items to be addressed, and documentation to be submitted concerning the Non-Compliance Event (NCE).

On September 13, 2017, the GWDS received Mountaire's 5-day Non-Compliance Notification Letter. After review of this notice, on September 15, 2017, the Division of Water responded requesting additional clarification.

On September 20, 2017, the GWDS received Mountaire's bi-weekly progress report along with another 5-day Non-Compliance Notification Letter. Subsequently, on September 29, 2017, the Division of Water responded indicating that this submittal did not comply with the requirements of the Departments September 15, 2017 letter requiring additional actions and information.

On September 20, 2017 and September 26, 2017, Mountaire met with the Department to discuss the NCE, corrective actions that Mountaire was performing and/or scheduling to bring the

facility back into compliance, and enhanced sampling and reporting that is required until the NCE is resolved.

SPRAY IRRIGATION - VIOLATIONS

Pursuant to the authority in *7 Del.C.*, § 6005, Mountaire is hereby notified that it is in violation of the facility's State Permit 359191-04 as cited below:

1. **Discharged effluent exceeded the permitted design effluent Total Nitrogen concentration by over 25%.**

   Citation:
   Permit Number 359191-04, Part I.B.15 states, "*The slow rate land treatment operation shall be conducted in accordance with the following documents: 15. The Design Development Report Addendum 2011 Wastewater Treatment Improvements submitted by CABE Associates, Inc. dated December 7, 2010.*"

   Permit Number 359191-04, Part I.D.8 states, "*Design Effluent Nitrogen Concentration: The facility has been designed for a monthly effluent Total Nitrogen concentration of 15.6 mg/L. If the effluent exceeds a Total Nitrogen concentration of 19.5 mg/L [Design Value + 25%] in any calendar month, the permittee shall resample the wastewater and submit the additional analyses to the Groundwater Discharges Section. If the effluent exceeds 19.5 for over a three month period, the permittee must have the system evaluated to determine the cause and submit a revised Design Engineer Report to the Groundwater Discharges Section. If the effluent exceeds 29.3 [Design Value +50%], the Department may invoke the provisions of Part V.A.1 of this permit. [Also reference Part II.B.1.]*" This permit condition issued in the 2017 permit is a combination and clarification of previous permit conditions carried over from the 2009 Permit DEN Number 359191-02: Part I.A.15, and Part I.I.1.

   Permit Number 359191-04, Part II.B.1 and Section 6.5.3.2.1.1 of the On-Site Regulations state, in part, "*If there has been significant increase (> 25%) in the characterization of any one parameter of the effluent wastewater as established in the Design Engineer Report, the permittee shall resample the wastewater and submit the additional analyses to the Department. The permittee shall re-characterize the wastewater to determine if a change in treatment is required and/or if the land limiting constituent has changed. If a change in treatment is required and/or if the land limiting constituent has changed, a revised Design Engineer Report shall be submitted to the Department.*"

   Violation:
   Since 2015, Effluent Total Nitrogen concentrations have been exceeding the 15.6 mg/L design value and have been as high as 641 mg/L in September of 2017. Mountaire's Design Development Report Addendum 2011 Wastewater Treatment Improvements submitted by CABE Associates, Inc., dated December 7, 2010, indicates effluent concentrations will not exceed 15.6 mg/L. Mountaire failed to notify the Department of the aforementioned non-compliant condition in writing until September 20, 2017.

Characteristic	Date	Result	Unit
Total Nitrogen	1/4/2017	56.2	mg/L
Total Nitrogen	2/8/2017	41.86	mg/L
Total Nitrogen	3/1/2017	18.76	mg/L
Total Nitrogen	4/24/2017	76.75	mg/L
Total Nitrogen	5/25/2017	30.8	mg/L
Total Nitrogen	6/21/2017	31.47	mg/L
Total Nitrogen	7/28/2017	26	mg/L
Total Nitrogen	8/30/2017	406	mg/L
Total Nitrogen	9/14/2014	368	mg/L
Total Nitrogen	9/21/2017	356	mg/L
Total Nitrogen	9/26/2017	641	mg/L
Total Nitrogen	9/28/2017	210	mg/L
Total Nitrogen	9/29/2017	320	mg/L
Total Nitrogen	10/2/2017	172	mg/L
Total Nitrogen	10/3/2017	163	mg/L
Total Nitrogen	10/4/2017	142	mg/L
Total Nitrogen	10/5/2017	164	mg/L
Total Nitrogen	10/6/2017	184	mg/L
Total Nitrogen	10/9/2017	151	mg/L
Total Nitrogen	10/10/2017	182	mg/L
Total Nitrogen	10/9/2017	151	mg/L
Total Nitrogen	10/10/2017	182	mg/L
Total Nitrogen	10/11/2017	105	mg/L
Total Nitrogen	10/12/2017	98	mg/L
Total Nitrogen	10/13/2017	102	mg/L
Total Nitrogen	10/16/2017	98.2	mg/L
Total Nitrogen	10/17/2017	122	mg/L
Total Nitrogen	10/18/2017	136	mg/L
Total Nitrogen	10/19/2017	111	mg/L
Total Nitrogen	10/20/2017	118	mg/L

2. **The permit limit of 320 lbs/acre-year for Nitrogen loading was exceeded for 2015.**

Citation:
Permit Number 359191-04, Part I.D.9 which states, in part, *"The total amount of nitrogen that may be applied to each spray field acre shall not exceed the following amounts...320 lbs/year."*

Violation:

2015: Mountaire exceeded the permitted total amount of nitrogen that may be applied to each spray field acre, 320 lbs/year. An email, dated September 9, 2016, from Mountaire providing updated Annual Report information for 2015 indicated Nitrogen was over applied on 11 of the 13 fields.

2017: By August of 2017, Mountaire has already exceeded the permitted total amount of Nitrogen that may be applied to each spray field acre for the year, 320 lbs/year. Reporting through August shows 9 out of 13 fields have already exceeded the limit for the calendar year 2017. Reporting showed the highest cumulative application rate at 646 lbs/acre. August's Report alone showed 6 fields were loaded in excess of the permit limit just in the month of August.

Field	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
CB3	20.2	13.37	9.82	16.58	16.24	13.78	Failed to Report	413.95	2.44	**506.38**
CB3A	28.89	37.81	13.99	0	27.99	27.23	Failed to Report	0	0	**135.91**
CB3B	47.47	19.61	7.33	39.01	26.26	21.76	Failed to Report	104.75	355.36	**621.55**
CB3C	19.36	23.92	13.69	94.83	0	0	Failed to Report	484.21	402.03	**1038.04**
CB3DE	23.71	19.47	8.71	107.68	16.05	8.65	Failed to Report	344.21	195.11	**723.59**
CB3DW	44.24	22.7	6.15	0	41.37	45.26	Failed to Report	179.21	0	**338.93**
WHBJ1	15.28	24.48	9.09	51.24	6.31	1.13	Failed to Report	24.95	71.80	**204.28**
WHBJ2	40.9	32.79	12.72	56.07	17.8	25.61	Failed to Report	388	253.10	**826.99**
WHBJ3	29.56	13.08	15.13	51.88	16.95	19.3	Failed to Report	344.29	312.46	**802.65**
WHBJ4	21.42	0	7.36	18.07	14.86	14.67	Failed to Report	338.24	196.07	**610.69**
WHBJ5	31.99	24.66	13.07	50.67	4.37	5.29	Failed to Report	268.04	211.51	**609.60**
WHBJ6	47.58	29.88	0.04	63.18	11.16	13.14	Failed to Report	481.19	183.21	**829.38**
WHBJ7	35.64	20.43	12.99	24.92	19.1	19.04	Failed to Report	212.35	186.96	**531.43**

3. The permit limit of 50 mg/L for BOD_5 was exceeded on the following days:

Citation:

Permit Number 359191-04, Part I.D.11 states, in part, *"The facility has been designed for limited public access. The treated wastewater utilized for limited public access sites must meet the following daily permissible average concentrations... a. The 5-day Biochemical Oxygen Demand (BOD_5) of the treated wastewater must not exceed 50 mg/L."*

Violation:

Mountaire reported the permit limit of 50 mg/L for BOD_5 was exceeded on the following days:

Characteristic	Date	Result	Unit
Biological Oxygen Demand (BOD)-5	4/2/2015	78.4	mg/L
Biological Oxygen Demand (BOD)-5	6/2/2015	148	mg/L

Biological Oxygen Demand (BOD)-5	7/1/2015	99.5	mg/L
Biological Oxygen Demand (BOD)-5	8/5/2015	167	mg/L
Biological Oxygen Demand (BOD)-5	11/10/2015	68.4	mg/L
Biological Oxygen Demand (BOD)-5	1/6/2016	67.7	mg/L
Biological Oxygen Demand (BOD)-5	2/17/2016	82	mg/L
Biological Oxygen Demand (BOD)-5	3/2/2016	65.2	mg/L
Biological Oxygen Demand (BOD)-5	4/6/2016	58.3	mg/L
Biological Oxygen Demand (BOD)-5	5/25/2016	144	mg/L
Biological Oxygen Demand (BOD)-5	6/22/2016	73.6	mg/L
Biological Oxygen Demand (BOD)-5	11/9/2016	69.1	mg/L
Biological Oxygen Demand (BOD)-5	7/28/2017	54.3	mg/L
Biological Oxygen Demand (BOD)-5	8/30/2017	816	mg/L
Biological Oxygen Demand (BOD)-5	8/31/2017	1200	mg/L
Biological Oxygen Demand (BOD)-5	9/6/2017	256	mg/L
Biological Oxygen Demand (BOD)-5	9/14/2017	990	mg/L
Biological Oxygen Demand (BOD)-5	9/19/2017	210	mg/L
Biological Oxygen Demand (BOD)-5	9/22/2017	1210	mg/L
Biological Oxygen Demand (BOD)-5	9/26/2017	530	mg/L
Biological Oxygen Demand (BOD)-5	9/27/2017	151	mg/L
Biological Oxygen Demand (BOD)-5	9/28/2017	266	mg/L
Biological Oxygen Demand (BOD)-5	9/29/2017	266	mg/L
Biological Oxygen Demand (BOD)-5	10/2/2017	127	mg/L
Biological Oxygen Demand (BOD)-5	10/3/2017	61.8	mg/L
Biological Oxygen Demand (BOD)-5	10/4/2017	53.6	mg/L
Biological Oxygen Demand (BOD)-5	10/5/2017	57.4	mg/L
Biological Oxygen Demand (BOD)-5	10/17/2017	56.8	mg/L
Biological Oxygen Demand (BOD)-5	10/18/2017	60.9	mg/L

4. **The permit limit of 50 mg/L (90 mg/L 2009 Permit) for TSS was exceeded on the following days:**

Citation:
Permit Number 359191-04, Part I.D.11 states, in part, *"The facility has been designed for limited public access. The treated wastewater utilized for limited public access sites must meet the following daily permissible average concentrations... c. The treated wastewater must not contain more than 50 mg/L of Total Suspended Solids."*

Violation:

Mountaire reported the permit limit of 50 mg/L (90 mg/L 2009 Permit) for TSS was exceeded on the following days:

Characteristic	Date	Result	Unit
Total Suspended Solids	5/25/2016	110	mg/L
Total Suspended Solids	8/30/2017	2320	mg/L
Total Suspended Solids	8/31/2017	3480	mg/L
Total Suspended Solids	9/14/2017	2840	mg/L
Total Suspended Solids	9/19/2017	490	mg/L
Total Suspended Solids	9/21/2017	2780	mg/L
Total Suspended Solids	9/26/2017	4220	mg/L
Total Suspended Solids	9/27/2017	570	mg/L
Total Suspended Solids	9/28/2017	620	mg/L
Total Suspended Solids	9/29/2017	960	mg/L
Total Suspended Solids	10/2/2017	130	mg/L
Total Suspended Solids	10/3/2017	96	mg/L
Total Suspended Solids	10/4/2017	100	mg/L
Total Suspended Solids	10/5/2017	150	mg/L
Total Suspended Solids	10/6/2017	320	mg/L
Total Suspended Solids	10/9/2017	380	mg/L
Total Suspended Solids	10/10/2017	280	mg/L
Total Suspended Solids	10/11/2017	265	mg/L
Total Suspended Solids	10/12/2017	130	mg/L
Total Suspended Solids	10/13/2017	71.2	mg/L
Total Suspended Solids	10/16/2017	76.9	mg/L
Total Suspended Solids	10/17/2017	125	mg/L
Total Suspended Solids	10/18/2017	182	mg/L
Total Suspended Solids	10/19/2017	142	mg/L

5. **The permit limit of 200 colonies/100 mL for Fecal Coliform was exceeded on the following days:**

Citation:
Permit Number 359191-04, Part I.D.11 states, in part, *"The facility has been designed for limited public access. The treated wastewater utilized for limited public access sites must meet the following daily permissible average concentrations... b. Disinfection of wastewaters containing domestic waste is required to yield a discharge not to exceed 200 col/100 mL Fecal Coliform."*

Violation:

Mountaire reported the permit limit of 200 mg/L for Fecal Coliform was exceeded on the following days:

Characteristic	Date	Result	Unit
Fecal Coliform (FC)	4/24/2017	800	col/100 ml
Fecal Coliform (FC)	5/25/2017	301	col/100 ml

Fecal Coliform (FC)	8/30/2017	727,273	col/100 ml
Fecal Coliform (FC)	8/31/2017	1,100,000	col/100 ml
Fecal Coliform (FC)	9/15/2017	> 8,000	col/100 ml
Fecal Coliform (FC)	9/26/2017	110,000	col/100 ml
Fecal Coliform (FC)	9/27/2017	> 1,000	col/100 ml
Fecal Coliform (FC)	9/28/2017	790,000	col/100 ml
Fecal Coliform (FC)	9/30/2017	1,400	col/100 ml

6. **The permit requirement of maintaining a Total Chlorine Residual between 1.0 mg/L and 4.0 mg/L was not met on the following days:**

Citation:
Permit Number 359191-04, Part I.D.6 which states, "*The total residual chlorine concentration shall not be less than 1.0 mg/L nor more than 4.0 mg/L at any time.*"

Violation:
Mountaire failed to maintain a Total Chlorine Residual (must be between 1.0 mg/L and 4.0 mg/L). Mountaire staff provided verbal non-compliance notification to the GWDS staff on September 7, 2017 that their Total Chlorine Residual values were non-compliant in July. Mountaire failed to notify of the non-compliant Total Chlorine Residual values in the 5-day Non-Compliance Notification dated September 13, 2017. Mountaire failed to report Total Chlorine Residual values in their July and August DMRs. Mountaire provided a spreadsheet with data on September 29, 2017 including data from September 5, 2017 through September 28, 2017 reporting total Residual Chlorine values less than the required permit range.

Characteristic	Date	Result	Unit
Total Residual Chlorine	9/5/2017	0.04	mg/L
Total Residual Chlorine	9/6/2017	0.03	mg/L
Total Residual Chlorine	9/7/2017	0.85	mg/L
Total Residual Chlorine	9/8/2017	0.7	mg/L
Total Residual Chlorine	9/9/2017	0.65	mg/L
Total Residual Chlorine	9/10/2017	0.7	mg/L
Total Residual Chlorine	9/11/2017	0.45	mg/L
Total Residual Chlorine	9/14/2017	0.59	mg/L
Total Residual Chlorine	9/15/2017	0.3	mg/L
Total Residual Chlorine	9/16/2017	0.39	mg/L
Total Residual Chlorine	9/17/2017	0.35	mg/L
Total Residual Chlorine	9/21/2017	0.42	mg/L
Total Residual Chlorine	9/22/2017	0.47	mg/L
Total Residual Chlorine	9/23/2017	0.4	mg/L
Total Residual Chlorine	9/25/2017	0.41	mg/L
Total Residual Chlorine	9/30/2017	0.50	mg/L

7. **Discharged effluent inconsistent with the terms and conditions of the permit and at a level in excess of that authorized by the permit.**

Citation:
Permit Number 359191-04, Part I.D.6 states, in part, "*During the period beginning on the effective date and lasting through the expiration date of this permit, the Permittee is authorized to discharge to the spray irrigation field(s)...the quantity and quality of effluent specified...and in accordance with the design documents listed in Part I.B of this permit*"

Permit Number 359191-04, Part IV.A.3 which states, "*All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.*"

Violation:
As iterated in Violations 1 through 7 above, Mountaire discharged effluent inconsistent with the terms and conditions of the permit and at a level in excess of that authorized by the permit.

8. **Operation of the wastewater treatment facility and spray irrigation system has continued to cause the groundwater to exceed drinking water standards for Nitrate Nitrogen.**

Citation:
Permit Number 359191-04, Part III.A.1 which states that, "*Operation of the wastewater treatment facility and spray irrigation system shall not cause the quality of Delaware's groundwater resources to be in violation of applicable Federal or State Drinking Water Standards on an average annual basis.*"

Violation:
Groundwater monitoring wells have consistently exceeded the drinking water standard of 10 mg/L for Nitrate Nitrogen and have shown no improvement since Mountaire acquired ownership of the facility in May of 2000. Reported 2016 data for groundwater indicates Nitrate Nitrogen has been as high as 92.5 mg/L in March for MW-47 (DNREC ID 70678). Reported 2017 data for groundwater indicates Nitrate Nitrogen has been as high as 65.8 mg/L in March for MW-47 (DNREC ID 70678).

9. **Failure to submit a Plan of Corrective Action relative to the effluent Total Nitrogen concentrations as required by the permitted Schedule of Compliance.**

Citation:
Permit Number 359191-04, Part I.F.1.a.ii which states, "*The Permittee shall submit the information necessary and/or complete the following requirements for proper compliant*

operation of the spray irrigation system:...Effluent Total Nitrogen concentration:...By August 31, 2017, the Permittee must submit to the Groundwater Discharges Section a Plan of Corrective Action. The Plan must include proposed efforts to investigate the cause of the elevated Total Nitrogen concentration in the effluent, proposed modifications to the system, and a timeline for implementing proposed modifications."

Violation:
Mountaire failed to submit a Plan of Corrective Action relative to the effluent Total Nitrogen concentrations as required by the permitted Schedule of Compliance, nor did Mountaire request an extension for plan submittal.

10. Failure to properly maintain and operate all structures, pipelines, systems and equipment for collection, treatment control and monitoring which are used by the permittee to achieve compliance with the terms and conditions of the permit.

Citation:
Permit Number 359191-04, Part III.A.2 which states that, *"The Permittee must properly maintain and operate all structures, pipelines, systems and equipment for collection, treatment control and monitoring which are used by the permittee to achieve compliance with the terms and conditions of the permit. Proper operation and maintenance includes, but is not limited to, effective performance based on designed facility removals, adequate funding, effective management, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures.*

Violation:
As noted in Mountaire's September 20, 2017 letter, "the apparent root cause of this NCE (Non-Compliance Event) is that proper wasting of bio-solids did not occur on a routine basis."

11. Failure to provide a five day non-compliance notification for the following violations:

Citation:
Permit Number 359191-04, Part IV.A.4 which states, in part, that, "*If for any reason the permittee does not comply with, or will be unable to comply with, any effluent limitations or other conditions specified in this permit, the permittee shall provide the Department with the following information in writing within five days of becoming aware of any actual or potential non-compliance:*

a. A description and cause of the non-compliance with any limitation or condition;
b. The period of non-compliance including exact dates and times; or, if not yet corrected, the anticipated time the non-compliance is expected to continue; and
c. The steps being taken or planned to reduce, eliminate and/or prevent recurrence of the non-compliant condition."

Violation:
Mountaire failed to provide a five day non-compliance notification for:

a. Effluent Total Nitrogen concentrations exceeding the 15.6 mg/L design value since 2015. Values have been as high as 641 mg/L in September of 2017. Mountaire's Design Development Report Addendum 2011 Wastewater Treatment Improvements submitted by CABE Associates, Inc., dated December 7, 2010, indicates effluent concentrations will not exceed 15.6 mg/L. Mountaire failed to notify the Department of the aforementioned non-compliant condition in writing until September 20, 2017.
b. Non-compliant Total Chlorine Residual values. Mountaire staff provided verbal non-compliance notification to the GWDS staff on September 7, 2017 that their Total Chlorine Residual values were non-compliant in July. Mountaire failed to notify of the non-compliant Total Chlorine Residual values in the 5-day Non-Compliance Notification dated September 13, 2017. Mountaire failed to report Total Chlorine Residual values in their July and August DMRs. Mountaire provided a spreadsheet with data on September 29, 2017 including data from September 5, 2017 through September 28, 2017 reporting total Residual Chlorine values less than the required permit range. Reported non-compliant data is listed in Violation Number 6.
c. Bypassing storage and discharging directly from the clarifiers to the center pivots as verbally reported to GWDS staff on September 7, 2017 and reported in writing on September 20, 2017.

12. Diverted flows by-passing part of the treatment facility's permitted process flow:

Citation:
Permit Number 359191-04, Part III.A.23 which states, "*The diversion of flow from any portion of the treatment facility's process flow (including, but not limited to, pretreatment, storage, distribution and land application) necessary to maintain compliance with the terms and conditions of this permit is prohibited unless:*
a. The bypass is unavoidable to prevent personal injury, loss of life, severe property damage, or materially adversely affect public health and/or the environment; or
b. There are no alternatives readily available.

The Groundwater Discharges Section must be orally notified within 24 hours after such bypass; and, a written submission regarding the bypass must be submitted within five days of the Permittee's becoming aware of the bypass. Where the need for a bypass is known (or should have been known) in advance, this notification must be submitted to the Groundwater Discharges Section for approval at least ten days prior, or as soon as possible, before the date of bypass.

The treatment facility must be repaired and restored to the permitted design operations process flow."

Violation:
On September 7, 2017 the Department received verbal notice from Mountaire's operational staff that not all flow from the clarifiers was discharging into the storage lagoon. Investigation by Mountaire's staff found lines discharging directly from the clarifiers to center pivots. Mountaire failed to submit written notification until September 20, 2017 after being required by the Department in a September 15, 2017 letter.

13. Failure to monitor and/or report complete representative data

Citation:
Part II.A and Part II.B of Mountaire's 2017 permit [Part I.G and Part I.I of the 2009 Permit] prescribes monitoring and reporting requirements for influent, effluent, groundwater, lysimeter, vegetation, and operations.

Violation:
A. August 2017 Discharge Monitoring Report reviewed in accordance with the 2017 Permit 359191-04:
   1) Failed to report Influent Total Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Phosphorus and Chloride.
   2) Failed to report Effluent Maximum Daily Flow, pH and Total Chlorine Residual.
   3) Failed to report monthly worksheet and calculations demonstrating effluent to zone/field/pivot, Nitrogen Loading Rate (lbs/acre), Phosphorus Loading Rate (lbs/acre) for fields CB3 and CB3A.
   4) Failed to provide lab data sheets for Influent monitoring.
B. July 2017 Discharge Monitoring Report reviewed in accordance with the 2009 Permit 359191-02:
   1) The September 5, 2017 letter accompanying the DMR indicated that the.... "July 31st analysis is not representative of the effluent on that day. It appears that the composite sampler was sampling only from clarifier A which had a low flow rate with a clear discharge while clarifier B effluent had solids carryover. Although I have attached the remaining required lab analysis for the effluent, I cannot submit this information on the SMR as the data collected for July appears to be invalid. The composite sampler has now been relocated to the wet well that collects the effluent from both clarifiers, and we anticipate that the data collected for future SMRs will reflect actual conditions."
   2) The 2009 permit requires Fecal Coliform be monitored at the spray irrigation pivot. Therefore, Fecal Coliform should have been able to have been reported on the DMR.
   3) DMR was signed certifying "the submitted information is true, accurate and complete" though the forms were not complete and the September 5, 2017 letter indicated the data was collected in a location that did not accurately reflect the effluent.
   4) Failed to report Effluent Maximum Daily Effluent Flow to all Spray Fields.
   5) Failed to report results on DMR for Ammonia Nitrogen, BOD5, Fecal Coliform, Nitrate + Nitrite Nitrogen, Oil and Grease, Organic Nitrogen, pH, Total Nitrogen,

Total Phosphorus, Total Residual Chlorine, and Total Suspended Solids. Lab data sheets provided for all but pH and Total Residual Chlorine.

6) Failed to report monthly worksheet and calculations demonstrating Nitrogen Loading Rate (lbs/acre) and Phosphorus Loading Rate (lbs/acre) for all fields.
7) Failed to provide lab data sheets for Influent.

C. June 2017 Discharge Monitoring Report reviewed in accordance with the 2009 Permit 359191-02:
   1) Failed to report Effluent Maximum Daily Effluent Flow to all Spray.
   2) Failed to report groundwater monitoring results for monitoring wells MW-23 (243365), MW-42 (70673), MW-43 (70674) and MW-47 (70678) for Ammonia, Arsenic, Chloride, Dissolved Oxygen, Nitrate + Nitrite Nitrogen, pH, Sodium, Specific Conductance, Temperature, Total Dissolved Solids, Total Nitrogen, and Total Phosphorus. Only Depth to Water was reported.
   3) Failed to report quarterly lysimeter monitoring results. Last quarterly results received by the GWDS were for March 2017. Quarterly results were due in June 2017.
   4) Failed to provide lab data sheets for Influent.

SPRAY IRRIGATION - ACTIONS REQUIRED

S1. Mountaire must return the facility to compliant operation in accordance with permit limitations and design specifications. By December 1, 2017, Mountaire must submit a corrective action work plan (Plan) to the GWDS for review that details corrective actions, timelines for the actions, as well as, purpose and anticipated results from each action.
   a. The Plan must detail any proposed repairs, restoration, and upgrades to the treatment facility; timeframes to completion; rationale for implementation and expected results.
   b. The Plan must also include Mountaire's short term and long term actions to address the excessive nitrogen loading on the spray irrigation fields.

S2. Spray Irrigation:
Mountaire is currently spraying effluent that does not conform to permit requirements. The Department is not approving/condoning spraying of non-conforming effluent on any of Mountaire's spray fields. However, if Mountaire continues to spry non-conforming effluent, as a minimum mitigation requirement for the protection of human health and the environment, Mountaire must:
   a. Continue until further notice, restrictions on spray irrigating during wet weather events to prevent ponding from occurring.
   b. In the event fecal coliforms exceed permit limits, implement an additional 150 foot buffer distance on each spray field and cease spray operations in windy (> 15 mph) conditions to prevent aerosol migration onto any public or access road from occurring.

S3. Effluent Monitoring: Continue until further notice, daily effluent monitoring for Fecal Coliform, Total Suspended Solids, Total Dissolved Solids, BOD5, Total Nitrogen, Ammonia Nitrogen, Organic Nitrogen, and Total Residual Chlorine. Fecal Coliform and Total Residual Chlorine should continue to be sampled at the spray irrigation pivot.

All other parameters shall be sampled at the combined total clarifier (CTC) composite sampling location.

a. Results should be expedited. Fecal Coliform and Total Nitrates should be reported to GWDS immediately upon verbal notification from the lab.
b. All other results can be summarized daily via email. Full lab reports should be submitted with bi-weekly reports unless requested sooner by the Department.

S4. Groundwater Monitoring: Continue and until further notice, increasing the groundwater sampling as required in Part II.A.3 of Mountaire's Permit to monthly until instructed by the Department that a reduction in sample frequency can occur.

a. Results should be expedited and reported to GWDS immediately upon notification from the lab.

S5. Surface Water Monitoring: By December 1, 2017, and until further notice, Mountaire must begin monthly surface water sampling in accordance with the *Surface Water Monitoring Plan* submitted on October 6, 2017 and with the Department's required modifications and additions in its letter dated November 1, 2017.

S6. Mountaire must continue to provide GWDS with progress reports on a bi-weekly basis. Progress reports should describe with reasonable specificity all steps taken to date to return to compliance and should describe results of remedial actions and should document current storage lagoon levels. Each bi-weekly report must also continue to include an updated spreadsheet summarizing per field: effluent flows, effluent Total Nitrogen concentration (mg/L) and Nitrogen loading (lbs/acre) summarized on a monthly basis and totalized for the year for comparison to the permitted limitation of 320 lbs/acre-year Nitrogen Loading. The spreadsheet should include all sources of Nitrogen to each field (e.g. fertilizer).

S7. By December 1, 2017, Mountaire must provide the following information relative to the system bypass as requested in the Department's September 15th, 29th, and November 1st letters:

a. Levels of contaminants of concern in the clarifiers vs. the storage lagoon.
b. Explanation of how bypass is warranted in accordance with Part III.A.23 of Mountaire's permit.

S8. System Analysis: In accordance with the *Wastewater Treatment Facility System Sampling Analysis, and Process Control Procedures* submitted on October 6, 2017, Mountaire must:

a. Perform microscopic observations of the biomass, to identify filamentous overgrowth before it can reduce clarifier performance. Best Management Practices and Best Professional Judgement would indicate that the microscopic examinations should be completed on a daily basis, and that the microscopic examinations are quantifiable and documented.
b. Ensure that system Dissolved Oxygen concentrations are monitored and documented, and that the proper limits are maintained in the treatment system. Ensure that the proper sludge blanket levels are maintained in the clarifiers and that the solids are not maintained in the clarifiers for too long a time period. Treatment Plant Standard Operating Procedures must indicate how sludge blanket depths are determined and what the acceptable range is.

c. Continue to follow the formal written procedure submitted to the GWDS on October 6, 2017.
d. Once Mountaire has developed and implemented the Treatment Plant SOPs please forward them to the Department for review and concurrence, this should be accomplished by November 30, 2017.

S9. By December 1, 2017, Mountaire must provide a narrative description to the GWDS with a re-established, more suitable effluent sampling location that accurately represents all effluent flow.

S10. By February 28, 2018 and by February 28th each subsequent year, Mountaire must determine facility operations in accordance with Operations and Maintenance Manuals regarding organic removal efficiency. Mountaire must include a copy of the Delaware Biosolids and Residuals Reporting System (BARRS) Report with the Spray Irrigation Annual Report.

Part II. Agricultural Utilization Permit AGU 1402-S-03

AGRICULTURAL UTILIZATION - BACKGROUND:

The Department of Natural Resources and Environmental Control's (Department) Surface Water Discharges Section (SWDS) met with a Mountaire representative on September 8, 2017. The purpose of meeting was to provide Department staff an opportunity to observe a former sludge storage lagoon that Mountaire has proposed utilizing for temporarily staging and dewatering of anaerobic lagoon sludge. It is the Departments understanding that due to the lack of regular maintenance on the anaerobic lagoons, Mountaire is in the position where the removal and temporary storage of anaerobic sludge is necessary as soon as possible. Removal of sludge is necessary to improve the efficiency of the anaerobic lagoon and ultimately help improve poor wastewater effluent quality. Additionally, the temporary storage of the anaerobic sludge is necessary to provide Mountaire additional time to dewater the anaerobic lagoon sludge, acquire additional land, and secure permits for land application of sludge thereon.

At the time of the Department's site visit, Mountaire indicated that the land application of return activated sludge from the Millsboro Mountaire wastewater treatment plant had been ongoing throughout the summer and continued through the date of the site visit (approximately 2,000,000 gallons). State Permit Number AGU 1402-S-03 requires a minimum two working day of notice prior to application each year; however, the Department had not been notified of any land application activities in 2017. The Mountaire representative indicated that they were unsure if over application of nutrients had occurred as the employee that oversaw the land application program recently left Mountaire and Mountaire was in the process of reviewing application records. Additionally, the Mountaire representative indicated that they were unsure at what loading rate sludge had been applied onto previous application fields earlier in 2017 or the loading rate sludge was being actively being applied onto the current application field. The Mountaire representative indicated that Mountaire would obtain the necessary application information and submit it to the Department.

At the conclusion of the Millsboro Mountaire site visit, the Department visited the Mountaire land application farm known as Thorogood farm and observed the ongoing application on the west portion of the farm. The application appeared to be even, almost no sludge remained on the surface, and no odors/vectors were noted; however, buffer areas for the field were not flagged as required in State Permit Number AGU 1402-S-03. The east portion of the field had a soybean crop; however, the crop appeared to be producing poor yields with several areas in the field showing minimal or no growth.

During a September 15, 2017 phone call, the Department asked Mountaire for the current loading rate of Plant Available Nitrogen (PAN) onto the Thorogood farm. The Mountaire representative indicated that they were unsure how to calculate the nutrient loading rate, as required by the Biosolids Regulations and State Permit Number AGU 1402-S-03. On September 19, 2017 Keen Consulting sent an email to the Department on behalf of Mountaire documenting sludge application by Mountaire from January 2017 to present. This document reflected that Mountaire applied 266 pounds of plant available nitrogen per acre onto a portion of the Frame Farm. Based on the proposed crop plan in Mountaire's 2016 annual report, application onto the Frame Farm exceedance of the agronomic loading rate likely occurred. Additionally, State Permit Number AGU 1402-S-03 requires fields to be planted with an appropriate crop within once (1) month of completing sludge application, unless prohibited by weather conditions. On September 8, 2017 a Mountaire representative indicated that land application onto portions of "Frame Farm 880-C and 880-D", had recently concluded. The Department indicated that it was critical to plant a crop on "Frame 20" as soon as possible to minimize the leaching of nutrients into groundwater. According to Mountaire, as of October 24, 2017, the Frame Farm had not been planted. September and October 2017 have not had long periods of inclement weather that would prevent planting an appropriate crop.

AGRICULTURAL UTILIZATION - VIOLATIONS

14. Application of Biosolids Without Submitting a Cropping Plan to the Department for Review:

Citation:
Part I, A.1 of State Permit Number AGU 1402-S-03 permit states:
"*Sludge and DAF shall be applied at a rate to meet, but not exceed, the PAN requirement for the crop(s) grown. The PAN application rates shall also include any residual mineralized nitrogen from previous sludge and DAF application. The cropping plan and the nutrient requirement for that crop shall be submitted to the Department, prior to sludge and DAF application, for review and approval.*"

Violation:
Mountaire did not provide the Department with its cropping plan and the nutrient requirement for the crops being grown, as required in State Permit Number AGU 1402-S-03. To date, Mountaire has not provided the Department with a crop plan for the remainder of 2017 and

2018. According to a submittal by Keen Consulting on behalf of Mountaire, 266 pounds of PAN per acre was applied onto a portion of Frame Farm 880-C and 880-D. Previous crop yields on the Frame Farm indicate that 266 pounds of PAN likely exceeds the agronomic rate for the Frame Farm. Mountaire did not provide the Department with a cropping plan or receive approval prior to applying nutrients and is therefore in violation of State Permit Number AGU 1402-S-03.

15. Violation No. 4 – Failure to Plant an Appropriate Crop at the Conclusion of Application Activities:

Citation:
Part I, A.2 of State Permit Number AGU 1402-S-03 permit states:
"*Fields must be planted with appropriate vegetation or a cover crop within one (1) month of completing sludge application, unless prohibited by weather conditions in which case vegetation must be established as soon as practicable.*"

Violation:
Mountaire did not plant an appropriate crop within one (1) month of completing sludge application onto portions of "Frame Farm 880-C and 880-D" that recently received sludge application. Mountaire violated crop planting requirements in State Permit Number AGU 1402-S-03.

16. Failure to Mark Buffer Zones Prior to Sludge Application:

Citation:
Part III, A.4, a. of State Permit Number AGU 1402-S-03 permit states:
"*Prior to the application of sludge, buffer zones and the areas on which sludge is to be applied must be clearly marked with stakes or other suitable markers acceptable to the Department.*"

Violation:
Mountaire did not mark buffer zones for the Thorogood East, Frame Farm 20, and Thorogood West Farms, prior to sludge application. Mountaire violated the buffer zone marking requirements in State Permit Number AGU 1402-S-03.

17. Violation No. 3 – Application of Biosolids to Application Sites Without Notifying the Department:

Citation:
Part III, A.4, b. of State Permit Number AGU 1402-S-03 permit states:
"*The permittee must notify the Department at (302) 739-9946 at least two (2) working days prior to the application of sludge.*"

Violation:
Mountaire did not provide the Department with prior notification of application activities, for the Thorogood East, Frame Farm 20, and Thorogood West Farms, during the 2017 calendar year. Mountaire violated the land application notification requirements of State Permit Number AGU 1402-S-03.

AGRICULTURAL UTILIZATION - ACTIONS REQUIRED

A1. By November 30, 2017, Mountaire shall submit detailed land application records for the Frame Farm 20, Thorogood East Farm, and Thorogood West Farm documenting the gallons of sludge land applied in 2017.
A2. By November 30, 2017, Mountaire shall submit a crop rotation plan and a nutrient management plan for 2018 and the remainder of 2017. The crop rotation plan shall include the "winter crops" that will be planted on sites that received sludge application in 2017. The nutrient management plan shall document the amount of plant available nitrogen to be applied from sludge and other sources (listed separately) for 2018 and the remainder of 2017 in accordance with agronomic rate requirements in Part III, B. of the Guidance and Regulations Governing the Land Treatment of Wastes and State Permit Number AGU 1402-S-03.
A3. By November 30, 2017, Mountaire shall demonstrate that the portions of Frame Farm 880-C and 880-D that were recently utilized for sludge application have been planted with an appropriate crop.
A4. By November 30, 2017, Mountaire shall submit a written explanation explaining the poor crop growth in the Thorogood East Farm.
A5. By November 30, 2017, Mountaire shall submit soil testing results for the parameters required annually in Part I.B.4 of State Permit Number AGU 1402-S-03 for the Thorogood East Farm.
A6. By November 30, 2017, Mountaire shall submit the date the former sludge land application manager left Mountaire.

NOTICE

This letter shall serve as official Notice of the above violations of 7 *Del.C.* Chapter 60, 7 Del.Admin. C. § 7101 *Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems* (Regulations), State Permit 359191-04 (Permit), 7 Del.Admin. C. § 7103 *Guidance and Regulations Governing the Land Treatment of Waste* (the Biosolids Regulations) and State Permit AGU 1402-S-03. In order to come into compliance with the Regulations and the Permit requirements, Mountaire shall perform the corrective actions in the timeframes specified above.

Failure to comply with this **Notice of Violation** will result in further enforcement action as provided in 7 *Del.C.* Ch. 60. In addition, the Department reserves the right to place additional requirements on Mountaire and pursue additional enforcement action based on future site inspections, data, and/or after a more detailed review of the violations.

If you have any questions or concerns, please feel free to contact me at (302) 739-9948. This **Notice of Violation** will be posted on the DNREC website at http://apps.dnrec.state.de.us/Violations/ViolationsSearch.aspx.

Sincerely,

Jennifer S. Roushey
Environmental Program Administrator
DNREC – Division of Water

Cc: Beth Sise, Mountaire
John Wren, Mountaire
Jack Hayes, DNREC