



STATE OF DELAWARE  
**DEPARTMENT OF NATURAL RESOURCES  
AND ENVIRONMENTAL CONTROL**  
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Office of the  
Secretary

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**Secretary's Order No. 2017-W-0029**

**Re: Artesian Wastewater Management, Inc.'s Application to Amend the Construction Permit for Phase 1 of the Artesian Northern Sussex Regional Water Recharge Facility near Milton, Sussex County.**

**Date of Issuance: November 2, 2017**

**Effective Date: November 2, 2017**

**BACKGROUND AND PROCEDURAL HISTORY**

Pursuant to 7 *Del. C.* §§ 6003, 6004(b), 6006(4) and other relevant authority, the Secretary of the Department of Natural Resources and Environmental Control ("Department") issues this Order for the May 9, 2017 application ("Application") submitted by Artesian Wastewater Management, Inc. ("Applicant") to the Department's Division of Water, Groundwater Discharges Section ("GWDS").

The Application seeks to amend the Department's October 15, 2013 construction permit<sup>1</sup> ("2013 Construction Permit") for the Phase 1 construction of the Artesian Northern Sussex Regional Water Recharge Facility<sup>2</sup> ("Facility") northwest of Milton, Sussex County. The reason for the amendment is to allow the Facility to serve the Applicant's new public utility customer, Allen Harim, LLC ("Allen Harim") at Allen Harim's Harbeson, Sussex County, poultry processing plant, which is located approximately eight miles south of the Facility. The Applicant

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<sup>1</sup> As authorized by Secretary's Order No. 2012-W-0052, issued March 12, 2013 ("2013 Order").

<sup>2</sup> The Facility will use over 1,700 acres along Routes 16 and 30, with most of the land leased from farmers, who will continue to farm using the treated wastewater for irrigation.

intends to provide Allen Harim with wastewater service for up to 2.0 million gallons per day (“MGD”) of treated industrial wastewater from Allen Harim's wastewater treatment plant (“WWTP”).

The Application provides the engineering changes required to serve Allen Harim, including the increased capacity of the approved Phase 1 storage pond capacity from 60 million gallons to 90 million gallons. In addition, the Applicant proposes to move the approved Phase 1 construction of 1.0 million gallons per day WWTP to Phase 2. The reason for this change is to allow the Applicant to receive Allen Harim's treated wastewater at the Facility's required level of treatment, which is based upon the Department's unlimited public access standard. The Application also proposes changing some of the spray irrigation areas within the 1,700 acres approved by the 2013 Construction Permit. The Application proposed no other changes to the 2013 Construction Permit, which reflects the conditions imposed by Sussex County's land use approval of the Facility as a regional WWTP.

After determining that the Application was administratively complete, the GWDS published public notice of the Application on June 11, 2017, which allowed for public comment. The GWDS received a request for a public hearing, and on July 5, 2017, the Department published public notice of a July 27, 2017 public hearing at the Milton Public Library before the Department's presiding hearing officer, Robert P. Haynes, Esquire. The public notice also re-opened the public comment period.

Over 110 persons attended the public hearing, and 14 persons provided public comments that opposed the Application. Mr. Haynes granted an unopposed request to extend the public comment period for written comments to August 11, 2017. The Department received over a hundred written public comments that opposed the Application.

Following the close of the public comment period, Mr. Haynes requested GWDS's technical assistance and recommendation on the Application. On October 2, 2017, the GWDS provided a Technical Response Memorandum ("TRM"), which responded to most of the public comments and recommended that the Department issue the amended permit ("Amended Permit") that was attached to the TRM.

Mr. Haynes prepared the attached Hearing Officer's Report ("Report"), which attached the TRM. The Report reviewed the complete procedural history, established and summarized the Record, and provided findings of fact, reasons, and conclusions to support the Department's approval of the Application and the GWDS's issuance of the amended permit.

The Report summarized the public comments as raising the following eight issues: 1) whether the Department has all the required information for its decision; 2) whether the Facility will contaminate the groundwater; 3) whether the Facility will cause runoff that will contaminate the soils or surface waters; 4) whether the Facility will emit odors; 5) whether the Facility will breed and otherwise attract mosquitos; 6) whether Allen Harim can treat its wastewater to meet the unlimited public access standards for the spray irrigation of treated wastewater; 7) whether the Facility will adversely impact local property values; and 8) whether the Facility improperly used public financing. The Report, relying extensively on the GWDS TRM, discussed the issues and found that the public comments did not raise any issue that would cause the Department to deny the Application or change any terms and conditions in the Amended Permit. Accordingly, the Report recommended that the Department direct the GWDS to issue the amended permit based upon the GWDS's draft amended permit.

## FINDINGS OF FACT

The Department finds that the Record, as established and summarized in the Report, provides the Department with all the information required for this Order. The Department reviews the Application pursuant to its *Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems*, 7 Del. Admin. Code 7101 ("Regulation 7101"). Section 6.3.1.14.1 of Regulation 7101 allows the Applicant to apply for a permit amendment because the 2013 Construction Permit remains in effect.

The Department finds that the GWDS's preliminary review of the Application properly determined that the Application was administratively complete for purposes of providing the public notice of the Application, which occurred on June 11, 2017. The Department finds that the GWDS properly gathered additional information from the Applicant, including information requested by the public comments. This additional information supported the GWDS's recommendation in its October 2, 2017 TRM that the Department should issue the amended permit. The Report also recommended that the Department approve the Application and issue the Amended Permit.

The Department finds that the GWDS thoroughly reviewed the Application, including the engineering plans and supporting construction information. The Department finds that GWDS's recommendation to approve the Application and issue the amended permit will allow the Facility to provide wastewater public utility service to Allen Harim using the storage pond's proposed larger capacity and spray irrigation areas. The Application does not amend the over 1,700 acres already approved for the Facility's construction. The amendment will not change spraying of treated wastewater that meets the Department's unlimited public access standard.

The Department finds that the approval of the Application is consistent with Sussex County's land use approval for the Applicant to be a regional WWTP. The proposed Phase 1 construction will allow the regional WWTP to operate the spray irrigation fields and storage pond constructed

to serve Allen Harim. The Department finds that the Application's changes to the 2013 Construction Permit are consistent with the Department's 2013 Order, which reflected the Applicant's proposed three-phase construction of the Facility's total 3.0 MGD capacity as a regional WWTP, serving the Applicant's public utility customers within the Delaware Public Service Commission's ("PSC") approved service territory.

The Department's 2013 Order approved the Phase 1 construction based upon the PSC's approval of the Applicant's public utility wastewater service territory, including land proposed for the 'Villages of Elizabethtown' development. The Application reflects the change in the Applicant's public utility service territory, which the PSC approved on January 24, 2017, when it added Allen Harim's land to the Applicant's service territory.

The Application's most significant proposed change is the increase in the Phase 1 storage pond's capacity from 62 million gallons to 90 million gallons. The 2013 Construction Permit approved the storage pond on the same 75-acre tract that the Application proposes for the larger pond. This change is part of the Facility's future construction of only two storage ponds in two phases, as opposed to the three ponds originally planned as part of the original three-phase construction. The Department finds that the Application's larger storage pond is reasonable, well supported in the record, and will provide sufficient storage to allow the Applicant to serve Allen Harim based upon its proposed 90 million gallon capacity.

The Department finds that the Application's second change to the 2013 Construction Permit is to delay the WWTP's construction to Phase 2. This change will reduce the amount of land disturbance on the same 75-acre parcel on which the Department approved the Phase 1 storage pond. The Department finds this proposed amendment reasonable and well supported in the Record.

The Application's third change to the 2013 Construction Permit is to increase the use of the over 1,700 leased acres for spray irrigation to reflect Allen Harim's volume of treated

wastewater, which exceed the design limits used for the 2013 Construction Permit. The Department finds that the increased use of spray irrigation areas is reasonable and well supported in the Record and will allow the reuse of treated wastewater to benefit crop production.

The Department finds that the Application does not propose any change to the 2013 Construction Permit's conditions that required a landscaped buffer, which the Department included to reflect Sussex County's conditions in its land use approval. These conditions should alleviate some of the concerns raised in the public comments that opposed the storage pond's appearance.

The Application supports the spray irrigation for crop production in the Amended Design Development Report's ("DDR") Appendix G, which provides the spray fields' design calculations. The DDR's Appendix F sets forth the Vegetative & Nutrient Management Plan prepared by Keen Consulting for regulating the crops grown in the spray fields. The DDR's Appendix G provides the calculations of the amount of nitrogen and phosphorous that the crops will absorb and prevent entering the groundwater. Thus, the Application fully supports the engineering for the spray irrigation of Allen Harim's treated wastewater.

As noted above, the public comments raised eight issues in opposition to the Department's approval of the Application. The Department carefully considered the public comments and the responses to those comments in the GWDS TRM, and the Department finds that the Report provides sufficient support to approve the Application.

The Report summarized the issues raised by the public comments, and this Order shall review each issue. The first issue is whether the Department has all the required information needed to consider the application to be in proper form and a completed application. The public comments questioned whether: (1) the Application's survey of nearby wells included wells installed after the well survey; (2) the Application reflected any floodplain or wetlands mapping changes; and (3) Sussex County's conditional land use approval remained valid. In response to

those comments, the GWDS asked the Applicant to provide additional information based upon GWDS's analysis of the Application and the public comments.

The Applicant provided an August 18, 2017 Addendum (“Addendum”) that responded to all of the GWDS requests for additional information, including the questions raised in the public comments. The 2013 Construction Permit allows for construction modifications, and the Addendum did not identify any substantive changes that would require a new construction permit. The engineering changes requested in the Application include: enlarging the storage pond to serve Allen Harim; delaying the WWTP's construction to Phase 2; and reduces the number of spray irrigation areas for Phase 1. The GWDS based the TRM recommendation upon all the information that it required for its review. The Department agrees with the GWDS assessment that the Record contains all the required information. The Addendum did not change the substance of the Application's proposed changes. The substance of the Application is to provide service to Allen Harim by increasing the size of the storage pond, removing the WWTP from Phase 1 construction, and reducing the spray irrigation areas in Phase I. The Department finds that the Record supports approving the Application and issuing the Amended Permit.

The second issue raised by many of the public comments was the concern that the Facility would contaminate the groundwater, particularly the groundwater used for drinking water supply to nearby houses. The proposed changes to the 2013 Construction Permit will not alter the existing requirement to meet 10 mg/L of nitrogen in the percolate prior to entering the groundwater. Allen Harim will provide treated wastewater for the Facility's storage and use as spray irrigation. Allen Harim will be required to treat the wastewater to meet the Department's unlimited public access criteria. These criteria protect groundwater from excessive levels of pollutants that could contaminate its use as drinking water. The unlimited public access criteria for spraying treated wastewater is the highest standard that Regulation 7101 requires for spray irrigation. The Facility's spray irrigation of private farmlands ordinarily would not require the

Applicant to meet the unlimited public access criteria, but the Application included that criteria in order to satisfy Sussex County's conditional approval.

The Department requires spray irrigation of treated wastewater to meet the Department's unlimited public access criteria for golf courses, parks, and other recreational areas open to public use, such as the Department's approval of spray irrigation at the Baywood Greens and Frog Hollow golf courses, and the sports fields and parks in towns of Middletown and Millsboro. Moreover, the Department will require monitoring wells to ensure that the Facility does not contaminate the groundwater.

The third issue raised in the public comments was the concern that the treated wastewater runoff from Facility's spray irrigation would contaminate other properties or surface waters. The GWDS's TRM and the Report address this concern and found that it did not support denial of the Application. The Department finds that the Record supports the spray irrigating of treated wastewater in accordance with Regulation 7101, will not cause any treated wastewater to runoff the Facility's property and adversely impact adjoining properties or any surface waters. The quality of the treated wastewater prevents possible contamination. Moreover, the 2013 Construction Permit includes the Sussex County's buffer requirements in its land use approval and provides for additional protection along with the unlimited public access criteria for the treated wastewater. Thus, the public concern about possible runoff of the treated wastewater does not support denying the Application.

The fourth issue raised in the public comments was the concern that the proposed amendment to the 2013 Construction Permit will cause the Facility to emit odors. The GWDS's TRM and the Report addressed this concern and found that possible odor from the Facility did not support denial of the Application. The Department finds that the construction of the larger storage pond and the use of spray irrigation should not cause the Facility to emit odor. The Department does not find that the public comments' concern with the Facility's possible odors

supports denying the Application, and the Department will monitor the Facility's operation to ensure that its odors comply with the Department's requirements.

The fifth issue raised in the public comments was the concern that the Facility would encourage mosquito breeding or otherwise attract mosquitos. The GWDS and the Applicant's responses to the public comments provide support finding that the larger storage pond and the spray irrigation should not encourage mosquito breeding or attract mosquitos. The proposed larger storage pond with its 25' depth, aeration, and additional chlorination, if necessary, should provide sufficient protection from breeding or attracting mosquitos.

The sixth issue raised in the public comments was the concern with the part that Allen Harim will play as the public utility customer. The public was concerned that Allen Harim would be unable to provide treated wastewater that would meet the Department's unlimited public access standard. The GWDS TRM reviewed this concern and provided its assessment that Allen Harim has taken corrective measures to its treatment process. The Report also finds that the spray irrigation of Allen Harim's treated wastewater provides important environmental benefits. The Department finds that Allen Harim is able to treat its industrial wastewater to meet the unlimited public access standard based upon the GWDS assessment of Allen Harim's treatment process and the improvements made to remedy past violations. Thus, the Department does not find that the public's concerns with the Facility receiving Allen Harim's treated wastewater support denial of the Application.

Several of the public comments requested that the Department require additional oversight of Allen Harim's treatment process. The Department finds that the Applicant's role will provide additional oversight of Allen Harim's treatment process. The Applicant, as a well-established public utility, has the expertise and resources to monitor Allen Harim's treatment process to supplement the Department's regulation. The Applicant's contract with Allen Harim enables the Applicant to take remedial action for any Allen Harim failure to meet the unlimited

public access standard. Moreover, the Department will have enforcement authority over both Allen Harim's treatment process and the Applicant's Facility for satisfying the requirements for the treated wastewater. Thus, the Department finds that the amended 2013 Construction Permit will provide the environment and the public with additional oversight to reduce the risk of any problems with Allen Harim's treatment of its wastewater.

The seventh issue raised by the public comments was that the Facility's construction would harm property values. The Report addressed this concern and relied on Sussex County's land use approval of the Facility. The Department finds that property valuation is not within its area of expertise and defers to Sussex County's land use approval. Ordinance Nos. 1922 and 1923 included findings that recognized that "the proposed use of the subject property of a public or semi-public character and is essential and desirable for the general convenience and welfare of neighboring properties and the County."

The final issue raised by the public comments was Allen Harim's receipt of public financing for improvements to its WWTP construction. The Report addressed this issue finding that it was not relevant to the Department's consideration of the Application.

### **REASONS AND CONCLUSIONS**

The Department approves the Application and directs GWDS to issue the Amended Permit. The Department considered the concerns raised in the many public comments and issues this decision to clarify both the 2013 Order and this Order, which will allow the Applicant to make changes in order to serve Allen Harim. The Department's decision is consistent with its 2013 Construction Permit and the 2013 Order, in which the Department recognized the environmental benefits of the Facility as a regional WWTP that would spray irrigate treated wastewater. The 2013 Construction Permit approved the Facility's wastewater application via spray irrigation on farmlands for crop production or in forested areas. This Order approves an amendment that maintains the Facility's spray irrigation methodology and provides wastewater

public utility service to Allen Harim. The engineering changes required for the amendment include: (1) increasing the size of the storage pond; (2) delaying construction of the WWTP to Phase 2; and (3) reducing the spray irrigation areas in Phase 1.

The Department is hopeful that this Order will allay some of the fears about spray irrigation of treated wastewater and provide a better understanding of its environmental benefits. The Department recognizes the questions raised by the public in regard to the regulation of treated wastewater. The Department is confident that the Application's amended Phase 1 construction reflects sound engineering for the construction of the Facility that will spray Allen Harim's treated wastewater. Additionally, once the Facility is constructed, the Applicant will be required to obtain an operating permit from the Department. The operating permit would regulate operational issues raised in the public comments, such as the concerns with odor and mosquitos.

The Department concludes and directs the following:

1. The Department has jurisdiction under *7 Del. C. §§ 6003, 6004, 6006(4)* and other relevant authority to make a final determination on the Application after holding a public hearing, considering the public comments, and other information in the Record;
2. The Department provided proper public notices of the Application and the public hearing pursuant to *7 Del. C. § 6004(b)*;
3. The Department considered all timely and relevant public comments in the Record as established in the Report, prior to issuing this Order as its final decision;
4. The Record supports approval of the Application and issuance of an amended permit. The GWDS shall promptly issue the Amended Permit, which includes reasonable conditions to protect the environment and public health;

5. The Department adopts the Report and its attached GWDS TRM as further support for this decision; and
6. The Department shall publish this Order on its web page, provide legal notice of this Order in the same manner as the Department provided legal notice of the Application, and otherwise as the Department determines is appropriate.



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Shawn M. Garvin  
Secretary

## HEARING OFFICER'S REPORT

TO: The Honorable Shawn M. Garvin  
Secretary, Department of Natural Resources and Environmental Control

FROM: Robert P. Haynes, Esquire  
Senior Hearing Officer, Office of the Secretary

RE: Artesian Wastewater Management, Inc.'s Application to Amend Permit to Construct Phase 1 of the Artesian Northern Sussex Regional Water Recharge Facility near Milton, Sussex County.

DATE: October 5, 2017

### I. PROCEDURAL HISTORY

This Report to the Secretary of the Department of Natural Resources and Environmental Control ("Department") is on Artesian Wastewater Management, Inc.'s ("Applicant") May 9, 2017 application ("Application") submitted to the Department's Division of Water, Groundwater Discharges Section ("GWDS").

The Application seeks to amend the Department's October 15, 2013 spray irrigation construction permit<sup>1</sup> DEN Number 359288-01 ("2013 Construction Permit"), which authorized the Phase 1 construction of the Artesian Northern Sussex Regional Water Recharge Facility<sup>2</sup> ("ANSRWRF" or "Facility") northwest of Milton, Sussex County. The Applicant proposed to build the Facility in phases, with Phase 1 construction based upon approved engineering plans for a 1.0 million gallon per day ("MGD") capacity wastewater treatment plant ("WWTP") and a 62 million gallon capacity storage pond, with spray irrigation of the treated wastewater on portions of the over 1,700 acres of leased farmlands and forested areas. The Facility was to serve the Applicant's public utility customers in its Public Service Commission ("PSC")

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<sup>1</sup> Secretary's Order No. 2012-W-0052, issued March 12, 2013, authorized the 2013 Construction Permit.

<sup>2</sup> The Facility would be along Routes 16 and 30 with a 75-acre parcel and over 1,700 leased acres for the spray irrigation on crop fields and forested areas.

approved service territory within the proposed The Villages of Elizabethtown development, which has yet to be constructed.

On September 27, 2016, the Applicant and Allen Harim, LLC ("Allen Harim") entered into a Wastewater Services Agreement for the Applicant to provide sanitary wastewater public utility service to Allen Harim's poultry processing plant located in Harbeson, Sussex County approximately eight miles south of the Facility. On January 24, 2017, the Delaware Public Service Commission ("PSC") approved the Applicant's expansion of its public utility service area to include Allen Harim's Harbeson properties. In a January 27, 2017 Process Wastewater Service Agreement, Allen Harim and the Applicant agreed to receive treated wastewater from its WWTP. Allen Harim's public utility service requirements for the Facility are based upon 1.5 MGD average daily flow and 2.0 MGD peak flow of treated industrial wastewater. The Phase 1 Construction Permit approved 1.0 MGD of capacity, which requires that the Application to amend the 2013 Construction Permit for Allen Harim's 2.0 MGD capacity for storage and spray irrigation.

The Application provides additional capacity by increasing the Phase 1 storage pond from 62 million gallons to 90 million gallons. The use of Allen Harim's WWTP means that the Applicant could remove the WWTP construction from Phase 1 and move it to Phase 2. The Application includes minor changes to the use of the spray areas within the originally designated 1,700 acres. The Application does not propose any change to the spray irrigation of treated wastewater that meets the Department's unlimited public access standard for spray irrigation, which Allen Harim will provide from its WWTP in Harbeson. In addition, Allen Harim will provide a 10.0 MGD capacity storage pond at Harbeson, which will be used to hold any diverted treated wastewater until it meets the Department's unlimited public access standards.

The GWDS' initial review of the Application determined that it was administratively complete, or in proper form. This initial determination allowed the GWDS to publish public notice of the Application, which occurred on June 11, 2017 in the *Delaware State News* and *The News Journal*.

On June 13, 2017, the GWDS received a public comment that objected to the Application and requested a public hearing. The Department determined to hold a public hearing and assigned me to preside over the public hearing and to prepare this Report.

On July 5, 2017, *The News Journal* and the *Delaware State News* published legal notices of the July 27, 2017 public hearing on the Application at the Milton Public Library, Milton. The public notice also re-opened the public comment period for written comments.

In a July 14, 2017 letter to the Applicant, the GWDS sent the Applicant the following Department's review documents:

- June 19, 2017 Memorandum from Jack Hayes, GWDS' Program Manager I, on his review of the Application's soils and vegetative management plan,
- June 27, 2017 email from Division of Water paralegal Roy Heineman on his review of the Application information on the leases,
- June 27, 2017 Memorandum from GWDS' Marlene Baust, P.E., that provided the GWDS Engineering Review of the Application,
- June 29, 2017 email from Tyler Brown, Environmental Program Manager, Division of Water, Wetlands and Subaqueous Lands Section on his review of wetlands and subaqueous lands, and
- July 14, 2017 Compliance Review for Construction Permit by GWDS' Monica Boyer, Senior Compliance Specialist.

The review documents sought additional information that the Department required for its review of the Application to determine if the Department should approve the Application, as updated as part of the GWDS review.

On July 25, 2017, Blair Venables, P.G. in the Department's Division of Water, Groundwater Protection Branch, provided comments to GWDS that recommended adding a monitoring well to spray field G.

At the July 27, 2017 public hearing, approximately one hundred and ten persons attended, and fourteen persons presented comments that opposed the Application. One speaker requested that the public comment period for written comments remain open for fifteen additional days, or until August 11, 2017. I granted this unopposed request.

In an August 11, 2017 letter, the Applicant responded to the public comments presented at the public hearing and on September 1, 2017 provided the leases.<sup>3</sup>

On September 5, 2017, the GWDS' Marlene Baust emailed the Applicant requesting the May 18, 2016 ANSRWRF Ground Water Elevation & Monitoring Well Location Report prepared by Ground Water Associates, LLC, which the Applicant provided.

On September 6, 2017, GWDS' Marlene Baust emailed Duffield Associates requesting clarification of its April 3, 2017 Report's description of the size of the storage pond. In a September 6, 2017 letter, Duffield Associates clarified that the proposed storage lagoon is a 90.0 million gallon capacity earthen storage lagoon.

By the end of the public comment period on August 11, 2017, the Department received over one hundred written comments that opposed the Application.

In an August 18, 2017 letter, the Applicant responded to the GWDS' requests for additional information, which included an addendum to the DDR and revised exhibits. This information did not alter the proposed engineering plans to the 2013 Construction Permit, which remained the 90 million gallon capacity storage pond, delaying the WWTP's construction until Phase 2, and minor changes to the spray areas within the original leased acreage.

In an August 22, 2017 memorandum to the GWDS, I requested GWDS' technical assistance. I identified the issues raised in the public comments and asked for GWDS to respond to them and to provide its overall expert recommendation on the Application.

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<sup>3</sup> The Applicant requested confidential treatment of the leases and the Department granted the request.

In the attached October 2, 2017 Technical Response Memorandum ("TRM"), the GWDS addressed the issues raised by most of public comments and recommended that the Department approve the GWDS's issuance of the draft permit ("Draft Permit") provided with the TRM.

I consider the Record, as established and summarized below, complete to support this Report's overall recommendation that the Department direct the GWDS to issue the Applicant an amendment to the 2013 Construction Permit based upon the Draft Permit.

## **II. SUMMARY OF THE RECORD<sup>4</sup>**

The Record established by this Report includes: 1) the verbatim transcript of the public hearing, 2) the documents submitted as exhibits at the hearing, and 3) this Report, including the attached GWDS TRM and the documents referenced in this Report and the TRM.

I summarize the public hearing portion of the Record based upon the verbatim transcript as follows:

Dr. John Hayes, GWDS Program Manager, made a statement and provided<sup>5</sup> the following documents:

1. DNREC Ex. 1-the May 9, 2017 form application and the Amended Design Development Report ("DDR") dated May 5, 2017;
2. DNREC Ex. 2-the June 11, 2017 legal notices of the Application;
3. DNREC Ex. 3-Anthony Scarpa's June 13, 2017 email that opposed the Application and requested a public hearing;
4. DNREC Ex. 4- the July 5, 2017 legal notices of the public hearing; and
5. DNREC Ex. 5- the public comments received prior to the public hearing.

Dr. Hayes' statement summarized the Application as seeking an amendment to the current construction permit to: 1) construct a larger Phase 1 storage lagoon; 2) delay the construction of the wastewater treatment facility and three spray irrigation fields until phase 2; and 3) receiving treated wastewater from Allen Harim. Dr. Hayes said that Allen Harim's treated wastewater

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<sup>4</sup> This summary reviews a record of public comments but does not determine any factual accuracy.

<sup>5</sup> The Department's role at the hearing is that it takes no position on the merits of the application until after a public hearing. Instead, the Department develops the hearing record with certain basic information solely to assist the public.

would meet the same unlimited public access standard that the Department previously approved. He stated that the Department would review the Application under its current regulations, which the Department amended in 2014. He explained that the Department approved the 2013 Construction Permit, and that the Department supports that decision. He said that the Department welcomes public comment on the proposed changes to the 2013 Construction Permit.

He noted that the Department's unlimited public access standard is the Department's highest standard for spray irrigation, which the Department requires when treated wastewater is sprayed on golf courses, parks, ball fields and other areas where direct human contact may occur. He cited examples of unlimited public access spray irrigation on the Baywood Greens golf course, the Frog Hollow golf course, Millsboro's ball fields, and Middletown's parks and farmland.

He stated that the Department's regulatory safeguards for the spray irrigation include requiring Allen Harim automatically to divert any non-compliant treated wastewater to Allen Harim's storage pond in Harbeson. He stated that the 2013 Construction Permit requires construction of monitoring wells for testing groundwater. In addition, it requires surface water monitoring for each spray field. He said that the Department will review the monitoring results as part of its evaluation and establish background levels for an operating permit application after the Facility is constructed.

Dr. Hayes commented that the treated wastewater would not have any odor because Allen Harim will disinfect it prior to its transportation to the Facility. He stated that the nitrogen and phosphorous in the treated wastewater would be absorbed by agronomic crops based upon an approved Nutrient Management Plan, which should allow the use of less nitrogen and phosphorous by the farmers than currently applied to the land.

The Applicant had representatives present who were available to answer any questions from the public, but the Applicant did not make any presentation.

Based upon the large number who attended the public hearing, I initially imposed a three-minute time limit for each public speaker. Based upon the total number of public speakers who signed up to speak, I allowed public speakers more time at the end and also allowed prior speakers who did not finish to speak again. The following is my summary of the public speakers' comments:

1. Anthony Scarpa commented on the Department's public hearing held five years ago on the Facility's construction to serve the proposed subdivision Villages of Elizabethtown along Routes 30 and 16 outside of Milton. He described the history of that development and the Applicant's involvement, which began as a consultant and then as the owner of the Facility based upon a \$5 million purchase of the developer's property for the WWTP. He mentioned the \$11 million loan that Allen Harim received to upgrade its WWTP because of the 90 violations that occurred from 2012 to 2016. He spoke about Allen Harim providing the Applicant with \$5 million from the loan as payment to connect to the Facility. He said that there is now only a driveway and some pipe on the ground. He described the Applicant's efforts to get the customers for the Facility by seeking Georgetown's wastewater. Mr. Scarpa (part 2) asked about the area that the Public Service Commission approved and if the Facility could receive other wastewater from other poultry processing plants. He indicated that the leases for the spray fields had expired. He talked about the financial web between the Applicant, Allen Harim and the landowner of the spray fields, the Isaacs family. He asked how much the Applicant is paying for the land for the lease. He indicated that Allen Harim pumps between 1.5 to 2 MGD from the groundwater. He commented that the aerators would operate constantly. He mentioned the construction of the pipeline and pump stations to bring the treated wastewater to the Facility and he asked about the cost to transport the wastewater. He said the Facility makes no financial sense and that the Department should approve the most economical possible method. He questioned why it took the Department so long to complete its investigation of the 90 violations at Allen Harim. He commented that the Department's 2013 decision approved a wastewater treatment process that removed a higher level of pollutants than in the Application. He stated that the Allen Harim plant still is violating its permit even after installing the upgrade last November. Mr. Scarpa (part 3) commented on the 90 million gallon storage lagoon that he said is only four feet above the water table. He advocated that the Department require a 60-millimeter thick liner and not the proposed 45-millimeter thick liner. He also commented that the lagoon banks would rise fourteen feet above grade, which would mean that you would be looking at a one-story building.
2. Andrea Green introduced herself as an attorney and resident in the Pemberton development. She commented on the Application's Exhibit B that contain Sussex County's condition use permits 1724 and 1725, which she claimed had expired. She

commented that the Application's well survey was outdated because it does not show her well. She commented on internal inconsistencies with the Application's new phase 1 having a 90 million gallon lagoon, but that Appendix H's technical support cites a 67.5 million gallon lagoon. She claimed that the Application is not an amendment, but for something entirely different. She said it would not serve local customers, but instead would serve only one commercial entity, Allen Harim. She said the Facility would take Allen Harim's problem, namely, the inability to comply with wastewater treatment standards, and pipe the treated wastewater eight miles up the road to Milton. Her written statement was marked as Green Ex. 1.

3. Paul Reid introduced himself as the President of the Sunland Ranch Property Owners Association and he commented on the Application not identifying any of Sunland Ranch's wells, which are within 2,500 feet of the spray fields. He also said that the Ingram Branch floodplain boundary behind Sunland Ranch recently changed. He questioned the spraying on wetlands or on a floodplain. He requested that a third party evaluate the Application and oversee Allen Harim. He said that the Department should not rely on the Applicant to self-report violations. He cited the Department's 75 violations against the Allen Harim's Harbeson WWTP for discharges that occurred four years before the Department issued the enforcement order. Paul Reid (part 2) asked about the crops and if no crops what happens. Dr. Hayes informed him that the lagoon holds a forty-five day supply of treated wastewater until it is sprayed on crops.
4. John Austin said he attended the Department's public hearing held five years ago on the original permit application. He said the Department issued the permit October 15, 2013, but that the Secretary's Order issued March 12, 2013. He claimed that the permit's expiration date should be earlier than the permit's issuance date. He indicated the current application no longer had a wastewater treatment facility and is instead seeks to construct only a wastewater disposal facility. He commented on Dr. Hayes' statement that the Department would apply the 2014 regulations, which he said was contrary to statements in the Application. He indicated that the Application stated that the treated wastewater would not exceed the standards for 10 milligrams of nitrogen and 8 milligrams of phosphorous. He commented that the permit will expire and that the plant could not be completed until eighteen months based upon a Cape Gazette article. Hence, he claimed the Facility would not be operational before the permit expires.
5. Mark Nauman spoke on his view of the Facility's true intention and noted that he gets his drinking water from a well that is 200' from spray field "C" but that the Application does not identify his well in the Application's well survey. He wants the Department to not bend to political pressure to save an outdated, nonconforming manufacturing facility or to overlook regulations to help a for profit utility company. He stated that the Department's only obligation in this matter is to consider the long-term safety and well-being of Delaware citizens and our natural resources. He asked if any third party engineers or monitoring would be involved in oversight. He asked how the surrounding groundwater and surface water would be impacted. He asked how large is the monitoring areas. He asked how often residents would receive the monitoring results. He asked what would happen if the Facility contaminated a private well.
6. Caroline Judd spoke as a resident of Sunland Ranch immediately adjacent to Spray Field C. She also submitted a letter marked as Judd Ex. 1. She expressed concern with Allen Harim's violations. She wants the Department to treat the Application as a

- new permit and not as an amendment. She wants an independent third party to undertake a full environmental assessment and to consider all the wells in the area. She expressed concern for property values in thirty years and she mentioned the contamination at Bowers Beach.
7. Maria Payan spoke as a representative of the Socially Responsible Agricultural Project. She wants the Department to require a new application for the Facility. She indicated that Sussex County's conditional use approval for the Facility had expired. She stated that the 2013 Construction Permit was for the 3,700 homes that were not constructed. She indicated that the FEMA floodplain maps have changed since 2013. She said that the Application's well survey is eleven years old and that the Department should require that the Applicant update it because the Applicant conducted it before construction of home in most of the developments. She said that Allen Harim is unable to meet treatment standards, as shown by the 90 Department violations since 2012. She did not see any Material Data Safety sheets for the chemicals that the Applicant would use at the Facility. She did not see any enterococcus monitoring. She said poultry waste is not human waste, and that the Department should require monitoring for enterococcus. She questioned the \$5 million impact fee paid to the Applicant out of an \$11 million loan that was to fund Allen Harim's upgrade to its WWTP. She claimed the Facility would only benefit Allen Harim and that Allen Harim owned the five parcels in the public utility service area. She said the Facility would be equivalent to putting 90,000 septic tanks on 21 acres. She commented on Beaver Dam Creek and other areas could not withstand the phosphorous that the Facility would apply to the spray fields. She asked what Allen Harim would pay to the Applicant. She discussed the need to protect the environment. Maria Payan (part 2) commented that a University of Missouri study on the impact of poultry plants on property values found that properties within a tenth of a mile declined in 88% in value. Ms. Payan (Part 3) commented on the odors from the Allen Harim facility and the signs to call the Department to complain about the odor.
  8. Sarah Cooksey provided comments as the Director of Conservation for the Nature Conservancy, which she said is the largest not-for profit conservation organization in the world. She said the Facility's lagoon and spray fields would be directly adjacent to the Nature Conservancy's Pemberton Forest Preserve, which has 1,300 acres and protects numerous habitat types. She said the preserve has forty rare plants and animals and federally protected Swamp Pink. She requested fifteen additional days to review the Application and to submit comments, which I granted after no one opposed it.
  9. Cathie Nagy commented that our government representatives should not be support the Facility and cover-up a business with a proven track record that violates the environment. She does not want to purchase water from Artesian or another utility if her well becomes contaminated. She commented on the lagoon's appearance. She asked about the quick approval of the plans and the motives of those who approved them. She wants Allen Harim to clean up its violations.
  10. John Chatley spoke as a resident of Pemberton and he mentioned a June 2 Cape Gazette article that indicated that chicken processing waste would be sent to the Facility. He also cited the Department's November 3, 2016 letter that cited Allen Harim for violations. He asked if the Department collected any fines. Dr. Hayes responded that they are still pending. He commented that the Department should collect the money. He requested an update to the November 3, 2016 letter and asked

cost of Allen Harim's upgrade to its WWTP. He wondered why the Applicant wanted Allen Harim's treated wastewater.

11. Gwendolyn Jones spoke as a resident of Milton who receives Tidewater's water and sewer service. She expressed concerns with Allen Harim's violations, which she feared would cause problems that may result in houses with wells and septic systems connecting to central water and sewer systems.
12. John Fryer spoke as a resident of Sylvan Acres. He expressed concern with the runoff from the spray fields because he lives downhill from them. He said that after a heavy rain he sweeps up the waste that flows from the fields. He commented that his development had a resident who worked for the Department who moved out two months ago and that he did not want the Facility constructed. He said he was concerned with the hormones and chemicals that may be in the chicken waste sprayed on the fields and eventually get in the wells. He said he knows that the fields' surface water goes on his property. He commented on the Blessing facility and he lacked faith that anyone at the Department will protect the public.
13. Susan Springfield asked about the crops that would be grown. Dr. Hayes replied by stating that corn, wheat, and soybean would be grown and would absorb the treated wastewater's nitrogen and phosphorous.
14. Al Grass' comments were that Ingram Branch will become like Beaverdam Creek and he opposed the Facility.

In addition, the Record includes over one hundred written public comments the Department received within the public comment period that ended August 11, 2017, which I summarize in a separate document. Most of the written comments raised many of the same issues that the above public comments at the public hearing raised. I met with the GWDS and the Applicant to review the issues raised by the public comments.

In an August 17, 2017 letter, I requested GWDS' technical assistance and expertise in request for a TRM that included the summary of the written comments timely received. My letter summarized the issues raised by the public comments as follows:

- 1) **Application completeness.** The public comments questioned whether the Application was complete or if the Department should require a new application or information such as an updated well survey, flood plain and wetland information. The comments questioned the status of the Sussex County's land use planning approval and the Department's original permit that the pending application seeks to amend;
- 2) **Groundwater contamination concerns.** Most of the public comments raised concerns with groundwater contamination in general and to their the water quality from their private wells specifically;

- 3) **Surface water or soil contamination concerns.** Some public comments raised concerns from releases from the pipeline or spray fields that would contaminate the soil or surface water because of possible runoff;
- 4) **Odors.** Many public comments were concerned with possible odors from the lagoons and the spray irrigation;
- 5) **Allen Harim's ability to treat wastewater to meet standards for spray irrigation.** Many public comments cited the Department's enforcement actions against Allen Harim and were concerned with the quality of the treated wastewater received at ANSRWRF;
- 6) **Property value impact.** Many comments raised concerns with the adverse impact on their homes' property values; and
- 7) **Financing the Facility-**Some public comments questioned the public financing of the cost to construct the Facility.

On August 18, 2017, the Applicant submitted an Addendum to the DDR that responded to the GWDS' July 17, 2017 and July 31, 2017 comments and included revised exhibits to the Application.

The GWDS prepared the attached Technical Response Memorandum ("TRM"), which addressed most of the above-identified technical issues with its expertise, which did not include the property valuation and financing issues raised by the public comments. The GWDS TRM recommended that the Department approve the Application and issue a permit consistent with GWDS' Draft Permit.

### **III. FINDINGS OF FACT**

I find that the Record, as established and summarized above, provides the Department with all the information required for a final decision on the Application. I find that the Record supports a final decision that approves the Application and directs GWDS to issue an amended permit consistent with the GWDS Draft Permit.

I find that the GWDS properly reviewed the Application under the Department's *Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems, 7 DE Admin. Code 7101* ("Regulation 7101"). Section 6.3.1.14.1 and Section 6.5.2.2.2 of Regulation 7101 allow the Applicant to apply to amend to a construction

permit based upon a new or updated DDR. The Applicant submitted a new and updated DDR to reflect the engineering changes needed to the 2013 Construction Permit in order to serve Allen Harim.

I find that the GWDS properly determined that the Application was in proper form and administratively complete when it decided to publish public notice of the receipt of the Application, which Regulation 7101 and *7 Del. Code Section 6004* requires. I find that the GWDS properly reviewed the Application under Regulation 7101, as opposed to the Department's regulations in effect when the Department issued the 2013 Construction Permit.

I find that the 2013 Construction Permit remains in effect until October 14, 2018 based upon the issuance date and expiration date on the 2013 Construction Permit, which controls over the date the Department issued the Order approving the issuance of the 2013 Construction Permit. Regulation 7101 allows the Department to extend a construction permit's expiration date for up to one year to allow for the completion of any construction.

I find that GWDS' decision to publish public notice properly relies on an initial review to determine if the Application meets Regulation 7101's requirements for a large system, as set forth in Section 6.5. I find that the GWDS's initial review supported publication of public notice of the receipt of the Application that met Regulation 7101's filing requirements, which provided notice to the public that the Department would receive public comments to assist its review of the substance of the Application.

I find that the Application seeks to amend the 2013 Construction Permit, which approved the construction of the Facility's Phase 1 based upon engineering plans for a 1.0 MGD WWTP, a 62 million gallon capacity storage pond, and spray irrigation areas of the WWTP's treated wastewater on a portion of the 1,700 leased acres. The Application's amendments would allow the Facility to serve Allen Harim, which does not Applicant to provide public utility wastewater

treatment service and hence the Applicant proposed to delay the construction of the WWTP until Phase 2. I find is a reasonable change that will reduce the environmental impact of the Phase 1 construction. The Application also proposed to increase the capacity of the approved 62 million gallon storage pond to 90 million gallons in order to meet Allen Harim's flow of up to 2.0 MGD of treated industrial wastewater. I find that this proposed change is reasonable and supported by the Application's engineering plans and the GWDS review of the plans. The remaining changes are to the spray areas, which reflect minor changes in the spray areas within the originally leased acres. I find these engineering changes are reasonable and supported by the Applicant's engineering analysis and plans. The GWDS required the Applicant to add a monitoring well, which the Applicant included as part of its August 18, 2017 submission.

The Applicant's contract with Allen Harim requires that Allen Harim will treat its industrial wastewater to meet the Department's unlimited public access standards, as set forth in Regulation 7101's Section 6.3.2.3.3.2. The Department will continue to regulate Allen Harim's WWTP by an operating permit, which requires Allen Harim to treat its industrial wastewater based on limits that satisfy the unlimited public access criteria.

I find that the Application supports the spray irrigation of Allen Harim's treated wastewater for crop production based upon the Amended Design Development Report's ("DDR") Appendix G, which provides the spray fields' design calculations. The DDR's Appendix F sets forth the Vegetative & Nutrient Management Plan prepared by Keen Consulting for regulating the crops grown in the spray fields. The DDR's Appendix G provides the calculations of the amount of nitrogen and phosphorous that the crops will absorb and prevent excessive levels from entering the groundwater. The storage pond's changes are supported by Duffield Associates Technical Specifications in the DDR's Appendix H. Thus, I find that the

Application, as updated, fully supports the engineering for the storage and spray irrigation of Allen Harim's treated wastewater on designated spray areas.

I find that the Application's proposed changes to the 2013 Construction Permit to allow the Facility's use of spray irrigation for Allen Harim's treated wastewater. I find that spray irrigation of treated wastewater provides several environmental benefits. The first environmental benefit is that the spray irrigation of Allen Harim's treated wastewater will allow the farmer to reduce using water from other sources, such as pumped from the local groundwater. While Allen Harim pumps groundwater for its use at the Harbeson plant, the spray irrigation of the treated wastewater allows reuse of the treated wastewater for agricultural purposes at the Facility's spray fields that grow crops. I find that the spray irrigation of treated wastewater provides a beneficial reuse as a source of reliable water supply for crop irrigation.

The second environmental benefit of the Facility's spray irrigation of Allen Harim's treated wastewater is that it will allow the farmer to reduce applying nitrogen and phosphorous fertilizer to their crops. Allen Harim's treated wastewater contains the nutrients nitrogen and phosphorous. These nutrients will allow the farmer to displace applying these nutrients as fertilizer by other methods. Thus, the spray irrigation of the treated wastewater with its nutrients will benefit crop production, and provides an additional beneficial reuse of the treated wastewater for agricultural purposes.

The third environmental benefit of the Facility's spray irrigation of Allen Harim's treated wastewater is that it will provide additional treatment to remove nutrients before they enter the groundwater. The spray irrigation of treated wastewater on crops will allow the crops to absorb the nutrients as fertilizer, as noted above. This absorption provides additional removal of nitrogen and phosphorous from the treated wastewater to protect the groundwater from any excessive levels of these nutrients. In effect, the spray irrigation for crop production provides a

natural method to remove nutrients from Allen Harim's treated wastewater and to protect the groundwater from receiving excessive levels of the nutrients.

The fourth environmental benefit of the Facility's spray irrigation of Allen Harim's treated wastewater is that it will allow Allen Harim to reduce its WWTP discharges into Beaverdam Creek, which should improve its water quality. Beaverdam Creek contains excessive nutrients from all sources within its watershed, such as fertilizer application to crops, lawns, and the Allen Harim's discharges. Allen Harim's use of the Facility's spray irrigation areas for its treated wastewater will reduce the amount of nutrients discharged into Beaverdam Creek, which should benefit its water quality.

Turning to the specific engineering changes proposed to the 2013 Construction Permit, I find that the proposed delay in the construction of the WWTP will reduce the impact of the Phase 1 construction on the amount of land disturbed by the construction. The Application's proposed increase to Phase 1 storage pond's capacity from 62 million gallons to 90 million gallons will increase the land disturbance, but this change will appear similar other farm ponds and will have a landscaped buffer. Thus, this change will not result in any significant increase in overall impact of the Phase 1 construction. The 2013 Construction Permit approved a storage pond on the same 75-acre tract that the Application proposes for the larger pond. I find that the Application's larger storage pond is reasonable, well supported in the record, and will provide sufficient storage to serve Allen Harim based upon the GWDS' recommendation in its TRM. The Application proposes small changes to the wetted areas used for spray irrigation. I find that these changes are reasonable and supported in the Record. The use of Allen Harim's treated wastewater for spray irrigation will not result in any outward change in the spray area's appearance from the current farming use that relies on irrigation water supplied by wells. Thus,

overall I find that the proposed amendments to the 2013 Construction Permit will have less of an environmental impact than the 2013 Construction Permit.

I find that the Applicant satisfied the requirements of Regulation 7101 to support the proposed amendment to the 2013 Construction Permit in order to serve Allen Harim. The Applicant provided additional information that GWDS requested, including information requested by the public comments. The role of the public comments is to participate in the Department's review process and the Department welcomes the participation as an added input, but the input does not include determining when the Department has all the information it needs for a decision on the Application.

Several public comments claimed that the Application, as originally submitted, failed to provide all the required information. I find that the public comments fail to understand the GWDS review process, which initially determines that an application is administratively complete for purposes of public notice and then determines, after a more thorough review that includes public comments, that the Department has enough information of a final decision on the Application. The GWDS TRM set forth that it determined that the Application was administratively complete when the Department provided public notice of the Application on June 11, 2017. This GWDS determination indicated that the Application provided information for all Section 7101's required information, but GWDS did not investigate the information in the Application as part of its administratively complete determination. The GWDS requested and received additional information and the GWDS TRM reflects a recommendation based upon receiving all the information the GWDS required for its recommendation. The GWDS TRM discussed the additional information the Applicant provided in its August 18, 2017 Addendum. This information did not materially change the proposed engineering plans for the amended Phase 1 construction, which was for the larger storage pond and wetted spray irrigation areas to

serve Allen Harim. Thus, I find there is no support for publishing any new public notice or otherwise starting over as the public comments sought based upon any additional information provided to the GWDS for its recommendation on the Application.

The second issue raised by many of the public comments was the concern that the Facility would contaminate the groundwater used for drinking water supply. The GWDS TRM addressed this issue and I find that it provides support for approving the permit amendment over the claims that the spray irrigation would contaminate drinking water. I find that the Application's proposed amendment to the 2013 Construction Permit does not change any requirement that the spray irrigation of treated wastewater will meet the Department's unlimited public access criteria. As such, the treated wastewater will not contaminate the groundwater used for drinking supply because Regulation 7101's unlimited public access standard protects the groundwater from any contamination. The TRM noted that Allen Harim's contract with the Applicant requires the automatic diversion of any non-complaint treated wastewater to Allen Harim's storage pond at Harbeson. This diversion means that Allen Harim will not send any inadequately treated wastewater to the Facility.

The Department's standard for unlimited public access is the highest standard that Regulation 7101 requires for spray irrigation of treated wastewater. The Department requires unlimited public access standard for spray irrigation of golf courses, parks, and other recreational areas open to public use. The Department's approval of other unlimited public access spray irrigation includes the Baywood Greens golf course and the Frog Hollow golf course, Millsboro's sports fields and Middletown's park area. I find that the unlimited public access criteria provides ample protection of the groundwater and the surrounding properties' wells that use the groundwater for drinking water.

The third issue raised in the public comments was the concern with possible runoff of the treated wastewater from the Facility. The GWDS TRM and the Applicant addressed this issue and I find their responses support the conclusion that the quality and the quantity of the sprayed treated wastewater would not contaminate the soils or surface waters from any runoff. I find that the Application's proposed amendment should not cause any treated wastewater to runoff the Facility's property and impact adjoining properties or any surface waters. The 2013 Construction Permit reflects Sussex County's buffer requirements in its land use approval. The buffer areas protect adjoining properties and surface water from the risk of the treated wastewater's runoff adversely affecting the environment.

The fourth issue raised in the public comments was the concern that the proposed amendment to the 2013 Construction Permit will cause the Facility to emit odors. The GWDS TRM addressed this concern and found that chlorination of the Allen Harim treated wastewater and proper operations should not cause any odors from the Facility's operation. I find that this concern does not support denial of the Application. I find that the larger storage pond and the use of spray irrigation should not cause the Facility to emit any odor. Moreover, the Applicant's proposed removal of the WWTP from Phase 1 construction also removes a possible source of odors. I find that this concern relates more to an operations permit, which if issued will regulate the Facility's operation to ensure that its odors comply with the Department's requirements.

The fifth issue raised in the public comments was the concern that the Facility would encourage mosquito breeding or otherwise attract mosquitos. I find that the design of the larger storage pond does not raise any valid reason to deny the Application and accept the GWDS TRM and the Applicant's explanation. The Department addressed this concern in the 2013 Construction Permit. I accept the Applicant's responses to the public comments that supports finding that the larger storage pond and the spray irrigation should not encourage mosquito

breeding or attract mosquitos. The proposed larger storage pond with its 25' depth, aeration and possible chlorination, if necessary, should provide sufficient protection from breeding or attracting mosquitos.

The sixth issue raised in the public comments was the concern with Allen Harim's involvement. The GWDS TRM indicated that the Allen Harim WWTP was outside of the scope of the Application, but the GWDS provided a response that explained the Allen Harim treatment process. The GWDS TRM indicated that Allen Harim's treatment process was capable of meeting the unlimited public access standard. The TRM addressed the Department's November 3, 2016 enforcement action for Allen Harim's discharges that remains pending. The TRM indicated Allen Harim, in general, has a good compliance record. It also indicated that many of the violations were for discharging excessive nutrients into Beaverdam Creek, which would not be violations if land applied by spray irrigation. I find no reason to deny the Application based upon the speculative concern that Allen Harim will be unable to treat its industrial wastewater to meet the unlimited public access standards. The GWDS TRM indicates that the Allen Harim WWTP can meet the required standard and that Allen Harim took corrective action to remedy the problems that caused the violations the Department's enforcement action cited.

The seventh issue raised by some public comments was the concern that the Facility would harm property values. The GWDS TRM did not address this concern, which is outside of its expertise. I find that the Record contains Sussex County's land use approval in Sussex County Ordinance Nos. 1922 and 1923, which included findings recognizing that, "the proposed use of the subject property of a public or semi-public character and is essential and desirable for the general convenience and welfare of neighboring properties and the County." Moreover, Dr. Hayes noted at the public hearing that spray irrigation is used on golf courses at the Baywood Greens and Frog Hollow developments. Thus, while not directly relevant to the Department's

decision, I find no support for the dire prediction that the Facility will cause a decline in property values. Indeed, the Facility may assist preserving farmland and open space, which may benefit the local property values.

Finally, some public comments raised an issue with Allen Harim's receipt of public financing for improvements to its WWTP construction. I find that this is not a valid consideration in the Department's review of the Application. Nevertheless, I find that the allegations of improper financing are not correct. The Department financed improvements to the Allen Harim WWTP, which included the construction to connect Allen Harim's WWTP to the Applicant's pipeline<sup>6</sup> that will transport the treated wastewater to the Facility.

#### **IV. REASONS AND CONCLUSIONS**

I recommend that the Department approve the Application and issue an amendment to the 2013 Construction Permit. The GWDS reviewed the Application and determined it complied with the information required by the Regulations 7101 and recommended that the Department approve GWDS's issuance of the amended construction permit to amend the 2013 Construction Permit. I agree with the GWDS recommendation.

The Department's regulations provide two general methods for the disposal of treated wastewater. One method is to discharge treated wastewater into surface waters. The second method is to discharge treated wastewater on land. The 2013 Construction Permit approved the Facility's land application via spray irrigation on farmlands for crop production or in forested areas. The Application will continue the spray irrigation method and the only changes are to the storage pond's capacity and to the spray areas in order to store and spray irrigate Allen Harim's treated wastewater.

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<sup>6</sup> The Department approved the Applicant's pipeline construction applications.

The public comments raised valid concerns and the Department's experts have addressed these concerns in an effort to bring understanding to a very difficult area of the Department's regulation to protect the environment and public health. The Department recently issued an Order for the discharge of treated wastewater into the Atlantic Ocean that also was very controversial.<sup>7</sup> In that case, many of the opponent of the proposed discharge location advocated that the Department approve land application. The Department's experts reviewed the Application and support amending the 2013 Construction Permit to allow the necessary changes in the engineering to serve Allen Harim.

I recommend that the Department enter the following:

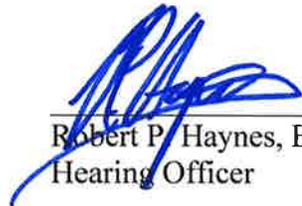
1. The Department has jurisdiction under *7 Del. C. §§6003, 6004, 6006(4)* and other relevant authority to make a final determination on the Application after holding a public hearing, considering the public comments, and other information in the Record;
2. The Department provided proper public notices of the Application and the public hearing pursuant to *7 Del. C. §6004(b)*;
3. The Department considered all timely and relevant public comments in the Record, as established in the Report, prior to issuing this Order as its final decision;
4. The Record supports approval of the Application and the GWDS' issuance of the amended construction permit. The GWDS shall promptly issue the Applicant the amended construction permit for the Facility's Phase 1. The Department's amended construction permit shall be consistent with the GWDS Draft Permit,

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<sup>7</sup> The Department recently approved the City of Rehoboth Beach's surface water discharge of treated wastewater into the Atlantic Ocean. Public comments in that proceeding wanted the Department to approve a land application method.

which includes reasonable conditions to protect the environment and public health;

5. The Department adopts Report and its attached GWDS TRM as further support for this decision; and that
6. The Department shall publish this Order on its web page, shall provide legal notice of this Order in the same manner as the Department provided legal notice of the Application and otherwise as the Department determines is appropriate.



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Robert P. Haynes, Esquire  
Hearing Officer



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

Groundwater Discharges Section

Telephone (302) 739-9948  
Fax (302) 739-7764

MEMORANDUM

**TO:** Robert P. Haynes, Hearing Officer

**THROUGH:** Virgil Holmes, Director *JH 10/2/17*

**FROM:** Jack Hayes, Environmental Program Manager *JH 10/4/17*  
Jennifer Roushey, Environmental Program Administrator *JR For JH 10/4/17*

**RE:** Technical Response Memorandum – Response to Public Notice and Public Hearing Comments for the Proposed Amendments to the Construction Permit for the Artesian Northern Sussex Regional Water Recharge Facility (ANSRWRF) near Milton, Delaware

**DATE:** October 2, 2017

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The Groundwater Discharges Section (GWDS), Division of Water, Department of Natural Resources and Environmental Control (Department) received an amended construction permit application for ANSRWRF, determined it was administratively complete and advertised the application. A meritorious request for a public hearing was received from Anthony Scarpa and the hearing was scheduled for July 27, 2017 at 6:00 pm in the Milton Public Library in Milton, Delaware.

On July 27, 2017 the public hearing was held at the Milton Public Library in Milton, Delaware. Approximately 100 people attended the hearing and many provided comment on the proposed permit amendments. Given the amount of interest in the permit amendment application and request for additional time, the Hearing Officer left the hearing record open for an additional period of 15 days. After the comment period ended on August 11, 2017 the Department's GWDS reviewed the hearing transcript and comments received then prepared this technical response document to address all comments received.

*Delaware's good nature depends on you!*



## **Response to Public Comments**

- 1. There were comments in regards to the amended permit applications completeness. The public comments questioned whether the Application was complete and if the Department should require a new application or information, such as an updated well survey, floodplain and wetland information. The comments also questioned the status of the Sussex County's land use planning approval and the Department's original permit that the pending application seeks to amend.**

*The Department had completed an administrative completeness review prior to the public notification of the amended permit application being received from Artesian. The Groundwater Discharges Section (GWDS) has subsequently undertaken a comprehensive technical review of the permit application to ensure the application meets the requirements set forth in the Regulations Governing the Design, Installation, and Operation of On-Site Wastewater Treatment and Disposal Systems (On-Site Regulations), amended in January 2014. Subsequent to this technical review and to address comments received via the public hearing, the Department requested clarification and supplemental information regarding the permit application from Artesian. The clarifying application information is referenced in this Technical Response Memorandum and included in its entirety in Appendix A. Of note, regarding the agricultural lease and isolation distances/buffers the GWDS provides the following: 1) the affidavit provided by the permit applicant concerning the agricultural lease/contract is acceptable for purposes of the amendment to the construction permit and 2) the proposed design of the spray irrigation activity as presented by the applicant in its permit amendment application supporting documentation, including the express intent to dispose of industrial wastewater treated to a higher standard than would be required for the designated disposal sites, could include isolation and buffer distances to mitigate concerns and the resulting cumulative net effect of the proposed system, when operational, would not likely adversely affect public health or the environment.*

*The existing construction permit which is in effect through October 14, 2018 allows for construction modifications; and therefore, the Department has determined that a new permit is not required. The requested permit amendment is being reviewed in accordance with the new On-Site Regulations; not the Regulations Governing the Land Treatment of Wastes which the existing construction permit was permitted under. The technical review required an updated well survey which was received on August 18, 2017. The Department's Wetlands and Subaqueous Lands Section has also performed a review of the floodplain and wetlands associated with the project finding no changes from the previous determinations. It should also be noted that this application is for construction only. Both Artesian (for the ANSRWRF facility) and Allen Harim (for their Harbeson wastewater treatment facility) will need to apply for and obtain separate operations permits from the Department prior to ANSRWRF receiving any treated effluent from the Allen Harim facility.*

*The GWDS had requested documentation from the Sussex County Director of Planning Offices to confirm the existing conditional use permits are active and in force for the project which was received August 24, 2017 and confirms the active status of both conditional use permits.*

- 2. Comments made expressed concerns about groundwater contamination. Most of the public comments raised concerns with groundwater contamination in general and the drinking water from individual wells.**



*The wastewater being treated at Allen Harim's Harbeson facility is treated to unlimited public access criteria which is a higher level of treatment than would be required at this type of limited access site and is the State's highest level of treatment for spray facilities. This level of treatment requires the removal of bacteria and virus' through disinfection. In this case, Allen Harim's Harbeson facility is utilizing chlorination to disinfect the wastewater stream and will be required to maintain a residual chlorine level to ensure this disinfection is occurring. The soil and sun also provide extra safeguards in killing and destroying bacteria and viruses once the wastewater is spray irrigated. The wastewater will also contain forms of nitrogen and phosphorus. These constituents are needed by crops to produce desired yields and productivity. The nutrient management plans maintained by the farmer account for the additional nitrogen and phosphorus being applied via the spray irrigation. This in turn reduces the amount of commercial fertilizers needed to obtain increased yields. The Design Development Report (DDR) which was submitted as a component of the permit application provides a Nitrogen Balance demonstrating the design should not cause the groundwater to exceed drinking water standards of 10 mg/L nitrogen on an annual average basis.*

*The GWDS requires multiple layers of monitoring to ascertain any increasing trends of these constituents getting into the groundwater. Prior to the facility going into operation, three separate groundwater and surface water samples must be obtained and tested through a certified laboratory to establish background levels for not only these constituents but a host of others. Once operational, quarterly sampling will be required by the facility through the following devices: lysimeters (in-field), monitoring wells (in-field, up-gradient, and down-gradient), and surface water grab samples. Using these three sets of data the Department is able to assess what impact the spray irrigation activities are having on the spray fields, groundwater, and surface waters within and adjacent to the spray fields. Annual soil sampling is required and once every five years heavy metals are required to be sampled. Background samples are obtained and tested during the soil investigation portion of the project. These are used to verify any impacts occurring as a result of the spray irrigation activities. In the event trends of increasing concentrations and/or impacts are observed, the permittee will be required to take corrective actions to stabilize levels and/or bring levels back within permit limits.*

**3. Concerns were raised about surface water or soil contamination. Public comments also raised concerns that a spray irrigation or pipeline accident may contaminate the soil or surface water.**

*The previous response addresses the concerns related to possible soil and surface water contamination. This type of facility is required to utilize licensed operators to oversee daily operations. As such, the licensed operators will be present to quickly identify and mitigate an upset or release. Should a pipeline break or a spray rig become damaged, it would be shut down and repaired as quickly as possible with notification to the GWDS of the incident within a twenty-four hour period. In addition, the pump station at Allen Harim's wastewater treatment facility will be required to have a pressure detection system to detect a break in the line.*

*The treatment levels for wastewater being sprayed at ANSRWRF allows for "unlimited public access". This means a spill or leak of treated effluent to the ground surface would not likely pose a risk to human health or the environment. A spill or leak can be mitigated rather easily with the use of pump trucks to suck up any large volumes of wastewater that may have spilled or leaked. If it were to occur in the farmer's field it would be sufficient to allow it to infiltrate into the soil or be taken up by the crops. In addition, conditions will be present in the Operations Permit for Allen Harim that require diversion of non-conforming wastewater to a diversion lagoon at the Allen Harim facility for further treatment; this will mitigate the concern of a spill or release of wastewater at ANSRWRF that does not meet the "unlimited public access" standard within the On-Site Regulations.*



- 4. The neighboring communities expressed displeasure with possible odors. Public comments had concerns with possible odors from the lagoons and spray irrigation.**

*There are a number of facilities similar to ANSRWRF located throughout the State and while there may be a slight odor associated with some that utilize lagoon treatment of the wastewater; treated wastewater should not have a significant odor. The sprayed wastewater is being treated to the "unlimited public access" standard that is applied to publicly accessible areas, such as, Delaware's golf courses and parks, and should not present an odor concern. If the public were to notice any concerns, odors or otherwise, they may contact the DNREC 24-Hour Toll-Free Complaint Line at 800-662-8802 to have their concerns investigated.*

- 5. Many individuals questioned the amount of potential mosquitos the lagoons would bring to the area. Public comments raised concerns with the lagoons as possible breeding spots for mosquitos.**

*The lagoons will be aerated which keeps the waters agitated and moving. Mosquitos breed and proliferate in shallow, stagnant pools of water. The lagoons are deep (~ 25 feet) and with aeration/agitation do not provide a good breeding ground for mosquitos. Other similar facilities do not have mosquito issues.*

*Secretary's Order No. 2012-W-0052 issued and effective March 12, 2013 requires the Permittee to ensure that the storage ponds shall not become a breeding ground for mosquitos. This requirement was iterated in the 2013 permit and is proposed to be reiterated in the amended permit if approved.*

*In addition, Artesian has provided comments to the Department addressing their mitigation of the potential mosquito concerns in a memo dated, August 8, 2017. Their responses follow:*

*"Conditions most favorable to mosquitoes breeding are areas of shallow, stagnant water with fairly flat side slopes and vegetation along the banks. To minimize the emergence of mosquitoes, the storage lagoon has designed as a deep pond with steep side slopes. Surface aeration will be used to keep the surface of the lagoon from becoming stagnant, and allow wave action on the bank to prevent mosquitoes from hatching. The lagoon liner will discourage vegetation growth, and operators will maintain the liner and banks to minimize weeds."*

*"In a well-maintained pond system, mosquitoes usually are not a nuisance. According to studies by the U.S. Public Health Service, the density of the mosquito population is directly proportional to the extent of weed growth in a pond. Where weed growth in the ponds and along the water line of the dikes is negligible and where wind action on the pond is not unduly restricted, the likelihood of mosquitoes breeding is low." [US EPA]*

- 6. Most attendee's and commenters questioned Allen Harim's ability to treat wastewater to meet standards for spray irrigation. Many public comments cited the Department's enforcement actions against Allen Harim. These comments were concerned with Allen Harim's ability to treat the wastewater sent to ANSRWRF.**

*The operation of Allen Harim's Harbeson wastewater treatment facility is outside the scope of the ANSRWRF onsite wastewater treatment and disposal construction permit; however, since Allen Harim's effluent will be sprayed at ANSRWRF, the Department would like to address the concern*



*surrounding Allen Harim's ability to treat wastewater to meet standards for spray irrigation. The wastewater treatment system at the Allen Harim Harbeson facility consists of primary screening, dissolved air flotation, biological nutrient removal (anoxic basins followed by aerobic basins), secondary clarifiers, chlorination, and de-chlorination. The wastewater treatment system is capable of consistently producing effluent that is in compliance with "unlimited public access" criteria. This is demonstrated by the monthly effluent concentration data contained in Allen Harim's Discharge Monitoring Reports submitted in compliance with their current National Pollutant Discharge Elimination System (NPDES) permit which authorizes effluent discharge directly to the Beaverdam Creek.*

*As documented in the Department's November 3, 2016 NOV, Allen Harim has had some instances of effluent violations under their NPDES permit; however, in general Allen Harim has maintained a good compliance history with their NPDES permit requirements. Although the Department's final resolution surrounding the November 3, 2016 NOV is still pending, Allen Harim took corrective actions to return to compliance. In addition, it is worth noting that many of the nutrient violations cited in the NOV which are a concern when effluent is discharged directly into a surface water body, would not be considered a violation under a land application permit since nutrients are assimilated through crop uptake and through the soil.*

*It should also be noted that Allen Harim will be required to obtain an operations permit for their wastewater treatment operation from the Department's Groundwater Discharges Section (GWDS) prior to sending any effluent to ANSRWRF. The operations permit will require that Allen Harim maintain a diversion lagoon at the Allen Harim Harbeson facility. In the event of an upset where effluent is not meeting required effluent standards, Allen Harim will be required to divert the non-compliant effluent to the onsite diversion lagoon for further treatment until corrective actions can be made. In addition, under the operations permit the Department's GWDS will be monitoring and overseeing Allen Harim's wastewater treatment operations to ensure compliance with permit conditions.*

#### **Overall GWDS recommendation and draft permit.**

*The GWDS recommends the approval of this amended construction permit. ANSRWRF will have the highest treatment level required. The facility must treat to unlimited public access criteria which are the same level of treatment required on Delaware's golf courses, parks, medians, etc. The wastewater will also be disinfected and provide a residual chlorine content to ensure bacteria and virus' are killed to below acceptable levels. There will be nitrogen and phosphorus present in the wastewater; however, the concentrations of these constituents are accounted for in the nitrogen balance, vegetative management plan, and amount of acreage to be used for the spray irrigated wastewater. Given this, the GWDS has a high degree of confidence with permitting the proposed construction permit application for ANSRWRF.*

This concludes the technical response document prepared by the GWDS for the Department to address the many comments and concerns for the proposed changes to the construction permit application for ANSRWRF.



**Spray Irrigation Construction Permit**

State Permit DEN Number: \*\*

Effective Date: \*\*

Expiration Date: \*\*

Issued by: Groundwater Discharges Section  
Division of Water  
Department of Natural Resources  
and Environmental Control  
89 Kings Highway  
Dover Delaware 19901  
302-739-9948



AUTHORIZATION TO CONSTRUCT  
UNDER THE LAWS OF THE  
STATE OF DELAWARE

**PERMITTEE: Artesian Wastewater Management, Inc.**  
664 Churchmans Road  
Newark, DE 19702

**FACILITY: Artesian Northern Sussex Regional Water Reclamation Facility  
(ANSRWRF)**

1. Pursuant to the provisions of 7 Del. C., 6003, **Artesian Wastewater Management, Inc.** is herein authorized to construct **Phase I** of the ANSRWRF:

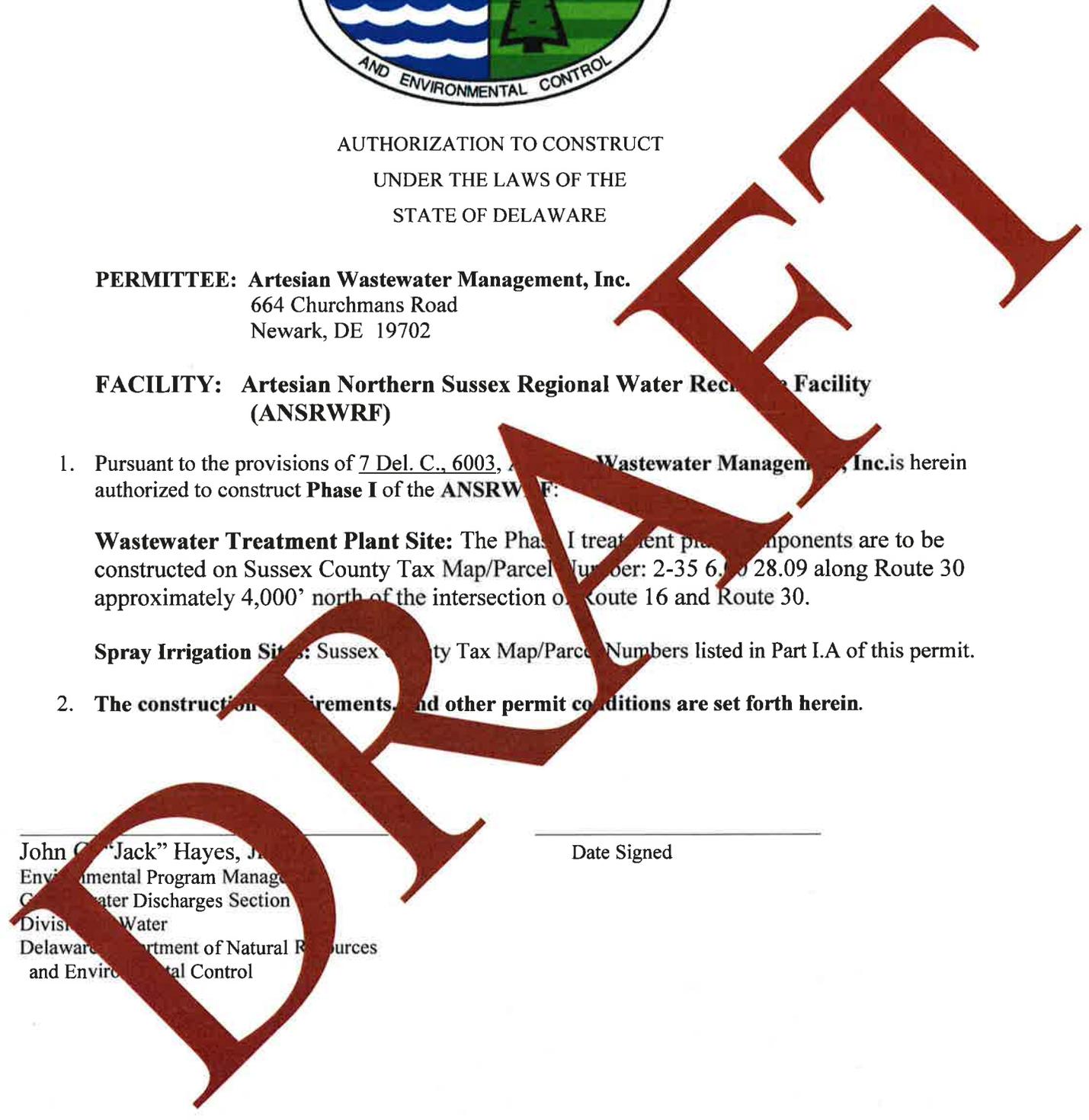
**Wastewater Treatment Plant Site:** The Phase I treatment plant components are to be constructed on Sussex County Tax Map/Parcel Number: 2-35 6.00 28.09 along Route 30 approximately 4,000' north of the intersection of Route 16 and Route 30.

**Spray Irrigation Sites:** Sussex County Tax Map/Parcel Numbers listed in Part I.A of this permit.

2. **The construction requirements and other permit conditions are set forth herein.**

\_\_\_\_\_  
John C. "Jack" Hayes, Jr.  
Environmental Program Manager  
Groundwater Discharges Section  
Division of Water  
Delaware Department of Natural Resources  
and Environmental Control

\_\_\_\_\_  
Date Signed



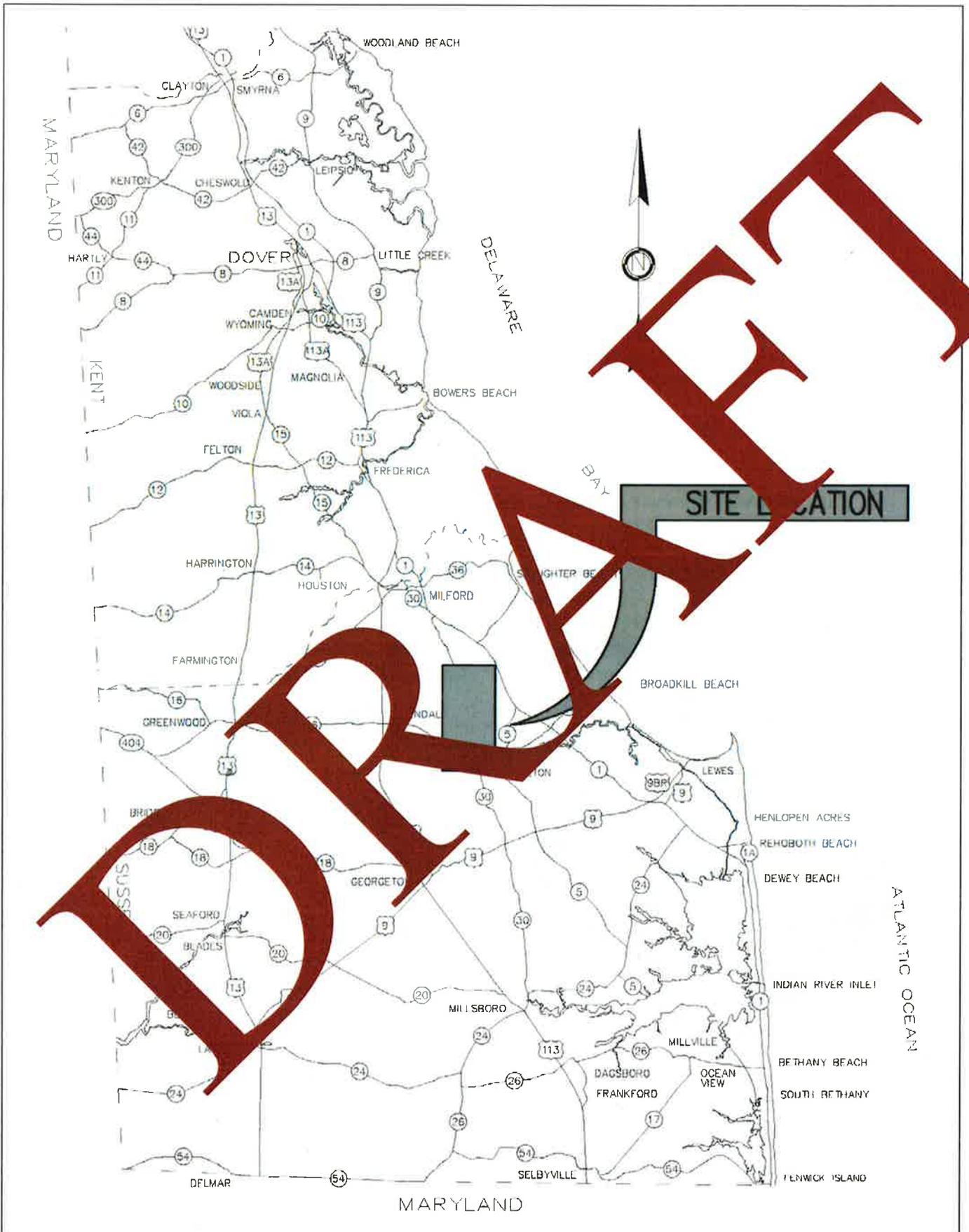
State Permit DEN Number: \*\*

Effective Date: \*\*

Expiration Date: \*\*

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### LOCATION MAP



**Part I**

**A. GENERAL DESCRIPTION:**

Artesian Northern Sussex Regional Water Recharge Facility (ANSRWRF) will serve as a regional facility meeting existing and future wastewater needs within the Artesian Wastewater service territories in Sussex County, Delaware.

The effluent is proposed to be utilized for spray irrigation of privately owned agricultural land, under a lease held in perpetuity by Artesian as the wastewater utility provider. Irrigation Sites are listed below.

The wastewater treatment facility is to be constructed on Sussex County Parcel Number: 2-35 6.00 28.09; located on a 75 acre site south of Reynolds Pond Road, east of Route 30, north of Ingram Branch and Route 16, and west of Cedar Creek Road, Sussex County, Delaware.

The facility will be built in three phases. This Permit authorizes the construction of Phase I only. Phase I of the project is to construct a storage lagoon and disposal spray fields, and to accept treated wastewater from Allen Harim Foods, LLC (Allen Harim). The design average daily flow is 1.5 MGD with a peak daily flow of 2.0 MGD. The customers for Phase I consists of a single food processing source, Allen Harim.

**Phase I Spray Irrigation Sites:**

Field	Sussex County Tax Map ID	Gross Area (Acres)	Existing Crop Spray Area (Acres)	Proposed Crop Spray Area (Acres)	Proposed Woods Spray Area (Acres)	Total Spray Area (Acres)	Percent Spray (%)
D	235-6.00-11.00 235-6.00-11.01 <sup>1</sup> 235-6.00-11.02 235-7.00-1.00 235-7.00-11.00	5.1	45.3	12.7	32.7	90.7	72.5%
E	235-6.00-2.00	119.0	33.2	7.3	0	90.5	76.0%
	235-7.00-7.00	5.5	10.5	0	0	110.5	87.3%
G	235-13.00-6.05 235-13.00-6.06	5.5	241.9	34.2	195.0	471.0	79.8%
	Total	96.1	480.9	54.2	227.7	762.7	

<sup>1</sup>One parcel in Field D (2-35-6-11.01) is not included in the current Conditional Use Ordinance 192, adopted July 31, 2017. Spray will not be permitted on this parcel until it has been added to an approved Conditional Use.

**B. DOCUMENTATION:**

Construction shall be in accordance with the following documents:

1. The State of Delaware, Department of Natural Resources and Environmental Control, Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems (Regulations).
2. Secretary's Order No. 2012-W-0052 issued and effective March 12, 2013.
3. May 5, 2017 Application Package for an Amended Construction Permit for the Artesian Northern Sussex Regional Water Recharge Facility (ANSRWRF) Phase 1 submitted by Artesian Wastewater Management, Inc. Application Package includes: Application Form, Amended Design Development Report (DDR), Drawings and Specifications.
4. August 18, 2017 Amended DDR Addendum 1 submitted by Artesian Wastewater Management, Inc. providing additional information requested.
5. Secretary's Order No. 2017-W-\*\*\*\* issued and effective \*\*\*, 2017.
6. Any other correspondence, documentation and/or reports related to the ANSRWRF received and approved by the Department of Groundwater Discharges Section and/or sent by the Department's Groundwater Discharges Section.

**C. Facility Specific Conditions:**

1. In accordance with Secretary's Order No. 2012-W-0052 Issued and Effective March 12, 2013, Permittee shall:
  - a. Design the treatment plant to look like an agricultural building and have landscaping to screen it from view from neighbors.
  - b. Ensure that the storage ponds shall not become a breeding ground for mosquitos.
  - c. Meet all required buffer for the spray fields as set by both the Department and Sussex County.
    - i. Maintain a 100 foot buffer from the wetted field area to the north-west corner of the Sylvan Area Development.
2. Permittee shall comply with all applicable Sussex county ordinances and conditional use requirements placed on this facility.
3. Wastewater spray irrigation will not be permitted on Field D parcel (2-35-6-11.01) until it is added to an approved Conditional Use. Parcel 2-35-6-11.01 is not included in the current Conditional Use Ordinance 1923, adopted July 31, 2017. Once this parcel has been added to an approved Conditional Use, Permittee must provide a copy of the approved Conditional Use to the Groundwater Discharges Section for approval. Written approval from the Groundwater Discharges Section must be acquired by the permittee prior to wastewater spray irrigation on this parcel.

4. The Department reserves the right to increase required separation/buffer and/or isolation distances at any time for reasons including the following:
  - a. Objection by an adjacent property owner due to aerosol migration onto their property;
  - b. Change in ownership of adjacent property;
  - c. Change in land use of adjacent property.
5. The additional 23 MG storage capacity may not be utilized during Phase I use under the written authorization of the GWDS or in response to an emergency situation outside the Permittee's control (Force Majeure).
6. The Permittee shall ensure the facility meets the following design criteria:

**Table 3-1: Revised Design Summary**

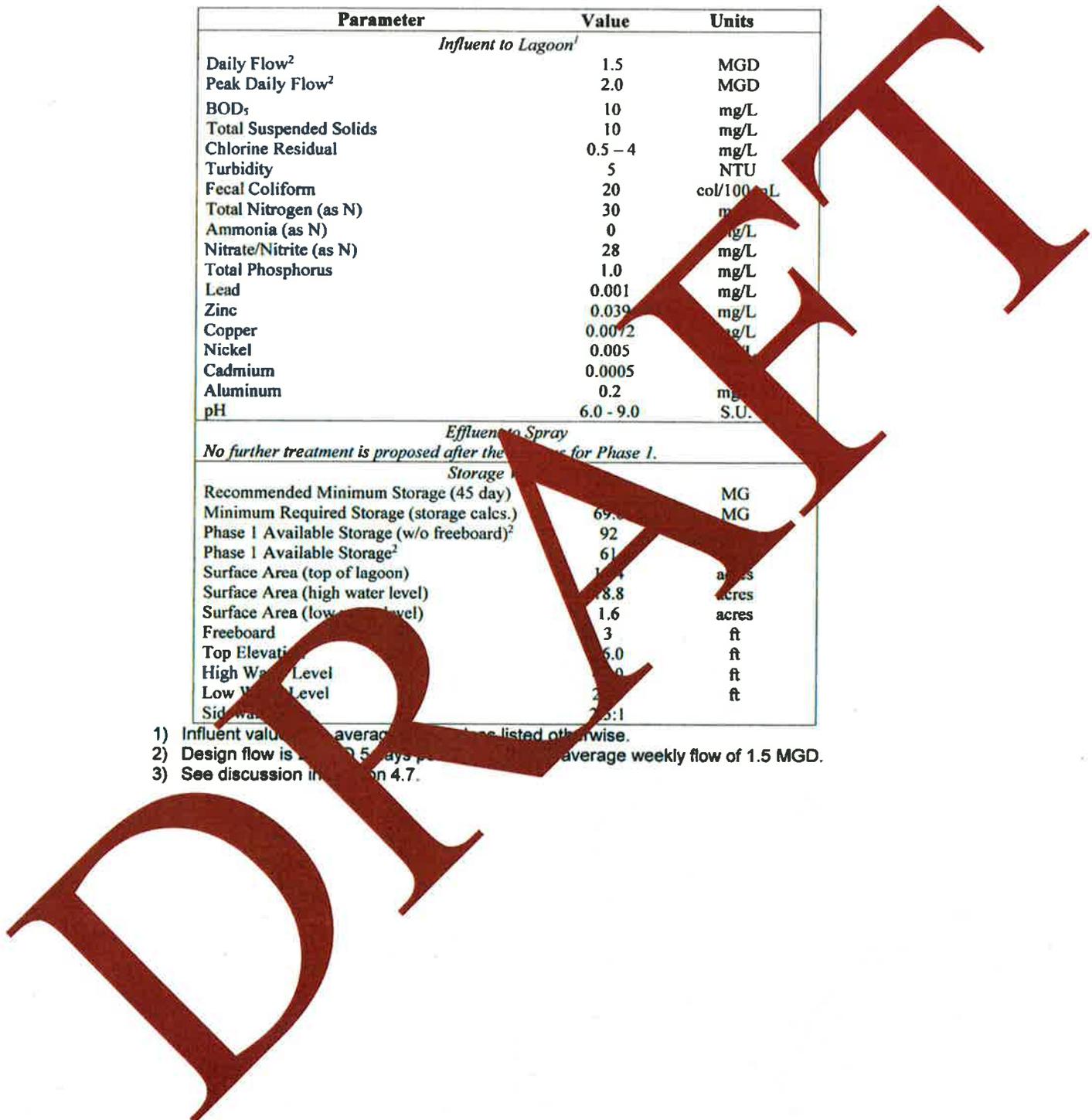
General Information		
Applicant	Artesian Wastewater Management, Inc.	
Facility Name	Artesian Northern Sussex Regional Water Recharge Facility (ANSRWF)	
Facility Location	Sussex County, Delaware	
Responsible Official	Rodney W. [Name]	
Activities (Phase 1)	Treatment, storage, and disposal of treated wastewater	
Activities (Future Phases)	Treatment, storage, and disposal of treated wastewater	
Type of Waste (Phase 1)	Wastewater from food processing	
Type of Waste (Future Phases)	Treated food processing wastewater	
Disposal Method	Spray irrigation to crops	
Type of Spray System	Pivot and Solid Set	
Public Access Level	Unlimited Public Access	
Nearest Weather Station	Georgetown 5 SW	
Watersheds	Roadkill River and Cedar Creek	
	<b>Location</b>	<b>Area (Acres)</b>
235-6.00-28.00	ANSRWF	74.62
230-22.00-1.00	Spray Field	182.87
230-21.00-35.00	Spray Field	77.93
230-21.00-35.00	Spray Field B	113.69
230-20.00-13.00	Spray Field B	221.14
235-6.00-28.00	Spray Field C	157.53
235-6.00-28.00	Spray Field D	56.78
235-6.00-28.00	Spray Field D	6.22
235-6.00-11.00	Spray Field D	10.46
235-7.00-164.00	Spray Field D	32.45
235-7.00-1.00	Spray Field D	19.23
235-7.00-21.00	Spray Field E	118.96
235-7.00-7.00	Spray Field F	126.51
235-7.00-6.05	Spray Field G	515.6
235-7.00-6.06	Spray Field G	74.9

1) See discussion in Section 4.3 Error! Reference source not found.

**Table 3-1: Revised Design Summary Table (Continued)**

Parameter	Value	Units
<i>Influent to Lagoon<sup>1</sup></i>		
Daily Flow <sup>2</sup>	1.5	MGD
Peak Daily Flow <sup>2</sup>	2.0	MGD
BOD <sub>5</sub>	10	mg/L
Total Suspended Solids	10	mg/L
Chlorine Residual	0.5 - 4	mg/L
Turbidity	5	NTU
Fecal Coliform	20	col/100 mL
Total Nitrogen (as N)	30	mg/L
Ammonia (as N)	0	mg/L
Nitrate/Nitrite (as N)	28	mg/L
Total Phosphorus	1.0	mg/L
Lead	0.001	mg/L
Zinc	0.039	mg/L
Copper	0.0072	mg/L
Nickel	0.005	mg/L
Cadmium	0.0005	mg/L
Aluminum	0.2	mg/L
pH	6.0 - 9.0	S.U.
<i>Effluent to Spray</i>		
<i>No further treatment is proposed after the lagoon for Phase 1.</i>		
<i>Storage</i>		
Recommended Minimum Storage (45 day)		MG
Minimum Required Storage (storage calcs.)	69.0	MG
Phase 1 Available Storage (w/o freeboard) <sup>2</sup>	92	MG
Phase 1 Available Storage <sup>2</sup>	61	MG
Surface Area (top of lagoon)	1.4	acres
Surface Area (high water level)	8.8	acres
Surface Area (low water level)	1.6	acres
Freeboard	3	ft
Top Elevation	6.0	ft
High Water Level	9.0	ft
Low Water Level	2	ft
Sidewall	2.5:1	

- 1) Influent values are average values unless listed otherwise.
- 2) Design flow is based on 5 days per week average weekly flow of 1.5 MGD.
- 3) See discussion in Section 4.7.



**Table 3-1: Revised Design Summary Table (Continued)**

Parameter	Value	Units
<i>Spray Area</i>		
Total Available Spray Area (gross acreage)	1,714	acres
Phase I Wetted Area (initial construction) <sup>1</sup>	471	acres
Phase I Wetted Area (total to be permitted) <sup>1</sup>	763	acres
Treatment Site Buffer Distance (property line)	30	ft
Treatment Site Buffer Distance (dwelling)	100	ft
Spray Buffer Distance (watercourse)	100	ft
Spray Buffer Distance (upgradient well)	100	ft
Spray Buffer Distance (downgradient well)	150	ft
<i>Spray Irrigation Nitrogen Balance</i>		
Design Percolate Total N	10	mg/L
Available Crop Area (initial construction) <sup>1</sup>	276	acres
Available Woods Area (initial construction) <sup>1</sup>	195	acres
Available Crop Area (total to be permitted) <sup>1</sup>	555	acres
Available Woods Area (total to be permitted) <sup>1</sup>	228	acres
Crop Plan	Corn-Wheat-Soybean Cover	
Crop Plan (alternate option)	Corn-Barley-Soybean Cover	
Corn Annual N Removal	155	lbs/acre
Wheat Annual N Removal	89	lbs/acre/year
Barley Annual N Removal	65	lbs/acre/year
Soybean Annual N Removal	189	lbs/acre/year
Cover Annual N Removal		lbs/acre/year
Loblolly Pine Annual N Removal		lbs/acre/year
Soybean Fixation	40%	% Total Removal
Precipitation Deposition of N	5	lbs/acre/year
Ammonia Volatilization	8	% Ammonia
Denitrification	15%	% Total Nitrogen
Max Hydraulic Loading	1.65	in/week
<i>Phosphorus Loading</i>		
Phosphorus Limited	Crop Areas of Fields D, F, and G	
Design Percolate Total Phosphorus	2.0	mg/L
Maximum Annual Spray Volume <sup>2</sup>		MG/acre-year
Maximum Phosphorus Loading <sup>2</sup>	19.5	lbs/acre-year
Average Annual Crop Removal	31.2	lbs/acre-year
<i>Soil Testing</i>		
Soil Cation Exchange Capacity	0 - 5	meq/100g
Soil Density	1.55	g/cc
Existing Lead in Soil	92.0	mg/kg
Existing Cadmium in Soil	34.0	mg/kg
Existing Copper in Soil	13.0	mg/kg
Existing Nickel in Soil	13.0	mg/kg
Existing Chromium in Soil	0.121	mg/kg
Land Limiting Constituent (LLC)	Zinc	
Site Life based on LLC	93	years

1) See discussion in Section 4.3.

2) This is a conservative estimate based on regulatory maximum spray rate of 2.5 in/wk.

## Part II

### A. CONSTRUCTION REQUIREMENTS:

1. **This permit authorizes the construction of Phase I only.** Wastewater may not be discharged to the storage lagoons or spray irrigation system under the terms of this construction permit. Upon final approval of construction, the permittee may apply for an operation permit. At that time, additional fees may be required.
2. The permittee shall notify the Department's Groundwater Discharges Section in writing of the intent to initiate construction activities at least fifteen days prior to the commencement of construction. The written notification shall include a draft construction schedule.  
  
The permittee must provide updated construction schedules if the schedule changes as construction progresses.
3. The permittee shall notify the Department's Groundwater Discharges Section of scheduled construction progress report meetings. The Department's Groundwater Discharges Section staff may attend these meetings.
4. Prior to initiating construction of a large on-site wastewater treatment and disposal system, a pre-construction meeting shall be held on-site and attended by the following individuals: DNREC Soil Scientist, DNREC Environmental Engineer, DNREC Hydrologist, Class D.3 Soil Scientist, Professional Geologist, Project Design Engineer, General Site Contractor, Class E.4 System Contractor and any necessary parties.
5. All systems must be installed by a DNREC licensed Class E.4 system contractor. Proper construction of the treatment plant and/or spray system must be certified in writing by the design engineer and the contractor's representative prior to startup of the wastewater treatment plant.
6. The Class E.4 system contractor must notify the Department's Groundwater Discharges Section 72 hours prior to construction startup.
7. The Class E.4 system contractor must obtain an authorization number from the Department's Groundwater Discharges Section prior to initiating construction.
8. Upon receipt of the authorization number, the Class E.4 system contractor shall provide an installation timeline to the Department's Groundwater Discharges Section. Upon receipt of the timeline, the Department's Groundwater Discharges Section may request weekly status reports (verbal) or monthly progress reports (written) be submitted.
9. The Class E.4 system contractor must have a copy of all valid, required and approved permits on site during construction.
10. The design engineer or his/her designee must periodically review the construction of the disposal system to ensure compliance with design specifications.
11. All system components must be surveyed to a common datum point.
12. Soil disturbance to the disposal areas must be limited to the minimum required for installation. A protective barrier must be placed around the disposal areas, including spare area, prior to the initiation of any construction activities. The soils may be rendered

unsuitable should unnecessary soil disturbance occur near or within the disposal area. Particular care should be taken when clearing wooded lots so as not to remove the surface soil material (see Lot Clearing Guidelines).

13. If well pointing is required during construction, the wells must be installed by a licensed well driller, and a permit to construct such wells must first be obtained from the Department.
14. All construction activities must be approved by the Department and must comply with all other applicable local utility construction specifications and standards; and must be in accordance with Ten States Standards.
15. Connections and/or additions to the wastewater treatment and disposal system, other than those indicated on the approved plans and specifications, will not be allowed without prior written approval from the Department's Groundwater Discharges Section.
16. Any anticipated facility expansions, production increases, or process modifications that will result in new, different, or increased discharges or pollutants must be reported in writing to the Department's Groundwater Discharges Section for approval. A new permit may be required.

17. Facility and Construction Changes

The permittee must submit a written report to the Department's Groundwater Discharges Section for review and approval of any changes to the facility or construction of the system within the following time periods:

- a. Thirty days before any planned activity, physical alteration to the permitted facility or addition to the permitted facility, if that activity, alteration or addition would result in a change in information that was previously submitted to the Department's Groundwater Discharges Section; or
- b. Thirty days before any anticipated change which would result in noncompliance with any permit condition or the regulations; or
- c. Immediately after the permittee becomes aware of relevant facts omitted from, or incorrect information submitted in, a permit application or report to the Department's Groundwater Discharges Section.

18. The permittee must supply the Department's Groundwater Discharges Section with testing procedures and results conducted on the force main/collection/distribution system (including any lift stations).

19. A construction permit issued by the Department does not relieve the permittee from complying with any local, municipal, county, or state requirement.

20. The Class 4 system contractor must contact the design Engineer, licensed operator and the Department's Groundwater Discharges Section to schedule an inspection prior to completion of construction.

21. Prior to the issuance of an operation permit the design Engineer shall provide the Department's Groundwater Discharges Section with an approved engineer inspection report(s) demonstrating that system has been constructed in accordance with the

- approved Design Engineer Report, Plans and Technical Specifications prior to the operation permit being issued.
22. The permittee is responsible for supplying the Department's Groundwater Discharges Section with a certificate or letter of completion/approval from the wastewater treatment plant manufacturer upon construction completion of the wastewater treatment plant applicable.
  23. Construction activities within spray fields must be minimized. Excessive compaction of surface soils by construction equipment must be avoided. Re-grading of pipeline trenches must match original contours. Settlement of trench backfill must be repaired.
  24. In forested systems, it is necessary to only grub the pipe centerline. Excessive clearing and grubbing must be avoided. Clearing for above-ground piping systems shall involve only vegetation that will interfere with operation of the system.
  25. All areas disturbed by construction must be re-vegetated prior to initiation of irrigation activities.
  26. Sloped areas require protection from erosion.
  27. Pressure testing of the irrigation force mains and laterals shall be completed during installation to avoid damage to spray fields from re-excavation and repair. Flushing is necessary to clear distribution system pipe of construction debris which may clog sprinkler nozzles. Care should be exercised to prevent erosion or flooding of the spray fields during pipeline flushing. Every effort should be made to keep trash and debris out of the distribution systems. Sprinklers and drain valves shall be checked for proper operation prior to installation.
  28. Wastewater irrigation on topsoil is not allowed beyond what is necessary for germination to establish a vegetative cover. Wastewater application, at the design rate, may begin only after a uniform vegetative cover has been established.
  29. Spray fields should be constructed early in the project so a vegetative cover can be re-established on disturbed areas prior to irrigation begins.
  30. Potable, ground or surface water must be used for distribution system testing unless authorized in writing by the Department's Groundwater Discharges Section.
  31. One growing season may be necessary before new spray fields will accept the design wastewater loading. A start-up period must be considered in the design and operation of these systems.
  32. Testing of the system is required prior to construction completion that will require the operation of the system or the discharge of treated wastewater, the permittee must request approval in writing from the Department's Groundwater Discharges Section and must notify the Groundwater Discharges Section of the scheduled testing so that Groundwater Discharges Section staff may be present during the testing of the system.
  33. No industrial or commercial discharges may be connected to the facility without prior written approval from the Department's Groundwater Discharges Section.
  34. The permittee shall take all reasonable steps to minimize any adverse impact to waters of the state resulting from construction under this permit. Such steps shall include, but not

be limited to, accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or reasonable mitigation of such impacts.

35. The Permittee must obtain appropriate state permits for the collection and distribution system.
36. Information for each monitoring well and piezometer shall be reported using the State of Delaware Well Identification Tag Number that is required on all wells in accordance with the Delaware Regulations Governing the Construction and Use of Wells, Section 10, A.

## B. MONITORING REQUIREMENTS

1. The permittee must have a licensed well driller install all required monitoring wells, piezometers and lysimeters at the locations approved by the Department's Groundwater Discharges Section and identified on the Drawings submitted as referenced on Part I.B of this permit. The permittee shall contact the Department's Groundwater Discharges Section at least 24 hours prior to the installation of the monitoring wells. All monitoring wells must be installed by a licensed well driller, and a permit to construct the wells must first be obtained from the Department.
2. After installation, the permittee must have all monitoring wells globally positioned. The GPS information must be submitted to the Department's Groundwater Discharges Section with the locations of the wells delineated on the As-Built Drawings. The GPS information must be in either Delaware State Plane, North American Datum 1983 meters; or Latitude and Longitude decimal degrees.
3. Prior to well purging and groundwater sampling, the elevation of a reference marking on the upper terminus of each monitoring well casing (TOC) shall be surveyed by a Delaware-licensed PLS to the nearest 0.01 ft relative to a common mean sea level datum. The elevation of the ground surface immediately adjacent to each monitoring well shall also be surveyed as previously described. All elevation data pertaining to monitoring wells shall be indicated on "as-built" plans and summarized in a report. Provide a permanent mark, etched on the casing, to be used to specify the survey point where the TOC elevations were read. Ensure that the water levels are consistently taken directly below the TOC elevations were read.
4. The permittee shall conduct a background groundwater quality sampling program prior to initiation of disposal activities. The sampling program shall be sufficient to establish representative groundwater quality at each well prior to initiation of disposal activities. A minimum of three samples shall be collected at least one month apart and analyzed prior to initiation of disposal activities. A summary report which includes all analyses must be submitted to the Department's Groundwater Discharges Section. Analyses must include parameters listed in Section 6.8.1.8.
5. Sampling parameters and frequencies will be outlined in the operation permit.

### C. REQUIREMENTS PRIOR TO ISSUANCE OF AN OPERATING PERMIT

1. The Permittee shall notify the Department's Groundwater Discharges Section in writing prior to the completion of construction and request a Construction Completion Inspection to be performed by the Department's Groundwater Discharges Section staff. The Design Engineer, Class E.4 system contractor, licensed operator and the Permittee must be present during the inspection. During the inspection, all mechanical parts are to be tested.
2. A classification shall be performed on the facility in accordance with Regulations Licensing Operators of Wastewater Facilities. The class of operator required for the facility will be determined by the Board of Certification for Licensed Wastewater Operators in accordance with the Regulations Licensing Operators of Wastewater Facilities. All large systems must be under the direction of a licensed operator. The licensed operator must be available at all times. The licensed operator shall be on-site at the time the system is put into operation and is to receive training as necessary to properly operate the system.
3. Upon completion of construction, an operation permit must be obtained from the Department's Groundwater Discharges Section prior to system operation. The permittee must submit to the Department's Groundwater Discharges Section the following applicable items in application for an operation permit. The items must be combined in one package and must include an electronic copy of items where possible. Failure to submit all required information constitutes grounds for denial of the operation permit.
  - a. A Department application form.
  - b. Applicable Departmental fees.
  - c. Design Engineer Inspection Report(s) certifying the facility has been constructed in accordance with approved plans and specifications.
  - d. Copies of all other applicable State/County inspection reports.
  - e. Contractor's Certificate of Completion.
  - f. A certificate or letter of completion/approval from the wastewater treatment plant manufacturer.
  - g. A copy of an agreement with a licensed operator and license certification.
  - h. A copy of the agreement with a regulated wastewater utility in the State of Delaware that the treatment facility will be operated under.

A set of "as-built" drawings of the facility bearing the seal and signature of a licensed Professional Engineer registered in the State of Delaware.

"As-built" drawings must include:

  - i. A site map showing the location of all structures, piping and appurtenances, disposal areas and buffers.
  - ii. A full equipment list and technical specifications for all equipment used, if different than submitted in the permit application.
  - iii. The new topography elevations of the system.

- iv. Monitoring/Observation well elevations at the top of the casing (TOC) and at the ground surface, GPS coordinates (State Plane), and local topography tied to a common benchmark.
- v. The location and screen depth, length of stick up, and well ID's must be provided for each monitor well.
- j. A copy of all Collection System Permit(s)
- k. Inspection Reports demonstrating collection system has been installed and inspected by Design Engineer
- l. If the collection system does not require county approval, the permittee must submit to the Department's Groundwater Discharges Section with all testing procedures conducted on the collection system, force main(s) and lift station(s).
- m. An Operation and Maintenance (O&M) Plan in accordance with Section 6.7 of the Regulations.
- n. Spreadsheet summary of groundwater monitoring well information.
  - i. GPS information detailing the northings and eastings, local well ID number; and the DNREC Well ID/Well Permit Number. The GPS information must be in either Delaware State Plane, North American Datum 1983 meters; or Latitude and Longitude decimal degrees.
  - ii. TOC elevations survey results for monitoring wells to be utilized for groundwater monitoring. Provide the elevation of the well stickup and the well survey information to the closest 0.01 feet. Provide a permanent mark, etch, or fixture to be used to specify the survey point where TOC elevations were read.
- o. A summary report detailing the analyses of the background groundwater quality sampling program that was conducted consisting of at least three (3) samples one (1) month apart and analyzed prior to the initiation of disposal activities (see Section 6.6.3.16 of the Regulations)
- p. Biosolids Management Plan. A copy of a biosolids management contract if a third party will be utilized to manage the biosolids. If the Permittee is not contracting out sludge management, the Permittee must obtain any necessary permits for land application of biosolids from the Department and provide a copy to the Groundwater Discharges Section.
- q. Legal documents (see Section 6.4 of the Regulations)
- r. Material Safety Data Sheets for all chemicals to be used by the facility staff/operator.

### Part III

#### A. MANAGEMENT REQUIREMENTS AND RESPONSIBILITIES

##### 1. Right of Entry

The permittee shall allow the Department entry and access, consistent with 7 D.A.C. Ch. 60, to:

- a. Enter the permitted facility.
- b. Inspect any records that must be kept under the conditions of the permit.
- c. Inspect any facility, equipment, practice, or operation permitted or required by the permit.
- d. Sample or monitor for the purpose of assuring permit compliance of any substance or any parameter at the facility.

##### 2. Permit Transferability

Permits may be transferred to a new owner or operator. The permittee must notify the Department's Groundwater Discharges Section by requesting a change of ownership of the permit before the date of transfer. The transfer must be consistent with any notarized legal documents and/or CPCN required by the regulations. The legal documentation must be provided with the application. The application must be received 30 days before the transfer.

- a. No person shall transfer a permit from one person to another unless 30 days written notice is given to the Department's Groundwater Discharges Section, indicating the transfer is agreeable to both persons, and approval of such transfer is obtained in writing from the Department's Groundwater Discharges Section, and any conditions of the approval of such transfer is obtained in writing from the Department's Groundwater Discharges Section, and any conditions of the transfer approved by the Department's Groundwater Discharges Section are complied with by the transferor and the transferee.

- b. The notice to the Department's Groundwater Discharges Section shall contain a written agreement between the transferor and the transferee, indicating the specific date of proposed transfer of permit coverage and acknowledging responsibilities of current and new permittees for compliance with and liability for the terms and conditions of this permit. The notice shall be signed by both the transferor and the transferee.

##### 3. Availability of Reports

All reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department of Natural Resources and Environmental Control. Monitoring data shall not be considered confidential.

Knowingly making any false statement on any such report may result in the imposition of

criminal penalties as provided for in 7 Del. C., §6013.

4. Non-compliance Notification

The Permittee shall report to the Department's Enforcement Section at (800) 662-8802 any unpermitted release or discharge of any contaminant into the air, or a pollutant, including petroleum substances, into surface waters, groundwater, or onto land as soon as the Permittee has knowledge of, or should have had knowledge of, the release or discharge.

The Permittee shall report to the Department's Groundwater Discharges Section orally within 24 hours from the time the Permittee became aware of any non-compliance that may endanger the public health or the environment by contacting the Department at the telephone numbers cited below.

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's Groundwater Discharges Section 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, and if not yet corrected, the anticipated time the non-compliance is expected to continue; and
- c. The steps being taken or planned to rectify, mitigate and/or prevent recurrence of the non-compliant condition.

The notification shall be submitted to the Department at the following address:

Groundwater Discharges Section  
Division of Water  
Department of Natural Resources and Environmental Control  
89 Kings Hwy  
Dover DE 19901  
Telephone: (302) 739-9100 Office  
(302) 572-9155

5. Construction Permit Expiration

a. If construction has not been initiated prior to the expiration of the construction permit, and there are proposed changes to the approved design, the applicant must submit a new or updated Design Engineer Report and construction plans as outlined in Sections 6.2.3, 6.5.1.4 and 6.5.1.5 for project re-evaluation. This will require public notification.

b. If construction has been initiated prior to the expiration of the construction permit, and construction has not been completed prior to the expiration of the permit, the permittee may apply for a one year extension of the construction permit.

c. If construction has not been initiated or construction has not been completed prior to the expiration of the one year extension, provided, the SIR is valid, and there are no changes to the approved design prior to the expiration of the construction permit, the applicant

must submit a construction permit application along with applicable fees, and a construction schedule.

6. Construction Permit Extension

The application for extension must include the following:

- a. A Department extension form
- b. Applicable Departmental fees
- c. Construction schedule

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## PART IV

### A. PROVISIONS

#### 1. Permit Revocation

The Department may revoke a permit if, among other things, the permittee violates permit condition, these regulations, fails to pay applicable Departmental fees, obtains the permit by misrepresentation or fails to fully disclose all relevant facts.

Except in cases of emergency, the Department shall issue a written notice of intent to revoke to the permittee prior to final revocation. Revocation shall become final within 20 days of receipt of the notice by the permittee, unless within that time the permittee requests an administrative hearing in writing.

The Department shall notify the permittee in writing of any revocation hearing at least 20 days prior to the date set for such hearing.

If the Department finds the public health, safety or welfare requires emergency action, the Department shall incorporate findings in support of such action in a written notice of emergency revocation issued to the permittee. Emergency revocation shall be effective upon receipt by the permittee. Thereafter, if requested by the permittee in writing, the Department shall provide the permittee a revocation hearing.

#### 2. Permit Modifications/Amendments

In consultation with the permittee, the Department may modify or amend an existing permit provided that the modifications would not result in an increased impact or risk to the environment or to public health.

#### 3. State Laws

This permit shall not be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation.

#### 4. Property Rights

The issuance of this permit does not convey any property rights of either real or personal property, or exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights or any infringement of federal, state or local laws or regulations.

#### 5. Severability

The provisions of this permit are severable. If any provision of this permit, or the application of any provision of this permit, to any circumstances is held invalid; the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

#### 6. This permit does not relieve the Permittee of complying with any other applicable Federal, State or local regulations.

State Permit DEN Number: \*\*

Effective Date: \*\*

Expiration Date: \*\*

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7. In the event that the Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems or applicable federal regulations are revised, this permit may be opened and modified accordingly after notice and opportunity for a public hearing.

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