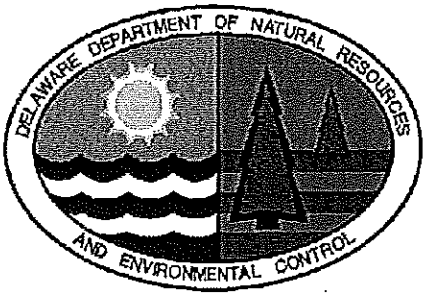

APPLICATION FOR A COASTAL ZONE ACT PERMIT

State of Delaware
Department of Natural Resources & Environmental Control
Office of the Secretary

September 25, 2009
Revised March 19, 2010
Wandendale Regional Wastewater Treatment and Disposal Facility
Tidewater Environmental Services, Inc.

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Permit Application Instructions

1. Complete all parts of the application. For sections which are not applicable to your project, do not leave blank; present a statement that clearly states why the section is not applicable to your project.

2. Because all applicants' projects are different, this word document template will provide you flexibility for needed space to answer the questions. Please insert additional lines for text where needed for your application. If appropriate, attach extra pages referencing each answer by the corresponding section and question number.

3. Submit eight complete hard copies of the permit application to:

   Office of the Secretary
   Department of Natural Resources & Environmental Control
   State of Delaware
   89 Kings Highway
   Dover, DE 19901

   In addition to the eight hard copies, submit a complete electronic "pdf" copy of the permit application and a copy of the Offset Matrix in Microsoft Word format on cd-rom.

4. Comply, if required, or as requested by the DNREC Secretary, with 7 Delaware Code, Chapter 79, Section 7902. If requested, but not completed, your application will not be considered administratively complete until this form is reviewed.

5. Be sure to include your permit application fee of $3,000; otherwise the application will not be considered administratively complete. Make checks payable to the "State of Delaware."

6. Be advised that the application for a Delaware Coastal Zone Act Permit is a public document, which may be displayed at DNREC offices, public libraries, and the web, among others. If this application requires you to place confidential information or data in the application to make it administratively complete, note the Delaware Freedom of Information Act (29 Delaware Code, Chapter 100) and DNREC's Freedom of Information Act Regulation, Section 6 (Requests for Confidentiality), for the proper procedure in requesting confidentiality.

Note: This application template was last revised by DNREC on January 30, 2008. Please discard any previous versions.

PART 1

CERTIFICATION BY APPLICANT

Under the penalty of perjury pursuant to 11 Delaware Code §1221-1235, I hereby certify that all the information contained in this Delaware Coastal Zone Act Permit Application and in any attachments is true and complete to the best of my belief.

I hereby acknowledge that any falsification or withholding of information will be grounds for denial of a Coastal Zone Permit.

I also hereby acknowledge that all information in this application will be public information subject to the Delaware Freedom of Information Act, except for clearly identified proprietary information agreed to by the Secretary of the Department of Natural Resources & Environmental Control.

Bruce E. Patrick, P.E.
Print Name of Applicant

Bruce E. Patrick
Signature of Applicant

Vice President of Engineering
Title

3/19/10
Date

PART 2

APPLICANT INFORMATION AND SITE IDENTIFICATION

2.1 Identification of the applicant:

Company Name: Tidewater Environmental Services, Inc.
Address: 1100 South Little Creek Road, Dover DE 19901
Telephone: (302) 734-7500
Fax: (302) 734-9295

2.2 Primary contact: Please list the name, phone number and email of a preferred contact within your company in case the DNREC needs to contact you regarding this permit application.

Jeremy Kalmbacher, P.E., (302) 734-7500, jkalm@tuiwater.com

2.3 Authorized agent (if any):

Name: Kenneth L. Davis, P.E.
Address: 144 S Governors Ave., Dover, DE 19903
Telephone: (302) 674-9280
Fax: (302) 674-1099

If you have an authorized agent for this permit application process, provide written authorization from client for being the authorized agent.

See Attachment A

2.4 Project property location (street address):

Project is located on four (4) separate parcels. Two (2) parcels are located on both sides of Rte. 24 and two (2) on both sides of Camp Arrowhead Road south of Love Creek in Sussex County Delaware. Three (3) of the parcels are located entirely within the coastal zone while one (1) is outside of the zone. See Attachment B

2.5 In a separate attachment, provide a general map of appropriate scale to clearly show the project site.

See Item 2.4

2.6 Is the applicant claiming confidentiality in any section of their application?

NO

If yes, see instructions on page 3.

PART 3

PROJECT SUMMARY

Provide a one-page summary describing the proposed project. Include a brief quantitative description of the anticipated environmental impacts, and how the Environmental Offset Proposal will "clearly and demonstrably" more than offset any negative impacts.

Tidewater Environmental Services Inc., (TESI) is a state regulated wastewater utility company licensed to own and operate public utilities in Delaware and other states. TESI is a well capitalized company owned by Middlesex Water Company which is a publicly traded utility company on the New York Stock Exchange. Middlesex Water Company also owns Tidewater Utilities Inc., a state regulated water utility company licensed to own and operate public utilities in Delaware and other states.

TESI proposes to build the Wandendale Regional Wastewater and Disposal Facility (Facility), a privately owned regional facility, to treat domestic wastewater only. No industrial wastewater treatment is anticipated at this site. The Facility will be designed to accommodate existing and new subdivisions in the service area shown in Attachment C. Certificates of Convenience and Necessity from the Public Service Commission are required to provide service to subdivisions. Attachment C notes the subdivisions for which the certificates have been obtained as of the date of this permit application. The disposal component of the facility will be similar to Sussex County's Inland Bays, Wolf Neck and Piney Neck Regional Wastewater Facilities.

The Facility will have a capacity to treat three (3) million gallons per day after complete buildout. The wastewater will be treated using membrane bio-reactor treatment technology with rapid infiltration basins and spray irrigation to recharge the aquifer. The biological nutrient removal process employed will be designed to remove the total nitrogen (TN) in the wastewater to less than 5 mg/l in accordance with the Inland Bays Pollution Control Strategy and the total phosphorus (TP) to 0.5 mg/l.

The Wandendale Regional Wastewater Treatment and Disposal Facility will be designed to meet Performance Standard Nitrogen (PSN 1) at 5.0 mg/l total nitrogen (TN) end-of-pipe concentration level. This is the highest level of treatment required in the Regulations of the Pollution Control Strategy for the Indian River, Indian River Bay, Rehoboth Bay and Little Assawoman Bay Watershed (PCS). The Facility will be designed to meet 0.5 mg/l end-of-pipe concentration for total phosphorous (TP.) This is a substantial improvement over the Performance Standard Phosphorous level 1 (3.9 mg/l), the highest level of treatment required in the PCS.

The PCS creates a built-in nutrient reduction mechanism for the Wandendale project. The nutrients in the wastewater associated with each new service connection are treated and removed by 90% (TN) and 96.8% (TP) before that wastewater is land applied. According to the PCS, the effluent from an existing, well-functioning small onsite wastewater treatment and disposal system (OWTDS) will be 50 and 15.7 mg/l TN and TP, respectively.

- Any large OWTDS (flow> 20,000 gpd) replacement systems must meet PSN2 (10 mg/l) and PSP1 (3.9 mg/l) if in an area with high phosphorous mobility potential, and
- Any large OWTDS (flow between 2,500 and 20,000 gpd) new systems must meet PSN2 (10 mg/l) and replacement systems PSN3 (20 mg/l), and
- Any new or replacement small OWTDS (flow less than or equal to 2,500 gpd) must meet PSN3 (20 mg/l), and
- Any innovative or alternative OWTDS with a flow less than or equal to 2,500 gpd, must meet PSN3 (20 mg/l.)

The following nutrient removal rates will be accomplished for each connection to Facility:

- For any new subdivision service connection, the Facility's effective removal rates will be 90% for TN and 96.8% for TP, and
- For any existing, small OWTDS, the Facility's effective removal rates will be 90% for TN and 96.8% for TP, and
- For any large OWTDS (flow > 20,000 gpd), the Facility's effective removal rates will be 80% for TN and 75 % for TP, and
- For any large replacement OWTDS (flow between 2,500 and 20,000 gpd), the Facility's effective removal rate will be 60% for TN , and
- For any replacement, innovative or alternative small OWTDS, the Facility's effective removal rate will be 60 % for TN.

The offsets are not necessary until there is a discharge to the Facility through a service connection. The offset occurs coincident with treatment and prior to discharge onto the land.

The resulting reduction in nutrient loading to the Inland Bays will mark a significant step toward water quality improvement. The offset amounts will be complimented by a combination of the following:

- Reduction of commercial fertilizer application by current operations
- Use of buffers around project site

Buffers will be placed around the perimeter of each parcel not only for the protection of water resources but the public as well. They consist of wooded and agriculture areas and range in width from 50 feet upwards to 400 feet. Department of Natural Resources and Environmental Control, allows for the calculation of offset amounts that can be used as credits for utilizing these protective buffers around the project site. The combined farming and buffer nutrient reductions will result in the removal of 2,700 and 1,000 pounds per year of TN and TP, respectively.

The construction of this treatment facility will benefit the coastal zone area by eliminating approximately 1,600 existing septic tanks and the avoidance of the installation of 8,400 future septic tanks. At buildout capacity, the facility will provide nitrogen and phosphorous nutrient reduction for 10,000 equivalent dwelling units by aquifer recharge and spray irrigation on farm land and existing forest land. TESI will provide the opportunity to eliminate the approximately 1,600 existing septic systems in the general area of Wandendale. Unlike a County Sanitary Sewer District, residents cannot be forced to connect or become part of the franchise area. Therefore the exact number of existing septic connections will depend on the number of residents interested, which will in turn determine the affordability and the ultimate number of connections. Regardless, TESI will provide this opportunity, which over time will most likely eliminate many of the existing 1,600 septic systems. The service area growth is subject to the vagaries of the housing market and the rate of existing septic tank failure. The date upon which the total service area build-out nutrient reduction projections will occur cannot be accurately estimated.

PART 4
PROJECT PROPERTY RECORD AND EVIDENCE OF LOCAL ZONING AND PLANNING APPROVAL

PROJECT PROPERTY RECORD

4.1 Name and address of project premises owner(s) of record:

Wandendale Farms, Inc.
821 Savannah Road
Lewes, DE 19958

4.2 Name and address of project premises equitable owner(s):

Same as above

4.3 Name and address of lessee(s):

Tidewater Environmental Services, Inc.
1100 South Little Creek Road
Dover, DE 19901

4.4 Is the project premises under option by permit applicant?

See Attachment D, Lease Agreement

4.5 What is the present zoning of the land for this entire project site?

All four (4) parcels have the designation of Conditional Use No. 1792 within AR-1, Agricultural Residential zone as granted by Ordinance No. 2019, With Conditions. The Conditional Use allows for the construction of a regional wastewater collection, treatment and disposal facility to be located on all the parcels.

EVIDENCE OF LOCAL ZONING AND PLANNING APPROVAL

I, _____, for Sussex County Planning and Zoning
(Name of County, City of Town)

do hereby affirm that the project proposed by Tidewater Environmental Services, Inc.
(Name of Applicant)

located at (see attached sheets) _____, in
(Address)

the AR-1 Agricultural Residential District zoning district is in

full compliance with the zoning code as it applies to this project.

The above named applicant's project is in compliance with the adopted comprehensive development plan for the geographic area within which the project will be located.

_____
(Signature)

_____
(Title)

_____
(Date)

(See Attachment E)

This part is essential for a complete Coastal Zone Act Permit Application. No application will be considered administratively complete without it. While the applicant is strongly advised to use this form, the local zoning jurisdiction may utilize a different form or document to demonstrate "evidence of local zoning approval," provided such documents are signed and dated by the proper official.

PART 5

PROJECT OPERATIONS

5.1 Describe the characteristics of the manufactured product and all the process and/or assembly operations utilized by the proposed project. Include in the description (use attachments if necessary):

a. the raw materials, intermediate products, by-products and final products and characteristics of each. Review any materials' risk of carcinogenicity, toxicity, mutagenicity and/or the potential to contribute to the formation of smog. Provide material safety data sheets (MSDS) if available;

Domestic wastewater is collected from the residential service area and piped to the treatment facility. The wastewater is treated using membrane bio-reactor treatment technology with rapid infiltration basins and spray irrigation to recharge the aquifer. The process will generate treated wastewater and surplus biosolids. Neither raw or treated domestic wastewater poses a risk of carcinogenicity, toxicity, mutagenicity or the potential to contribute to the formation of smog. MSDS sheets are not required for either the raw or treated wastewater.

b. the step-by-step procedures or processes for manufacturing and/or assembling the product(s). Provide a flow diagram to illustrate procedures;

See Attachment F

c. the nature of the materials mentioned above in 4.1(a) as to whether or not the materials require special means of storage or handling;

There is no special means of storage or handling the domestic wastewater.

d. list the machinery (new and/or existing) to be utilized by this project;

The equipment will be based on biological nutrient removal process followed by membrane technology for biosolids separation. The equipment listed is representative of that process. Whereas the treatment process will remain the same, competitive bidding may result in relatively limited changes to the equipment.

See Attachment G

e. list any new buildings or other facilities to be utilized;

- Control Building 3,600 SF
- Membrane Biological Treatment Building 39,015 SF

f. list the size and contents of any anticipated aboveground or underground storage tank systems that may be constructed or utilized in support of facility operations;

Flow Equalization Basin	500,000 gallons
Pre Anoxic Basin	420,000 gallons
Aeration Basin, 9 at	93,000 gallons each
Post Anoxic, 9 at	35,000 gallons each
Membrane Tank, 9 at	25,000 gallons each
Aerobic digester	300,000 gallons
Dosing Tank	500,000 gallons
Misc. Chemical Tanks, 6 at	400-3,000 gallons each

g. if this project represents an increase or decrease in production at an already existing facility, what will be the new rate of maximum production?

New Facility

h. if this project represents a totally new facility at a new or existing site, what will be the maximum production rate?

Capacity = 3.0 MGD of domestic wastewater processed

5.2 Describe daily hours of plant operations and the number of operating shifts.

Plant will operate 7 days/week. Operating shift will be 5 days a week with an 8 hour shift each day.

5.3 Provide a site plan of this project with: (See Attachment H)

a. a north arrow;

b. a scale of not less than one inch to 200 feet;

c. identity of the person responsible for the plan, including any licenses and their numbers;

d. the acreage of the applicant's entire property and acreage of the proposed project;

e. property lines of entire property;

f. lines designating the proposed project area for which application is being made, clearly distinguished from present facilities and operating areas (if any);

g. existing and proposed roads, railroads, parking and loading areas, piers, wharfs, and other transportation facilities;

h. existing water bodies and wetlands and proposed dredge and fill areas, and;

i. existing and proposed drainage ways, gas, electric, sewer, water, roads, and other rights-of-way.

5.4 How many acres of land in total are required for this proposed project?

Existing/ currently utilized/ developed land: N/A acres.

New land: 320.21 acres.

5.5 Has the property been involved with a state or federal site cleanup program such as Superfund, Brownfields, HSCA Voluntary Cleanup Program, RCRA Corrective Action, Aboveground or Underground Storage Tank Cleanup Programs? If so please specify which program.

No. See Attachment I

5.6 With regards to environmental cleanup actions, has a Uniform Environmental Covenant, Final Plan of Remedial Action, or no further action letter been issued by the Department? No

If so are the planned construction activities consistent with the requirements or conditions stated in these documents?

PART 6A

ENVIRONMENTAL IMPACTS

Air Quality

6.1 Describe project emissions (new, as well as any increase or decrease over current emissions) by type and amount under maximum operating conditions:

Operation conditions for this project will not produce emissions. All process equipment is enclosed. There is however an emergency generator used to provide backup power for critical equipment in the event of a power failure. The generator will be exercised once per week for maintenance requirements with de-minis emissions expected. There will be no air permits required by the Department of Natural Resources and Environmental Control for operation of this facility.

6.2 Describe how the above emissions change in the event of a mechanical malfunction or human error. NA

6.3 Describe any pollution control measures to be utilized to control emissions to the levels cited above in 5.1.NA

6.4 Show evidence that applicant has, or will have, the ability to maintain and utilize this equipment listed in 5.3 in a consistently proper and efficient manner. (For example, provide college transcripts and/or records of training courses and summary of experience with this pollution control equipment of person(s) responsible for pollution control equipment, and/or provide copies of contracts with pollution control firms to be responsible for maintaining and utilizing this equipment.) NA

Water Quality

6.5 Describe wastewater discharge (new, as well as any increase or decrease over current discharge levels) due to project operations:

Pollutant	Current Discharge Concentration (ppm)	New or Changed Discharge Concentration (ppm)	Current Discharge		Net Increase/Decrease		New Total Emissions	
			Lbs/day	*Tons/year*	*Lbs/day*	*Tons/year*	*Lbs/day*	*Tons/year*

The PCS creates a built-in nutrient reduction mechanism for the Wandendale project. The nutrients in the wastewater associated with each new service connection are treated and removed by 90% (TN) and 96.8% (TP) before that wastewater is land applied.

(See Attachment F for a narrative description of project operations)
(See Attachment J for the wastewater treatment calculations. The plant target for concentration for TN is 2.6 mg/l in order to consistently achieve 5.0 mg/l. The TP value shown in the calculations is for biological TP removal. A 0.5 mg/l effluent will be obtained by chemical precipitation of the remaining TP.)

6.6 Describe the current method of employee sanitary wastewater disposal and any proposed changes to that system due to this proposed project.

Sanitary waste from the new treatment and disposal facility will be on site.

6.7 Identify the number, location, and name of receiving water outfall(s) of any and all process wastewater discharge (new or current) affected by this proposed project. Provide NPDES Permit Numbers for each discharge affected.

There will be no process wastewater discharges to surface water as a result of this project

6.8 If any effluent is discharged into a public sewer system, is there any pretreatment program? If so, describe the program.

There will be no effluent discharges into a public sewer system. All domestic wastewater generated will be treated on site by the facility.

6.9 Stormwater:

a. Identify the number, location, and name of receiving waters of stormwater discharges. Provide permit number for each discharge.

There will be no stormwater discharges to surface waters as a result of this project.

b. Describe the sources of stormwater run-off (roofs, storage piles, parking lots, etc).

Roof, driveways, sidewalks and parking lots

c. Describe the amount of stormwater run-off increase over current levels that will result from the proposed project.

Increased stormwater runoff is a result of the addition of impervious surfaces. The increased runoff will be handled in accordance with the requirements of Delaware Sediment and Stormwater Regulations once the final project design is complete.

d. Describe any pollutants likely to be in the stormwater.

No pollutants will be generated in stormwater as a result of this project

e. Describe any pollution control device(s) or management technique(s) to be used to reduce the amount of stormwater generated, and devices to improve the quality of the stormwater run-off prior to discharge.

Stormwater quality and quantity will be handled in accordance with the best management practices of the Delaware Sediment and Stormwater Regulations once the final project design is complete.

f. Describe any new or improved stormwater drainage system required to safely carry off stormwater without flooding project site or neighboring areas down gradient.

Best management practices will be utilized to safely discharge any stormwater. A combination of ponds, bioretention facilities, infiltration trenches, biofiltration swales and filter strips will be utilized.

6.10 Will this project use a new water intake device, or increase the use (flow) from an existing intake device?

NO

If yes, state: NA

a. the volume of water to be withdrawn, and;

b. describe what will be done to prevent entrainment and/or entrapment of aquatic life by the intake device.

6.11 Will this proposed project result in a thermal discharge of water, or an increase in the flow or temperature of a current thermal discharge?

NO

If yes, state: NA

a. the volume of the new flow or increase from the existing thermal discharge, both in flow and amount of heat;

b. how warm will the water be when it is discharged into a receiving waterway, discharge canal, or ditch, and what will be the difference in discharge temperature and ambient temperature (delta T) at various seasons of the year after all cooling water mechanisms have been applied to the hot water?

c. the equipment and/or management techniques that will be used to reduce the thermal load of the discharge water.

6.12 Will any proposed new discharge or change in existing discharge cause, or have potential to cause, or contribute to, the exceedence of applicable criteria appearing in the "State of Delaware Surface Water Quality Standards"?

NO. There will be no discharge to surface water as a result of this project.

If yes, explain: NA

6.13 Describe any oils discharged to surface waters due to this proposed project.

There will be no oil discharges to surface waters due to this project.

6.14 Describe any settleable or floating solid wastes discharged to surface waters due to this project.

There will be no settleable or floating solid wastes discharged to surface waters due to this project.

6.15 Show evidence that the applicant has, or will have, the ability to maintain and utilize any water pollution control equipment listed in questions 5.5 through 5.14 in a consistently proper and efficient manner. (For example, provide operator license numbers, college transcripts and/or training courses and summary of prior experience with this pollution control equipment of person(s) responsible for pollution control equipment, and/or provide copies of contracts with pollution control firms.

The persons below are licensed wastewater treatment operators required to take continuous training courses to maintain their licenses.

Name	Level	License #
Kyle Betts, Jr.	IV	361
Jeffrey Deats	IV	50
Rick A. Garloff	I, OIT	622
Ronald Griffith	IV	114
Thomas S. Herholdt	II	589
Stephen G. Hudson	IV	120
Gary S. Jackson	II, OIT	592
Robert Lawson	II	556
Christina Leyden	II, OIT	588
Patrick Shannon	I	630
David Weed	III	528

6.16 Estimate the amount of water to be used for each specified purpose including cooling water. State daily and maximum water use in the unit of gallons per day for each purpose and source of water. State if water use will vary with the seasons, time of day, or other factors.

The treatment facility will include a laboratory, bathroom and office in addition to plant washdown and water for process. (See Attachment K)

6.17 Identify the source of water needed for the proposed project, including potable water supplies.

Water supply will be furnished in the form of an on-site well and in accordance with the requirements of Department of Natural Resources and Environmental Control (DNREC), Office of Drinking Water (ODW) and the State Fire Marshal.

6.18 Are wells going to be used?

See response to Item 6.17

If yes:

a. Identify the aquifer to be pumped and the depth, size and pumping capacity of the wells.
Well will be designed and constructed in accordance with the requirements of Department of Natural Resources and Environmental Control (DNREC), Office of Drinking Water (ODW) and the State Fire Marshal Most likely, the well will be in the Columbia aquifer, with screen depth beginning in the 80-100 ft. range to be pumped at 10-20 gpm.

b. Has a permit been applied for to do this?

Permit will be applied for at the appropriate time.

c. How close is the proposed well(s) to any well(s) on adjacent lands?

Well will be located on the treatment facility site and will not impact any wells (if any) on adjacent lands.

Solid Waste

6.19 Will this project result in the generation of any solid waste?

Solid waste will be generated from packaging materials such as boxes, paper wrappers, and office and laboratory supplies.

If yes, describe each type and volume of any solid waste (including biowastes) generated by this project, and the means used to transport, store, and dispose of the waste(s).

Approximately 8,000 lb/day of biosolids will be generated from the treatment process at build out capacity. Since the initial operating capacity of the treatment facility will be phased depending on the number of customers, the biosoilds amount will be small and will be stored in a tank on site. A licensed waste hauler will pick up the biosolids and dispose of at a site regulated by the Department of Natural Resources and Environmental Control, Regulations Governing Solid Waste, outside of the Coastal Zone. Once the biosolids generation increases, they will be dewatered on site and the solids will also be transported to the disposal site outside of the Coastal Zone.

6.20 Will there be any on-site recycling, re-use, or reclamation of solid wastes generated by this project?

NO

If yes, describe:

6.21 Will any waste material generated by this project be destroyed on-site?

NO

If yes, how will that be done?

Hazardous Waste

6.22 Will this proposed project result in the generation of any hazardous waste as defined by the "Delaware Regulations Governing Hazardous Waste"?

NO

If yes, identify each hazardous waste, its amount, and how it is generated:

6.23 Describe the transport of any hazardous waste and list the permitted hazardous waste haulers that will be utilized.

NA

6.24 Will the proposed project cause the applicant to store, treat, and/or dispose of hazardous waste?

NO

If yes, describe:

6.25 Does the applicant currently generate any hazardous waste at this site?

NO

If yes, describe:

Habitat Protection

6.26 What is the current use of the land that is to be used for the proposed project?

Land is currently used for hunting and farming the following crops:

Dixie Butter Peas
Soybeans
Corn
Sunflowers
Blackeye Peas
Wheat
Lima Beans

6.27 Will the proposed project result in the loss of any wetland habitat?

NO

If yes, describe:

6.28 Will any wastewater and/or stormwater be discharged into a wetland?

NO

If yes, will the discharge water be of the same salinity as the receiving wetlands?

6.29 Will the proposed project result in the loss of any undisturbed natural habitat or public use of tidal waters?

There will be no loss of public use of tidal waters as a result of this project.

If yes, how many acres?

Approximately 10 acres of forest will be cleared to construct the treatment facility and RIBs. However this will be more than offset by the many buffer zones designated and the addition of trees and shrubs as part of the new landscaping to be installed.

6.30 Do threatened or endangered species (as defined by the DNREC and/or the Federal Endangered Species Act) exist at the site of the proposed project, or immediately adjacent to it?

Project site has not been evaluated for rare or endangered species. Natural Heritage and Endangered Species Section of DNREC has requested a site visit to survey the project site to evaluate the habitat and determine the potential for Species of Greatest Conservation Need.

If yes, list each species:

6.31 Will this proposed project have any effect on these threatened or endangered species (as defined by the DNREC and/or the Federal Endangered Species Act).

All recommendations requested by Natural Heritage and Endangered Species Section of DNREC will be implemented. It is anticipated there will be no effect.

If yes, explain:

6.32 What assurances can be made that no threatened or endangered species exist on the proposed project site?

Natural Heritage and Endangered Species Section of DNREC will evaluate project site. Buffer zones of 200ft. will be maintained between wetlands and the project. Annual monitoring of project site will be conducted to examine the effect of spray irrigation on all identified ground nesting birds and amphibians. (See Attachment L for recommendations by Natural Heritage & Endangered Species section of DNREC)

6.33 Describe any filling, dredging, or draining that may affect nearby wetlands or waterways.

None

6.34 If dredging is proposed, how much will occur and where will the dredged materials go for disposal? NA

Other Environmental Effects

6.35 Describe any noticeable effects of the proposed project site including: heat, glare, noise, vibration, radiation, electromagnetic interference, odors, and other effects.

There will be no noticeable effects due to the design precautions identified in 6.36

6.36 Describe what will be done to minimize and monitor such effects.

Plant will be totally enclosed and comply with The Regulations Governing the Control of Noise. Emergency generator will have sound attenuation enclosure and muffler. It will also have springs installed to dampen any vibration during equipment exercise. The treatment technology being used along with the process thermal control system will produce minimal odor and will not require an air permit from Department of Natural Resources and Environmental Control.

6.37 Describe any effect this proposed project will have on public access to tidal waters.

None

6.38 Provide a thorough scenario of the proposed project's potential to pollute should a major equipment malfunction or human error occur, including a description of backup controls, backup power, and safety provisions planned for this project to minimize any such accidents.

Emergency generator will be available as a backup power source in the event of power loss to operate critical equipment. There will be automatic controls with backup systems in the event the process has to be interrupted. The plant has storage capacity in its Bardenpho process equipment, equalization tanks, wetwells and rapid infiltration beds to handle excess flows. Additionally the plant is designed to handle peak flows which can be as high as 2.5 times the average flow it is anticipated to handle.

6.39 Describe how the air, water, solid and hazardous waste streams, emissions, or discharge change in the event of a major mechanical malfunction or human error.

The wastewater treatment plant has storage capacity in its Bardenpho process equipment, equalization tanks, wetwells and rapid infiltration beds to handle excess flows. All process equipment such as pumps, blowers and chemical systems will have backup systems in the event of any malfunction. There will be safety equipment that will notify plant personnel in the event of any malfunction. Plant personnel are required to respond in a matter of 60 minutes to an alarm situation.

PART 6B

ENVIRONMENTAL OFFSET PROPOSAL REDUCTION CLAIM

Is applicant claiming the right to have a reduced offset proposal due to past voluntary improvements as defined in the "Regulations Governing Delaware's Coastal Zone"?

NO

If yes, provide an attachment to the application presenting sufficient tangible documentation to support your claim.

PART 6C

ENVIRONMENTAL OFFSET PROPOSAL

If the applicant or the Department finds that an Environmental Offset Proposal is required, the proposed offset project shall include all the information needed to clearly establish: The PCS creates a built-in nutrient reduction mechanism for the Wandendale project. The nutrients in the wastewater associated with each new service connection are treated and removed by 90% (TN) and 96.8% (TP) before that wastewater is land applied. See Attachment M for further details.

A. A qualitative and quantitative description of how the offset project will "*clearly and demonstrably*" more than offset the negative impacts from the proposed project.

B. How and in what period of time the offset project will be carried out.

C. What the environmental benefits will be and when they will be achieved.

D. What scientific evidence there is concerning the efficacy of the offset project in producing its intended results.

E. How the success or failure of the offset project will be measured in both the short and long term.

F. What, if any, negative impacts are associated with the offset project.

G. How the offset will impact the attainment of the Department's environmental goals for the Coastal Zone and the environmental indicators used to assess long-term environmental quality within the Coastal Zone.

Additional Offset Proposal Information for the Applicant

1. The offset proposals must "*clearly and demonstrably*"[1] more than offset any new pollution from the applicant's proposed project. The applicant can claim (with documentation) evidence of past voluntary environmental investments (as defined in the Regulations) implemented prior to the time of application. Where the Department concurs with the applicant that such has occurred, the positive environmental improvement of the offset proposal against the new negative impact can be somewhat reduced.

2. The applicant must complete the Coastal Zone Environmental Impact Offset Matrix. This matrix can be found on the CZA web page (http://www.dnrec.delaware.gov/Admin/CZA/CZAHome.htm, or by clicking on this link. On page one, the applicant must list all environmental impacts in the column labeled "Describe Environmental Impacts." In the column to the immediate right, the applicant should reference the page number of the application or attachment which documents each impact listed. In the "Describe Environmental Offset Proposal" column, applicant must state what action is offsetting the impact. The offset action shall be referenced by page number in the column to the right to show how the offset will work. The applicant shall not utilize the far right column. *Please ensure the matrix is complete, detailed, and as specific as possible, given the allotted space. Also, thoroughly proof-read to ensure there are no spelling or grammatical errors.* The applicant must submit a completed matrix both in hardcopy and electronic form.

3. Please note: the entire offset proposal, including the matrix, shall be available to the public, as well as the evidence of past voluntary environmental enhancements.

[1] For purposes of this requirement, the DNREC will interpret the phrase "clearly and demonstrably" to mean an offset proposal that is obviously so beneficial without detailed technical argument or debate. The positive environmental benefits must be obviously more beneficial to the environment than the new pollution that minimal technical review is required by the Department and the public to confirm such. The total project must have a positive environmental impact. The burden of proof is on the applicant.

PART 7

ECONOMIC EFFECTS

Construction

7.1 Estimate the total number of workers for project construction and the number to be hired in Delaware.

Delaware Economic and Development Office (DEDO) estimates 11 construction jobs per million dollars of project cost are generated. Using that estimate, 330 construction jobs will be generated.

7.2 Estimate the weekly construction payroll.

24 month construction period, 1/3 payroll, $117,000

7.3 Estimate the value of construction supplies and services to be purchased in Delaware.

$6,000,000 (20%)

7.4 State the expected dates of construction initiation and completion.

Depends on permit issuance.

7.5 Estimate the economic impact from the loss of natural habitat, or any adverse economic effects from degraded water or air quality from the project on individuals who are directly or indirectly dependent on that habitat or air or water quality (e.g. commercial fishermen, waterfowl guides, trappers, fishing guides, charter or head boat operators, and bait and tackle dealers). None

Operations

7.6 State the number of new employees to be hired as a direct result of this proposed project and how many of them will be existing Delaware residents and how many will be transferred in from other states.

Four new employees will be hired. Preference will be given to Delaware residents because of emergency on-call requirement that response must be within one hour.

7.7 If employment attributable to the proposed project will vary on a seasonal or periodic basis, explain the variation and estimate the number of employees involved.

Not seasonal

7.8 Estimate the percent distribution of annual wages and salaries (based on regular working hours) for employees attributable to this project:

Wage/salary	Percent of employees
<$10,000	
$10,000-14,999	
$15,000-24,999	
$25,000-34,999	
$35,000-49,999	
$50,000-64,999	
$65,000-74,999	50
$75,000-99,999	50
>$100,000	

7.9 Estimate the annual taxes to be paid in Delaware attributable to this proposed project:

State personal income taxes:	$18,300
State corporate income taxes	$26,800
County and school district taxes:	$1,400 & $24,800
Municipal taxes:	$ -0-

PART 8

SUPPORTING FACILITIES REQUIREMENTS

Describe the number and type of new supporting facilities and services that will be required as a result of the proposed project, including, but not limited to: None

a. Roads

b. Bridges

c. Piers and/or docks

d. Railroads

e. Microwave towers

f. Special fire protection services not now available

g. Traffic signals

h. Sewer expansion

i. Energy related facilities expansion

j. Pipelines

PART 9

AESTHETIC EFFECTS

9.1 Describe whether the proposed project will be located on a site readily visible from a public road, residential area, public park, or other public meeting place (such as schools or cultural centers).

Portions of the project will be visible from public roads. However there will be either 50ft or 100ft buffers between plant and public roads. Additionally, there will be landscape features included to have the project blend in with existing features. See Attachment N.

9.2 Is the project site location within a half mile of a place of historic or scenic value? No

9.3 Describe any planned attempt to make the proposed facility aesthetically compatible with its neighboring land uses. Include schematic plans and/or drawings of the proposed project after it is complete, including any landscaping and screening.

See response to 9.1

PART 10

EFFECTS ON NEIGHBORING LAND USES

10.1 How close is the nearest year-round residence to the site of this proposed project? See Attachment O.

10.2 Will this proposed project interfere with the public's use of existing public or private recreational facilities or resources? No

10.3 Will the proposed project utilize or interfere with agricultural areas? No. project will provide agricultural areas with needed nutrients

10.4 Is there any possibility that the proposed project could interfere with a nearby existing business, commercial or manufacturing use? No.

END OF APPLICATION

ATTACHMENTS TO FOLLOW