

## **MARRICK PROPERTIES PROPOSAL TO REDUCE IMPACTS OF THE SHOPPES@APPLE GREENE WASTEWATER SYSTEM**

On August 4, 2008, Apple Greene Civic Association officers Lisa Yankanich and Katie McVicker, along with Richard Klein, met with Marrick Properties representatives Rick Bailey and Frank Jaklitsch. The purpose of the meeting was to discuss options for resolving the Association's concerns regarding the proposed sewage fields and sewage holding pond along with the lack of onsite stormwater management.

On September 1<sup>st</sup> Marrick Properties provided the Association with two letters. The first letter was addressed to their consultant and contained 15 questions. The second letter was the consultant's response to the questions. Unfortunately the response gave answers but didn't include the 15 questions, which made it difficult to understand. Below you will find each question followed by the consultant's response along with comments from the Association's consultant, Richard Klein of Community & Environmental Defense Services (CEDS).

- 1. Mr. Klein stated that there are two (2) existing operational drip irrigation systems currently in the State of Maryland. Is this the case?**

*Applicant's Consultant:* There are 2 operational drip irrigation systems in Maryland. They are Marley Run and Calvert Gateway.

*CEDS Response:* The applicant's consultant is correct.

- 2. Are there any other MDE permitted drip irrigation systems in the State of Maryland? If so, where are they planned and are they private or public planned systems?**

*Applicant's Consultant:* The following is a listing of permitted (by MDE) but not constructed facilities:

- a) Town of Berlin - 8,400 gpd - public;
- b) Eagles Nest Campground - Worcester Co. - 45,000 gpd - private;
- c) Island Resort Campground - Worcester Co. - 9,600 gpd - private;
- d) Life in Jesus Camp - Frederick - 18,900 gpd - private;
- e) Mountainside Day Camp -Frederick - 880 gpd - private;
- f) River Valley Ranch - Carroll - 5,000 gpd- private; and
- g) Cedarville Trailer Park - Prince Georges - private.

*CEDS Response:* The applicant's consultant is correct, though there is an eighth permitted, unconstructed facility - the Shoppes@Apple Greene.

- 3. Does the State of Maryland consider drip irrigation systems experimental and if so, what is their definition of experimental?**

***Applicant's Consultant:*** Per MDE the State of Maryland currently considers drip irrigation as experimental. Their definition of experimental is that there are so few facilities in operation. As the number of facilities increases to some point the term "experimental" will be dropped.

***CEDS Response:*** I have asked MDE for the process they will use to determine when drip-irrigation is no longer considered an experimental technology.

**4. Do other states permit drip irrigation systems and if so, are they widely used and where?**

***Applicant's Consultant:*** Other states permit the use of drip irrigation systems. The ones I am aware of are Delaware, Pennsylvania, Virginia, North Carolina, Michigan, and California.

***CEDS Response:*** I have contacted wastewater treatment permitting officials in these six states about their experience with drip-irrigation technology. California appears to only drip-irrigation for a very highly treated wastewater. Michigan has pretty much abandoned the technology (*see the attached letter from the Michigan DEQ*).

**5. What is the buffer between drip field "F" and Apple Green? What is the buffer between drip field "C" and Apple Green?**

***Applicant's Consultant:*** The narrowest buffer between Area F and Apple Green is in excess of 76 ft. The narrowest buffer between Area C and Apple Green is 38 ft. This will be revised to 50 ft.

***CEDS Response:*** The applicant's consultant is correct.

**6. If drip field "C" is deleted, how many gallons per day of discharge capacity would be lost?**

***Applicant's Consultant:*** If Drip Field C is eliminated the discharge would have to be reduced by 6,596 gpd.

***CEDS Response:*** The applicant's consultant is correct.

**7. Is drip field "F" uphill from Apple Greene?**

***Applicant's Consultant:*** Drip Field F is not uphill from Apple Green. A stream also separates Drip Field F from Apple Green.

**CEDS Response:** This is **NOT** correct. The stream is the property boundary for the Apple Greene homes located off of Winesap Court. Therefore Field F **IS UPHILL** of Apple Greene. More importantly, the residents of the Winesap Court homes report that their children and grandkids frequently play in this stream. However, should sewage field F be put into service then they will no longer permit their children near the stream.

**8. Is drip field "C" uphill from Apple Greene?**

**Applicant's Consultant:** Drip field C is up hill from Apple Green.

**CEDS Response:** The applicant's consultant is correct.

**9. If either or both of drip fields "C" and "F" are uphill from Apple Greene, can an earth berm be added along the property line closest to Apple Greene to prevent any runoff migrating off of our property?**

**Applicant's Consultant:** Yes.

**CEDS Response:** This is **NOT** correct. It would take more than just an earth berm to prevent partially treated sewage from flowing into areas where it threatens Apple Greene residents.

**10. Can the holding pond be constructed underground considering its size?**

**Applicant's Consultant:** No. It is impracticable from a volume and size standpoint.

**CEDS Response:** This is absurd. Stormwater ponds are commonly built beneath parking lots. In fact there are eight underground stormwater facilities in Calvert County.

**11. Can the holding pond be reconfigured to increase its buffer from Apple Greene? If so, please provide us with a new plan for it.**

**Applicant's Consultant:** The holding pond can be reconfigured to increase the distance from the high water level to the lots in Apple Green. Enclosed is a revised plan.

**CEDS Response:** The pond was moved 20 feet further away from Reverend Coffman's home. It is now 100 feet from his property line, but still within view from his home and that of his neighbors. It appears that the pond has been deepened so the footprint is smaller. This means its not quite as close to the proposed connector road, but still within view.

**12. If the capacity of the holding pond is reduced from 60 day to 30 day storage how much will that affect our discharge capacity?**

*Applicant's Consultant:* I am waiting on information from our Hydrogeologist pertaining to the impact of the reduced storage on the nitrogen balance.

*CEDS Response:* As of this date (September 11, 2008) Marrick Properties has not informed us of the hydrogeologist's opinion.

**13. What is the storage capacity of the holding pond at Capital Gateway, the Giant shopping center in Dunkirk?**

*Applicant's Consultant:* Capital Gateway has a 60 day holding capacity (per MDE).

*CEDS Response:* On January 11, 2005 MDE allowed the applicant to reduce the storage capacity of the Capital Gateway holding pond from 60 days to 30 days (*see attached letter*). Given this MDE might well reduce the Shoppes required holding pond size from the equivalent of 60 days of flow to 30 days, which would make it even easier to relocate the pond to another part of the site and place it underground.

**14. Can the nitrogen standard for the effluent be reduced to 4 mg/l utilizing the system we plan to install?**

*Applicant's Consultant:* The supplier maintains that we can achieve total nitrogen in the effluent of 4 mg/l. The subsurface drip irrigation system is designed with nitrogen uptake in mind. The nitrogen uptake is provided by plants. If the nitrogen level in the effluent is too low additional nitrogen will have to be applied to the ground in order for the plants to grow and thrive.

*CEDS Response:* Originally I'd hoped that reducing the nitrogen content of the treated wastewater would allow a reduction in the area of the sewage fields. However I have since learned that the field size is controlled by the volume of discharge, not the nitrogen content. Some of the options for reducing the area of the fields include: water conservation, restricting the site to uses that generate relatively low wastewater volumes (eliminate the supermarket and restrict to offices, banks, etc.), and reducing the square footage of floor space. Marrick Properties did not address any of these options in their response.

**15. What was the nature of the recent problem at the Marley Run drip irrigation field? Has it been corrected? Was the problem significant enough to create a wetland due to saturated ground?**

*Applicant's Consultant:* The nature of the recent problem at Marley Run was caused by problem with the control system. The problem has been corrected. A recent visual inspection of the drip field area did not show any indication of being a wetland.

***CEDS Response:*** This response misses the critical point. If we had visited both the Marley Run and Gateway drip-irrigation fields, say, a hundred times and had only found sewage-saturated soils once then there might be little cause for concern. But this was ***NOT*** the case. We visited each field ***once*** and found that sewage had saturated the surface of both. This means that the probability that the fields next to Apple Greene will become saturated with sewage is 100%. In other words, the risk to Apple Greene residents goes way beyond what most would deem as reasonable.

With respect to the wetland question, the applicant's consultant is wrong. Wetland vegetation was present in the sewage field at Marley Run. The drip-irrigation field was saturated with partially treated sewage for at least a year (*see MDE inspection reports*) which allowed cattails and other wetland plants to become established within the sewage irrigation field at Marley Run (*see attached photo*).

Prepared by Richard Klein on September 11, 2008  
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Web Page: ceds.org



**MARYLAND DEPARTMENT OF THE ENVIRONMENT**

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Jonas A. Jacobson  
Deputy Secretary

Mr. Bruce C. McMillin, P.E.  
Campbell & Nolan Associates, Inc  
215 Bynum Road  
Forest Hill, MD 21050

RE: State Discharge Permit No. 02-DP-3418A  
Calvert Gateway Commercial Subdivision  
Calvert County

Dear Mr. McMillin:

Per your request of August 24, 2004, we have made a modification to the referenced permit. Enclosed is Modification A of State Discharge Permit 02-DP-3418. Modification A includes the change of storage time requirement of the effluent lagoon from 60 days to 30 days. This change is conforming to the storage requirement for a drip irrigation system included in the MDE Guidelines for Land Treatment of Municipal Wastewaters revised in July of 2003. Please replace title page and page No. 4 of the existing permit with the enclosed revised pages. Permit conditions not affected by this modification remain unchanged. The permit expiration date remains July 1, 2008.

If you have any questions, please call Ching-Tzone Tien, Chief, Groundwater Discharge Permits Division at (410) 537-3662.

Sincerely,

Robert M. Summers, Director  
Water Management Administration

cc: Paul McFaden



JENNIFER M. GRANHOLM  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
LANSING



STEVEN E. CHESTER  
DIRECTOR

August 21, 2008

Mr. Frank Force, Supervisor  
Grattan Township  
12050 Old Belding Road  
Belding, Michigan 48809

Dear Mr. Force:

**SUBJECT: State Groundwater Discharge Permit No. GW1810236  
Grattan Vergennes WWTF  
Discharge Management Plan & Existing Land Treatment System**

I have reviewed the document entitled *Grattan/Vergennes Wastewater Facility, Irrigation Management Plan, December 2003*, submitted by Prein & Newhof on behalf of the subject facility as required by the Part 22 Groundwater Quality Administrative Rules and as a condition of its permit reissuance. Within this letter, this document will be referred to as this facility's discharge management plan (DMP). This letter will also summarize observations made on-site regarding the land treatment system.

The DMP indicates the facility intends to continue to utilize the existing drip irrigation system for distribution of its wastewater over the 75-acre site. The DMP also indicates the even distribution is assumed although it cannot be determined since flows aren't measured to the individual zones. Only total flows to the system can be determined.

On November 13, 2007, the Department of Environmental Quality (DEQ), Water Bureau staff including Leslie Sorensen, Angela Strong, and myself met with the wastewater facility operator, Marc Middlestadt at the land treatment site to inspect the condition of the distribution system. It was apparent that the drip irrigation distribution system was in disrepair with many drip irrigation lines cut or buried beneath the soil or vegetation. Due to the fact that much of the header and lateral system is below ground, and with many drip irrigation lines buried it is difficult to ascertain the current effectiveness of the distribution system. However, given the lack of individual zone flow metering, the evidence of poorly maintained irrigation lines, and the extensiveness and topography of the acreage, it is highly doubtful that this system can uniformly distribute the facility's wastewater as required by Rule 2233(4)(a)(ii) of the Part 22 Rules, whether it is repaired and working as it was designed or not. Therefore, the DEQ staff has determined that the Grattan Vergennes WWTF must abandon the drip irrigation distribution system and propose an alternative means of treating its wastewater via land treatment if it wishes to continue discharging to groundwaters of the State.

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~~Mr. Frank Force~~~~-2-~~~~August 21, 2008~~

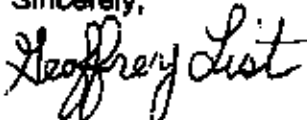
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Plans for developing a new land treatment system for its wastewater may be submitted to the DEQ for review and approval. Once a new land treatment system is developed for the facility, it will, of course, necessitate revisions to the DMP. Instituting flow metering to determine the volume and application rates to individual zones or fields will be required. More regular periodic maintenance of the equipment as well as the management of the vegetation will also need to be a component of the DMP. Determination of nutrient removal by the existing crops and underlying soils is included in the current DMP, but crop harvest and removal may need to be a part of the overall treatment of the wastewater to prevent buildup of nutrients at the discharge site.

A new guidesheet (Guidesheet II, entitled *Guidance For The Development Of A Discharge Management Plan, May 2008*) for preparing the facility's DMP has recently been placed on-line at the following address:  
[http://www.michigan.gov/deq/0,1607,7-135-3313\\_4117-9782-,00.html](http://www.michigan.gov/deq/0,1607,7-135-3313_4117-9782-,00.html). This guidesheet contains information that may be helpful to you in developing your DMP.

Please contact me at the telephone number listed below if there are any questions or concerns.

Sincerely,



Geoffrey List  
Senior Soil Scientist  
Groundwater Permits Unit  
Permits Section  
Water Bureau  
517-373-8750

cc: Ms. Barbara Marczak, Prein & Newhof  
Ms. Leslie Sorensen, DEQ-Grand Rapids District  
Mr. James Janiczek, DEQ  
Ms. Angela Strong, DEQ  
Mr. J. B. Beauboef, DEQ


**Maryland Department of Environment**
**Water Management Administration**
**Compliance Program**
**1800 Washington Blvd, Baltimore MD 21230**
**[410-537-3510]**
**Field Inspection Report by: Tamene Dilnesahu**
**Permit / Approval Numbers: PAF 08-2727**
**Inspection Date: July 29, 2008**
**Facility Address: 10760 Town Center Blvd. MD, 20754**
**Site Name: Calvert Gateway WWTP**
**Site Status: Active**
**Inspection Type: Follow-up**
**Site Condition: Noncompliance**
**Contact(s): Mrs. Trish Lyons**
**Recommended Action: Additional Investigation Required**
**Evidence Collected: Visual observation and Photos**
**Inspection Reason: PAF**
**INSPECTION SAMPLES**

Location	Sample Type	Result	Units	Date Taken	Time Taken	Taken By
10760 Town Center Blvd.						

**INSPECTION FINDINGS**

A follow up investigation was conducted this date at Calvert Gateway WWTP. This inspection was conducted by Mrs. Shailaja Polasi of MDE Public Health Engineer and me. We met on site Mrs. Trish Lyons Operation Manager and Robert Vermillion Plant Operator. This inspection consisted of review of records followed by facility inspection and walk-through drip field. This inspection report focused mainly on the follow up of PAF 08-2727.

The facility is authorized to discharge treated sewage by subsurface drip irrigation system from the facility to ground waters of the State, in accordance with special and general conditions as described in the permit (02-DP-3418).

The following items are the findings of this investigation regarding drip field:

1. After record review and plant inspection walked through the drip field with Mrs. Lyons and Mrs. Polasi to investigate the status of drip field. Mrs. Lyons stated that failure of drip field and ponding was caused by groundhogs and broken pipes, they shut down dosing until repaired. The repair was made by Freemire Associates. They dug the soil approximately 18" deep about dozen locations to locate underground broken pipes and replace them.

Permit / Approval Numbers: 06-CA-0039  
Inspection Date: July 22, 2008  
Facility Address: Silverwood Ln., Prince Frederick, MD 20678

2. Currently the operator is monitoring drip field daily to prevent future ponding and any non-complying discharge and will shut down dosing to the drip field if any further leaks develop.
3. It appears to be the problem was addressed; however the drip field is still wet and difficult to determine if the problem is completely solved.
4. Any standing or ponded water condition on adjacent properties or a persistent standing or ponded water condition on the permittee's property is a violation of the permit and Environmental Articles Title-9.
5. Expiration date of the permit (02-DP-3418) was July 1, 2008.
6. Since ponding occurred on different location on the drip field and run off the site to the adjacent Road (Ward Road) and permit was expired, this case will be referred to the office division chief for further investigation and possible penalty action

Inspector:

  
Tamene Dilnesahu

Received by: \_\_\_\_\_



**Maryland Department of Environment**  
**Water Management Administration**  
**Compliance Program**  
 1800 Washington Blvd, Baltimore MD 21230  
 [Enter Phone Number]

**Field Inspection Report by:** Tamene Dilnesahu

**Permit / Approval Numbers:** PAF 08-2728

**Inspection Date:** July 29, 2008

**Facility Address:** 785 Marley Run Dr,  
Huntingtown, MD 20639

**Site Name:** Marley Run WWTP

**Site Status:** Active

**Inspection Type:** Follow up

**Site Condition:** Noncompliance

**Contact(s):** Mr. Jon Castro

**Recommended Action:** Additional Investigation  
Require.

**Evidence Collected:** Visual Observation, Photos

**Inspection Reason:** PAF

Location	INSPECTION SAMPLES				Date Taken	Time Taken	Taken By
	Sample Type	Result	Units				
785 Marley Run Dr.							

#### INSPECTION FINDINGS

A follow up investigation was conducted this date at Marley Run WWTP. This inspection was conducted by Mrs. Shailaja Polasi of MDE Public Health Engineer and me. We met on site Mr. Jon Castro Plant Operator, Mr. Ray Hall Superintendent and Mr. Barry King Calvert County Director of water and Sewer. This inspection consisted of review of records followed by facility inspection and walk-through drip field. This inspection report focused mainly on the follow up of PAF 08-2728.

The facility is authorized to discharge treated sewage by subsurface drip irrigation system from the facility to ground waters of the State, in accordance with special and general conditions as described in the permit (03-DP-3232).

The following items are the findings of this investigation regarding drip field:

1. After record review and plant inspection walked through the drip field with Mr. Castro and Mrs. Polasi to investigate the status of drip field. Mr. Castro stated that failure of drip field and ponding was caused by transformer malfunction (burned up), which controls each

Permit / Approval Numbers: <NO DATA FOUND>

Inspection Date: August 4, 2008

Facility Address: 785 Marley Run Dr, Huntingtown, MD 20639

solenoid in each zones/cells. There are twelve zones in drip field. According to Mr. Castro zone #11 is responsible for the ponding and effluent run off the site.

2. The flow to the drip field is continuously monitored on computer from the operator room. The program allows monitoring how much gallons/day discharged to each zones. Currently the program shows that Zone # 2,#3,#4,#6,#7,#8,#9, are active and zones#1,#5,#10,#11,and #12 are inactive, however due to bad transformer solenoid on zone #11 remained open and all other solenoids were shut down and there is no flow to these zones, the operator was observing false information from the computer, as a result all discharge sewage went to zone #11 and that saturate the field and started creating ponding and run off to adjacent Road.
3. There is no record which shows that inspection of drip field were performed, and it appears to be this drip field is ponding over a year now and there is no noncompliance report sent to MDE concerning ponding.
4. Any standing or ponded water condition on adjacent properties or a persistent standing or ponded water condition on the permittee's property is a violation of the permit and Environmental Articles Title-9.
5. On July 31 Mr. Castro Called my office and left a message stating that they replaced the transformer and shut down manually solenoid on zone #11, they are not going to discharge any time soon to zone #11. And it appears to be the problem was addressed; however the drip field is still wet and difficult to determine if the problem is completely solved.
6. For more information see inspection report of this date by Mrs. Shailaja Polasi of MDE.
7. Routine inspections will continue

Inspector:

  
Tamene Dilnesahu

Received by: \_\_\_\_\_

Cattails



Wetland Vegetation Growing in the Sewage  
Irrigation Field at Marley Run