C 1 | 42306 | SEQUENCE NO. (MDE USE ONLY)

(THIS NUMBER IS TO BE PUNCHED IN COLS. 3-6 ON ALL CARDS)

STATE OF MARYLAND
WELL COMPLETION REPORT
FILL IN THIS FORM COMPLETELY
PLEASE TYPE

THIS REPORT MUST BE SUBMITTED WITHIN 45 DAYS AFTER WELL IS COMPLETED.

COUNTY NUMBER

ST/CO USE ONLY
DATE Received MM 03 DD 02 YY 16

DATE WELL COMPLETED MM 2.23 DD YY 16

Depth of Well 300 (TO NEAREST FOOT)

OK 3/4/16 SC

PERMIT NO. FROM "PERMIT TO DRILL WELL" HO-15-0209

OWNER Williamsburg Homes (last name / first name)

WELL SITE ADDRESS Lime Kiln RD TOWN Fielton

SUBDIVISION Westland Farm Estates SECTION LOT 3

WELL LOG
Not required for driven wells

STATE THE KIND OF FORMATIONS PENETRATED, THEIR COLOR, DEPTH, THICKNESS AND IF WATER BEARING

DESCRIPTION (Use additional sheets if needed)	FEET FROM	FEET TO	check if water bearing
Light to Dark Brown Loamy	0	40	
Grey Limestone	40	160	
White	160	161	✓
Grey White Limestone	161	200	

NUMBER OF UNSUCCESSFUL WELLS: 0

WELL HYDROFRACTURED yes Y no N

CIRCLE APPROPRIATE LETTER
- A A WELL WAS ABANDONED AND SEALED WHEN THIS WELL WAS COMPLETED
- E ELECTRIC LOG OBTAINED
- P TEST WELL CONVERTED TO PRODUCTION WELL

I HEREBY CERTIFY THAT THIS WELL HAS BEEN CONSTRUCTED IN ACCORDANCE WITH COMAR 26.04.04 "WELL CONSTRUCTION" AND IN CONFORMANCE WITH ALL CONDITIONS STATED IN THE ABOVE CAPTIONED PERMIT, AND THAT THE INFORMATION PRESENTED HEREIN IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DRILLERS LIC. NO.: M SD 009

DRILLERS SIGNATURE (MUST MATCH SIGNATURE ON APPLICATION)

LIC. NO.: __ __ D __ __ __

SITE SUPERVISOR (sign. of driller or journeyman responsible for sitework if different from permittee)

GROUTING RECORD
WELL HAS BEEN GROUTED (Circle Appropriate Box) yes Y no N

TYPE OF GROUTING MATERIAL (Circle one)

CEMENT (C M) BENTONITE CLAY (B C)

NO. OF BAGS 22 NO. OF POUNDS 238

GALLONS OF WATER 162

DEPTH OF GROUT SEAL (to nearest foot)

from 0 (TOP) ft. to 58 (BOTTOM) ft.

(enter 0 if from surface)

CASING RECORD
casing types insert appropriate code below

(S T) STEEL (C O) CONCRETE (P L) PLASTIC (O T) OTHER

MAIN CASING TYPE	Nominal diameter top (main) casing (nearest inch)!	Total depth of main casing (nearest foot)
ST	06	60

OTHER CASING (if used)

EACH CASING	diameter inch	depth (feet) from	depth (feet) to

SCREEN RECORD
screen type or open hole insert appropriate code below

(S T) STEEL (B R) BRASS BRONZE (H O) OPEN HOLE (P L) PLASTIC (O T) OTHER

C 2

EACH SCREEN	DEPTH (nearest ft.)	
1	HO	60 / 200
2		
3		

SLOT SIZE 1 ____ 2 ____ 3 ____

DIAMETER OF SCREEN ____ (NEAREST INCH)

from ____ to ____

GRAVEL PACK IF WELL DRILLED WAS FLOWING WELL INSERT F IN BOX 68

MDE USE ONLY (NOT TO BE FILLED IN BY DRILLER)

T (E.R.O.S.) W Q

70 ____ 72 ____ 74 75 76 ____

TELESCOPE CASING | LOG INDICATOR | OTHER DATA

C 3

PUMPING TEST
HOURS PUMPED (nearest hour) 3

PUMPING RATE (gal. per min.) 5.4

METHOD USED TO MEASURE PUMPING RATE 1 gal

WATER LEVEL (distance from land surface)

BEFORE PUMPING 28 ft.

WHEN PUMPING 98 ft.

TYPE OF PUMP USED (for test)

(A) air (P) piston (T) turbine

(C) centrifugal (R) rotary (O) other (describe below)

(J) jet (S) submersible

PUMP INSTALLED
DRILLER INSTALLED PUMP (CIRCLE) (YES or NO) YES NO

IF DRILLER INSTALLS PUMP, THIS SECTION MUST BE COMPLETED FOR ALL WELLS.

TYPE OF PUMP INSTALLED PLACE (A,C,J,P,R,S,T,O) IN BOX 29. ____

CAPACITY: GALLONS PER MINUTE (to nearest gallon) ____

PUMP HORSE POWER ____

PUMP COLUMN LENGTH (nearest ft.) ____

CASING HEIGHT (circle appropriate box and enter casing height)

(+) above (−) below LAND SURFACE

02 (nearest foot)

LATITUDE 39.150123

LONGITUDE 76.943790

(DEFAULT COORD. WGS 84)

Pursuant to §10-624 of the State Govt. Article of the Maryand Code personal info. requested on this form is used in processing this form pursuant to COMAR 26.04.04. Failure to provide the info. may result in this form not being processed. You have the right to inspect, amend, or correct this form. The Maryland Department of the Environment is subject to the Maryland Public Information Act. This form may be made available on the Internet via MDE's website and is subject to inspection or copying, in whole or in part, by the pulic and other governmental agencies, if not protected by federal or state law.

COUNTY

EMERGENCY/TEMP NO. IF ANY

B 1 | 38281 | SEQUENCE NO. (MDE USE ONLY)

STATE OF MARYLAND
APPLICATION FOR PERMIT TO DRILL WELL
please type

STATE PERMIT NUMBER: HO - 15 - 0209

fill in this form completely

Date Received (APA): 02/04/16

OWNER INFORMATION

Last Name: Williamsburg Homes | First Name: Owner

Street or RFD: 5485 Harpers Farm

Town: Columbia | State: Md | Zip: 21044

DRILLER INFORMATION

Driller's Name: Allen Compton | License No.: MSD 009

Firm Name: Eagles Well Drilling, LLC

Address: P.O. Box 202 Woodbine MD 21797

Signature | Date

B 2 WELL INFORMATION

APPROX. PUMPING RATE (GAL. PER MIN.): 5

AVERAGE DAILY QUANTITY NEEDED (GAL. PER DAY): 500

USE FOR WATER (CIRCLE APPROPRIATE BOX)

- (D) DOMESTIC POTABLE SUPPLY & RESIDENTIAL IRRIGATION
- [F] FARMING (LIVESTOCK WATERING & AGRICULTURAL IRRIGATION)
- [I] INDUSTRIAL, COMMERCIAL, DEWATERING
- [P] PUBLIC WATER SUPPLY WELL
- [T] TEST, OBSERVATION, MONITORING
- [O] OPEN LOOP GEOTHERMAL
- [C] CLOSED LOOP GEOTHERMAL

APPROXIMATE DEPTH OF WELL: 300 FEET

APPROXIMATE DIAMETER OF WELL: 6 NEAREST INCH

METHOD OF DRILLING (circle one)

BORED (or Augered)	JETTED	Jetted & DRIVEN
(AIR-ROTary)	AIR-PERcussion	ROTARY (Hydraulic Rotary)
CABLE	REVerse-ROTary	DRive-POINT

other

REPLACEMENT OR DEEPENED WELLS (CIRCLE APPROPRIATE BOX)

- (N) THIS WELL WILL NOT REPLACE AN EXISTING WELL
- [Y] THIS WELL WILL REPLACE A WELL THAT WILL BE ABANDONED AND SEALED
- [S] THIS WELL WILL REPLACE A WELL THAT WILL BE USED AS A STANDBY-CONTACT LOCAL APPROVING AUTHORITY FOR POLICY ON STANDBY WELLS
- [D] THIS WELL WILL DEEPEN AN EXISTING WELL

PERMIT NUMBER OF WELL TO BE REPLACED OR DEEPENED (IF AVAILABLE): __ __ - __ __ - __ __ __ __

Not to be filled in by driller (MDE OR COUNTY USE ONLY)

APPROP. PERMIT NUMBER: _ _ _ _ _ G _ _ _

PERMIT No. HO - 15 - 0209

B 3 LOCATION OF WELL

COUNTY: Howard

SUBDIVISION: Westland Farm Estates

SECTION: | LOT: 3

NEAREST TOWN: Fulton

B 4

SOURCES OF DRILLING WATER
1. well water
2.
3.

STREET ADDRESS: Lime Kiln Rd

ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX): NORTH (N) WEST (W) (32) EAST (E) SOUTH (S)

DISTANCE FROM ROAD: 330 FT

ENTER FT OR MI

TAX MAP: 45 BLK: 5 PARCEL: 28

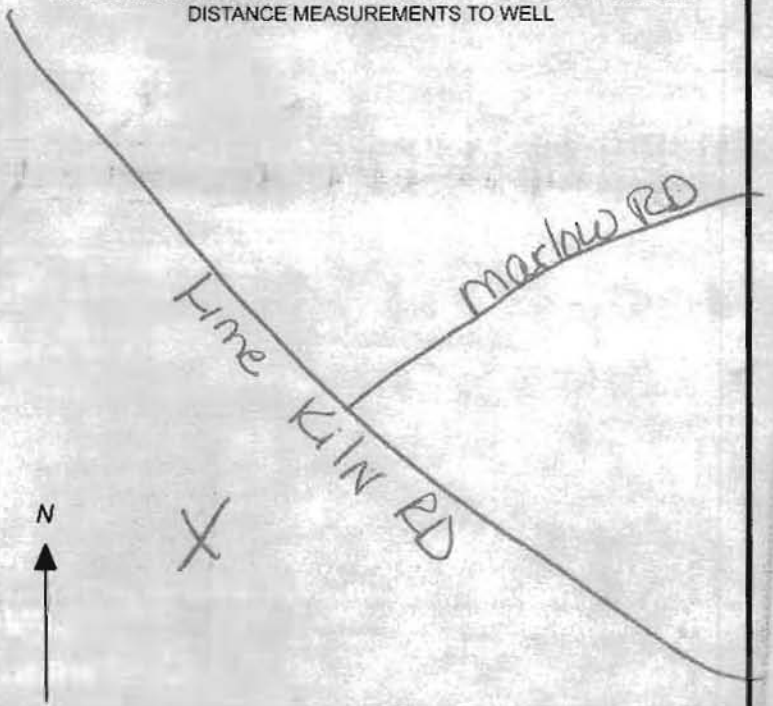
NOT TO BE FILLED IN BY DRILLER
HEALTH DEPARTMENT APPROVAL

COUNTY NAME: Howard (13) COUNTY NO.

STATE SIGNATURE | INSERT S

DATE ISSUED: 2/17/16 | CO SIGNATURE: Sarah Hill | EXP. DATE: 2/17/17

PROPOSED LOCATION OF WELL ON LOT
SHOW PERMANENT STRUCTURES SUCH AS BUILDINGS, SEPTIC SYSTEM, ROADS AND/OR LANDMARKS AND INDICATE NOT LESS THAN TWO DISTANCE MEASUREMENTS TO WELL



SPECIAL CONDITIONS

NOTE APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED=

MDE/WMA/PER.071

② COUNTY

Date: February 23, 2016

FIELD DATE SHEET
HOWARD COUNTY WELL YIELD TEST

Well Permit No. HO-15-0209
Location of Property: Lime Kiln Rd Fulton, Md
Subdivision: Westland Farm Estate Lot: 3
Well Driller: Fogles Allen Compton Owner: Williamsburg Homes

Depth of Well: 200'
Distance of measuring point (M.P.) above ground: 1'
Static water level (S.W.L.) below M.P.: 28'
High rate pumping –reservoir Drawdown
Time pump started: 12:30 Pumping rate: 8.5
Total time 45 Mins to reach pumping water level 98' ft. below M.P.

Recovery pump test data – observations to be recorded every 15 minutes

TIME (in 15 minute intervals)	WATER LEVEL Below M.P.	PUMPING RATE Time to fill 1 gallon bucket	FLOW METER READING (if used)	CALCULATED FLOW (gallons per minute)
12:30	28'	7 Seconds		8.5 gpm
12:45	60'	7		8.5 gpm
1:00	83'	7		8.5 gpm
1:15	98'	11 Seconds		5.4 gpm
1:30	98'	11		5.4 gpm
1:45	98'	11		5.4 gpm
2:00	97'	11		5.4 gpm
2:15	95'	11		5.4 gpm
2:30	94'	11		5.4 gpm
2:45	94'	11		5.4 gpm
3:00	94'	11		5.4 gpm
3:15	94'	11		5.4 gpm
3:30	94'	11		5.4 gpm
3:45	94'	11		5.4 gpm
4:00	94'	11		5.4 gpm
4:15	94'	11		5.4 gpm
4:30	93'	11		5.4 gpm

HOWARD COUNTY HEALTH DEPARTMENT
BUREAU OF ENVIRONMENTAL HEALTH
WELL & SEPTIC PROGRAM
TEL: (410)313-1771 FAX: (410)313-2648

Information Form for the Installation of the Well Pump, Pitless Adapter, and Supply Piping

NOTE: The installer is responsible for requesting an inspection prior to 9 am on the day of the desired inspection. No work is to be covered until approved by the Health Department. All installations must comply with the National Standard Plumbing Code (NSPC, as amended locally) and COMAR 26.04.04 (MD Well Construction Regulations). Submission of a complete form is required prior to Use and Occupancy approval.

Company Name: Fogle's Well Pump & Water Treatment, LLC Telephone #: 410 795 5670
Address: 1530 Obrient Rd
Sykesville, MD 21784

(Must circle one) Licensed Plumber (Licensed Well Driller) Licensed Well Pump Installer
License # and name of individual responsible for the field installation:
Name (Print): David C Fogle License#: MS0222.6
*A licensed individual must perform the actual installation. Apprentices must be under the supervision of a licensed journeyman or master plumber, pump installer or well driller. Licenses may be subjected to field verification. Unlicensed individuals may be reported to the appropriate licensing agency.

Name of Property Owner: Williamsburg Homes Telephone #:
Subdivision: Westland Farms Lot # 3 Well Tag #: HO-15-02209 (P) 08/11/2017
Site Address: 12510 Westland Farms
Fulton, MD

Submersible Pump Data		Pitless Adapter		Well Cap and Electric Conduit	
Make:	Grundfos	Make:	Campbell	Two piece watertight cap:	YES
Model #:	15SQE07-160	Model #:	N/A	Screened, vented well cap:	YES
Pump Capacity	15 GPM	Depth:	36" (36" min)	Cap secured to casing:	YES
Well Yield:	5.4 GPM	NSF/WSC approved:	YES	Conduit min 18" B.G.:	YES
Depth of well encountered at time of pump installation:	200 (feet)			Conduit secured to well cap:	YES

If pump capacity exceeds well yield, a low water cut off switch is required by NSPC 1990 Section 17.8.4
Torque arrestors, Cable guards, or other acceptable method used – Must circle one
Safety rope, if used, attached to brass rope adapter or other acceptable method inside of well casing N/A

Piping to house		House Connection	
Type:	1" poly pipe	PVC sleeve to undisturbed soil at wall penetration:	YES
PSI:	200 (160 psi min)	Length of sleeve (5' minimum from foundation):	6'
Depth of supply line:	5'2 (36" min)	Sleeve sealed properly:	YES

The water supply line is required to be at least ten feet from the septic tank, pump chamber, sewage piping, distribution box, drainfields, and sewage reserve area. If this cannot be accomplished, contact this office for approval prior to installation.

David C Fogle 8/10/17
Signature of company representative responsible for installation date

For Health Department Use Only – Not to be completed by Installer

Date Insp. Requested: 08/11/17 (P) 08/11/2017 Date Insp. Approved: 08/11/2017 Inspector: (P)
Inspection Data: Pitless adapter watertight & water supply line at least 36" below grade ✓
Two piece cap installed and attached to casing securely ✓
Elec. conduit extends at least 18" below grade/attached to cap properly ✓
Safety rope not outside of well cap/casing ✓
Correct well tag attached properly and casing 8" above finished grade ✓
Water supply line sleeved adequately at house connection ✓
Adequate grout observed below pitless adapter ✓

Howard County Health Department

Bureau of Environmental Health
8930 Stanford Boulevard, Columbia, MD 21045
Main: 410-313-2640 | Fax: 410-313-2648
TDD 410-313-2323 | Toll Free 1-866-313-6300
www.hchealth.org
Facebook: www.facebook.com/hocohealth
Twitter: HowardCoHealthDep

Maura J. Rossman, M.D., Health Officer

INTERIM CERTIFICATE OF POTABILITY

Expiration Date – April 18, 2017

October 18, 2017

Homeowner
12510 Westland Court
Fulton, MD 20759

RE: Westland Farms, Lot 3
12510 Westland Court
Building Permit: B17000819
Well Permit: HO-15-0209

Dear Homeowner:

This is to advise you that the septic system installation and water well construction for the above referenced property have been inspected and approved. Final approval of the septic system was granted on **10/16/2017.** Final approval of the well line connection to the dwelling was granted on **08/11/2017.** The well construction was completed on **03/04/2016.** Water samples were collected on **09/27/2017, 10/08/2017.**

The water sample results indicate that the water samples submitted for testing were free of coliform and fecal coliform bacteria at the time of sampling and are bacteriologically safe for drinking. This certifies that the initial sampling requirements of COMAR 26.04.04 "Well Regulations" have been met for the water supply system installed under well permit HO-15-0209. Although the submitted sample results are in compliance with COMAR standards, the Health Department does not guarantee water supplies.

This Interim Certificate of Potability will expire **six months** from the date of issuance. Submission of a second bacteriological test indicating the water is free of coliform and fecal coliform bacteria is required prior to the expiration date, after which time a Final Certificate of Potability will be issued. **Failure to submit an additional sample and obtain a Final Certificate of Potability will result in a Notice of Violation and is punishable as a misdemeanor under the *Annotated Code of Maryland, Environment Article, 9-1311,* subject to a fine of up to $500 or imprisonment not to exceed three months.**

Please contact (410) 313-1773 to schedule a final water sample appointment or contact a Maryland certified water laboratory to schedule a water sample. A list of laboratories certified by the state of Maryland may be found at the following website:
http://www.mde.state.md.us/assets/document/WSP-Labs-2010apr16.pdf

In closing, please refer to our "Homeowner Fact Sheet" which illustrates a better understanding for your onsite sewage disposal system. You will also find a link to Maryland Department of the Environments website which describes in further detail operation and maintenance of your septic system.

Approving Authority,

Kevin M. Wolf, L.E.H.S., R.E.H.S./RS, Supervisor
Groundwater Management Section
Well & Septic Program

cc: Howard County Dept. of Inspections, Licenses, and Permits
Community Hygiene Program
File

Howard County Health Department

Bureau of Environmental Health
8930 Stanford Boulevard, Columbia, MD 21045
Main: 410-313-2640 | Fax: 410-313-2648
TDD 410-313-2323 | Toll Free 1-866-313-6300
www.hchealth.org
Facebook: www.facebook.com/hocohealth
Twitter: HowardCoHealthDep

Dr. Maura J. Rossman, M.D., Health Officer

TO ALL INTERESTED PARTIES

When submitting a well permit application for a proposed well for new construction, please indicate one of the following:

Well Site Location:

Westland Farm Estates	3	Lime Kiln Rd
Subdivision/Property Name	Lot #	Road Name

☒ The well site has been staked by Fisher Collins & Carter
(professional land surveyor or company employing professional land surveyors)
on January 14, 2016 (date) and does not require a site inspection.

☐ The well driller, builder or property owner will call the Health Department to schedule a time to meet in the field to verify the proposed well site location.

This sheet, along with two copies of an acceptable well site plan, must be attached to the green well permit application.

DO NOT REMOVE THIS TAG
DEPARTMENT OF THE ENVIRONMENT
WELL PERMIT NUMBER

H0-15-0209

INFORMATION-GIVE NUMBER AND WRITE
1800 WASHINGTON BLVD
BALTIMORE MARYLAND 21230

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

WELL EXHIBIT
LOT 3
WESTLAND FARM ESTATES
APFO DEVELOPMENT PHASE 2
LOTS 3 THRU 14

TAX MAP #45 ZONED: RR-DEO PARCEL: 28
3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1"= 100' DATE: JANUARY 12, 2016

Well site approved
2/17/16 SC

Well box staked by Fisher,
Collins, + Carter

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554 FAX (410) 848-0298

REPORT OF ANALYSIS

Laboratory ID #:	117375	Account #:	4470
Reference:	Westland Farms Lot 3	Company:	Williamsburg Homes LLC
Location:	12510 Westland Court Fulton, MD 20759	Requested By:	Bob Corbett
		Source:	Well Water
Date/ Time Collected:	9/27/2017 1006	Site:	Pressure Tank
Date/Time Rec'd:	9/27/2017 1120	Treatment:	None
Chlorine ppm:	Free: ND Total: ND	pH:	6.8
Collected By:	J. Yeager 6176JY	Well #:	HO-15-0209

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Bacteria, Coliform, Total, MPN	1.0	MPN/ 100 ml	<1.0	SM20 9223	9/28/2017 / 1000 / LLO
Bacteria, E. coli, MPN	<1.0	MPN/ 100 ml	<1.0	SM20 9223	9/28/2017 / 1000 / LLO
Nitrate	1.33	mg/L	10	601	9/28/2017 / 1015 / CRS
Turbidity	1.44	NTU	<10	SM20 2130B	9/28/2017 / 1045 / CRS
Sand	NS	mg/L	5	Visual/Gravimetric	9/28/2017 / 1015 / CRS

NOTES

1. mg/L = milligrams per liter (also, parts per million)
2. MPN/ 100 ml = Most Probable Number [of viable bacteria] per 100 ml of sample.
3. NS = None Seen (NS indicates less than 5 mg/L)
4. NTU = Nephelometric Turbidity Units
5. Results less than or within the reference range are considered satisfactory and within potable water limits at the time of sampling.
6. ND:None Detected
7. Visual well check: Sealed, vented cap
8. pH & Chlorine level tested on site

Reason for Test : Use & Occupancy
Building Permit # : 17000819

Date Reported: 9/28/2017

MD State Certification # 133

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554 FAX (410) 848-0298

REPORT OF ANALYSIS

Laboratory ID #:	117484	Account #:	4470
Reference:	Westland Farms Lot 3	Company:	Williamsburg Homes LLC
Location:	12510 Westland Court	Requested By:	Bob Corbett
	Fulton, MD 20759	Source:	Well Water
Date/ Time Collected:	10/3/2017 1220	Site:	Pressure Tank
Date/Time Rec'd:	10/3/2017 1445	Treatment:	None
Chlorine ppm:	Free: ND Total: ND	pH:	7.9
Collected By:	J.M. Robbins 5606JR	Well #:	HO-15-0209

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Bacteria, Coliform, Total, MPN	<1.0	MPN/ 100 ml	<1.0	SM20 9223	10/4/2017 / 0945 / CRS
Bacteria, E. coli, MPN	<1.0	MPN/ 100 ml	<1.0	SM20 9223	10/4/2017 / 0945 / CRS

NOTES

1. MPN/ 100 ml = Most Probable Number [of viable bacteria] per 100 ml of sample.
2. Results less than or within the reference range are considered satisfactory and within potable water limits at the time of sampling.
3. ND:None Detected
4. Visual well check: Sealed, vented cap
5. pH & Chlorine level tested on site

Reason for Test : Use & Occupancy
Building Permit # : 17000819

Date Reported: 10/4/2017

MD State Certification # 133

FILE INQUIRY NOTES

DATE	RESULTS OF REVIEW FOR FILE
2/23/16	On site as drilling started ~ 1:30 pm (SC)

PERMIT PLAN
STORMWATER MANAGEMENT
REPORT SUPPLEMENT
WESTLAND FARM ESTATES
LOT 3

Zoned: RR-DEO

Howard County, Maryland
Fifth Election District
Tax Map#45 Grid #5 Parcel #28

3/5/2015 (F-15-125)
2/23/2017 (Lot 3)

Developer:
Lime Kiln, LLC
12549 Lime Kiln Road
Fulton, MD 20759

Prepared By:

Fisher, Collins and Carter, Inc.
Centennial Square Office Park
10272 Baltimore National Pike
Ellicott City, Maryland 21042
410-461-2855
w.o. #05062-3003

Professional Certification: I hereby certify that these documents were prepared by me and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland. License No. 38386, Expiration Date: January 12, 2018.

ESDv Provided - Drywells

ESDv provided Dry Wells on DW1 Lot 3: 87 cu.ft.

There will be approximately three (3) downspouts for a total roof area of 1050 sq.ft. for the proposed house. It is proposed to use one (1) drywells that will meet the following consitions:

Treatment: Drywells shell meet the following conditions:

1. Installing Gutter Drain Filters within the pipe of each downspout will provide pretreatment.
2. Each drywell has been designed to capture and store the ESDv and the Pe value based upon this ESDv has been applied to each contributing drainage area. Also, the storage calculations account for the porosity of the sand and gravel media in the bottem of the facility.
3. The drainage area to each drywell will not exceed 1000 sq.ft.
4. The soils for this project are HSG B and C, so the drywells will not exceed 5' in depth.
5. The length of each drywell will be greater than the width.
6. A one-foot layer of sand will be provided at the bottem of each drywell.

SWM Volume Computations for the Drywells

The ESDv for each of the drywells is:
The ESDv equation is (Pe x Rv x A)/12 where:
Impervious Area = 1050 sq.ft.
Rv = 0.95
Pe = 1.00
ESDv = (1.00 x 0.95 x 1050)/12 = 83.13 cu.ft. say 84

Provided will be one (1) drywells with dimensions of 9 ft. long x 9 ft. wide x 3 ft. deep = 217
217 cu.ft. of storage x 0.40 void ratio for stone = 87 cu.ft > 84 cu.ft.

ESDv Provided - Drywells

ESDv provided Dry Wells on DW2 Lot 3: 77 cu.ft.

There will be approximately two (2) downspouts for a total roof area of 705 sq.ft. for the proposed house. It is proposed to use one (1) drywells that will meet the following consitions:

Treatment: Drywells shell meet the following conditions:

1. Installing Gutter Drain Filters within the pipe of each downspout will provide pretreatment.
2. Each drywell has been designed to capture and store the ESDv and the Pe value based upon this ESDv has been applied to each contributing drainage area. Also, the storage calculations account for the porosity of the sand and gravel media in the bottem of the facility.
3. The drainage area to each drywell will not exceed 1000 sq.ft.
4. The soils for this project are HSG B and C, so the drywells will not exceed 5' in depth.
5. The length of each drywell will be greater than the width.
6. A one-foot layer of sand will be provided at the bottem of each drywell.

SWM Volume Computations for the Drywells

The ESDv for each of the drywells is:
The ESDv equation is (Pe x Rv x A)/12 where:
Impervious Area = 705 sq.ft.
Rv = 0.95
Pe = 1.00
ESDv = (1.00 x 0.95 x 705)/12 = 55.81 cu.ft. say 56

Provided will be one (1) drywells with dimensions of 8 ft. long x 8 ft. wide x 3 ft. deep = 192
192 cu.ft. of storage x 0.40 void ratio for stone = 77 cu.ft > 56 cu.ft.

ESDv Provided - Drywells

ESDv provided Dry Wells on DW3 Lot 3: 77 cu.ft.

There will be approximately two (2) downspouts for a total roof area of 886 sq.ft. for the proposed house. It is proposed to use one (1) drywells that will meet the following consitions:

Treatment: Drywells shell meet the following conditions:

1. Installing Gutter Drain Filters within the pipe of each downspout will provide pretreatment.
2. Each drywell has been designed to capture and store the ESDv and the Pe value based upon this ESDv has been applied to each contributing drainage area. Also, the storage calculations account for the porosity of the sand and gravel media in the bottem of the facility.
3. The drainage area to each drywell will not exceed 1000 sq.ft.
4. The soils for this project are HSG B and C, so the drywells will not exceed 5' in depth.
5. The length of each drywell will be greater than the width.
6. A one-foot layer of sand will be provided at the bottem of each drywell.

SWM Volume Computations for the Drywells

The ESDv for each of the drywells is:
The ESDv equation is (Pe x Rv x A)/12 where:
Impervious Area = 886 sq.ft.
Rv = 0.95
Pe = 1.00
ESDv = (1.00 x 0.95 x 886)/12 = 70.14 cu.ft. say 71

Provided will be one (1) drywells with dimensions of 8 ft. long x 8 ft. wide x 3 ft. deep = 192
192 cu.ft. of storage x 0.40 void ration for stone = 77 cu.ft > 71 cu.ft.

ESDv Provided - Drywells

ESDv provided Dry Wells on DW3A Lot 3: 77 cu.ft.

There will be approximately two (2) downspouts for a total roof area of 782 sq.ft. for the proposed house. It is proposed to use one (1) drywells that will meet the following consitions:

Treatment: Drywells shell meet the following conditions:

1. Installing Gutter Drain Filters within the pipe of each downspout will provide pretreatment.
2. Each drywell has been designed to capture and store the ESDv and the Pe value based upon this ESDv has been applied to each contributing drainage area. Also, the storage calculations account for the porosity of the sand and gravel media in the bottem of the facility.
3. The drainage area to each drywell will not exceed 1000 sq.ft.
4. The soils for this project are HSG B and C, so the drywells will not exceed 5' in depth.
5. The length of each drywell will be greater than the width.
6. A one-foot layer of sand will be provided at the bottem of each drywell.

SWM Volume Computations for the Drywells

The ESDv for each of the drywells is:
The ESDv equation is (Pe x Rv x A)/12 where:
Impervious Area = 782 sq.ft.
Rv = 0.95
Pe = 1.00
ESDv = (1.00 x 0.95 x 782)/12 = 61.91 cu.ft. say 62

Provided will be one (1) drywells with dimensions of 8 ft. long x 8 ft. wide x 3 ft. deep = 192
192 cu.ft. of storage x 0.40 void ration for stone = 77 cu.ft > 62 cu.ft.

ESDv Provided - Drywells

ESDv provided Dry Wells on DW4 Lot 3A: 87 cu.ft.

There will be approximately three (3) downspouts for a total roof area of 1065 sq.ft. for the proposed house. It is proposed to use one (1) drywells that will meet the following consitions:

Treatment: Drywells shell meet the following conditions:

1. Installing Gutter Drain Filters within the pipe of each downspout will provide pretreatment.
2. Each drywell has been designed to capture and store the ESDv and the Pe value based upon this ESDv has been applied to each contributing drainage area. Also, the storage calculations account for the porosity of the sand and gravel media in the bottem of the facility.
3. The drainage area to each drywell will not exceed 1000 sq.ft.
4. The soils for this project are HSG B and C, so the drywells will not exceed 5' in depth.
5. The length of each drywell will be greater than the width.
6. A one-foot layer of sand will be provided at the bottem of each drywell.

SWM Volume Computations for the Drywells
The ESDv for each of the drywells is:
The ESDv equation is (Pe x Rv x A)/12 where:
Impervious Area = 1065 sq.ft.
Rv = 0.95
Pe = 1.00
ESDv = (1.00 x 0.95 x 1065)/12 = 84.31 cu.ft. say 85

Provided will be one (1) drywells with dimensions of 9 ft. long x 9 ft. wide x 3 ft. deep = 217
217 cu.ft. of storage x 0.40 void ration for stone = 87 cu.ft > 85 cu.ft.

ESDv Provided - Disconnection of Non-Rooftop Runoff

ESDv provided by N-2 (Drive) Non-Rooftop Runoff Use-in-Common Drive : 741 cu.ft.

Determine Treatment for part of the common & individual driveway: Lot Drive: 9,354 SqFt.
A non-rooftop disconnect area has been proposed along the driveway, The following calculations reflect the most extream of the the disconnectuin area.
Impervious Ratio = 100.0%
Disconnection Length / Impervious Length = 16./16.
Using Table 5.7(page 5.62) the PE treatment provided based on a 1:1 ratio is 1.0"
Pervious ratio = Disconnection Length / Contribution Length = N/A
Using Table 5.7 (page 5.62) the PE treatment provided based one a 1:1 ratio is 1.0" Using a treated Pe of 1.0" Environmental Site Design has been provided.

$$ESDv = \frac{(Pe)(Rv)(A)}{12}$$

ESDv Required: (1.0)(0.95)(9354)/12 = 740.53 cu.ft.

ESDv Provided - Disconnection of Non-Rooftop Runoff

ESDv provided by N-2 (3) Non-Rooftop Runoff Lot 3: 201 cu.ft.

Determine Treatment for the proposed driveway: Lot 3: 2,549 SqFt. of Driveway
A non-rooftop disconnect area has been proposed along the driveway, The following calculations reflect the most extream of the the disconnectuin area.
Impervious Ratio = 100.0%
Disconnection Length / Impervious Length = 12/12
Using Table 5.7(page 5.62) the PE treatment provided based on a 1:1 ratio is 1.0"
Pervious ratio = Disconnection Length / Contribution Length = N/A
Using Table 5.7 (page 5.62) the PE treatment provided based one a 1:1 ratio is 1.0" Using a treated Pe of 1.0" Environmental Site Design has been provided.

$$ESDv = \frac{(Pe)(Rv)(A)}{12}$$

ESDv Required: (1.0)(0.95)(2549)/12 = 201.80 cu.ft.

V.
CONCLUSION

V. Conclusion:

This SWM report supplement is to modify the SWM Report design for Lot 3. Non-rooftop disconnection is being utilized for the driveway and five (5) drywells are now proposed for the proposed house. ESD requiements were based on the site area with the Final Plans. No additional ESD requirement was required beyond that initially proposed, but an additional drywell has been added to treat rooftop runoff which exceeds the volume required for the site. It is this firms opinion that Environmental Site Design (ESD) to the Maximum Extent Practicable (MEP) has been still been achieved since additional drywell exceeds that which is required.