

**C 1** 29933 SEQUENCE NO. (MDE USE ONLY)  
 1 2 3 6  
 (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 10 DD 29 YY 15 DATE WELL COMPLETED MM 10 DD 23 YY 15 Depth of Well 22 240 26 PERMIT NO. FROM "PERMIT TO DRILL WELL" 11/3/15 SC 140-15-0162  
 8 13 15 20 (TO NEAREST FOOT) 28 29 30 31 32 33 34 35 36 37  
 OWNER Durant David  
 WELL SITE ADDRESS 2410 Durvall Rd TOWN Woodbine  
 SUBDIVISION \_\_\_\_\_ SECTION \_\_\_\_\_ LOT 15

**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		check if water bearing
	FROM	TO	
moist shuff Reddish Brown Fine Sandy micaceous silt	0	22'	
Weathered Rock	22'	80'	
Rock	80'	240'	

2x Geohemul

**GROUTING RECORD** YES NO  
 Y  N  
 44 44  
 WELL HAS BEEN GROUTED (Circle Appropriate Box)  
 TYPE OF GROUTING MATERIAL (Circle one)  
 CEMENT  **CM** BENTONITE CLAY  **BC**  
 NO. OF BAGS 10 NO. OF POUNDS 500  
 GALLONS OF WATER 240  
 DEPTH OF GROUT SEAL (to nearest foot)  
 from 0' TOP 52 ft. to 240' BOTTOM 58 ft.  
 (enter 0 if from surface)

**CASING RECORD**  
 casing types insert appropriate code below  
 **ST** STEEL  **CO** CONCRETE  
 **PL** PLASTIC  **OT** OTHER  
 MAIN CASING TYPE Nominal diameter top (main) casing (nearest inch)! Total depth of main casing (nearest foot)  
 60 61 63 64 66 70

**OTHER CASING (if used)**  
 diameter inch depth (feet) from to  
 E A C H C A S I N G

**SCREEN RECORD**  
 screen type or open hole insert appropriate code below  
 **ST** STEEL  **BR** BRASS  **HO** OPEN HOLE  
 **PL** PLASTIC  **OT** OTHER

NUMBER OF UNSUCCESSFUL WELLS: \_\_\_\_\_  
 WELL HYDROFRACTURED YES NO  
 Y  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. 1 MWD 560  
 DRILLERS SIGNATURE \_\_\_\_\_  
 (MUST MATCH SIGNATURE ON APPLICATION)  
 LIC. NO. 1 D

**C 2** DEPTH (nearest ft.)  
 T 1 2  
 E 1 8 9 11 15 17 21  
 A C 2 23 24 26 30 32 36  
 H S 3 38 39 41 45 47 51  
 R E E N  
 SLOT SIZE 1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_  
 DIAMETER OF SCREEN (NEAREST INCH)  
 56 60  
 from \_\_\_\_\_ to \_\_\_\_\_

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

MDE USE ONLY (NOT TO BE FILLED IN BY DRILLER)  
 T (E.R.O.S.) W Q  
 70 72 74 75 76

**C 3** **PUMPING TEST**  
 1 2  
 HOURS PUMPED (nearest hour) 8 9  
 PUMPING RATE (gal. per min.) 11 15  
 METHOD USED TO MEASURE PUMPING RATE \_\_\_\_\_  
 WATER LEVEL (distance from land surface)  
 BEFORE PUMPING 17 20 ft.  
 WHEN PUMPING 22 25 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 YES NO  
 (CIRCLE) (YES or 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 \_\_\_\_\_ 29  
 CAPACITY: GALLONS PER MINUTE (to nearest gallon) 31 35  
 PUMP HORSE POWER 37 41  
 PUMP COLUMN LENGTH (nearest ft.) 43 47  
 CASING HEIGHT (circle appropriate box and enter casing height)  
 + above } LAND SURFACE  
 - below } (nearest foot)  
49 50 51

LATITUDE 39.306533  
 LONGITUDE 77.023623  
 (DEFAULT COORD. WGS 84)  
 NOTES:

10 bags x  $\frac{20 \text{ gal}}{\text{bag}} = 200 \text{ gal} / 240'$   
 $= 1.00 \text{ gal/ft.}$

B 1	35142	SEQUENCE NO. (MDE USE ONLY)	STATE OF MARYLAND <b>APPLICATION FOR PERMIT TO DRILL WELL</b> 557389 please type	STATE PERMIT NUMBER H0 - 15 - 0160 <small>70 fill in this form completely 79</small>
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**OWNER INFORMATION**

Date Received (APA) 09/28/15

8 MM DD YY 13

15 Last Name Durant Owner David First Name David 34

36 2410 Duvall Rd. Street or RFD 55

57 Woodbine Town 70. MD State 72 21797 Zip 76

**LOCATION OF WELL**

B 3

8 COUNTY Howard 21

23 SUBDIVISION \_\_\_\_\_ 42

SECTION 44 46 LOT 15 48 50

52 NEAREST TOWN Woodbine 71

**DRILLER INFORMATION**

Driller's Name Edward Gross 76 License No. MW D580 81

Firm Name Long Green Drilling 410-409-2260

Address 12238 Long Green Pike S.E. Glen Burnie 21057

Signature [Signature] Date 9/27/15

**SOURCES OF DRILLING WATER**

B 4

1. Public 11 STREET ADDRESS 2410 Duvall Rd 30

2. more to go on 2410 Duvall Rd

3. \_\_\_\_\_

ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX)

NORTH  WEST  EAST  SOUTH

34 206 37 DISTANCE FROM ROAD FT

ENTER FT OR MI 38 39

TAX MAP: 13 BLK: 4 PARCEL 302

**WELL INFORMATION**

B 2

APPROX. PUMPING RATE (GAL. PER MIN.) 8 12

AVERAGE DAILY QUANTITY NEEDED (GAL. PER DAY) 14 20

**NOT TO BE FILLED IN BY DRILLER HEALTH DEPARTMENT APPROVAL**

COUNTY NAME Howard COUNTY NO. 13

STATE SIGNATURE \_\_\_\_\_ INSERT S → 41

DATE ISSUED 10/06/15 K-Rt 10/06/16

43 MM DD YY 48 CO SIGNATURE EXP. DATE

**USE FOR WATER (CIRCLE APPROPRIATE BOX)**

DOMESTIC POTABLE SUPPLY & RESIDENTIAL IRRIGATION

FARMING (LIVESTOCK WATERING & AGRICULTURAL IRRIGATION)

22  INDUSTRIAL, COMMERCIAL, DEWATERING

PUBLIC WATER SUPPLY WELL

TEST, OBSERVATION, MONITORING

OPEN LOOP GEOTHERMAL

CLOSED LOOP GEOTHERMAL 2x Geothermal

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

APPROXIMATE DEPTH OF WELL 240' FEET

24 28

APPROXIMATE DIAMETER OF WELL 6" NEAREST INCH

**METHOD OF DRILLING (circle one)**

BORED (or Augered) JETTED Jetted & DRIVEN

30 AIR-ROTary AIR-PERCussion ROTARY (Hydraulic Rotary)

37 CABLE REVerse-ROTary DRive-POINT

other \_\_\_\_\_

**REPLACEMENT OR DEEPEINED WELLS (CIRCLE APPROPRIATE BOX)**

THIS WELL WILL NOT REPLACE AN EXISTING WELL

THIS WELL WILL REPLACE A WELL THAT WILL BE ABANDONED AND SEALED

39  THIS WELL WILL REPLACE A WELL THAT WILL BE USED AS A STANDBY-CONTACT LOCAL APPROVING AUTHORITY FOR POLICY ON STANDBY WELLS

THIS WELL WILL DEEPEIN AN EXISTING WELL

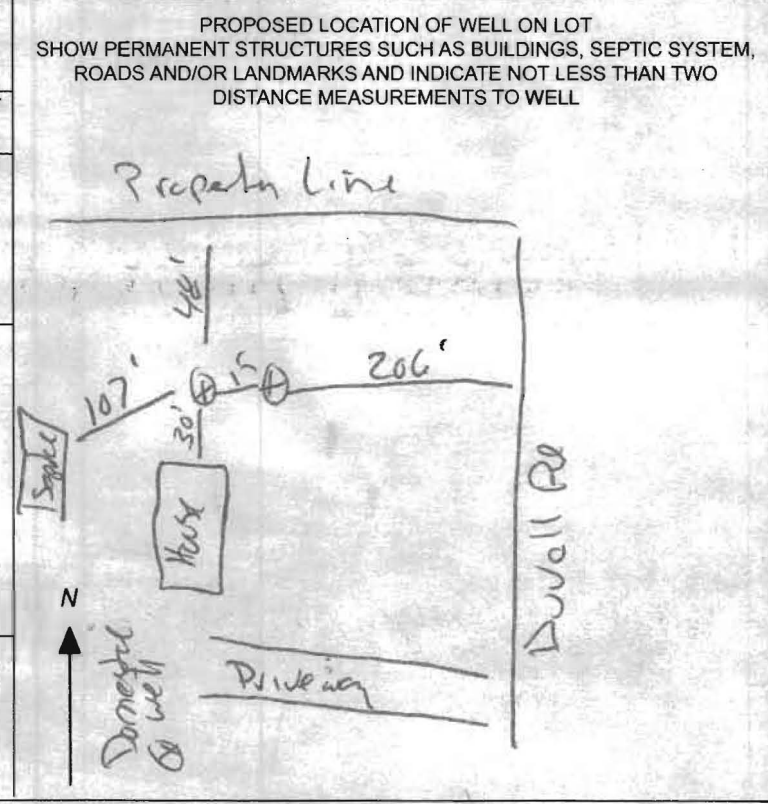
PERMIT NUMBER OF WELL TO BE REPLACED OR DEEPEINED (IF AVAILABLE) 41 \_\_\_\_\_ 52

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

APPROP. PERMIT NUMBER \_\_\_\_\_ G \_\_\_\_\_

PERMIT No. H0 - 15 - 0160

70 71 72 73 74 75 76 77 78 79



SPECIAL CONDITIONS

NOTE APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED. Wells must be grouted from bottom to top.



## Bureau of Environmental Health

7178 Columbia Gateway Drive, Columbia, MD 21046-2147

Main: 410-313-2640 | Fax: 410-313-2648

TDD 410-313-2323 | Toll Free 1-866-313-6300

[www.hchealth.org](http://www.hchealth.org)

Facebook: [www.facebook.com/hocohealth](https://www.facebook.com/hocohealth)


Twitter: [HowardCoHealthDep](https://twitter.com/HowardCoHealthDep)

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

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### MEMORANDUM

TO: Edward Gross, Long Green Drilling: MWD580

FROM: Ryan Rappaport, LEHS Well & Septic Program 

RE: Geothermal Well Permit: 2410 Duvall Road

DATE: October 6, 2015

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The geothermal well permit application submitted to this office has been approved. A site visit was completed on October 5, 2015 and it was found that the well casing for the potable well, permit # HO-81-1013, currently has a one piece cap. Please provide the homeowner with a proper two piece well cap to ensure the long term safety of their potable water supply.

Cc: File

2410 Duvall Rd  
 Woodbine, MD. 21797

S 18° 50' 44" W

400.00'

30' B.V.L.

60' D. R.

LOT 15  
 3.052 ACRES

*elevations adjusted*

- House out 492.4
- Tank in 491.7
- Tank out 491.4
- Box in 491.2
- Box out 491.1
- Trench in 491.0
- Grade 494.0

Same  
 Same

1" = 41'

WELL  
 496.5

EL.  
 496.0  
 FUTURE  
 GARAGE

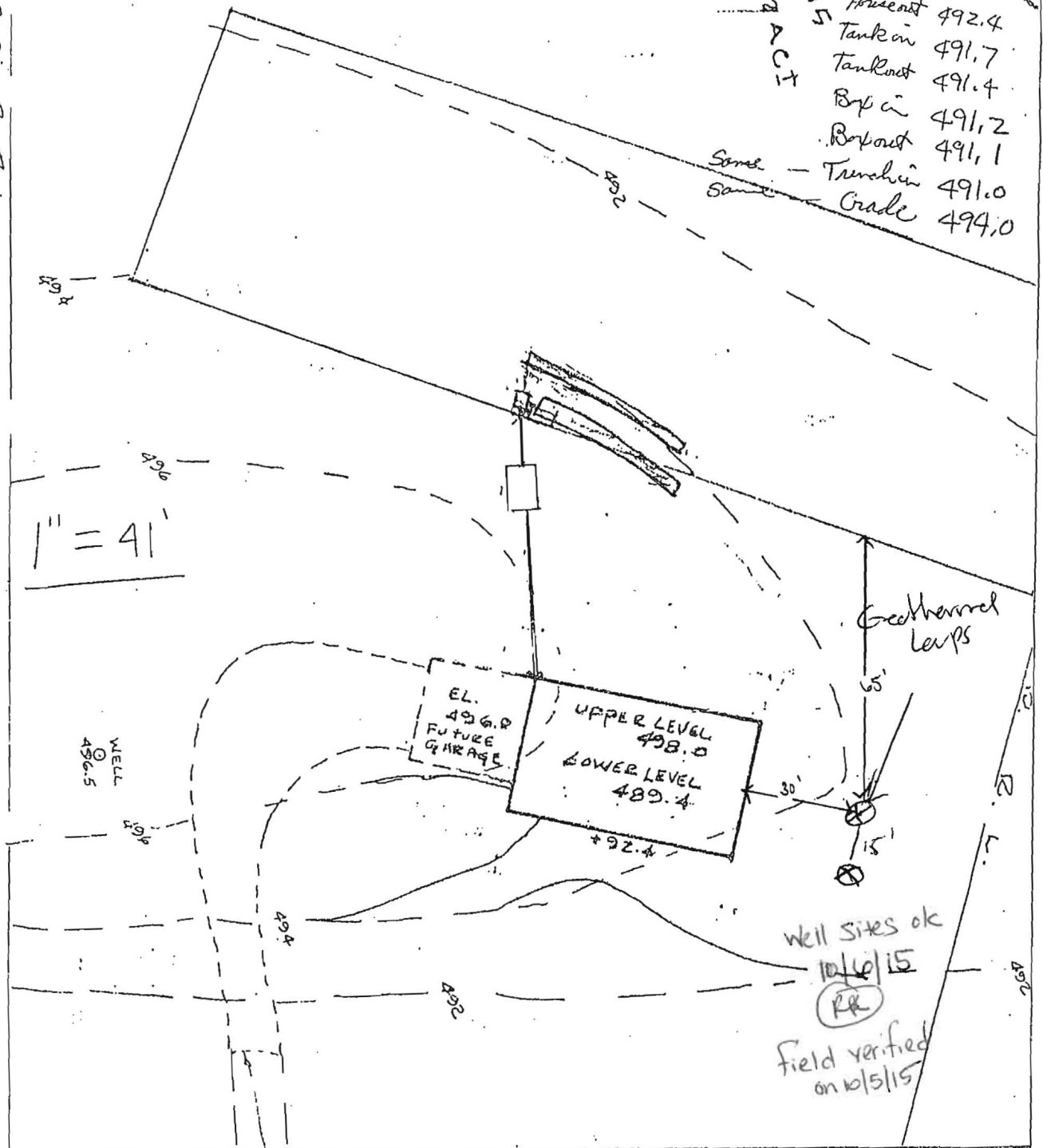
UPPER LEVEL  
 498.0  
 LOWER LEVEL  
 489.4

Geothermal  
 loops

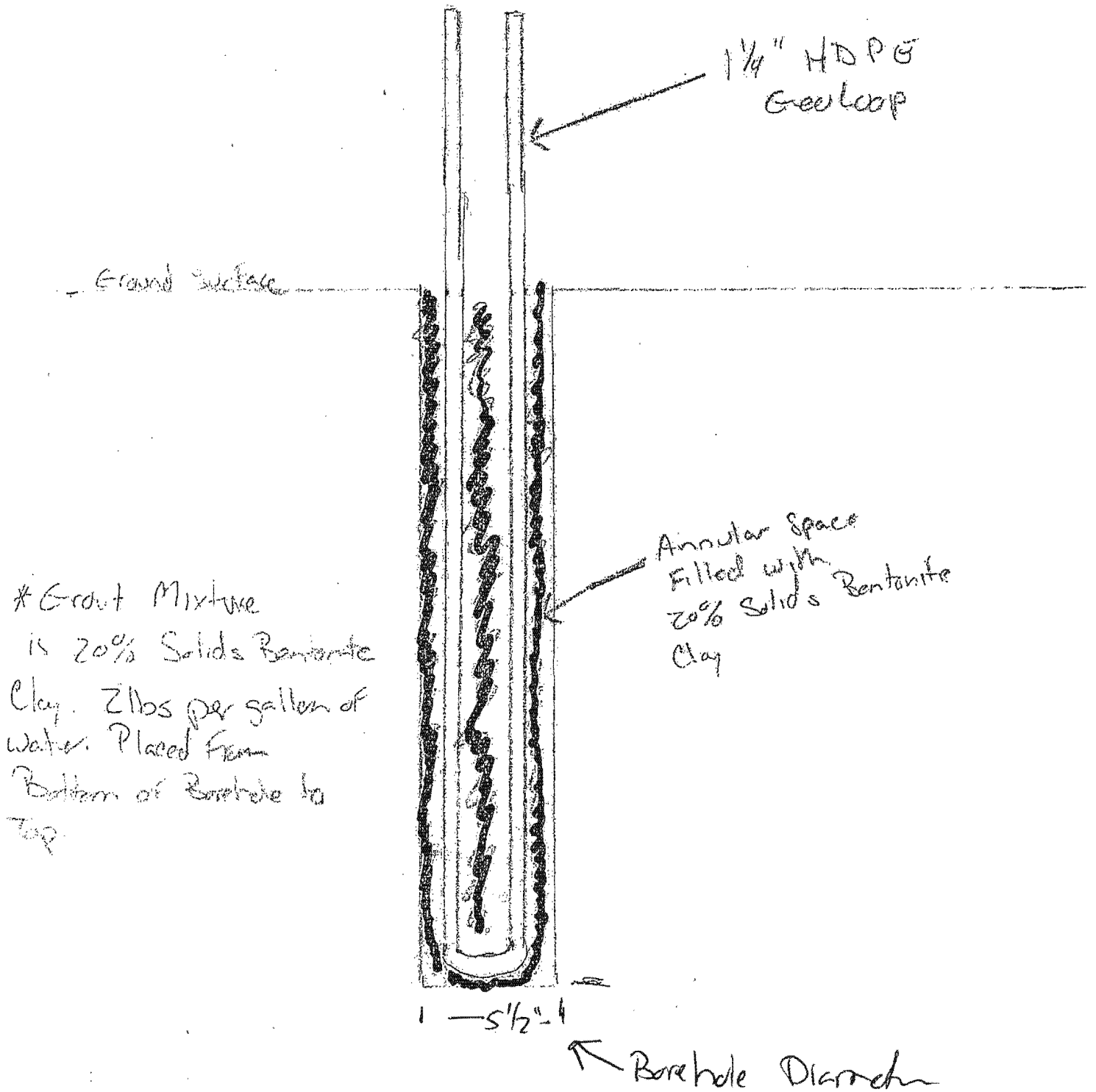
Well sites ok  
 10/6/15

RR

Field verified  
 on 10/5/15



# Borehole Cross Section



\* Grout Mixture is 20% Solids Bentonite Clay. 2 lbs per gallon of water. Placed from Bottom of Borehole to Top.