

C 1 28069

SEQUENCE NO. (MDE USE ONLY)

STATE OF MARYLAND WELL COMPLETION REPORT

FILL IN THIS FORM COMPLETELY PLEASE TYPE

THIS REPORT MUST BE FILED 45 DAYS AFTER WELL IS COMPLETED

COUNTY NUMBER

1 2 3 6
(THIS NUMBER IS TO BE PUNCHED IN COLS. 3-6 ON ALL CARDS)

ST/CO USE ONLY
DATE Received
MM DD YY
8 13

DATE WELL COMPLETED
MM DD YY
7-31-14
15 20

Depth of Well
22 320 26
(TO NEAREST FOOT)

PERMIT NO. FROM "PERMIT TO DRILL WELL"
2/27/14 AD-14-0062
28 29 30 31 32 33 34 35 36 37

OWNER Browder Christopher
WELL SITE ADDRESS 12351 Proakness Cir Ln TOWN Charlottesville MD
SUBDIVISION Wetland Grove SECTION _____ LOT 6

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	
Top soil	0	1	
Brn Clay	1	20	
Broken limestone	20	60	
Grn limestone	60	320	

NUMBER OF UNSUCCESSFUL WELLS: _____

WELL HYDROFRACTURED YES NO

- 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 D 553

DRILLERS SIGNATURE (MUST MATCH SIGNATURE ON APPLICATION)
Pats Cohen

LIC. NO. D 948

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

GROUTING RECORD

WELL HAS BEEN GROUTED (Circle Appropriate Box) Y N

TYPE OF GROUTING MATERIAL (Circle one)
CEMENT CM BENTONITE CLAY BC

NO. OF BAGS 24 NO. OF POUNDS 1200

GALLONS OF WATER 600

DEPTH OF GROUT SEAL (to nearest foot)
from 0 ft. to 320 ft.
(enter 0 if from surface)

CASING RECORD

caseing types insert appropriate code below

ST STEEL CO CONCRETE
 PL PLASTIC OT OTHER

MAIN CASING TYPE

Nominal diameter top (main) casing (nearest inch): 60 61 63 64 66 70

Total depth of main casing (nearest foot): _____

OTHER CASING (if used)

diameter inch _____ depth (feet) from _____ to _____

SCREEN RECORD

screen type or open hole

insert appropriate code below

ST STEEL BR BRASS HO OPEN HOLE
 PL PLASTIC OT OTHER

DEPTH (nearest ft.)

1	8	9	11	15	17	21
2	23	24	26	30	32	36
3	38	39	41	45	47	51

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

TELESCOPE CASING LOG INDICATOR OTHER DATA

PUMPING TEST

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 _____ ft. 17 20

WHEN PUMPING _____ ft. 22 25

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 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)

LATITUDE 39.22764
LONGITUDE 76.94240
(DEFAULT COORD. WGS 84)

NOTES: x x x x
1) 39.22763 / 76.94235
2) 39.22777 / 76.94237
3) 39.22770 / 76.94238

front

B 1 29189

SEQUENCE NO. (MDE USE ONLY)

STATE OF MARYLAND APPLICATION FOR PERMIT TO DRILL WELL please type

STATE PERMIT NUMBER

HO - 14 - 0062 fill in this form completely

Date Received (APA)

062514

OWNER INFORMATION

Brewster Christopher + Amy 12351 Preakness Circle Lane Clarksville MD 21029

LOCATION OF WELL

Howard County Walnut Grove Clarksville

DRILLER INFORMATION

C John Hess MW D 553 Allied Environmental Services 20 Boy Dr Annapolis Junction MD 20701

SOURCES OF DRILLING WATER

Public

12351 Preakness Circle Ln ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX) DISTANCE FROM ROAD TAX MAP: 00258 BLK: 0018 PARCEL: 0074

WELL INFORMATION

APPROX. PUMPING RATE (GAL. PER MIN.) AVERAGE DAILY QUANTITY NEEDED (GAL. PER DAY)

USE FOR WATER (CIRCLE APPROPRIATE BOX)

- DOMESTIC POTABLE SUPPLY & RESIDENTIAL IRRIGATION FARMING (LIVESTOCK WATERING & AGRICULTURAL IRRIGATION) INDUSTRIAL, COMMERCIAL, DEWATERING PUBLIC WATER SUPPLY WELL TEST, OBSERVATION, MONITORING OPEN LOOP GEOTHERMAL CLOSED LOOP GEOTHERMAL 4 loops

NOT TO BE FILLED IN BY DRILLER HEALTH DEPARTMENT APPROVAL

Howard County 13 STATE SIGNATURE DATE ISSUED 07/22/2014 CO SIGNATURE EXP. DATE 7/22/14

APPROXIMATE DEPTH OF WELL 320 FEET

APPROXIMATE DIAMETER OF WELL NEAREST INCH

METHOD OF DRILLING (circle one)

- BORED (or Augered) AIR-ROTary JETTED AIR-PERCussion ROTARY (Hydraulic Rotary) CABLE REVERSE-ROTary DRIVE-POINT

REPLACEMENT OR DEEPEMED WELLS (CIRCLE APPROPRIATE BOX)

- THIS WELL WILL NOT REPLACE AN EXISTING WELL THIS WELL WILL REPLACE A WELL THAT WILL BE ABANDONED AND SEALED 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 DEEPEM AN EXISTING WELL PERMIT NUMBER OF WELL TO BE REPLACED OR DEEPEMED (IF AVAILABLE)

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

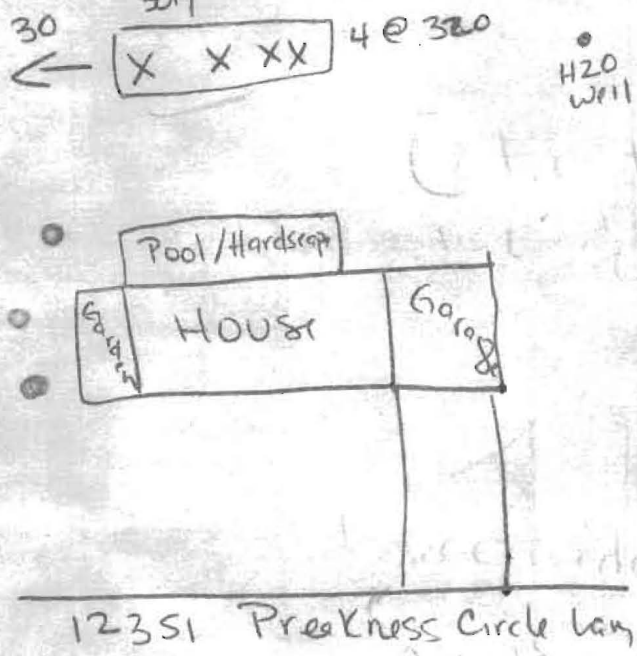
APPROP. PERMIT NUMBER PERMIT No. HO - 14 - 0062

SPECIAL CONDITIONS

NOTE: APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED

Wells must be grouted from bottom to top.

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



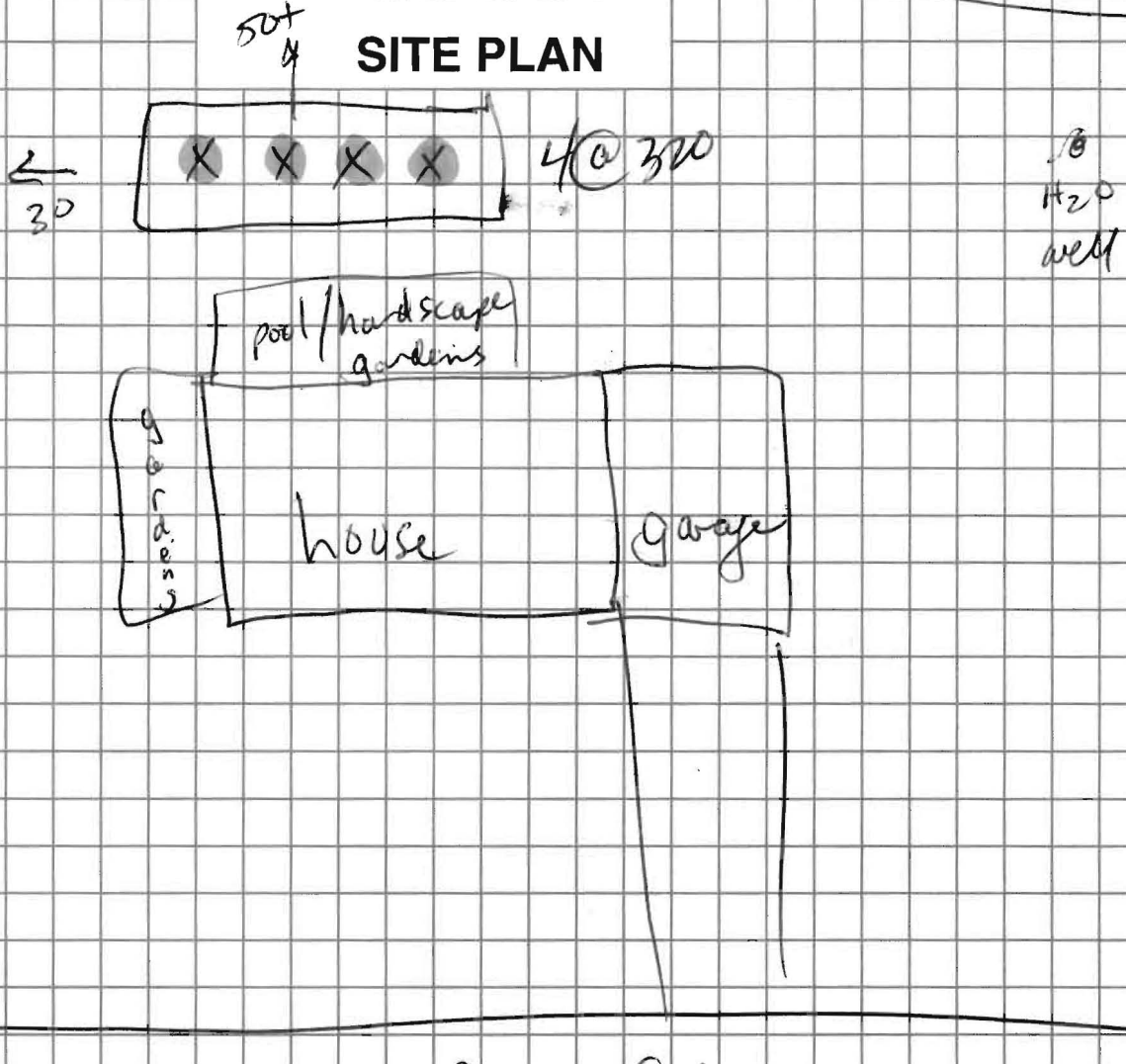
Energy Architects

Service road



WELL DRILLING

SITE PLAN



12351 Preakness Circle

Sediment Control Protocol: silt fence - large lot - room for water/spoils

Distance From House: 200'± Trees Nearby: none

From Septic: 200' - out front - drawing to follow Utility Issues: none

From Sewer: n/a Mats Needed: across neighbor/lawn

From Property Line: 30 Access For H/U: tight on side between pool/fence

From Street: 200' Neighboring Tags: _____

Comments: fence/gate to be removed by others
Enter on service road 2-3 doors down, neighbor access letter to cross last 30 yds.

"Access to 12347" stub in only 2", leave pressure test on, (2) 4 ton units

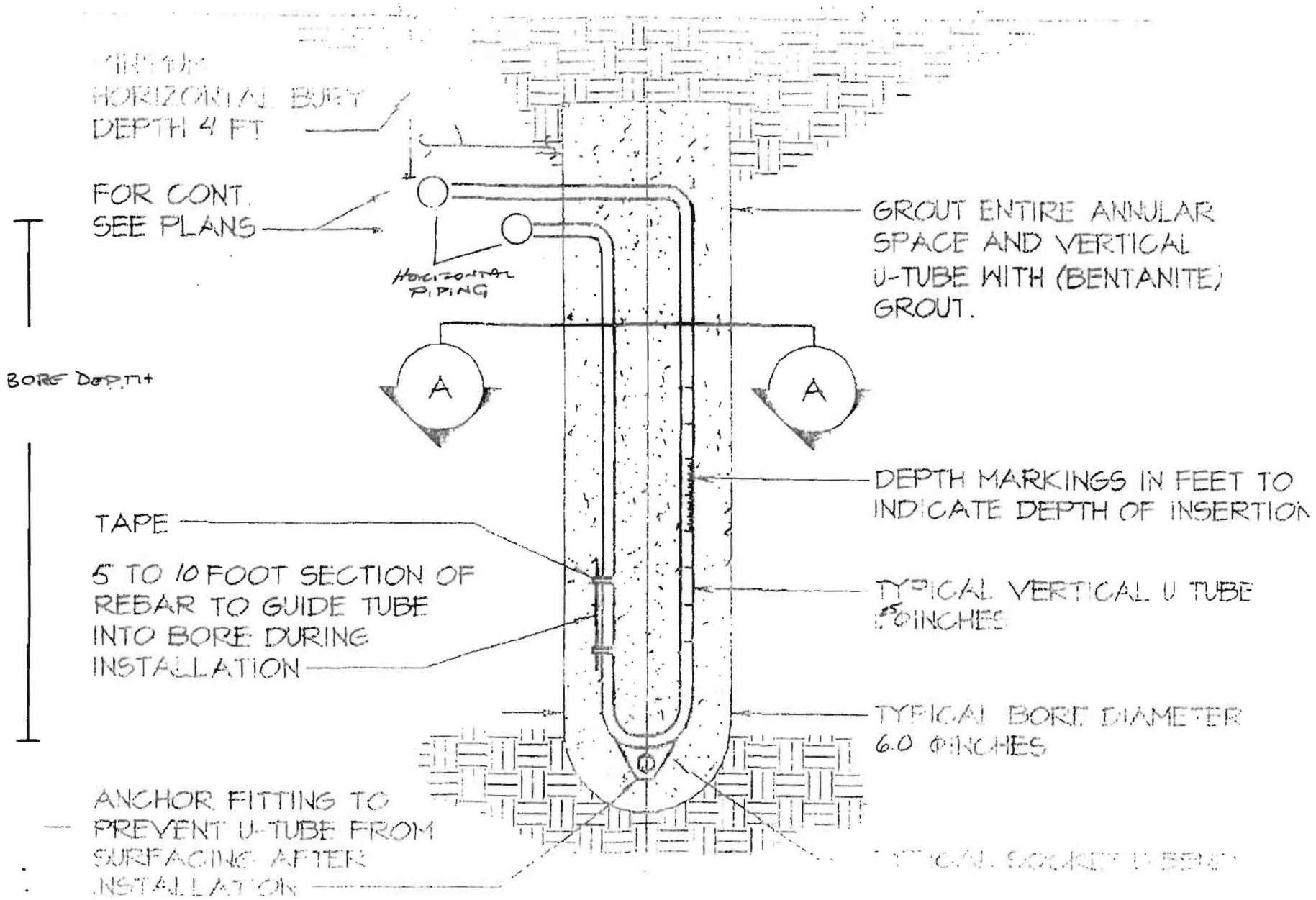
Person Completing Form: Guizzardi

HOWARD COUNTY GROUTING PROCEDURE

Boreholes will be grouted from the bottom to the top via a tremie pipe and positive displacement pump. Bentonite grout, known as Quik-Grout will be used according to the manufacturer's specifications to achieve a consistency of at least 20% solids (24 gallons potable water/50 lb. sack of grout) and a permeability no more than $2.5 \text{ E}(-08) \text{ cm/sec}$. Grouting will be completed immediately after installing the geothermal loop and no later than twenty-four (24) hours after installing the geothermal loop. Open boreholes/annular space will be protected as necessary to prevent the entry of surface water or pollutants.

GRADE

EACH BORE HOLE (TYP.)



HORIZONTAL BURY DEPTH 4 FT

FOR CONT. SEE PLANS

HORIZONTAL PIPING

GROUT ENTIRE ANNULAR SPACE AND VERTICAL U-TUBE WITH (BENTANITE) GROUT.

BORE DEPTH

TAPE

5 TO 10 FOOT SECTION OF REBAR TO GUIDE TUBE INTO BORE DURING INSTALLATION

DEPTH MARKINGS IN FEET TO INDICATE DEPTH OF INSERTION

TYPICAL VERTICAL U TUBE 6.0 INCHES

TYPICAL BORE DIAMETER 6.0 INCHES

ANCHOR FITTING TO PREVENT U-TUBE FROM SURFACING AFTER INSTALLATION

TYPICAL SCHEDULE 40 REBAR