

C1 1735

SEQUENCE NO. (MDE USE ONLY)

STATE OF MARYLAND WELL COMPLETION REPORT

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

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

COUNTY NUMBER

ST/CO USE ONLY DATE RECEIVED

DATE WELL COMPLETED

Depth of Well

PERMIT NO. FROM "PERMIT TO DRILL WELL"

OWNER, STREET OR RFD, SUBDIVISION, SECTION, TOWN, LOT

WELL LOG

Not required for driven wells

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

Table with columns: DESCRIPTION, FEET (FROM, TO), check if water bearing. Includes handwritten entries: Top soil, Brn Clay + Gravel, Grey Rock.

NUMBER OF UNSUCCESSFUL WELLS:

WELL HYDROFRACTURED

CIRCLE APPROPRIATE LETTER A, E, P

I HEREBY CERTIFY THAT THIS WELL HAS BEEN CONSTRUCTED IN ACCORDANCE WITH COMAR 28.04.04

DRILLER'S LIC. NO. MWD 553

DRILLER'S SIGNATURE, LIC. NO. DWD 949

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

GROUTING RECORD

WELL HAS BEEN GROUTED (Circle Appropriate Box)

TYPE OF GROUTING MATERIAL (Circle one) CEMENT, BENTONITE CLAY

NO. OF BAGS, NO. OF POUNDS, GALLONS OF WATER, DEPTH OF GROUT SEAL

MAIN CASING TYPE, Nominal diameter, Total depth

OTHER CASING (if used) diameter, depth

SCREEN RECORD, screen type or open hole, insert appropriate code below

DEPTH (nearest ft.)

SLOT SIZE 1, 2, 3

DIAMETER OF SCREEN (NEAREST INCH)

GRAVEL PACK IF WELL DRILLED WAS FLOWING WELL

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

PUMPING TEST

HOURS PUMPED (nearest hour)

PUMPING RATE (gal. per min.)

METHOD USED TO MEASURE PUMPING RATE

WATER LEVEL (distance from land surface)

BEFORE PUMPING

WHEN PUMPING

TYPE OF PUMP USED (for test) A, C, J, P, R, S, T

PUMP INSTALLED

DRILLER INSTALLED PUMP (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.

CAPACITY: GALLONS PER MINUTE (to nearest gallon)

PUMP HORSE POWER

PUMP COLUMN LENGTH (nearest ft.)

CASING HEIGHT (circle appropriate box and enter casing height)

LOCATION OF WELL ON LOT SHOW PERMANENT STRUCTURE SUCH AS BUILDING, SEPTIC TANKS, AND /OR LANDMARKS

Handwritten notes and signatures at bottom right.

Ground logs

B 1 11288 1 2 3 6	SEQUENCE NO. (MDE USE ONLY)	STATE OF MARYLAND APPLICATION FOR PERMIT TO DRILL WELL 5/16/2013 please type	STATE PERMIT NUMBER HO -95 -2613 70 fill in this form completely 79
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OWNER INFORMATION

Date Received (APA) 11 22 13
 8 MM DD YY 13

Dockstader Owner Christine First Name 34
 15 Last Name

13521 Paternal Gift Rd Street or RFD 55
 36

Highland MD Town 70 State 72 Zip 20777 76

LOCATION OF WELL

Howard COUNTY 21
 8

Paternal Gift Farm SUBDIVISION 42
 23

SECTION 44 46 LOT 10 48 50

Highland NEAREST TOWN 71
 52

DRILLER INFORMATION

C. John Hess MW D553 License No. 81
 76

Allied Environmental Services Firm Name

P.O. Box 129 Annapolis Junction MD 20701 Address

C. John Hess Signature 11-18-13 Date

SOURCES OF DRILLING WATER

1. Public 11 STREET ADDRESS 30
 2. 13521 Paternal Gift Rd
 3. ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX)

NORTH
 WEST
 EAST
 SOUTH

34 15 37 DISTANCE FROM ROAD ENTER FT OR MI 38 39

TAX MAP: 0040 BLK: 0011 PARCEL 0090

WELL INFORMATION

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

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

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 NAME A 537385 COUNTY NO. 13

STATE SIGNATURE _____ INSERT S →

DATE ISSUED 12/10/2013 43 MM DD YY 48

[Signature] CO SIGNATURE 12/10/14 EXP. DATE

APPROXIMATE DEPTH OF WELL 400 FEET
 24 28

APPROXIMATE DIAMETER OF WELL 6 INCH
 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 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

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

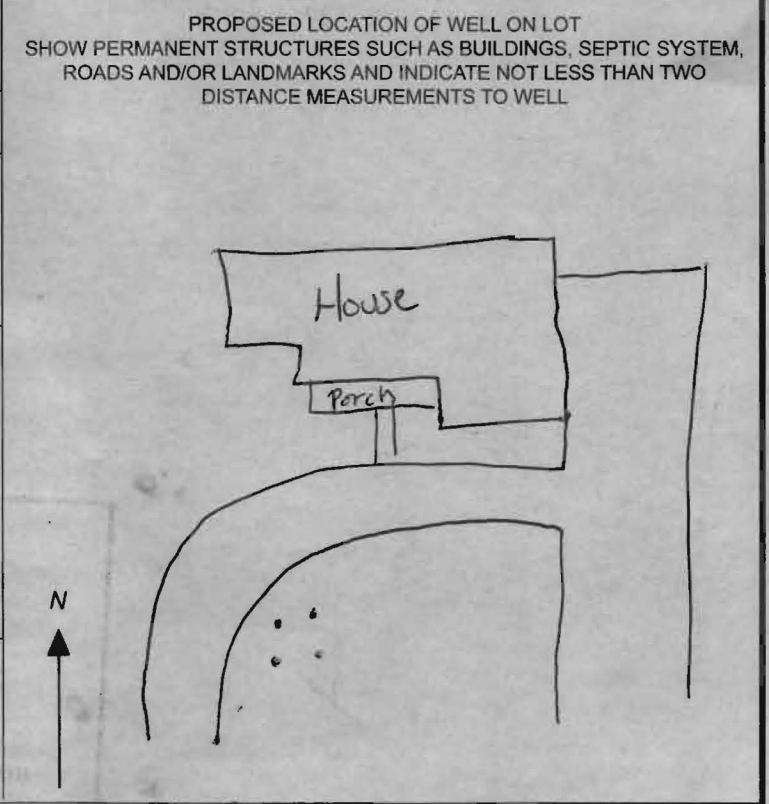
THIS WELL WILL DEEPEIN AN EXISTING WELL

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. HO -95 -2613
 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.

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



DEPTH MARKINGS IN FEET TO
INDICATE DEPTH OF INSERTION

TAPE

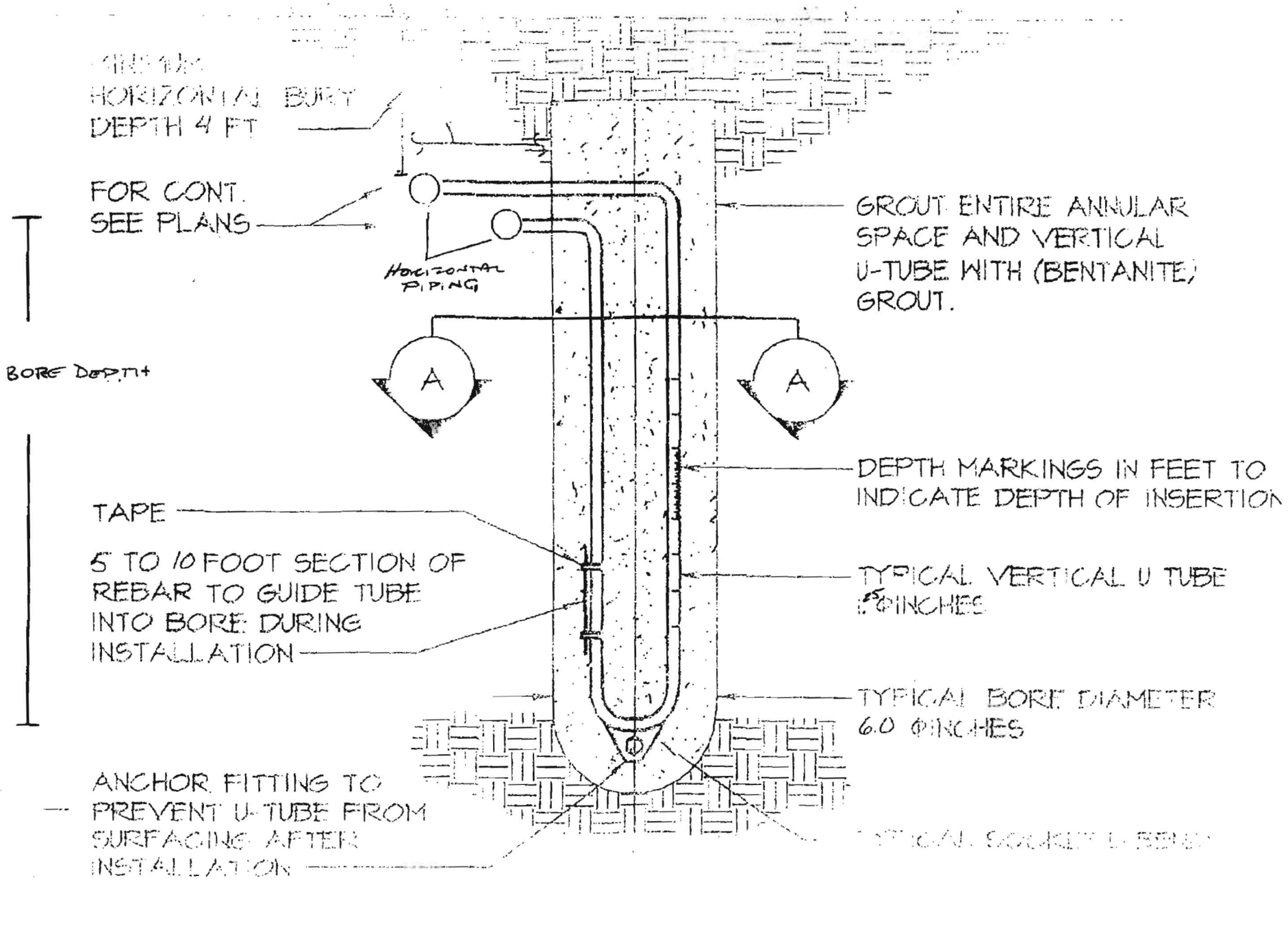
5 TO 10 FOOT SECTION OF
REBAR TO GUIDE TUBE
INTO BORE DURING
INSTALLATION

TYPICAL VERTICAL U TUBE
6.0 INCHES

TYPICAL BORE DIAMETER
6.0 INCHES

ANCHOR FITTING TO
PREVENT U-TUBE FROM
SURFACING AFTER
INSTALLATION

TYPICAL SOCKET U-REBAR



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.