

C1 28097

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 COLUMNS 3-6 ON ALL CARDS)

COUNTY NUMBER

DATE RECEIVED MM DD YY 10/16/14

DATE WELL COMPLETED MM DD YY 9-12

DEPTH OF WELL 290 (TO NEAREST FOOT)

PERMIT NO. FROM "PERMIT TO DRILL WELL" HD-14-0090

OWNER: Wankany, Ronald M. WELL SITE ADDRESS: 5248 Flux Way TOWN: Dayton MD SUBDIVISION: Balma Farm SECTION: LOT: 2d

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. Rows include Topsoil, Binsoil, Tan Soil, Mod Tan weathered Rock, Mud Hard Gray Rock.

GRROUTING RECORD WELL HAS BEEN GROUTED (Y) NO (N) TYPE OF GROUTING MATERIAL: CEMENT (CM), BENTONITE CLAY (BC) NO. OF BAGS: 22 NO. OF POUNDS: 1100

CASING RECORD MAIN CASING TYPE: PL Nominal diameter: 6 Total depth: 40

OTHER CASING (if used) diameter inch depth (feet) from to

SCREEN RECORD screen type or open hole: ST (STEEL), BR (BRASS), HO (OPEN HOLE)

DEPTH (nearest ft) 1 8 9 11 15 17 21 23 24 26 30 32 36 38 39 41 45 47 51

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

PUMPING TEST HOURS PUMPED: 8.5 PUMPING RATE: 11-15 gal/min 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: R (rotary)

PUMP INSTALLED DRILLER INSTALLED PUMP: YES NO IF DRILLER INSTALLS PUMP, THIS SECTION MUST BE COMPLETED FOR ALL WELLS TYPE OF PUMP INSTALLED: R (rotary) CAPACITY: 31-35 GALLONS PER MINUTE PUMP HORSE POWER: 37-41 PUMP COLUMN LENGTH: 43-47 ft CASING HEIGHT: + above, - below LAND SURFACE (nearest foot)

LATITUDE 39.22131 LONGITUDE 77.01235 (DEFAULT COORD. WGS 84)

NOTES: #2 39.22128 77.01235

05-386705

B 1	37383	SEQUENCE NO. (MDE USE ONLY)	STATE OF MARYLAND APPLICATION FOR PERMIT TO DRILL WELL please type 554605	STATE PERMIT NUMBER HO-14-0090 fill in this form completely
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Date Received (APA) 010214

OWNER INFORMATION

8 MM DD YY 13
Waw Kanyn Ronald+Maureen
15 Last Name Owner First Name 34
5248 Ilex Way
36 Street or RFD 55
Dayton MD 21036
57 Town 70 State 72 Zip 76

B 3

LOCATION OF WELL

Howard
8 COUNTY 21
Kalmia Farms
23 SUBDIVISION 42
SECTION 44 46 LOT 22 48 50
Dayton
52 NEAREST TOWN 71

DRILLER INFORMATION

C John Hess M W D 553
Driller's Name 76 License No. 81
Allied Environmental Services
Firm Name
P.O. Box 129 Annapolis Junction MD 20701
Address
C John Hess 05/28/14
Signature Date

B 4

SOURCES OF DRILLING WATER

1. Public
2.
3.

5248 Ilex Way
11 STREET ADDRESS 30
ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX)
NORTH
WEST 32 EAST
SOUTH
34 37
DISTANCE FROM ROAD
ENTER FT OR MI 38 39
TAX MAP: 0027 BLK: 0017 PARCEL: 0127

B 2

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)

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
 G OPEN LOOP GEOTHERMAL
 C CLOSED LOOP GEOTHERMAL 2 loops

NOT TO BE FILLED IN BY DRILLER HEALTH DEPARTMENT APPROVAL

Howard 13
COUNTY NAME COUNTY NO.
STATE SIGNATURE INSERT S →
DATE ISSUED 9/10/14 H. Oswald 9/10/15
43 MM DD YY 48 CO SIGNATURE EXP. DATE

APPROXIMATE DEPTH OF WELL 290 FEET
24 28

APPROXIMATE DIAMETER OF WELL 6 INCH
NEAREST INCH

METHOD OF DRILLING (circle one)

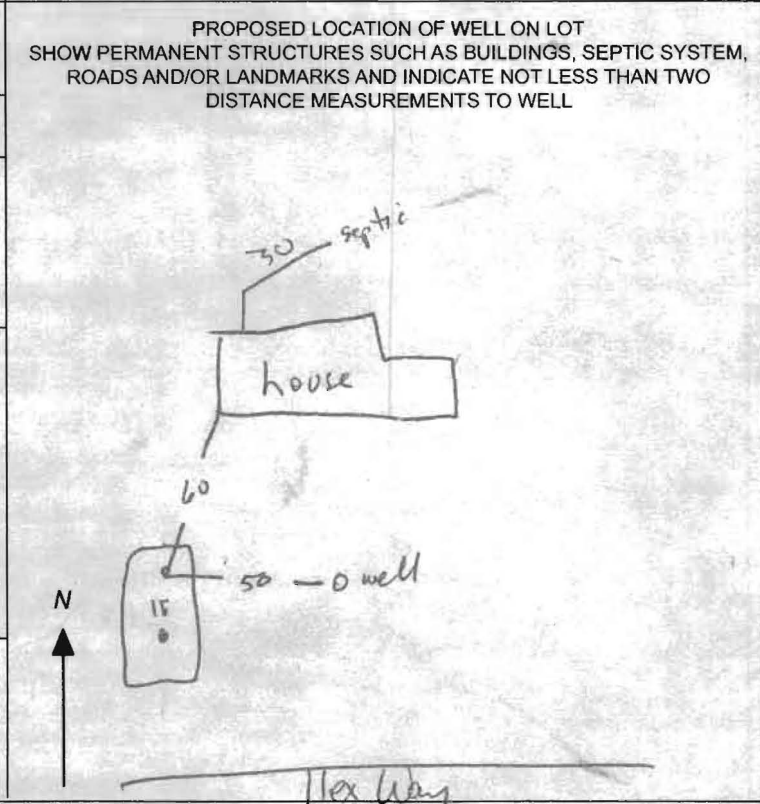
BORED (or Augered) JETTED Jetted & DRIVEN
30 AIR-ROTary AIR-PERCussion ROTARY (Hydraulic Rotary)
37 CABLE REVerse-ROTary DRive-POINT
other

REPLACEMENT OR DEEPEINED WELLS (CIRCLE APPROPRIATE BOX)

N THIS WELL WILL NOT REPLACE AN EXISTING WELL
 Y THIS WELL WILL REPLACE A WELL THAT WILL BE ABANDONED AND SEALED
39 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 DEEPEIN AN EXISTING WELL
PERMIT NUMBER OF WELL TO BE REPLACED OR DEEPEINED (IF AVAILABLE) 41 52

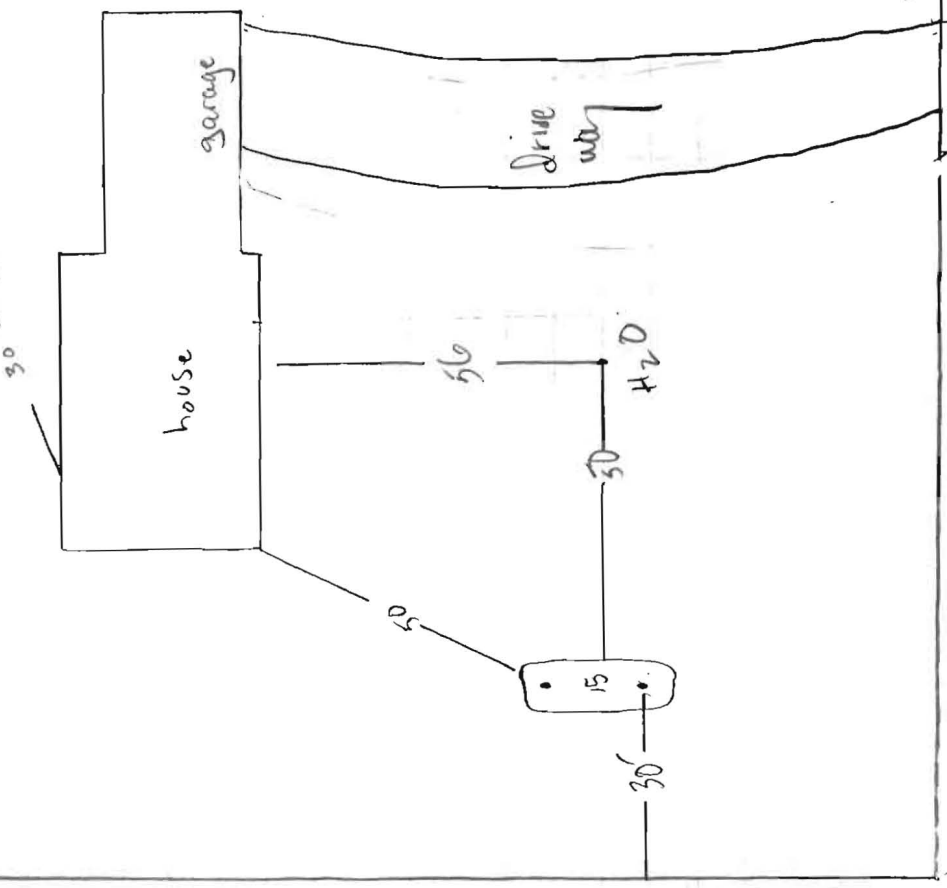
Not to be filled in by driller (MDE OR COUNTY USE ONLY)

APPROP. PERMIT NUMBER G
PERMIT No. HO-14-0090
70 71 72 73 74 75 76 77 78 79



SPECIAL CONDITIONS
NOTE: APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED

Cross Loop Weatherman
Well Site Plan
Approved As Shown
9/10/14 - H.O.



1" = 30'

5248 Ilex Way
Dayton Md

GRADE

EACH BORE HOLE (TYP.)

MINIMUM
HORIZONTAL BURY
DEPTH 4 FT

FOR CONT.
SEE PLANS

HORIZONTAL
PIPING

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

BORE DEPTH



DEPTH MARKINGS IN FEET TO
INDICATE DEPTH OF INSERTION

TAPE

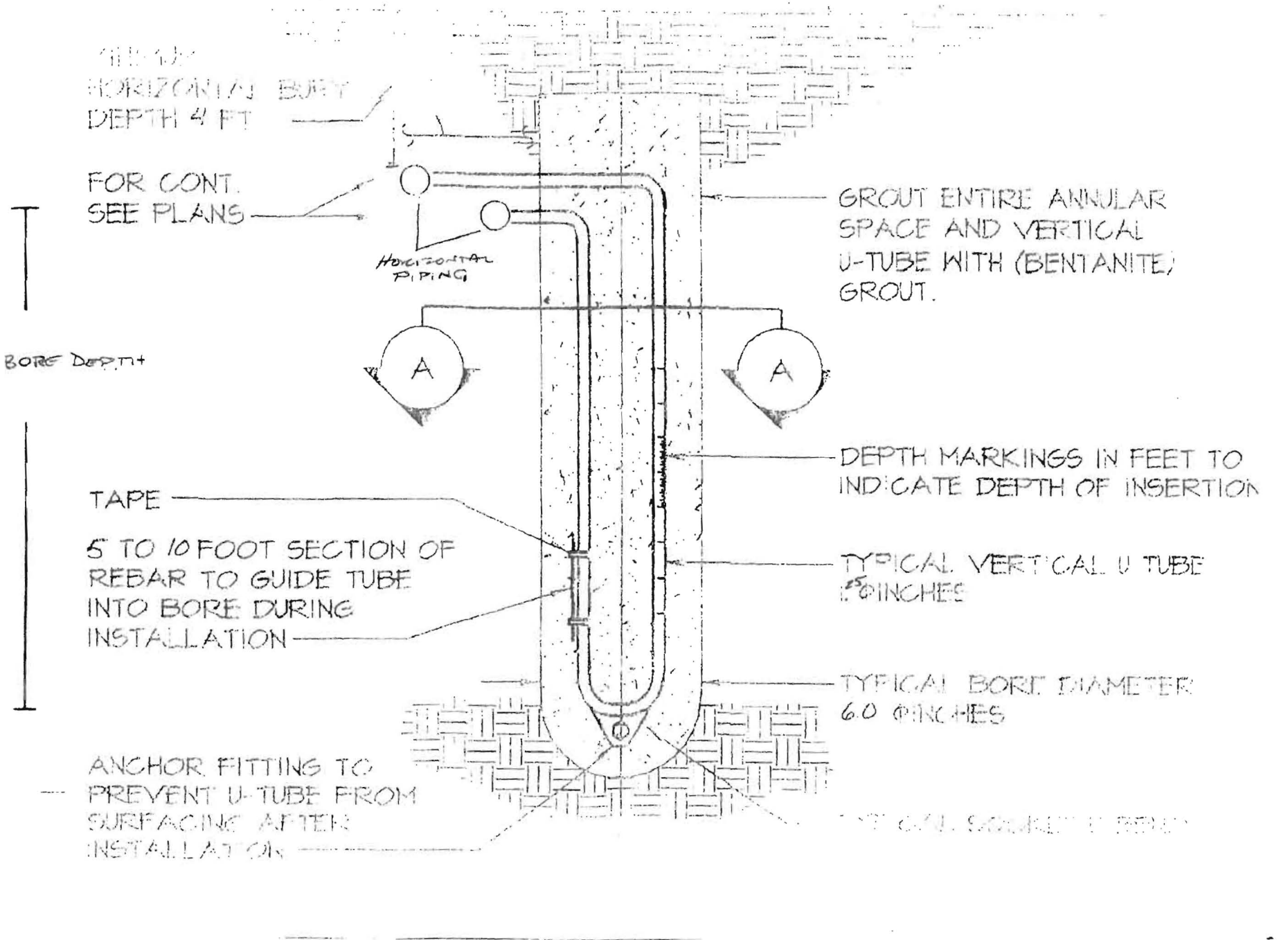
5 TO 10 FOOT SECTION OF
REBAR TO GUIDE TUBE
INTO BORE DURING
INSTALLATION

TYPICAL VERTICAL U TUBE
1.5 INCHES

TYPICAL BORE DIAMETER
60 INCHES

ANCHOR FITTING TO
PREVENT U-TUBE FROM
SURFACING AFTER
INSTALLATION

TYPICAL SPACING OF 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.