

C1 04871

SEQUENCE NO. (MDE USE ONLY)

STATE OF MARYLAND WELL COMPLETION REPORT

THIS REPORT MUST BE SUBMITTED AFTER WELL IS COMPLETED.

1 2 3 6

FILL IN THIS FORM COMPLETELY PLEASE TYPE

COUNTY NUMBER

ST/CO USE ONLY DATE Received MM 02 DD 05 YY 15

DATE WELL COMPLETED MM 12 DD 30 YY 14

Depth of Well 22 330 26 2/18/2015

PERMIT NO. FROM "PERMIT TO DRILL WELL" HO-14-0194

OWNER Srg. J. Lopez-Pellicia first name TOWN Columbia, MD

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 entries like Top Soil, Brn Rd Soil, Hard Brn Gray Rock, Med Gray Rock.

GRROUTING RECORD WELL HAS BEEN GROUTED (Circle Appropriate Box) Y N

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

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)

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 PL PLASTIC HO OPEN HOLE OT OTHER

NUMBER OF UNSUCCESSFUL WELLS: WELL HYDROFRACTURED yes Y no N

CIRCLE APPROPRIATE LETTER A A WELL WAS ABANDONED AND SEALED WHEN THIS WELL WAS COMPLETED

I HEREBY CERTIFY THAT THIS WELL HAS BEEN CONSTRUCTED IN ACCORDANCE WITH COMAR 26.04.04 "WELL CONSTRUCTION"

DRILLERS LIC. NO. M W D 553 DRILLERS SIGNATURE LIC. NO. W R D 097

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

DEPTH (nearest ft.) E 1 8 9 11 15 17 21 A 2 23 24 26 30 32 36 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

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

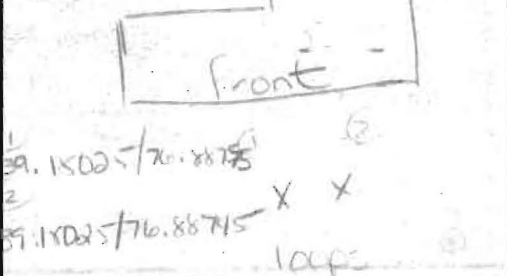
HOURS PUMPED (nearest hour) 8 9 PUMPING RATE (gal. per min.) 11 15 METHOD USED TO MEASURE PUMPING RATE WATER LEVEL (distance from land surface) BEFORE PUMPING 17 20 ft. WHEN PUMPING 22 25 ft. TYPE OF PUMP USED (for test) A air P piston T turbine C centrifugal R rotary O other (describe below) J jet S submersible

PUMP INSTALLED DRILLER INSTALLED PUMP (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) 31 35

PUMP HORSE POWER 37 41 PUMP COLUMN LENGTH (nearest ft.) 43 47 CASING HEIGHT (circle appropriate box and enter casing height) + above - below LAND SURFACE (nearest foot) 49 50 51

LOCATION OF WELL ON LOT SHOW PERMANENT STRUCTURES AND INDICATE NOT LESS THAN TWO DISTANCES (MEASUREMENTS TO WELL)



B 1 **25763**

SEQUENCE NO. (MDE USE ONLY)

STATE OF MARYLAND
APPLICATION FOR PERMIT TO DRILL WELL
555321-A please type

STATE PERMIT NUMBER

HO -14 -0144
fill in this form completely

Date Received (APA)

11/18/14
8 MM DD YY 13

OWNER INFORMATION

Schaefer Joseph+Patricia
15 Last Name Owner First Name 34
10818 Vista Road
36 Columbia MD 21044
57 Town 70 State 72 Zip 76

B 3

LOCATION OF WELL

Howard
8 COUNTY 21
Holiday Hills
23 SUBDIVISION 42
SECTION 44 46 LOT 84 48 50
Columbia
52 NEAREST TOWN 71

DRILLER INFORMATION

C John Hess MWD 553
76 Driller's Name License No. 81
Allied Environmental Services
Firm Name
P.O. Box 19 Annapolis Junction MD 20701
Address
John Hess 11/18/14
Signature Date

B 4

SOURCES OF DRILLING WATER

- 1. Public
- 2.
- 3.

10818 Vista Road
11 STREET ADDRESS 30
ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX)
NORTH
WEST SOUTH EAST
34 200 37
DISTANCE FROM ROAD FT
ENTER FT OR MI 38 39
TAX MAP: 0041 BLK: 0005 PARCEL: 0304

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
- O 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 12/02/2014 R-Rt 12/2/15
43 MM DD YY 48 CO SIGNATURE EXP. DATE

APPROXIMATE DEPTH OF WELL 320 FEET
24 28
APPROXIMATE DIAMETER OF WELL 316 INCH NEAREST INCH

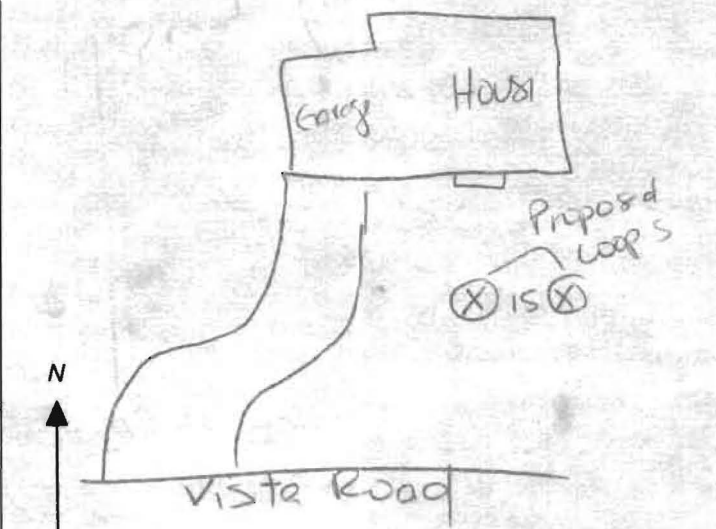
PROPOSED LOCATION OF WELL ON LOT
SHOW PERMANENT STRUCTURES SUCH AS BUILDINGS, SEPTIC SYSTEM, ROADS AND/OR LANDMARKS AND INDICATE NOT LESS THAN TWO DISTANCE MEASUREMENTS TO WELL

METHOD OF DRILLING (circle one)

- BORED (or Augered) JETTED Jetted & DRIVEN
- 36 AIR-ROTary AIR-PERCussion ROTARY (Hydraulic Rotary)
- 37 CABLE REVERSE-ROTary Drive-POINT
- other

REPLACEMENT OR DEEPEMED 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 DEEPEM AN EXISTING WELL
- PERMIT NUMBER OF WELL TO BE REPLACED OR DEEPEMED (IF AVAILABLE) 41 52



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

APPROX. PERMIT NUMBER G
PERMIT No. HO -14 -0144
70 71 72 73 74 75 76 77 78 79

SPECIAL CONDITIONS: about all wells from bottom to top; call Health Dept for inspection prior to any grouting.

APPROVED

WALKTHRU BUILDING PERMIT

BP# 800149862 A# 29094

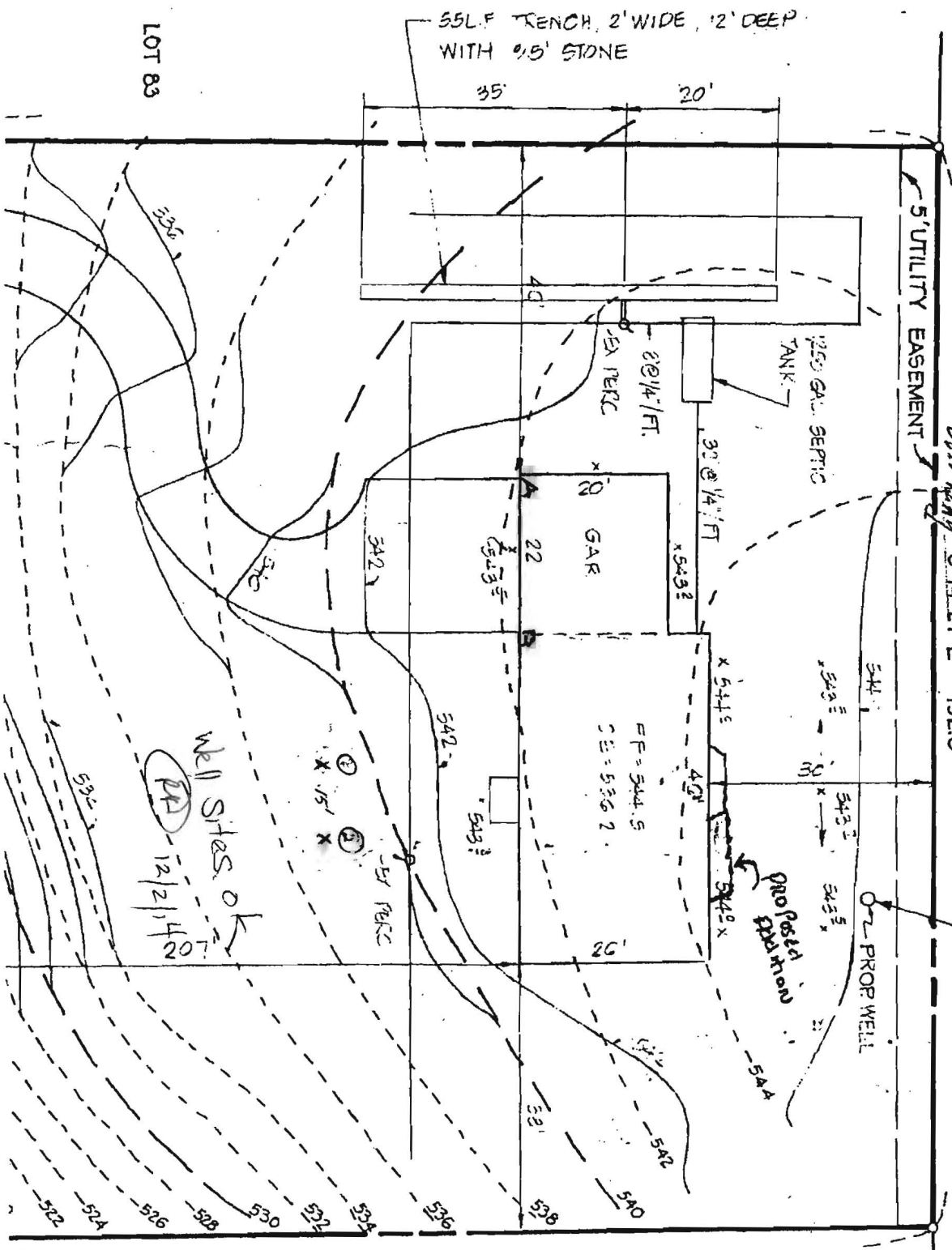
APP SAN SFD DATE: 8/27/08

DEPT OF WORKS 14'8" X 2

Overhang 9'74"27" E 152.0'

NOTE: THERE ARE NO EXIS WITHIN 100 FEET OF THE

B



LOT 83

LOT 85

Scale 1" = 20'

- 1.) 46' 37"
- 2.) 58' 31"

Well Sites OK
P1 12/2/14/02

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.)

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" Ø INCHES

TYPICAL BORE DIAMETER
6.0" Ø INCHES

ANCHOR FITTING TO
PREVENT U-TUBE FROM
SURFACING AFTER
INSTALLATION

TYPICAL SOCKET U-BEND

