

C1 41902

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)

FILL IN THIS FORM COMPLETELY PLEASE TYPE

COUNTY NUMBER A50387B

ST/CO USE ONLY DATE Received

DATE WELL COMPLETED

Depth of Well

PERMIT NO. FROM "PERMIT TO DRILL WELL"

MM DD YY 02 20 2016

MM DD YY 02 04 16

22 320

HO-16-0202

OWNER Chaudhry/Khalid, Imran/Ayesha, WELL SITE ADDRESS 3709 PARK OVERLOOK DR, TOWN ELIZABETH CITY, SUBDIVISION Benson Branch Estates, SECTION, LOT 17

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 for Top Soil/Grass, light brown, Dry/Trace mica, brown weathers, Rock/mica, light blue silt, etc.

GROUTING RECORD

WELL HAS BEEN GROUTED (Y/N), TYPE OF GROUTING MATERIAL (Cement, Bentonite Clay), NO. OF BAGS, NO. OF POUNDS, GALLONS OF WATER, DEPTH OF GROUT SEAL

CASING RECORD

MAIN CASING TYPE, Nominal diameter top (main) casing, Total depth of main casing

OTHER CASING (if used) diameter, depth

SCREEN RECORD

screen type or open hole, insert appropriate code below (ST, BR, HO, PL, OT)

NUMBER OF UNSUCCESSFUL WELLS: 0, WELL HYDROFRACTURED (Y/N)

CIRCLE APPROPRIATE LETTER: A (abandoned), E (electric log), P (test well converted)

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

DRILLERS LIC. NO. MWD 572, DRILLERS SIGNATURE, LIC. NO. MWD 973

SITE SUPERVISOR (sign. of driller or journeyman responsible for sitework)

DEPTH (nearest ft.)

Table with columns: E, A, C, H, S, R, E, N and rows for depth intervals (8-11, 15-17, 23-26, 30-32, 38-41, 45-47, slot size, diameter of screen)

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

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

TELESCOPE CASING, LOG INDICATOR, OTHER DATA

PUMPING TEST

HOURS PUMPED, PUMPING RATE, METHOD USED TO MEASURE PUMPING RATE, WATER LEVEL, BEFORE PUMPING, WHEN PUMPING, TYPE OF PUMP USED

PUMP INSTALLED

DRILLER INSTALLED PUMP (YES/NO), TYPE OF PUMP INSTALLED, CAPACITY: GALLONS PER MINUTE, PUMP HORSE POWER, PUMP COLUMN LENGTH, CASING HEIGHT

LATITUDE 39.271320, LONGITUDE 76.963712 (DEFAULT COORD. WGS 84)

Pursuant to §10-624 of the State Govt. Article of the Maryland Code personal info. requested on this form is used in processing this form pursuant to COMAR 26.04.04.

<b>B 1</b>	SEQUENCE NO. (MDE USE ONLY) <b>46407</b>	<b>STATE OF MARYLAND</b> <b>APPLICATION FOR PERMIT TO DRILL WELL</b> please type <b>557960</b>	STATE PERMIT NUMBER <b>40-15-0202</b> <small>70 fill in this form completely 79</small>
1 2 3 6	<b>OWNER INFORMATION</b> Date Received (APA) <u>01/04/16</u> 8 MM DD YY 13 15 Last Name <u>Chaundry/Khalil</u> Owner <u>Imran/Ayesha</u> First Name 34 36 Street or RFD <u>3709 Park Overlook Ct</u> 55 <u>Ellicott City MD 21042</u> 57 Town 70 State 72 Zip 76		<b>B 3 LOCATION OF WELL</b> 8 COUNTY <u>Howard</u> 21 23 SUBDIVISION <u>Benson Branch Estates</u> 42 SECTION <u>44</u> 46 LOT <u>17</u> 48 50 <u>ELICOTT CITY</u> 52 NEAREST TOWN 71
<b>DRILLER INFORMATION</b> Driller's Name <u>Samuel A. Connelly M W D 50</u> 76 License No. 81 Firm Name <u>Connelly &amp; Associates, Inc.</u> Address <u>260 Interstate Ct. Frederick MD 21704</u> Signature <u>Samuel A. Connelly</u> Date <u>1/6/16</u>		<b>B 4 SOURCES OF DRILLING WATER</b> 1. <u>private</u> 11 STREET ADDRESS 30 2. _____ 3. _____ ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX) NORTH <input type="checkbox"/> WEST <input checked="" type="checkbox"/> EAST <input type="checkbox"/> SOUTH <input type="checkbox"/> 34 <u>45</u> 37 DISTANCE FROM ROAD FT ENTER FT OR MI 38 39 TAX MAP: <u>22</u> BLK: <u>10</u> PARCEL <u>558</u>	
<b>B 2</b>	<b>WELL INFORMATION</b> APPROX. PUMPING RATE (GAL. PER MIN.) _____ 8 12 AVERAGE DAILY QUANTITY NEEDED (GAL. PER DAY) _____ 14 20		Form predates New notation 2017 procedures (A)
<b>USE FOR WATER (CIRCLE APPROPRIATE BOX)</b> <input type="checkbox"/> DOMESTIC POTABLE SUPPLY & RESIDENTIAL IRRIGATION <input type="checkbox"/> FARMING (LIVESTOCK WATERING & AGRICULTURAL IRRIGATION) <input checked="" type="checkbox"/> INDUSTRIAL, COMMERCIAL, DEWATERING <input type="checkbox"/> PUBLIC WATER SUPPLY WELL <input type="checkbox"/> TEST, OBSERVATION, MONITORING <input type="checkbox"/> OPEN LOOP GEOTHERMAL <input checked="" type="checkbox"/> CLOSED LOOP GEOTHERMAL		<b>NOT TO BE FILLED IN BY DRILLER HEALTH DEPARTMENT APPROVAL</b> <u>Howard</u> (13) <u>A50387B</u> COUNTY NAME COUNTY NO. STATE SIGNATURE _____ INSERT S → 41 DATE ISSUED <u>1/20/2016</u> <u>Brian Baber</u> <u>1/20/2017</u> 43 MM DD YY 48 CO SIGNATURE EXP. DATE	
APPROXIMATE DEPTH OF WELL <u>320</u> FEET 24 28 APPROXIMATE DIAMETER OF WELL <u>6</u> 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 	
<b>METHOD OF DRILLING (circle one)</b> BORED (or Augered) JETTED Jetted & DRIVEN 30 AIR-ROTary AIR-PERcussion ROTARY (Hydraulic Rotary) 37 CABLE REVERSE-ROTary DRIVE-POINT other _____		Pursuant to § 10-624 of the State Govt. Article of the Maryland Code, personal info requested on this form is used in processing this form pursuant to COMAR 26.04.04. Failure to provide the info may result in this form not being processed. You have the right to inspect, amend, or correct this form. The Maryland Department of the Environment is subject to the Maryland Public Information Act. This form may be made available on the Internet via MDE's website and is subject to inspection or copying, in whole or in part, by the public and other governmental agencies, if not protected by federal or State Law.	
<b>REPLACEMENT OR DEEPEMED WELLS (CIRCLE APPROPRIATE BOX)</b> <input checked="" type="checkbox"/> THIS WELL WILL NOT REPLACE AN EXISTING WELL <input type="checkbox"/> THIS WELL WILL REPLACE A WELL THAT WILL BE ABANDONED AND SEALED 39 <input type="checkbox"/> THIS WELL WILL REPLACE A WELL THAT WILL BE USED AS A STANDBY-CONTACT LOCAL APPROVING AUTHORITY FOR POLICY ON STANDBY WELLS <input type="checkbox"/> THIS WELL WILL DEEPEM AN EXISTING WELL PERMIT NUMBER OF WELL TO BE REPLACED OR DEEPEMED (IF AVAILABLE) 41 _____ 52		N 	
<b>Not to be filled in by driller (MDE OR COUNTY USE ONLY)</b> APPROP. PERMIT NUMBER _____ G _____ PERMIT No. <u>40-15-0202</u> 70 71 72 73 74 75 76 77 78 79			
<b>SPECIAL CONDITIONS</b> NOTE: APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED			



260 Interstate Court, Frederick, Maryland 21704 · 301-696-8820 · [www.connellygeothermal.com](http://www.connellygeothermal.com)

Howard County  
Bureau of Environmental Health  
8930 Stanford Boulevard  
Columbia, MD 21045

February 26, 2016

RE: Geothermal Well Completion Report / HO-15-0202

Please find enclosed the Well Completion Reports for the above referenced well tag number.

Thank you,

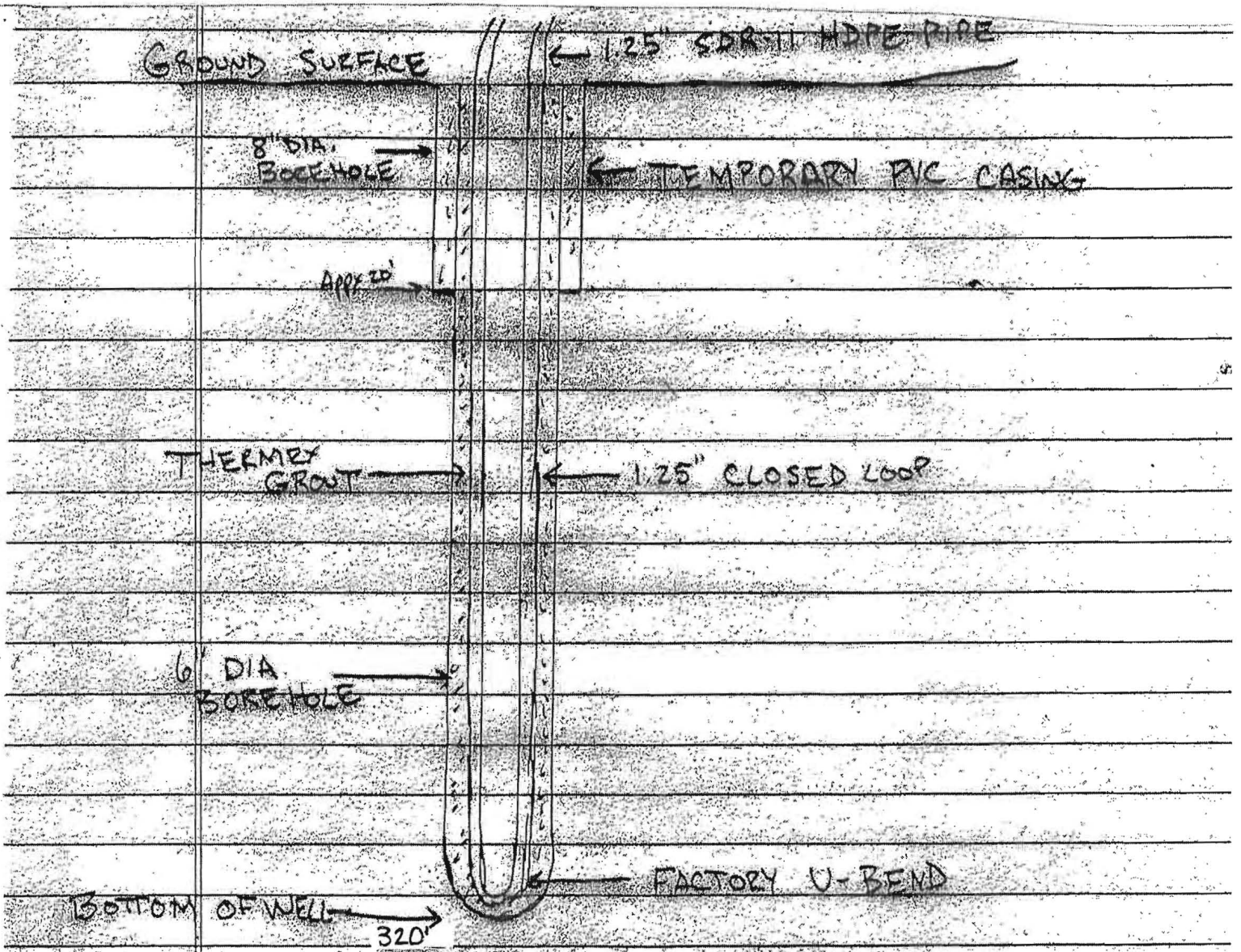
A handwritten signature in black ink, appearing to read 'Emily Sottile', is written over a horizontal line.

Emily Sottile  
Business Operations Manager

Vol of piping ~ 2513  
Vol of Base hole ~ 6031  
~ 3518 gpm +



Geothermal Closed Loop – 3709 Park Overlook Ct., Ellicott City, MD



Grout information for this property is as follows:

Thermex grout mixture of 50 lb. grout to 17 gallons water, placed in the well using the tremie method, from bottom to top.

C1 41901  
 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 450387B

ST/CO USE ONLY  
 DATE Received  
 MM DD YY  
03 20 2016

DATE WELL COMPLETED  
 MM DD YY  
02 04 16

Depth of Well  
 22 320 26  
 (TO NEAREST FOOT)

PERMIT NO.  
 FROM "PERMIT TO DRILL WELL"  
HO-15-0202

OWNER Chaudhry / Khalil Imran / Ayesha  
 WELL SITE ADDRESS 3709 Park Overlook Dr TOWN ELlicott City  
 SUBDIVISION Benson Branch Estates SECTION \_\_\_\_\_ LOT 17

**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	1.5	
light brown dry / trace mica	1.5	16	
brown weathered Rock / mica well hard	16	32	✓
light blue Shist / mica hard	32	320	

**GROUTING RECORD**  
 WELL HAS BEEN GROUTED (Circle appropriate box)  Y  N  
 TYPE OF GROUTING MATERIAL (Circle one) CEMENT  BENTONITE CLAY

CEMENT  BENTONITE CLAY   
 NO. OF BAGS 16 NO. OF POUNDS 800  
 GALLONS OF WATER 301  
 DEPTH OF GROUT SEAL (to nearest foot)  
 from 0 ft. to 320 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 type or open hole  
 insert appropriate code below  
 ST STEEL  BR BRASS  HO OPEN HOLE  
 PL PLASTIC  OT OTHER

NUMBER OF UNSUCCESSFUL WELLS: 0

WELL HYDROFRACTURED  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 512  
Samuel M. Connelly  
 DRILLERS SIGNATURE (MUST MATCH SIGNATURE ON APPLICATION)  
 LIC. NO. 1 AWD 973

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

**C 2** DEPTH (nearest ft.)

1	8	9	11	15	17	21
2	23	24	26	30	32	36
3	38	39	41	45	47	51
4	SLOT SIZE 1 _____ 2 _____ 3 _____					
5	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 \_\_\_\_\_ TELESCOPE CASING LOG INDICATOR OTHER DATA 74 75 76

**C 3** 93-1.05 Btu/hr-ft

**PUMPING TEST**  
 HOURS PUMPED (nearest hour) 8  
 PUMPING RATE (gal. per min.) NA  
 METHOD USED TO MEASURE PUMPING RATE NA

WATER LEVEL (distance from land surface)  
 BEFORE PUMPING NA ft.  
 WHEN PUMPING NA 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 } LAND SURFACE (nearest foot)  
 - below } 3

LATITUDE 39.271376  
 LONGITUDE 76.963737  
 (DEFAULT COORD. WGS 84)

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