

*pm*

State of West Virginia  
Department of Environmental Protection - Office of Oil and Gas  
Well Operator's Report of Well Work

API 47-017-06495 County Doddridge District Grant  
Quad West Union 7.5' & Smithburg 7.5' Pad Name Melody Pad Field/Pool Name \_\_\_\_\_  
Farm name Brown, Melody et al Well Number Weinhold Unit 1H  
Operator (as registered with the OOG) Antero Resources Corporation  
Address 1615 Wynkoop Street City Denver State CO Zip 80202

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4,356,597m Easting 520,750m  
Landing Point of Curve Northing 4,356,373.94m Easting 520,591.11m  
Bottom Hole Northing 4,353,886m Easting 521,590m

Elevation (ft) 1,135' GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage  Other \_\_\_\_\_  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil  Other \_\_\_\_\_  
Drilled with  Cable  Rotary  
Drilling Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh Water  Brine  
Production hole  Air  Mud  Fresh Water  Brine  
Mud Type(s) and Additive(s)  
Air- Foam & 4% KCL  
Mud- Polymer

RECEIVED  
Office of Oil and Gas  
OCT 19 2015  
WV Department of  
Environmental Protection

Date permit issued 06/25/2014 Date drilling commenced 10/12/2014 Date drilling ceased 01/09/2015  
Date completion activities began WOC Date completion activities ceased WOC  
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 46' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft 865'; 1,509' Void(s) encountered (Y/N) depths None  
Coal depth(s) ft 1,821' Cavern(s) encountered (Y/N) depths None  
Is coal being mined in area (Y/N) No

Reviewed by:

*JL*

10/30/2015

API 47-017 - 06495 Farm name Brown, Melody et al Well number Weinhold Unit 1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	40'	New	94#; H-40	N/A	Yes
Surface	17 1/2"	13 3/8"	522'	New	48#; H-40	N/A	Yes
Coal							
Intermediate 1	12 1/4"	9 5/8"	2,591'	New	36#; J-55	N/A	Yes
Intermediate 2							
Intermediate 3							
Production	8 3/4" & 8 1/2"	5 1/2"	16,363'	New	23#; P-110	N/A	Yes
Tubing							
Packer type and depth set		N/A					

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Class A	100 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	668 sx	15.6	1.18	363	0'	8 Hrs.
Coal							
Intermediate 1	Class A	945 sx	15.6	1.18	812	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	996 sx (Lead); 1,489 sx (Tail)	14.5 (Lead); 15.2 (Tail)	1.3 (Lead); 1.86 (Tail)	3,270	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 16,363 MD; 6,952 TVD (BHL); 6,968 TVD (Deepest Point Drilled) Loggers TD (ft) 16,363'  
 Deepest formation penetrated Marcellus Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 6,236'

Check all wireline logs run \*\*  caliper  density  deviated/directional  induction  neutron  resistivity  gamma ray  temperature  temperature

Well cored  Yes  No Conventional Sidewall Were cuttings collected  Yes  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING \_\_\_\_\_

Conductor- 0  
 Surface- 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface  
 Intermediate- 1 above float joint, 1 above float collar, 1 every 4th joint to surface  
 Production- 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS N/A - WOC

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS N/A - WOC

WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED N/A - WOC

**RECEIVED**  
**Office of Oil and Gas**  
**OCT 19 2015**  
**WV Department of Environmental Protection**







**EXHIBIT 3**

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Fresh Water	46'	N/A	46'	N/A
silt	0	81	0	81
Sandstone	est. 81	281	est. 81	281
siltstone (trace coal)	est. 281	401	est. 281	401
Silty Sandstone	est. 401	581	est. 401	581
Sandy siltstone	est. 581	761	est. 581	761
Limestone	est. 761	781	est. 761	781
Sandy siltstone	est. 781	861	est. 781	861
Limey Siltstone	est. 861	961	est. 861	961
Sandy shale	est. 961	1,281	est. 961	1,281
Sandstone	est. 1281	1,401	est. 1281	1,401
Sandy shale	est. 1401	1,561	est. 1401	1,561
Silty Sandstone (trace coal)	est. 1561	1,761	est. 1561	1,761
Sandstone	est. 1761	1,821	est. 1761	1,821
Coal	est. 1821	2,001	est. 1821	2,001
Limey Siltstone	est. 2001	2,068	est. 2001	2,069
Big Lime	2,068	2,189	2,069	2,191
Big Injun	2,189	2,612	2,191	2,614
Gantz Sand	2,612	2,753	2,614	2,754
Fifty Foot Sandstone	2,753	2,825	2,754	2,827
Gordon	2,825	3,167	2,827	3,169
Fifth Sandstone	3,167	3,207	3,169	3,209
Bayard	3,207	3,558	3,209	3,560
Warren	3,558	3,965	3,560	3,966
Speechley	3,965	4,205	3,966	4,206
Baltown	4,205	4,679	4,206	4,681
Bradford	4,679	5,147	4,681	5,149
Benson	5,147	5,399	5,148	5,399
Alexander	5,399	5,594	5,401	5,596
Eik	5,594	6,102	5,596	6,104
Rhinestreet	6,102	6,453	6,104	6,455
Sycamore	6,434	6,608	6,455	6,608
Middlesex	6,608	6,740	6,731	6,740
Burkett	6,740	6,769	7,026	7,026
Tully	6,769	6,818	7,097	7,257
Marcellus	6,818	NA	7,257	NA

\*Please note Antero determines shallow formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

LATITUDE 39°22'30"

2,637'

11,691' TO BOTTOM HOLE

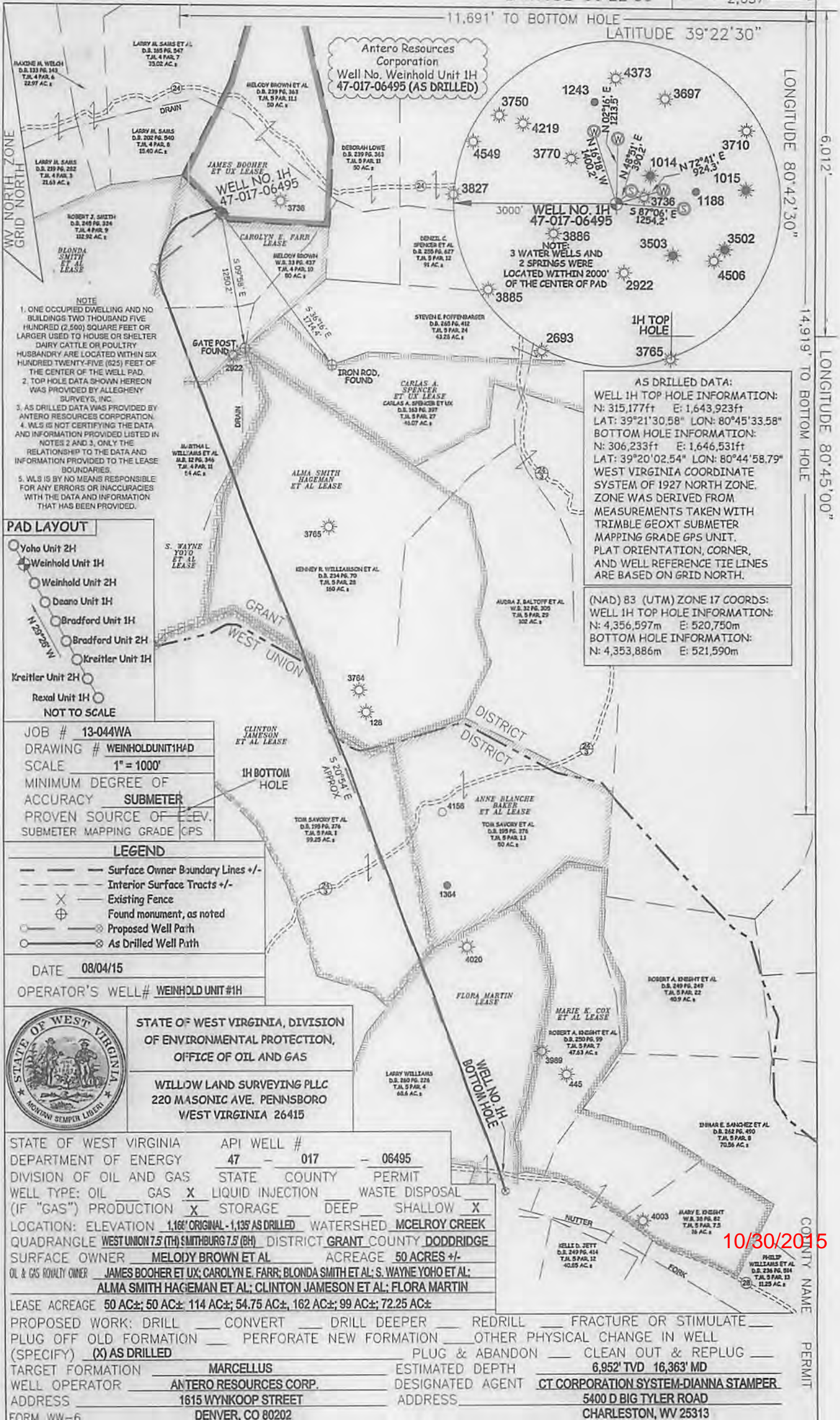
LATITUDE 39°22'30"

LONGITUDE 80°42'30"

6,012'

14,919' TO BOTTOM HOLE

LONGITUDE 80°45'00"



**NOTE**

- ONE OCCUPIED DWELLING AND NO BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
- TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
- AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
- WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3. ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
- WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

**AS DRILLED DATA:**

**WELL 1H TOP HOLE INFORMATION:**  
 N: 315,177ft E: 1,643,923ft  
 LAT: 39°21'30.58" LON: 80°45'33.58"

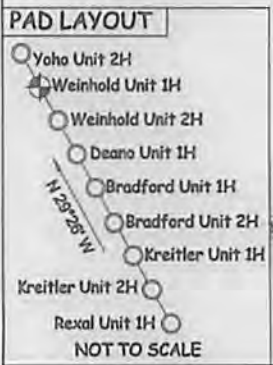
**BOTTOM HOLE INFORMATION:**  
 N: 306,233ft E: 1,646,531ft  
 LAT: 39°20'02.54" LON: 80°44'58.79"

WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:

**WELL 1H TOP HOLE INFORMATION:**  
 N: 4,356,597m E: 520,750m

**BOTTOM HOLE INFORMATION:**  
 N: 4,353,886m E: 521,590m



JOB # 13-044WA  
 DRAWING # WEINHOLDUNIT1HAD  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY SUBMETER  
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

- LEGEND**
- Surface Owner Boundary Lines +/-
  - Interior Surface Tracts +/-
  - Existing Fence
  - Found monument, as noted
  - Proposed Well Path
  - As Drilled Well Path

DATE 08/04/15  
 OPERATOR'S WELL# WEINHOLD UNIT#1H

STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

WILLOW LAND SURVEYING PLLC  
 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

API WELL # 47 - 017 - 06495

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL

(IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION 1,166' ORIGINAL - 1,135' AS DRILLED WATERSHED MCELROY CREEK

QUADRANGLE WEST UNION 7.5 (TH) SMITHBURG 7.5 (BH) DISTRICT GRANT COUNTY DODDRIDGE

SURFACE OWNER MELODY BROWN ET AL ACREAGE 50 ACRES +/-

OIL & GAS ROYALTY OWNER JAMES BOOHER ET UX; CAROLYN E. FARR; BLONDA SMITH ET AL; S. WAYNE YOHO ET AL; ALMA SMITH HAGEMAN ET AL; CLINTON JAMESON ET AL; FLORA MARTIN

LEASE ACREAGE 50 AC±; 50 AC±; 114 AC±; 54.75 AC±; 162 AC±; 99 AC±; 72.25 AC±

PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE

PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) (X) AS DRILLED

TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,952' TVD 16,363' MD

WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT CT CORPORATION SYSTEM-DIANNA STAMPER

ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD

FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

10/30/2015

COUNTY NAME PERMIT