

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

API 47-017-06378 County Doddridge District Greenbrier  
Quad Big Isaac 7.5' Pad Name Hughes Pad Field/Pool Name \_\_\_\_\_  
Farm name Nelson, Eric E., et al Well Number McClain 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 4,341,195m Easting 532,756m  
Landing Point of Curve Northing 4,341,094.51m Easting 532,928.87m  
Bottom Hole Northing 4,338,814m Easting 533,662m

Elevation (ft) 1,332' 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

Date permit issued 10/28/2013 Date drilling commenced 09/25/2014 Date drilling ceased 12/16/2014  
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 109'; 112' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft 1,091'; 1,150' Void(s) encountered (Y/N) depths None  
Coal depth(s) ft 390' Cavern(s) encountered (Y/N) depths None  
Is coal being mined in area (Y/N) No

Office of Oil and Gas  
West Virginia Department of Environmental Protection

Reviewed by:

OK

10/30/2015

API 47-017 - 06378

Farm name Nelson, Eric E., et al

Well number McClain Unit 1H

| CASING STRINGS            | Hole Size       | Casing Size | Depth   | New or Used | Grade wt/ft | Basket Depth(s) | Did cement circulate (Y/N)<br>* Provide details below* |
|---------------------------|-----------------|-------------|---------|-------------|-------------|-----------------|--|
| Conductor                 | 24"             | 20"         | 40'     | New         | 94#; H-40   | N/A             | Yes  |
| Surface                   | 17 1/2"         | 13 3/8"     | 557'    | New         | 48#; H-40   | N/A             | Yes  |
| Coal                      |                 |             |         |             |             |                 |  |
| Intermediate 1            | 12 1/4"         | 9 5/8"      | 2,530'  | New         | 36#; J-55   | N/A             | Yes  |
| Intermediate 2            |                 |             |         |             |             |                 |  |
| Intermediate 3            |                 |             |         |             |             |                 |  |
| Production                | 8 3/4" & 8 1/2" | 5 1/2"      | 15,619' | 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              | 150 sx                           | 15.6                     | 1.18                         | 38                        | 0'                             | 8 Hrs.    |
| Surface        | Class A              | 707 sx                           | 15.6                     | 1.18                         | 387                       | 0'                             | 8 Hrs.    |
| Coal           |                      |                                  |                          |                              |                           |                                |           |
| Intermediate 1 | Class A              | 965 sx                           | 15.6                     | 1.18                         | 792                       | 0'                             | 8 Hrs.    |
| Intermediate 2 |                      |                                  |                          |                              |                           |                                |           |
| Intermediate 3 |                      |                                  |                          |                              |                           |                                |           |
| Production     | Class H              | 1,116 sx (Lead); 1,308 sx (Tail) | 14.5 (Lead); 15.2 (Tail) | 1.3 (Lead); 1.86 (Tail)      | 3,113                     | -500' into Intermediate casing | 8 Hrs.    |
| Tubing         |                      |                                  |                          |                              |                           |                                |           |

Drillers TD (ft) 15,619' MD; 7,343' TVD (BHL); 7,362' TVD (Deepest Point Drilled)

Loggers TD (ft) 15,572'

Deepest formation penetrated Marcellus

Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 6,583'

Check all wireline logs run \*\*

- caliper     density     deviated/directional     induction  
 neutron     resistivity     gamma ray     temperature     sonic

\*\*Logs will be submitted with FINAL Completion Report

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

*Received*

SEP 28 2015

WAS WELL COMPLETED AS SHOT HOLE  Yes  No

DETAILS N/A - WOC

WAS WELL COMPLETED OPEN HOLE?  Yes  No

DETAILS N/A - WOC

Office of Oil and Gas  
Regulatory Protection

WERE TRACERS USED  Yes  No

TYPE OF TRACER(S) USED N/A - WOC





## 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          | 109'            | N/A                | 109'           | N/A               |
| Fresh Water          | 112'            | N/A                | 112'           | N/A               |
| Shale                | 0               | 188                | 0              | 188               |
| Sandy siltstone      | est. 188        | 390                | est. 188       | 390               |
| Coal                 | est. 390        | 408                | est. 390       | 408               |
| Shale                | est. 408        | 488                | est. 408       | 488               |
| Siltstone            | est. 488        | 828                | est. 488       | 828               |
| Shale                | est. 828        | 908                | est. 828       | 908               |
| Sandstone            | est. 908        | 943                | est. 908       | 943               |
| Shale                | est. 943        | 964                | est. 943       | 964               |
| Trace coal           | est. 964        | 986                | est. 964       | 986               |
| Sandy siltstone      | est. 986        | 1,348              | est. 986       | 1,348             |
| Shale                | est. 1348       | 1,588              | est. 1348      | 1,588             |
| Sandy shale          | est. 1588       | 1,648              | est. 1588      | 1,648             |
| Trace coal           | est. 1648       | 1,668              | est. 1648      | 1,668             |
| Shale                | est. 1668       | 1,708              | est. 1668      | 1,708             |
| Sandstone            | est. 1708       | 1,808              | est. 1708      | 1,808             |
| Silty sandstone      | est. 1808       | 1,948              | est. 1808      | 1,948             |
| Trace coal           | est. 1948       | 1,988              | est. 1948      | 1,988             |
| Silty sandstone      | est. 1988       | 2,248              | est. 1988      | 2,248             |
| Shale                | est. 2248       | 2,289              | est. 2248      | 2,291             |
| Big Lime             | 2,289           | 2,455              | 2,291          | 2,457             |
| Big Injun            | 2,455           | 2,764              | 2,457          | 2,766             |
| Weir                 | 2,764           | 2,881              | 2,766          | 2,883             |
| Fifty Foot Sandstone | 2,881           | 2,979              | 2,883          | 2,981             |
| Gordon               | 2,979           | 3,150              | 2,981          | 3,152             |
| Fifth Sandstone      | 3,150           | 3,189              | 3,152          | 3,191             |
| Bayard               | 3,189           | 3,974              | 3,191          | 3,976             |
| Speechley            | 3,974           | 4,449              | 3,976          | 4,451             |
| Baltown              | 4,449           | 4,738              | 4,451          | 4,740             |
| Bradford             | 4,738           | 5,055              | 4,740          | 5,057             |
| Riley                | 5,055           | 5,273              | 5,057          | 5,275             |
| Benson               | 5,273           | 5,540              | 5,275          | 5,325             |
| Alexander            | 5,540           | 6,855              | 5,325          | 5,542             |
| Sycamore             | 6,855           | 7,024              | 5,542          | 7,074             |
| Middlesex            | 7,024           | 7,165              | 7,074          | 7,265             |
| Burkett              | 7,165           | 7,196              | 7,265          | 7,312             |
| Tully                | 7,196           | 7,323              | 7,312          | 7,600             |
| Marcellus            | 7,323           | NA                 | 7,600          | 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.

Received

SEP 28 2015

Office of Oil and Gas  
WV Dept. of Environmental Protection

10/30/2015

LATITUDE 39°15'00"

10,595'

7,658' TO BOTTOM HOLE

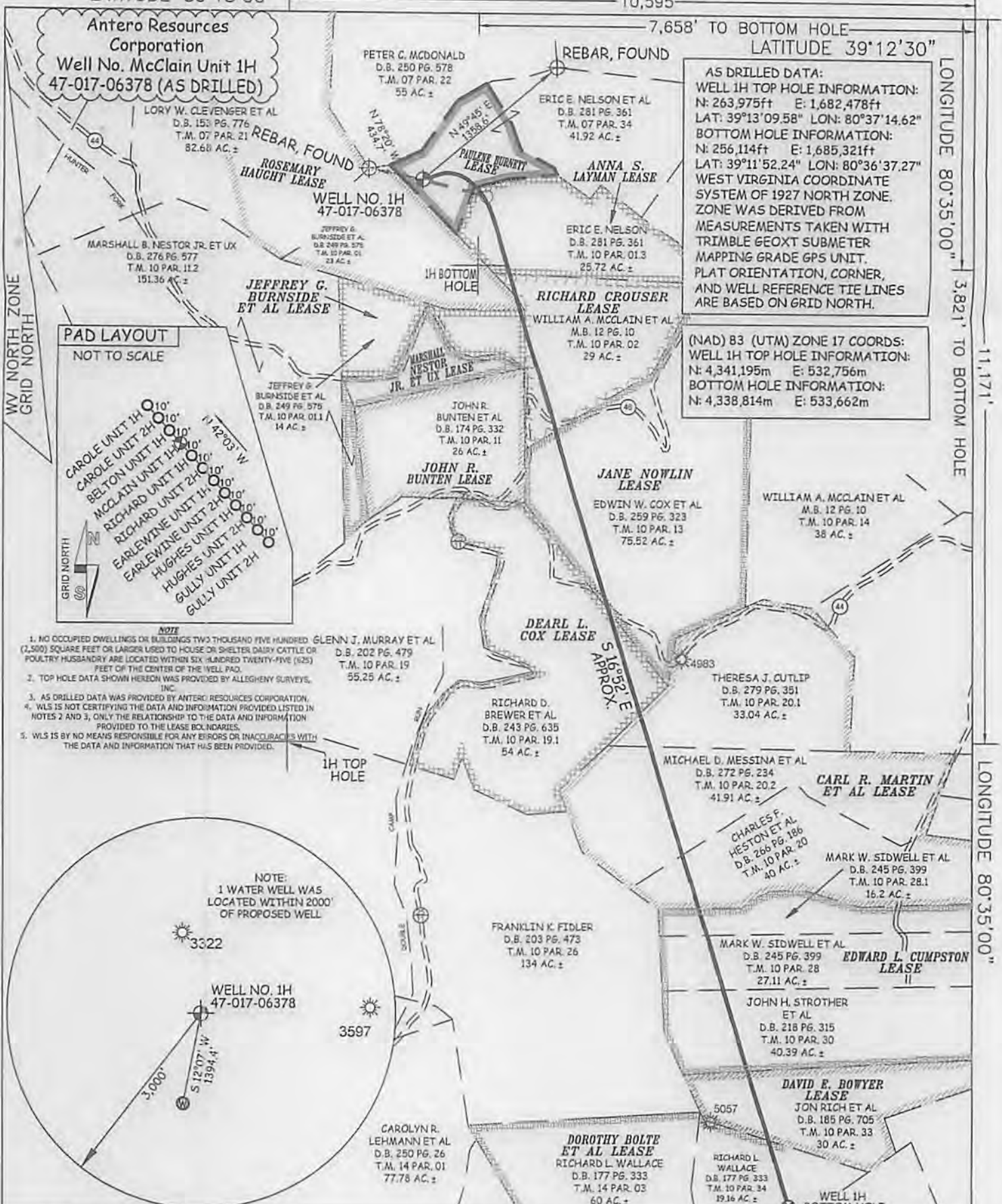
LATITUDE 39°12'30"

LONGITUDE 80°35'00"

3,821' TO BOTTOM HOLE

11,171'

LONGITUDE 80°35'00"



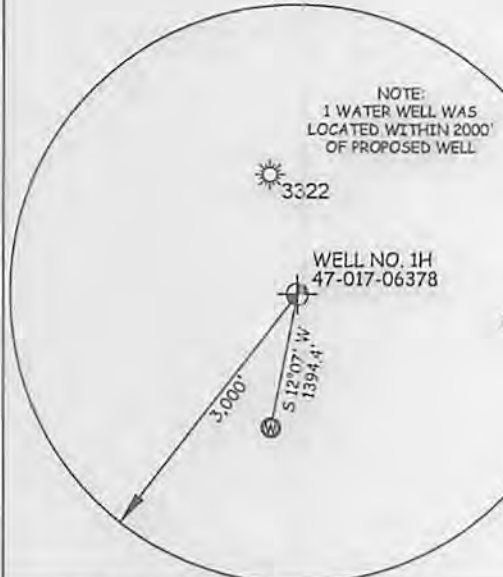
**AS DRILLED DATA:**  
 WELL 1H TOP HOLE INFORMATION:  
 N: 263,975ft E: 1,682,478ft  
 LAT: 39°13'09.58" LON: 80°37'14.62"  
 BOTTOM HOLE INFORMATION:  
 N: 256,114ft E: 1,685,321ft  
 LAT: 39°11'52.24" LON: 80°36'37.27"  
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS 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: 4,341,195m E: 532,756m  
 BOTTOM HOLE INFORMATION:  
 N: 4,338,814m E: 533,662m

**PAD LAYOUT**  
 NOT TO SCALE



- NOTE**
1. NO OCCUPIED DWELLINGS OR 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.
  2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
  3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
  4. 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.
  5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.



**NOTE:**  
 1 WATER WELL WAS LOCATED WITHIN 2000' OF PROPOSED WELL

JOB # 12-147WA  
 DRAWING # MCCLAIN1HAD  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY SUBMETER  
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS



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

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

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

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

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

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
 LOCATION: ELEVATION 1,354' ORIGINAL - 1,332' PROPOSED WATERSHED HEADWATERS MIDDLE ISLAND CREEK  
 QUADRANGLE BIG ISSAC 7.5' DISTRICT GREENBRIER COUNTY DODDRI

API WELL # 47 - 017 - 06378  
 STATE COUNTY PERMIT

SURFACE OWNER ERIC E. NELSON, ET AL ACREAGE 41.92 ACRES +/-  
 OIL & GAS ROYALTY OWNER PAULENE BURNETT; ANNA S. LAYMAN; RICHARD CROUSER; LEASE ACREAGE 14.29 ACRES+; 25.16 ACRES+; 29.93 ACRES+;  
 ROSEMARY HAUGHT; JEFFREY G. BURNSIDE ET AL; JANE NOWLIN DEARL L. COX; CARL R. MARTIN ET AL; EDWARD L. CUMPTON; DAVID E. BOWYER; DOROTHY BOLTE ET AL 115 ACRES+; 14 ACRES+; 76 ACRES+; 30.923 ACRES+; 115 ACRES+; 86 ACRES+; 30 ACRES+; 80 ACRES+;

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 PLUG & ABANDON CLEAN OUT & REPLUG  
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7,342' TVD 15,619' MD

WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER  
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD  
 DENVER, CO 80202 CHARLESTON, WV 25313

10/30/2015

COUNTY NAME PERMIT