WR-35
Rev. 8/23/13

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

RECEIVED
FEB 12 2016
WV GEOLOGICAL SURVEY
MORGANTOWN, WV

API 47 - 085 - 10144 County Ritchie District Clay
Quad Pennsboro 7.5' Pad Name Annie Horizontal Pad Field/Pool Name ----
Farm name Eddy F. Landrum Well Number Ericson Unit 3H
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 4353115m Easting 506432m
Landing Point of Curve Northing 4353047.83m Easting 506577.45m
Bottom Hole Northing 4351225m Easting 507312m

Elevation (ft) 1004' 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 11/13/2014 Date drilling commenced 2/25/2015 Date drilling ceased 7/20/2015
Date completion activities began 7/31/2015 Date completion activities ceased 10/1/2015
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 216' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2210', 5202' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 176', 316', 516', 976', 1056', 1776' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:

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API 47- 085 - 10144 Farm name Eddy F. Landrum Well number Ericson Unit 3H

| 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 | 30" | 20" | 40' | New | 94#/J-55 | N/A | Y |
| Surface | 17-1/2" | 13-3/8" | 322' | New | 48#/H-40 | N/A | Y |
| Coal | | | | | | | |
| Intermediate 1 | 12-1/4" | 9-5/8" | 2567' | New | 36#/J-55 | N/A | Y |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | 8-3/4"/8-1/2" | 5-1/2" | 13,152' | New | 20#/P-110 | N/A | Y |
| Tubing | | 2-3/8" | 6477' | | 4.7#/N-80 | | |
| Packer type and depth set | | N/A | | | | | |

Comment Details

| CEMENT DATA | Class/Type of Cement | Number of Sacks | Slurry wt (ppg) | Yield ( ft $^3$/sks) | Volume ($ft^3$) | Cement Top (MD) | WOC (hrs) |
|---|---|---|---|---|---|---|---|
| Conductor | Class A | 193 sx | 15.6 | 1.2 | 38 Cu. Ft. | 0' | 8 Hrs. |
| Surface | Class A | 430 sx | 15.6 | 1.18 | 224 Cu. Ft. | 0' | 8 Hrs. |
| Coal | | | | | | | |
| Intermediate 1 | Class A | 1007 sx | 15.6 | 1.18 | 804 Cu. Ft. | 0' | 8 Hrs. |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | Class H | 994 sx (Lead), 1100 sx (Tail) | 14.2 (Lead), 14.8 (Tail) | 1.24 (Lead), 1.81 (Tail) | 2540 Cu. Ft. | ~500' into Intermediate Casing | 8 Hrs. |
| Tubing | | | | | | | |

Drillers TD (ft) 13,152' MD, 6335' TVD (BHL), 6344' TVD (Deepest Point Drilled) Loggers TD (ft) 13,101' MD

Deepest formation penetrated Marcellus Shale Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 5560'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Belle Unit 3H API# 47-085-10029). Please reference the wireline logs submitted with Form WR-35 for the Belle Unit 3H. A Cement Bond Log has been included with this submittal.

Check all wireline logs run □ caliper □ density □ deviated/directional □ induction □ neutron □ resistivity □ gamma ray □ 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

WAS WELL COMPLETED OPEN HOLE? □ Yes ■ No DETAILS

WERE TRACERS USED □ Yes ■ No TYPE OF TRACER(S) USED N/A

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API 47- 085 - 10144 Farm name Eddy F. Landrum Well number Ericson Unit 3H

PERFORATION RECORD

| Stage No. | Perforation date | Perforated from MD ft. | Perforated to MD ft. | Number of Perforations | Formation(s) |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | SEE ATTACHED EXHIBIT 1 | | |
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Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

| Stage No. | Stimulations Date | Ave Pump Rate (BPM) | Ave Treatment Pressure (PSI) | Max Breakdown Pressure (PSI) | ISIP (PSI) | Amount of Proppant (lbs) | Amount of Water (bbls) | Amount of Nitrogen/other (units) |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
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| | | | | | | | | |
| | | | SEE ATTACHED EXHIBIT 2 | | | | | |
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Please insert additional pages as applicable.

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API 47- 085 - 10144 Farm name Eddy F. Landrum Well number Ericson Unit 3H

| PRODUCING FORMATION(S) | DEPTHS | | | |
|---|---|---|---|---|
| Marcellus | 6299' (Top) | TVD | 6551' (Top) | MD |
| | | | | |
| | | | | |
| | | | | |

Please insert additional pages as applicable.

GAS TEST ☐ Build up ☐ Drawdown ■ Open Flow OIL TEST ■ Flow ☐ Pump

SHUT-IN PRESSURE Surface 3000 psi Bottom Hole ---- psi DURATION OF TEST ----- hrs

OPEN FLOW

| Gas | Oil | NGL | Water | GAS MEASURED BY |
|---|---|---|---|---|
| 11159 mcfpd | 196 bpd | ---- bpd | 60 bpd | ☐ Estimated ■ Orifice ☐ Pilot |

| LITHOLOGY/ FORMATION | TOP DEPTH IN FT NAME TVD | BOTTOM DEPTH IN FT TVD | TOP DEPTH IN FT MD | BOTTOM DEPTH IN FT MD | DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, $H_2S$, ETC) |
|---|---|---|---|---|---|
| | 0 | | 0 | | |
| | | | | | SEE ATTACHED EXHIBIT 3 |
| | | | | | |
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Please insert additional pages as applicable.

Drilling Contractor Precision Drilling Company, LP
Address 2640 Reach Road City Williamsport State PA Zip 17701

Logging Company Rush Wellsite Services
Address 600 Alpha Drive City Canonsburg State PA Zip 15317

Cementing Company Nabors Completion & Production Services, Co. (bought Superior)
Address 1650 Hackers Creek City Jane Lew State WV Zip 26378

Stimulating Company US Well Services
Address 533 Industrial Park Drive City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Natalie Komp Telephone 303-357-6820
Signature [signature] Title Permitting Agent Date 2/9/2016

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

| API 47-085-10144 Farm Name Eddy F. Landrum Well Number Ericson Unit 3H | | | | | |
|---|---|---|---|---|---|
| **EXHIBIT 1** | | | | | |
| Stage No. | Perforation Date | Perforated from MD ft. | Perforated to MD ft. | Number of Perforations | Formations |
| 1 | 31-Jul-15 | 12,890 | 13,056 | 60 | Marcellus |
| 2 | 21-Aug-15 | 12,693 | 12,859 | 60 | Marcellus |
| 3 | 21-Aug-15 | 12,496 | 12,662 | 60 | Marcellus |
| 4 | 21-Aug-15 | 12,299 | 12,465 | 60 | Marcellus |
| 5 | 21-Aug-15 | 12,103 | 12,269 | 60 | Marcellus |
| 6 | 22-Aug-15 | 11,906 | 12,072 | 60 | Marcellus |
| 7 | 22-Aug-15 | 11,709 | 11,875 | 60 | Marcellus |
| 8 | 22-Aug-15 | 11,512 | 11,678 | 60 | Marcellus |
| 9 | 23-Aug-15 | 11,315 | 11,481 | 60 | Marcellus |
| 10 | 23-Aug-15 | 11,118 | 11,284 | 60 | Marcellus |
| 11 | 23-Aug-15 | 10,921 | 11,087 | 60 | Marcellus |
| 12 | 23-Aug-15 | 10,724 | 10,891 | 60 | Marcellus |
| 13 | 25-Aug-15 | 10,528 | 10,694 | 60 | Marcellus |
| 14 | 25-Aug-15 | 10,331 | 10,497 | 60 | Marcellus |
| 15 | 26-Aug-15 | 10,134 | 10,300 | 60 | Marcellus |
| 16 | 26-Aug-15 | 9,937 | 10,103 | 60 | Marcellus |
| 17 | 26-Aug-15 | 9,740 | 9,906 | 60 | Marcellus |
| 18 | 28-Aug-15 | 9,543 | 9,709 | 60 | Marcellus |
| 19 | 28-Aug-15 | 9,346 | 9,513 | 60 | Marcellus |
| 20 | 28-Aug-15 | 9,150 | 9,316 | 60 | Marcellus |
| 21 | 29-Aug-15 | 8,953 | 9,119 | 60 | Marcellus |
| 22 | 29-Aug-15 | 8,756 | 8,922 | 60 | Marcellus |
| 23 | 29-Aug-15 | 8,559 | 8,725 | 60 | Marcellus |
| 24 | 29-Aug-15 | 8,362 | 8,528 | 60 | Marcellus |
| 25 | 30-Aug-15 | 8,165 | 8,331 | 60 | Marcellus |
| 26 | 30-Aug-15 | 7,968 | 8,135 | 60 | Marcellus |
| 27 | 30-Aug-15 | 7,772 | 7,938 | 60 | Marcellus |
| 28 | 30-Aug-15 | 7,575 | 7,741 | 60 | Marcellus |
| 29 | 30-Aug-15 | 7,378 | 7,544 | 60 | Marcellus |
| 30 | 31-Aug-15 | 7,181 | 7,347 | 60 | Marcellus |
| 31 | 31-Aug-15 | 6,984 | 7,150 | 60 | Marcellus |
| 32 | 31-Aug-15 | 6,787 | 6,953 | 60 | Marcellus |
| 33 | 1-Sep-15 | 6,590 | 6,756 | 60 | Marcellus |

API 47-085-10144 Farm Name Eddy F.Landrum Well Number Ericson Unit 3H

## EXHIBIT 2

| Stage No. | Stimulations Date | Avg Pump Rate | Avg Treatment Pressure (PSI) | Max Breakdown Pressure (PSI) | ISIP (PSI) | Amount of Proppant (lbs) | Amount of Water (bbls) | Amount of Nitrogen/ other (units) |
|---|---|---|---|---|---|---|---|---|
| 1 | 20-Aug-15 | 63.1 | 7,217 | N/A | 3,988 | 214,160 | 7,085 | N/A |
| 2 | 21-Aug-15 | 68.5 | 7,119 | 6,204 | 2,803 | 237,910 | 6,840 | N/A |
| 3 | 21-Aug-15 | 66.2 | 6,930 | 6,417 | 4,027 | 237,750 | 6,929 | N/A |
| 4 | 21-Aug-15 | 64.9 | 6,894 | 6,277 | 3,275 | 238,760 | 6,628 | N/A |
| 5 | 21-Aug-15 | 65.4 | 7,115 | 6,649 | 3,760 | 237,580 | 6,482 | N/A |
| 6 | 22-Aug-15 | 65.2 | 6,867 | 7,018 | 4,515 | 193,830 | 6,827 | N/A |
| 7 | 22-Aug-15 | 67.8 | 6,674 | 6,014 | 3,028 | 235,840 | 6,258 | N/A |
| 8 | 22-Aug-15 | 66.1 | 6,829 | 5,863 | 4,034 | 171,680 | 6,846 | N/A |
| 9 | 23-Aug-15 | 67.2 | 6,990 | 6,507 | 2,993 | 237,780 | 6,453 | N/A |
| 10 | 23-Aug-15 | 67.8 | 6,613 | 6,059 | 2,852 | 238,310 | 6,230 | N/A |
| 11 | 23-Aug-15 | 68.3 | 6,713 | 5,856 | 2,906 | 205,710 | 6,523 | N/A |
| 12 | 23-Aug-15 | 69.7 | 6,878 | 6,484 | 5,275 | 157,160 | 6,497 | N/A |
| 13 | 25-Aug-15 | 65.8 | 6,716 | N/A | 3,198 | 237,860 | 6,341 | N/A |
| 14 | 25-Aug-15 | 63.8 | 7,251 | 6,584 | 5,052 | 154,040 | 6,214 | N/A |
| 15 | 26-Aug-15 | 63.4 | 6,789 | 5,859 | 3,138 | 150,354 | 6,722 | N/A |
| 16 | 26-Aug-15 | 65.6 | 6,734 | 6,019 | 2,788 | 235,350 | 6,710 | N/A |
| 17 | 26-Aug-15 | 30.7 | 8,468 | 6,243 | 4,759 | 2,620 | 3,535 | N/A |
| 18 | 28-Aug-15 | 56.3 | 7,360 | 9,033 | 4,104 | 114,015 | 5,616 | N/A |
| 19 | 28-Aug-15 | 63.7 | 6,475 | 5,923 | 3,938 | 172,086 | 5,830 | N/A |
| 20 | 28-Aug-15 | 56.0 | 6,431 | 7,350 | 3,527 | 221,680 | 6,249 | N/A |
| 21 | 29-Aug-15 | 58.7 | 5,877 | 5,754 | 2,592 | 239,438 | 6,051 | N/A |
| 22 | 29-Aug-15 | 63.5 | 5,972 | 5,769 | 2,892 | 234,546 | 5,673 | N/A |
| 23 | 29-Aug-15 | 60.1 | 6,401 | 5,590 | 3,300 | 113,830 | 5,610 | N/A |
| 24 | 29-Aug-15 | 54.7 | 6,212 | 5,682 | 4,951 | 171,860 | 6,073 | N/A |
| 25 | 30-Aug-15 | 60.4 | 6,017 | 6,107 | 2,914 | 228,590 | 5,759 | N/A |
| 26 | 30-Aug-15 | 62.5 | 6,194 | 5,418 | 3,372 | 115,340 | 5,686 | N/A |
| 27 | 30-Aug-15 | 61.2 | 6,288 | 5,570 | 4,230 | 210,800 | 5,635 | N/A |
| 28 | 30-Aug-15 | 56.3 | 6,957 | 6,280 | 4,481 | 116,560 | 5,880 | N/A |
| 29 | 30-Aug-15 | 61.2 | 5,886 | 6,059 | 3,818 | 234,100 | 5,702 | N/A |
| 30 | 31-Aug-15 | 58.2 | 5,890 | 5,611 | 3,593 | 226,920 | 5,663 | N/A |
| 31 | 31-Aug-15 | 61.0 | 5,661 | 5,911 | 3,450 | 228,980 | 5,568 | N/A |
| 32 | 31-Aug-15 | 53.1 | 5,882 | 5,826 | 4,538 | 93,830 | 6,234 | N/A |
| 33 | 1-Sep-15 | 62.8 | 5,614 | 6,027 | 3,170 | 223,490 | 5,976 | N/A |
| | AVG= | **61.8** | **6,603** | **6,192** | **3,675** | **6,332,759** | **202,325** | TOTAL |

| API 47-085-10144 Farm Name Eddy F. Landrum Well Number Ericson Unit 3H | | | | |
|---|---|---|---|---|
| **EXHIBIT 3** | | | | |
| **LITHOLOGY/ FORMATION** | **TOP DEPTH (TVD) From Surface** | **BOTTOM DEPTH (TVD) From Surface** | **TOP DEPTH (MD) From Surface** | **BOTTOM DEPTH (MD) From Surface** |
| Fresh Water | 216' | N/A | 216' | N/A |
| Silty Shale | 0 | 176 | 0 | 176 |
| Coal | est 176 | 236 | est 176 | 236 |
| Sandstone | est 236 | 316 | est 236 | 316 |
| Coal | est 316 | 376 | est 316 | 376 |
| Sandstone | est 376 | 396 | est 376 | 396 |
| Silty Shale | est 396 | 416 | est 396 | 416 |
| Sandstone | est 416 | 516 | est 416 | 516 |
| Coal | est 516 | 576 | est 516 | 576 |
| Sandstone | est 576 | 616 | est 576 | 616 |
| Sandy Shale | est 616 | 736 | est 616 | 736 |
| Shale | est 736 | 776 | est 736 | 776 |
| Sandy Siltstone | est 776 | 876 | est 776 | 876 |
| Shale | est 876 | 926 | est 876 | 926 |
| Sandstone | est 926 | 976 | est 926 | 976 |
| Coal | est 976 | 1,036 | est 976 | 1,036 |
| Shale | est 1036 | 1,056 | est 1036 | 1,056 |
| Coal | est 1056 | 1,246 | est 1056 | 1,246 |
| Shale | est 1246 | 1,336 | est 1246 | 1,336 |
| Sandstone | est 1336 | 1,416 | est 1336 | 1,416 |
| Shale | est 1416 | 1,516 | est 1416 | 1,516 |
| Sandy Siltsone/Coal | est 1516 | 1,596 | est 1516 | 1,596 |
| Silty Sandstone | est 1596 | 1,716 | est 1596 | 1,716 |
| Coal | est 1716 | 1,776 | est 1716 | 1,776 |
| Sandy Shale/Coal | est 1776 | 1,871 | est 1776 | 1,877 |
| Big Lime | 1,871 | 2,013 | 1,877 | 2,019 |
| Big Injun | 2,013 | 2,741 | 2,019 | 2,747 |
| Fifty Foot Sandstone | 2,741 | 2,861 | 2,747 | 2,867 |
| Gordon | 2,861 | 3,295 | 2,867 | 3,301 |
| Bayard | 3,295 | 4,036 | 3,301 | 4,042 |
| Baltown | 4,036 | 4,502 | 4,042 | 4,508 |
| Bradford | 4,502 | 4,892 | 4,508 | 4,898 |
| Benson | 4,892 | 5,122 | 4,898 | 5,128 |
| Alexander | 5,122 | 6,042 | 5,128 | 6,093 |
| Sycamore | 6,042 | 6,138 | 6,093 | 6,216 |
| Middlesex | 6,138 | 6,246 | 6,216 | 6,400 |
| Burkett | 6,246 | 6,276 | 6,400 | 6,475 |
| Tully | 6,276 | 6,299 | 6,475 | 6,551 |
| Marcellus | 6,299 | NA | 6,551 | 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.

# Hydraulic Fracturing Fluid Product Component Information Disclosure

| | |
|---|---|
| Job Start Date: | 8/20/2015 |
| Job End Date: | 9/1/2015 |
| State: | West Virginia |
| County: | Ritchie |
| API Number: | 47-085-10144-00-00 |
| Operator Name: | Antero Resources Corporation |
| Well Name and Number: | Ericson 3H |
| Longitude: | -80.92537500 |
| Latitude: | 39.32742500 |
| Datum: | NAD83 |
| Federal/Tribal Well: | NO |
| True Vertical Depth: | 6,343 |
| Total Base Water Volume (gal): | 8,737,196 |
| Total Base Non Water Volume: | 0 |

FracFocus Chemical Disclosure Registry

GROUNDWATER PROTECTION COUNCIL

Oil & Gas

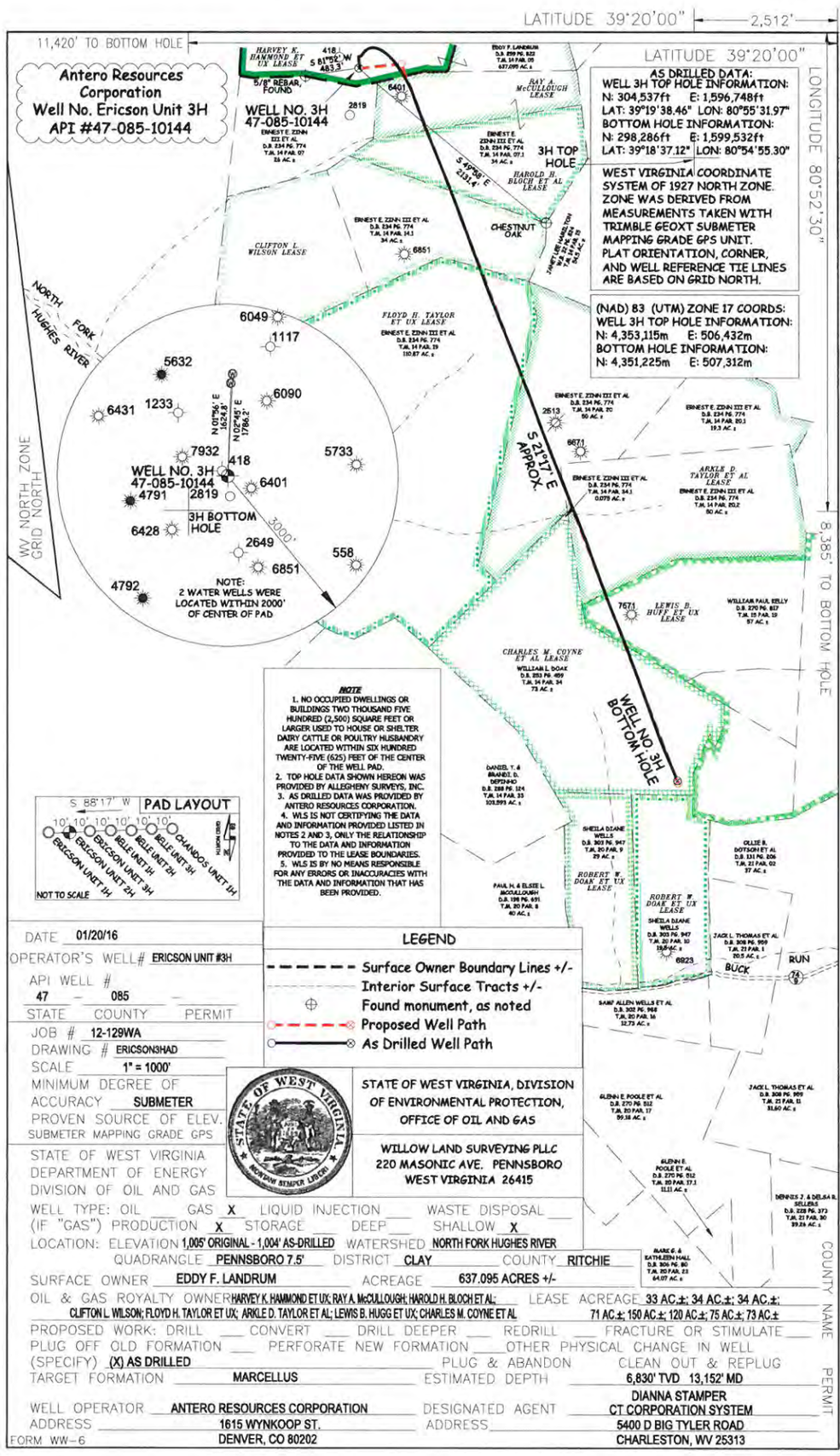
**Hydraulic Fracturing Fluid Composition:**

| Trade Name | Supplier | Purpose | Ingredients | Chemical Abstract Service Number (CAS #) | Maximum Ingredient Concentration in Additive (% by mass)** | Maximum Ingredient Concentration in HF Fluid (% by mass)** | Comments |
|---|---|---|---|---|---|---|---|
| Water | Antero Resources | Base Fluid | | | | | |
| | | | Water | 7732-18-5 | 100.00000 | 91.49804 | |
| Sand | U.S. Well Services, LLC | Proppant | | | | | |
| | | | Crystalline Silica, quartz | 14808-60-7 | 100.00000 | 7.95182 | |
| HCL Acid (12.6%-18.0%) | U.S. Well Services, LLC | Bulk Acid | | | | | |
| | | | Water | 7732-18-5 | 87.50000 | 0.26318 | |
| | | | Hydrogen Chloride | 7647-01-0 | 18.00000 | 0.06286 | |
| LGC-15 | U.S. Well Services | Gelling Agents | | | | | |
| | | | Guar Gum | 9000-30-0 | 50.00000 | 0.05277 | |
| | | | Petroleum Distillates | 64742-47-8 | 60.00000 | 0.04997 | |
| | | | Suspending agent (solid) | 14808-60-7 | 3.00000 | 0.00807 | |
| | | | Surfactant | 68439-51-0 | 3.00000 | 0.00317 | |
| WFRA-405 | U.S. Well Services | Friction Reducer | | | | | |
| | | | Water | 7732-18-5 | 40.00000 | 0.02673 | |
| | | | Anionic Polyacrylamide | Proprietary | 40.00000 | 0.02673 | |
| | | | Sodium Chloride | 7647-14-5 | 20.00000 | 0.01337 | |
| | | | Petroleum Distillates | 64742-47-8 | 20.00000 | 0.01076 | |
| | | | Ethoxylated alcohol blend | Proprietary | 5.00000 | 0.00334 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SI-1100 | U.S. Well Services | Scale Inhibitor | | | | | |
| | | | Water | 7732-18-5 | 80.00000 | 0.01092 | |
| | | | Ethylene Glycol | 107-21-1 | 25.00000 | 0.00386 | |
| | | | Copolymer of Maleic and Acrylic acid | 52255-49-9 | 10.00000 | 0.00161 | |
| | | | Potassium salt of diethylene triamine penta (methylene phosphonic acid) | 15827-60-8 | 7.50000 | 0.00138 | |
| | | | Hexamethylene tramine penta (methylene phosphonic acid) | 34690-00-1 | 5.00000 | 0.00089 | |
| | | | Phosphino carboxylic acid polymer | 71050-62-9 | 5.00000 | 0.00089 | |
| | | | Hexamethylene diamine penta (methylene phosphonic acid) | 23605-74-5 | 2.00000 | 0.00036 | |
| K-BAC 1020 | U.S. Well Services | Anti-Bacterial Agent | | | | | |
| | | | 2,2-dibromo-3-nitrilopropionamide | 10222-01-2 | 20.00000 | 0.00452 | |
| | | | Deionized Water | 7732-18-5 | 28.00000 | 0.00258 | |
| AP One | U.S. Well Services | Gel Breakers | | | | | |
| | | | Ammonium Persulfate | 7727-54-0 | 100.00000 | 0.00165 | |
| AI-301 | U.S. Well Services | Acid Corrosion Inhibitors | | | | | |
| | | | Diethylene Glycol | 111-46-6 | 30.00000 | 0.00020 | |
| | | | Methenamine | 100-97-0 | 20.00000 | 0.00016 | |
| | | | Hydrogen Chloride | 7647-01-0 | 10.00000 | 0.00007 | |
| | | | Polyethylene polyamine | 68603-67-8 | 10.00000 | 0.00006 | |
| | | | Coco amine | 61791-14-8 | 5.00000 | 0.00003 | |
| Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS. | | | | | | | |

* Total Water Volume sources may include fresh water, produced water, and/or recycled water
** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)



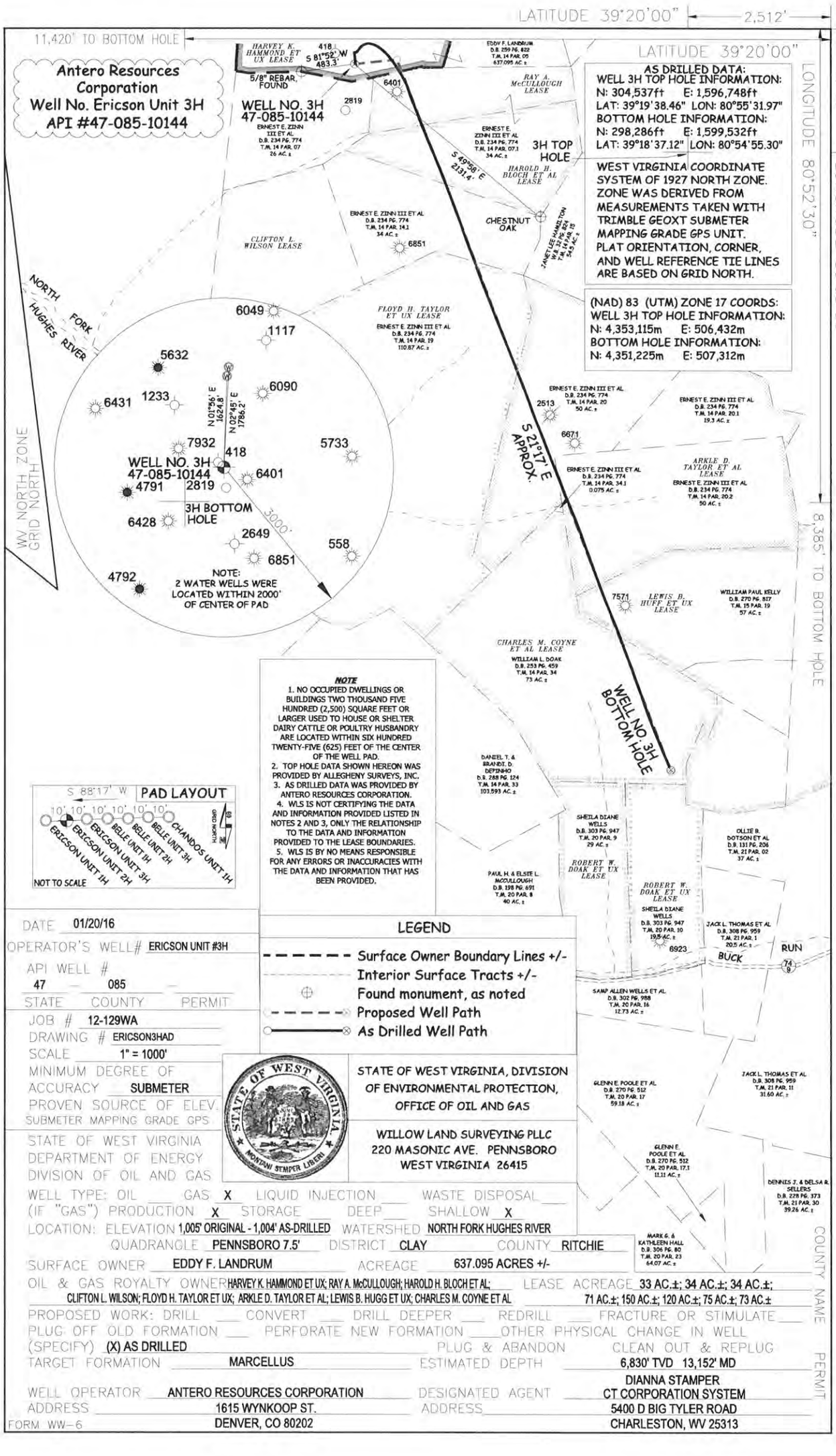

DATE 01/20/16
OPERATOR'S WELL# ERICSON UNIT #3H
API WELL # 47 – 085 –
STATE COUNTY PERMIT
JOB # 12-129WA
DRAWING # ERICSON3HAD
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
LOCATION: ELEVATION 1,005' ORIGINAL - 1,004' AS-DRILLED WATERSHED NORTH FORK HUGHES RIVER
QUADRANGLE PENNSBORO 7.5' DISTRICT CLAY COUNTY RITCHIE
SURFACE OWNER EDDY F. LANDRUM ACREAGE 637.095 ACRES +/-
OIL & GAS ROYALTY OWNER HARVEY K. HAMMOND ET UX; RAY A. McCULLOUGH; HAROLD H. BLOCH ET AL; CLIFTON L. WILSON; FLOYD H. TAYLOR ET UX; ARKLE D. TAYLOR ET AL; LEWIS B. HUGG ET UX; CHARLES M. COYNE ET AL LEASE ACREAGE 33 AC.±; 34 AC.±; 34 AC.±; 71 AC.±; 150 AC.±; 120 AC.±; 75 AC.±; 73 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 PLUG & ABANDON ___ CLEAN OUT & REPLUG ___
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,830' TVD 13,152' MD

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

FORM WW-6


LATITUDE 39°20'00"
2,512'
11,420' TO BOTTOM HOLE
LATITUDE 39°20'00"
2,180'
LONGITUDE 80°52'30"
LONGITUDE 80°55'00"
8,385' TO BOTTOM HOLE
Antero Resources Corporation
Well No. Ericson Unit 3H
API #47-085-10144
WELL NO. 3H
47-085-10144
3H TOP HOLE
3H BOTTOM HOLE
AS DRILLED DATA:
WELL 3H TOP HOLE INFORMATION:
N: 304,537ft E: 1,596,748ft
LAT: 39°19'38.46" LON: 80°55'31.97"
BOTTOM HOLE INFORMATION:
N: 298,286ft E: 1,599,532ft
LAT: 39°18'37.12" LON: 80°54'55.30"
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 3H TOP HOLE INFORMATION:
N: 4,353,115m E: 506,432m
BOTTOM HOLE INFORMATION:
N: 4,351,225m E: 507,312m
WV NORTH ZONE GRID NORTH
NORTH FORK HUGHES RIVER
S 81°52' W 483.3'
5/8" REBAR FOUND
S 49°58' E 2131.4'
S 21°17' E APPROX.
N 01°56' E 1624.8'
N 02°45' E 1786.2'
3000'
NOTE: 2 WATER WELLS WERE LOCATED WITHIN 2000' OF CENTER OF PAD
HARVEY K. HAMMOND ET UX LEASE
RAY A. McCULLOUGH LEASE
HAROLD H. BLOCH ET AL LEASE
CLIFTON L. WILSON LEASE
FLOYD H. TAYLOR ET UX LEASE
ARKLE D. TAYLOR ET AL LEASE
LEWIS B. HUFF ET UX LEASE
CHARLES M. COYNE ET AL LEASE
ROBERT W. DOAK ET UX LEASE
CHESTNUT OAK
EDDY F. LANDRUM D.B. 259 PG. 822 T.M. 14 PAR. 05 637.095 AC. ±
ERNEST E. ZINN III ET AL D.B. 234 PG. 774 T.M. 14 PAR. 07 26 AC. ±
ERNEST E. ZINN III ET AL D.B. 234 PG. 774 T.M. 14 PAR. 07.1 34 AC. ±
ERNEST E. ZINN III ET AL D.B. 234 PG. 774 T.M. 14 PAR. 14.1 34 AC. ±
ERNEST E. ZINN III ET AL D.B. 234 PG. 774 T.M. 14 PAR. 19 110.87 AC. ±
ERNEST E. ZINN III ET AL D.B. 234 PG. 774 T.M. 14 PAR. 20 50 AC. ±
ERNEST E. ZINN III ET AL D.B. 234 PG. 774 T.M. 14 PAR. 20.1 19.3 AC. ±
ERNEST E. ZINN III ET AL D.B. 234 PG. 774 T.M. 14 PAR. 34.1 0.075 AC. ±
ERNEST E. ZINN III ET AL D.B. 234 PG. 774 T.M. 14 PAR. 20.2 50 AC. ±
JANET LEE HAMILTON W.B. 32 PG. 824 T.M. 14 PAR. 15 45.5 AC. ±
WILLIAM L. DOAK D.B. 253 PG. 459 T.M. 14 PAR. 34 73 AC. ±
WILLIAM PAUL KELLY D.B. 270 PG. 817 T.M. 15 PAR. 19 57 AC. ±
DANIEL T. & BRANDT. D. DEFINIHO D.B. 288 PG. 124 T.M. 14 PAR. 33 103.593 AC. ±
SHEILA DIANE WELLS D.B. 303 PG. 947 T.M. 20 PAR. 9 29 AC. ±
PAUL H. & ELSIE L. MCCULLOUGH D.B. 198 PG. 691 T.M. 20 PAR. 8 40 AC. ±
SHEILA DIANE WELLS D.B. 303 PG. 947 T.M. 20 PAR. 10 19.5 AC. ±
OLLIE B. DOTSON ET AL D.B. 131 PG. 206 T.M. 21 PAR. 02 37 AC. ±
JACK L. THOMAS ET AL D.B. 308 PG. 959 T.M. 21 PAR. 1 20.5 AC. ±
SAMP ALLEN WELLS ET AL. D.B. 302 PG. 988 T.M. 20 PAR. 16 12.73 AC. ±
GLENN E. POOLE ET AL D.B. 270 PG. 512 T.M. 20 PAR. 17 59.18 AC. ±
JACK L. THOMAS ET AL D.B. 308 PG. 959 T.M. 21 PAR. 11 31.60 AC. ±
GLENN E. POOLE ET AL D.B. 270 PG. 512 T.M. 20 PAR. 17.1 11.11 AC. ±
DENNIS J. & DELSA R. SELLERS D.B. 228 PG. 373 T.M. 21 PAR. 30 39.26 AC. ±
MARK G. & KATHLEEN HALL D.B. 306 PG. 80 T.M. 20 PAR. 23 64.07 AC. ±
RUN BUCK
COUNTY NAME PERMIT
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.
PAD LAYOUT
S 88°17' W
10' 10' 10' 10' 10' 10'
ERICSON UNIT 1H
ERICSON UNIT 2H
ERICSON UNIT 3H
BELLE UNIT 1H
BELLE UNIT 2H
BELLE UNIT 3H
CHANDOS UNIT 1H
GRID NORTH
NOT TO SCALE
LEGEND
Surface Owner Boundary Lines +/-
Interior Surface Tracts +/-
Found monument, as noted
Proposed Well Path
As Drilled Well Path
STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WILLOW LAND SURVEYING PLLC
220 MASONIC AVE. PENNSBORO
WEST VIRGINIA 26415
DATE 01/20/16
OPERATOR'S WELL# ERICSON UNIT #3H
API WELL # 47 — 085 —
STATE COUNTY PERMIT
JOB # 12-129WA
DRAWING # ERICSON3HAD
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS
STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY
DIVISION OF OIL AND GAS
WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
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