

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

API 47-033-05817H6A County Harrison District Harrison / Union
Quad West Milford 7.5' Pad Name KST5HS Field/Pool Name Kennedy Storage
Farm name JAMES IVAN MCDONALD Well Number KST5DHS
Operator (as registered with the OOG) CNX Gas Company LLC
Address P.O. Box 1248 City Jane Lew State WV Zip 26378

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,335,844.34 m Easting 545,519.97 m
Landing Point of Curve Northing 4,335,891.80 m Easting 545,649.51 m
Bottom Hole Northing 4,332,827.14 m Easting 546,661.77 m

Elevation (ft) 1156.09' 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)
N/A (Production hole has not been drilled.)

Date permit issued 07/25/2014 Date drilling commenced 01/09/2015 Date drilling ceased N/A (Drilling has not been completed)
Date completion activities began N/A (Completion has not begun.) Date completion activities ceased N/A
Verbal plugging (Y/N) N 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 135 Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1570, 2355 Void(s) encountered (Y/N) depths N
Coal depth(s) ft 80', 390', 1060', 1440 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by: _____

APPROVED

NAME: Sam Ward
DATE: 1/5/17

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DEC 28 2016
WV Dept of Environmental Protection

API 47-033 - 05B17H6A Farm name JAMES IVAN MCDONALD Well number KST6DHS

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"	114'	N	J-55 84# / 114'	N/A	N (grout)
Surface	17 1/2"	13 3/8"	981.3'	N	J-55 84.5# / 981.3'	N/A	Y
Coal	-	-	-	-	-	-	-
Intermediate 1	12 1/4"	8 5/8"	2484'	N	J-55 36# / 2484'	N/A	Y
Intermediate 2	-	-	-	-	-	-	-
Intermediate 3	-	-	-	-	-	-	-
Production	N/A	(Production hole	has not been	drilled.)	-	-	-
Tubing	N/A	(Tubing has not	been run.)	-	-	-	-
Packers type and depth sst	None						

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	875	15.80	1.22	820	0'	24
Surface	Class A	700	15.61	1.21	847	0'	8
Coal	-	-	-	-	-	-	-
Intermediate 1	Class A	780	15	1.41	1099	0'	8
Intermediate 2	-	-	-	-	-	-	-
Intermediate 3	-	-	-	-	-	-	-
Production	N/A	(Production hole	has not been	drilled.)	-	-	-
Tubing	N/A	(Tubing has not	been run.)	-	-	-	-

Drillers TD (ft) N/A (Drilling has not been completed.)

Loggers TD (ft) N/A (Drilling has not been completed.)

Deepest formation penetrated N/A (Drilling has not been completed.)

Plug back to (ft) N/A (Drilling has not been completed.)

Plug back procedure N/A (Drilling has not been completed.)

Kick off depth (ft) N/A (Drilling has not been completed.)

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

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING Conductor - No centralizers used.

Surface - Bow spring centralizers on first joint then every fourth joint to 100 feet from surface.

Coal - Bow spring centralizers one on the first two joints and every fourth joint until inside surface casing.

Intermediate - Bow spring centralizers one on the first two joints and every fourth joint until inside surface casing.

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS N/A (Well has not been completed.)

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS N/A (Well has not been completed.)

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED N/A (Well has not been completed.)

API 47- 033 - 05817H6A Farm name JAMES IVAN MCDONALD Well number KST5DHS

PRODUCING FORMATION(S)	DEPTHS	
N/A (Well has not been completed.)	TVD	MD
No producing formation(s)		

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface N/A psi Bottom Hole N/A psi DURATION OF TEST N/A hrs

OPEN FLOW Gas N/A mcfpd Oil N/A bpd NGL N/A bpd Water N/A bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP		BOTTOM		DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		
					See Attached

Please insert additional pages as applicable.

Drilling Contractor Noah Horn
Address 1070 Sandy Valley Lane City Oakwood State VA Zip 24631

Logging Company Halliburton
Address 121 Champion Way, Suite 200 City Canonsburg State PA Zip 16317

Cementing Company CalFrac
Address 2001 Summit View Road City Smithfield State PA Zip 15478

Stimulating Company N/A (Formations have not been perforated or stimulated.)
Address N/A City N/A State N/A Zip N/A

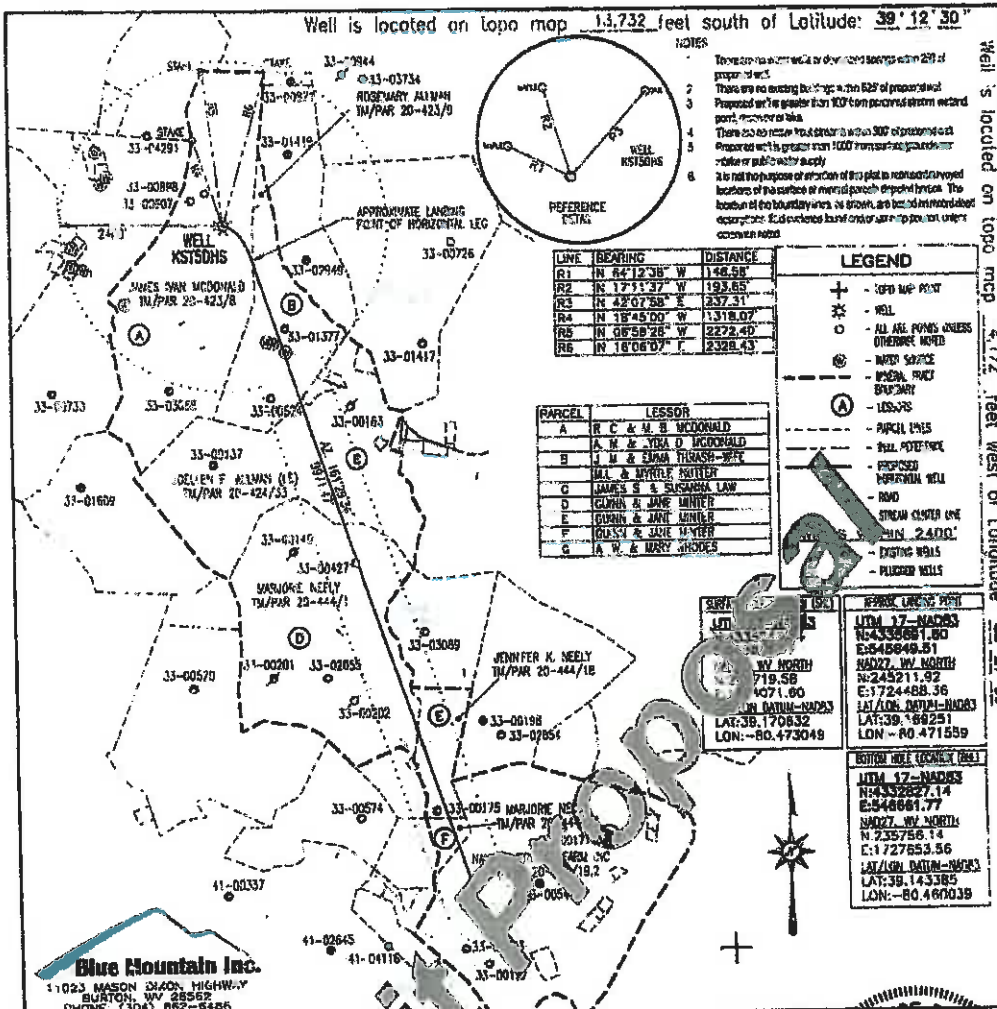
Please insert additional pages as applicable.

Completed by GEX Gas WV Operations Company, LLC - Drilling and Completions Telephone 304-884-2000
Signature *Steve Spiker* Title Steve Spiker - Completions Manager-Gas WV Date 3/15/16

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

API 47-933-05817H6A Form name JAMES IVAN McDONALD Well number ESTSDHS

LITHOLOGY / FORMATION	TOP DEPTH IN FT		BOTTOM DEPTH IN FT		TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY TYPE OF FLUID (FRESHWATER, BRINE, GAS, H2S, ETC)
	TVD	Q	TVD	Q			
Shale/Coal	80	80	180	180			
Limestone/Shale/Siltstone	180	180	220	220			
Shale/Redrock/Siltstone	220	220	360	360			
Redrock/Siltstone	360	360	430	430			
Redrock/Siltstone/Coal	430	430	540	540			
Shale/Redrock/Siltstone	540	540	600	600			
Sh/RR/Siltstone/Sandstone	600	600	660	660			
Shale/Redrock/Siltstone	660	660	780	780			
Stone: Lime, Silt, Sand	780	780	960	960			
SN/RR/Siltstone/Limestone	960	960	1040	1040			
Redrock/Sandstone	1040	1040	1060	1060			
Sandstone	1060	1060	1080	1080			
SN/Redrock/Siltstone/Coal	1080	1080	1240	1240			
Shale/Redrock/Siltstone	1240	1240	1440	1440			
Shale/Siltstone/Sandstone	1440	1440	1458	1458			
Shale/Siltstone/Coal	1458	1458	1482	1482			Light Gray
Little Lime	1500	1500	1532	1532			Light Gray/Brown
Big Lime	1600	1600	1671	1671			Light Gray
Big Injun	1682	1682	1913	1913			Gray
Giant Sand / Giant A	1972	1972	2059	2059			Verticlated
50/30 Foot Sands	2096	2096	2339	2339			Med Gray
Gordon Sand	2240	2240	2359	2359			Dark Gray
Shale	2368	2368	2391	2391			Med Gray
5th Sand	2407	2407	2470	2470			Med Gray
Bayard Sand	2471	2471					Med/Dark Gray
Siltstone/Shale							



LINE	BEARING	DISTANCE
R1	N 84°12'36\" W	148.58
R2	N 17°11'37\" W	193.65
R3	N 42°07'58\" E	237.31
R4	N 18°45'00\" W	1318.07
R5	N 06°58'28\" W	2272.40
R6	N 16°08'07\" E	2328.43

PARCEL	LESSOR
A	R C & M B MCDONALD
B	A M & LYRA D MCDONALD
C	M M & EMMA THOMAS-WAY
D	WILL & MERRILE KRITZER
E	JAMES S & SUSANNA LAW
F	CLYDE & JANE WINTER
G	LEWIS & JANE WINTER
H	ROSEY & JANE WINTER
I	A W & MARY RHODES

LEGEND	
+	TOP MAP POINT
⊗	WELL
○	ALL ALL PONES UNLESS OTHERWISE NOTED
⊙	WELL SOURCE
⊖	WATER POINT
⊕	BOUNDARY
⊗	LESSOR
⊖	PARCEL LINES
⊖	PAV. DRIVE
⊖	PROPOSED
⊖	PROPOSED WELL
⊖	ROAD
⊖	STREAM CENTER LINE
⊖	MIN. 2.000'
⊖	DITCH
⊖	PLUGGED WELLS

SURFACE AREA	
UTM 17-NAD83	N433881.80
E548649.51	NAD27 W. NORTH
N:245211.92	E:1724488.36
LAT:39.170832	LON:-80.473049

Blue Mountain Inc.
 11023 MASON DRAGON HIGHWAY
 BURTON, WV 25852
 PHONE: (304) 862-6486

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS DRAWING IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

FILE #: KST5DHS
 DRAWING #: KST5DHS
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/250'
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT 243,811
 R.P.E.: _____ L.L.S.: P.S. No. 2000

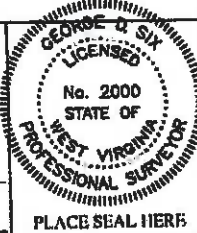
DATE: JULY 25, 2014
 OPERATOR'S WELL #: KST5DHS
 API WELL #: 47 33 05817 HSA
 STATE COUNTY PERMIT

Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow

WATERSHED: MIDDLE WEST FORK CREEK ELEVATION: 1156.09'±
 COUNTY/DISTRICT: HARRISON / UNION QUADRANGLE: WEST MILFORD, WV 7.5'
 SURFACE OWNER: JAMES VAN MCDONALD ACREAGE: 176.000±
 OIL & GAS ROYALTY OWNER: R C MCDONALD & M B MCDONALD, A M MCDONALD & LYRA D MCDONALD ACREAGE: 630.000±

DRILL CONVERT DRILL DISPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TMD: 7,170'± TMD: 17,752'±
 WELL OPERATOR: CNA GAS COMPANY LLC DESIGNATED AGENT: MATTHEW IMRICH
 Address: P.O. BOX 1248 Address: P.O. BOX 1248
 City: JANE LEW State: WV Zip Code: 26378 City: JANE LEW State: WV Zip Code: 26378



PROFILE VIEW

API 47-033-05817H6A Farm Name JAMES IVAN MCDONALD Well Number KSTSDHS

Profile View – Not Available – Drilling has not been completed

RECEIVED
Office of the State Auditor
DEC 28 2015
Missouri Department of
Environmental Protection

DEVIATION SURVEY

API 47-033-05817H6A Farm Name JAMES IVAN MCDONALD Well Number KSTDHS

Deviation Survey – Not Available – Drilling has not been completed

FRAC FOCUS REGISTRY

API 47-033-05817H6A Farm Name JAMES IVAN MCDONALD Well Number KSTSDHS

Frac Focus Registry – Not Available – Formations have not been perforated or stimulated

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Office of Oil and Gas
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WV Department of
Environmental Protection

01/13/2017

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Department of Environmental Protection - Office of Oil and Gas
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Coal depth(s) ft 80', 390', 1060', 1440 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:

APPROVED

NAME: Sam Ward

DATE: 1/5/17

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WV Department of
Environmental Protection

WPA-35
Rev. 8/23/13

API	47-033-05817H6A	Farm name	JAMES VAN MCDONALD	Well number	MSZDKS
LITHOLOGY / FORMATION	TOP DEPTH IN FT TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY TYPE OF FLUID (FRESHWATER, BRINE, GAS, H2S, ETC)
PH	80	80			
Shale/Coal	80	180			
Limestone/Shale/Siltstone	180	220			
Shale/Redrock/Siltstone	220	360			
Redrock/Siltstone	360	390			
Redrock/Siltstone/Coal	390	430			
Shale/Redrock/Siltstone	430	540			
Sh/RR/Siltstone/Sandstone	540	600			
Shale/Redrock/Siltstone	600	650			
Stone: Lime, Silt, Sand	650	780			
SH/RR/Siltstone/Limestone	780	960			
Redrock/Sandstone	960	1040			
Sandstone	1040	1060			
SH/Redrock/Siltstone/Coal	1060	1080			
Shale/Redrock/Siltstone	1080	1240			
Shale/Siltstone/Sandstone	1240	1440			
Shale/Siltstone/Coal	1440	1458			
Little Lime	1458	1482			Light Gray
Big Lime	1500	1552			Light grey/Brown
Big Injun	1600	1671			Light Gray
Gantz Sand / Gantz A	1852	1913			Grey
50/30 Foot Sands	1972	2059			Varkolored
Gordon Sand	2056	2239			Med Gray
Shale	2240	2359			Dark Gray
Fifth Sand	2360	2381			Med Gray
Bayard Sand	2447	2470			Med Gray
Siltstone/Shale	2471	2471			Med/Dark Gray

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Profile View – Not Available – Drilling has not been completed

FRACED
Office of Oil and Gas
DEC 28 2015

Well
EPA

FRAC FOCUS REGISTRY

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OFFICE OF OIL AND GAS
DEC 28 2016
BY: [illegible]
[illegible]

01/13/2017