



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Monday, August 8, 2022
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

ARSENAL RESOURCES LLC
6031 WALLACE RD. EXT. SUITE 101
WEXFORD, PA 15090

Re: Permit Modification Approval for JOHNSON TFP 40 202
47-091-01363-00-00

Lateral Extension. Lateral Leg Length 13642.2' to 14488'. Total Measured Depth 22136.9' to 22850'. Updated Lease Chain

ARSENAL RESOURCES LLC

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926- 0450.

A handwritten signature in blue ink, appearing to read 'James A. Martin', is written over a faint circular stamp.

James A. Martin
Chief

Operator's Well Number: JOHNSON TFP 40 202
Farm Name: RENEE JOHNSON
U.S. WELL NUMBER: 47-091-01363-00-00
Horizontal 6A New Drill
Date Modification Issued: 08/08/2022

Promoting a healthy environment.

08/12/2022

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: Arsenal Resources 494519412 Taylor Fleming Rosemont
Operator ID County District Quadrangle

2) Operator's Well Number: Johnson TFP 40 202 Well Pad Name: Johnson TFP 40

3) Farm Name/Surface Owner: Renee Johnson Public Road Access: CR 17, Oral Lake Road

4) Elevation, current ground: 1338.79' Elevation, proposed post-construction: 1332.5'

5) Well Type (a) Gas X Oil _____ Underground Storage _____

Other _____

(b) If Gas Shallow X Deep _____

Horizontal X

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus Shale, Top- 7,824.5ft, Bottom- 7,916.5ft, Anticipated Thickness- 92ft, Associated Pressure- 0.5 psi/ft

8) Proposed Total Vertical Depth: 7,903.5 ft

9) Formation at Total Vertical Depth: Marcellus Shale

10) Proposed Total Measured Depth: 22,850 ft ✓

11) Proposed Horizontal Leg Length: 14,488 ft ✓

12) Approximate Fresh Water Strata Depths: 38', 40', 49', 362', 670'

13) Method to Determine Fresh Water Depths: Offsetting wells reported water depths (091-00116, 091-00118, 091-00108, 091-00120)

14) Approximate Saltwater Depths: 1980'

15) Approximate Coal Seam Depths: Eik Lick-322.5', Harlem-398.5', Bakerstown-477.5', Brush Creek-577.5', Upper Freeport-630.5', Lower Freeport-692.5', Upper Kittanning-760.5', Middle Kittanning-825.5', Lower Kittanning-845.5', Clarion-876.5'

16) Approximate Depth to Possible Void (coal mine, karst, other): None Known

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes _____ No None Known

(a) If Yes, provide Mine Info: Name: _____

Depth: _____

Seam: _____

Owner: _____

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18)

CASING AND TUBING PROGRAM

TYPE	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	24	Used		94	120	120	CTS
Fresh Water	13.375	New	J-55	54.5	725	725	CTS
Coal							
Intermediate	9.625	New	J-55	40	2100	2100	CTS
Production	5.5	New	P-110	20	22,850	22,850	TOC @ 1,950
Tubing							
Liners							

Kenneth Greynolds
Digitally signed by Kenneth Greynolds
 DN: CN = Kenneth Greynolds email = Kenneth.L.Greynolds@wv.gov C = AD O = WVDEP OU = Oil and Gas
 Date: 2022.07.15 09:08:39 -0400

TYPE	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	24	36			0	Class A, 3% CaCl2	1.2
Fresh Water	13.375	17.5	0.38	2,730	900	Class A, 3% CaCl2	1.2
Coal							
Intermediate	9.625	12.25	0.395	3,950	1,500	Class A, 3% CaCl2	1.29
Production	5.5	8.5-8.75	0.361	15,920	11,500	Class A/50:50 Poz	1.29/1.34
Tubing					5,000		
Liners					N/A		

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PACKERS

Kind:				
Sizes:				
Depths Set:				

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

The well will be started with a conductor rig drilling a 36" hole to Conductor programmed depth then running 24" casing and circulate cement back to surface. The conductor rig will move out and the drilling rig will move in and rig up. The drilling rig will then spud a 17 1/2" hole and drill to fresh water casing (Surface) to the programmed depth, Run 13- 3/8" casing and cement to surface. The rig will continue drilling a 12- 1/4" intermediate hole to the programmed depth, run 9- 5/8" casing and cement to surface. The rig will then continue to drill an 8- 3/4" hole to a designed pilot hole depth, then trip out of hole to run wireline logs. A cement kick-off plug will then be set from bottom of the pilot hole to the designed KOP. We will then drill off the cement plug and start drilling the curve and lateral section to the programmed total measured depth, run 5 1/2" casing and cement according to the program.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

The well will be completed using a plug and perforation method and stimulated with a slickwater and sand slurry. The anticipated maximum rate will be 90 bpm and the maximum pressure will be 11,500 psi.

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21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 33.56

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22) Area to be disturbed for well pad only, less access road (acres): 6.20

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23) Describe centralizer placement for each casing string:

24"- No centralizers 13 3/8" – one bow spring centralizer on every other joint 9 5/8" – one bow spring centralizer every third joint from TD to surface 5 1/2" – one semi rigid centralizer on every joint from TD of casing to end of curve. Then every other joint to KOP. Every third joint from KOP to 2,300'; there will be no centralizers from 2,300 to surface.

24) Describe all cement additives associated with each cement type:

24" will be circulated to surface. The 13 3/8" casing will be cemented to surface with Class A cement and no greater than 3% CaCl (calcium chloride). The 9 5/8" casing will be cemented to surface with Class A cement, & no greater than 3% calcium chloride. The 5 1/2" production string will be cemented back to 1,950' (+/- 150' above the casing shoe for the 9 5/8") with Class A and 50/50 Poz cement retarded (to extend pumpability) cellophane flaked for fluid loss, Bentonite gel as an extender (increased pumpability and fluid loss), a defoaming agent to decrease cement foaming during mixing to insure the cement is of proper weight to placement and possibly gypsum gas blocking additive to aid in blocking/gas migration (in combination with other additive mentioned here, helps cement achieve a "right angle" set) during the plastic phase of the cement set-up.

25) Proposed borehole conditioning procedures:

Top holes will be drilled with fresh water KOP. At KOP, the wellbore will be loaded with synthetic oil based mud, barite-weighted mud system with such properties as to build a filter-cake on the face of the bore-hole. This will provide lubricity as well as stabilizing the well bore. We will begin rotating the drill string and mud will be circulated upon reaching TD until no further cuttings are observed coming across the shaker screens. Once clean mud is circulated back to surface, we will pull three stands of drill pipe, load the hole, pull three strands and load the hole. The weight indicator on the rig will be monitored for any occurrences of drag and if any are noticed, we will re-run the previous stand of pipe pulled across and circulate 2x bottoms up while watching shakers for signs of cuttings. Once at the base curve, the string will be continuously rotated while pumping 2x bottoms up. We will pull three stands and fill the hole until we reach the vertical section of the well.

*Note: Attach additional sheets as needed.



Purpose

The purpose of this pad-specific Hydraulic Fracturing Monitoring Plan is to identify and notify conventional well operators near Arsenal Resources hydraulic fracturing in Taylor County, WV prior to hydraulic fracturing at Johnson TFP40 and Well Number 201.

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water, or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 7,910' TVD) and existing conventional natural gas wells in the partially-depleted, relatively high permeability Benson formations (approximately 4,900' TVD).

The plan is being implemented as an additional safety measure to be utilized in conjunction with best management practices and emergency action plans for this site. These additional measures include pre-notification of conventional well operators of the timing and location of the hydraulic fracturing, establishment of measures conventional well operators should implement, and assurance that the Division of Oil and Gas is notified of the timeline, as well as any issues that may arise during fracturing.

1. Communications with Conventional Operators.

Arsenal Resources, using available data (WV Geological Survey, WVDEP Website, and IHS data service), has identified all known conventional wells and well operators within 500 feet of this pad and the lateral sections. A map showing these wells along with a list of the wells and operators is included in Attachment A.

Upon approval of this plan, Arsenal Resources will notify these operators, via letter, of the hydraulic fracturing schedule for these wells. A copy of this letter is included in Attachment B.

The letter provides recommendations to these conventional operators to 1) increase their monitoring of their wells during that time period, 2) ensure that their well head equipment is sound, and 3) provide immediate notification to Arsenal Resources and the OOG in the event of any changes in their well conditions.

Specifically, the letter recommends that conventional well operators conduct the following activities during and after fracturing operations:

1. Inspect their surface equipment prior to fracturing to establish integrity and establish pre-frac well conditions.
2. Observe wells closely during and after fracturing and monitor for abnormal increases in water, gas or pressure.
3. Inspect or install master valves rated to 3,000 psi or other necessary equipment for wellhead integrity.
4. Notify the OOG and ARSENAL RESOURCES if any changes in water, gas production, pressure or other anomalies are identified.

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2. Reporting

Arsenal Resources will provide information relating to the hydraulic fracturing schedule, communication with conventional operators, and ongoing monitoring of the work upon request of OOG or immediately after any event of any noted abnormalities.

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Area of Review Report - Johnson TFP40 Pad, 202 Lateral, Taylor & Barbour County, WV

Well Name	API Number	Operator Name / Address	Well Type	Latitude	Longitude	Total Depth	Perforated Formation(s)	Producing Zones not Perforated
Goodwin 2	091-00116	Diversified Production LLC	Existing	39.25858	-80.169849	4560	Benson	NA
Goodwin 4	091-00118	Diversified Production LLC	Existing	39.256779	-80.173388	2480	Big Injun(Grnbr), Fifth	NA
Goodwin 3	091-00117	Diversified Production LLC	Existing	39.254729	-80.171316	2581	Gordon, Benson	NA
Goff-Arnold 2	091-00182	Greylock Conventional, LLC	Existing	39.245897	-80.167017	4580	Benson	NA
Stewart 2A	091-01005	Diversified Production LLC	Existing	39.242262	-80.164901	4955	Fourth, Benson	NA
LL Moss 1A	001-02526	Diversified Production LLC	Existing	39.237911	-80.163406	4657	Benson	NA
J & M Mosesso 437-CH	001-00968	Diversified Production LLC	Existing	39.233889	-80.160206	4695	Riley, Benson	NA
Coalquest 11	001-02874	Summit Appalachia Operating Co LLC	Existing	39.22602	-80.159111	1048	Lower Kittanning Coal	NA
J A Mosesso 1	001-00613	Diversified Production LLC	Existing	39.218672	-80.153374	4750	Riley, Benson	NA

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ARSENAL

R E S O U R C E S

SITE SAFETY PLAN

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JOHNSON TFP 40 WELL PAD #202

911 Address:

4006 Green Valley Rd

Bridgeport, WV 26330

Kenneth Greynolds

Digitally signed by: Kenneth Greynolds
DN: CN = Kenneth Greynolds email = Kenneth.L.
Greynolds@wv.gov C = AD O = WVDEP OU = Oil and Gas
Date: 2022.07.15 09:03:36 -04'00'

SURFACE HOLE SURVEYED 39° 17' 30" (NAD27)
 BOTTOM HOLE SURVEYED 39° 15' 00" (NAD27)

822'

8 603'

Latitude: (NAD27)

(NAD83-WVN) US SURVEY FT.

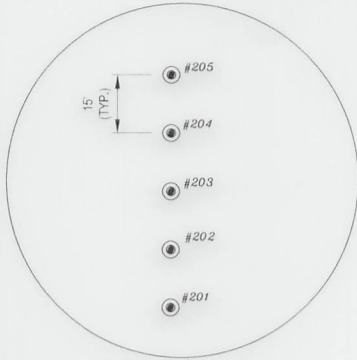
TOP HOLE
 N) 276986.722
 E) 1779051.662
 LANDING POINT
 N) 276187.113
 E) 1778179.540
 BOTTOM HOLE
 N) 262490.533
 E) 1782902.710

(NAD83-LAT/LONG) DECIMAL

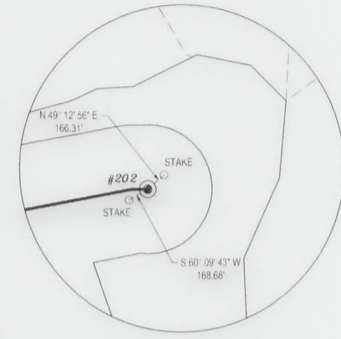
TOP HOLE
 N) 39.258540
 E) -80.169059
 LANDING POINT
 N) 39.256327
 E) -80.172119
 BOTTOM HOLE
 N) 39.218819
 E) -80.155087

(UTM, NAD83) METER

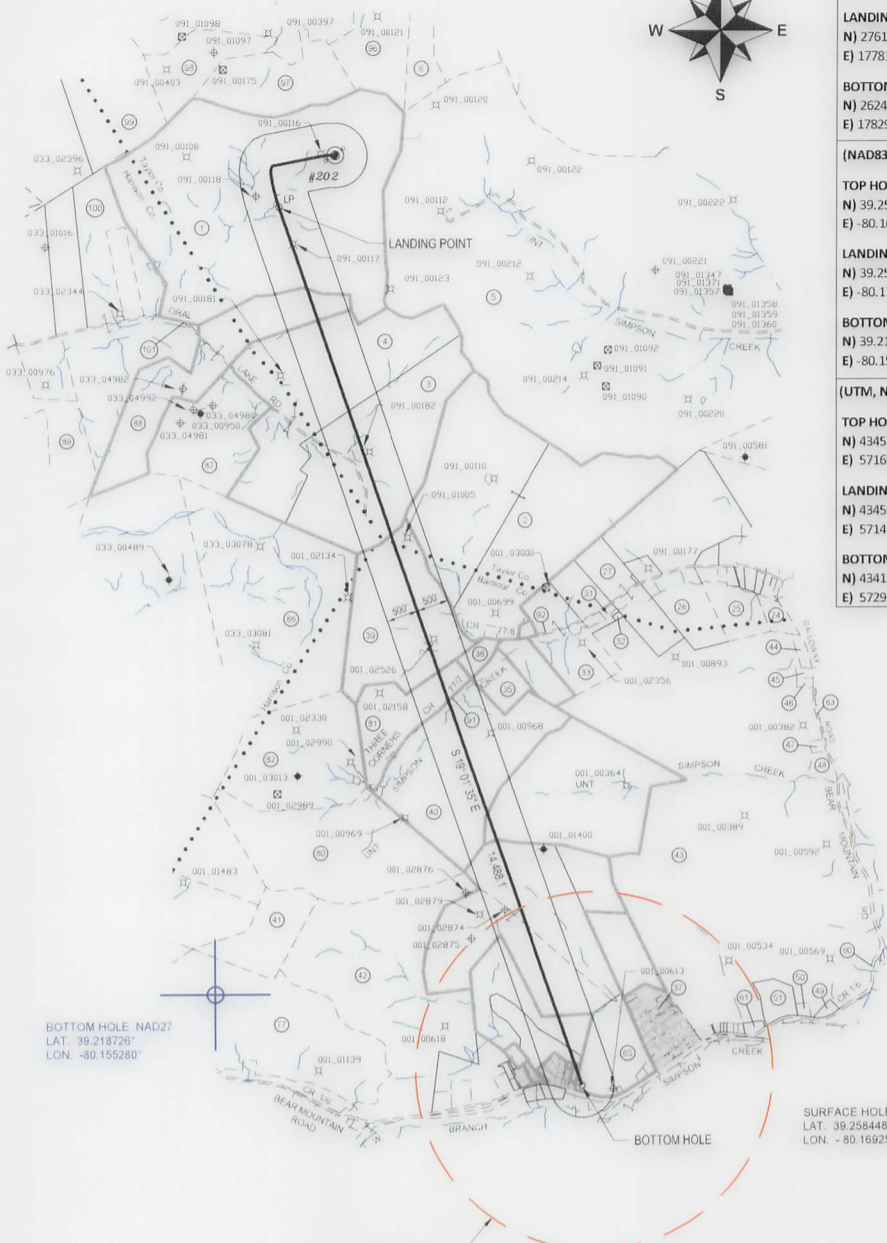
TOP HOLE
 N) 4345796.714
 E) 571690.472
 LANDING POINT
 N) 4345548.681
 E) 571428.816
 BOTTOM HOLE
 N) 4341399.701
 E) 572937.174



REFERENCES TO PROPOSED HORIZONTAL WELL SURFACE LOCATIONS NTS



REFERENCES TIES (NTS)



BOTTOM HOLE NAD27
 LAT. 39.218729°
 LON. -80.155280°

SURFACE HOLE NAD27
 LAT. 39.258448°
 LON. -80.169253°

Longitude: (NAD27)

11 296'

12 093'

BOTTOM HOLE SURVEYED 80° 07' 30" (NAD27)
 SURFACE HOLE SURVEYED 80° 10' 00" (NAD27)

- REFERENCE NOTES
- Property lines as shown taken from deeds, tax maps, and field locations. A full boundary survey is not expressed or implied. All bearings are based on grid North. Ownership taken from public records for Taylor, Harrison, and Barbour County, West Virginia Date 2022
 - State Plane Coordinates & NAD83 Lat/Long by differential submeter mapping grade GPS.
 - There are no railroads, dwellings, or agricultural buildings within 625 feet of center of pad.
 - No water wells found within 250' of the center of well pad.

LEGEND

- PROPOSED WELL LATERAL
- - - PROPOSED WELL TIE LINE
- ~ STREAM
- EXISTING ROAD
- BUFFER
- - - PROPERTY LINE
- - - MINERAL TRACT BOUNDARY
- - - COUNTY BOUNDARY LINE
- #H PROPOSED WELL HEAD
- ⊗ EXISTING WELL HEAD (Active)
- ⊙ EXISTING WELL HEAD (Plugged)
- ⊕ EXISTING WELL HEAD (Abandoned)
- ⊘ EXISTING WELL HEAD (Never Drilled)
- ⊚ EXISTING WELL HEAD (Future Drill)
- LANDING POINT/BOTTOM HOLE
- ⊙ SURFACE OWNER

FILE#: 22078-001
 SHEET#: 1 of 3
 SCALE: 1" = 3000'
 TICK SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/200
 PROVEN SOURCE OF ELEVATION: WV-RTN CORS STATION

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT 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.

Signed: *Herbert L. Parsons, III*
 P.S. #2361: Herbert L. Parsons, III P.S.



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 WVDEP
 OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25304



DATE: JULY 18, 2022
 JOHNSON TFP-40
 OPERATOR'S WELL #: # 202
 API WELL #: 47 091 01363
 STATE COUNTY PERMIT

Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow
 WATERSHED: SIMPSON CREEK
 COUNTY / DISTRICT: TAYLOR CO. FLEMINGTON DISTRICT
 SURFACE OWNER: RENEE JOHNSON
 OIL & GAS ROYALTY OWNER: SEE WW-6A1

ELEVATION: 1,332.5
 QUADRANGLE: ROSEMONT WV
 ACREAGE: 284 ±
 ACREAGE: 284 ±

08/12/2022

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE SPECIFY: _____
 TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 7,903.5' TMD: 22,850.0'
 WELL OPERATOR: ARSENAL RESOURCES DESIGNATED AGENT: NATHAN SKEEN
 ADDRESS: 6031 WALLACE ROAD EXTENSION # 300 ADDRESS: 633 MAIN STREET
 CITY: WEXFORD STATE: PA ZIP: 15090 CITY: BRIDGEPORT STATE: WV ZIP: 26330



REFERENCE NOTES

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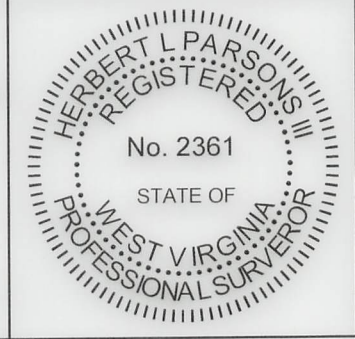
	PROPOSED WELL LATERAL
	PROPOSED WELL TIE LINE
	STREAM
	EXISTING ROAD
	BUFFER
	PROPERTY LINE
	MINERAL TRACT BOUNDARY
	COUNTY BOUNDARY LINE
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	EXISTING WELL HEAD (Plugged)
	EXISTING WELL HEAD (Abandoned)
	EXISTING WELL HEAD (Never Drilled)
	EXISTING WELL HEAD (Future Drill)
	LANDING POINT/BOTTOM HOLE
	SURFACE OWNER

ENLARGED PLAT AREA

FILE#: 22078-001
 SHEET#: 2 of 3
 SCALE: 1" = 1000'
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Signed: *Herbert L. Parsons, III* 7/18/2022
 P.S. #2361: Herbert L. Parsons, III P.S.



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 601 57TH STREET
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 QUADRANGLE: ROSEMONT, WV
 ACREAGE: 284 ±
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08/12/2022

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

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 7,903.5' TMD: 22,850.0'

WELL OPERATOR: ARSENAL RESOURCES DESIGNATED AGENT: NATHAN SKEEN
 ADDRESS: 6031 WALLACE ROAD EXTENSION # 300 ADDRESS: 633 MAIN STREET
 CITY: WEXFORD STATE: PA ZIP: 15090 CITY: BRIDGEPORT STATE: WV ZIP: 26330

SURFACE PARCEL OWNER INFORMATION			ADJOINER PARCEL OWNER INFORMATION				
ID#	DEP#	PARCEL NUMBER	OWNER NAME	ID#	DEP#	PARCEL NUMBER	OWNER NAME
1	033	17-15-0331-0027-0000	JOHNSON RENEE	2	001	01-09-0009-0002-0000	STEWART FARM LLC
88	033	17-15-0351-0010-0000	JOHNSON RENEE	5	091	46-04-0011-0001-0000	CFS FARMS LIMITED LIABILITY CO
4	033	17-15-0351-0012-0000	GCSTREAM LLC	6	091	46-04-0008-0022-0000	GRIPPIN JAMES S & ELAINE M & SURV
3	033	17-15-0351-0013-0000	GCSTREAM LLC	24	091	46-04-0011-0007-0005	SANFORD RICHARD LEE & PAMELA & SURV
39	001	01-09-0009-0001-0000	STEWART FARM LLC	25	091	46-04-0011-0006-0000	RAVIS THOMAS E
81	001	01-09-0009-0019-0000	STEWART FARM LLC	26	091	46-04-0011-0005-0001	RAVIS THOMAS E
40	001	01-09-0009-0020-0000	SEESE ROBERT & BRENDA HWS	27	091	46-04-0011-0003-0000	PROPOST PAUL
43	001	01-09-0009-0022-0000	WOLFE LARRY ROBERT WOLFE & STANLEY WOLFE ET UXES, HWS	31	001	01-09-0009-0008-0000	CLEAVENGER LEONARD D
42	001	01-09-0011-0001-0000	POLINO ENTERPRISES INC	32	001	01-09-0009-0008-0002	CLEAVENGER LEONARD D
71	001	01-09-0012-0061-0000	CHARLTON-FRYER AMANDA S & TIMOTHY R CHARLTON L/E	33	001	01-09-0009-0007-0000	CROUSE STEPHEN DALE & MICHAEL LYNN
70	001	PLAN OF LOTS	BROWNTON PLAN OF LOTS	35	001	01-09-0009-0020-0001	SMALLWOOD RUSSELL & ANGELA WRS
65	001	01-09-0012-0027-0000	WOLFE LARRY MICHAEL	37	001	PLAT	CLEAVENGER PLATT
				38	001	01-09-0009-0003-0000	STEWART FARM LLC
				41	001	01-09-0009-0012-0001	POLINO ENTERPRISES INC
				44	001	01-09-0009-0017-0001	MADDIX MICHAEL R & JUDITH L
				45	001	01-09-0009-0011-0000	SALTIS STEVE JR & AMY HWS
				46	001	01-09-0009-0012-0000	SALTIS STEVE JR & AMY R HWS
				47	001	01-09-0009-0013-0000	MURPHY GEORGE H JR & TAMELA J HWS
				48	001	01-09-0009-0022-0002	WOLFE MICHAEL B
				49	001	01-09-0012-0004-0002	KNOTTS TERRY & DONETTA
				50	001	01-09-0012-0014-0000	MOSES JOHN A TRUST
				51	001	01-09-0009-0022-0003	KRIZNER FRANK A & RENEE B HWS
				60		RIGHT-OF-WAY	COUNTY ROUTE 1/6 BEAR MOUNTAIN ROAD
				61	001	01-09-0012-0004-0000	SWIGER ARGYLE C
				62	001	01-09-012A-0107-0001	DARR WILLIAM
				63	001	RIGHT-OF-WAY	GALLOWAY STATE ROUTE 76
				64	001	01-09-012A-0091 thru 94-0000	CRISS DAVID A
				64	001	01-09-012A-0107-0000	CRISS DAVID A
				66	001	01-09-0012-0026-0000	WOLFE LARRY ROBERT & STANLEY
				67	001	01-09-0012-0027-0002	WOLFE LARRY MICHAEL & ELLEN SUE HWS
				68	001	01-09-0012-0027-0001	WOLFE LARRY MICHAEL
				69	001	01-09-0012-0028-0000	WOLFE LARRY M & ELLEN S HWS
				72	001	01-09-0012-0060-0000	SCHIMANSKY STEVEN & DEBRA HWS
				73	001	01-09-0012-0042-0000	FOSTER ERIC M & TRACI D W/S
				76	001	01-09-0012-0041-0000	TRADER PAUL & LORETTA WRS
				77	001	01-09-0011-0001-0002	BECKWITH LUMBER CO INC
				80	001	01-09-0010-0002-0000	SMITH JO ANN V & GARY M BROWN JR (WS)
				82	001	01-09-0010-0001-0000	SMITH JO ANN V & GARY M BROWN JR (WS)
				86	033	17-15-0351-0023-0000	GCSTREAM LLC
				87	033	17-15-0351-0011-0000	GCSTREAM LLC
				89	033	17-15-0351-0007-0000	WARDER ORAN LEE & JANICE L
				93	001	01-09-012C-0003-0000	ARBAUGH RITA
				96	091	46-04-0008-0021-0000	MILLARD CARLYLE G
				97	091	46-04-0007-0027-0000	CEQUEL III COMMUNICATIONS
				98	091	46-04-0007-0009-0000	CEQUEL III COMMUNICATIONS
				99	091	46-04-0007-0008-0000	FRUM CLINTON A (HEIRS)
				100	033	17-15-0351-0009-0000	JOHNSON RENEE
				190	001	01-09-012A-0090-0000	ELMOND MUREL L (L/E)
				191	001	01-09-0012-0004-0004	TINGLER RUSSEL J
				192	001	01-09-012A-0095-0000	KITTLE FRANK G HRS ET AL
				193	001	01-09-012A-0098-0000	BARTLETT MICHAEL ALLEN SR
				216	001	01-09-012C-0003-0000	COSTELLO HUGO, HRS

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 - No water wells found within 250' of the center of well pad.

LEGEND

	PROPOSED WELL LATERAL
	PROPOSED WELL TIE LINE
	STREAM
	EXISTING ROAD
	BUFFER
	PROPERTY LINE
	MINERAL TRACT BOUNDARY
	COUNTY BOUNDARY LINE
	PROPOSED WELL HEAD
	EXISTING WELL HEAD (Active)
	EXISTING WELL HEAD (Plugged)
	EXISTING WELL HEAD (Abandoned)
	EXISTING WELL HEAD (Never Drilled)
	EXISTING WELL HEAD (Future Drill)
	LANDING POINT/BOTTOM HOLE
	SURFACE OWNER

FILE#: 22078-001
 SHEET#: 3 of 3
 SCALE: 1" = 3000'
 TICK SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/200
 PROVEN SOURCE OF ELEVATION: WV-RTN CORS STATION

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT 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.

Signed: *Herbert L. Parsons, III* 7/18/2022
 P.S. #2361: Herbert L. Parsons, III P.S.



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 WVDEP
 OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25304



DATE: JULY 18, 2022
 JOHNSON TFP-40
 OPERATOR'S WELL #: # 202
 API WELL #: 47 091 01363
 STATE COUNTY PERMIT

Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow
 WATERSHED: SIMPSON CREEK
 COUNTY / DISTRICT: TAYLOR CO. FLEMINGTON DISTRICT
 SURFACE OWNER: RENEE JOHNSON
 OIL & GAS ROYALTY OWNER: SEE WW-6A1

ELEVATION: 1,332.5
 QUADRANGLE: ROSEMONT WV
 ACREAGE: 284 ±
 ACREAGE: 284 ±

08/12/2022

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE SPECIFY: _____
 TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 7,903.5' TMD: 22,850.0'
 WELL OPERATOR: ARSENAL RESOURCES DESIGNATED AGENT: NATHAN SKEEN
 ADDRESS: 6031 WALLACE ROAD EXTENSION # 300 ADDRESS: 633 MAIN STREET
 CITY: WEXFORD STATE: PA ZIP: 15090 CITY: BRIDGEPORT STATE: WV ZIP: 26330

Latitude: (NAD27)

(NAD83-WVN) US SURVEY FT.

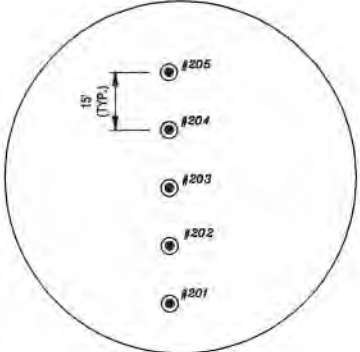
TOP HOLE
 N) 276986.722
 E) 1779051.662
 LANDING POINT
 N) 276187.113
 E) 1778179.540
 BOTTOM HOLE
 N) 262490.533
 E) 1782902.710

(NAD83-LAT/LONG) DECIMAL

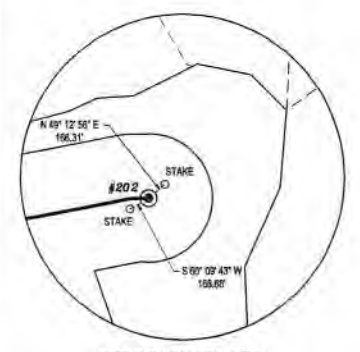
TOP HOLE
 N) 39.258540
 E) -80.169059
 LANDING POINT
 N) 39.256327
 E) -80.172119
 BOTTOM HOLE
 N) 39.218819
 E) -80.155087

(UTM, NAD83) METER

TOP HOLE
 N) 4345796.714
 E) 571690.472
 LANDING POINT
 N) 4345548.681
 E) 571428.816
 BOTTOM HOLE
 N) 4341399.701
 E) 572937.174



REFERENCES TO PROPOSED HORIZONTAL WELL SURFACE LOCATIONS NTS

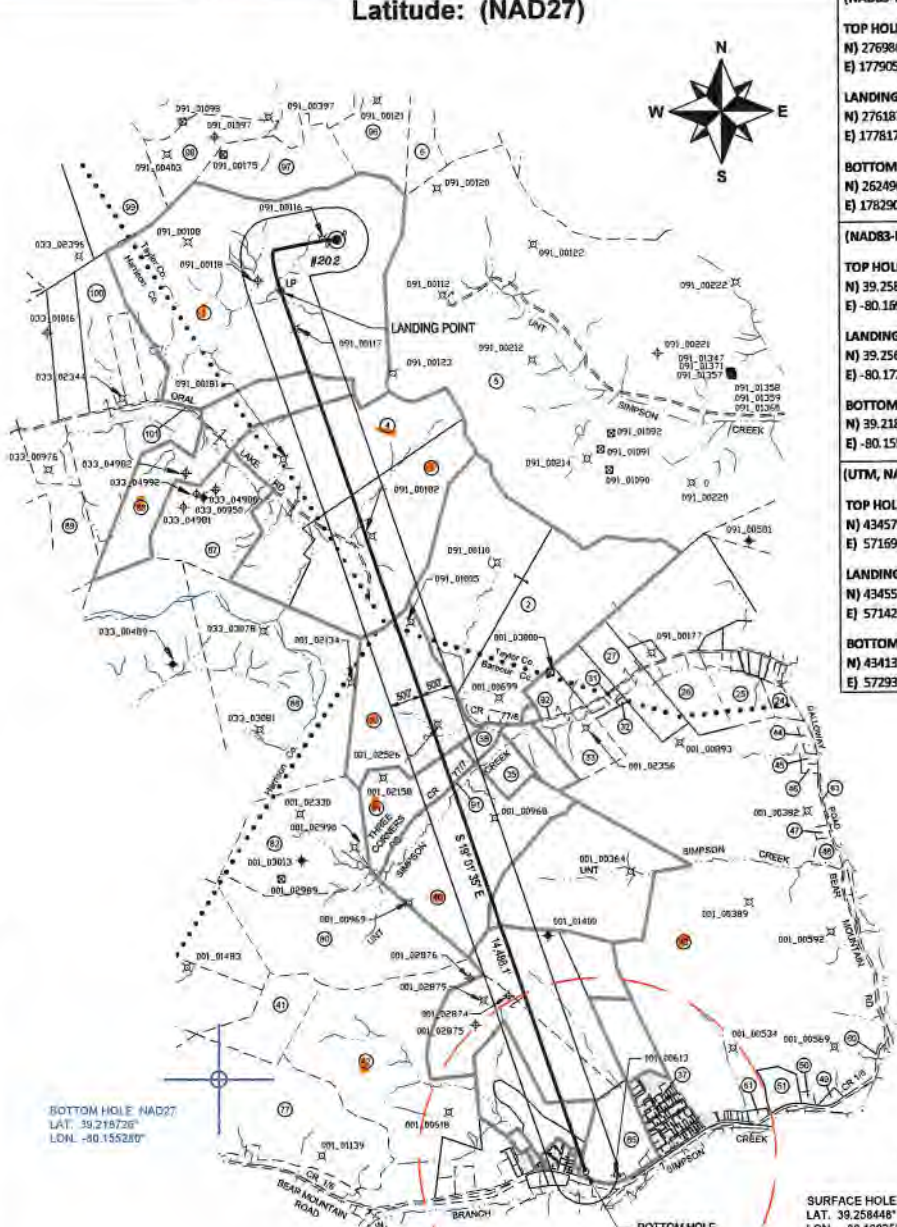


REFERENCES TIES (NTS)

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- - - - PROPOSED WELL TIE LINE
- STREAM
- EXISTING ROAD
- BUFFER
- - - - PROPERTY LINE
- MINERAL TRACT BOUNDARY
- COUNTY BOUNDARY LINE
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- ⊙ EXISTING WELL HEAD (Active)
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- ⊙ EXISTING WELL HEAD (Abandoned)
- ⊙ EXISTING WELL HEAD (Never Drilled)
- ⊙ EXISTING WELL HEAD (Future Drill)
- ⊙ LANDING POINT/BOTTOM HOLE
- ⊙ SURFACE OWNER



BOTTOM HOLE NAD27
 LAT. 39.218726°
 LON. -80.155280°

SURFACE HOLE NAD27
 LAT. 39.258448°
 LON. -80.169253°

Longitude: (NAD27)

11,296'

12,083'

FILE#: 22078-001
 SHEET#: 1 of 3
 SCALE: 1" = 3000'
 TICK SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/200
 PROVEN SOURCE OF ELEVATION: WV-RTN CORS STATION

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT 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.
 Signed: *Herbert L. Parsons* 7-18-2022
 P.S. #2361: Herbert L. Parsons, III P.S.



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 WVDEP
 OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25304



DATE: JULY 18, 2022
 JOHNSON TFP-40
 OPERATOR'S WELL #: # 202
 API WELL #: 47 091 D1363
 STATE COUNTY PERMIT

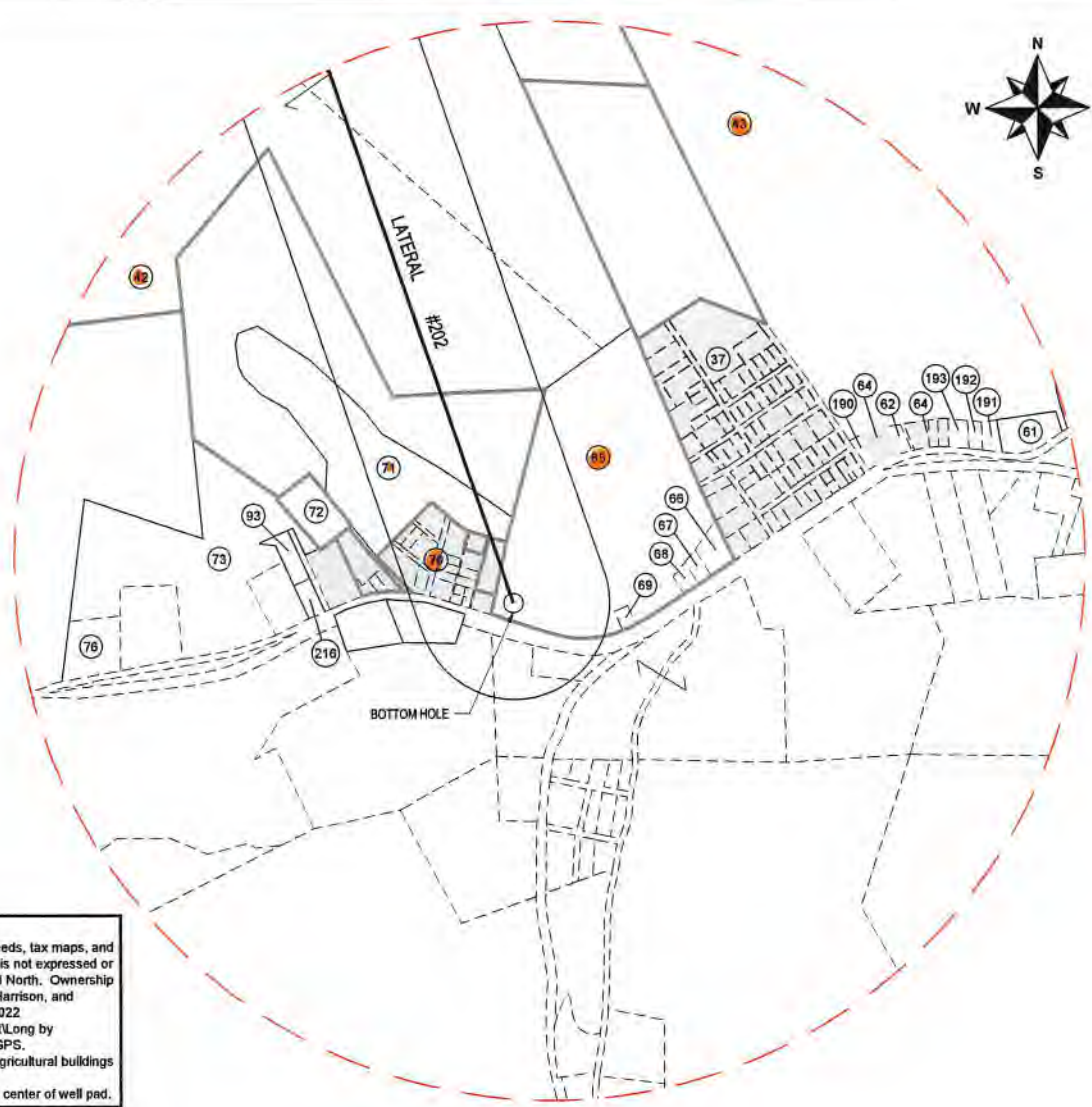
Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow
 WATERSHED: SIMPSON CREEK
 COUNTY / DISTRICT: TAYLOR CO. FLEMINGTON DISTRICT
 SURFACE OWNER: RENEE JOHNSON
 OIL & GAS ROYALTY OWNER: SEE WW-6A1

ELEVATION: 1,332.5
 QUADRANGLE: ROSEMONT, WV
 ACREAGE: 284 ± 08/12/2022
 ACREAGE: 284 ±

- DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
- PLUG OFF FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
- CLEAN OUT & REPLUG OTHER CHANGE SPECIFY: _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 7,903.5' TMD: 22,850.0'
 WELL OPERATOR: ARSENAL RESOURCES DESIGNATED AGENT: NATHAN SKEEN
 ADDRESS: 6031 WALLACE ROAD EXTENSION # 300 ADDRESS: 633 MAIN STREET
 CITY: WEXFORD STATE: PA ZIP: 15090 CITY: BRIDGEPORT STATE: WV ZIP: 26330

BOTTOM HOLE SURVEYED 80° 07' 30" (NAD27)
 SURFACE HOLE SURVEYED 80° 10' 00" (NAD27)



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	EXISTING WELL HEAD (Never Drilled)
	EXISTING WELL HEAD (Future Drill)
	LANDING POINT/BOTTOM HOLE
	SURFACE OWNER

ENLARGED PLAT AREA

FILE#: 22078-001
 SHEET#: 2 of 3
 SCALE: 1" = 1000'
 TICK SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/200
 PROVEN SOURCE OF ELEVATION: WV-RTN CORS STATION

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 WATERSHED: SIMPSON CREEK
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ELEVATION: 1,332.5
 QUADRANGLE: ROSEMONT WV
 ACREAGE: 284 ±
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08/12/2022

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 PLUG OFF FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE SPECIFY: _____

TARGET FORMATION: MARCELLUS
 WELL OPERATOR: ARSENAL RESOURCES
 ADDRESS: 6031 WALLACE ROAD EXTENSION # 300
 CITY: WEXFORD STATE: PA ZIP: 15090

ESTIMATED DEPTH: TVD: 7,903.5' TMD: 22,850.0'
 DESIGNATED AGENT: NATHAN SKEEN
 ADDRESS: 633 MAIN STREET
 CITY: BRIDGEPORT STATE: WV ZIP: 26330

SURFACE PARCEL OWNER INFORMATION			ADJOINER PARCEL OWNER INFORMATION				
ID#	DEP#	PARCEL NUMBER	OWNER NAME	ID#	DEP#	PARCEL NUMBER	OWNER NAME
1	033	17-15-0331-0027-0000	JOHNSON RENEE	2	001	01-09-0009-0002-0000	STEWART FARM LLC
89	033	17-15-0351-0010-0000	JOHNSON RENEE	5	091	46-04-0011-0001-0000	CFS FARMS LIMITED LIABILITY CO
4	033	17-15-0351-0012-0000	GCSTREAM LLC	6	091	46-04-0008-0022-0000	GRIPPIN JAMES S & ELAINE M & SURV
3	033	17-15-0351-0013-0000	GCSTREAM LLC	24	091	46-04-0011-0007-0005	SANFORD RICHARD LEE & PAMELA & SURV
39	001	01-09-0009-0001-0000	STEWART FARM LLC	25	091	46-04-0011-0006-0000	RAVIS THOMAS E
81	001	01-09-0009-0019-0000	STEWART FARM LLC	26	091	46-04-0011-0005-0001	RAVIS THOMAS E
40	001	01-09-0009-0020-0000	SEESE ROBERT & BRENDA HWS	27	091	46-04-0011-0003-0000	PROPST PAUL
43	001	01-09-0009-0022-0000	WOLFE LARRY, ROBERT WOLFE & STANLEY WOLFE ET UXES, HWS	31	001	01-09-0009-0008-0000	CLEAVENGER LEONARD D
42	001	01-09-0011-0001-0000	POLINO ENTERPRISES INC	32	001	01-09-0009-0008-0002	CLEAVENGER LEONARD D
71	001	01-09-0012-0001-0000	CHARLTON-FRYER AMANDA S & TIMOTHY R CHARLTON L/E	33	001	01-09-0009-0007-0000	CROUSE STEPHEN DALE & MICHAEL LYNN
70	001	01-09-0012-0001-0000	BROWNTON PLAN OF LOTS	35	001	01-09-0009-0020-0001	SMALLWOOD RUSSELL & ANGELA WRS
65	001	01-09-0012-0027-0000	WOLFE LARRY MICHAEL	37	001	PLAT	CLEAVENGER PLATT
				38	001	01-09-0009-0003-0000	STEWART FARM LLC
				41	001	01-09-0009-0012-0001	POLINO ENTERPRISES INC
				44	001	01-09-0009-0017-0001	MADDIX MICHAEL R & JUDITH L
				45	001	01-09-0009-0011-0000	SALTIS STEVE JR & AMY HWS
				46	001	01-09-0009-0012-0000	SALTIS STEVE JR & AMY R HWS
				47	001	01-09-0009-0013-0000	MURPHY GEORGE H JR & TAMELA J, HWS
				48	001	01-09-0009-0022-0002	WOLFE MICHAEL B
				49	001	01-09-0012-0004-0002	KNOTTS TERRY & DONETTA
				50	001	01-09-0012-0014-0000	MOSESJO JOHN A TRUST
				51	001	01-09-0009-0022-0003	KRIZNER FRANK A & RENEE B HWS
				60		RIGHT-OF-WAY	COUNTY ROUTE 1/6 BEAR MOUNTAIN ROAD
				81	001	01-09-0012-0004-0000	SWIGER ARGYLE C
				82	001	01-09-012A-0107-0001	DARR WILLIAM
				93	001	RIGHT-OF-WAY	GALLOWAY STATE ROUTE 76
				94	001	01-09-012A-0081 thru 94-0000	CRISS DAVID A
				94	001	01-09-012A-0107-0000	CRISS DAVID A
				96	001	01-09-0012-0026-0000	WOLFE LARRY, ROBERT & STANLEY
				97	001	01-09-0012-0027-0002	WOLFE LARRY MICHAEL & ELLEN SUE HWS
				98	001	01-09-0012-0027-0001	WOLFE LARRY MICHAEL
				99	001	01-09-0012-0028-0000	WOLFE LARRY M & ELLEN S HWS
				72	001	01-09-0012-0080-0000	SCHIMANSKY STEVEN & DEBRA HWS
				73	001	01-09-0012-0042-0000	FOSTER ERIC M & TRACI D W/S
				76	001	01-09-0012-0041-0000	TRADER PAUL & LORETTA WRS
				77	001	01-09-0011-0001-0002	BECKWITH LUMBER CO INC
				80	001	01-09-0010-0002-0000	SMITH JO ANN V & GARY M BROWN JR (WS)
				82	001	01-09-0010-0001-0000	SMITH JO ANN V & GARY M BROWN JR (WS)
				86	033	17-15-0351-0023-0000	GCSTREAM LLC
				87	033	17-15-0351-0011-0000	GCSTREAM LLC
				89	033	17-15-0351-0007-0000	WARDER ORAN LEE & JANICE L
				93	001	01-09-012C-0003-0000	ARBIAUGH RITA
				96	091	46-04-0008-0021-0000	MILLARD CARLYLE G
				97	091	46-04-0007-0027-0000	CEQUEL III COMMUNICATIONS
				98	091	46-04-0007-0009-0000	CEQUEL III COMMUNICATIONS
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				191	001	01-09-0012-0004-0004	TINGLER RUSSEL J
				192	001	01-09-012A-0095-0000	KITTLE FRANK G HRS ET AL
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				216	001	01-09-012C-0003-0000	COSTELLO HUGO, HRS

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~~~~~	STREAM
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=====	BUFFER
-----	PROPERTY LINE
-----	MINERAL TRACT BOUNDARY
.....	COUNTY BOUNDARY LINE
⊙ #H	PROPOSED WELL HEAD
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□	EXISTING WELL HEAD (Future Drill)
○	LANDING POINT/BOTTOM HOLE
⊙	SURFACE OWNER

FILE#: 22078-001  
SHEET#: 3 of 3  
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 CLEAN OUT & REPLUG  OTHER CHANGE SPECIFY: _____

TARGET FORMATION: MARCELLUS

WELL OPERATOR: ARSENAL RESOURCES  
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CITY: WEXFORD STATE: PA ZIP: 15090

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ELEVATION: 1,332.5  
QUADRANGLE: ROSEMONT, WV  
ACREAGE: 284 ± 08/12/2022  
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DESIGNATED AGENT: NATHAN SKEEN  
ADDRESS: 633 MAIN STREET  
CITY: BRIDGEPORT STATE: WV ZIP: 26330

Attachment to WW-6A1, Johnson 202

Letter Designation/Number Designation on Plat	Grantor, Lessor, Assignor, etc.	Grantee, Lessee, Assignee, etc.	Royalty	Book/Page	Acreage
<b>1</b> (00006031)	BLANCH WATSON(WIDOW) DEZZIE BUTTS & TERRY H BUTTS(HER HUSBAND) DULCIE STARKEY(WIDOW) MARTHA ROBERTS(WIDOW) GAIL WILSON(WIDOW) MARY BARTLETT(WIDOW) JAMES BARTLETT & ELSA BARTLETT(HIS WIFE) ERNESTINE WHITE & JOHN WHITE(HER HUSBAND) LEONA CHANDLER(WIDOW) AND	Union Drilling Inc	12.50%	32/220 and 1030/412	284
	Union Drilling Inc	Equitable Resources Exploration		1189/1209	
	Equitable Resources Exploration	Equitable Resources Energy Co		1199/642	
	Equitable Resources Energy Co	Enervest East LMTD Partnership		22/181	
	Enervest East LMTD Partnership	The Houston Exploration Co		1359/820	
	The Houston Exploration Co	Seneca Upshur Petroleum Inc		1367/1084	
	Seneca-Upshur Petroleum, Inc.	Seneca-Upshur Petroleum LLC		16/637 also 447/129	
<b>88</b> (00006674)	Debra A Mulneix	Mar Key LLC	15.00%	1561/464	85
<b>88</b> (00006675)	Phyllis G Steele	Mar Key LLC	15.00%	1561/454	85
<b>88</b> (00006676)	Alice L Donley	Mar Key LLC	15.00%	1561/451	85
<b>88</b> (00006677)	James R Collins Jr by REBECCA COLLINS BISER, ACTING IN HER CAPACITY AS ATTORNEY IN FACT	Mar Key LLC	15.00%	1561/490	85
<b>88</b> (00006697)	Gale M Steele	Mar Key LLC	15.00%	1568/76	85
<b>88</b> (00007736)	MARLENE B STEELE, WIDOW, BY DAVID E BOWEN AND CHERYL L BOWEN AS ATTORNEYS-IN-FACT	Mar Key LLC	15.00%	1585/239	85
<b>88</b> (00007761)	George F Jack Jr	Mar Key LLC	15.00%	1598/842	85
<b>4</b> 00008217	LAURA GOFF DAVIS HAROLD DOTSON CATHER AND DIANE GOFF CATHER HIS WIFE	NRM Petroleum Corporation	12.50%	1076/550 34/220	225

**Attachment to WW-6A1, Johnson 202**

<b>Letter Designation/Number Designation on Plat</b>	<b>Grantor, Lessor, Assignor, etc.</b>	<b>Grantee, Lessee, Assignee, etc.</b>	<b>Royalty</b>	<b>Book/Page</b>	<b>Acreage</b>
	NRM Petroleum Corporation	Eastern American Energy Corporation		1248/378	
	Eastern American Energy Corporation	Energy Corporation of America		1441/1003	
	Energy Corporation of America	Greylock Production, LLC		36/618	
	Greylock Production, LLC	Mar Key, LLC		1607/855	
4 00008218	H DOTSON CATHER AND DIANA CATHER HIS WIFE	NRM Petroleum Corporation	12.50%	1076/548 34/218	225
	NRM Petroleum Corporation	Eastern American Energy Corporation		1248/378	
	Eastern American Energy Corporation	Energy Corporation of America		1441/1003	
	Energy Corporation of America	Greylock Production, LLC		36/618	
	Greylock Production, LLC	Mar Key, LLC		1607/855	
3 00008217	LAURA GOFF DAVIS HAROLD DOTSON CATHER AND DIANE GOFF CATHER HIS WIFE	NRM Petroleum Corporation	12.50%	1076/550 34/220	225
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	Eastern American Energy Corporation	Energy Corporation of America		1441/1003	
	Energy Corporation of America	Greylock Production, LLC		36/618	
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3 00008218	H DOTSON CATHER AND DIANA CATHER HIS WIFE	NRM Petroleum Corporation	12.50%	1076/548 34/218	225
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	Eastern American Energy Corporation	Energy Corporation of America		1441/1003	
	Energy Corporation of America	Greylock Production, LLC		36/618	
	Greylock Production, LLC	Mar Key, LLC		1607/855	
39 (00003422)	John E Lough and Elda D Lough	Petroleum Development Corporation	12.50%	111/114	75
	PDC Mountaineer, LLC	Petroleum Development Corporation		150/444	
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	



**Attachment to WW-6A1, Johnson 202**

<b>Letter Designation/Number Designation on Plat</b>	<b>Grantor, Lessor, Assignor, etc.</b>	<b>Grantee, Lessee, Assignee, etc.</b>	<b>Royalty</b>	<b>Book/Page</b>	<b>Acreage</b>
39 (00003421)	L L MOSS AND MARY MARGARET MOSS	Petroleum Development Corporation	12.50%	111/88	75
	PDC Mountaineer, LLC	Petroleum Development Corporation		150/444	
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
81 (00003868)	HOLLIE STEWART AND BLANCHE M STEWART HIS WIFE FRANKLIN D STEWART AND SHIRLEY P STEWART HIS WIFE	Petroleum Development Corporation	12.50%	99/252	37.58
	PDC Mountaineer, LLC	Petroleum Development Corporation		150/444	
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
40 (00005898)	John A Mosesso and Mary K Mosesso	Union Drilling Inc	12.50%	79/55	98
	Union Drilling Inc	Equitable Resources Exploration		325/219	
	Equitable Resources Exploration	Equitable Resources Energy Co		328/171	
	Equitable Resources Energy Co	Enervest East LMTD Partnership		129/524	
	Enervest East LMTD Partnership	The Houston Exploration Co		138/1	
	The Houston Exploration Co	Seneca Upshur Petroleum Inc		404/381	
	Seneca-Upshur Petroleum, Inc.	Seneca-Upshur Petroleum LLC		16/637 also 447/129	
40 (00008901)	Robert Seese	Mar Key LLC	13.00%	184/423	12
43 (00005929)	Virginia C McDonald	Union Drilling Inc & Allerton Miller	12.50%	47/443	114
	Union Drilling Inc	Equitable Resources Exploration		325/219	
	Equitable Resources Exploration	Equitable Resources Energy Co		328/171	
	Equitable Resources Energy Co	Enervest East LMTD Partnership		129/524	
	Enervest East LMTD Partnership	The Houston Exploration Co		138/1	
	The Houston Exploration Co	Seneca Upshur Petroleum Inc		404/381	
	Seneca-Upshur Petroleum, Inc.	Seneca-Upshur Petroleum LLC		16/637 also 447/129	
42 (00005891)	John A Mosesso, Raymond and Kathryn Chess	Allerton Miller	12.50%	49/227	250

**Attachment to WW-6A1, Johnson 202**

<b>Letter Designation/Number Designation on Plat</b>	<b>Grantor, Lessor, Assignor, etc.</b>	<b>Grantee, Lessee, Assignee, etc.</b>	<b>Royalty</b>	<b>Book/Page</b>	<b>Acreage</b>
	Allerton Miller	Union Drilling Inc		98/11	
	Union Drilling Inc	Equitable Resources Exploration		325/219	
	Equitable Resources Exploration	Equitable Resources Energy Co		328/171	
	Equitable Resources Energy Co	Enervest East LMTD Partnership		129/524	
	Enervest East LMTD Partnership	The Houston Exploration Co		138/1	
	The Houston Exploration Co	Seneca Upshur Petroleum Inc		404/381	
	Seneca-Upshur Petroleum, Inc.	Seneca-Upshur Petroleum LLC		16/637 also 447/129	
<b>71</b> (00008808)	James L Lee	Mar Key, LLC	15.00%	182/335	57.67
<b>70</b> (00008914)	Amanda and Timothy Charlton LE	Mar Key LLC	12.50%	<b>pending see attached lease documents</b>	14.56
<b>65</b> (00005891)	John A Mosesso, Raymond and Kathryn Chess	Allerton Miller	12.50%	49/227	250
	Allerton Miller	Union Drilling Inc		98/11	
	Union Drilling Inc	Equitable Resources Exploration		325/219	
	Equitable Resources Exploration	Equitable Resources Energy Co		328/171	
	Equitable Resources Energy Co	Enervest East LMTD Partnership		129/524	
	Enervest East LMTD Partnership	The Houston Exploration Co		138/1	
	The Houston Exploration Co	Seneca Upshur Petroleum Inc		404/381	
	Seneca-Upshur Petroleum, Inc.	Seneca-Upshur Petroleum LLC		16/637 also 447/129	

## OIL AND GAS LEASE, EASEMENT AND RIGHT-OF-WAY

THIS OIL AND GAS LEASE, EASEMENT AND RIGHT-OF-WAY ("Agreement") made and entered into this the 11th day of July, 2022, by and between Timothy R. Charlton of 100 Clifton Circle, Oak Ridge, Tennessee 37830 and Amanda S. Charlton-Fryer of 503 Ashberry Drive, Flemington, West Virginia 26347, as joint tenants with right of survivorship.

hereinafter called "Lessor" (whether one or more), and Mar Key LLC of 6031 Wallace Road Extension, Suite 300, Wexford, PA 15090 hereinafter called "Lessee",

1. **GRANTING CLAUSE:** WITNESSETH, said Lessor, for and in consideration of the sum of ONE DOLLAR (\$1.00), the receipt of which is hereby acknowledged, and the royalties herein provided, and the covenants hereinafter contained to be paid, kept and performed by said Lessee, grants, demises, leases and lets, exclusively unto Lessee, the lands hereinafter more particularly described in Exhibit A attached hereto, with covenants of general warranty, for the purposes and with the rights of exploring by conducting geological surveys, by geophysical surveys with seismographs, by core tests, gravity, magnetic, geochemical and other methods whether now developed or developed later, and of constructing drill sites to drill new wells, recondition producing wells, redrill and use abandoned wells, pipe and equipment on the property, and of drilling either vertically or horizontally, producing, and otherwise operating for oil, gas, natural gasoline, coalbed methane, casing-head gas, condensate, related hydrocarbons, and all products produced therewith or therefrom or any one or more of the foregoing ("Oil and Gas"), together with the right and easement to construct, lay, operate, repair, maintain and remove pipelines, water lines, telephone, power and electric lines (telephone, power and electric lines for use only with associated oil and gas production equipment), tanks, ponds, permanent roadways including stone or rock roads, plants, stations, compressors, equipment, and structures thereon including houses for valves, meters, regulators and other appliances, together with the exclusive right to inject air, gas, water, brine or other fluids into the subsurface strata, the right to use water, with any and all other rights and privileges necessary, incident to or convenient for such operations, alone or co-jointly with neighboring lands for these purposes, together also with the right to unlimited access to the lands so Lessee can exercise any of the aforesaid rights (collectively, the "Leased Premises").

2. **DESCRIPTION:** Leased Premises being located in the District of Pleasant, County of Barbour, State of West Virginia and further described on Exhibit A, attached and containing, for the purpose of calculating the payments, 14.56000000 acres of land whether actually containing more or less.

3. **TERM OF LEASE:** This lease shall be in force for five (5) years from the date hereof (herein referred to as "primary term"), and as long after the primary term as Operations relating to the search or exploration for Oil and Gas are conducted on the premises, or as long as oil or gas is capable of production therefrom or from lands pooled therewith, or this lease is maintained in force pursuant to any other provision hereof (the "secondary term"). The term "Operations" in this lease means drilling of a well, the re-working, deepening or plugging back of a well or hole, completion, recompletion, fracturing, work in preparation for such activity, or other work conducted in an effort to obtain or re-establish production of Oil and Gas. A well capable of producing Oil and Gas will continue this lease in force until surrendered. If the well is not producing, shut-in payments shall be made as hereinafter provided.

4. **RIGHT TO EXTEND:** Lessee may, at its option, extend the primary term for an additional period equal to the primary term by the tender of an amount equal to the amount paid Lessor by Lessee at the execution and tendered to Lessor in like manner. If Lessee exercises this option, the primary term of this Agreement shall be considered to be continuous commencing on the date of the Agreement and continuing from that date to the end of the extended primary term. Lessee's option shall expire thirty (30) days following the termination or expiration of this Agreement.

5. **PAYMENTS TO LESSOR:** Lessee covenants and agrees to pay Lessor as Royalty, less all taxes, assessments, and adjustments on production from the Leasehold, as follows:

(a) **OIL ROYALTY:** To deliver to the credit of Lessor a Royalty equal to one-eighth (1/8) of the net revenue realized by Lessee for all oil and any constituents thereof produced and marketed from the Leasehold, less the cost to transport, handle, separate, meter, treat, process and market the oil.

(b) **GAS ROYALTY:** To pay Lessor on actual volumes of gas and any constituents thereof sold from said land, one-eighth (1/8) of the net amount realized by Lessee, computed at the wellhead. As used in this lease, the term "net amount realized by Lessee, computed at the wellhead" shall mean the gross proceeds received by Lessee from the sale of oil and gas minus post-production costs incurred by Lessee between the wellhead and the point of sale. As used in this Lease, the term "post-production costs" shall mean all costs and expenses of (a) treating and processing oil and/or gas, and (b) separating liquid hydrocarbons from gas, other than condensate separated at the well, and (c) transporting oil and/or gas, including but not limited to transportation between the wellhead and any production or treating facilities, and transportation to the point of sale, and (d) compressing gas for transportation and delivery purposes, and (e) metering oil and/or gas to determine the amount sold and/or the amount used by Lessee, and (f) sales charges, commissions and fees paid to third parties (whether or not affiliated) in connection with the sale of the gas, and (g) any and all other costs and expenses of any kind or nature incurred in regard to the gas, or the handling thereof, between the wellhead and the point of sale. Lessee may use its own pipelines and equipment to provide such treating, processing, separating, transportation, compression and metering services, or it may engage others to provide such services; and if Lessee uses its own pipelines and/or equipment, post-production costs shall include without limitation reasonable depreciation and amortization expenses relating to such facilities, together with Lessee's cost of capital and a reasonable return on its investment in such facilities. Prior to payment of royalty, Lessor may be required to execute a Division Order certifying Lessor's interest in production. Lessee may pay all taxes and fees levied upon the oil and gas as produced, including, without limitation, severance taxes and privilege and surveillance fees, and deduct a proportionate share of the amount so paid from any monies payable to Lessor hereunder. Lessee may withhold Royalty payment until such time as the total withheld equals \$25.00 or as required by applicable state statute, or annually at the end of the calendar year.

(c) **SHUT-IN ROYALTY:** If at any time after the primary term hereof there is a well capable of producing gas in paying quantities located upon the Leased Premises or on lands pooled therewith but such well is awaiting pipeline connection or is shut-in for any other reason (whether before or after production) and this Agreement is not maintained in force by operations or production at any well or by other activity or event, nevertheless it shall be considered that gas is being produced in paying quantities within the meaning of this Agreement. On or before the end of the initial year during which this Agreement is maintained in force for the entire annual period under this paragraph 5(c), Lessee shall pay or tender to Lessor hereunder, or to those entitled to the royalties provided in this Agreement, a shut-in royalty equal to \$1.00 per acre for the acreage held under this Agreement at the time such payment or tender is made. Each subsequent payment or tender shall be made thereafter in like manner and amount on or before the end of each annual period while the Agreement was maintained in force for the entire annual period under the first sentence of this paragraph 5(c). Failure to pay or error in paying shall not constitute as grounds for forfeiture of this lease and shall not affect the obligation to make such payment, and Lessee shall not be considered in default on account thereof until Lessor has first given Lessee written notice of the non-payment and Lessee shall have failed to make payment for a period of one hundred twenty (120) days after receipt of such notice.

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1 of 5

(d) **RENTAL:** If Lessee shall not have commenced drilling operations for a well on this Agreement or on adjacent neighboring lands pooled or unitized with this Agreement within 90 days from the date hereof, or, if Lessee has not recorded in the County Recorder's Office of the subject premises hereinbefore described, a full and completed surrender of the Leased Premises within 90 days from the date hereof, then Lessee agrees to pay to the Lessor the sum of **three thousand seventy two and 75/100 Dollars (\$3,072.75)** as full and complete rental payment for this Agreement for the entire primary term of this Agreement. The commencement of a well within 90 days from the date hereof or the recording of the surrender within 90 days from the date hereof shall relieve and release the Lessee from any and all obligation to pay Lessor rental under the terms of this Agreement.

(e) **DAMAGES:** Lessee shall pay Lessor for all damages to growing agricultural crops caused by Lessee's operations on the Leased Premises and shall bury all permanent pipelines below plow depth through cultivated areas upon request of Lessor owning an interest in the surface. Damages shall be calculated at the current marketable value only; and in no instance shall estimates of future values be considered. Any timber cut by Lessee in preparing access roads, right-of-ways, or locations will be stacked in an orderly manner in locations to be mutually agreed upon between by Lessee and Lessor and will not be subject to damage reimbursement to Lessor by Lessee. Any delays to Lessee's workers or damages to Lessee's property that are caused by Lessor, whether intentional or not, shall be recoverable by Lessee from any royalty payments or any other payments to Lessor that are due or becoming due.

**6. MANNER OF PAYMENT:** (a) **CHANGE IN LAND OWNERSHIP:** All payments under this Agreement shall be made by check to the order of Lessor, and shall be mailed to Lessor, at Lessor's last known address until the Lessee receives written notice from the Lessor, its heirs or assigns, accompanied by certified recorded copies of deeds or other documents as Lessee may require, evidencing such change of ownership of the leased premises and directing payments to be made otherwise, and any payments made as indicated above until such direction, and thereafter in accordance with such direction, shall absolve the Lessee from any liability to any heir or assign of the Lessor.

If during the term of this Agreement, Lessor makes any conveyance whereby any surface rights are transferred on the Leased Premises, Lessor shall promptly give notice of the same to Lessee and Lessor shall forward to Lessee a recorded copy of such conveyance. Lessor shall similarly provide any new title holder(s) to the surface rights with the terms and provisions of this Agreement and that said title holders are subject to and are bound by this Agreement.

(b) **BREACH OF OBLIGATIONS:** The breach by Lessee of any obligations arising hereunder shall not work a forfeiture or termination of this lease nor cause a termination or reversion of the estate created hereby nor be grounds for cancellation hereof in whole or in part unless Lessor shall notify Lessee in writing of the facts relied upon in claiming a breach hereof, and Lessee, if in default, shall have one hundred twenty (120) days after receipt of such notice in which to commence the compliance with the obligations imposed by virtue of this instrument, and if Lessee shall fail to do so, then Lessor shall have grounds for action in arbitration or such remedy to which Lessor may be entitled.

(c) **PROPORTIONATE REDUCTION:** If Lessor owns less than the entire interest in the Leased Premises, then the royalties, rentals and other payments herein provided shall be paid to the Lessor only in the proportion such interest bears to the whole and undivided interest therein.

(d) **TITLE, CLAIMS, AND LIENS:** In addition to the covenants of general warranty hereinabove contained, Lessor further covenants and agrees, that if Lessor's title to the Leased Premises shall come into dispute or litigation, or, if in the judgment of Lessee, there are bona fide adverse claims to the rental or royalties hereinabove provided for, then Lessee, at its option, may withhold the payment of said rental or royalties without interest until final adjudication or other settlement of such dispute, litigation, claim or claims; and that Lessee, at its option, may pay and discharge any taxes, mortgages or other lien or liens existing, levied, assessed or which may hereafter come into existence or be levied or assessed on or against the Leased Premises, and in the event it exercises such option, Lessee shall be subrogated to the lien and any and all rights of any holder or holders thereof, and may reimburse itself by applying to the discharge of any such mortgage, tax, or other lien or liens, any rental or royalty accruing hereunder.

**7. FORCE MAJEURE, FEDERAL & STATE LAWS:** In the event drilling or other operations hereunder are delayed or interrupted by lack of water, labor or material, or by fire, storm, flood, weather, war, rebellion, insurrection, riot, strike, differences with workmen, failure of subcontractors, or failure of carriers to transport or furnish facilities for transportation, or as a result of some order, rule, regulation, requisition or necessity of the government including the inability to obtain drilling permits, or any other recognized force majeure, or as the result of any other cause whatsoever beyond the control of Lessee, the time of such delay or interruption shall not be counted against Lessee, notwithstanding anything in this Agreement to the contrary. All express or implied covenants of this Agreement shall be subject to all Federal and State Laws, Executive Orders, Rules or Regulations and this Agreement shall not be terminated, in whole or in part, nor Lessee held liable for any damages for failure to comply therewith, if compliance is prevented by, or if such failure is the result of, any such Law, Order, Rule or Regulation.

**8. ASSIGNMENT OF LEASE:** Lessee shall have the right to assign this Agreement or any interest therein and the assignee of Lessee shall have corresponding rights, privileges, and obligations with respect to said royalties and rental as to the acreage assigned to it.

**9. SURRENDER OF LEASE:** Lessee may, at any time during the term hereof, cancel and surrender this Agreement in whole or in part, and be relieved of any and all obligations, payments and liabilities, including any and all delayed rental as set forth in paragraph 5(d) above, by the recording of such cancellation and surrender in the County Recorder's Office of the subject premises hereinbefore described and this lease shall be terminated as to the land in respect to which a surrender is made.

**10. DEVELOPMENT OF LEASE:** It is agreed that Lessee may drill or not drill on the Leased Premises as it may elect, and the consideration paid and to be paid hereunder constitutes full adequate compensation and consideration to Lessee for such privilege.

**11. FACILITIES:** Lessee shall not drill a well within 200 feet of any dwelling now on the Leased Premises, except by written consent of the Lessor or owner of the surface on which such dwelling is located, whichever is applicable; provided, however, that Lessee may otherwise locate drill sites and well bores where it deems necessary on Leased Premises for the production of oil or gas or both. Lessee may construct and maintain any roads necessary to carry out the intent of this Agreement. It is agreed that Lessee shall have the privilege of using without any additional rental or compensation to Lessor hereunder sufficient water, Oil and Gas from the Leased Premises to run all machinery necessary for drilling and operations thereon.

**12. CONTINUING OPERATIONS:** If Lessee shall obtain a well permit during the primary term of this Agreement, or any extension thereof, Lessee shall then have the right until the permit expires to drill the permitted well, and if Oil or Gas, or both, found in paying quantities, this Agreement shall continue and be in force and with like effect as if such well had been completed within the term first herein mentioned. The Lessee shall pay the Lessor a shut-in royalty as provided in paragraph 5(c), as if there is a well capable of producing gas, until either the permit expires or a well capable of producing oil or gas is completed.

**13. PROPERTY USE:** The Leased Premises may be fully and freely used by Lessor for any purpose, excepting such parts as are used by Lessee in operation hereunder. Any sites of Lessee's utilized for drilling, producing, storing and otherwise operating on the Leased Premises are for Lessee's use only; and; Lessor shall not use any such sites for storage or for any other purpose so long as this Agreement is in effect.

08/12/2022

14. **POOLING & UNITIZATION:** Lessor grants Lessee the right to pool, unitize, or combine all or parts of the premises with other lands, whether contiguous or not contiguous, leased or unleased, whether owned by Lessee or by others, at a time before or after drilling to create drilling or production units either by contract right or pursuant to governmental authorization or order. Such units will not exceed the size as allowed by the appropriate governmental authority and may or may not be limited to certain strata or formation. Where Lessee forms a unit by contract right, it may, at its' sole option, place of record, a copy of its declaration of unitization. Lessor shall be provided with notice of the formation of unit(s) if required by of the appropriate governmental authority. Whether unit(s) are formed by contract right or by appropriate governmental authority, for all purposes of this lease, the leasehold shall be deemed to be unitized as of the effective date of its declaration of unitization. Lessee is granted the right to change the size, shape and conditions of operation or payment of any unit created. Lessor agrees to accept and receive out of the production of the net proceeds realized from the production of such unit, such proportional share of the royalty from each unit well as the number of leasehold net acres included in the unit bears to the total number of acres in the unit; for such purposes, Lessee may, at its option, definitively rely on the acreage calculation of the local property tax assessment authorities. Drilling operations in preparation for drilling, production, or shut-in production from the unit, or payment of royalty or delay rental shall have the same effect upon the term of this lease as if a well were located on the leasehold estates created by this and the other leases free and clear of such pooling. The rights and obligations of this paragraph are subject to the pooling and spacing orders and provisions of governmental agencies with jurisdiction.

15. **INSTALLATION OF PIPELINES:** Lessee shall be entitled during the term of this Agreement to lay and maintain pipelines on and across the Leased Premises to transport, without any fee payable therefore to Lessor, natural gas produced on the said tract of land, lands pooled and unitized herewith, and/or on other lands whether or not adjacent to the tract of land described herein. Any such transportation or gathering lines shall always remain the property of the Lessee. Beyond the term of this Agreement, Lessee shall not be entitled to lay and maintain additional pipelines across Lessor's premises without specific written consent of Lessor. However, any pipelines laid during the term of this Agreement shall continue to be operative at the Lessee's option without any fee payable to Lessor and Lessee shall continue to have the right of unlimited access to maintain or remove said pipelines.

16. **PRODUCTION:** Lessee shall sell the production of the well on such terms and conditions as Lessee, in its sole discretion, may deem appropriate. Lessee shall have no duty to obtain production sales terms which maximize the royalties payable to Lessor hereunder.

17. **PLUGGING & ABANDONMENT:** Lessee, in its sole discretion, may plug and abandon any well which it has drilled on the Leased Premises. Upon abandonment of said well or wells drilled on the Leased Premises, Lessee shall convey back to Lessor the drill site, access road(s) to said drill site(s), culverts and gates. Transportation and gathering pipelines shall remain the property of the Lessee and Lessee shall continue to have the right of unlimited access to maintain or remove said pipelines.

18. **REMOVAL OF FIXTURES:** Lessee shall have the right at any time during the term of this Agreement or after the expiration or termination thereof to remove all machinery, fixtures, pipelines, meters, well equipment, houses, buildings, and other structures which Lessee has placed or caused to be placed on said premises, including the right to pull and remove all casing and tubing.

19. **SUCCESSORS IN TITLE:** All the terms, conditions, limitations, and covenants herein contained shall be binding upon the parties hereto and shall extend to and be binding upon their respective heirs, successors, personal representatives, and assigns, but no representations other than those herein contained shall be binding on either party.

20. **WARRANTY OF TITLE:** Lessor hereby represents, warrants and covenants that: (i) Lessor owns any and all interest in and rights to the Leased Premises; (ii) the Leased Premises are not encumbered by any enforceable oil or gas lease(s) of record or otherwise; (iii) Lessor is not currently receiving any bonus, rental, production royalty or shut-in royalty as the result of any prior oil or gas lease(s) covering any or all of the Leased Premises, and (iv) any wells previously drilled upon the Leased Premises, or upon any lands with which the Leased Premises have been combined in a drilling or production unit, have been plugged and abandoned.

21. **FIRST RIGHT OF REFUSAL:** If Lessor receives an offer to lease the oil or gas, or both, concerning any portion of the Leased Premises at any time while this Agreement remains in full force and effect, or within six (6) months thereafter, Lessor hereby agrees to notify Lessee of offeror's name, and to offer immediately to Lessee, in writing, to lease the oil or gas, or both, under the same terms. Lessee shall have fifteen (15) days to accept or reject the said offer to lease the oil and gas covered by the offer at the price, terms, and conditions specified in the offer. Failure of Lessor to provide such notice and offer to Lessee shall terminate any Lease entered into between Lessor and such offeror.

22. **COUNTERPARTS:** This Agreement may be executed in counterparts each having the same validity and all of which shall constitute but one and the same instrument. In the event any one or more of the parties named as Lessor fail to execute this Agreement, it shall nevertheless be binding upon all such parties who do execute it as Lessor.

23. **RIGHTS OF FURTHER ASSURANCES:** In the event that this Lease contains an inaccurate description of the Leased Premises or it is determined that curative documentation is required to clarify ownership capacity or that the Agreement contains errors or omissions, Lessor hereby covenants and agrees to execute and deliver all such documents, deeds, amendments, ratifications, affidavits, or such further actions as Lessee may reasonably request, to carry out the intent of, and give effect to this lease and all covenants contained herein.

24. **CAPTIONS & HEADINGS:** The captions and headings used in this Agreement are intended for convenience only and shall not be used for purposes of construction or interpretation. The captions and/or headings shall in no way define, limit, or describe the scope or intent of any part of this Agreement.

25. **ENTIRE AGREEMENT:** This Agreement constitutes the sole understanding of the Parties about this subject matter and supersedes any and all proposals, negotiations, agreements and representations of the Parties prior to the execution hereof.

08/12/2022

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IN WITNESS WHEREOF, the parties to this Agreement, intending to be legally bound, have hereunto set their hands and seals the day and year first above written.

WITNESS(ES):

_____

Printed Name _____

_____

Printed Name _____

_____

Printed Name _____

_____

Printed Name _____

LESSOR SIGNATURE:

Timothy R. Charlton

Printed Name Timothy R. Charlton

Amanda S. Charlton-Fryer

Printed Name Amanda S. Charlton-Fryer

_____

Printed Name _____

_____

Printed Name _____

ACKNOWLEDGMENT

STATE OF WEST VIRGINIA )  
 ) SS:  
COUNTY OF BARBOUR )

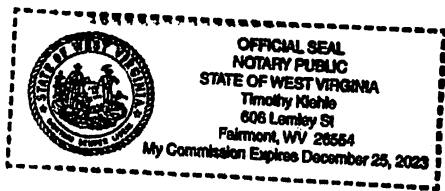
On this the 11th day of July, 2022, before me Timothy Kiehle, the undersigned officer, personally appeared Timothy R. Charlton and Amanda S. Charlton-Fryer, as joint tenants with right of survivorship, known to me (or satisfactorily proven) to be the person(s) whose name(s) is/are subscribed to the within instrument, and acknowledged that they executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission Expires: December 25, 2023

Signature/Notary Public: [Signature]

Name/Notary Public (print): Timothy Kiehle



08/12/2022

PREPARED BY & RETURN TO: MAR KEY LLC  
6031 WALLACE ROAD EXTENSION, SUITE 300  
WEXFORD, PA 15090

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ASCF initial  
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**EXHIBIT A**

**Description of Leased Premises.** The land ("Leased Premises") leased herein is located in Pleasant District, Barbour County, West Virginia, described in Deed Book 502, at Page 626, containing 14.56000000 acres, more or less, and conveyed to Lessor by Randall L. Charlton, a/k/a Randall Lynn Charlton, a widower, by Deed, dated 7/23/2018, recorded in Deed Book 502, at Page 626, in the Recorder's Office of said County. Said Leased Premises being identified for tax purposes as tract(s) or parcel number(s) 47-001-09-12C-15.2, 47-001-09-12C-15.5, 47-001-09-12C-16, 47-001-09-12C-17, 47-001-09-12C-17.1 and 47-001-09-12-61, as of the date of this Agreement. Notwithstanding said tax map designation, the Agreement shall be effective as to the tract actually owned by Lessor whether or not the tax map designation correctly identifies the location of the tract. It being the purpose and intent of Lessor to lease and Lessor does hereby lease all interests in the land above described now owned or hereafter acquired by Lessor.

08/12/2022

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MEMORANDUM OF OIL AND GAS LEASE, EASEMENT AND RIGHT-OF-WAY

State of West Virginia

County of Barbour

Lessor (whether one or more): Timothy R. Charlton of 100 Clifton Circle, Oak Ridge, Tennessee 37830 and  
Lessor's Address Amanda S. Charlton-Fryer of 503 Ashberry Drive, Flemington, West Virginia 26347, as joint tenants with right of survivorship.

Lessee: Mar Key LLC  
Lessee's Address: 6031 Wallace Road Extension, Suite 300  
Wexford, PA 15090

Date Executed: July 11, 2022

Effective Date: July 11, 2022

As of the Date Executed stated above, Lessor, named above, executed and delivered to Lessee, named above, an Oil And Gas Lease, Easement and Right-of-Way (the "Agreement") in which Lessor granted, leased, and let to Lessee lands (the "Lands") located in the County and State named, described as follows:

The Lands leased being located in Pleasant District, Barbour County, West Virginia, described in Deed Book 502, at Page 626, containing 14.56000000 acres, more or less, and conveyed to Lessor by Randall L. Charlton, a/k/a Randall Lynn Charlton, a widower, by Deed, dated 7/23/2018, recorded in Deed Book 502, at Page 626, in the Recorder's Office of said County. Said Lands being identified for tax purposes as tract(s) or parcel number(s) 47-001-09-12C-15.2, 47-001-09-12C-15.5, 47-001-09-12C-16, 47-001-09-12C-17, 47-001-09-12C-17.1 and 47-001-09-12-61, as of the date of the Agreement. Notwithstanding said tax map designation, the Agreement shall be effective as to the tract actually owned by Lessor whether or not the tax map designation correctly identifies the location of the tract. It being the purpose and intent of Lessor to lease and Lessor does hereby lease all interests in the Lands above described now owned or hereafter acquired by Lessor.

The Agreement grants Lessee, the exclusive right to explore for, produce and market oil, gas and other hydrocarbons from the Lands during the term of the Agreement, as provided for in the Agreement.

The Agreement is for a primary term of five (5) years from the Effective Date stated above, and as long thereafter as oil, gas or other minerals are produced from the lands described above, or lands pooled therewith, according to and by the terms and provisions of the Agreement between Lessor and Lessee. Lessee at its sole option may extend the primary term for an additional five (5) years. The Agreement, with all of its terms, covenants and other provisions, is referred to and incorporated into this Memorandum for all purposes.

This Memorandum of Oil and Gas Lease, Easement and Right-of-Way is executed by Lessor and Lessee and placed of record in the County in which the Lands are located for the purpose of placing all persons on notice of the existence of the Agreement which Agreement is not, at the request of both parties, being placed of record.

WITNESS:

LESSOR:

  
Timothy R. Charlton

  
Amanda S. Charlton-Fryer

LESSEE:  
Mar Key LLC

08/12/2022

By: Jon Sheldon  
Its: Senior Vice President and COO



ACKNOWLEDGMENT

STATE OF WEST VIRGINIA )  
 ) SS:  
COUNTY OF BARBOUR )

On this the 11th day of July, 2022, before me Timothy Kiehle, the undersigned officer, personally appeared **Timothy R. Charlton and Amanda S. Charlton-Fryer**, as joint tenants with right of survivorship, known to me (or satisfactorily proven) to be the person(s) whose name(s) is/are subscribed to the within instrument, and acknowledged that they executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission Expires: December 25, 2023



Signature/Notary Public: [Handwritten Signature]

Name/Notary Public (print): Timothy Kiehle

ACKNOWLEDGMENT

COMMONWEALTH OF PENNSYLVANIA )  
 ) SS:  
COUNTY OF ALLEGHENY )

On this the ____ day of _____, 20____, before me, the undersigned officer personally appeared, **Jon Sheldon**, who acknowledged himself to be the **Senior Vice President and COO** of **Mar Key LLC**, and as such **Senior Vice President and COO**, being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing his name as **Senior Vice President and COO**.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission Expires: _____

Signature/Notary Public: _____

Name/Notary Public (print): _____

08/12/2022

PREPARED BY & RETURN TO:  
MAR KEY LLC  
6031 WALLACE RD EXT, STE 300  
WEXFORD, PA 15090

## **Agreement to Drill, Complete and Operate Oil & Gas Wells**

This Agreement to Drill, Complete and Operate Oil & Gas Wells (this "Agreement"), by and among Arsenal Resources LLC, a West Virginia limited liability company ("Arsenal"), River Ridge Energy, LLC, a Delaware limited liability company ("River Ridge"), and River Ridge Energy, Holdings, LLC, a Delaware limited liability company ("River Ridge Holdings"), is effective as of March 1, 2017. (the "Effective Date") and sets forth the terms pursuant to which Arsenal will drill, complete and operate the Wells (as defined below) on behalf of River Ridge and River Ridge Holdings. Arsenal, River Ridge, and River Ridge Holdings are each a "Party" and are collectively the "Parties". In consideration of the foregoing and the respective agreements hereinafter set forth and the mutual benefits to be derived therefrom, the Parties, intending to be legally bound, hereby agree as follows:

1. **Term:** This Agreement is effective from the Effective Date until terminated by Arsenal on the one hand or River Ridge and River Ridge Holdings on the other hand with 30 days' written notice to the other Party or Parties, as applicable (the "Term").
2. **Authorization to Operate:** River Ridge and River Holdings authorize Arsenal to undertake and perform, on River Ridge and River Ridge Holdings behalf, all operations, including without limitation permit applications, well pad preparation, drilling and completing wells, and marketing gas, oil and other hydrocarbons therefrom with respect to all oil and gas wells to be drilled on oil and gas leasehold acreage held by River Ridge or River Ridge Holdings. River Ridge, River Ridge Holdings and Arsenal are affiliates with a common parent. Arsenal was formed to operate oil and gas leasehold acreage held by River Ridge, River Ridge Holdings and certain other affiliates. Arsenal agrees that it shall, in a good and workmanlike manner and in accordance with industry standards as they prevail in the area, drill, complete and operate oil and gas wells on leasehold acreage owned by River Ridge or River Ridge Holdings from time to time as directed by River Ridge or River Ridge Holdings (collectively, the "Wells").
3. **No Third Party Beneficiary:** This Agreement is for the benefit of the Parties and is not for the benefit of any third party.
4. **Counterparts:** This Agreement may be simultaneously executed in several counterparts and via facsimile or similar electronic transmittal, each of which shall be deemed to be an original and taken together shall constitute one and the same instrument.

[Signature Page Follows]

IN WITNESS WHEREOF, Arsenal, River Ridge, and River Ridge Holdings have caused their duly authorized representatives to execute this Agreement as of the Effective Date.

**ARSENAL RESOURCES LLC**

By: Joel E. Symonds  
Name: Joel E. Symonds  
Title: Vice President - Land

**RIVER RIDGE ENERGY, LLC**

By: Joel E. Symonds  
Name: Joel E. Symonds  
Title: Vice President - Land

**RIVER RIDGE HOLDINGS, LLC**

By: Joel E. Symonds  
Name: Joel E. Symonds  
Title: Vice President - Land

# West Virginia Secretary of State — Online Data Services

## Business and Licensing

Online Data Services Help

### Business Organization Detail

*NOTICE: The West Virginia Secretary of State's Office makes every reasonable effort to ensure the accuracy of information. However, we make no representation or warranty as to the correctness or completeness of the information. If information is missing from this page, it is not in the The West Virginia Secretary of State's database.*

#### MAR KEY LLC

Organization Information								
Org Type	Effective Date	Established Date	Filing Date	Charter	Class	Sec Type	Termination Date	Termination Reason
LLC   Limited Liability Company	7/11/2011		7/11/2011	Domestic	Profit			

Organization Information			
<b>Business Purpose</b>	2111 - Mining, Quarrying, Oil & Gas Extraction - Oil and Gas Extraction - Crude Oil and Natural Gas Extraction		<b>Capital Stock</b>
<b>Charter County</b>		<b>Control Number</b>	99Q1F
<b>Charter State</b>	WV	<b>Excess Acres</b>	
<b>At Will Term</b>	A	<b>Member Managed</b>	MBR
<b>At Will Term Years</b>		<b>Par Value</b>	
<b>Authorized Shares</b>		<b>Young Entrepreneur</b>	Not Specified

08/12/2022

--

<b>Addresses</b>	
<b>Type</b>	<b>Address</b>
<b>Designated Office Address</b>	633 W. MAIN STREET BRIDGEPORT, WV, 26330
<b>Mailing Address</b>	6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090 USA
<b>Notice of Process Address</b>	CORPORATION SERVICE COMPANY 209 WEST WASHINGTON STREET CHARLESTON, WV, 25302
<b>Principal Office Address</b>	6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090 USA
<b>Type</b>	<b>Address</b>

<b>Officers</b>	
<b>Type</b>	<b>Name/Address</b>
<b>Member</b>	ARSENAL RESOURCES DEVELOPMENT LLC 6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090
<b>Organizer</b>	PAUL M HERZING 560 EPSILON DR. PITTSBURGH, PA, 15238 USA
<b>Type</b>	<b>Name/Address</b>

<b>Annual Reports</b>	
<b>Filed For</b>	
2020	
2019	
2018	

2017
2016
2015
2014
2013
2012
<b>Date filed</b>

[File Your Current Year Annual Report Online Here](#)

For more information, please contact the Secretary of State's Office at 304-558-8000.

Monday, March 1, 2021 — 9:37 AM

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# West Virginia Secretary of State — Online Data Services

## Business and Licensing

Online Data Services Help

### Business Organization Detail

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#### SENECA-UPSHUR PETROLEUM, LLC

Organization Information								
Org Type	Effective Date	Established Date	Filing Date	Charter	Class	Sec Type	Termination Date	Termination Reason
LLC   Limited Liability Company	2/12/1973		2/12/1973	Domestic	Profit			

Organization Information			
<b>Business Purpose</b>	2111 - Mining, Quarrying, Oil & Gas Extraction - Oil and Gas Extraction - Crude Oil and Natural Gas Extraction		<b>Capital Stock</b>
<b>Charter County</b>		<b>Control Number</b>	0
<b>Charter State</b>	WV	<b>Excess Acres</b>	0
<b>At Will Term</b>	A	<b>Member Managed</b>	MBR
<b>At Will Term Years</b>		<b>Par Value</b>	
<b>Authorized Shares</b>		<b>Young Entrepreneur</b>	Not Specified

08/12/2022

<b>Addresses</b>	
<b>Type</b>	<b>Address</b>
<b>Designated Office Address</b>	633 W. MAIN STREET BRIDGEPORT, WV, 26330
<b>Mailing Address</b>	6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090 USA
<b>Notice of Process Address</b>	CORPORATION SERVICE COMPANY 209 WEST WASHINGTON STREET CHARLESTON, WV, 25302
<b>Principal Office Address</b>	6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090 USA
<b>Type</b>	<b>Address</b>

<b>Officers</b>	
<b>Type</b>	<b>Name/Address</b>
<b>Member</b>	RIVER RIDGE ENERGY, LLC 6031 WALLACE ROAD EXTENSION, SUITE 300 WEXFORD, PA, 15090
<b>Organizer</b>	TAMMY J OWEN 300 SUMMERS STREET, STE 1500 PO BOX 2107 CHARLESTON, WV, 25328 USA
<b>Type</b>	<b>Name/Address</b>

<b>DBA</b>			
<b>DBA Name</b>	<b>Description</b>	<b>Effective Date</b>	<b>Termination Date</b>
KEYSPAN PRODUCTION & DEVELOPMENT COMPANY	TRADENAME	6/11/2004	
NATIONAL GRID	TRADENAME	8/17/2007	



NATIONAL GRID PRODUCTION AND DEVELOPMENT	TRADENAME	12/5/2008	5/9/2012
<b>DBA Name</b>	<b>Description</b>	<b>Effective Date</b>	<b>Termination Date</b>

<b>Name Changes</b>	
<b>Date</b>	<b>Old Name</b>
<b>3/28/2011</b>	SENECA-UPSHUR PETROLEUM, INC.
<b>Date</b>	<b>Old Name</b>

<b>Date</b>	<b>Amendment</b>
<b>6/15/2016</b>	AMENDMENT FILED CHANGING FROM A MANAGER-MANAGED CO. TO A MEMBER-MANAGED CO. >> REMOVED ROBERT KOZEL & STEPHEN A. BISHOP AS MANAGERS & ADDED SOLE MEMBER (C IMAGE).
<b>3/28/2011</b>	CONVERSION: FROM SENECA-UPSHUR PETROLEUM, INC. TO SENECA-UPSHUR PETROLEUM, LLC
<b>7/25/1997</b>	MERGER; MERGING LITTLE SWISS DRILLING COMPANY, A QUAL WV CORP AND PALACE VALLEY PETROLEUM COMPANY, A QUAL WV CORP WITH AND INTO SENECA-UPSHUR PETROLEUM, INC., A QUAL WV CORP, THE SURVIVOR.
<b>Date</b>	<b>Amendment</b>

<b>Annual Reports</b>	
<b>Filed For</b>	
2020	
2019	
2018	
2017	
2016	
2015	
2014	
2013	
2012	
2011	

08/12/2022

2010
2009
2008
2007
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2003
2002
2001
2000
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1998
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For more information, please contact the Secretary of State's Office at 304-558-8000.

Monday, March 1, 2021 — 9:40 AM

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# ARSENAL

R E S O U R C E S

## SITE SAFETY PLAN

RECEIVED  
Office of Oil and Gas

JUL 25 2022

WV Department of  
Environmental Protection

### JOHNSON TFP 40 WELL PAD #202

#### 911 Address:

4006 Green Valley Rd

Bridgeport, WV 26330

Kenneth Greynolds

Digitally signed by: Kenneth Greynolds  
DN: CN = Kenneth Greynolds email = Kenneth.L.  
Greynolds@wv.gov C = AD O = WVDEP OU = Oil and Gas  
Date: 2022.07.15 09:03:36 -0400

**JOHNSON TFP40 Well Pad #202  
Site Safety Plan Table of Contents**

- Section 1 Contacts, Schedules and Meetings
  - A. Emergency Contact Information-Page 3
  - B. Public Facility Contact Information-Page 3
  - C. H2S Gas, Blow Out, Flaring Emergency and Notification and Evacuation procedures - Page 4-5
  - D. Pre-Spud Meeting-Page 6-7
  - E. Daily Visitors Sign In Sheet -Page 8
  - F. Safety Meeting Schedule-Page 8
- Section 2 Maps and Diagrams
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  - B. Topographic Map - Page 11-12
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- Section 3 Well Work
  - A. Well Work Descriptions and Schematics – Page 14-18
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- Section 4 Chemical Inventory and SDS
  - A. SDS Availability/Location – Page 21
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  - D. Personnel with Well Control Training – Page 25
  - E. Well Event Record Keeping – Page 25
  - F. Inspector Notification – Page 26
  - G. Wellhead Assembly – Page 26-28
  - H. Well Kill Procedure – Page 29
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  - D. Establishment of Protective Zones – Page 30-31
  - E. H2S PPE – Page 31-32
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- Section 8 Collision Avoidance
  - A. Established definitions – Page 35
  - B. Description of Risk – Page 35
  - C. Plan Components – (DDC Anti Collision Report) – Page 35-36
  - D. Spider Plot and Anti-Collision Plan – Page 37 (Attached Plan)

**Section 1 – Contacts, Schedules, and Meetings**

**A. Emergency Contact Information**

This section details the method of notification to the public if an H2S Gas, blowout, or flaring emergency would be encountered. This section also lists the H2S Safety Services and Equipment that will be brought on site in case of an H2S Emergency.

Emergency Contact Information

The 24-hour Emergency Contact Information including the name and phone numbers of persons to be notified shall be posted in the production trailer in a common area and in plain sight for reference. The Emergency Contact Information is identified in the following table:

<b>Arsenal Resources – Emergency Contact Information</b>		
<b>Name</b>	<b>Position</b>	<b>24-Hour Phone #</b>
Jon Sheldon	Chief Operating Officer	304-376-0719
Ross Schweitzer	Sr. Director of Drilling, Cons & Permitting	724-584-1192
Brandon Wedde	Sr Director of Completions & Production	724-719-1240
<b>West Virginia DEP Office of Oil &amp; Gas – Emergency Contact Information</b>		
<b>Name</b>	<b>Position</b>	<b>24-Hour Phone #</b>
Ken Greynolds	Local WVDEP Inspector, Taylor County	304-206-6613
	Office of Oil & Gas	304-926-0499
	WVDEP Emergency Spill Hotline	1-800-642-3074
<b>Emergency Response Units</b>		
National Response Center for Reporting Chemical or Oil Spills		800-424-8802
WVDEP Emergency Spill Center		800-642-3074
<b>Ambulance, Fire, and Law Enforcement</b>		<b>911</b>
Taylor County EMS		304-265-0904
Taylor County Emergency Service Center		304-265-2524
Taylor County Sheriff Department		304-265-3428

**B. Public Facility Contact Information**

According to information provided to Arsenal Resources by D&H, there are six public facilities located within the one-mile radius of the site. These facilities are listed in the table below:

Bailey Memorial UMC	63 Bailey Church Rd	Rosemont	WV	26424	304-842-1141
Flemington Assembly Church of God	1001 West Veterans Memorial HWY	Flemington	WV	26347	304-506-3448
Victory Valley Church	Route 76	Rosemont	WV	26424	304-739-4787
USPS	1791 W Veterans Memorial Hwy	Rosemont	WV	26424	800-275-8777
D&K Custom Cutting	1686 E Veterans Memorial Hwy	Flemington	WV	26347	304-739-2686
Mustangs & Bullets	4041 Green Valley Rd	Bridgeport	WV	26330	304-842-4363

All landowners within a 1 Mile Radius are listed as part of the Well Safety Plan Map.

* - *ESRI Aerial Imaging was used to determine the location of Schools/Public Facilities/Houses within one mile of the project site.*

### **C. H2S Gas, Blow Out, and Flaring Emergency Notification and Evacuation Procedures**

This section details the method of notification to the public if an H2S Gas, blowout, or flaring emergency would be encountered. This section also lists the H2S Safety Services and Equipment that will be brought on-site in case of an H2S Emergency.

#### Evacuation Plan

In the event of an emergency that requires evacuation, personnel are to vacate the well pad area in a calm and orderly fashion by exiting the pad via the access road onto CR 17.

The procedure to be used in alerting nearby persons in the event of any occurrence that could pose a threat to life or property will be arranged and completed with public officials in detail, prior to drilling into the hydrogen sulfide formations.

In the event of an actual emergency, the following steps will be immediately taken:

1. Arsenal Resources will immediately notify the appropriate parties from the Emergency Contacts Section of this plan and any other appropriate parties to conduct necessary evacuation notifications. The emergency officials will immediately warn each resident and transient's down-wind within the radius of exposure from the well site, and then warn all residents in the radius of exposure. Additional evacuation zones may be necessary as the situation warrants. Arsenal Resources will provide assistance to emergency authorities.
2. Arsenal Resources will dispatch sufficient personnel to assist with traffic control in the vicinity away from the potentially dangerous area as requested and directed by the emergency authorities in charge of the evacuation procedures. A guard will be stationed at the entrance of the well site to monitor essential and non-essential traffic.
3. General:
  - A. The area included within the radius of exposure is considered to be the zone of maximum potential hazard from a hydrogen sulfide gas escape. Immediate evacuation of public areas, in accordance with the provisions of this contingency plan, is imperative. When it is determined that conditions exist which create an additional area (beyond the initial zone of maximum potential hazard) vulnerable to possible hazard, public areas in the additional hazardous area will be evacuated in accordance

with the contingency plan.

- B. In the event of a disaster, after the public areas have been evacuated and traffic stopped, it is expected that local civil authorities will have arrived and within a few hours will have assumed direction of and control of the public, including all public areas. Arsenal Resources will cooperate with these authorities to the fullest extent and will exert every effort by careful advice to such authorities to prevent panic or rumors.
- C. Arsenal Resources will dispatch appropriate management personnel at the disaster site as soon as possible. The company's personnel will cooperate with and provide such information to civil authorities as they might require.
- D. One of the products of the combustion of hydrogen sulfide is sulfur dioxide (SO₂). Under certain conditions this gas may be equally as dangerous as H₂S. A pump type detector device, which determines the percent of SO₂ in air through concentrations in ppm, will be available. Although normal air movement is sufficient to dissipate this material to safe levels, the SO₂ detector should be utilized to check concentrations in the proximity of the well once every hour, or as necessary and the situation warrants. Also, if any low areas are suspected of having high concentrations, personnel should be made aware of these areas, and steps should be taken to determine whether or not these low areas are hazardous.

This evacuation plan will also be posted in the production trailer in a common area and in plain sight for personnel to reference if there is an emergency that requires evacuation. The evacuation plan will be reviewed in the pre-drill or weekly safety meetings with all personnel.

#### **D. Pre-Spud Meeting.**

The Pre-Spud Meeting Form included on the next page will be used during the pre-spud meeting to account for all parties that are present. The invited parties shall include Representatives from Arsenal Resources Drilling and HSE Departments, the regional WVDEP Inspector, and representatives from all contractor companies being utilized during the drilling process.



Meeting Date: _____

Pre-Spud Meeting

JOHNSON TFP40 Well Pad # _____

**NAME**

**TITLE**

	Arsenal Resources DRILLING REPRESENTATIVE
	Arsenal Resources SITE SUPERVISOR/REPRESENTATIVE
	STATE INSPECTOR
	DRILLING CONTRACTOR REPRESENTATIVE

### **E. Daily Visitor Sign-In Sheets**

Arsenal Resources utilizes a third-party security contractor to monitor the main entry to our sites from the start of the drilling process through the conclusion of flowback. The contractors will be utilizing their forms to document all individuals that access Arsenal Resources' well pad.

### **F. Safety Meetings**

**Safety Meetings:** Arsenal Resources and selected contractors shall hold a "pre- drill" safety meeting to discuss Well Site Safety during operations at the project location.

Safety Meetings will be held on a daily basis, prior to starting different phases of the operation (e.g., completion or work over operations), or when safety issues arise or need to be addressed.

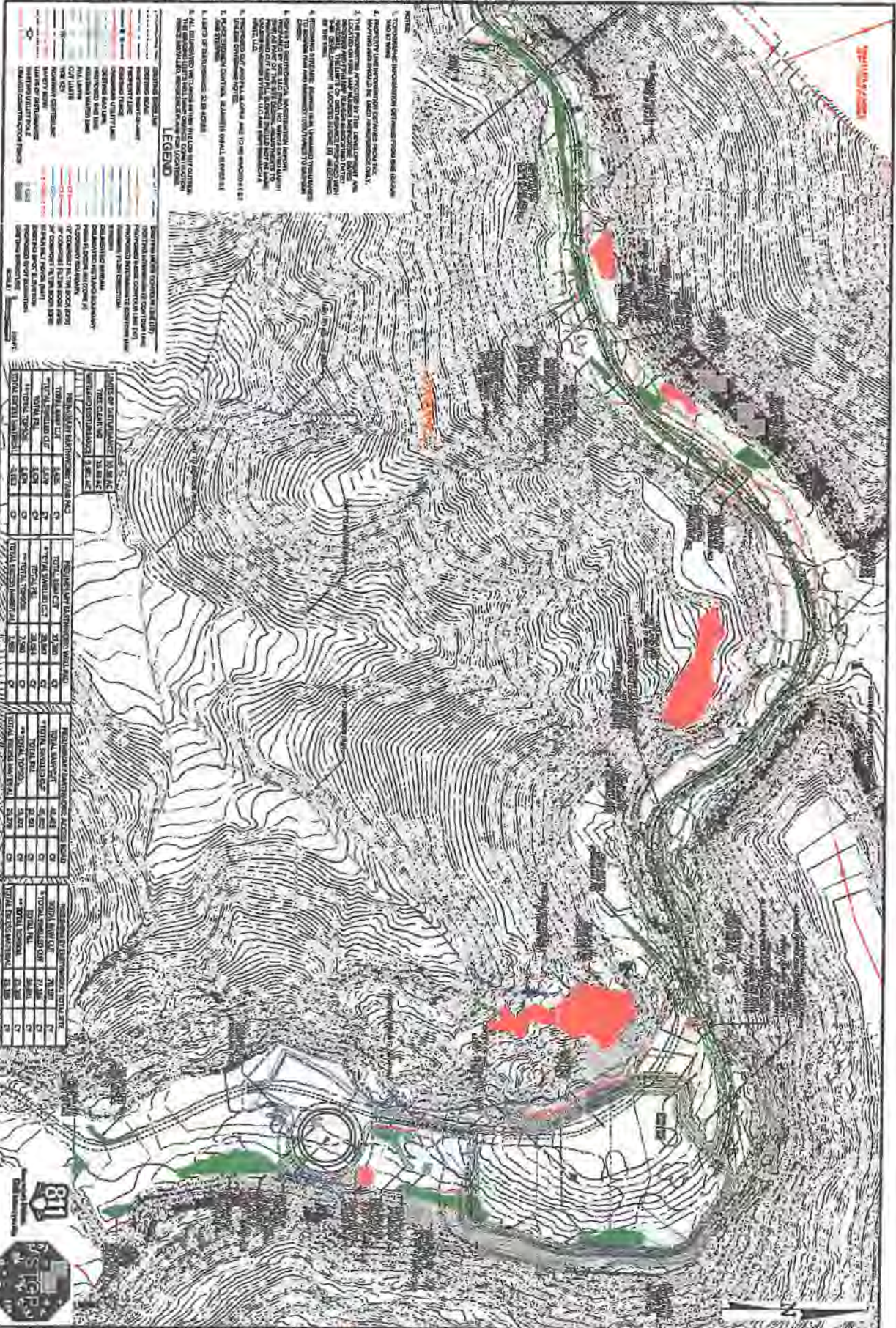
Attendance logs will be kept for all site safety meetings and maintained on site.

The local WV DEP inspector, Bryan Harris, or another Office of Oil and Gas representative and emergency responders from the area will be notified of and invited to the pre-drill and subsequent meeting.

## **Section 2 – Maps and Diagrams**

### **A. Plan View Map**

The following pages include a Plan view map of the location, access road, pit(s), flare lines, nearby dwellings, notation of the north direction and the prevailing wind direction.



- NOTES:**
1. CONTOUR INTERVAL: 10 FEET
  2. THE PROPOSED ADVERTISEMENTS FOR THE DEVELOPMENT ARE LOCATED ON THE MAP AS SHOWN. THE ADVERTISEMENTS ARE LOCATED ON THE MAP AS SHOWN. THE ADVERTISEMENTS ARE LOCATED ON THE MAP AS SHOWN.
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**LEGEND**

Symbol	Description
Red shaded area	Proposed Advertisement
Green shaded area	Proposed Advertisement
Blue shaded area	Proposed Advertisement
Black line	Proposed Advertisement
Grey line	Proposed Advertisement
White area	Proposed Advertisement

**POINTS OF INTEREST**

Point of Interest	Coordinates
Point 1	45.0000 N, 120.0000 W
Point 2	45.0000 N, 120.0000 W
Point 3	45.0000 N, 120.0000 W
Point 4	45.0000 N, 120.0000 W
Point 5	45.0000 N, 120.0000 W

**ADVERTISEMENTS**

Advertisement	Area	Height
Advertisement 1	100 sq ft	10 ft
Advertisement 2	100 sq ft	10 ft
Advertisement 3	100 sq ft	10 ft
Advertisement 4	100 sq ft	10 ft
Advertisement 5	100 sq ft	10 ft

**ADVERTISEMENTS**

Advertisement	Area	Height
Advertisement 1	100 sq ft	10 ft
Advertisement 2	100 sq ft	10 ft
Advertisement 3	100 sq ft	10 ft
Advertisement 4	100 sq ft	10 ft
Advertisement 5	100 sq ft	10 ft

**ADVERTISEMENTS**

Advertisement	Area	Height
Advertisement 1	100 sq ft	10 ft
Advertisement 2	100 sq ft	10 ft
Advertisement 3	100 sq ft	10 ft
Advertisement 4	100 sq ft	10 ft
Advertisement 5	100 sq ft	10 ft

**811**

**ARSENAL**

**DIEFFENBACH & WITZL**

West Chester, OH 43081

Phone: (614) 233-1111

Fax: (614) 233-1112

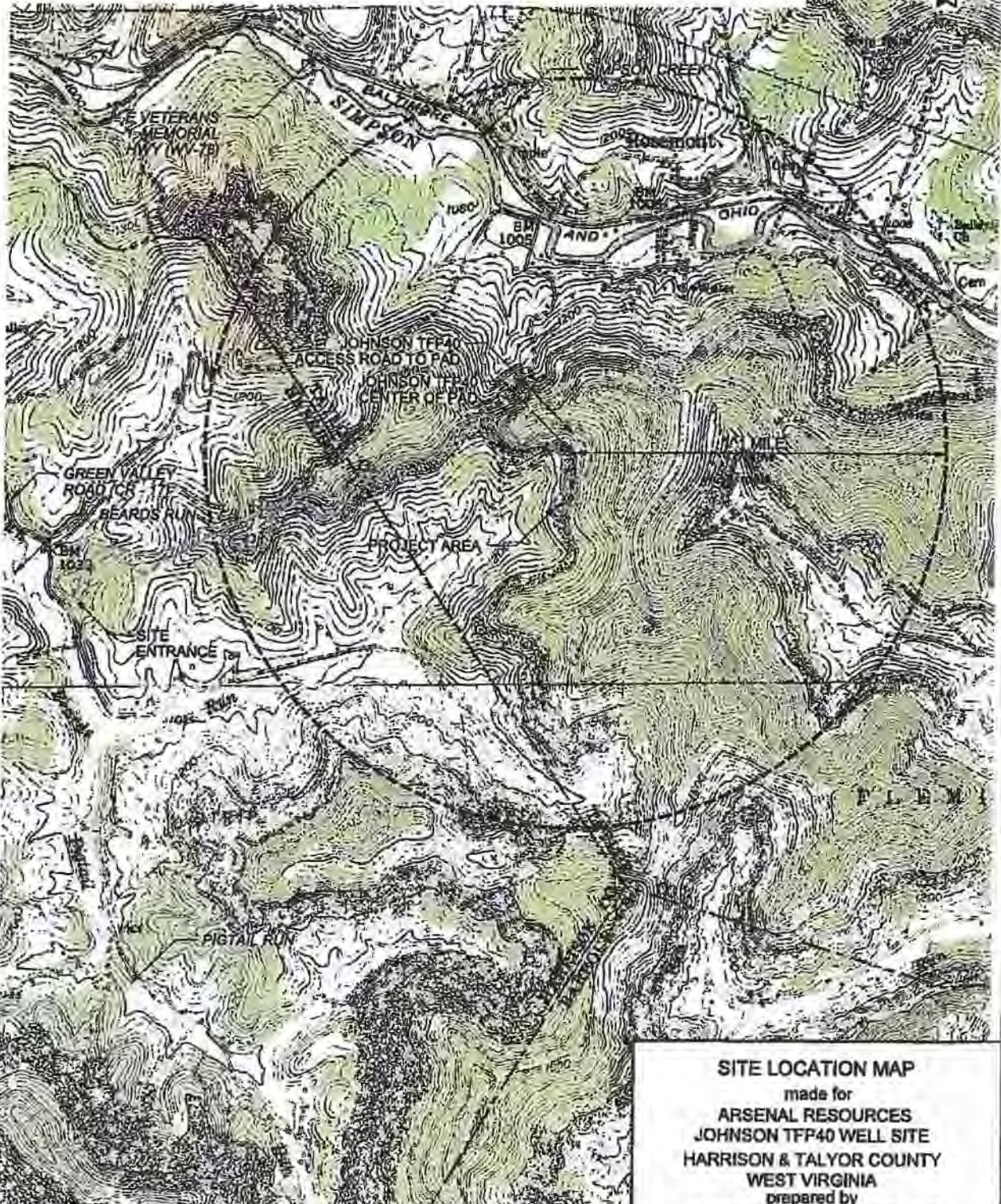
## **B. Topographic Map**

This section includes a Topographic map of the well location, including a 1 mile radius of well location, and UTM NAD 83 coordinates of well site entrance, UTM NAD 83 coordinates of the point the access road intersects the public route, and public route numbers and/or route names.

**SITE ACCESS ROAD ENTRANCE (NAD83  
UTM (METER)**  
 N: 4345150.895  
 E: 589528.425  
**GEOGRAPHIC (DMS)**  
 LAT: 39° 15' 10.43"  
 LONG: -80° 11' 3.15"

**ACCESS ROAD TO PAD (NAD83)  
UTM (METER)**  
 N: 4345804.476  
 E: 571674.923  
**GEOGRAPHIC (DMS)**  
 LAT: 39° 15' 34.25"  
 LONG: -80° 10' 8.22"

**CENTER OF PAD (NAD83)  
UTM (METER)**  
 N: 4345803.820  
 E: 571690.367  
**GEOGRAPHIC (DMS)**  
 LAT: 39° 15' 30.97"  
 LONG: -80° 10' 8.62"



9/27/2016 3:15:29 PM K:\Mountaineer Keyhole\2017\17075-007 - Johnson TFP40\Comment\Site Location Map (1 MILE).dgn

REFERENCES: IMAGERY PROVIDED BY USGS:  
 ROSEMONT & BROWNTOWN QUADRANGLES,  
 WEST VIRGINIA 7.5 MINUTE SERIES



**SITE LOCATION MAP**  
 made for  
**ARSENAL RESOURCES**  
**JOHNSON TFP40 WELL SITE**  
**HARRISON & TAYLOR COUNTY**  
**WEST VIRGINIA**  
 prepared by  
**DIEFFENBAUCH & HRITZ, LLC**  
 1095 Chaplin Rd Suite 200, Morgantown, WV 26501  
 Phone: 304-985-5555 Fax: 304-985-5557

08/12/2022

### **C. Evacuation Plan Procedures**

In the event of an H₂S emergency, the following steps will be immediately taken:

1. Arsenal Resources will immediately notify the appropriate parties from the Emergency Contacts Section of this plan and any other appropriate parties to conduct necessary evacuation notifications. The emergency officials will immediately warn each resident and transient's down-wind within the radius of exposure from the well site, and then warn all residents in the radius of exposure. Additional evacuation zones may be necessary as the situation warrants. Arsenal Resources will provide assistance to emergency authorities.
2. Arsenal Resources will dispatch sufficient personnel to assist with traffic control in the vicinity away from the potentially dangerous area as requested and directed by the emergency authorities in charge of the evacuation procedures. A guard will be stationed at the entrance of the well site to monitor essential and non-essential traffic.

General:

- A. The area included within the radius of exposure is considered to be the zone of maximum potential hazard from a hydrogen sulfide gas escape. Immediate evacuation of public areas, in accordance with the provisions of this contingency plan, is imperative. When it is determined that conditions exist which create an additional area (beyond the initial zone of maximum potential hazard) vulnerable to possible hazard, public areas in the additional hazardous area will be evacuated in accordance with the contingency plan.
- B. In the event of a disaster, after the public areas have been evacuated and traffic stopped, it is expected that local civil authorities will have arrived and within a few hours will have assumed direction of and control of the public, including all public areas. Arsenal Resources will cooperate with these authorities to the fullest extent and will exert every effort by careful advice to such authorities to prevent panic or rumors.
- C. Arsenal Resources will dispatch appropriate management personnel at the disaster site as soon as possible. The company's personnel will cooperate with and provide such information to civil authorities as they might require.
- D. One of the products of the combustion of hydrogen sulfide is sulfur dioxide (SO₂). Under certain conditions this gas may be equally as dangerous as H₂S. A pump type detector device, which determines the percent of SO₂ in air through concentrations in ppm, will be available. Although normal air movement is sufficient to dissipate this material to safe levels, the SO₂ detector should be utilized to check concentrations in the proximity of the well once every hour, or as necessary and the situation warrants. Also, if any low areas are suspected of having high concentrations, personnel should be made aware of these areas, and steps should be taken to determine whether or not these low areas are hazardous.

### **Section 3 - Well Work**

This section includes written descriptions of well work and procedure to be used during the drilling, completion, and production phases, including schematic plan views of each, as well as casing sheets.

#### **Project Description**

This project includes the construction of several temporary and permanent features including a 8,383 foot long, 16 foot wide gravel access road to a 182,660 square foot gravel well pad with associated erosion and sediment control BMP's. An additional 238 foot long access road is to be constructed from the gravel well pad to a 40,280 square foot gravel AST and Manifold pad. Once the well pad is constructed, the well is to be drilled as a horizontal well for natural gas extraction purposes.

#### **General Drilling Program**

1. Move in and rig up rat hole rig and drill 36" conductor hole and run 24" conductor casing to approximately 120' depth. Cement to surface via pump truck thru swedge and up the backside and drill 16" mouse hole per rig specifications. Rig down move off rat hole rig.
2. Move in and rig up a double or triple drilling rig, rig up flow lines and steel pits, and drill 17 ½" hole to a depth of 300' – 1000' depending on local fresh water depth. Drilling medium will be on fresh water. Run new, J-55, 54.5#, 13 3/8" casing and hardware to near bottom and cement to surface with Class A, 3% CaCl₂ cement. Wait at least 8 hrs. on cement prior to drilling. If no cement circulation, call the inspector, run a CBL to determine cement top, then grout from the top back to surface. Wait on top grout 8hrs if grout is needed prior to drilling. Nipple up casing with annular BOP and test.
3. *Open Mine Contingency Plan:* when an open mine is encountered, Arsenal Resources will run 20" (H-40, 94#) and hardware as a mine string. The mine string will be set between 30 to 50 feet below the base of the open mine encountered. The mine string will have a cement balance job on the bottom (below the open mine), and the top will be surface-grouted to ground level. Then drill down to the proposed surface depth and set 13 -3/8" casing as originally planned.
4. Rig up directional drillers (if they are scheduled to nudge the surface) and trip in hole with 12 ¼" bit and drill on fresh water to the depth of 50 feet below the base of the 5th Sand, at approximately 1,500-2,800 feet. Any change from permitted depth will result in immediate notification to the OOG inspector for approval and subsequent modification to other well casing plans on the same pad will be made immediately to the OOG inspector. Run new, J-55 40#, 9 5/8" casing and hardware to near bottom and cement to surface with Class A cement. Wait at least 8 hrs. on cement prior to drilling.
5. Trip in hole with directional tools and 8 ¾" bit, continue drilling on fresh water to KOP. Then switch to a synthetic base mud system, and drill and build angle at 9 degree doglegs and land well at approximately 90 degrees horizontal in the lower Marcellus. Trip for directional issues or bit as needed, and drill 8 ¾" or 8 ½" hole.
6. Drill 8 3/4" or 8 ½" hole to planned total depth. Condition and prep the hole for casing run, and trip out of the hole. Lay down drilling assembly, and rig up casing crew and handling equipment. Run 5.5" 20# P-110, production casing the entire



measured depth of the well. Rig down casing crew and equipment, and rig up cementing crew. Cement production casing in 2 stages, with the lead and tail consisting of various densities of Class A cement slurry. The top of the production cement will be brought to approximately 150' within the intermediate casing shoe.

Once drilling operations have finished, the Johnson TFP40 #202 will be handed over to completions. Arsenal Resources will complete the well, using wireline perforating, and slickwater fracing. The number of stages will be determined once the lateral has been drilled. Each stage will consist of 400,000 lbs. of sand and approximately 350,000 gallons of water.

### **Well Equipment Set Up Procedure**

1. Well set up starts by meeting with completions, flow back, set up contractor, and production supervisor.
2. A discussion is made on where to set surface equipment, GPU's Tanks and lines.
3. Procedure for equipment setup is to level off and gravel GPU and Tank area. Build concrete pad for GPU's and construct tank containment, and then set GPU's and Tanks. Install header pipe and dump lines to tanks. Install Sand traps, Lock-out casing valve and install prefabbed well head fittings, and dig up and install 3" lines to well heads. X-Ray all welds on gas lines; install skillets and block of lines for Hydrostatic test, test pipe. Drain pipe, remove plugs and skillets, bolt piping back up. Finish hooking up ESD Controls.
4. Welding is done in one corner of locations, utilizing flow backs LEL and our Personal LEL Monitors

## Wellbore Casing and Cement Information

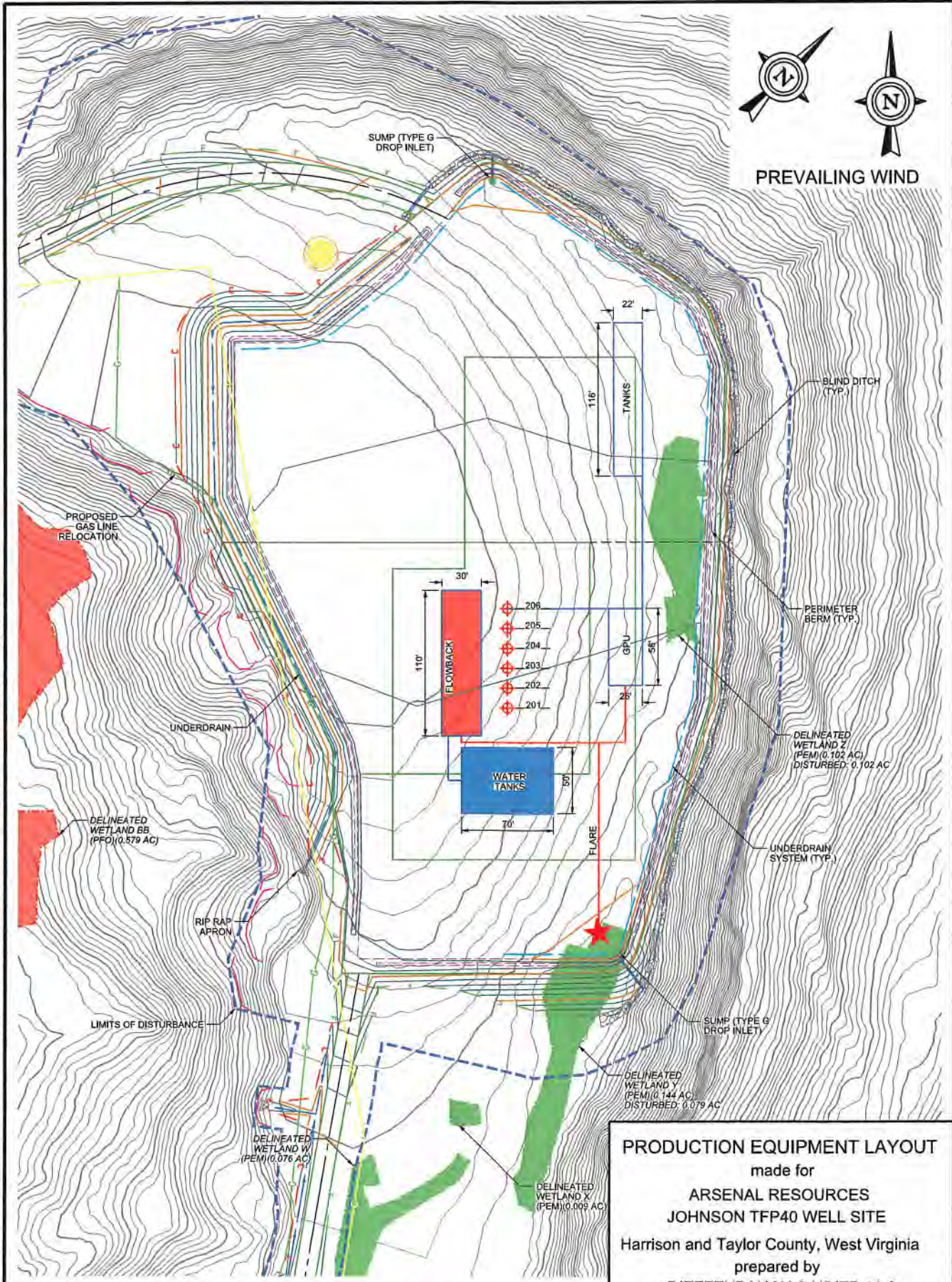
Geology information pertaining to the depths of freshwater, saltwater, coal, voids, etc., as listed on the Well Permit Application have been identified in the table below:

Geologic Information	
Approximate freshwater strata depths	38', 40', 49', 362', 670'
Approximate saltwater depths	1980'
Approximate coal seam depths	322.5', 398.5', 477.5', 577.5', 630.5', 692.5', 760.5', 825.5', 845.5', 876.5'
Approximate void depths (coal, karst, other)	None

1. Casing and Cementing Standards listed on the Well Work Permit Application Casing and Tubing Program Table have been identified in the table below:

Casing & Tubing Program						
Casing Type	Size	Grade	Weight /FT	For Drilling	Left in Well	Fill Up
Conductor	24"		94#	120'	120'	CTS
Fr. Water	13.375"	J-55	54.5#	725'	725'	CTS
Intermediate	9.625"	J-55	40#	2,100'	2,100'	CTS
Production	5.5"	P-110	20#	32,392'	32,392'	TOC @ 1.950
Tubing						

All casing and cement will meet current API standards any special conditions required of the permit that were set forth upon approval.

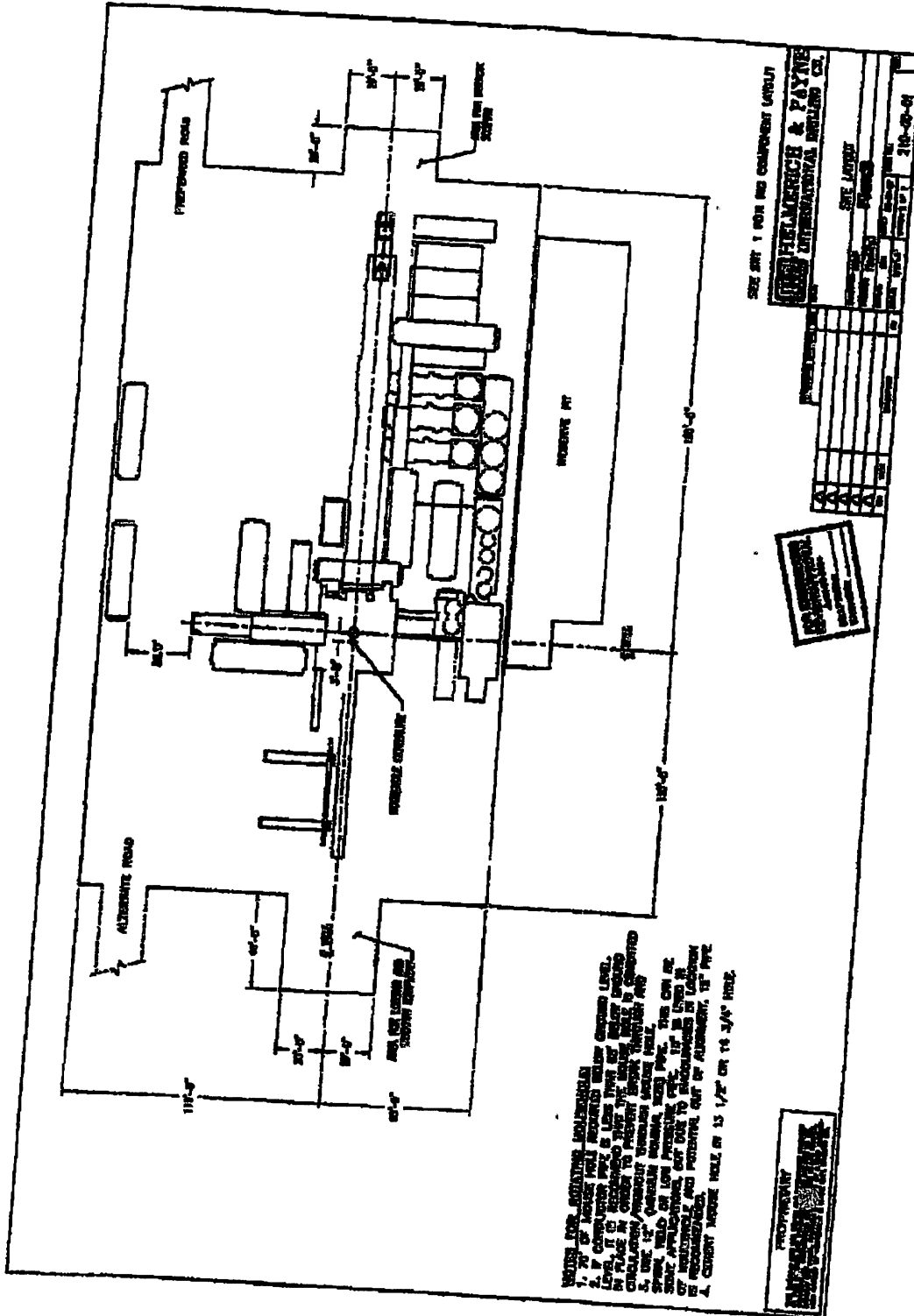


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SCALE: 0 100 ft.

**PRODUCTION EQUIPMENT LAYOUT**  
 made for  
**ARSENAL RESOURCES**  
**JOHNSON TFP40 WELL SITE**  
 Harrison and Taylor County, West Virginia  
 prepared by  
**DIEFFENBAUCH & HRITZ, LLC**  
 1095 Chaplin Rd Suite 200, Morgantown, WV 26501  
 Phone: 304-985-5555 Fax: 304-985-5557

08/12/2022



SEE SET 1 FOR THE COMPLETE LAYOUT

**FIELDMARCH & PAYNE**  
INTERNATIONAL HOLDINGS CO.

DATE: 21-09-04

NO.	DESCRIPTION	DATE	BY
1	ISSUED FOR PERMIT	21-09-04	[Signature]
2	REVISED		
3	REVISED		
4	REVISED		



- NOTES FOR CONSTRUCTION CONTRACTORS**
1. THE CONCRETE SHALL BE CAST ON A LEVEL.
  2. IF CONCRETE SHALL BE CAST ON A LEVEL, IT IS TO BE CAST ON A LEVEL.
  3. ALL CONCRETE SHALL BE CAST ON A LEVEL.
  4. ALL CONCRETE SHALL BE CAST ON A LEVEL.



**B. LEPC Submission**

The following page contains a Statement detailing that the plan will be provided to the local emergency planning committee or county emergency services office within at least 7 days from land disturbance or well work.



Arsenal Resources acknowledges that a copy of this Site Safety Plan will be submitted to the Local Emergency Planning Committee or county emergency services office as listed in the contacts section of this plan, within at least 7 days from land disturbance or well work.

*R. Schweitzer*

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Ross Schweitzer  
Sr. Director of Drilling, Construction and Permitting

## **Section 4 – Chemical Inventory and Safety Data Sheets (SDS)**

### **A. SDS Availability / Location**

The SDS sheets will be provided and maintained by the selected contractor(s) and for personnel to reference.

The location of the SDS sheets, how they are referenced, and maintained shall be detailed in each of the operations meetings and the pre-drill or weekly safety meetings with all personnel.

### **B. Inventory of Mud Materials**

1. Inventory: At least 70,965 pounds of barite will be kept on location plus additional weight at the warehouse. At least 2,075 bbls of drilling fluid will be onsite and additional fluid will be stored both on location and at the warehouse.
2. The number and type of mixing units for mixing the mud on site shall be provided by the selected contractor and kept in the production trailer in a designated archive area for reference.
3. The selected driller shall use IADC well control methods. These shall include the Driller's Method, Wait and Weight, Dynamic Volumetric, Migration/Bleed, and Lubrication/Bleed. The primary methods are Driller's Method and Wait and Weight.

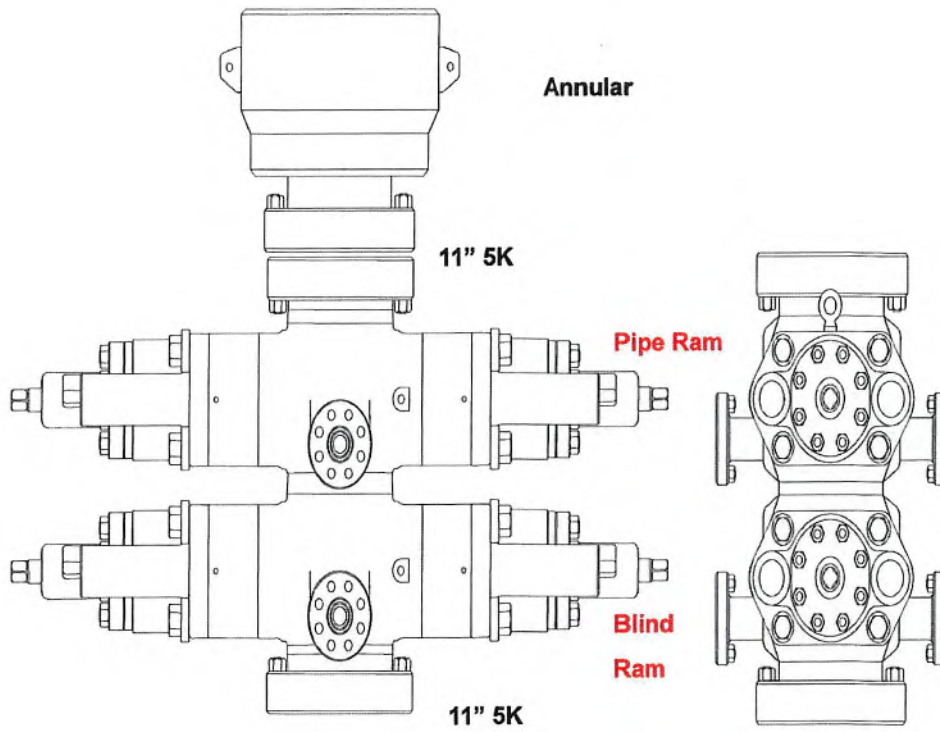
## **Section 5 -BOP and Well Control**

### **A. BOP Equipment**

The following pages include schematics and information on the BOP equipment.



**11" 5K Double Ram BOP**




# Choke & Kill, BOP

- Choke & Kill, BOP
- Rotary hose
- Hydraulic hose
- Hammer Unions
- Industrial hose
- Fire hose
- Metal hose, Expansion Joints
- Ducting hose
- Automotive hose
- Crimp Fittings & Machines
- Frac Fittings, Notched KCs
- Cam & Groove, Universal, Shank Fittings
- Valves
- Black Pipe
- Quick Couplings
- Gauges
- Belts, Sheaves, & Bushings
- Steel Adapters
- Brass Adapters

## MW Choke & Kill

Designed as a flexible connection to the choke manifold.

**Tube:** petroleum resistant for oil based drilling fluids  
**Cover:** ozone, petroleum, and abrasion resistant  
**Reinforcement:** high tensile steel wire spiral layers  
**Thermal Blanket:** 1500° continuous ratings, non-flammable, non-conductive  
**Armor Wall:** .144"  
**Max Length:** 150 feet

 -20° F / +212° F  
 -29° C / +100° C




Item	ID inch	OD inch	WP psi	Test psi	Weight lbs./ft
CK-48 Red	3	4.94	5,000	10,000	14.9
CK-56 Red	3½	5.44			17.7
CK-64 Red	4	6.31			26.4
CK-48 Armor	3	6.5			20.8
CK-56 Armor	3½	7	10,000	15,000	23.1
CK-64 Armor	4	8			26.3
CK-4810K Red	3	5.31			22.3
CK-5610K Red	3½	5.81			25.0
CK-6410K Red	4	4.75	10,000	15,000	36.1
CK-4810K Armor	3	6.5			26.0
CK-5610K Armor	3½	7			29.0
CK-6410K Armor	4	8			32.8

## MW BOP Control Line

For blowout preventer lines.

**Tube:** for hydraulic BOP actuation  
**Thermal Blanket:** 1500° continuous rating, non-flammable, non-conductive  
**Armor Wall:** .08"

Popular with a larger hex and longer threads for easier installation of hammer unions.

 -20° F / +212° F  
 -29° C / +100° C



Item	ID inch	OD inch	WP psi	Test psi	Weight lbs./ft
BOP-16 Armor	1	2.06	5,000	10,000	3.9
BOP-32 Armor	2	3.75			11.7
BOP-16	1	1.77			2.1
BOP-32	2	3.09			10.2

Carbon or stainless steel nipples are available and 1/2", 3/4", 1-1/4", and 1-1/2" sizes are available too.



## **Section 5, continued**

### **B. BOP Testing**

Procedure and Schedule for Testing the BOP Stack: For the bottom and horizontal wellbore drilling phase, the BOP equipment shall be function tested upon initial installation, weekly, and after each bit trip. The BOP equipment shall be pressure tested upon initial installation and every twenty-one (21) days thereafter. All pressure tests shall be performed for thirty (30) minutes. Annular preventers should be tested to seventy percent (70%) of the rated capacity and ram preventers should be tested to eighty percent (80%) of the rated capacity.

BOP Schedule: A schedule of BOP equipment installation and operation shall be kept for each applicable string in the Detailed Daily Reports that are kept in the production trailer in a designated archive location for reference.

Adjustments and variances are only permitted with consent of the area drilling/completion manager and WVDEP Inspector.

The Testing will follow the requirements of 35-8 5.7.c.2.

### **C. BOP Equipment and Assembly Installation Schedule**

1. The 13 3/8" Rotating Head will be installed when nipping up on the 13 3/8" casing. It will divert returns to the pit while air drilling this section.
2. The 9 5/8" BOP stack will be installed when nipping up on the 13 3/8" casing. The BOP will be pressure tested using a test plug. The BOP will be tested to a pressure of 250 psi low and 5,000 psi high and the annular to 250 psi low and 2,500 psi high prior to drilling out 8 5/8" casing.
3. When the 10,000 psi BOP stack is in use, a 10,000 psi upper and lower Kelly cock will be employed. They will be tested when the BOP stack is tested.

### **D. Personnel with Well Control Training**

A list of all personnel with approved well control training and current certification recognized by the International Association of Drilling Contractors (IADC) shall be provided to the Office prior to the pre-spud meeting. Current Arsenal Resources employee with Wild Well Control training is Ross Schweitzer and Jarrett Toms.

### **E. Well Event Record Keeping**

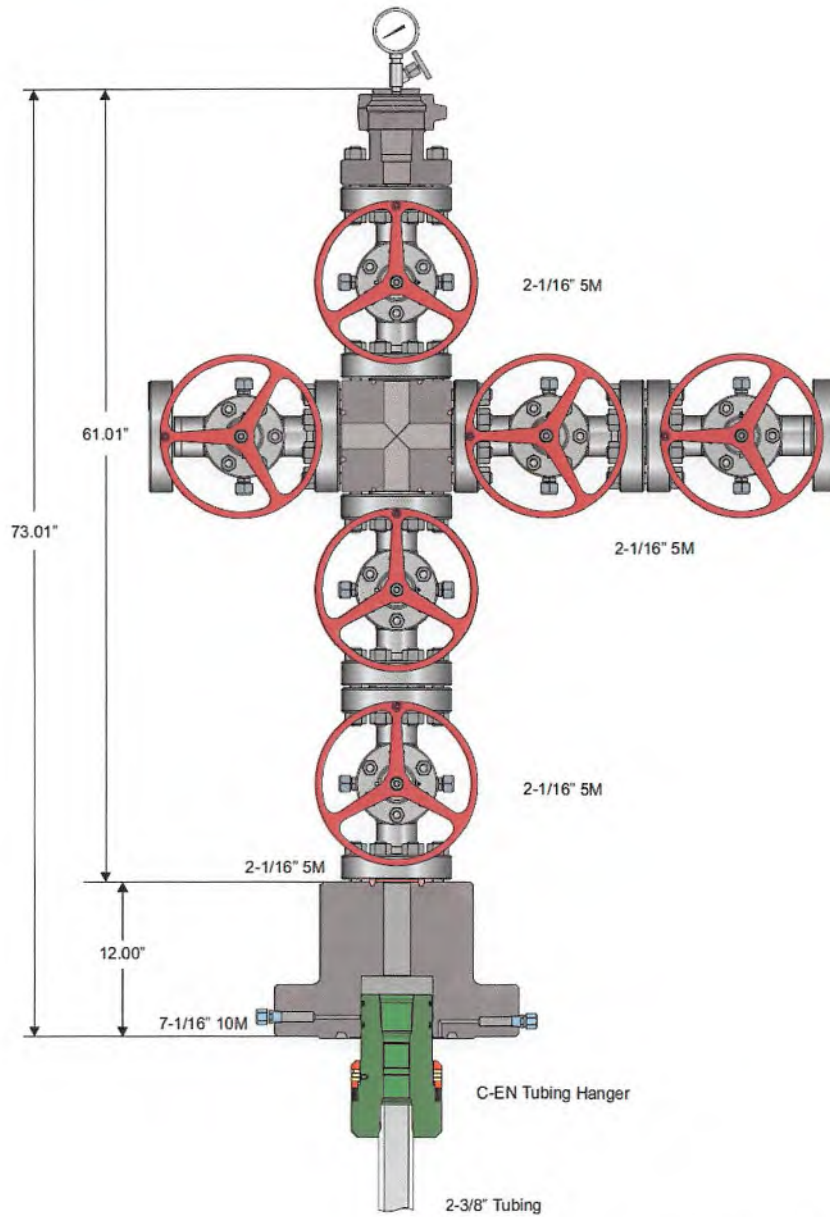
Detailed Log: A detailed daily record of events shall be kept during the drilling operation noting any significant event (e.g., lost circulation, presence of hydrogen sulfide, fluid entry, kicks and abnormal pressures). The daily reports will be kept in the production trailer in a designated archive location for reference.

## **F. Inspector Notification**

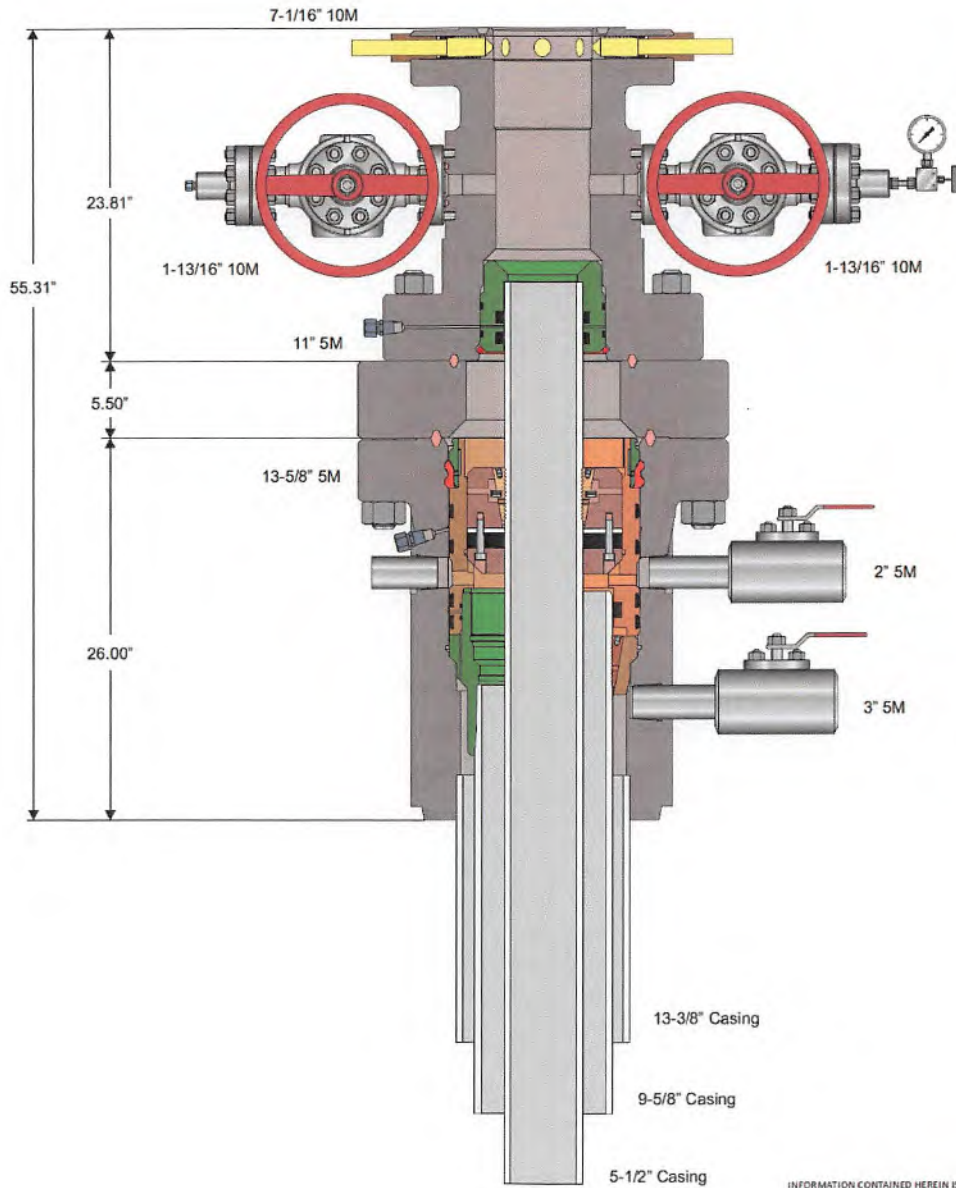
A detailed record of significant drilling events will be recorded in Arsenal Resources well log book. The state inspector will be notified upon any significant drilling events including the encounter of Hydrogen Sulfide Gas, lost circulation, fluid entry, abnormal pressures, etc.

## **G. Wellhead Assembly**

The following pages contain sketches of the anticipated wellhead assemblies that will be used.



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## **H. Well Kill Procedures**

1. Inventory: At least 70,965 pounds of barite will be kept on location plus additional weight at the warehouse. At least 2,075 bbls of drilling fluid will be onsite and additional fluid will be stored both on location and at the warehouse.
2. The number and type of mixing units for mixing the mud on site shall be provided by the selected contractor and kept in the production trailer in a designated archive area for reference.
3. The selected driller shall use IADC well control methods. These shall include the Driller's Method, Wait and Weight, Dynamic Volumetric, Migration/Bleed, and Lubrication/Bleed. The primary methods are Driller's Method and Wait and Weight.

## **Section 6 – Hydrogen Sulfide (H2S)**

### **A. Hydrogen Sulfide (H2S) Detection and Warning Equipment**

Arsenal Resources has a MeshGuard LEL and H2S Monitoring system installed on the rig. The system triggers audio and visual alarms if it detects LEL or H2S at action levels.

The system consists of the following:

- 1 H₂S Fixed Monitor w/2 relays (relays location in doghouse & company man trailer)
- 4 H₂S Sensors (sensors located on rig floor, cellar, shakers, and mud tank)
- 2 Explosion Proof Alarms (Light and Siren)

Arsenal Resources employees will utilize MGC multi-gas detectors. The selected contractor foreman shall immediately notify the WV DEP Office of Oil and Gas Inspector and the Office when Hydrogen Sulfide is encountered.

### **B. H2S Personnel Training**

Personnel involved with the monitoring, detection or warning of the presence of Hydrogen Sulfide shall be provided training in a special training session detailing how to use the equipment and issue the necessary warning prior to the operations commencing. This is special Hydrogen Sulfide detection training that will be conducted by the selected contractor.

### **C. Inspector Notification of H2S Presence**

The selected contractor shall immediately contact the WV DEP Office of Oil and Gas Inspector by phone when Hydrogen Sulfide is detected and alert the guard station that no entry to the site shall be granted to unauthorized personnel during that time until the presence of Hydrogen Sulfide is no longer detected and the site is deemed safe by the WV DEP Office of Oil and Gas Inspector or Office Representative.

### **D. Establishment of Protective Zones**

#### **Evacuation and Notification of General Public if an H2S Emergency Occurs:**

In the event of an accident that requires notification to the residents within 2,500 feet of the well site, local emergency responders and the Taylor County Emergency Services shall be notified by phone and coordinate alerting the residents by phone or in person and advise them of the appropriate action.



The selected contractor shall maintain the 2,500 foot protection zone during all applicable events such as hydrogen sulfide, blow-outs and flaring by alerting the local emergency responders and the Taylor County Emergency Services and having them coordinate notifications and evacuation of the protection zone.

## **E. H2S PPE**

### Personal Protective Equipment (PPE):

During operations, all personnel shall have on hard hats, safety goggles, fire retardant clothing, steel toe boots and earplugs at all times. Additional PPE may be required for specialized tasks.

Each individual's required PPE will be detailed in the Job Safety Analysis report that is kept in the production trailer in a designated archive area for reference, and shall be reviewed by each individual prior to the start of their shift.

Personnel without the required PPE will not be granted access to the site.

### H2S Safety Services Equipment List:

In the event of an H2S Emergency, Total Safety or TekSolv will be contacted to provide the following:

#### Hydrogen Sulfide Safety Package

##### **Respiratory Safety Systems**

<u>QTY</u>	<u>DESCRIPTION</u>
8	30-minute pressure demand SCBA with Pigtail.
4	4 supplied Air Respirators with 5 minute escape bottles.

##### **Detection and Alarm Safety System**

1	Personal H ₂ S monitors
1	Portable Tri-Gas Hand Held Meter (O ₂ , LEL, H ₂ S)
1	Gastech Manual Impingement Pump Type Detector
2	Boxes H ₂ S Tubes Various Ranges
2	Boxes SO ₂ Tubes Various Ranges
1	Calibration Gas
1	Set Paper Work for Records: Training, Cal, Inspection, other

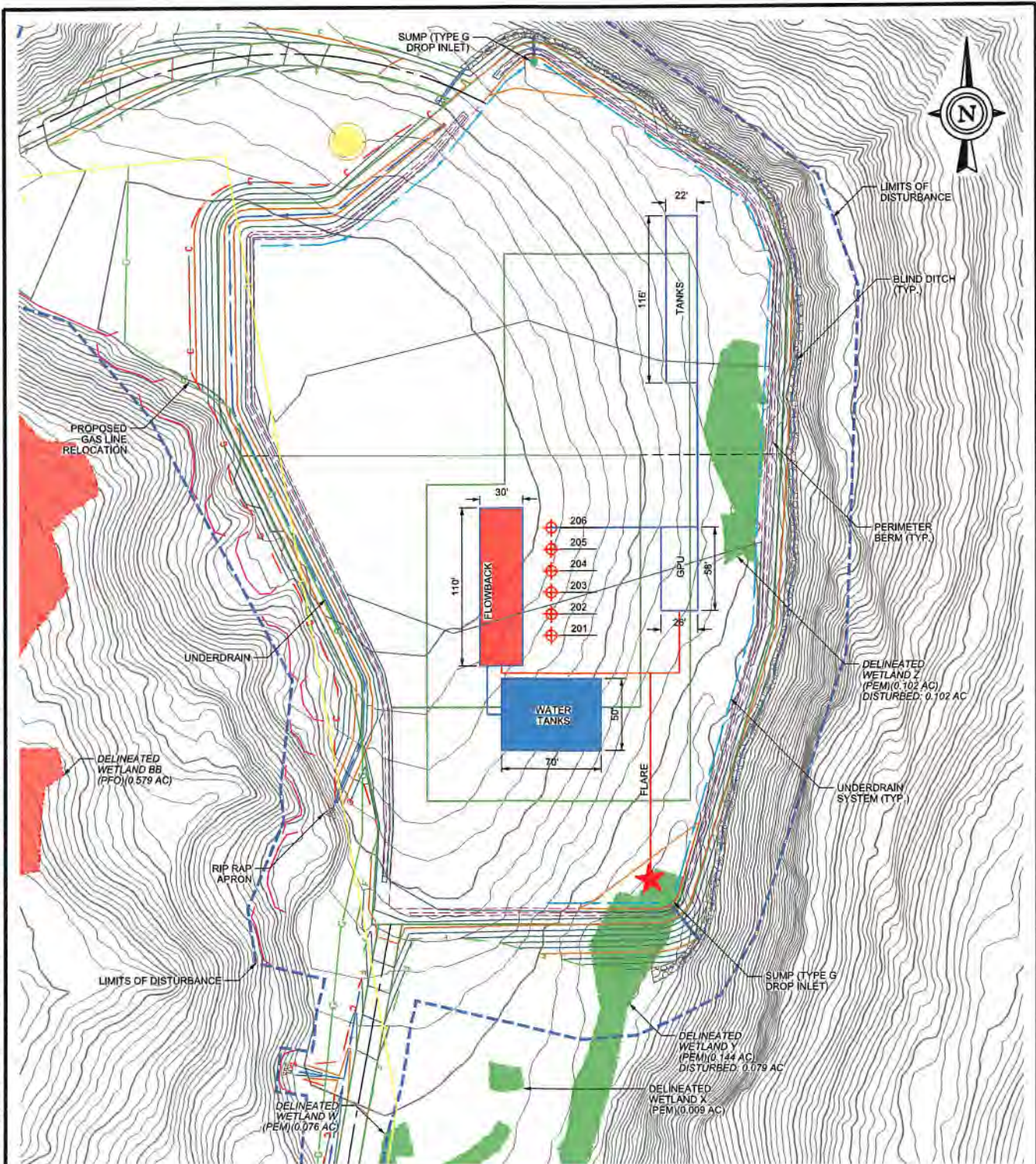
### **Additional Safety Related Equipment**

<u>QTY</u>	<u>Description</u>
2	Windssocks with Pole and Bracket
1	Set Well Condition Sign w/Green, Yellow, Red Flags
1	Primary Safe Briefing Area Sign
1	Secondary Safe Briefing Area Sign
1	Oxygen Resuscitator

## **Section 7 – Flaring**

- A. Description and Plan including schematic of installation for duration of flaring activities:
1. Flare Line will be constructed using three inch flare line tubing and anchored with cement anchor blocks. The line will have a dual choke assembly manifold with adjustable manual chokes. A detailed Pad Flaring Diagram is located in Section 7.
  2. The selected contractor will designate the system to light the flare and the dedication of the back-up igniters.
  3. The Taylor County Emergency Services and local Volunteer Fire Department shall be notified by the selected contractor foreman prior to lighting the flare when possible, and as soon after lighting the flare as reasonably possible.
  4. A minimum distance of 100 feet will be maintained to the nearest flammable material beyond the end of the flare line. The flare line has been placed in order to avoid any distance less than 100 feet to the nearest wooded area. The flare line minimum distances to the nearest flammable material shall be detailed in each of the operations meetings and the pre-drill or weekly safety meetings with all personnel.
  5. The estimated flaring operations for this site are anticipated to last no longer than two weeks.

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WELL NO.	STATE PLAN COORDINATE (WVN NAD 83)	LAT/LONG COORDINATE	LAT/LONG COORDINATE (NAD 83) (DMS)	UTM COORDINATE (NAD83-ZONE 17-METER)	EXISTING ELEV (NAVD88) (FT)	PROPOSED ELEV. (NAVD88) (FT)
WELL 201	NORTHING 276971.7222	LAT. 39.258498°	LAT. 39°15'30.60"	NORTHING 4345792.144	1335.06'	1333.5'
	EASTING 1779051.6624	LONG. -80.169060°	LONG. -80°10'08.61"	EASTING 571690.548		
WELL 202	NORTHING 276986.7221	LAT. 39.258540°	LAT. 39°15'30.75"	NORTHING 4345796.714	1335.90'	1333.5'
	EASTING 1779051.6624	LONG. -80.169060°	LONG. -80°10'08.62"	EASTING 571690.472		
WELL 203	NORTHING 277001.7221	LAT. 39.258582°	LAT. 39°15'30.89"	NORTHING 4345801.284	1337.01'	1333.5'
	EASTING 1779051.6624	LONG. -80.169060°	LONG. -80°10'08.62"	EASTING 571690.397		
WELL 204	NORTHING 277016.7221	LAT. 39.258623°	LAT. 39°15'31.04"	NORTHING 4345805.854	1337.79'	1333.5'
	EASTING 1779051.6624	LONG. -80.169061°	LONG. -80°10'08.62"	EASTING 571690.321		
WELL 205	NORTHING 277031.7221	LAT. 39.258664°	LAT. 39°15'31.19"	NORTHING 4345810.424	1338.26'	1333.5'
	EASTING 1779051.6624	LONG. -80.169061°	LONG. -80°10'08.62"	EASTING 571690.245		
WELL 206	NORTHING 277046.7221	LAT. 39.258705°	LAT. 39°15'31.34"	NORTHING 4345814.994	1338.79'	1333.5'
	EASTING 1779051.6624	LONG. -80.169062°	LONG. -80°10'08.62"	EASTING 571690.169		

**FLOWBACK SCHEMATIC LAYOUT**  
 made for  
**ARSENAL RESOURCES**  
**JOHNSON TFP40 WELL SITE**  
 Harrison and Taylor County, West Virginia  
 prepared by  
**DIEFFENBAUCH & HRITZ, LLC**  
 1095 Chaplin Rd Suite 200, Morgantown, WV 26501  
 Phone: 304-985-5555 Fax: 304-985-5557



08/12/2022

## **Section 8 – Collision Avoidance**

### **A. Established Definitions**

Protocol and established safeguard designed to prevent underground collisions during any drilling on multi-well pads.

### **B. Description of Risk**

Arsenal Resources uses an anti-collision protocol on all wells as a safeguard designed to prevent underground collision during any drilling on multi-well pads.

### **C. Plan Components**

1. All surveys will be MWD/EM survey tools in all hole sections, and surveys will be taken every stand (Around 90'). If the SF < 1 surveys will be taken on a more frequent basis, most likely every 30'. We will discuss with the WVDEP Oil and Gas Inspector.
2. All directional and MWD tools will be visually inspected by directional MWD personnel and Arsenal Resources site representatives at a minimum.
3. Surface nudges will be planned by the directional company as needed to maintain a safe SF.
4. The same survey tools that we use in the vertical section will be used.
5. The directional company uses a AC software to maintain a safe SF. Compass is the current company's software.
6. Arsenal Resources will maintain the state minimum SF factors in all whole sections.
  - a. Minimum SF standards (thresholds) required – SF > 1.5 shall be obtained early as practical and maintained. Survey every stand (90').
  - b. SF > 2 applies when in proximity to any fractured or any producing well that exists on the well pad. Survey every stand (90'). **Additional risk management might be needed as well and will be addressed as needed.
7. Lateral Section
  - a. Arsenal Resources will work with the directional companies to maintain delineation, grid connections, and ensure magnetic interference correction is being followed. The onsite Arsenal Resources representative and the directional company's MWD personnel will be responsible for QC/QA.

8. For any existing horizontal or vertical well found adjacent to the lateral section Arsenal Resources will maintain over a 2 SF and will review each well on a case by case basis with a pre-drilled AC program along with continually updating the plan while drilling.
9. Arsenal Resources will attach the wall map showing all wells on the pad spaced at 10' - 15' apart. If there is a fractured well, (live) well, Arsenal Resources will note it in the drawing.
10. When there is an existing wellbore on the pad, Arsenal Resources will attach notes and or surveys for the well.
11. If a collision should occur, the wellbores would be shut in immediately and the well would need to be killed with kill mud. If a survey shows imminent risk for a collision, Arsenal Resources will stop drilling and confirm with a gyro, then evaluate the situation on a case by case basis. If Arsenal Resources can steer away with MWD or a gyro we will, or we will plug back if needed.
12. Arsenal Resources will notify the WVDEP Oil and Gas inspector immediately of any underground collision or if the SF level 1 is determined.
13. Arsenal Resources will provide other supportive resources as needed.

# Arsenal Resources

Taylor County, WV  
Johnson TFP40  
202

Orig.

Plan: DEP Plan 4

## Standard Planning Report

11 July, 2022



[www.scientificdrilling.com](http://www.scientificdrilling.com)

08/12/2022

Planning Report

<b>Database:</b>	Northeast	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Company:</b>	Arsenal Resources	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Project:</b>	Taylor County, WV	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site:</b>	Johnson TFP40	<b>North Reference:</b>	Grid
<b>Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Orig.		
<b>Design:</b>	DEP Plan 4		

<b>Project</b>	Taylor County, WV		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	West Virginia Northern Zone		

<b>Site</b>	Johnson TFP40				
<b>Site Position:</b>		<b>Northing:</b>	276,971.63 usft	<b>Latitude:</b>	39° 15' 30.596 N
<b>From:</b>	Map	<b>Easting:</b>	1,779,051.83 usft	<b>Longitude:</b>	80° 10' 8.612 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-0.43 °

<b>Well</b>	202					
<b>Well Position</b>	<b>+N/-S</b>	15.09 ft	<b>Northing:</b>	276,986.72 usft	<b>Latitude:</b>	39° 15' 30.745 N
	<b>+E/-W</b>	-0.17 ft	<b>Easting:</b>	1,779,051.66 usft	<b>Longitude:</b>	80° 10' 8.616 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	1,332.50 ft

<b>Wellbore</b>	Orig.				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM2022	6/14/2022	-9.53	65.73	51,576.10000000

<b>Design</b>	DEP Plan 4			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	160.97

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,000.00	4.00	270.00	999.84	0.00	-6.98	2.00	2.00	0.00	0.00	270.00
2,604.08	4.00	270.00	2,600.01	0.00	-118.87	0.00	0.00	0.00	0.00	0.00
2,945.54	10.72	259.24	2,938.47	-5.94	-162.03	2.00	1.97	-3.15	-16.99	
7,344.87	10.72	259.24	7,261.06	-158.75	-965.82	0.00	0.00	0.00	0.00	
8,361.89	90.00	160.97	7,903.52	-799.61	-872.12	9.00	7.80	-9.66	-98.12	Joh_TPF40_202_LP
22,850.00	90.00	160.97	7,903.52	-14,496.22	3,851.05	0.00	0.00	0.00	0.00	Joh_TPF40_202_PBT



Planning Report

<b>Database:</b>	Northeast	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Company:</b>	Arsenal Resources	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Project:</b>	Taylor County, WV	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site:</b>	Johnson TFP40	<b>North Reference:</b>	Grid
<b>Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Orig.		
<b>Design:</b>	DEP Plan 4		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>KOP 800' MD/ TVD 800'</b>									
900.00	2.00	270.00	899.98	0.00	-1.75	-0.57	2.00	2.00	0.00
1,000.00	4.00	270.00	999.84	0.00	-6.98	-2.28	2.00	2.00	0.00
<b>Hold 4° Inc</b>									
1,100.00	4.00	270.00	1,099.59	0.00	-13.95	-4.55	0.00	0.00	0.00
1,200.00	4.00	270.00	1,199.35	0.00	-20.93	-6.82	0.00	0.00	0.00
1,300.00	4.00	270.00	1,299.11	0.00	-27.91	-9.10	0.00	0.00	0.00
1,400.00	4.00	270.00	1,398.86	0.00	-34.88	-11.37	0.00	0.00	0.00
1,500.00	4.00	270.00	1,498.62	0.00	-41.86	-13.65	0.00	0.00	0.00
1,600.00	4.00	270.00	1,598.38	0.00	-48.83	-15.92	0.00	0.00	0.00
1,700.00	4.00	270.00	1,698.13	0.00	-55.81	-18.20	0.00	0.00	0.00
1,800.00	4.00	270.00	1,797.89	0.00	-62.78	-20.47	0.00	0.00	0.00
1,900.00	4.00	270.00	1,897.65	0.00	-69.76	-22.75	0.00	0.00	0.00
2,000.00	4.00	270.00	1,997.40	0.00	-76.73	-25.02	0.00	0.00	0.00
2,100.00	4.00	270.00	2,097.16	0.00	-83.71	-27.29	0.00	0.00	0.00
2,200.00	4.00	270.00	2,196.91	0.00	-90.69	-29.57	0.00	0.00	0.00
2,300.00	4.00	270.00	2,296.67	0.00	-97.66	-31.84	0.00	0.00	0.00
2,400.00	4.00	270.00	2,396.43	0.00	-104.64	-34.12	0.00	0.00	0.00
2,500.00	4.00	270.00	2,496.18	0.00	-111.61	-36.39	0.00	0.00	0.00
2,600.00	4.00	270.00	2,595.94	0.00	-118.59	-38.67	0.00	0.00	0.00
2,604.08	4.00	270.00	2,600.01	0.00	-118.87	-38.76	0.00	0.00	0.00
<b>KO Tangent 2°/100</b>									
2,700.00	5.86	264.50	2,695.57	-0.47	-127.10	-41.00	2.00	1.94	-5.73
2,800.00	7.83	261.58	2,794.85	-1.96	-138.92	-43.45	2.00	1.97	-2.93
2,900.00	9.81	259.82	2,893.67	-4.46	-154.05	-46.01	2.00	1.98	-1.75
2,945.51	10.72	259.24	2,938.44	-5.94	-162.02	-47.22	2.00	1.99	-1.29
<b>Hold 10.7° Inc</b>									
2,945.54	10.72	259.24	2,938.47	-5.94	-162.03	-47.22	2.00	1.99	-1.18
3,000.00	10.72	259.24	2,991.99	-7.83	-171.98	-48.67	0.00	0.00	0.00
3,100.00	10.72	259.24	3,090.24	-11.30	-190.25	-51.35	0.00	0.00	0.00
3,200.00	10.72	259.24	3,188.50	-14.78	-208.52	-54.02	0.00	0.00	0.00
3,300.00	10.72	259.24	3,286.75	-18.25	-226.79	-56.70	0.00	0.00	0.00
3,400.00	10.72	259.24	3,385.01	-21.72	-245.06	-59.37	0.00	0.00	0.00
3,500.00	10.72	259.24	3,483.26	-25.20	-263.33	-62.04	0.00	0.00	0.00
3,600.00	10.72	259.24	3,581.52	-28.67	-281.60	-64.72	0.00	0.00	0.00
3,700.00	10.72	259.24	3,679.77	-32.14	-299.87	-67.39	0.00	0.00	0.00
3,800.00	10.72	259.24	3,778.03	-35.62	-318.14	-70.06	0.00	0.00	0.00
3,900.00	10.72	259.24	3,876.28	-39.09	-336.42	-72.74	0.00	0.00	0.00
4,000.00	10.72	259.24	3,974.54	-42.57	-354.69	-75.41	0.00	0.00	0.00
4,100.00	10.72	259.24	4,072.80	-46.04	-372.96	-78.08	0.00	0.00	0.00
4,200.00	10.72	259.24	4,171.05	-49.51	-391.23	-80.76	0.00	0.00	0.00
4,300.00	10.72	259.24	4,269.31	-52.99	-409.50	-83.43	0.00	0.00	0.00
4,400.00	10.72	259.24	4,367.56	-56.46	-427.77	-86.11	0.00	0.00	0.00

Planning Report

Database:	Northeast	Local Co-ordinate Reference:	Well 202
Company:	Arsenal Resources	TVD Reference:	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
Project:	Taylor County, WV	MD Reference:	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
Site:	Johnson TFP40	North Reference:	Grid
Well:	202	Survey Calculation Method:	Minimum Curvature
Wellbore:	Orig.		
Design:	DEP Plan 4		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,500.00	10.72	259.24	4,465.82	-59.93	-446.04	-88.78	0.00	0.00	0.00
4,600.00	10.72	259.24	4,564.07	-63.41	-464.31	-91.45	0.00	0.00	0.00
4,700.00	10.72	259.24	4,662.33	-66.88	-482.58	-94.13	0.00	0.00	0.00
4,800.00	10.72	259.24	4,760.58	-70.35	-500.85	-96.80	0.00	0.00	0.00
4,900.00	10.72	259.24	4,858.84	-73.83	-519.12	-99.47	0.00	0.00	0.00
5,000.00	10.72	259.24	4,957.09	-77.30	-537.39	-102.15	0.00	0.00	0.00
5,100.00	10.72	259.24	5,055.35	-80.78	-555.66	-104.82	0.00	0.00	0.00
5,200.00	10.72	259.24	5,153.60	-84.25	-573.94	-107.49	0.00	0.00	0.00
5,300.00	10.72	259.24	5,251.86	-87.72	-592.21	-110.17	0.00	0.00	0.00
5,400.00	10.72	259.24	5,350.11	-91.20	-610.48	-112.84	0.00	0.00	0.00
5,500.00	10.72	259.24	5,448.37	-94.67	-628.75	-115.52	0.00	0.00	0.00
5,600.00	10.72	259.24	5,546.63	-98.14	-647.02	-118.19	0.00	0.00	0.00
5,700.00	10.72	259.24	5,644.88	-101.62	-665.29	-120.86	0.00	0.00	0.00
5,800.00	10.72	259.24	5,743.14	-105.09	-683.56	-123.54	0.00	0.00	0.00
5,900.00	10.72	259.24	5,841.39	-108.56	-701.83	-126.21	0.00	0.00	0.00
6,000.00	10.72	259.24	5,939.65	-112.04	-720.10	-128.88	0.00	0.00	0.00
6,100.00	10.72	259.24	6,037.90	-115.51	-738.37	-131.56	0.00	0.00	0.00
6,200.00	10.72	259.24	6,136.16	-118.99	-756.64	-134.23	0.00	0.00	0.00
6,300.00	10.72	259.24	6,234.41	-122.46	-774.91	-136.90	0.00	0.00	0.00
6,400.00	10.72	259.24	6,332.67	-125.93	-793.18	-139.58	0.00	0.00	0.00
6,500.00	10.72	259.24	6,430.92	-129.41	-811.46	-142.25	0.00	0.00	0.00
6,600.00	10.72	259.24	6,529.18	-132.88	-829.73	-144.93	0.00	0.00	0.00
6,700.00	10.72	259.24	6,627.43	-136.35	-848.00	-147.60	0.00	0.00	0.00
6,800.00	10.72	259.24	6,725.69	-139.83	-866.27	-150.27	0.00	0.00	0.00
6,900.00	10.72	259.24	6,823.94	-143.30	-884.54	-152.95	0.00	0.00	0.00
7,000.00	10.72	259.24	6,922.20	-146.77	-902.81	-155.62	0.00	0.00	0.00
7,100.00	10.72	259.24	7,020.46	-150.25	-921.08	-158.29	0.00	0.00	0.00
7,200.00	10.72	259.24	7,118.71	-153.72	-939.35	-160.97	0.00	0.00	0.00
7,300.00	10.72	259.24	7,216.97	-157.20	-957.62	-163.64	0.00	0.00	0.00
7,344.87	10.72	259.24	7,261.05	-158.75	-965.82	-164.84	0.00	0.00	0.00
<b>KO Curve 9°/100</b>									
7,344.87	10.72	259.24	7,261.06	-158.75	-965.82	-164.84	0.00	0.00	0.00
7,400.00	11.14	232.94	7,315.22	-162.92	-975.11	-163.93	9.00	0.77	-47.70
7,500.00	16.29	200.85	7,412.47	-181.89	-987.84	-150.15	9.00	5.14	-32.10
7,600.00	23.80	186.10	7,506.40	-215.13	-994.99	-121.06	9.00	7.51	-14.74
7,700.00	32.06	178.38	7,594.71	-261.82	-996.39	-77.38	9.00	8.26	-7.73
7,800.00	40.61	173.59	7,675.21	-320.81	-992.00	-20.18	9.00	8.55	-4.78
7,900.00	49.29	170.25	7,745.92	-390.65	-981.93	49.13	9.00	8.69	-3.35
8,000.00	58.05	167.68	7,805.11	-469.61	-966.42	128.83	9.00	8.76	-2.57
8,100.00	66.86	165.57	7,851.31	-555.77	-945.87	216.98	9.00	8.80	-2.12
8,200.00	75.68	163.71	7,883.39	-646.98	-920.77	311.40	9.00	8.83	-1.85
8,300.00	84.53	162.00	7,900.56	-741.02	-891.75	409.75	9.00	8.84	-1.71
8,361.89	90.00	160.97	7,903.52	-799.61	-872.12	471.55	9.00	8.85	-1.66
8,361.94	90.00	160.97	7,903.52	-799.66	-872.11	471.59	0.00	0.00	0.00
<b>LP @ 90° Inc/ 160.97° Az/ 8361.9' MD/ TVD 7903.5'</b>									
8,400.00	90.00	160.97	7,903.52	-835.64	-859.70	509.66	0.00	0.00	0.00
8,500.00	90.00	160.97	7,903.52	-930.18	-827.10	609.66	0.00	0.00	0.00
8,600.00	90.00	160.97	7,903.52	-1,024.72	-794.50	709.66	0.00	0.00	0.00
8,700.00	90.00	160.97	7,903.52	-1,119.25	-761.90	809.66	0.00	0.00	0.00
8,800.00	90.00	160.97	7,903.52	-1,213.79	-729.30	909.66	0.00	0.00	0.00
8,900.00	90.00	160.97	7,903.52	-1,308.33	-696.70	1,009.66	0.00	0.00	0.00
9,000.00	90.00	160.97	7,903.52	-1,402.86	-664.10	1,109.66	0.00	0.00	0.00

Planning Report

<b>Database:</b>	Northeast	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Company:</b>	Arsenal Resources	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Project:</b>	Taylor County, WV	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site:</b>	Johnson TFP40	<b>North Reference:</b>	Grid
<b>Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Orig.		
<b>Design:</b>	DEP Plan 4		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,100.00	90.00	160.97	7,903.52	-1,497.40	-631.50	1,209.66	0.00	0.00	0.00
9,200.00	90.00	160.97	7,903.52	-1,591.94	-598.90	1,309.66	0.00	0.00	0.00
9,300.00	90.00	160.97	7,903.52	-1,686.47	-566.30	1,409.66	0.00	0.00	0.00
9,400.00	90.00	160.97	7,903.52	-1,781.01	-533.70	1,509.66	0.00	0.00	0.00
9,500.00	90.00	160.97	7,903.52	-1,875.55	-501.10	1,609.66	0.00	0.00	0.00
9,600.00	90.00	160.97	7,903.52	-1,970.08	-468.50	1,709.66	0.00	0.00	0.00
9,700.00	90.00	160.97	7,903.52	-2,064.62	-435.90	1,809.66	0.00	0.00	0.00
9,800.00	90.00	160.97	7,903.52	-2,159.16	-403.29	1,909.66	0.00	0.00	0.00
9,900.00	90.00	160.97	7,903.52	-2,253.69	-370.69	2,009.66	0.00	0.00	0.00
10,000.00	90.00	160.97	7,903.52	-2,348.23	-338.09	2,109.66	0.00	0.00	0.00
10,100.00	90.00	160.97	7,903.52	-2,442.77	-305.49	2,209.66	0.00	0.00	0.00
10,200.00	90.00	160.97	7,903.52	-2,537.31	-272.89	2,309.66	0.00	0.00	0.00
10,300.00	90.00	160.97	7,903.52	-2,631.84	-240.29	2,409.66	0.00	0.00	0.00
10,400.00	90.00	160.97	7,903.52	-2,726.38	-207.69	2,509.66	0.00	0.00	0.00
10,500.00	90.00	160.97	7,903.52	-2,820.92	-175.09	2,609.66	0.00	0.00	0.00
10,600.00	90.00	160.97	7,903.52	-2,915.45	-142.49	2,709.66	0.00	0.00	0.00
10,700.00	90.00	160.97	7,903.52	-3,009.99	-109.89	2,809.66	0.00	0.00	0.00
10,800.00	90.00	160.97	7,903.52	-3,104.53	-77.29	2,909.66	0.00	0.00	0.00
10,900.00	90.00	160.97	7,903.52	-3,199.06	-44.69	3,009.66	0.00	0.00	0.00
11,000.00	90.00	160.97	7,903.52	-3,293.60	-12.09	3,109.66	0.00	0.00	0.00
11,100.00	90.00	160.97	7,903.52	-3,388.14	20.51	3,209.66	0.00	0.00	0.00
11,200.00	90.00	160.97	7,903.52	-3,482.67	53.11	3,309.66	0.00	0.00	0.00
11,300.00	90.00	160.97	7,903.52	-3,577.21	85.71	3,409.66	0.00	0.00	0.00
11,400.00	90.00	160.97	7,903.52	-3,671.75	118.31	3,509.66	0.00	0.00	0.00
11,500.00	90.00	160.97	7,903.52	-3,766.28	150.91	3,609.66	0.00	0.00	0.00
11,600.00	90.00	160.97	7,903.52	-3,860.82	183.51	3,709.66	0.00	0.00	0.00
11,700.00	90.00	160.97	7,903.52	-3,955.36	216.11	3,809.66	0.00	0.00	0.00
11,800.00	90.00	160.97	7,903.52	-4,049.89	248.71	3,909.66	0.00	0.00	0.00
11,900.00	90.00	160.97	7,903.52	-4,144.43	281.31	4,009.66	0.00	0.00	0.00
12,000.00	90.00	160.97	7,903.52	-4,238.97	313.91	4,109.66	0.00	0.00	0.00
12,100.00	90.00	160.97	7,903.52	-4,333.51	346.51	4,209.66	0.00	0.00	0.00
12,200.00	90.00	160.97	7,903.52	-4,428.04	379.11	4,309.66	0.00	0.00	0.00
12,300.00	90.00	160.97	7,903.52	-4,522.58	411.71	4,409.66	0.00	0.00	0.00
12,400.00	90.00	160.97	7,903.52	-4,617.12	444.31	4,509.66	0.00	0.00	0.00
12,500.00	90.00	160.97	7,903.52	-4,711.65	476.92	4,609.66	0.00	0.00	0.00
12,600.00	90.00	160.97	7,903.52	-4,806.19	509.52	4,709.66	0.00	0.00	0.00
12,700.00	90.00	160.97	7,903.52	-4,900.73	542.12	4,809.66	0.00	0.00	0.00
12,800.00	90.00	160.97	7,903.52	-4,995.26	574.72	4,909.66	0.00	0.00	0.00
12,900.00	90.00	160.97	7,903.52	-5,089.80	607.32	5,009.66	0.00	0.00	0.00
13,000.00	90.00	160.97	7,903.52	-5,184.34	639.92	5,109.66	0.00	0.00	0.00
13,100.00	90.00	160.97	7,903.52	-5,278.87	672.52	5,209.66	0.00	0.00	0.00
13,200.00	90.00	160.97	7,903.52	-5,373.41	705.12	5,309.66	0.00	0.00	0.00
13,300.00	90.00	160.97	7,903.52	-5,467.95	737.72	5,409.66	0.00	0.00	0.00
13,400.00	90.00	160.97	7,903.52	-5,562.48	770.32	5,509.66	0.00	0.00	0.00
13,500.00	90.00	160.97	7,903.52	-5,657.02	802.92	5,609.66	0.00	0.00	0.00
13,600.00	90.00	160.97	7,903.52	-5,751.56	835.52	5,709.66	0.00	0.00	0.00
13,700.00	90.00	160.97	7,903.52	-5,846.09	868.12	5,809.66	0.00	0.00	0.00
13,800.00	90.00	160.97	7,903.52	-5,940.63	900.72	5,909.66	0.00	0.00	0.00
13,900.00	90.00	160.97	7,903.52	-6,035.17	933.32	6,009.66	0.00	0.00	0.00
14,000.00	90.00	160.97	7,903.52	-6,129.71	965.92	6,109.66	0.00	0.00	0.00
14,100.00	90.00	160.97	7,903.52	-6,224.24	998.52	6,209.66	0.00	0.00	0.00
14,200.00	90.00	160.97	7,903.52	-6,318.78	1,031.12	6,309.66	0.00	0.00	0.00

Planning Report

<b>Database:</b>	Northeast	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Company:</b>	Arsenal Resources	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Project:</b>	Taylor County, WV	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site:</b>	Johnson TFP40	<b>North Reference:</b>	Grid
<b>Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Orig.		
<b>Design:</b>	DEP Plan 4		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,300.00	90.00	160.97	7,903.52	-6,413.32	1,063.72	6,409.66	0.00	0.00	0.00
14,400.00	90.00	160.97	7,903.52	-6,507.85	1,096.32	6,509.66	0.00	0.00	0.00
14,500.00	90.00	160.97	7,903.52	-6,602.39	1,128.92	6,609.66	0.00	0.00	0.00
14,600.00	90.00	160.97	7,903.52	-6,696.93	1,161.52	6,709.66	0.00	0.00	0.00
14,700.00	90.00	160.97	7,903.52	-6,791.46	1,194.12	6,809.66	0.00	0.00	0.00
14,800.00	90.00	160.97	7,903.52	-6,886.00	1,226.72	6,909.66	0.00	0.00	0.00
14,900.00	90.00	160.97	7,903.52	-6,980.54	1,259.32	7,009.66	0.00	0.00	0.00
15,000.00	90.00	160.97	7,903.52	-7,075.07	1,291.92	7,109.66	0.00	0.00	0.00
15,100.00	90.00	160.97	7,903.52	-7,169.61	1,324.52	7,209.66	0.00	0.00	0.00
15,200.00	90.00	160.97	7,903.52	-7,264.15	1,357.12	7,309.66	0.00	0.00	0.00
15,300.00	90.00	160.97	7,903.52	-7,358.68	1,389.73	7,409.66	0.00	0.00	0.00
15,400.00	90.00	160.97	7,903.52	-7,453.22	1,422.33	7,509.66	0.00	0.00	0.00
15,500.00	90.00	160.97	7,903.52	-7,547.76	1,454.93	7,609.66	0.00	0.00	0.00
15,600.00	90.00	160.97	7,903.52	-7,642.30	1,487.53	7,709.66	0.00	0.00	0.00
15,700.00	90.00	160.97	7,903.52	-7,736.83	1,520.13	7,809.66	0.00	0.00	0.00
15,800.00	90.00	160.97	7,903.52	-7,831.37	1,552.73	7,909.66	0.00	0.00	0.00
15,900.00	90.00	160.97	7,903.52	-7,925.91	1,585.33	8,009.66	0.00	0.00	0.00
16,000.00	90.00	160.97	7,903.52	-8,020.44	1,617.93	8,109.66	0.00	0.00	0.00
16,100.00	90.00	160.97	7,903.52	-8,114.98	1,650.53	8,209.66	0.00	0.00	0.00
16,200.00	90.00	160.97	7,903.52	-8,209.52	1,683.13	8,309.66	0.00	0.00	0.00
16,300.00	90.00	160.97	7,903.52	-8,304.05	1,715.73	8,409.66	0.00	0.00	0.00
16,400.00	90.00	160.97	7,903.52	-8,398.59	1,748.33	8,509.66	0.00	0.00	0.00
16,500.00	90.00	160.97	7,903.52	-8,493.13	1,780.93	8,609.66	0.00	0.00	0.00
16,600.00	90.00	160.97	7,903.52	-8,587.66	1,813.53	8,709.66	0.00	0.00	0.00
16,700.00	90.00	160.97	7,903.52	-8,682.20	1,846.13	8,809.66	0.00	0.00	0.00
16,800.00	90.00	160.97	7,903.52	-8,776.74	1,878.73	8,909.66	0.00	0.00	0.00
16,900.00	90.00	160.97	7,903.52	-8,871.27	1,911.33	9,009.66	0.00	0.00	0.00
17,000.00	90.00	160.97	7,903.52	-8,965.81	1,943.93	9,109.66	0.00	0.00	0.00
17,100.00	90.00	160.97	7,903.52	-9,060.35	1,976.53	9,209.66	0.00	0.00	0.00
17,200.00	90.00	160.97	7,903.52	-9,154.88	2,009.13	9,309.66	0.00	0.00	0.00
17,300.00	90.00	160.97	7,903.52	-9,249.42	2,041.73	9,409.66	0.00	0.00	0.00
17,400.00	90.00	160.97	7,903.52	-9,343.96	2,074.33	9,509.66	0.00	0.00	0.00
17,500.00	90.00	160.97	7,903.52	-9,438.50	2,106.93	9,609.66	0.00	0.00	0.00
17,600.00	90.00	160.97	7,903.52	-9,533.03	2,139.53	9,709.66	0.00	0.00	0.00
17,700.00	90.00	160.97	7,903.52	-9,627.57	2,172.13	9,809.66	0.00	0.00	0.00
17,800.00	90.00	160.97	7,903.52	-9,722.11	2,204.73	9,909.66	0.00	0.00	0.00
17,900.00	90.00	160.97	7,903.52	-9,816.64	2,237.33	10,009.66	0.00	0.00	0.00
18,000.00	90.00	160.97	7,903.52	-9,911.18	2,269.93	10,109.66	0.00	0.00	0.00
18,100.00	90.00	160.97	7,903.52	-10,005.72	2,302.54	10,209.66	0.00	0.00	0.00
18,200.00	90.00	160.97	7,903.52	-10,100.25	2,335.14	10,309.66	0.00	0.00	0.00
18,300.00	90.00	160.97	7,903.52	-10,194.79	2,367.74	10,409.66	0.00	0.00	0.00
18,400.00	90.00	160.97	7,903.52	-10,289.33	2,400.34	10,509.66	0.00	0.00	0.00
18,500.00	90.00	160.97	7,903.52	-10,383.86	2,432.94	10,609.66	0.00	0.00	0.00
18,600.00	90.00	160.97	7,903.52	-10,478.40	2,465.54	10,709.66	0.00	0.00	0.00
18,700.00	90.00	160.97	7,903.52	-10,572.94	2,498.14	10,809.66	0.00	0.00	0.00
18,800.00	90.00	160.97	7,903.52	-10,667.47	2,530.74	10,909.66	0.00	0.00	0.00
18,900.00	90.00	160.97	7,903.52	-10,762.01	2,563.34	11,009.66	0.00	0.00	0.00
19,000.00	90.00	160.97	7,903.52	-10,856.55	2,595.94	11,109.66	0.00	0.00	0.00
19,100.00	90.00	160.97	7,903.52	-10,951.09	2,628.54	11,209.66	0.00	0.00	0.00
19,200.00	90.00	160.97	7,903.52	-11,045.62	2,661.14	11,309.66	0.00	0.00	0.00
19,300.00	90.00	160.97	7,903.52	-11,140.16	2,693.74	11,409.66	0.00	0.00	0.00
19,400.00	90.00	160.97	7,903.52	-11,234.70	2,726.34	11,509.66	0.00	0.00	0.00

Planning Report

<b>Database:</b>	Northeast	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Company:</b>	Arsenal Resources	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Project:</b>	Taylor County, WV	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site:</b>	Johnson TFP40	<b>North Reference:</b>	Grid
<b>Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Orig.		
<b>Design:</b>	DEP Plan 4		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
19,500.00	90.00	160.97	7,903.52	-11,329.23	2,758.94	11,609.66	0.00	0.00	0.00
19,600.00	90.00	160.97	7,903.52	-11,423.77	2,791.54	11,709.66	0.00	0.00	0.00
19,700.00	90.00	160.97	7,903.52	-11,518.31	2,824.14	11,809.66	0.00	0.00	0.00
19,800.00	90.00	160.97	7,903.52	-11,612.84	2,856.74	11,909.66	0.00	0.00	0.00
19,900.00	90.00	160.97	7,903.52	-11,707.38	2,889.34	12,009.66	0.00	0.00	0.00
20,000.00	90.00	160.97	7,903.52	-11,801.92	2,921.94	12,109.66	0.00	0.00	0.00
20,100.00	90.00	160.97	7,903.52	-11,896.45	2,954.54	12,209.66	0.00	0.00	0.00
20,200.00	90.00	160.97	7,903.52	-11,990.99	2,987.14	12,309.66	0.00	0.00	0.00
20,300.00	90.00	160.97	7,903.52	-12,085.53	3,019.74	12,409.66	0.00	0.00	0.00
20,400.00	90.00	160.97	7,903.52	-12,180.06	3,052.34	12,509.66	0.00	0.00	0.00
20,500.00	90.00	160.97	7,903.52	-12,274.60	3,084.94	12,609.66	0.00	0.00	0.00
20,600.00	90.00	160.97	7,903.52	-12,369.14	3,117.54	12,709.66	0.00	0.00	0.00
20,700.00	90.00	160.97	7,903.52	-12,463.67	3,150.14	12,809.66	0.00	0.00	0.00
20,800.00	90.00	160.97	7,903.52	-12,558.21	3,182.75	12,909.66	0.00	0.00	0.00
20,900.00	90.00	160.97	7,903.52	-12,652.75	3,215.35	13,009.66	0.00	0.00	0.00
21,000.00	90.00	160.97	7,903.52	-12,747.29	3,247.95	13,109.66	0.00	0.00	0.00
21,100.00	90.00	160.97	7,903.52	-12,841.82	3,280.55	13,209.66	0.00	0.00	0.00
21,200.00	90.00	160.97	7,903.52	-12,936.36	3,313.15	13,309.66	0.00	0.00	0.00
21,300.00	90.00	160.97	7,903.52	-13,030.90	3,345.75	13,409.66	0.00	0.00	0.00
21,400.00	90.00	160.97	7,903.52	-13,125.43	3,378.35	13,509.66	0.00	0.00	0.00
21,500.00	90.00	160.97	7,903.52	-13,219.97	3,410.95	13,609.66	0.00	0.00	0.00
21,600.00	90.00	160.97	7,903.52	-13,314.51	3,443.55	13,709.66	0.00	0.00	0.00
21,700.00	90.00	160.97	7,903.52	-13,409.04	3,476.15	13,809.66	0.00	0.00	0.00
21,800.00	90.00	160.97	7,903.52	-13,503.58	3,508.75	13,909.66	0.00	0.00	0.00
21,900.00	90.00	160.97	7,903.52	-13,598.12	3,541.35	14,009.66	0.00	0.00	0.00
22,000.00	90.00	160.97	7,903.52	-13,692.65	3,573.95	14,109.66	0.00	0.00	0.00
22,100.00	90.00	160.97	7,903.52	-13,787.19	3,606.55	14,209.66	0.00	0.00	0.00
22,200.00	90.00	160.97	7,903.52	-13,881.73	3,639.15	14,309.66	0.00	0.00	0.00
22,300.00	90.00	160.97	7,903.52	-13,976.26	3,671.75	14,409.66	0.00	0.00	0.00
22,400.00	90.00	160.97	7,903.52	-14,070.80	3,704.35	14,509.66	0.00	0.00	0.00
22,500.00	90.00	160.97	7,903.52	-14,165.34	3,736.95	14,609.66	0.00	0.00	0.00
22,600.00	90.00	160.97	7,903.52	-14,259.88	3,769.55	14,709.66	0.00	0.00	0.00
22,700.00	90.00	160.97	7,903.52	-14,354.41	3,802.15	14,809.66	0.00	0.00	0.00
22,800.00	90.00	160.97	7,903.52	-14,448.95	3,834.75	14,909.66	0.00	0.00	0.00
22,849.00	90.00	160.97	7,903.52	-14,495.27	3,850.73	14,958.66	0.00	0.00	0.00
<b>TD @ 90° Inc/ 160.97° Az/ 22850.0' MD/ TVD 7903.5'</b>									
22,850.00	90.00	160.97	7,903.52	-14,496.22	3,851.05	14,959.66	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	Northeast	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Company:</b>	Arsenal Resources	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Project:</b>	Taylor County, WV	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site:</b>	Johnson TFP40	<b>North Reference:</b>	Grid
<b>Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Orig.		
<b>Design:</b>	DEP Plan 4		

### Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Joh_TPF40_202_SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	276,986.72	1,779,051.66	39° 15' 30.745 N	80° 10' 8.616 W
Joh_TPF40_202_KOP - plan hits target center - Point	0.00	0.00	800.00	0.00	0.00	276,986.72	1,779,051.66	39° 15' 30.745 N	80° 10' 8.616 W
Joh_TPF40_202_LP - plan hits target center - Point	0.00	360.00	7,903.52	-799.61	-872.12	276,187.11	1,778,179.54	39° 15' 22.778 N	80° 10' 19.627 W
Joh_TPF40_202_PBHL - plan misses target center by 9542.25ft at 22850.00ft MD (7903.52 TVD, -14496.22 N, 3851.05 E) - Point	0.00	360.00	7,903.52	-23,516.90	6,962.61	253,469.87	1,786,014.26	39° 11' 38.814 N	80° 8' 37.955 W
Joh_TPF40_202_PBHL - plan hits target center - Point	0.00	360.00	7,903.52	-14,496.22	3,851.05	262,490.53	1,782,902.71	39° 13' 7.750 N	80° 9' 18.312 W

Well Location Plat  
Page 4 Cross Section

Seneca Resources Company, LLC  
Applicant / Well Operator Name

DEP ID#

Johnson TFP40  
Taylor County, WV  
GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)

Well #  
202



**WELL PLAN**  
Operator Name: **Arsenal Resources**

DEP  
Use  
Only

Permit #

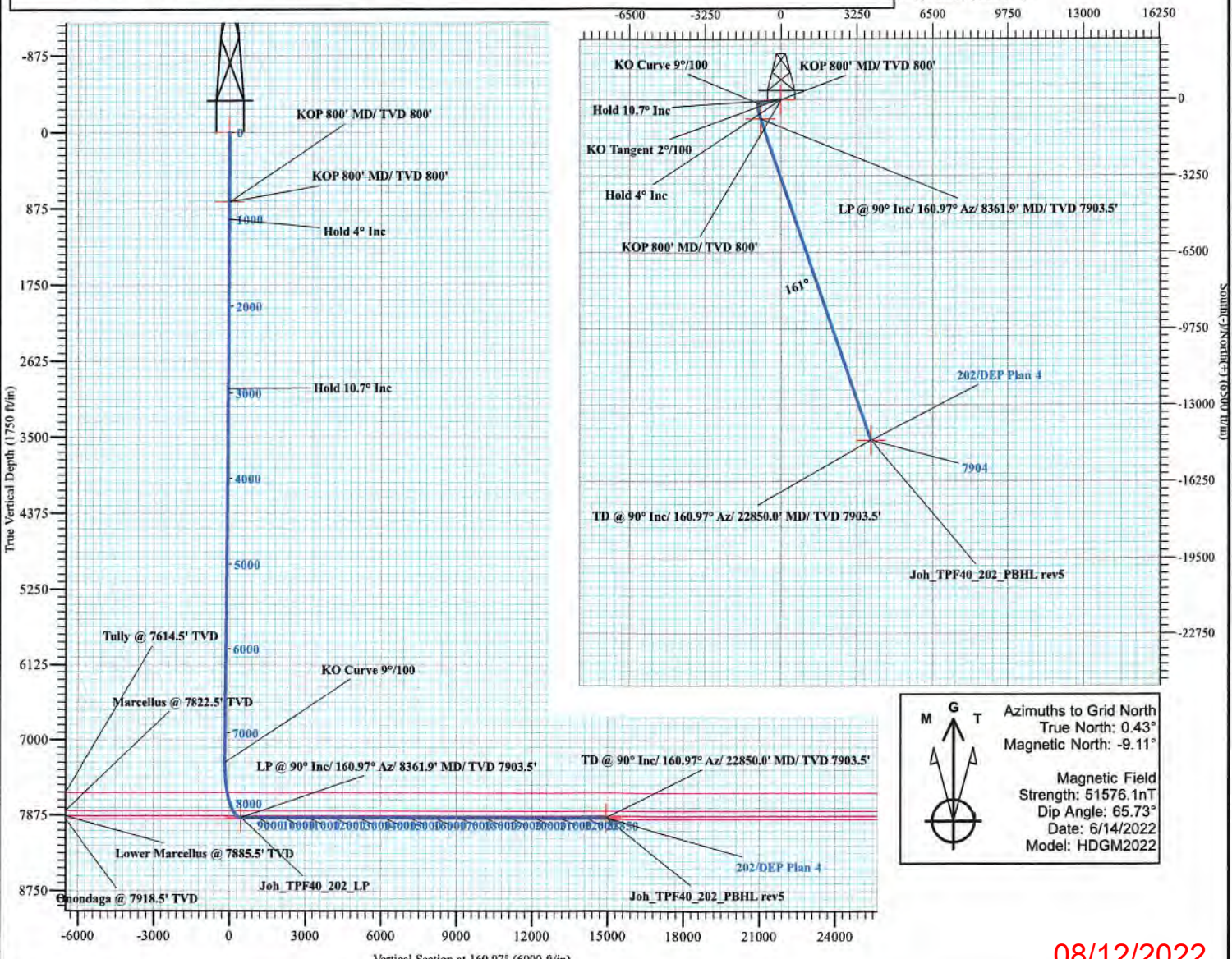
Well/Farm Name: **Johnson TFP40**

NOTES:

Name	TVD	Latitude	Longitude	TMD
Joh_TPF40_202_SHL	0.00	39° 15' 30.745 N	80° 10' 8.616 W	0
Joh_TPF40_202_KOP	800.00	39° 15' 30.745 N	80° 10' 8.616 W	800
Joh_TPF40_202_LP	7903.52	39° 15' 22.778 N	80° 10' 19.627 W	4866.8
Joh_TPF40_202_PBHL rev5	7903.52	39° 13' 7.750 N	80° 9' 18.312 W	8139.48

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	KOP 800' MD/ TVD 800'
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	Hold 4° Inc
1000.00	4.00	270.00	999.84	0.00	-6.98	2.00	270.00	-2.28	KO Tangent 2"/100
2604.08	4.00	270.00	2600.01	0.00	-118.87	0.00	0.00	-38.76	Hold 10.7° Inc
2945.54	10.72	259.24	2938.47	-5.94	-162.03	2.00	-16.99	-47.22	KO Curve 9"/100
7344.87	10.72	259.24	7261.06	-158.75	-965.82	0.00	0.00	-164.84	
8361.89	90.00	160.97	7903.52	-799.61	-872.12	9.00	-98.12	471.56P @ 90° Inc/ 160.97° Az/ 8361.9' MD/ TVD 7903.5'	
22850.00	90.00	160.97	7903.52-14496.22	3851.05	0.00	0.00	0.00	14959.66	



Azimuths to Grid North  
 True North: 0.43°  
 Magnetic North: -9.11°  
 Magnetic Field  
 Strength: 51576.1nT  
 Dip Angle: 65.73°  
 Date: 6/14/2022  
 Model: HDGM2022

08/12/2022

# Arsenal Resources

Taylor County, WV  
Johnson TFP40  
202

Orig.  
DEP Plan 4

## Anticollision Report

11 July, 2022



[www.scientificdrilling.com](http://www.scientificdrilling.com)

08/12/2022



Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	DEP Plan 4		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.00ft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	0.00 to 22,850.00ft	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum ellipse separation of 1,000.00 ft	<b>Error Surface:</b>	Ellipsoid Separation
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	Date 7/11/2022				
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	800.00	DEP Plan 4 (Orig.)	MWD+HRGM+Int	MWD with High Resolution Geomagnetic model and E	
800.00	2,600.01	DEP Plan 4 (Orig.)	MWD+AfterInt	OWSG MWD with High resolution geomagnetic model	
2,600.01	22,850.00	DEP Plan 4 (Orig.)	SDI MWD	SDI MWD - Standard ver 1.0.1	

<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (ft)</b>	<b>Offset Measured Depth (ft)</b>	<b>Distance Between Centres (ft)</b>	<b>Distance Between Ellipses (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>
Offset Well - Wellbore - Design						
Johnson TFP40						
201 - Orig. - DEP Plan 6	800.00	800.00	15.00	9.46	2.707	CC, ES
201 - Orig. - DEP Plan 6	22,800.00	23,083.19	1,000.21	433.13	1.764	SF
203 - Orig. - DEP Plan 5	800.00	800.00	15.00	9.46	2.707	CC
203 - Orig. - DEP Plan 5	900.00	899.83	15.59	9.35	2.496	ES
203 - Orig. - DEP Plan 5	22,800.00	22,695.83	999.99	428.65	1.750	SF
204 - Orig. - DEP Plan 5	800.00	800.00	30.00	24.46	5.413	CC
204 - Orig. - DEP Plan 5	900.00	899.65	30.59	24.34	4.899	ES
204 - Orig. - DEP Plan 5	22,800.00	22,820.45	2,210.55	1,639.76	3.873	SF
205 - Orig. - DEP Plan 4	800.00	800.00	45.00	39.46	8.120	CC, ES
205 - Orig. - DEP Plan 4	900.00	898.51	46.62	40.38	7.468	SF
Pritt South Pad						
Pritt South #207 - OH - SDI Plan 1	11,353.05	8,901.89	2,205.03	2,105.16	22.079	CC
Pritt South #207 - OH - SDI Plan 1	22,000.00	19,532.02	2,206.88	1,716.69	4.502	ES, SF

<b>Offset Design</b>													Offset Site Error:	0.00 ft	
Johnson TFP40 - 201 - Orig. - DEP Plan 6													Offset Well Error:	0.00 ft	
Survey Program: 0-MWD+HRGM+Int, 800-MWD+AfterInt, 2600-SDI MWD															
Reference		Offset		Semi Major Axis				Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
0.00	0.00	0.00	0.00	0.00	0.00	180.00	-15.00	0.00	15.00						
100.00	100.00	100.00	100.00	0.26	0.26	180.00	-15.00	0.00	15.00	14.48	0.52	28.664			
200.00	200.00	200.00	200.00	0.62	0.62	180.00	-15.00	0.00	15.00	13.76	1.24	12.095			
300.00	300.00	300.00	300.00	0.98	0.98	180.00	-15.00	0.00	15.00	13.04	1.96	7.665			
400.00	400.00	400.00	400.00	1.34	1.34	180.00	-15.00	0.00	15.00	12.33	2.67	5.610			
500.00	500.00	500.00	500.00	1.70	1.70	180.00	-15.00	0.00	15.00	11.61	3.39	4.424			
600.00	600.00	600.00	600.00	2.05	2.05	180.00	-15.00	0.00	15.00	10.89	4.11	3.652			
700.00	700.00	700.00	700.00	2.41	2.41	180.00	-15.00	0.00	15.00	10.18	4.83	3.109			
800.00	800.00	800.00	800.00	2.77	2.77	180.00	-15.00	0.00	15.00	9.46	5.54	2.707	CC, ES		
900.00	899.98	899.65	899.63	3.12	3.11	-91.44	-16.12	-1.33	16.13	9.89	6.23	2.586			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 201 - Orig. - DEP Plan 6													Offset Site Error:	0.00 ft
Survey Program: G-MWD+HRGM+Int, BCG-MWD+AfterInt, 2600-SDI MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
1,000.00	999.84	999.22	999.06	3.47	3.45	-94.75	-19.45	-5.30	19.54	12.63	6.91	2.827		
1,100.00	1,099.59	1,098.62	1,098.08	3.82	3.79	-94.42	-25.00	-11.91	25.13	17.53	7.60	3.306		
1,200.00	1,199.35	1,198.38	1,197.29	4.17	4.14	-91.60	-31.70	-19.90	31.78	23.48	8.30	3.829		
1,300.00	1,299.11	1,298.15	1,296.51	4.53	4.50	-89.76	-38.40	-27.89	38.49	29.48	9.01	4.273		
1,400.00	1,398.86	1,397.92	1,395.74	4.89	4.87	-88.46	-45.11	-35.88	45.23	35.50	9.72	4.652		
1,500.00	1,498.62	1,497.68	1,494.96	5.25	5.23	-87.50	-51.81	-43.67	51.98	41.54	10.44	4.978		
1,600.00	1,598.38	1,597.45	1,594.18	5.62	5.60	-86.76	-58.51	-51.85	58.74	47.58	11.16	5.262		
1,700.00	1,698.13	1,697.22	1,693.40	5.98	5.98	-86.18	-65.22	-59.84	65.51	53.62	11.89	5.511		
1,800.00	1,797.89	1,796.99	1,792.62	6.35	6.35	-85.70	-71.92	-67.83	72.29	59.67	12.62	5.730		
1,900.00	1,897.65	1,896.76	1,891.85	6.71	6.73	-85.31	-78.62	-75.82	79.07	65.73	13.34	5.925		
2,000.00	1,997.40	1,996.53	1,991.07	7.08	7.11	-84.98	-85.33	-83.81	85.85	71.78	14.08	6.100		
2,100.00	2,097.16	2,096.30	2,090.29	7.45	7.48	-84.69	-92.03	-91.80	92.64	77.83	14.81	6.256		
2,200.00	2,196.91	2,196.06	2,189.51	7.81	7.87	-84.45	-98.73	-99.79	99.43	83.89	15.54	6.398		
2,300.00	2,296.67	2,295.83	2,288.73	8.18	8.25	-84.24	-105.44	-107.78	106.22	89.94	16.26	6.526		
2,400.00	2,396.43	2,395.60	2,387.96	8.55	8.63	-84.05	-112.14	-115.77	113.01	96.00	17.01	6.643		
2,500.00	2,496.18	2,495.37	2,487.18	8.92	9.01	-83.88	-118.84	-123.75	119.80	102.05	17.75	6.751		
2,600.00	2,595.94	2,595.14	2,586.40	9.30	9.21	-83.73	-125.55	-131.74	126.59	108.47	18.48	6.866		
2,700.00	2,695.69	2,694.97	2,685.17	9.67	9.25	-83.60	-132.21	-140.98	132.88	114.71	19.24	6.978		
2,800.00	2,795.45	2,793.97	2,783.54	10.04	9.27	-83.48	-138.81	-153.62	138.11	119.90	20.00	7.087		
2,900.00	2,895.21	2,893.39	2,881.44	10.41	9.31	-83.37	-145.35	-169.66	142.28	124.01	20.77	7.192		
3,000.00	2,994.97	2,992.80	2,978.70	10.78	9.37	-83.27	-151.82	-189.10	145.61	127.24	21.54	7.294		
3,100.00	3,094.73	3,092.00	3,075.05	11.15	9.47	-83.18	-158.19	-211.86	149.25	130.74	22.31	7.393		
3,200.00	3,194.49	3,190.76	3,170.12	11.52	9.60	-83.10	-164.45	-237.83	153.62	134.94	23.08	7.489		
3,300.00	3,294.25	3,288.85	3,263.61	11.89	9.77	-83.03	-170.57	-266.85	159.19	140.33	23.85	7.582		
3,400.00	3,394.01	3,386.05	3,355.22	12.26	10.01	-82.97	-176.54	-299.76	166.55	147.50	24.62	7.672		
3,500.00	3,493.77	3,483.57	3,446.21	12.63	10.30	-82.92	-182.44	-333.36	176.07	156.84	25.39	7.759		
3,600.00	3,593.53	3,581.88	3,537.83	13.00	10.64	-82.88	-188.38	-368.51	186.99	167.56	26.16	7.843		
3,700.00	3,693.29	3,680.19	3,629.45	13.37	11.02	-82.85	-194.31	-403.66	199.00	179.36	26.93	7.924		
3,800.00	3,793.05	3,778.50	3,721.07	13.74	11.44	-82.83	-200.25	-438.81	211.92	192.05	27.70	8.002		
3,900.00	3,892.81	3,876.81	3,812.69	14.11	11.89	-82.82	-206.19	-473.95	225.57	205.48	28.47	8.077		
4,000.00	3,992.57	3,975.12	3,904.31	14.48	12.36	-82.82	-212.13	-509.10	239.85	219.53	29.24	8.150		
4,100.00	4,092.33	4,073.43	3,995.93	14.85	12.88	-82.82	-218.07	-544.25	254.65	234.07	30.01	8.220		
4,200.00	4,192.09	4,171.74	4,087.55	15.22	13.41	-82.82	-224.01	-579.40	269.87	249.04	30.78	8.288		
4,300.00	4,291.85	4,270.06	4,179.17	15.59	13.96	-82.82	-229.94	-614.55	285.46	264.36	31.55	8.354		
4,400.00	4,391.61	4,368.37	4,270.79	15.96	14.53	-82.82	-235.88	-649.70	301.35	279.98	32.32	8.418		
4,500.00	4,491.37	4,466.68	4,362.41	16.33	15.12	-82.82	-241.82	-684.85	317.50	295.84	33.09	8.480		
4,600.00	4,591.13	4,564.99	4,454.03	16.70	15.71	-82.82	-247.76	-720.00	333.87	311.91	33.86	8.540		
4,700.00	4,690.89	4,663.30	4,545.65	17.07	16.32	-82.82	-253.70	-755.15	350.44	328.17	34.63	8.598		
4,800.00	4,790.65	4,761.61	4,637.27	17.44	16.94	-82.82	-259.64	-790.30	367.17	344.58	35.40	8.654		
4,900.00	4,890.41	4,859.92	4,728.89	17.81	17.58	-82.82	-265.58	-825.45	384.04	361.12	36.17	8.708		
5,000.00	4,990.17	4,958.23	4,820.51	18.18	18.22	-82.82	-271.51	-860.60	401.04	377.78	36.94	8.761		
5,100.00	5,089.93	5,056.54	4,912.13	18.55	18.86	-82.82	-277.45	-895.75	418.15	394.54	37.71	8.812		
5,200.00	5,189.69	5,154.85	5,003.75	18.92	19.52	-82.82	-283.39	-930.90	435.36	411.38	38.48	8.861		
5,300.00	5,289.45	5,253.16	5,095.37	19.29	20.18	-82.82	-289.33	-966.05	452.65	428.30	39.25	8.908		
5,400.00	5,389.21	5,351.47	5,186.99	19.66	20.85	-82.82	-295.27	-1,001.19	470.02	445.29	40.02	8.954		
5,500.00	5,488.97	5,449.76	5,278.61	20.03	21.52	-82.82	-301.21	-1,036.34	487.45	462.34	40.79	9.000		
5,600.00	5,588.73	5,548.10	5,370.23	20.40	22.20	-82.82	-307.14	-1,071.49	504.95	479.45	41.56	9.044		
5,700.00	5,688.49	5,646.41	5,461.85	20.77	22.88	-82.82	-313.08	-1,106.64	522.50	496.60	42.33	9.087		
5,800.00	5,788.25	5,744.72	5,553.47	21.14	23.56	-82.82	-319.02	-1,141.79	540.11	513.79	43.10	9.129		
5,900.00	5,888.01	5,843.03	5,645.09	21.51	24.25	-82.82	-324.96	-1,176.94	557.75	531.03	43.87	9.170		
6,000.00	5,987.77	5,941.34	5,736.71	21.88	24.94	-82.82	-330.90	-1,212.09	575.44	548.29	44.64	9.210		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 201 - Orig. - DEP Plan 6														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM+Int. 800-MWD+AfterInt, 2600-SDI MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
6,100.00	6,037.90	6,039.65	5,828.33	17.09	25.64	-12.10	-336.84	-1,247.24	593.17	565.59	27.58	21.506			
6,200.00	6,136.16	6,137.96	5,919.95	17.45	26.34	-11.67	-342.78	-1,282.39	610.93	582.91	28.02	21.806			
6,300.00	6,234.41	6,236.27	6,011.57	17.81	27.04	-11.27	-348.71	-1,317.54	628.72	600.26	28.46	22.093			
6,400.00	6,332.67	6,334.58	6,103.19	18.17	27.74	-10.89	-354.65	-1,352.69	646.54	617.64	28.91	22.368			
6,500.00	6,430.92	6,432.89	6,194.81	18.53	28.45	-10.53	-360.59	-1,387.84	664.39	635.03	29.36	22.631			
6,600.00	6,529.18	6,531.20	6,286.44	18.90	29.16	-10.19	-366.53	-1,422.99	682.26	652.44	29.81	22.883			
6,700.00	6,627.43	6,629.51	6,378.06	19.27	29.87	-9.86	-372.47	-1,458.14	700.15	669.87	30.28	23.124			
6,800.00	6,725.69	6,727.83	6,469.68	19.64	30.58	-9.56	-378.41	-1,493.29	718.06	687.32	30.74	23.356			
6,900.00	6,823.94	6,826.14	6,561.30	20.01	31.29	-9.26	-384.34	-1,528.43	736.00	704.78	31.22	23.577			
7,000.00	6,922.20	6,924.45	6,652.92	20.39	32.01	-8.98	-390.28	-1,563.58	753.95	722.25	31.69	23.789			
7,100.00	7,020.46	7,022.76	6,744.54	20.76	32.72	-8.72	-396.22	-1,598.73	771.91	739.74	32.17	23.993			
7,200.00	7,118.71	7,121.07	6,836.16	21.14	33.44	-8.46	-402.16	-1,633.88	789.89	757.24	32.66	24.189			
7,300.00	7,216.97	7,219.38	6,927.78	21.52	34.16	-8.22	-408.10	-1,669.03	807.89	774.75	33.14	24.376			
7,400.00	7,315.22	7,317.54	7,019.26	21.87	34.88	-7.98	-414.03	-1,704.13	825.90	792.31	33.59	24.587			
7,500.00	7,413.47	7,413.87	7,108.03	22.16	35.58	-7.74	-419.95	-1,738.57	843.97	810.10	33.87	24.916			
7,600.00	7,506.40	7,505.98	7,194.87	22.43	36.26	-7.50	-425.41	-1,771.50	862.69	828.61	34.08	25.314			
7,700.00	7,594.71	7,591.76	7,274.82	22.68	36.89	-7.26	-430.59	-1,802.17	883.23	848.84	34.40	25.678			
7,800.00	7,675.21	7,694.96	7,371.03	22.92	37.53	-7.03	-444.90	-1,836.30	905.96	870.60	35.16	25.766			
7,900.00	7,745.92	7,812.29	7,478.31	23.18	38.18	-6.80	-479.94	-1,867.77	929.68	893.22	36.46	25.498			
8,000.00	7,805.11	7,949.17	7,595.98	23.47	38.84	-6.57	-544.49	-1,893.29	953.11	915.20	37.91	25.144			
8,100.00	7,851.31	8,111.99	7,718.34	23.82	39.48	-6.34	-650.42	-1,906.43	974.33	935.24	39.10	24.922			
8,200.00	7,883.39	8,305.23	7,828.49	24.26	40.08	-6.11	-808.00	-1,896.81	990.78	951.05	39.71	24.952			
8,300.00	7,900.36	8,524.76	7,895.63	24.79	40.62	-5.88	-1,011.40	-1,853.93	999.48	959.49	39.98	25.000			
8,400.00	7,903.52	8,683.19	7,903.52	25.43	40.97	-5.65	-1,161.72	-1,805.29	1,000.24	958.98	41.26	24.242			
8,500.00	7,903.52	8,783.19	7,903.52	26.21	41.26	-5.42	-1,256.26	-1,772.69	1,000.24	957.09	43.14	23.184			
8,600.00	7,903.52	8,883.19	7,903.52	27.11	41.62	-5.19	-1,350.80	-1,740.09	1,000.24	954.98	45.25	22.104			
8,700.00	7,903.52	8,983.19	7,903.52	28.12	42.06	-4.96	-1,445.33	-1,707.49	1,000.24	952.67	47.56	21.029			
8,800.00	7,903.52	9,083.19	7,903.52	29.23	42.56	-4.73	-1,539.87	-1,674.89	1,000.24	950.18	50.06	19.982			
8,900.00	7,903.52	9,183.19	7,903.52	30.43	43.15	-4.50	-1,634.41	-1,642.29	1,000.24	947.54	52.70	18.980			
9,000.00	7,903.52	9,283.19	7,903.52	31.70	43.80	-4.27	-1,728.95	-1,609.69	1,000.24	944.76	55.48	18.030			
9,100.00	7,903.52	9,383.19	7,903.52	33.03	44.54	-4.04	-1,823.48	-1,577.09	1,000.24	941.87	58.37	17.137			
9,200.00	7,903.52	9,483.19	7,903.52	34.42	45.34	-3.81	-1,918.02	-1,544.49	1,000.23	938.88	61.36	16.302			
9,300.00	7,903.52	9,583.19	7,903.52	35.86	46.22	-3.58	-2,012.56	-1,511.89	1,000.23	935.80	64.43	15.524			
9,400.00	7,903.52	9,683.19	7,903.52	37.35	47.16	-3.35	-2,107.09	-1,479.29	1,000.23	932.65	67.58	14.801			
9,500.00	7,903.52	9,783.19	7,903.52	38.87	48.17	-3.12	-2,201.63	-1,446.69	1,000.23	929.44	70.79	14.129			
9,600.00	7,903.52	9,883.19	7,903.52	40.43	49.24	-2.89	-2,296.17	-1,414.08	1,000.23	926.17	74.06	13.506			
9,700.00	7,903.52	9,983.19	7,903.52	42.01	50.37	-2.66	-2,390.70	-1,381.48	1,000.23	922.86	77.38	12.926			
9,800.00	7,903.52	10,083.19	7,903.52	43.63	51.55	-2.43	-2,485.24	-1,348.88	1,000.23	919.50	80.74	12.389			
9,900.00	7,903.52	10,183.19	7,903.52	45.26	52.79	-2.20	-2,579.78	-1,316.28	1,000.23	916.10	84.14	11.888			
10,000.00	7,903.52	10,283.19	7,903.52	46.92	54.07	-1.97	-2,674.31	-1,283.68	1,000.23	912.67	87.57	11.422			
10,100.00	7,903.52	10,383.19	7,903.52	48.59	55.39	-1.74	-2,768.85	-1,251.08	1,000.23	909.20	91.03	10.988			
10,200.00	7,903.52	10,483.19	7,903.52	50.28	56.75	-1.51	-2,863.39	-1,218.48	1,000.23	905.71	94.52	10.582			
10,300.00	7,903.52	10,583.19	7,903.52	51.99	58.15	-1.28	-2,957.92	-1,185.88	1,000.23	902.20	98.03	10.203			
10,400.00	7,903.52	10,683.19	7,903.52	53.71	59.59	-1.05	-3,052.46	-1,153.28	1,000.23	898.67	101.56	9.848			
10,500.00	7,903.52	10,783.19	7,903.52	55.44	61.06	-0.82	-3,147.00	-1,120.68	1,000.23	895.12	105.12	9.516			
10,600.00	7,903.52	10,883.19	7,903.52	57.18	62.54	-0.59	-3,241.53	-1,088.08	1,000.23	891.55	108.69	9.203			
10,700.00	7,903.52	10,983.19	7,903.52	58.94	64.05	-0.36	-3,336.07	-1,055.48	1,000.23	887.96	112.27	8.909			
10,800.00	7,903.52	11,083.19	7,903.52	60.70	65.59	-0.13	-3,430.61	-1,022.88	1,000.23	884.36	115.87	8.633			
10,900.00	7,903.52	11,183.19	7,903.52	62.47	67.15	0.10	-3,525.14	-990.28	1,000.23	880.75	119.48	8.372			
11,000.00	7,903.52	11,283.19	7,903.52	64.25	68.73	0.33	-3,619.68	-957.68	1,000.23	877.13	123.10	8.125			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 201 - Orig. - DEP Plan 6														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM+Int 800-MWD+AfterInt 2600-SDI MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
11,100.00	7,903.52	11,383.19	7,903.52	66.03	70.33	90.00	-3,714.22	-925.08	1,000.23	873.49	126.74	7.892			
11,200.00	7,903.52	11,483.19	7,903.52	67.83	71.95	90.00	-3,808.75	-892.48	1,000.23	869.85	130.36	7.672			
11,300.00	7,903.52	11,583.19	7,903.52	69.62	73.58	90.00	-3,903.29	-859.88	1,000.23	866.20	134.03	7.463			
11,400.00	7,903.52	11,683.19	7,903.52	71.43	75.23	90.00	-3,997.83	-827.27	1,000.23	862.54	137.69	7.264			
11,500.00	7,903.52	11,783.19	7,903.52	73.24	76.89	90.00	-4,092.36	-794.67	1,000.23	858.87	141.36	7.076			
11,600.00	7,903.52	11,883.19	7,903.52	75.05	78.56	90.00	-4,186.90	-762.07	1,000.23	855.19	145.04	6.896			
11,700.00	7,903.52	11,983.19	7,903.52	76.87	80.24	90.00	-4,281.44	-729.47	1,000.23	851.51	148.72	6.726			
11,800.00	7,903.52	12,083.19	7,903.52	78.69	81.93	90.00	-4,375.98	-696.87	1,000.23	847.82	152.41	6.563			
11,900.00	7,903.52	12,183.19	7,903.52	80.51	83.64	90.00	-4,470.51	-664.27	1,000.23	844.13	156.10	6.408			
12,000.00	7,903.52	12,283.19	7,903.52	82.34	85.35	90.00	-4,565.05	-631.67	1,000.23	840.43	159.80	6.259			
12,100.00	7,903.52	12,383.19	7,903.52	84.16	87.07	90.00	-4,659.59	-599.07	1,000.23	836.72	163.51	6.117			
12,200.00	7,903.52	12,483.19	7,903.52	86.01	88.80	90.00	-4,754.12	-566.47	1,000.23	833.01	167.21	5.982			
12,300.00	7,903.52	12,583.19	7,903.52	87.85	90.54	90.00	-4,848.66	-533.87	1,000.23	829.30	170.93	5.852			
12,400.00	7,903.52	12,683.19	7,903.52	89.69	92.28	90.00	-4,943.20	-501.27	1,000.23	825.58	174.64	5.727			
12,500.00	7,903.52	12,783.19	7,903.52	91.54	94.03	90.00	-5,037.73	-468.67	1,000.23	821.86	178.37	5.606			
12,600.00	7,903.52	12,883.19	7,903.52	93.38	95.79	90.00	-5,132.27	-436.07	1,000.23	818.12	182.11	5.493			
12,700.00	7,903.52	12,983.19	7,903.52	95.23	97.55	90.00	-5,226.81	-403.47	1,000.23	814.44	185.79	5.384			
12,800.00	7,903.52	13,083.19	7,903.52	97.08	99.32	90.00	-5,321.34	-370.87	1,000.23	810.69	189.54	5.277			
12,900.00	7,903.52	13,183.19	7,903.52	98.93	101.10	90.00	-5,415.88	-338.27	1,000.23	806.96	193.27	5.175			
13,000.00	7,903.52	13,283.19	7,903.52	100.79	102.88	90.00	-5,510.42	-305.67	1,000.23	803.22	197.01	5.077			
13,100.00	7,903.52	13,383.19	7,903.52	102.65	104.66	90.00	-5,604.95	-273.07	1,000.23	799.48	200.75	4.983			
13,200.00	7,903.52	13,483.19	7,903.52	104.50	106.45	90.00	-5,699.49	-240.46	1,000.23	795.74	204.49	4.891			
13,300.00	7,903.52	13,583.19	7,903.52	106.36	108.24	90.00	-5,794.03	-207.86	1,000.23	792.00	208.23	4.804			
13,400.00	7,903.52	13,683.19	7,903.52	108.23	110.04	90.00	-5,888.56	-175.26	1,000.23	788.25	211.97	4.719			
13,500.00	7,903.52	13,783.19	7,903.52	110.09	111.84	90.00	-5,983.10	-142.66	1,000.23	784.51	215.72	4.637			
13,600.00	7,903.52	13,883.19	7,903.52	111.95	113.64	90.00	-6,077.64	-110.06	1,000.23	780.76	219.47	4.557			
13,700.00	7,903.52	13,983.19	7,903.52	113.82	115.45	90.00	-6,172.17	-77.46	1,000.23	777.01	223.22	4.481			
13,800.00	7,903.52	14,083.19	7,903.52	115.69	117.26	90.00	-6,266.71	-44.86	1,000.23	773.25	226.97	4.407			
13,900.00	7,903.52	14,183.19	7,903.52	117.55	119.07	90.00	-6,361.25	-12.26	1,000.23	769.50	230.72	4.335			
14,000.00	7,903.52	14,283.19	7,903.52	119.42	120.88	90.00	-6,455.78	20.34	1,000.22	765.75	234.48	4.266			
14,100.00	7,903.52	14,383.19	7,903.52	121.29	122.70	90.00	-6,550.32	52.94	1,000.22	761.99	238.24	4.198			
14,200.00	7,903.52	14,483.19	7,903.52	123.17	124.53	90.00	-6,644.86	85.54	1,000.22	758.23	242.00	4.133			
14,300.00	7,903.52	14,583.19	7,903.52	125.04	126.35	90.00	-6,739.39	118.14	1,000.22	754.47	245.75	4.070			
14,400.00	7,903.52	14,683.19	7,903.52	126.91	128.18	90.00	-6,833.93	150.74	1,000.22	750.71	249.52	4.009			
14,500.00	7,903.52	14,783.19	7,903.52	128.79	130.00	90.00	-6,928.47	183.34	1,000.22	746.95	253.28	3.949			
14,600.00	7,903.52	14,883.19	7,903.52	130.66	131.84	90.00	-7,023.01	215.94	1,000.22	743.18	257.04	3.891			
14,700.00	7,903.52	14,983.19	7,903.52	132.54	133.67	90.00	-7,117.54	248.54	1,000.22	739.42	260.81	3.835			
14,800.00	7,903.52	15,083.19	7,903.52	134.41	135.50	90.00	-7,212.08	281.14	1,000.22	735.65	264.57	3.781			
14,900.00	7,903.52	15,183.19	7,903.52	136.29	137.34	90.00	-7,306.62	313.75	1,000.22	731.89	268.34	3.727			
15,000.00	7,903.52	15,283.19	7,903.52	138.17	139.18	90.00	-7,401.15	346.35	1,000.22	728.12	272.10	3.676			
15,100.00	7,903.52	15,383.19	7,903.52	140.05	141.02	90.00	-7,495.69	378.95	1,000.22	724.35	275.87	3.626			
15,200.00	7,903.52	15,483.19	7,903.52	141.93	142.86	90.00	-7,590.23	411.55	1,000.22	720.58	279.64	3.577			
15,300.00	7,903.52	15,583.19	7,903.52	143.81	144.71	90.00	-7,684.76	444.15	1,000.22	716.81	283.41	3.529			
15,400.00	7,903.52	15,683.19	7,903.52	145.69	146.55	90.00	-7,779.30	476.75	1,000.22	713.04	287.18	3.483			
15,500.00	7,903.52	15,783.19	7,903.52	147.57	148.40	90.00	-7,873.84	509.35	1,000.22	709.27	290.95	3.438			
15,600.00	7,903.52	15,883.19	7,903.52	149.45	150.25	90.00	-7,968.37	541.95	1,000.22	705.50	294.73	3.394			
15,700.00	7,903.52	15,983.19	7,903.52	151.34	152.10	90.00	-8,062.91	574.55	1,000.22	701.72	298.50	3.351			
15,800.00	7,903.52	16,083.19	7,903.52	153.22	153.95	90.00	-8,157.45	607.15	1,000.22	697.95	302.27	3.309			
15,900.00	7,903.52	16,183.19	7,903.52	155.10	155.80	90.00	-8,251.98	639.75	1,000.22	694.17	306.05	3.268			
16,000.00	7,903.52	16,283.19	7,903.52	156.99	157.66	90.00	-8,346.52	672.35	1,000.22	690.40	309.82	3.228			
16,100.00	7,903.52	16,383.19	7,903.52	158.87	159.51	90.00	-8,441.06	704.95	1,000.22	686.62	313.60	3.190			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 201 - Orig. - DEP Plan 6													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM+Int. 800-MWD+AfterInt. 2600-SDI MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
16,200.00	7,903.52	16,483.19	7,903.52	160.76	161.37	90.00	-8,535.59	737.55	1,000.22	682.85	317.37	3.152		
16,300.00	7,903.52	16,583.19	7,903.52	162.64	163.23	90.00	-8,630.13	770.16	1,000.22	679.07	321.15	3.115		
16,400.00	7,903.52	16,683.19	7,903.52	164.53	165.08	90.00	-8,724.67	802.75	1,000.22	675.29	324.93	3.078		
16,500.00	7,903.52	16,783.19	7,903.52	166.42	166.94	90.00	-8,819.20	835.35	1,000.22	671.52	328.70	3.043		
16,600.00	7,903.52	16,883.19	7,903.52	168.30	168.81	90.00	-8,913.74	867.95	1,000.22	667.74	332.48	3.008		
16,700.00	7,903.52	16,983.19	7,903.52	170.19	170.67	90.00	-9,008.28	900.56	1,000.22	663.96	336.26	2.975		
16,800.00	7,903.52	17,083.19	7,903.52	172.08	172.53	90.00	-9,102.81	933.16	1,000.22	660.18	340.04	2.941		
16,900.00	7,903.52	17,183.19	7,903.52	173.97	174.39	90.00	-9,197.35	965.76	1,000.22	656.40	343.82	2.909		
17,000.00	7,903.52	17,283.19	7,903.52	175.86	176.26	90.00	-9,291.89	998.36	1,000.22	652.62	347.60	2.878		
17,100.00	7,903.52	17,383.19	7,903.52	177.74	178.12	90.00	-9,386.42	1,030.96	1,000.22	648.84	351.38	2.847		
17,200.00	7,903.52	17,483.19	7,903.52	179.63	179.99	90.00	-9,480.96	1,063.56	1,000.22	645.06	355.16	2.816		
17,300.00	7,903.52	17,583.19	7,903.52	181.52	181.86	90.00	-9,575.50	1,096.16	1,000.22	641.28	358.94	2.787		
17,400.00	7,903.52	17,683.19	7,903.52	183.41	183.72	90.00	-9,670.04	1,128.76	1,000.22	637.50	362.72	2.758		
17,500.00	7,903.52	17,783.19	7,903.52	185.30	185.59	90.00	-9,764.57	1,161.36	1,000.22	633.72	366.50	2.729		
17,600.00	7,903.52	17,883.19	7,903.52	187.19	187.46	90.00	-9,859.11	1,193.96	1,000.22	629.93	370.28	2.701		
17,700.00	7,903.52	17,983.19	7,903.52	189.08	189.33	90.00	-9,953.65	1,226.56	1,000.22	626.15	374.07	2.674		
17,800.00	7,903.52	18,083.19	7,903.52	190.98	191.20	90.00	-10,048.18	1,259.16	1,000.22	622.37	377.85	2.647		
17,900.00	7,903.52	18,183.19	7,903.52	192.87	193.07	90.00	-10,142.72	1,291.76	1,000.22	618.59	381.63	2.621		
18,000.00	7,903.52	18,283.19	7,903.52	194.76	194.95	90.00	-10,237.26	1,324.36	1,000.22	614.80	385.41	2.595		
18,100.00	7,903.52	18,383.19	7,903.52	196.65	196.82	90.00	-10,331.79	1,356.96	1,000.22	611.02	389.20	2.570		
18,200.00	7,903.52	18,483.19	7,903.52	198.54	198.69	90.00	-10,426.33	1,389.56	1,000.22	607.24	392.98	2.545		
18,300.00	7,903.52	18,583.19	7,903.52	200.43	200.57	90.00	-10,520.87	1,422.16	1,000.22	603.45	396.76	2.521		
18,400.00	7,903.52	18,683.19	7,903.52	202.33	202.44	90.00	-10,615.40	1,454.76	1,000.22	599.67	400.55	2.497		
18,500.00	7,903.52	18,783.19	7,903.52	204.22	204.31	90.00	-10,709.94	1,487.37	1,000.22	595.89	404.33	2.474		
18,600.00	7,903.52	18,883.19	7,903.52	206.11	206.19	90.00	-10,804.48	1,519.97	1,000.22	592.10	408.11	2.451		
18,700.00	7,903.52	18,983.19	7,903.52	208.01	208.07	90.00	-10,899.01	1,552.57	1,000.22	588.32	411.90	2.428		
18,800.00	7,903.52	19,083.19	7,903.52	209.90	209.94	90.00	-10,993.55	1,585.17	1,000.21	584.53	415.68	2.406		
18,900.00	7,903.52	19,183.19	7,903.52	211.79	211.82	90.00	-11,088.09	1,617.77	1,000.21	580.75	419.47	2.384		
19,000.00	7,903.52	19,283.19	7,903.52	213.69	213.70	90.00	-11,182.62	1,650.37	1,000.21	576.96	423.25	2.363		
19,100.00	7,903.52	19,383.19	7,903.52	215.58	215.58	90.00	-11,277.16	1,682.97	1,000.21	573.18	427.04	2.342		
19,200.00	7,903.52	19,483.19	7,903.52	217.47	217.45	90.00	-11,371.70	1,715.57	1,000.21	569.39	430.82	2.322		
19,300.00	7,903.52	19,583.19	7,903.52	219.37	219.33	90.00	-11,466.23	1,748.17	1,000.21	565.61	434.61	2.301		
19,400.00	7,903.52	19,683.19	7,903.52	221.26	221.21	90.00	-11,560.77	1,780.77	1,000.21	561.82	438.39	2.282		
19,500.00	7,903.52	19,783.19	7,903.52	223.16	223.09	90.00	-11,655.31	1,813.37	1,000.21	558.04	442.18	2.262		
19,600.00	7,903.52	19,883.19	7,903.52	225.05	224.97	90.00	-11,749.84	1,845.97	1,000.21	554.25	445.96	2.243		
19,700.00	7,903.52	19,983.19	7,903.52	226.95	226.85	90.00	-11,844.38	1,878.57	1,000.21	550.47	449.75	2.224		
19,800.00	7,903.52	20,083.19	7,903.52	228.84	228.73	90.00	-11,938.92	1,911.17	1,000.21	546.68	453.53	2.205		
19,900.00	7,903.52	20,183.19	7,903.52	230.74	230.62	90.00	-12,033.45	1,943.77	1,000.21	542.90	457.32	2.187		
20,000.00	7,903.52	20,283.19	7,903.52	232.63	232.50	90.00	-12,127.99	1,976.37	1,000.21	539.11	461.10	2.169		
20,100.00	7,903.52	20,383.19	7,903.52	234.53	234.38	90.00	-12,222.53	2,008.97	1,000.21	535.32	464.89	2.152		
20,200.00	7,903.52	20,483.19	7,903.52	236.42	236.26	90.00	-12,317.07	2,041.57	1,000.21	531.54	468.67	2.134		
20,300.00	7,903.52	20,583.19	7,903.52	238.32	238.15	90.00	-12,411.60	2,074.16	1,000.21	527.75	472.45	2.117		
20,400.00	7,903.52	20,683.19	7,903.52	240.22	240.03	90.00	-12,506.14	2,106.76	1,000.21	523.97	476.24	2.100		
20,500.00	7,903.52	20,783.19	7,903.52	242.11	241.91	90.00	-12,600.68	2,139.36	1,000.21	520.18	480.03	2.084		
20,600.00	7,903.52	20,883.19	7,903.52	244.01	243.80	90.00	-12,695.21	2,171.96	1,000.21	516.40	483.81	2.067		
20,700.00	7,903.52	20,983.19	7,903.52	245.91	245.68	90.00	-12,789.75	2,204.56	1,000.21	512.61	487.60	2.051		
20,800.00	7,903.52	21,083.19	7,903.52	247.80	247.57	90.00	-12,884.29	2,237.16	1,000.21	508.83	491.39	2.035		
20,900.00	7,903.52	21,183.19	7,903.52	249.70	249.45	90.00	-12,978.82	2,269.76	1,000.21	505.04	495.17	2.020		
21,000.00	7,903.52	21,283.19	7,903.52	251.60	251.34	90.00	-13,073.36	2,302.36	1,000.21	501.25	498.96	2.005		
21,100.00	7,903.52	21,383.19	7,903.52	253.49	253.22	90.00	-13,167.90	2,334.96	1,000.21	497.47	502.74	1.990		

CC - Min centre to center distance of convergent point, SF - min separation factor, ES - min ellipse separation

## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 201 - Orig. - DEP Plan 6													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM+Int, 800-MWD+AfterInt, 2600-SDI MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
21,200.00	7,903.52	21,483.19	7,903.52	255.39	255.11	90.00	-13,262.43	2,367.58	1,000.21	493.68	506.53	1.975		
21,300.00	7,903.52	21,583.19	7,903.52	257.29	256.99	90.00	-13,356.97	2,400.18	1,000.21	489.90	510.31	1.960		
21,400.00	7,903.52	21,683.19	7,903.52	259.18	258.88	90.00	-13,451.51	2,432.78	1,000.21	486.11	514.10	1.946		
21,500.00	7,903.52	21,783.19	7,903.52	261.06	260.77	90.00	-13,546.04	2,465.38	1,000.21	482.33	517.88	1.931		
21,600.00	7,903.52	21,883.19	7,903.52	262.98	262.65	90.00	-13,640.58	2,497.98	1,000.21	478.54	521.67	1.917		
21,700.00	7,903.52	21,983.19	7,903.52	264.88	264.54	90.00	-13,735.12	2,530.58	1,000.21	474.76	525.45	1.904		
21,800.00	7,903.52	22,083.19	7,903.52	266.77	266.43	90.00	-13,829.65	2,563.18	1,000.21	470.97	529.24	1.890		
21,900.00	7,903.52	22,183.19	7,903.52	268.67	268.31	90.00	-13,924.19	2,595.78	1,000.21	467.19	533.02	1.876		
22,000.00	7,903.52	22,283.19	7,903.52	270.57	270.20	90.00	-14,018.73	2,628.38	1,000.21	463.40	536.81	1.863		
22,100.00	7,903.52	22,383.19	7,903.52	272.47	272.09	90.00	-14,113.26	2,660.99	1,000.21	459.62	540.59	1.850		
22,200.00	7,903.52	22,483.19	7,903.52	274.37	273.98	90.00	-14,207.80	2,693.59	1,000.21	455.83	544.37	1.837		
22,300.00	7,903.52	22,583.19	7,903.52	276.26	275.87	90.00	-14,302.34	2,726.19	1,000.21	452.05	548.16	1.825		
22,400.00	7,903.52	22,683.19	7,903.52	278.16	277.76	90.00	-14,396.87	2,758.79	1,000.21	448.26	551.94	1.812		
22,500.00	7,903.52	22,783.19	7,903.52	280.06	279.64	90.00	-14,491.41	2,791.39	1,000.21	444.48	555.73	1.800		
22,600.00	7,903.52	22,883.19	7,903.52	281.96	281.53	90.00	-14,585.95	2,823.99	1,000.21	440.70	559.51	1.788		
22,700.00	7,903.52	22,983.19	7,903.52	283.86	283.42	90.00	-14,680.48	2,856.59	1,000.21	436.91	563.29	1.776		
22,800.00	7,903.52	23,083.19	7,903.52	285.76	285.31	90.00	-14,775.02	2,889.19	1,000.21	433.13	567.08	1.764 SF		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 203 - Orig. - DEP Plan 5														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM+Int, 800-MWD+AfterInt, 2600-SDI MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside		Offset Wellbore Centre		Distance		Separation		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Tooface (°)	+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00	0.00	15.00	15.00	14.48	0.52	28.661		
100.00	100.00	100.00	100.00	0.26	0.26	0.00	15.00	0.00	15.00	13.76	1.24	12.094			
200.00	200.00	200.00	200.00	0.62	0.62	0.00	15.00	0.00	15.00	13.04	1.96	7.664			
300.00	300.00	300.00	300.00	0.98	0.98	0.00	15.00	0.00	15.00	12.33	2.67	5.609			
400.00	400.00	400.00	400.00	1.34	1.34	0.00	15.00	0.00	15.00	11.61	3.39	4.423			
500.00	500.00	500.00	500.00	1.70	1.70	0.00	15.00	0.00	15.00	10.89	4.11	3.651			
600.00	600.00	600.00	600.00	2.05	2.05	0.00	15.00	0.00	15.00	10.18	4.83	3.109			
700.00	700.00	700.00	700.00	2.41	2.41	0.00	15.00	0.00	15.00	9.46	5.54	2.707	CC		
800.00	800.00	800.00	800.00	2.77	2.77	0.00	15.00	0.00	15.00	8.75	6.25	2.496	ES		
900.00	899.98	899.83	899.82	3.12	3.13	93.93	15.55	-0.67	15.59	8.04	6.95	2.555			
1,000.00	999.84	999.61	999.57	3.47	3.48	103.93	17.22	-2.68	17.75	7.34	7.65	2.811			
1,100.00	1,099.59	1,099.38	1,099.25	3.82	3.83	111.53	19.99	-6.02	21.50	6.64	8.36	3.106			
1,200.00	1,199.35	1,199.16	1,198.84	4.17	4.19	113.07	23.86	-10.71	25.96	5.94	9.07	3.381			
1,300.00	1,299.11	1,299.05	1,298.48	4.53	4.55	112.56	28.30	-16.07	30.68	5.24	9.79	3.615			
1,400.00	1,398.86	1,398.94	1,398.13	4.89	4.91	112.19	32.74	-21.44	35.40	4.54	10.51	3.816			
1,500.00	1,498.62	1,498.83	1,497.77	5.25	5.27	111.90	37.19	-26.81	40.12	3.84	11.24	3.991			
1,600.00	1,598.38	1,598.71	1,597.42	5.62	5.63	111.68	41.63	-32.18	44.85	3.14	11.96	4.143			
1,700.00	1,698.13	1,698.60	1,697.06	5.98	6.00	111.50	46.07	-37.54	49.57	2.44	12.69	4.278			
1,800.00	1,797.89	1,798.49	1,796.71	6.35	6.36	111.35	50.51	-42.91	54.29	1.74	13.42	4.398			
1,900.00	1,897.65	1,898.38	1,896.35	6.71	6.73	111.22	54.95	-48.28	59.01	1.04	14.15	4.505			
2,000.00	1,997.40	1,998.27	1,996.00	7.08	7.09	111.11	59.39	-53.65	63.74	0.34	14.88	4.601			
2,100.00	2,097.16	2,098.16	2,095.64	7.45	7.46	111.02	63.83	-59.01	68.46	-0.36	15.61	4.689			
2,200.00	2,196.91	2,198.04	2,195.29	7.81	7.82	110.94	68.28	-64.38	73.19	-1.06	16.34	4.768			
2,300.00	2,296.67	2,297.93	2,294.93	8.18	8.19	110.87	72.72	-69.75	77.91	-1.76	17.07	4.840			
2,400.00	2,396.43	2,397.82	2,394.58	8.55	8.56	110.81	77.16	-75.12	82.63	-2.46	17.81	4.906			
2,500.00	2,496.18	2,497.71	2,494.22	8.92	8.92	110.75	81.60	-80.48	87.36	-3.16	18.54	5.066			
2,600.00	2,595.94	2,597.60	2,593.87	9.30	9.31	110.70	86.04	-85.85	92.08	-3.86	19.27	5.372			
2,700.00	2,695.67	2,697.42	2,693.45	9.68	9.69	110.67	90.48	-91.21	97.80	-4.56	20.00	5.797			
2,800.00	2,795.39	2,797.23	2,792.82	10.06	10.07	110.64	94.91	-96.57	103.52	-5.26	20.73	6.350			
2,900.00	2,895.11	2,896.99	2,891.85	10.44	10.45	110.61	99.32	-101.90	110.24	-5.96	21.46	7.022			
3,000.00	2,994.83	2,996.70	2,990.50	10.82	10.83	110.58	103.72	-107.22	116.96	-6.66	22.19	7.718			
3,100.00	3,094.55	3,096.41	3,089.11	11.20	11.21	110.55	108.12	-112.53	123.68	-7.36	22.92	8.417			
3,200.00	3,194.27	3,196.12	3,187.71	11.58	11.59	110.52	112.51	-117.84	130.59	-8.06	23.65	9.113			
3,300.00	3,293.99	3,295.83	3,286.32	11.96	11.97	110.49	116.90	-123.14	137.50	-8.76	24.38	9.809			
3,400.00	3,393.71	3,395.54	3,384.99	12.34	12.35	110.46	120.63	-127.65	144.41	-9.46	25.11	10.507			
3,500.00	3,493.43	3,495.25	3,483.51	12.72	12.73	110.43	123.28	-130.84	151.32	-10.16	25.84	11.215			
3,600.00	3,593.15	3,594.96	3,581.79	13.10	13.11	110.40	124.83	-132.73	158.23	-10.86	26.57	11.940			
3,700.00	3,692.87	3,694.67	3,679.77	13.48	13.49	110.37	125.32	-133.31	165.14	-11.56	27.30	12.676			
3,800.00	3,792.59	3,794.38	3,778.03	13.86	13.87	110.34	125.32	-133.31	172.05	-12.26	28.03	13.413			
3,900.00	3,892.31	3,894.09	3,876.28	14.24	14.25	110.31	125.32	-133.31	178.96	-12.96	28.76	14.147			
4,000.00	3,992.03	3,993.81	3,974.54	14.62	14.63	110.28	125.32	-133.31	185.87	-13.66	29.49	14.875			
4,100.00	4,091.75	4,093.52	4,072.80	15.00	15.01	110.25	125.32	-133.31	192.78	-14.36	30.22	15.594			
4,200.00	4,191.47	4,193.24	4,171.05	15.38	15.39	110.22	125.32	-133.31	199.69	-15.06	30.95	16.301			
4,300.00	4,291.19	4,292.96	4,269.31	15.76	15.77	110.19	125.32	-133.31	206.60	-15.76	31.68	16.995			
4,400.00	4,390.91	4,392.68	4,367.56	16.14	16.15	110.16	125.32	-133.31	213.51	-16.46	32.41	17.674			
4,500.00	4,490.63	4,492.40	4,465.82	16.52	16.53	110.13	125.32	-133.31	220.42	-17.16	33.14	18.337			
4,600.00	4,590.35	4,592.12	4,564.07	16.90	16.91	110.10	125.32	-133.31	227.33	-17.86	33.87	18.993			
4,700.00	4,690.07	4,691.84	4,662.33	17.28	17.29	110.07	125.32	-133.31	234.24	-18.56	34.60	19.612			
4,800.00	4,789.79	4,791.56	4,760.58	17.66	17.67	110.04	125.32	-133.31	241.15	-19.26	35.33	20.224			
4,900.00	4,889.51	4,891.28	4,858.84	18.04	18.05	110.01	125.32	-133.31	248.06	-19.96	36.06	20.817			
5,000.00	4,989.23	4,991.00	4,957.09	18.42	18.43	110.00	125.32	-133.31	254.97	-20.66	36.79				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 203 - Orig. - DEP Plan 5													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM+Int 800-MWD+AfterInt. 2800-SDI MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Tooface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,100.00	5,055.35	5,061.07	5,055.35	13.72	10.67	164.50	125.32	-133.31	469.95	447.99	21.97	21.392		
5,200.00	5,153.60	5,159.32	5,153.60	14.04	10.78	165.08	125.32	-133.31	487.92	465.69	22.23	21.949		
5,300.00	5,251.86	5,257.58	5,251.86	14.36	10.90	165.62	125.32	-133.31	505.94	483.44	22.50	22.488		
5,400.00	5,350.11	5,355.83	5,350.11	14.69	11.02	166.13	125.32	-133.31	523.99	501.22	22.77	23.008		
5,500.00	5,448.37	5,454.09	5,448.37	15.02	11.14	166.60	125.32	-133.31	542.08	519.03	23.06	23.512		
5,600.00	5,546.63	5,552.34	5,546.63	15.36	11.26	167.04	125.32	-133.31	560.21	536.86	23.34	23.998		
5,700.00	5,644.88	5,650.60	5,644.88	15.70	11.39	167.45	125.32	-133.31	578.36	554.72	23.64	24.466		
5,800.00	5,743.14	5,748.85	5,743.14	16.04	11.52	167.84	125.32	-133.31	596.54	572.60	23.94	24.919		
5,900.00	5,841.39	5,847.11	5,841.39	16.39	11.66	168.20	125.32	-133.31	614.75	590.50	24.25	25.355		
6,000.00	5,939.65	5,945.36	5,939.65	16.74	11.79	168.55	125.32	-133.31	632.98	608.42	24.56	25.775		
6,100.00	6,037.90	6,043.62	6,037.90	17.09	11.93	168.87	125.32	-133.31	651.23	626.35	24.88	26.179		
6,200.00	6,136.16	6,141.87	6,136.16	17.45	12.07	169.18	125.32	-133.31	669.50	644.30	25.20	26.569		
6,300.00	6,234.41	6,240.13	6,234.41	17.81	12.22	169.47	125.32	-133.31	687.78	662.26	25.53	26.945		
6,400.00	6,332.67	6,338.38	6,332.67	18.17	12.36	169.74	125.32	-133.31	706.09	680.23	25.86	27.307		
6,500.00	6,430.92	6,436.64	6,430.92	18.53	12.51	170.01	125.32	-133.31	724.41	698.21	26.19	27.655		
6,600.00	6,529.18	6,534.90	6,529.18	18.90	12.66	170.26	125.32	-133.31	742.74	716.20	26.54	27.990		
6,700.00	6,627.43	6,633.15	6,627.43	19.27	12.81	170.49	125.32	-133.31	761.08	734.20	26.88	28.312		
6,800.00	6,725.69	6,731.41	6,725.69	19.64	12.97	170.72	125.32	-133.31	779.44	752.21	27.23	28.623		
6,900.00	6,823.94	6,829.66	6,823.94	20.01	13.12	170.93	125.32	-133.31	797.81	770.22	27.58	28.922		
7,000.00	6,922.20	6,927.92	6,922.20	20.39	13.28	171.14	125.32	-133.31	816.19	788.25	27.94	29.210		
7,100.00	7,020.46	7,026.17	7,020.46	20.76	13.44	171.34	125.32	-133.31	834.58	806.27	28.30	29.487		
7,200.00	7,118.71	7,124.43	7,118.71	21.14	13.60	171.52	125.32	-133.31	852.97	824.31	28.67	29.753		
7,300.00	7,216.97	7,222.69	7,216.97	21.52	13.76	171.73	124.95	-133.18	871.38	842.36	29.02	30.022		
7,400.00	7,315.22	7,319.64	7,315.51	21.87	13.88	-160.94	117.01	-130.43	889.86	860.55	29.31	30.363		
7,500.00	7,412.47	7,416.07	7,407.98	22.16	13.99	-127.66	98.96	-124.19	908.19	878.65	29.53	30.751		
7,600.00	7,506.40	7,512.30	7,499.50	22.43	14.10	-112.11	71.04	-114.52	925.84	896.09	29.74	31.127		
7,700.00	7,594.71	7,608.31	7,595.89	22.68	14.22	-103.83	31.67	-100.90	942.40	912.42	29.98	31.433		
7,800.00	7,675.21	7,704.73	7,665.37	22.92	14.41	-98.72	-19.78	-83.12	957.48	927.15	30.34	31.562		
7,900.00	7,745.92	7,801.70	7,736.09	23.18	14.72	-95.30	-82.36	-61.50	970.73	939.84	30.89	31.427		
8,000.00	7,805.11	7,899.29	7,796.29	23.47	15.17	-92.95	-154.85	-36.48	981.81	950.11	31.70	30.972		
8,100.00	7,851.31	7,997.54	7,844.36	23.82	15.80	-91.37	-235.75	-8.56	990.46	957.63	32.83	30.168		
8,200.00	7,883.39	8,096.43	7,878.87	24.26	16.62	-90.41	-323.25	21.63	996.46	962.15	34.31	29.041		
8,300.00	7,900.56	8,195.90	7,898.71	24.79	17.60	-89.99	-415.30	53.38	999.68	963.55	36.13	27.671		
8,400.00	7,903.52	8,295.83	7,903.52	25.43	18.72	-90.00	-509.58	85.89	1,000.23	962.00	38.23	26.166		
8,500.00	7,903.52	8,395.83	7,903.52	26.21	19.97	-90.00	-604.12	118.49	1,000.23	959.68	40.55	24.664		
8,600.00	7,903.52	8,495.83	7,903.52	27.11	21.30	-90.00	-698.65	151.09	1,000.23	957.14	43.09	23.213		
8,700.00	7,903.52	8,595.83	7,903.52	28.12	22.72	-90.00	-793.19	183.69	1,000.23	954.43	45.80	21.839		
8,800.00	7,903.52	8,695.83	7,903.52	29.23	24.21	-90.00	-887.73	216.29	1,000.22	951.57	48.66	20.557		
8,900.00	7,903.52	8,795.83	7,903.52	30.43	25.75	-90.00	-982.27	248.89	1,000.22	948.58	51.64	19.370		
9,000.00	7,903.52	8,895.83	7,903.52	31.70	27.34	-90.00	-1,076.80	281.48	1,000.22	945.50	54.72	18.279		
9,100.00	7,903.52	8,995.83	7,903.52	33.03	28.97	-90.00	-1,171.34	314.09	1,000.22	942.33	57.89	17.278		
9,200.00	7,903.52	9,095.83	7,903.52	34.42	30.62	-90.00	-1,265.88	346.68	1,000.22	939.09	61.13	16.362		
9,300.00	7,903.52	9,195.83	7,903.52	35.86	32.31	-90.00	-1,360.42	379.28	1,000.22	935.78	64.44	15.523		
9,400.00	7,903.52	9,295.83	7,903.52	37.35	34.02	-90.00	-1,454.95	411.88	1,000.21	932.42	67.79	14.754		
9,500.00	7,903.52	9,395.83	7,903.52	38.87	35.74	-90.00	-1,549.49	444.48	1,000.21	929.02	71.19	14.049		
9,600.00	7,903.52	9,495.83	7,903.52	40.43	37.49	-90.00	-1,644.03	477.08	1,000.21	925.57	74.64	13.401		
9,700.00	7,903.52	9,595.83	7,903.52	42.01	39.25	-90.00	-1,738.56	509.68	1,000.21	922.10	78.11	12.805		
9,800.00	7,903.52	9,695.83	7,903.52	43.63	41.02	-90.00	-1,833.10	542.28	1,000.21	918.59	81.62	12.255		
9,900.00	7,903.52	9,795.83	7,903.52	45.26	42.81	-90.00	-1,927.64	574.87	1,000.21	915.06	85.15	11.747		
10,000.00	7,903.52	9,895.83	7,903.52	46.92	44.60	-90.00	-2,022.18	607.47	1,000.20	911.50	88.70	11.276		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 203 - Orig. - DEP Plan 5														Offset Site Error:	0.00 ft
Survey Program: D-MWD+HRGM+Int. 800-MWD+AfterInt. 2500-SDI MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
10,100.00	7,903.52	9,995.83	7,903.52	48.69	46.40	-90.00	-2,116.71	840.07	1,000.20	907.92	92.28	10.839			
10,200.00	7,903.52	10,095.83	7,903.52	50.28	48.22	-90.00	-2,211.25	672.67	1,000.20	904.33	95.87	10.433			
10,300.00	7,903.52	10,195.83	7,903.52	51.99	50.03	-90.00	-2,305.79	705.27	1,000.20	900.72	99.48	10.054			
10,400.00	7,903.52	10,295.83	7,903.52	53.71	51.86	-90.00	-2,400.33	737.87	1,000.20	897.09	103.10	9.701			
10,500.00	7,903.52	10,395.83	7,903.52	55.44	53.69	-90.00	-2,494.86	770.47	1,000.20	893.45	106.74	9.370			
10,600.00	7,903.52	10,495.83	7,903.52	57.18	55.52	-90.00	-2,589.40	803.07	1,000.19	889.80	110.39	9.061			
10,700.00	7,903.52	10,595.83	7,903.52	58.94	57.36	-90.00	-2,683.94	835.66	1,000.19	886.14	114.05	8.770			
10,800.00	7,903.52	10,695.83	7,903.52	60.70	59.20	-90.00	-2,778.48	868.26	1,000.19	882.47	117.72	8.497			
10,900.00	7,903.52	10,795.83	7,903.52	62.47	61.05	-90.00	-2,873.01	900.86	1,000.19	878.80	121.39	8.239			
11,000.00	7,903.52	10,895.83	7,903.52	64.25	62.80	-90.00	-2,967.55	933.46	1,000.19	875.11	125.08	7.997			
11,100.00	7,903.52	10,995.83	7,903.52	66.03	64.76	-90.00	-3,062.09	966.06	1,000.19	871.42	128.77	7.767			
11,200.00	7,903.52	11,095.83	7,903.52	67.83	66.61	-90.00	-3,156.63	998.66	1,000.18	867.72	132.47	7.550			
11,300.00	7,903.52	11,195.83	7,903.52	69.62	68.47	-90.00	-3,251.16	1,031.26	1,000.18	864.01	136.17	7.345			
11,400.00	7,903.52	11,295.83	7,903.52	71.43	70.33	-90.00	-3,345.70	1,063.86	1,000.18	860.30	139.88	7.150			
11,500.00	7,903.52	11,395.83	7,903.52	73.24	72.20	-90.00	-3,440.24	1,096.45	1,000.18	856.58	143.60	6.965			
11,600.00	7,903.52	11,495.83	7,903.52	75.05	74.06	-90.00	-3,534.78	1,129.05	1,000.18	852.86	147.32	6.789			
11,700.00	7,903.52	11,595.83	7,903.52	76.87	75.93	-90.00	-3,629.31	1,161.65	1,000.18	849.13	151.04	6.622			
11,800.00	7,903.52	11,695.83	7,903.52	78.69	77.80	-90.00	-3,723.85	1,194.25	1,000.17	845.40	154.77	6.462			
11,900.00	7,903.52	11,795.83	7,903.52	80.51	79.67	-90.00	-3,818.39	1,226.85	1,000.17	841.67	158.50	6.310			
12,000.00	7,903.52	11,895.83	7,903.52	82.34	81.55	-90.00	-3,912.93	1,259.45	1,000.17	837.93	162.24	6.165			
12,100.00	7,903.52	11,995.83	7,903.52	84.18	83.42	-90.00	-4,007.46	1,292.05	1,000.17	834.19	165.98	6.026			
12,200.00	7,903.52	12,095.83	7,903.52	86.01	85.30	-90.00	-4,102.00	1,324.65	1,000.17	830.45	169.72	5.893			
12,300.00	7,903.52	12,195.83	7,903.52	87.85	87.17	-90.00	-4,196.54	1,357.24	1,000.17	826.70	173.46	5.766			
12,400.00	7,903.52	12,295.83	7,903.52	89.69	89.05	-90.00	-4,291.07	1,389.84	1,000.16	822.95	177.21	5.644			
12,500.00	7,903.52	12,395.83	7,903.52	91.54	90.93	-90.00	-4,385.61	1,422.44	1,000.16	819.20	180.96	5.527			
12,600.00	7,903.52	12,495.83	7,903.52	93.38	92.81	-90.00	-4,480.15	1,455.04	1,000.16	815.44	184.72	5.415			
12,700.00	7,903.52	12,595.83	7,903.52	95.23	94.69	-90.00	-4,574.69	1,487.64	1,000.16	811.69	188.47	5.307			
12,800.00	7,903.52	12,695.83	7,903.52	97.08	96.57	-90.00	-4,669.22	1,520.24	1,000.16	807.93	192.23	5.203			
12,900.00	7,903.52	12,795.83	7,903.52	98.93	98.46	-90.00	-4,763.76	1,552.84	1,000.16	804.17	195.99	5.103			
13,000.00	7,903.52	12,895.83	7,903.52	100.79	100.34	-90.00	-4,858.30	1,585.44	1,000.15	800.41	199.75	5.007			
13,100.00	7,903.52	12,995.83	7,903.52	102.65	102.22	-90.00	-4,952.84	1,618.04	1,000.15	796.64	203.51	4.914			
13,200.00	7,903.52	13,095.83	7,903.52	104.50	104.11	-90.00	-5,047.37	1,650.63	1,000.15	792.87	207.28	4.825			
13,300.00	7,903.52	13,195.83	7,903.52	106.36	106.00	-90.00	-5,141.91	1,683.23	1,000.15	789.11	211.04	4.739			
13,400.00	7,903.52	13,295.83	7,903.52	108.23	107.88	-90.00	-5,236.45	1,715.83	1,000.15	785.34	214.81	4.656			
13,500.00	7,903.52	13,395.83	7,903.52	110.09	109.77	-90.00	-5,330.99	1,748.43	1,000.15	781.57	218.58	4.576			
13,600.00	7,903.52	13,495.83	7,903.52	111.95	111.66	-90.00	-5,425.52	1,781.03	1,000.14	777.79	222.35	4.498			
13,700.00	7,903.52	13,595.83	7,903.52	113.82	113.55	-90.00	-5,520.06	1,813.63	1,000.14	774.02	226.12	4.423			
13,800.00	7,903.52	13,695.83	7,903.52	115.69	115.44	-90.00	-5,614.60	1,846.23	1,000.14	770.25	229.89	4.350			
13,900.00	7,903.52	13,795.83	7,903.52	117.55	117.32	-90.00	-5,709.14	1,878.83	1,000.14	766.47	233.67	4.280			
14,000.00	7,903.52	13,895.83	7,903.52	119.42	119.21	-90.00	-5,803.67	1,911.42	1,000.14	762.69	237.44	4.212			
14,100.00	7,903.52	13,995.83	7,903.52	121.29	121.10	-90.00	-5,898.21	1,944.02	1,000.14	758.92	241.22	4.146			
14,200.00	7,903.52	14,095.83	7,903.52	123.17	123.00	-90.00	-5,992.75	1,976.62	1,000.13	755.14	245.00	4.082			
14,300.00	7,903.52	14,195.83	7,903.52	125.04	124.89	-90.00	-6,087.29	2,009.22	1,000.13	751.36	248.77	4.020			
14,400.00	7,903.52	14,295.83	7,903.52	126.91	126.78	-90.00	-6,181.82	2,041.82	1,000.13	747.58	252.55	3.960			
14,500.00	7,903.52	14,395.83	7,903.52	128.79	128.67	-90.00	-6,276.36	2,074.42	1,000.13	743.80	256.33	3.902			
14,600.00	7,903.52	14,495.83	7,903.52	130.66	130.56	-90.00	-6,370.90	2,107.02	1,000.13	740.01	260.11	3.845			
14,700.00	7,903.52	14,595.83	7,903.52	132.54	132.46	-90.00	-6,465.43	2,139.62	1,000.13	736.23	263.89	3.790			
14,800.00	7,903.52	14,695.83	7,903.52	134.41	134.35	-90.00	-6,559.97	2,172.21	1,000.12	732.45	267.68	3.736			
14,900.00	7,903.52	14,795.83	7,903.52	136.29	136.24	-90.00	-6,654.51	2,204.81	1,000.12	728.66	271.46	3.684			
15,000.00	7,903.52	14,895.83	7,903.52	138.17	138.14	-90.00	-6,749.05	2,237.41	1,000.12	724.88	275.24	3.634			
15,100.00	7,903.52	14,995.83	7,903.52	140.05	140.03	-90.00	-6,843.58	2,270.01	1,000.12	721.09	279.03	3.584			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 203 - Orig. - DEP Plan 5														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM+Int, 800-MWD+AfterInt, 2600-SDI MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
15,200.00	7,903.52	15,095.83	7,903.52	141.93	141.92	-90.00	-6,938.12	2,302.61	1,000.12	717.30	282.81	3.536			
15,300.00	7,903.52	15,195.83	7,903.52	143.81	143.82	-90.00	-7,032.66	2,335.21	1,000.12	713.52	286.60	3.490			
15,400.00	7,903.52	15,295.83	7,903.52	145.69	145.71	-90.00	-7,127.20	2,367.81	1,000.11	709.73	290.38	3.444			
15,500.00	7,903.52	15,395.83	7,903.52	147.57	147.61	-90.00	-7,221.73	2,400.41	1,000.11	705.94	294.17	3.400			
15,600.00	7,903.52	15,495.83	7,903.52	149.45	149.50	-90.00	-7,316.27	2,433.00	1,000.11	702.15	297.96	3.357			
15,700.00	7,903.52	15,595.83	7,903.52	151.34	151.40	-90.00	-7,410.81	2,465.60	1,000.11	698.36	301.75	3.314			
15,800.00	7,903.52	15,695.83	7,903.52	153.22	153.30	-90.00	-7,505.35	2,498.20	1,000.11	694.57	305.53	3.273			
15,900.00	7,903.52	15,795.83	7,903.52	155.10	155.19	-90.00	-7,599.88	2,530.80	1,000.11	690.78	309.32	3.233			
16,000.00	7,903.52	15,895.83	7,903.52	156.99	157.09	-90.00	-7,694.42	2,563.40	1,000.10	686.99	313.11	3.194			
16,100.00	7,903.52	15,995.83	7,903.52	158.87	158.98	-90.00	-7,788.96	2,596.00	1,000.10	683.20	316.90	3.156			
16,200.00	7,903.52	16,095.83	7,903.52	160.76	160.88	-90.00	-7,883.50	2,628.60	1,000.10	679.41	320.69	3.119			
16,300.00	7,903.52	16,195.83	7,903.52	162.64	162.78	-90.00	-7,978.03	2,661.20	1,000.10	675.62	324.48	3.082			
16,400.00	7,903.52	16,295.83	7,903.52	164.53	164.68	-90.00	-8,072.57	2,693.79	1,000.10	671.82	328.27	3.047			
16,500.00	7,903.52	16,395.83	7,903.52	166.42	166.57	-90.00	-8,167.11	2,726.39	1,000.10	668.03	332.07	3.012			
16,600.00	7,903.52	16,495.83	7,903.52	168.30	168.47	-90.00	-8,261.65	2,758.99	1,000.09	664.24	335.88	2.978			
16,700.00	7,903.52	16,595.83	7,903.52	170.19	170.37	-90.00	-8,356.18	2,791.59	1,000.09	660.44	339.65	2.944			
16,800.00	7,903.52	16,695.83	7,903.52	172.08	172.27	-90.00	-8,450.72	2,824.19	1,000.09	656.65	343.44	2.912			
16,900.00	7,903.52	16,795.83	7,903.52	173.97	174.16	-90.00	-8,545.26	2,856.79	1,000.09	652.85	347.23	2.880			
17,000.00	7,903.52	16,895.83	7,903.52	175.86	176.06	-90.00	-8,639.79	2,889.39	1,000.09	649.06	351.03	2.849			
17,100.00	7,903.52	16,995.83	7,903.52	177.74	177.96	-90.00	-8,734.33	2,921.99	1,000.09	645.26	354.82	2.819			
17,200.00	7,903.52	17,095.83	7,903.52	179.63	179.86	-90.00	-8,828.87	2,954.59	1,000.08	641.47	358.61	2.789			
17,300.00	7,903.52	17,195.83	7,903.52	181.52	181.76	-90.00	-8,923.41	2,987.18	1,000.08	637.67	362.41	2.760			
17,400.00	7,903.52	17,295.83	7,903.52	183.41	183.65	-90.00	-9,017.94	3,019.78	1,000.08	633.88	366.20	2.731			
17,500.00	7,903.52	17,395.83	7,903.52	185.30	185.55	-90.00	-9,112.48	3,052.38	1,000.08	630.08	370.00	2.703			
17,600.00	7,903.52	17,495.83	7,903.52	187.19	187.45	-90.00	-9,207.02	3,084.98	1,000.08	626.29	373.79	2.675			
17,700.00	7,903.52	17,595.83	7,903.52	189.08	189.35	-90.00	-9,301.56	3,117.58	1,000.08	622.49	377.59	2.649			
17,800.00	7,903.52	17,695.83	7,903.52	190.98	191.25	-90.00	-9,396.09	3,150.18	1,000.07	618.69	381.38	2.622			
17,900.00	7,903.52	17,795.83	7,903.52	192.87	193.15	-90.00	-9,490.63	3,182.78	1,000.07	614.89	385.18	2.596			
18,000.00	7,903.52	17,895.83	7,903.52	194.76	195.05	-90.00	-9,585.17	3,215.38	1,000.07	611.10	388.97	2.571			
18,100.00	7,903.52	17,995.83	7,903.52	196.65	196.95	-90.00	-9,679.71	3,247.97	1,000.07	607.30	392.77	2.546			
18,200.00	7,903.52	18,095.83	7,903.52	198.54	198.85	-90.00	-9,774.24	3,280.57	1,000.07	603.50	396.57	2.522			
18,300.00	7,903.52	18,195.83	7,903.52	200.43	200.75	-90.00	-9,868.78	3,313.17	1,000.07	599.70	400.36	2.498			
18,400.00	7,903.52	18,295.83	7,903.52	202.33	202.65	-90.00	-9,963.32	3,345.77	1,000.06	595.90	404.16	2.474			
18,500.00	7,903.52	18,395.83	7,903.52	204.22	204.55	-90.00	-10,057.86	3,378.37	1,000.06	592.11	407.96	2.451			
18,600.00	7,903.52	18,495.83	7,903.52	206.11	206.45	-90.00	-10,152.39	3,410.97	1,000.06	588.31	411.75	2.429			
18,700.00	7,903.52	18,595.83	7,903.52	208.01	208.35	-90.00	-10,246.93	3,443.57	1,000.06	584.51	415.55	2.407			
18,800.00	7,903.52	18,695.83	7,903.52	209.90	210.25	-90.00	-10,341.47	3,476.17	1,000.06	580.71	419.35	2.385			
18,900.00	7,903.52	18,795.83	7,903.52	211.79	212.15	-90.00	-10,436.01	3,508.76	1,000.06	576.91	423.15	2.363			
19,000.00	7,903.52	18,895.83	7,903.52	213.69	214.05	-90.00	-10,530.54	3,541.36	1,000.05	573.11	426.94	2.342			
19,100.00	7,903.52	18,995.83	7,903.52	215.58	215.95	-90.00	-10,625.08	3,573.96	1,000.05	569.31	430.74	2.322			
19,200.00	7,903.52	19,095.83	7,903.52	217.47	217.85	-90.00	-10,719.62	3,606.56	1,000.05	565.51	434.54	2.301			
19,300.00	7,903.52	19,195.83	7,903.52	219.37	219.75	-90.00	-10,814.16	3,639.16	1,000.05	561.71	438.34	2.281			
19,400.00	7,903.52	19,295.83	7,903.52	221.26	221.65	-90.00	-10,908.69	3,671.76	1,000.05	557.91	442.14	2.262			
19,500.00	7,903.52	19,395.83	7,903.52	223.16	223.55	-90.00	-11,003.23	3,704.36	1,000.05	554.11	445.93	2.243			
19,600.00	7,903.52	19,495.83	7,903.52	225.05	225.45	-90.00	-11,097.77	3,736.96	1,000.04	550.31	449.73	2.224			
19,700.00	7,903.52	19,595.83	7,903.52	226.95	227.35	-90.00	-11,192.30	3,769.55	1,000.04	546.51	453.53	2.205			
19,800.00	7,903.52	19,695.83	7,903.52	228.84	229.25	-90.00	-11,286.84	3,802.15	1,000.04	542.71	457.33	2.187			
19,900.00	7,903.52	19,795.83	7,903.52	230.74	231.15	-90.00	-11,381.38	3,834.75	1,000.04	538.91	461.13	2.169			
20,000.00	7,903.52	19,895.83	7,903.52	232.63	233.05	-90.00	-11,475.92	3,867.35	1,000.04	535.11	464.93	2.151			
20,100.00	7,903.52	19,995.83	7,903.52	234.53	234.95	-90.00	-11,570.45	3,899.95	1,000.04	531.31	468.73	2.134			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 203 - Orig. - DEP Plan 5														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM+Int. 800-MWD+AfterInt. 2600-SDI MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
20,200.00	7,903.52	20,095.83	7,903.52	236.42	236.85	-90.00	-11,664.99	3,932.55	1,000.03	527.51	472.53	2.116			
20,300.00	7,903.52	20,195.83	7,903.52	236.32	238.75	-90.00	-11,759.53	3,965.15	1,000.03	523.71	476.33	2.099			
20,400.00	7,903.52	20,295.83	7,903.52	240.22	240.66	-90.00	-11,854.07	3,997.75	1,000.03	519.90	480.13	2.083			
20,500.00	7,903.52	20,395.83	7,903.52	242.11	242.56	-90.00	-11,948.60	4,030.35	1,000.03	516.10	483.93	2.066			
20,600.00	7,903.52	20,495.83	7,903.52	244.01	244.46	-90.00	-12,043.14	4,062.94	1,000.03	512.30	487.73	2.050			
20,700.00	7,903.52	20,595.83	7,903.52	245.91	246.36	-90.00	-12,137.68	4,095.54	1,000.03	508.50	491.52	2.035			
20,800.00	7,903.52	20,695.83	7,903.52	247.80	248.26	-90.00	-12,232.22	4,128.14	1,000.02	504.70	495.33	2.019			
20,900.00	7,903.52	20,795.83	7,903.52	249.70	250.16	-90.00	-12,326.75	4,160.74	1,000.02	500.90	499.13	2.004			
21,000.00	7,903.52	20,895.83	7,903.52	251.60	252.06	-90.00	-12,421.29	4,193.34	1,000.02	497.09	502.93	1.988			
21,100.00	7,903.52	20,995.83	7,903.52	253.49	253.96	-90.00	-12,515.83	4,225.94	1,000.02	493.29	506.73	1.973			
21,200.00	7,903.52	21,095.83	7,903.52	255.39	255.87	-90.00	-12,610.37	4,258.54	1,000.02	489.49	510.53	1.959			
21,300.00	7,903.52	21,195.83	7,903.52	257.29	257.77	-90.00	-12,704.90	4,291.14	1,000.02	485.69	514.33	1.944			
21,400.00	7,903.52	21,295.83	7,903.52	259.18	259.67	-90.00	-12,799.44	4,323.73	1,000.01	481.89	518.13	1.930			
21,500.00	7,903.52	21,395.83	7,903.52	261.08	261.57	-90.00	-12,893.98	4,356.33	1,000.01	478.08	521.93	1.916			
21,600.00	7,903.52	21,495.83	7,903.52	262.98	263.47	-90.00	-12,988.52	4,388.93	1,000.01	474.28	525.73	1.902			
21,700.00	7,903.52	21,595.83	7,903.52	264.88	265.37	-90.00	-13,083.05	4,421.53	1,000.01	470.48	529.53	1.888			
21,800.00	7,903.52	21,695.83	7,903.52	266.77	267.28	-90.00	-13,177.59	4,454.13	1,000.01	466.68	533.33	1.875			
21,900.00	7,903.52	21,795.83	7,903.52	268.67	269.18	-90.00	-13,272.13	4,486.73	1,000.01	462.87	537.13	1.862			
22,000.00	7,903.52	21,895.83	7,903.52	270.57	271.08	-90.00	-13,366.66	4,519.33	1,000.00	459.07	540.93	1.849			
22,100.00	7,903.52	21,995.83	7,903.52	272.47	272.98	-90.00	-13,461.20	4,551.93	1,000.00	455.27	544.73	1.836			
22,200.00	7,903.52	22,095.83	7,903.52	274.37	274.88	-90.00	-13,555.74	4,584.52	1,000.00	451.47	548.53	1.823			
22,300.00	7,903.52	22,195.83	7,903.52	276.26	276.79	-90.00	-13,650.28	4,617.12	1,000.00	447.66	552.34	1.810			
22,400.00	7,903.52	22,295.83	7,903.52	278.16	278.69	-90.00	-13,744.81	4,649.72	1,000.00	443.86	556.14	1.798			
22,500.00	7,903.52	22,395.83	7,903.52	280.06	280.59	-90.00	-13,839.35	4,682.32	1,000.00	440.06	559.94	1.786			
22,600.00	7,903.52	22,495.83	7,903.52	281.96	282.49	-90.00	-13,933.89	4,714.92	999.99	436.26	563.74	1.774			
22,700.00	7,903.52	22,595.83	7,903.52	283.86	284.39	-90.00	-14,028.43	4,747.52	999.99	432.45	567.54	1.762			
22,800.00	7,903.52	22,695.83	7,903.52	285.76	286.30	-90.00	-14,122.96	4,780.12	999.99	428.65	571.34	1.750 SF			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

### Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 204 - Orig. - DEP Plan 5														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM+Int, 800-MWD+AfterInt, 2600-SDI MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.00	0.00	30.00						
100.00	100.00	100.00	100.00	0.26	0.26	0.00	30.00	0.00	30.00	29.48	0.52	57.321			
200.00	200.00	200.00	200.00	0.62	0.62	0.00	30.00	0.00	30.00	28.76	1.24	24.188			
300.00	300.00	300.00	300.00	0.98	0.98	0.00	30.00	0.00	30.00	28.04	1.96	15.328			
400.00	400.00	400.00	400.00	1.34	1.34	0.00	30.00	0.00	30.00	27.33	2.67	11.218			
500.00	500.00	500.00	500.00	1.70	1.70	0.00	30.00	0.00	30.00	26.61	3.39	8.847			
600.00	600.00	600.00	600.00	2.05	2.05	0.00	30.00	0.00	30.00	25.89	4.11	7.303			
700.00	700.00	700.00	700.00	2.41	2.41	0.00	30.00	0.00	30.00	25.18	4.83	6.218			
800.00	800.00	800.00	800.00	2.77	2.77	0.00	30.00	0.00	30.00	24.46	5.54	5.413 CC			
899.00	899.98	899.65	899.63	3.12	3.12	96.42	30.39	1.69	30.59	24.34	6.24	4.899 ES			
1,000.00	999.84	998.58	998.42	3.47	3.47	113.24	31.55	6.70	34.42	27.48	6.93	4.965			
1,100.00	1,099.59	1,097.61	1,097.21	3.82	3.82	129.36	33.10	13.43	43.03	35.40	7.63	5.643			
1,200.00	1,199.35	1,196.65	1,196.01	4.17	4.17	139.63	34.66	20.17	53.88	45.54	8.32	6.474			
1,300.00	1,299.11	1,295.69	1,294.80	4.53	4.53	146.34	36.21	26.90	65.83	56.81	9.02	7.301			
1,400.00	1,398.86	1,394.73	1,393.60	4.89	4.89	150.95	37.76	33.63	78.40	68.69	9.72	8.070			
1,500.00	1,498.62	1,493.76	1,492.40	5.25	5.25	154.27	39.32	40.36	91.35	80.93	10.42	8.770			
1,600.00	1,598.38	1,592.80	1,591.20	5.62	5.61	156.76	40.87	47.09	104.52	93.40	11.12	9.400			
1,700.00	1,698.13	1,691.84	1,690.00	5.98	5.97	158.70	42.43	53.82	117.84	106.01	11.82	9.966			
1,800.00	1,797.89	1,790.88	1,788.79	6.35	6.33	160.24	43.98	60.55	131.26	118.73	12.53	10.476			
1,900.00	1,897.65	1,889.92	1,887.59	6.71	6.70	161.49	45.53	67.29	144.76	131.52	13.24	10.936			
2,000.00	1,997.40	1,988.96	1,986.39	7.08	7.06	162.53	47.09	74.02	158.32	144.37	13.95	11.353			
2,100.00	2,097.16	2,088.00	2,085.19	7.45	7.42	163.41	48.64	80.75	171.92	157.27	14.65	11.732			
2,200.00	2,196.91	2,187.04	2,183.99	7.81	7.79	164.15	50.20	87.48	185.55	170.19	15.36	12.077			
2,300.00	2,296.67	2,286.08	2,282.78	8.18	8.15	164.80	51.75	94.21	199.22	183.14	16.07	12.394			
2,400.00	2,396.43	2,385.12	2,381.58	8.55	8.52	165.36	53.30	100.94	212.90	196.11	16.79	12.684			
2,500.00	2,496.18	2,484.16	2,480.36	8.92	8.88	165.85	54.86	107.68	226.60	209.10	17.50	12.951			
2,600.00	2,595.94	2,583.20	2,579.18	9.10	9.10	166.29	56.41	114.41	240.31	222.44	17.87	13.446			
2,700.00	2,695.57	2,675.60	2,671.29	9.12	9.14	172.13	58.06	121.56	256.60	238.71	17.89	14.342			
2,800.00	2,794.85	2,764.65	2,759.79	9.14	9.16	175.32	60.27	131.11	279.31	261.46	17.85	15.645			
2,900.00	2,893.67	2,851.43	2,845.71	9.17	9.18	177.27	63.01	142.99	308.36	290.54	17.81	17.311			
3,000.00	2,991.99	2,936.44	2,929.47	9.23	9.22	177.97	66.26	157.08	343.04	325.26	17.78	19.294			
3,100.00	3,090.24	3,029.66	3,021.14	9.30	9.28	178.06	70.09	173.63	379.22	361.38	17.84	21.253			
3,200.00	3,188.50	3,122.88	3,112.80	9.40	9.35	178.13	73.91	190.18	415.40	397.48	17.92	23.183			
3,300.00	3,286.75	3,216.11	3,204.46	9.51	9.44	178.19	77.73	206.74	451.58	433.58	18.01	25.078			
3,400.00	3,385.01	3,309.33	3,296.12	9.64	9.54	178.24	81.55	223.29	487.77	469.66	18.11	26.936			
3,500.00	3,483.26	3,402.56	3,387.79	9.78	9.66	178.28	85.37	239.84	523.95	505.73	18.22	28.755			
3,600.00	3,581.52	3,495.78	3,479.45	9.94	9.79	178.32	89.19	256.39	560.14	541.79	18.35	30.530			
3,700.00	3,679.77	3,589.00	3,571.11	10.11	9.93	178.35	93.02	272.95	596.32	577.84	18.48	32.260			
3,800.00	3,778.03	3,692.23	3,662.77	10.30	10.09	178.38	96.84	289.50	632.50	613.87	18.63	33.943			
3,900.00	3,876.28	3,775.45	3,754.43	10.51	10.26	178.41	100.66	306.05	668.69	649.89	18.80	35.577			
4,000.00	3,974.54	3,868.67	3,846.10	10.72	10.44	178.43	104.48	322.61	704.87	685.91	18.97	37.162			
4,100.00	4,072.80	3,961.90	3,937.76	10.95	10.63	178.46	108.30	339.16	741.06	721.91	19.15	38.696			
4,200.00	4,171.05	4,055.05	4,029.36	11.19	10.82	178.46	112.27	355.67	777.24	757.90	19.34	40.182			
4,300.00	4,269.31	4,148.00	4,120.70	11.43	11.02	178.29	116.51	371.66	813.45	793.91	19.54	41.624			
4,400.00	4,367.56	4,240.88	4,211.64	11.69	11.21	177.92	121.66	386.97	849.71	829.96	19.75	43.021			
4,500.00	4,465.82	4,333.56	4,302.66	11.96	11.43	177.46	128.57	401.93	886.04	866.06	19.98	44.347			
4,600.00	4,564.07	4,426.50	4,393.73	12.24	11.66	177.03	149.49	416.89	922.42	902.20	20.22	45.618			
4,700.00	4,662.33	4,519.43	4,484.80	12.52	11.91	176.63	160.42	431.86	958.84	938.37	20.47	46.838			
4,800.00	4,760.58	4,612.36	4,575.66	12.81	12.16	176.26	171.34	446.82	995.30	974.57	20.73	48.007			
4,900.00	4,858.84	4,705.29	4,666.93	13.11	12.42	175.92	182.27	461.79	1,031.79	1,010.79	21.00	49.126			
5,000.00	4,957.09	4,798.23	4,758.00	13.41	12.69	175.60	193.19	476.75	1,068.31	1,047.03	21.28	50.196			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 204 - Orig. - DEP Plan 5													Offset Site Error:	0.00 ft
Survey Program: D-MWD+HRGM+Int. 800-MWD+AfterInt. 2600-SDI MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor	
5,100.00	5,055.35	4,891.16	4,849.07	13.72	12.97	175.30	204.11	491.72	1,104.86	1,083.29	21.57	51.217		
5,200.00	5,153.80	4,984.09	4,940.13	14.04	13.25	175.02	215.04	506.68	1,141.44	1,119.57	21.87	52.193		
5,300.00	5,251.88	5,077.02	5,031.20	14.36	13.54	174.76	225.96	521.64	1,178.03	1,155.85	22.18	53.123		
5,400.00	5,350.11	5,169.96	5,122.27	14.69	13.84	174.51	236.89	536.61	1,214.64	1,192.16	22.49	54.011		
5,500.00	5,448.37	5,262.89	5,213.33	15.02	14.14	174.28	247.81	551.57	1,251.28	1,228.47	22.81	54.857		
5,600.00	5,546.63	5,355.82	5,304.40	15.36	14.44	174.06	258.74	566.54	1,287.93	1,264.79	23.14	55.662		
5,700.00	5,644.88	5,448.75	5,395.47	15.70	14.75	173.86	269.66	581.50	1,324.59	1,301.12	23.47	56.429		
5,800.00	5,743.14	5,541.69	5,486.53	16.04	15.07	173.66	280.58	596.47	1,361.27	1,337.46	23.82	57.159		
5,900.00	5,841.39	5,634.62	5,577.60	16.39	15.39	173.48	291.51	611.43	1,397.96	1,373.80	24.16	57.854		
6,000.00	5,939.65	5,727.55	5,668.67	16.74	15.71	173.30	302.43	626.40	1,434.67	1,410.15	24.52	58.514		
6,100.00	6,037.90	5,820.48	5,759.73	17.09	16.04	173.13	313.36	641.36	1,471.38	1,446.50	24.88	59.142		
6,200.00	6,136.16	5,913.42	5,850.80	17.45	16.37	172.97	324.28	656.32	1,508.11	1,482.86	25.24	59.740		
6,300.00	6,234.41	6,006.35	5,941.87	17.81	16.71	172.82	335.20	671.29	1,544.84	1,519.23	25.62	60.307		
6,400.00	6,332.67	6,099.28	6,032.94	18.17	17.04	172.68	346.13	686.25	1,581.59	1,555.59	25.99	60.847		
6,500.00	6,430.92	6,192.21	6,124.00	18.53	17.38	172.54	357.05	701.22	1,618.34	1,591.96	26.38	61.359		
6,600.00	6,529.18	6,285.15	6,215.07	18.90	17.73	172.41	367.98	716.18	1,655.10	1,628.34	26.76	61.845		
6,700.00	6,627.43	6,378.08	6,306.14	19.27	18.07	172.28	378.90	731.15	1,691.67	1,664.71	27.15	62.308		
6,800.00	6,725.69	6,471.01	6,397.20	19.64	18.42	172.16	389.83	746.11	1,728.64	1,701.09	27.55	62.748		
6,900.00	6,823.94	6,563.94	6,488.27	20.01	18.77	172.05	400.75	761.07	1,765.42	1,737.47	27.95	63.165		
7,000.00	6,922.20	6,656.88	6,579.34	20.39	19.13	171.94	411.67	776.04	1,802.21	1,773.85	28.35	63.562		
7,100.00	7,020.46	6,749.81	6,670.40	20.76	19.48	171.83	422.60	791.00	1,839.00	1,810.24	28.76	63.939		
7,200.00	7,118.71	6,842.74	6,761.47	21.14	19.84	171.73	433.52	805.97	1,875.80	1,846.62	29.17	64.298		
7,300.00	7,216.97	6,935.67	6,852.54	21.52	20.20	171.63	444.45	820.93	1,912.60	1,883.01	29.59	64.638		
7,400.00	7,315.22	7,028.46	6,943.46	21.87	20.56	-160.74	455.35	835.87	1,949.40	1,919.41	29.99	65.005		
7,500.00	7,412.47	7,119.48	7,032.65	22.16	20.92	-126.55	466.05	850.53	1,985.88	1,955.55	30.32	65.488		
7,600.00	7,506.40	7,206.47	7,117.90	22.43	21.26	-110.20	476.28	864.54	2,021.59	1,990.99	30.60	66.058		
7,700.00	7,594.71	7,287.29	7,197.09	22.68	21.57	-101.26	485.78	877.55	2,056.37	2,025.53	30.84	66.677		
7,800.00	7,675.21	7,368.75	7,276.96	22.92	21.88	-95.71	494.41	891.00	2,090.18	2,059.10	31.09	67.237		
7,900.00	7,745.92	7,471.34	7,377.25	23.18	22.20	-92.26	493.23	912.04	2,122.32	2,090.90	31.43	67.535		
8,000.00	7,805.11	7,594.70	7,494.23	23.47	22.55	-90.19	471.22	943.69	2,151.82	2,119.94	31.89	67.482		
8,100.00	7,851.31	7,751.15	7,630.45	23.82	22.93	-89.34	412.36	992.00	2,177.48	2,144.90	32.58	68.838		
8,200.00	7,883.39	7,957.67	7,776.71	24.26	23.45	-89.49	287.69	1,065.08	2,197.41	2,163.60	33.81	65.001		
8,300.00	7,900.56	8,223.26	7,886.89	24.79	24.47	-89.98	69.12	1,163.12	2,208.84	2,172.54	36.30	60.843		
8,400.00	7,903.52	8,420.45	7,903.52	25.43	25.66	-90.00	-115.00	1,230.03	2,210.50	2,171.38	39.12	56.504		
8,500.00	7,903.52	8,520.45	7,903.52	26.21	26.45	-90.00	-209.54	1,282.63	2,210.50	2,169.18	41.32	53.503		
8,600.00	7,903.52	8,620.45	7,903.52	27.11	27.36	-90.00	-304.08	1,295.23	2,210.50	2,166.77	43.73	50.548		
8,700.00	7,903.52	8,720.45	7,903.52	28.12	28.38	-90.00	-398.61	1,327.83	2,210.50	2,164.17	46.33	47.710		
8,800.00	7,903.52	8,820.45	7,903.52	29.23	29.50	-90.00	-493.15	1,360.44	2,210.50	2,161.41	49.09	45.028		
8,900.00	7,903.52	8,920.45	7,903.52	30.43	30.69	-90.00	-587.69	1,393.04	2,210.50	2,158.51	51.98	42.522		
9,000.00	7,903.52	9,020.45	7,903.52	31.70	31.96	-90.00	-682.22	1,425.64	2,210.50	2,155.51	54.99	40.199		
9,100.00	7,903.52	9,120.45	7,903.52	33.03	33.30	-90.00	-776.76	1,458.24	2,210.50	2,152.41	58.09	38.054		
9,200.00	7,903.52	9,220.45	7,903.52	34.42	34.69	-90.00	-871.30	1,490.84	2,210.50	2,149.23	61.27	36.079		
9,300.00	7,903.52	9,320.45	7,903.52	35.86	36.13	-90.00	-965.84	1,523.44	2,210.50	2,145.99	64.52	34.263		
9,400.00	7,903.52	9,420.45	7,903.52	37.35	37.61	-90.00	-1,060.37	1,556.04	2,210.50	2,142.68	67.82	32.593		
9,500.00	7,903.52	9,520.45	7,903.52	38.87	39.13	-90.00	-1,154.91	1,588.64	2,210.50	2,139.32	71.18	31.056		
9,600.00	7,903.52	9,620.45	7,903.52	40.43	40.69	-90.00	-1,249.45	1,621.24	2,210.50	2,135.92	74.58	29.640		
9,700.00	7,903.52	9,720.45	7,903.52	42.01	42.27	-90.00	-1,343.98	1,653.84	2,210.50	2,132.49	78.02	28.334		
9,800.00	7,903.52	9,820.45	7,903.52	43.63	43.88	-90.00	-1,438.52	1,686.44	2,210.50	2,129.01	81.49	27.127		
9,900.00	7,903.52	9,920.45	7,903.52	45.26	45.51	-90.00	-1,533.06	1,719.04	2,210.50	2,125.52	84.99	26.010		
10,000.00	7,903.52	10,020.45	7,903.52	46.92	47.17	-90.00	-1,627.59	1,751.64	2,210.50	2,121.99	88.51	24.974		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

### Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 204 - Orig. - DEP Plan 5														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM+Int. 800-MWD+AfterInt. 2600-SDI MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
10,100.00	7,903.52	10,120.45	7,903.52	48.59	48.84	-90.00	-1,722.13	1,764.24	2,210.50	2,118.44	92.06	24.011			
10,200.00	7,903.52	10,220.45	7,903.52	50.28	50.52	-90.00	-1,816.67	1,816.84	2,210.50	2,114.87	95.63	23.115			
10,300.00	7,903.52	10,320.45	7,903.52	51.99	52.23	-90.00	-1,911.20	1,849.45	2,210.50	2,111.29	99.22	22.280			
10,400.00	7,903.52	10,420.45	7,903.52	53.71	53.94	-90.00	-2,005.74	1,882.05	2,210.50	2,107.69	102.82	21.499			
10,500.00	7,903.52	10,520.45	7,903.52	55.44	55.67	-90.00	-2,100.28	1,914.65	2,210.50	2,104.07	106.44	20.768			
10,600.00	7,903.52	10,620.45	7,903.52	57.18	57.41	-90.00	-2,194.81	1,947.25	2,210.50	2,100.44	110.07	20.083			
10,700.00	7,903.52	10,720.45	7,903.52	58.94	59.16	-90.00	-2,289.35	1,979.85	2,210.51	2,096.80	113.71	19.440			
10,800.00	7,903.52	10,820.45	7,903.52	60.70	60.92	-90.00	-2,383.89	2,012.45	2,210.51	2,093.15	117.36	18.835			
10,900.00	7,903.52	10,920.45	7,903.52	62.47	62.69	-90.00	-2,478.42	2,045.05	2,210.51	2,089.48	121.02	18.265			
11,000.00	7,903.52	11,020.45	7,903.52	64.25	64.47	-90.00	-2,572.96	2,077.65	2,210.51	2,085.81	124.69	17.728			
11,100.00	7,903.52	11,120.45	7,903.52	66.03	66.25	-90.00	-2,667.50	2,110.25	2,210.51	2,082.13	128.37	17.219			
11,200.00	7,903.52	11,220.45	7,903.52	67.83	68.04	-90.00	-2,762.03	2,142.85	2,210.51	2,078.45	132.06	16.739			
11,300.00	7,903.52	11,320.45	7,903.52	69.62	69.84	-90.00	-2,856.57	2,175.45	2,210.51	2,074.76	135.75	16.283			
11,400.00	7,903.52	11,420.45	7,903.52	71.43	71.64	-90.00	-2,951.11	2,208.05	2,210.51	2,071.06	139.45	15.851			
11,500.00	7,903.52	11,520.45	7,903.52	73.24	73.44	-90.00	-3,045.64	2,240.65	2,210.51	2,067.35	143.16	15.441			
11,600.00	7,903.52	11,620.45	7,903.52	75.05	75.26	-90.00	-3,140.18	2,273.25	2,210.51	2,063.64	146.87	15.051			
11,700.00	7,903.52	11,720.45	7,903.52	76.87	77.07	-90.00	-3,234.72	2,305.86	2,210.51	2,059.93	150.58	14.680			
11,800.00	7,903.52	11,820.45	7,903.52	78.69	78.89	-90.00	-3,329.25	2,338.46	2,210.51	2,056.21	154.30	14.326			
11,900.00	7,903.52	11,920.45	7,903.52	80.51	80.72	-90.00	-3,423.79	2,371.06	2,210.51	2,052.48	158.03	13.988			
12,000.00	7,903.52	12,020.45	7,903.52	82.34	82.54	-90.00	-3,518.33	2,403.66	2,210.51	2,048.75	161.76	13.666			
12,100.00	7,903.52	12,120.45	7,903.52	84.18	84.37	-90.00	-3,612.86	2,436.26	2,210.51	2,045.02	165.49	13.357			
12,200.00	7,903.52	12,220.45	7,903.52	86.01	86.21	-90.00	-3,707.40	2,468.86	2,210.51	2,041.29	169.22	13.063			
12,300.00	7,903.52	12,320.45	7,903.52	87.85	88.05	-90.00	-3,801.94	2,501.46	2,210.51	2,037.55	172.96	12.780			
12,400.00	7,903.52	12,420.45	7,903.52	89.69	89.89	-90.00	-3,896.47	2,534.06	2,210.51	2,033.81	176.71	12.510			
12,500.00	7,903.52	12,520.45	7,903.52	91.54	91.73	-90.00	-3,991.01	2,566.66	2,210.51	2,030.06	180.45	12.250			
12,600.00	7,903.52	12,620.45	7,903.52	93.38	93.57	-90.00	-4,085.55	2,599.26	2,210.51	2,026.31	184.20	12.001			
12,700.00	7,903.52	12,720.45	7,903.52	95.23	95.42	-90.00	-4,180.08	2,631.86	2,210.51	2,022.56	187.95	11.761			
12,800.00	7,903.52	12,820.45	7,903.52	97.08	97.27	-90.00	-4,274.62	2,664.46	2,210.51	2,018.81	191.70	11.531			
12,900.00	7,903.52	12,920.45	7,903.52	98.93	99.12	-90.00	-4,369.16	2,697.06	2,210.51	2,015.06	195.45	11.310			
13,000.00	7,903.52	13,020.45	7,903.52	100.79	100.98	-90.00	-4,463.69	2,729.66	2,210.51	2,011.30	199.21	11.096			
13,100.00	7,903.52	13,120.45	7,903.52	102.65	102.83	-90.00	-4,558.23	2,762.26	2,210.51	2,007.54	202.97	10.891			
13,200.00	7,903.52	13,220.45	7,903.52	104.50	104.69	-90.00	-4,652.77	2,794.87	2,210.51	2,003.78	206.73	10.693			
13,300.00	7,903.52	13,320.45	7,903.52	106.36	106.55	-90.00	-4,747.30	2,827.47	2,210.51	2,000.02	210.49	10.502			
13,400.00	7,903.52	13,420.45	7,903.52	108.23	108.41	-90.00	-4,841.84	2,860.07	2,210.51	1,996.26	214.26	10.317			
13,500.00	7,903.52	13,520.45	7,903.52	110.09	110.27	-90.00	-4,936.38	2,892.67	2,210.51	1,992.49	218.02	10.139			
13,600.00	7,903.52	13,620.45	7,903.52	111.95	112.14	-90.00	-5,030.92	2,925.27	2,210.52	1,988.73	221.79	9.967			
13,700.00	7,903.52	13,720.45	7,903.52	113.82	114.00	-90.00	-5,125.45	2,957.87	2,210.52	1,984.96	225.56	9.800			
13,800.00	7,903.52	13,820.45	7,903.52	115.69	115.87	-90.00	-5,219.99	2,990.47	2,210.52	1,981.19	229.33	9.639			
13,900.00	7,903.52	13,920.45	7,903.52	117.55	117.74	-90.00	-5,314.53	3,023.07	2,210.52	1,977.42	233.10	9.483			
14,000.00	7,903.52	14,020.45	7,903.52	119.42	119.61	-90.00	-5,409.06	3,055.67	2,210.52	1,973.65	236.87	9.332			
14,100.00	7,903.52	14,120.45	7,903.52	121.29	121.48	-90.00	-5,503.60	3,088.27	2,210.52	1,969.87	240.64	9.186			
14,200.00	7,903.52	14,220.45	7,903.52	123.17	123.35	-90.00	-5,598.14	3,120.87	2,210.52	1,966.10	244.42	9.044			
14,300.00	7,903.52	14,320.45	7,903.52	125.04	125.22	-90.00	-5,692.67	3,153.47	2,210.52	1,962.32	248.19	8.906			
14,400.00	7,903.52	14,420.45	7,903.52	126.91	127.09	-90.00	-5,787.21	3,186.07	2,210.52	1,958.55	251.97	8.773			
14,500.00	7,903.52	14,520.45	7,903.52	128.79	128.96	-90.00	-5,881.75	3,218.67	2,210.52	1,954.77	255.75	8.643			
14,600.00	7,903.52	14,620.45	7,903.52	130.66	130.84	-90.00	-5,976.28	3,251.27	2,210.52	1,950.99	259.53	8.517			
14,700.00	7,903.52	14,720.45	7,903.52	132.54	132.72	-90.00	-6,070.82	3,283.88	2,210.52	1,947.21	263.31	8.395			
14,800.00	7,903.52	14,820.45	7,903.52	134.41	134.59	-90.00	-6,165.36	3,316.48	2,210.52	1,943.43	267.09	8.276			
14,900.00	7,903.52	14,920.45	7,903.52	136.29	136.47	-90.00	-6,259.89	3,349.08	2,210.52	1,939.65	270.87	8.161			
15,000.00	7,903.52	15,020.45	7,903.52	138.17	138.35	-90.00	-6,354.43	3,381.68	2,210.52	1,935.87	274.65	8.048			
15,100.00	7,903.52	15,120.45	7,903.52	140.05	140.23	-90.00	-6,448.97	3,414.28	2,210.52	1,932.09	278.43	7.939			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 204 - Orig. - DEP Plan 5													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM+Int, 800-MWD+AfterInt, 2600-SDI MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
15,200.00	7,903.52	15,220.45	7,903.52	141.93	142.11	-90.00	-6,543.50	3,446.88	2,210.52	1,928.30	282.22	7.833		
15,300.00	7,903.52	15,320.45	7,903.52	143.81	143.99	-90.00	-6,638.04	3,479.48	2,210.52	1,924.52	286.00	7.729		
15,400.00	7,903.52	15,420.45	7,903.52	145.69	145.87	-90.00	-6,732.58	3,512.08	2,210.52	1,920.74	289.79	7.628		
15,500.00	7,903.52	15,520.45	7,903.52	147.57	147.75	-90.00	-6,827.11	3,544.68	2,210.52	1,916.95	293.57	7.530		
15,600.00	7,903.52	15,620.45	7,903.52	149.45	149.63	-90.00	-6,921.65	3,577.28	2,210.52	1,913.16	297.36	7.434		
15,700.00	7,903.52	15,720.45	7,903.52	151.34	151.51	-90.00	-7,016.19	3,609.88	2,210.52	1,909.38	301.14	7.340		
15,800.00	7,903.52	15,820.45	7,903.52	153.22	153.40	-90.00	-7,110.72	3,642.48	2,210.52	1,905.59	304.93	7.249		
15,900.00	7,903.52	15,920.45	7,903.52	155.10	155.28	-90.00	-7,205.26	3,675.08	2,210.52	1,901.80	308.72	7.160		
16,000.00	7,903.52	16,020.45	7,903.52	156.99	157.16	-90.00	-7,299.80	3,707.68	2,210.52	1,898.02	312.51	7.073		
16,100.00	7,903.52	16,120.45	7,903.52	158.87	159.05	-90.00	-7,394.33	3,740.29	2,210.52	1,894.23	316.30	6.989		
16,200.00	7,903.52	16,220.45	7,903.52	160.76	160.93	-90.00	-7,488.87	3,772.89	2,210.52	1,890.44	320.09	6.906		
16,300.00	7,903.52	16,320.45	7,903.52	162.64	162.82	-90.00	-7,583.41	3,805.49	2,210.52	1,886.65	323.88	6.825		
16,400.00	7,903.52	16,420.45	7,903.52	164.53	164.71	-90.00	-7,677.94	3,838.09	2,210.52	1,882.86	327.67	6.746		
16,500.00	7,903.52	16,520.45	7,903.52	166.42	166.59	-90.00	-7,772.48	3,870.69	2,210.53	1,879.07	331.46	6.669		
16,600.00	7,903.52	16,620.45	7,903.52	168.30	168.48	-90.00	-7,867.02	3,903.29	2,210.53	1,875.28	335.25	6.594		
16,700.00	7,903.52	16,720.45	7,903.52	170.19	170.37	-90.00	-7,961.55	3,935.89	2,210.53	1,871.49	339.04	6.520		
16,800.00	7,903.52	16,820.45	7,903.52	172.08	172.25	-90.00	-8,056.09	3,968.49	2,210.53	1,867.69	342.83	6.448		
16,900.00	7,903.52	16,920.45	7,903.52	173.97	174.14	-90.00	-8,150.63	4,001.09	2,210.53	1,863.90	346.63	6.377		
17,000.00	7,903.52	17,020.45	7,903.52	175.86	176.03	-90.00	-8,245.16	4,033.69	2,210.53	1,860.11	350.42	6.308		
17,100.00	7,903.52	17,120.45	7,903.52	177.74	177.92	-90.00	-8,339.70	4,066.29	2,210.53	1,856.32	354.21	6.241		
17,200.00	7,903.52	17,220.45	7,903.52	179.63	179.81	-90.00	-8,434.24	4,098.89	2,210.53	1,852.52	358.00	6.175		
17,300.00	7,903.52	17,320.45	7,903.52	181.52	181.70	-90.00	-8,528.77	4,131.49	2,210.53	1,848.73	361.80	6.110		
17,400.00	7,903.52	17,420.45	7,903.52	183.41	183.59	-90.00	-8,623.31	4,164.09	2,210.53	1,844.94	365.59	6.046		
17,500.00	7,903.52	17,520.45	7,903.52	185.30	185.48	-90.00	-8,717.85	4,196.69	2,210.53	1,841.14	369.39	5.984		
17,600.00	7,903.52	17,620.45	7,903.52	187.19	187.37	-90.00	-8,812.38	4,229.30	2,210.53	1,837.35	373.18	5.923		
17,700.00	7,903.52	17,720.45	7,903.52	189.08	189.26	-90.00	-8,906.92	4,261.90	2,210.53	1,833.55	376.98	5.864		
17,800.00	7,903.52	17,820.45	7,903.52	190.98	191.15	-90.00	-9,001.46	4,294.50	2,210.53	1,829.76	380.77	5.805		
17,900.00	7,903.52	17,920.45	7,903.52	192.87	193.04	-90.00	-9,096.00	4,327.10	2,210.53	1,825.96	384.57	5.748		
18,000.00	7,903.52	18,020.45	7,903.52	194.76	194.93	-90.00	-9,190.53	4,359.70	2,210.53	1,822.17	388.36	5.692		
18,100.00	7,903.52	18,120.45	7,903.52	196.65	196.82	-90.00	-9,285.07	4,392.30	2,210.53	1,818.37	392.16	5.637		
18,200.00	7,903.52	18,220.45	7,903.52	198.54	198.72	-90.00	-9,379.61	4,424.90	2,210.53	1,814.57	395.96	5.583		
18,300.00	7,903.52	18,320.45	7,903.52	200.43	200.61	-90.00	-9,474.14	4,457.50	2,210.53	1,810.78	399.75	5.530		
18,400.00	7,903.52	18,420.45	7,903.52	202.33	202.50	-90.00	-9,568.68	4,490.10	2,210.53	1,806.98	403.55	5.478		
18,500.00	7,903.52	18,520.45	7,903.52	204.22	204.39	-90.00	-9,663.22	4,522.70	2,210.53	1,803.18	407.35	5.427		
18,600.00	7,903.52	18,620.45	7,903.52	206.11	206.29	-90.00	-9,757.75	4,555.30	2,210.53	1,799.39	411.15	5.377		
18,700.00	7,903.52	18,720.45	7,903.52	208.01	208.18	-90.00	-9,852.29	4,587.90	2,210.53	1,795.59	414.94	5.327		
18,800.00	7,903.52	18,820.45	7,903.52	209.90	210.07	-90.00	-9,946.83	4,620.50	2,210.53	1,791.79	418.74	5.279		
18,900.00	7,903.52	18,920.45	7,903.52	211.79	211.97	-90.00	-10,041.38	4,653.10	2,210.53	1,787.99	422.54	5.232		
19,000.00	7,903.52	19,020.45	7,903.52	213.69	213.86	-90.00	-10,135.90	4,685.71	2,210.53	1,784.20	426.34	5.185		
19,100.00	7,903.52	19,120.45	7,903.52	215.58	215.76	-90.00	-10,230.44	4,718.31	2,210.53	1,780.40	430.14	5.139		
19,200.00	7,903.52	19,220.45	7,903.52	217.47	217.65	-90.00	-10,324.97	4,750.91	2,210.53	1,776.60	433.94	5.094		
19,300.00	7,903.52	19,320.45	7,903.52	219.37	219.54	-90.00	-10,419.51	4,783.51	2,210.53	1,772.80	437.73	5.050		
19,400.00	7,903.52	19,420.45	7,903.52	221.26	221.44	-90.00	-10,514.05	4,816.11	2,210.53	1,769.00	441.53	5.006		
19,500.00	7,903.52	19,520.45	7,903.52	223.16	223.33	-90.00	-10,608.58	4,848.71	2,210.54	1,765.20	445.33	4.964		
19,600.00	7,903.52	19,620.45	7,903.52	225.05	225.23	-90.00	-10,703.12	4,881.31	2,210.54	1,761.40	449.13	4.922		
19,700.00	7,903.52	19,720.45	7,903.52	226.95	227.12	-90.00	-10,797.66	4,913.91	2,210.54	1,757.60	452.93	4.881		
19,800.00	7,903.52	19,820.45	7,903.52	228.84	229.02	-90.00	-10,892.19	4,946.51	2,210.54	1,753.80	456.73	4.840		
19,900.00	7,903.52	19,920.45	7,903.52	230.74	230.91	-90.00	-10,986.73	4,979.11	2,210.54	1,750.00	460.53	4.800		
20,000.00	7,903.52	20,020.45	7,903.52	232.63	232.81	-90.00	-11,081.27	5,011.71	2,210.54	1,746.20	464.33	4.761		
20,100.00	7,903.52	20,120.45	7,903.52	234.53	234.71	-90.00	-11,175.80	5,044.31	2,210.54	1,742.40	468.13	4.722		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 204 - Orig. - DEP Plan 5													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM+Int, 800-MWD+AfterInt, 2600-SDI MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
20,200.00	7,903.52	20,220.45	7,903.52	236.42	236.60	-90.00	-11,270.34	5,076.91	2,210.54	1,738.60	471.93	4.684		
20,300.00	7,903.52	20,320.45	7,903.52	238.32	238.50	-90.00	-11,364.88	5,109.51	2,210.54	1,734.80	475.73	4.647		
20,400.00	7,903.52	20,420.45	7,903.52	240.22	240.39	-90.00	-11,459.41	5,142.11	2,210.54	1,731.00	479.53	4.610		
20,500.00	7,903.52	20,520.45	7,903.52	242.11	242.29	-90.00	-11,553.95	5,174.72	2,210.54	1,727.20	483.34	4.574		
20,600.00	7,903.52	20,620.45	7,903.52	244.01	244.19	-90.00	-11,648.49	5,207.32	2,210.54	1,723.40	487.14	4.538		
20,700.00	7,903.52	20,720.45	7,903.52	245.91	246.08	-90.00	-11,743.02	5,239.92	2,210.54	1,719.60	490.94	4.503		
20,800.00	7,903.52	20,820.45	7,903.52	247.80	247.98	-90.00	-11,837.56	5,272.52	2,210.54	1,715.80	494.74	4.468		
20,900.00	7,903.52	20,920.45	7,903.52	249.70	249.88	-90.00	-11,932.10	5,305.12	2,210.54	1,712.00	498.54	4.434		
21,000.00	7,903.52	21,020.45	7,903.52	251.60	251.77	-90.00	-12,026.63	5,337.72	2,210.54	1,708.20	502.34	4.400		
21,100.00	7,903.52	21,120.45	7,903.52	253.49	253.67	-90.00	-12,121.17	5,370.32	2,210.54	1,704.40	506.14	4.367		
21,200.00	7,903.52	21,220.45	7,903.52	255.39	255.57	-90.00	-12,215.71	5,402.92	2,210.54	1,700.60	509.95	4.335		
21,300.00	7,903.52	21,320.45	7,903.52	257.29	257.47	-90.00	-12,310.24	5,435.52	2,210.54	1,696.79	513.75	4.303		
21,400.00	7,903.52	21,420.45	7,903.52	259.18	259.36	-90.00	-12,404.78	5,468.12	2,210.54	1,692.99	517.55	4.271		
21,500.00	7,903.52	21,520.45	7,903.52	261.08	261.26	-90.00	-12,499.32	5,500.72	2,210.54	1,689.19	521.35	4.240		
21,600.00	7,903.52	21,620.45	7,903.52	262.98	263.16	-90.00	-12,593.85	5,533.32	2,210.54	1,685.39	525.15	4.209		
21,700.00	7,903.52	21,720.45	7,903.52	264.88	265.06	-90.00	-12,688.39	5,565.92	2,210.54	1,681.59	528.96	4.179		
21,800.00	7,903.52	21,820.45	7,903.52	266.77	266.95	-90.00	-12,782.93	5,598.52	2,210.54	1,677.78	532.76	4.149		
21,900.00	7,903.52	21,920.45	7,903.52	268.67	268.85	-90.00	-12,877.46	5,631.12	2,210.54	1,673.98	536.56	4.120		
22,000.00	7,903.52	22,020.45	7,903.52	270.57	270.75	-90.00	-12,972.00	5,663.73	2,210.54	1,670.18	540.36	4.091		
22,100.00	7,903.52	22,120.45	7,903.52	272.47	272.65	-90.00	-13,066.54	5,696.33	2,210.54	1,666.38	544.17	4.062		
22,200.00	7,903.52	22,220.45	7,903.52	274.37	274.55	-90.00	-13,161.08	5,728.93	2,210.54	1,662.57	547.97	4.034		
22,300.00	7,903.52	22,320.45	7,903.52	276.26	276.45	-90.00	-13,255.61	5,761.53	2,210.54	1,658.77	551.77	4.006		
22,400.00	7,903.52	22,420.45	7,903.52	278.16	278.34	-90.00	-13,350.15	5,794.13	2,210.55	1,654.97	555.58	3.979		
22,500.00	7,903.52	22,520.45	7,903.52	280.06	280.24	-90.00	-13,444.69	5,826.73	2,210.55	1,651.17	559.38	3.952		
22,600.00	7,903.52	22,620.45	7,903.52	281.96	282.14	-90.00	-13,539.22	5,859.33	2,210.55	1,647.36	563.18	3.925		
22,700.00	7,903.52	22,720.45	7,903.52	283.86	284.04	-90.00	-13,633.76	5,891.93	2,210.55	1,643.56	566.99	3.899		
22,800.00	7,903.52	22,820.45	7,903.52	285.76	285.94	-90.00	-13,728.30	5,924.53	2,210.55	1,639.76	570.79	3.873 SF		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 205 - Orig. - DEP Plan 4														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM+Int, 800-MWD+AfterInt, 2600-SDI MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.00	0.00	45.00	44.48	0.52	85.982			
100.00	100.00	100.00	100.00	0.26	0.26	0.00	45.00	0.00	45.00	43.76	1.24	36.281			
200.00	200.00	200.00	200.00	0.62	0.62	0.00	45.00	0.00	45.00	43.04	1.96	22.991			
300.00	300.00	300.00	300.00	0.98	0.98	0.00	45.00	0.00	45.00	42.33	2.67	16.828			
400.00	400.00	400.00	400.00	1.34	1.34	0.00	45.00	0.00	45.00	41.61	3.39	13.270			
500.00	500.00	500.00	500.00	1.70	1.70	0.00	45.00	0.00	45.00	40.89	4.11	10.954			
600.00	600.00	600.00	600.00	2.05	2.05	0.00	45.00	0.00	45.00	40.18	4.83	9.326			
700.00	700.00	700.00	700.00	2.41	2.41	0.00	45.00	0.00	45.00	39.46	5.54	8.120	CC, ES		
800.00	800.00	800.00	800.00	2.77	2.77	0.00	46.53	0.72	46.62	40.38	6.24	7.468	SF		
900.00	899.98	898.51	898.49	3.12	3.12	92.96	46.53	0.72	46.62	40.38	6.24	7.468	SF		
1,000.00	999.84	996.53	996.37	3.47	3.48	100.60	51.11	2.85	52.16	45.23	6.93	7.523			
1,100.00	1,099.59	1,093.76	1,093.24	3.82	3.83	108.68	58.64	6.36	62.38	54.76	7.62	8.190			
1,200.00	1,199.35	1,192.52	1,191.47	4.17	4.18	114.53	67.99	10.72	75.41	67.09	8.32	9.066			
1,300.00	1,299.11	1,291.42	1,289.83	4.53	4.55	118.64	77.36	15.09	88.99	79.96	9.02	9.861			
1,400.00	1,398.86	1,390.33	1,388.19	4.89	4.91	121.65	86.73	19.46	102.90	93.17	9.73	10.574			
1,500.00	1,498.62	1,489.23	1,486.55	5.25	5.26	123.94	96.10	23.83	117.02	106.58	10.44	11.207			
1,600.00	1,598.38	1,588.13	1,584.91	5.62	5.65	125.74	105.47	28.20	131.29	120.14	11.15	11.771			
1,700.00	1,698.13	1,687.03	1,683.27	5.98	6.02	127.19	114.84	32.56	145.66	133.80	11.87	12.275			
1,800.00	1,797.89	1,785.93	1,781.63	6.35	6.39	128.37	124.21	36.93	160.11	147.53	12.58	12.725			
1,900.00	1,897.65	1,884.84	1,879.99	6.71	6.77	129.36	133.57	41.30	174.61	161.31	13.30	13.131			
2,000.00	1,997.40	1,983.74	1,978.35	7.08	7.14	130.20	142.94	45.67	189.15	175.14	14.01	13.497			
2,100.00	2,097.16	2,082.64	2,076.71	7.45	7.52	130.91	152.31	50.04	203.73	189.00	14.73	13.829			
2,200.00	2,196.91	2,181.54	2,175.07	7.81	7.89	131.53	161.68	54.41	218.34	202.89	15.45	14.132			
2,300.00	2,296.67	2,280.44	2,273.43	8.18	8.27	132.08	171.05	58.78	232.97	216.80	16.17	14.408			
2,400.00	2,396.43	2,379.34	2,371.79	8.55	8.64	132.56	180.42	63.15	247.61	230.72	16.89	14.661			
2,500.00	2,496.18	2,478.25	2,470.15	8.92	9.02	132.98	189.79	67.52	262.27	244.66	17.61	14.894			
2,600.00	2,595.94	2,577.15	2,568.51	9.30	9.25	133.36	199.16	71.89	276.94	258.94	18.00	15.386			
2,700.00	2,695.67	2,676.87	2,666.67	9.12	9.32	133.23	208.12	76.69	293.58	275.52	18.05	16.263			
2,800.00	2,794.85	2,780.74	2,750.80	9.14	9.33	134.01	217.02	83.99	315.56	297.53	18.03	17.502			
2,900.00	2,893.67	2,848.41	2,837.45	9.17	9.36	145.96	226.01	93.79	343.07	325.06	18.01	19.045			
3,000.00	2,991.99	2,933.57	2,921.27	9.23	9.40	148.07	235.02	105.83	375.70	357.70	18.00	20.872			
3,100.00	3,090.24	3,016.79	3,002.77	9.30	9.45	149.69	244.08	120.00	411.25	393.27	17.99	22.865			
3,200.00	3,188.50	3,100.01	3,083.79	9.40	9.52	151.25	253.39	136.53	449.37	431.38	17.99	24.980			
3,300.00	3,286.75	3,177.41	3,158.67	9.51	9.61	152.65	262.27	154.01	490.00	472.04	17.96	27.287			
3,400.00	3,385.01	3,254.71	3,232.93	9.64	9.72	153.97	271.34	173.47	533.08	515.14	17.94	29.709			
3,500.00	3,483.26	3,329.96	3,304.66	9.78	9.86	155.20	280.35	194.33	578.54	560.61	17.93	32.267			
3,600.00	3,581.52	3,400.01	3,370.90	9.94	10.01	156.29	288.90	215.44	626.31	608.42	17.89	35.018			
3,700.00	3,679.77	3,474.23	3,440.48	10.11	10.21	157.38	298.12	239.56	676.26	658.35	17.91	37.761			
3,800.00	3,778.03	3,543.24	3,504.58	10.30	10.44	158.34	306.83	263.61	728.34	710.44	17.90	40.681			
3,900.00	3,876.28	3,610.19	3,566.17	10.51	10.68	159.23	315.42	288.40	782.46	764.56	17.90	43.712			
4,000.00	3,974.54	3,675.10	3,625.30	10.72	10.96	160.04	323.86	313.81	838.53	820.62	17.90	46.834			
4,100.00	4,072.80	3,749.86	3,692.86	10.95	11.32	160.92	333.68	344.29	896.10	878.07	18.03	49.708			
4,200.00	4,171.05	3,830.67	3,765.84	11.19	11.74	161.77	344.31	377.33	953.92	935.70	18.22	52.345			
4,300.00	4,269.31	3,911.48	3,838.82	11.43	12.18	162.52	354.93	410.36	1,011.88	993.44	18.44	54.889			
4,400.00	4,367.56	3,992.29	3,911.80	11.69	12.66	163.19	365.56	443.40	1,069.93	1,051.27	18.66	57.333			
4,500.00	4,465.82	4,073.10	3,984.78	11.96	13.16	163.79	376.18	476.43	1,128.07	1,109.17	18.90	59.674			
4,600.00	4,564.07	4,153.91	4,057.76	12.24	13.68	164.33	386.81	509.46	1,186.29	1,167.13	19.16	61.919			
4,700.00	4,662.33	4,234.72	4,130.74	12.52	14.22	164.82	397.43	542.50	1,244.57	1,225.15	19.43	64.069			
4,800.00	4,760.59	4,315.53	4,203.72	12.81	14.78	165.27	408.05	575.53	1,302.91	1,283.21	19.70	66.127			
4,900.00	4,858.84	4,396.34	4,276.70	13.11	15.35	165.68	418.68	608.57	1,361.30	1,341.31	19.99	68.093			
5,000.00	4,957.09	4,477.15	4,349.68	13.41	15.94	166.06	429.30	641.60	1,419.73	1,399.44	20.29	69.963			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 205 - Orig. - DEP Plan 4														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM+Int, 800-MWD+AfterInt, 2600-SDI MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Tooface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
5,100.00	5,055.35	4,557.96	4,422.66	13.72	16.53	166.41	439.93	674.64	1,478.20	1,457.59	20.60	71.746			
5,200.00	5,153.60	4,638.77	4,495.64	14.04	17.14	166.73	450.55	707.67	1,536.70	1,515.77	20.92	73.445			
5,300.00	5,251.86	4,719.58	4,568.62	14.36	17.76	167.03	461.17	740.70	1,595.23	1,573.98	21.25	75.062			
5,400.00	5,350.11	4,800.39	4,641.60	14.69	18.38	167.31	471.80	773.74	1,653.79	1,632.20	21.59	76.599			
5,500.00	5,448.37	4,881.20	4,714.58	15.02	19.01	167.56	482.42	806.77	1,712.37	1,690.43	21.94	78.056			
5,600.00	5,546.63	4,962.01	4,787.56	15.36	19.65	167.81	493.05	839.81	1,770.97	1,748.68	22.29	79.440			
5,700.00	5,644.88	5,042.82	4,860.54	15.70	20.30	168.03	503.67	872.84	1,829.59	1,806.94	22.66	80.755			
5,800.00	5,743.14	5,123.63	4,933.52	16.04	20.95	168.24	514.30	905.87	1,888.23	1,865.21	23.03	82.003			
5,900.00	5,841.39	5,204.44	5,006.50	16.39	21.61	168.44	524.92	938.91	1,946.89	1,923.48	23.40	83.188			
6,000.00	5,939.65	5,285.25	5,079.48	16.74	22.27	168.63	535.54	971.94	2,005.56	1,981.77	23.79	84.310			
6,100.00	6,037.90	5,366.06	5,152.46	17.09	22.93	168.81	546.17	1,004.98	2,064.24	2,040.06	24.18	85.373			
6,200.00	6,136.16	5,446.87	5,225.44	17.45	23.60	168.97	556.79	1,038.01	2,122.94	2,098.36	24.58	86.382			
6,300.00	6,234.41	5,527.68	5,298.42	17.81	24.28	169.13	567.42	1,071.04	2,181.64	2,156.67	24.98	87.338			
6,400.00	6,332.67	5,608.49	5,371.40	18.17	24.95	169.28	578.04	1,104.08	2,240.36	2,214.97	25.39	88.246			
6,500.00	6,430.92	5,689.30	5,444.38	18.53	25.63	169.43	588.66	1,137.11	2,299.09	2,273.29	25.80	89.105			
6,600.00	6,529.18	5,770.11	5,517.36	18.90	26.31	169.56	599.29	1,170.15	2,357.83	2,331.60	26.22	89.918			
6,700.00	6,627.43	5,850.92	5,590.34	19.27	27.00	169.69	609.91	1,203.18	2,416.57	2,389.92	26.65	90.689			
6,800.00	6,725.69	5,931.73	5,663.32	19.64	27.69	169.81	620.54	1,236.21	2,475.32	2,448.25	27.08	91.421			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 ft	
Pritt South Pad - Pritt South #207 - OH - SDI Plan 1													Offset Well Error:	0.00 ft	
Survey Program: 0-MWD+HRGM+Int. 1100-MWD+AReint. 2500-SDI MWD															
Reference		Offset		Semi Major Axis				Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooffset (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
10,000.00	7,903.52	8,500.02	7,676.53	46.92	66.59	84.34	-4,009.51	-2,158.71	2,474.84	2,398.33	76.51	32.347			
10,100.00	7,903.52	8,520.04	7,686.56	48.59	66.69	84.57	-4,023.09	-2,147.96	2,436.81	2,359.06	77.75	31.342			
10,200.00	7,903.52	8,550.02	7,700.74	50.28	66.85	84.91	-4,044.21	-2,132.10	2,401.56	2,322.30	79.26	30.298			
10,300.00	7,903.52	8,569.82	7,709.53	51.99	66.95	85.12	-4,058.66	-2,121.80	2,369.07	2,288.47	80.60	29.394			
10,400.00	7,903.52	8,600.02	7,722.05	53.71	67.09	85.43	-4,081.40	-2,106.38	2,339.47	2,257.27	82.20	28.460			
10,500.00	7,903.52	8,624.50	7,731.39	55.44	67.20	85.66	-4,100.46	-2,094.17	2,312.75	2,229.03	83.72	27.625			
10,600.00	7,903.52	8,650.02	7,740.33	57.18	67.31	85.87	-4,120.86	-2,081.72	2,288.97	2,203.69	85.29	26.839			
10,700.00	7,903.52	8,700.02	7,755.47	58.94	67.51	86.25	-4,162.32	-2,058.27	2,268.31	2,180.89	87.42	25.949			
10,800.00	7,903.52	8,700.02	7,755.47	60.70	67.51	86.25	-4,162.32	-2,058.27	2,250.42	2,161.92	88.49	25.431			
10,900.00	7,903.52	8,750.02	7,767.37	62.47	67.69	86.54	-4,205.55	-2,036.17	2,235.36	2,144.72	90.64	24.662			
11,000.00	7,903.52	8,780.71	7,773.04	64.25	67.79	86.68	-4,232.84	-2,023.33	2,223.43	2,130.94	92.49	24.040			
11,100.00	7,903.52	8,800.02	7,775.96	66.03	67.85	86.76	-4,250.27	-2,015.56	2,214.60	2,120.24	94.36	23.469			
11,197.70	7,903.52	8,850.02	7,781.18	67.78	67.99	86.89	-4,296.21	-1,996.56	2,208.58	2,111.94	96.64	22.854			
11,200.00	7,903.52	8,850.02	7,781.18	67.83	67.99	86.89	-4,296.21	-1,996.56	2,208.47	2,111.79	96.68	22.844			
11,267.81	7,903.52	8,879.23	7,782.67	69.40	68.06	86.93	-4,323.50	-1,986.26	2,205.65	2,107.14	98.51	22.391			
11,300.00	7,903.52	8,883.45	7,782.78	69.62	68.07	86.93	-4,327.48	-1,984.82	2,205.43	2,106.67	98.76	22.331			
11,353.05	7,903.52	8,901.89	7,783.02	70.58	68.11	86.94	-4,344.86	-1,978.69	2,205.03	2,105.16	99.87	22.079	CC		
11,400.00	7,903.52	8,948.81	7,783.02	71.43	68.22	86.94	-4,389.22	-1,963.40	2,205.03	2,103.78	101.25	21.777			
11,423.23	7,903.52	8,972.04	7,783.02	71.85	68.28	86.94	-4,411.18	-1,955.83	2,205.04	2,103.11	101.93	21.633			
11,500.00	7,903.52	9,048.81	7,783.02	73.24	68.49	86.94	-4,483.76	-1,930.81	2,205.05	2,100.84	104.21	21.159			
11,523.23	7,903.52	9,072.04	7,783.02	73.66	68.55	86.94	-4,505.72	-1,923.25	2,205.06	2,100.15	104.91	21.019			
11,600.00	7,903.52	9,148.81	7,783.02	75.05	68.80	86.94	-4,578.30	-1,898.23	2,205.07	2,097.82	107.25	20.561			
11,623.23	7,903.52	9,172.04	7,783.02	75.47	68.88	86.94	-4,600.26	-1,890.66	2,205.07	2,097.12	107.95	20.426			
11,700.00	7,903.52	9,248.81	7,783.02	76.87	69.15	86.94	-4,672.84	-1,865.64	2,205.09	2,094.74	110.35	19.983			
11,723.23	7,903.52	9,272.04	7,783.02	77.29	69.24	86.94	-4,694.80	-1,858.08	2,205.08	2,094.02	111.07	19.853			
11,800.00	7,903.52	9,348.81	7,783.02	78.69	69.55	86.94	-4,767.39	-1,833.06	2,205.10	2,091.59	113.51	19.426			
11,823.23	7,903.52	9,372.04	7,783.02	79.11	69.65	86.94	-4,789.35	-1,825.49	2,205.11	2,090.86	114.25	19.301			
11,900.00	7,903.52	9,448.81	7,783.02	80.51	69.99	86.94	-4,861.93	-1,800.48	2,205.12	2,088.35	116.77	18.885			
11,923.23	7,903.52	9,472.04	7,783.02	80.94	70.10	86.94	-4,883.89	-1,792.91	2,205.12	2,087.62	117.50	18.767			
12,000.00	7,903.52	9,548.81	7,783.02	82.34	70.48	86.94	-4,956.47	-1,767.89	2,205.14	2,085.37	119.77	18.412			
12,023.23	7,903.52	9,572.04	7,783.02	82.77	70.60	86.94	-4,978.43	-1,760.32	2,205.14	2,084.63	120.51	18.299			
12,100.00	7,903.52	9,648.81	7,783.02	84.18	71.01	86.94	-5,051.01	-1,735.31	2,205.15	2,081.95	123.20	17.899			
12,123.23	7,903.52	9,672.04	7,783.02	84.60	71.14	86.94	-5,072.97	-1,727.74	2,205.16	2,081.18	123.98	17.787			
12,200.00	7,903.52	9,748.81	7,783.02	86.01	71.59	86.94	-5,145.56	-1,702.72	2,205.17	2,078.82	126.55	17.425			
12,223.23	7,903.52	9,772.04	7,783.02	86.44	71.73	86.94	-5,167.52	-1,695.15	2,205.17	2,077.84	127.34	17.318			
12,300.00	7,903.52	9,848.81	7,783.02	87.85	72.22	86.94	-5,240.10	-1,670.14	2,205.19	2,075.25	129.93	16.972			
12,323.23	7,903.52	9,872.04	7,783.02	88.28	72.37	86.94	-5,262.06	-1,662.57	2,205.19	2,074.47	130.72	16.869			
12,400.00	7,903.52	9,948.81	7,783.02	89.69	72.89	86.94	-5,334.64	-1,637.55	2,205.20	2,071.86	133.34	16.538			
12,423.23	7,903.52	9,972.04	7,783.02	90.12	73.06	86.94	-5,356.60	-1,629.99	2,205.21	2,071.07	134.14	16.440			
12,500.00	7,903.52	10,048.81	7,783.02	91.54	73.62	86.94	-5,429.18	-1,604.97	2,205.22	2,068.45	136.77	16.123			
12,523.23	7,903.52	10,072.04	7,783.02	91.96	73.79	86.94	-5,451.14	-1,597.40	2,205.22	2,067.65	137.58	16.029			
12,600.00	7,903.52	10,148.81	7,783.02	93.38	74.39	86.94	-5,523.73	-1,572.38	2,205.24	2,065.00	140.23	15.726			
12,623.23	7,903.52	10,172.04	7,783.02	93.81	74.57	86.94	-5,545.68	-1,564.82	2,205.24	2,064.20	141.04	15.636			
12,700.00	7,903.52	10,248.81	7,783.02	95.23	75.21	86.94	-5,618.27	-1,539.80	2,205.25	2,061.54	143.71	15.345			
12,723.23	7,903.52	10,272.04	7,783.02	95.66	75.40	86.94	-5,640.23	-1,532.23	2,205.26	2,060.73	144.52	15.259			
12,800.00	7,903.52	10,348.81	7,783.02	97.08	76.07	86.94	-5,712.81	-1,507.22	2,205.27	2,058.05	147.22	14.980			
12,823.23	7,903.52	10,372.04	7,783.02	97.51	76.28	86.94	-5,734.77	-1,499.65	2,205.27	2,057.24	148.03	14.897			
12,900.00	7,903.52	10,448.81	7,783.02	98.93	76.98	86.94	-5,807.35	-1,474.63	2,205.29	2,054.55	150.74	14.630			
12,923.23	7,903.52	10,472.04	7,783.02	99.36	77.20	86.94	-5,829.31	-1,467.06	2,205.29	2,053.73	151.56	14.551			
13,000.00	7,903.52	10,548.81	7,783.02	100.79	77.94	86.94	-5,901.90	-1,442.05	2,205.30	2,051.03	154.28	14.294			
13,023.23	7,903.52	10,572.04	7,783.02	101.22	78.16	86.94	-5,923.85	-1,434.48	2,205.31	2,050.21	155.10	14.218			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

### Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Pritt South Pad - Pritt South #207 - OH - SDI Plan 1													Offset Well Error:	0.00 ft
Survey Program: 0-MWD+HRGM+int. 1100-MWD+Atterint. 2500-SDI MWD														
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,100.00	7,903.52	10,648.81	7,783.02	102.65	78.93	86.94	-5,996.44	-1,409.46	2,205.32	2,047.49	157.83	13.972		
13,123.23	7,903.52	10,672.04	7,783.02	103.08	79.17	86.94	-6,018.40	-1,401.89	2,205.32	2,046.66	158.66	13.900		
13,200.00	7,903.52	10,748.81	7,783.02	104.50	79.97	86.94	-6,090.98	-1,376.88	2,205.34	2,043.93	161.40	13.663		
13,223.23	7,903.52	10,772.04	7,783.02	104.94	80.22	86.94	-6,112.94	-1,369.31	2,205.34	2,043.11	162.24	13.593		
13,300.00	7,903.52	10,848.81	7,783.02	106.36	81.06	86.94	-6,185.52	-1,344.29	2,205.35	2,040.36	164.99	13.367		
13,323.23	7,903.52	10,872.04	7,783.02	106.80	81.31	86.94	-6,207.48	-1,336.73	2,205.36	2,039.53	165.82	13.299		
13,400.00	7,903.52	10,948.81	7,783.02	108.23	82.18	86.94	-6,280.06	-1,311.71	2,205.37	2,036.78	168.59	13.082		
13,423.23	7,903.52	10,972.04	7,783.02	108.66	82.44	86.94	-6,302.02	-1,304.14	2,205.37	2,035.95	169.42	13.017		
13,500.00	7,903.52	11,048.81	7,783.02	110.09	83.33	86.94	-6,374.61	-1,279.12	2,205.39	2,033.19	172.20	12.807		
13,523.23	7,903.52	11,072.04	7,783.02	110.52	83.61	86.94	-6,396.57	-1,271.56	2,205.39	2,032.36	173.04	12.745		
13,600.00	7,903.52	11,148.81	7,783.02	111.95	84.53	86.94	-6,469.15	-1,246.54	2,205.40	2,029.59	175.81	12.544		
13,623.23	7,903.52	11,172.04	7,783.02	112.39	84.81	86.94	-6,491.11	-1,238.97	2,205.41	2,028.75	176.66	12.484		
13,700.00	7,903.52	11,248.81	7,783.02	113.82	85.76	86.94	-6,563.69	-1,213.95	2,205.42	2,025.98	179.44	12.290		
13,723.23	7,903.52	11,272.04	7,783.02	114.25	86.05	86.94	-6,585.65	-1,206.39	2,205.43	2,025.14	180.29	12.233		
13,800.00	7,903.52	11,348.81	7,783.02	115.69	87.02	86.94	-6,658.23	-1,181.37	2,205.44	2,022.36	183.08	12.046		
13,823.23	7,903.52	11,372.04	7,783.02	116.12	87.31	86.94	-6,680.19	-1,173.80	2,205.44	2,021.51	183.93	11.991		
13,900.00	7,903.52	11,448.81	7,783.02	117.55	88.31	86.94	-6,752.78	-1,148.79	2,205.46	2,018.73	186.73	11.811		
13,923.23	7,903.52	11,472.04	7,783.02	117.99	88.61	86.94	-6,774.74	-1,141.22	2,205.46	2,017.88	187.58	11.758		
14,000.00	7,903.52	11,548.81	7,783.02	119.42	89.63	86.94	-6,847.32	-1,116.20	2,205.47	2,015.09	190.38	11.584		
14,023.23	7,903.52	11,572.04	7,783.02	119.86	89.94	86.94	-6,869.28	-1,108.63	2,205.48	2,014.24	191.23	11.533		
14,100.00	7,903.52	11,648.81	7,783.02	121.29	90.98	86.94	-6,941.86	-1,083.62	2,205.49	2,011.44	194.04	11.366		
14,123.23	7,903.52	11,672.04	7,783.02	121.73	91.29	86.94	-6,963.82	-1,076.05	2,205.49	2,010.60	194.89	11.316		
14,200.00	7,903.52	11,748.81	7,783.02	123.17	92.35	86.94	-7,036.40	-1,051.03	2,205.51	2,007.79	197.71	11.155		
14,223.23	7,903.52	11,772.04	7,783.02	123.60	92.67	86.94	-7,058.36	-1,043.47	2,205.51	2,006.94	198.57	11.107		
14,300.00	7,903.52	11,848.81	7,783.02	125.04	93.75	86.94	-7,130.95	-1,018.45	2,205.52	2,004.13	201.39	10.952		
14,323.23	7,903.52	11,872.04	7,783.02	125.47	94.08	86.94	-7,152.90	-1,010.88	2,205.53	2,003.28	202.24	10.905		
14,400.00	7,903.52	11,948.81	7,783.02	126.91	95.17	86.94	-7,225.49	-985.87	2,205.54	2,000.47	205.07	10.755		
14,423.23	7,903.52	11,972.04	7,783.02	127.35	95.50	86.94	-7,247.45	-978.30	2,205.54	1,999.62	205.92	10.710		
14,500.00	7,903.52	12,048.81	7,783.02	128.79	96.61	86.94	-7,320.03	-953.28	2,205.56	1,996.80	208.75	10.565		
14,523.23	7,903.52	12,072.04	7,783.02	129.22	96.95	86.94	-7,341.99	-945.71	2,205.56	1,995.95	209.61	10.522		
14,600.00	7,903.52	12,148.81	7,783.02	130.66	98.08	86.94	-7,414.57	-920.70	2,205.57	1,993.13	212.44	10.382		
14,623.23	7,903.52	12,172.04	7,783.02	131.10	98.42	86.94	-7,436.53	-913.13	2,205.58	1,992.27	213.30	10.340		
14,700.00	7,903.52	12,248.81	7,783.02	132.54	99.56	86.94	-7,509.12	-888.11	2,205.59	1,989.45	216.14	10.204		
14,723.23	7,903.52	12,272.04	7,783.02	132.97	99.91	86.94	-7,531.07	-880.54	2,205.59	1,988.60	217.00	10.164		
14,800.00	7,903.52	12,348.81	7,783.02	134.41	101.07	86.94	-7,603.66	-855.53	2,205.61	1,985.77	219.84	10.033		
14,823.23	7,903.52	12,372.04	7,783.02	134.85	101.42	86.94	-7,625.62	-847.96	2,205.61	1,984.91	220.70	9.994		
14,900.00	7,903.52	12,448.81	7,783.02	136.29	102.58	86.94	-7,698.20	-822.94	2,205.62	1,982.08	223.54	9.867		
14,923.23	7,903.52	12,472.04	7,783.02	136.73	102.94	86.94	-7,720.16	-815.37	2,205.63	1,981.22	224.40	9.829		
15,000.00	7,903.52	12,548.81	7,783.02	138.17	104.12	86.94	-7,792.74	-790.35	2,205.64	1,978.39	227.25	9.706		
15,023.23	7,903.52	12,572.04	7,783.02	138.61	104.48	86.94	-7,814.70	-782.79	2,205.64	1,977.53	228.11	9.669		
15,100.00	7,903.52	12,648.81	7,783.02	140.05	105.67	86.94	-7,887.28	-757.77	2,205.66	1,974.69	230.96	9.550		
15,123.23	7,903.52	12,672.04	7,783.02	140.49	106.03	86.94	-7,909.24	-750.21	2,205.66	1,973.83	231.83	9.514		
15,200.00	7,903.52	12,748.81	7,783.02	141.93	107.24	86.94	-7,981.83	-725.19	2,205.67	1,970.99	234.68	9.399		
15,223.23	7,903.52	12,772.04	7,783.02	142.37	107.60	86.94	-8,003.79	-717.62	2,205.68	1,970.13	235.54	9.364		
15,300.00	7,903.52	12,848.81	7,783.02	143.81	108.82	86.94	-8,076.37	-692.61	2,205.69	1,967.29	238.40	9.252		
15,323.23	7,903.52	12,872.04	7,783.02	144.25	109.19	86.94	-8,098.33	-685.04	2,205.69	1,966.43	239.26	9.219		
15,400.00	7,903.52	12,948.81	7,783.02	145.69	110.41	86.94	-8,170.91	-660.02	2,205.71	1,963.59	242.12	9.110		
15,423.23	7,903.52	12,972.04	7,783.02	146.13	110.78	86.94	-8,192.87	-652.45	2,205.71	1,962.72	242.99	9.077		
15,500.00	7,903.52	13,048.81	7,783.02	147.57	112.01	86.94	-8,265.45	-627.44	2,205.72	1,959.88	245.85	8.972		
15,523.23	7,903.52	13,072.04	7,783.02	148.01	112.39	86.94	-8,287.41	-619.87	2,205.73	1,959.01	246.71	8.940		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design     Pritt South Pad - Pritt South #207 - OH - SDI Plan 1													Offset Site Error:	0.00 ft
Survey Program:     0-MWD+HRGM+Int, 1100-MWD+AfterInt, 2500-SDI MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
15,600.00	7,903.52	13,148.81	7,783.02	149.45	113.63	86.94	-8,360.00	-594.85	2,205.74	1,956.17	249.58	8.538		
15,623.23	7,903.52	13,172.04	7,783.02	149.89	114.01	86.94	-8,381.96	-587.28	2,205.74	1,955.30	250.44	8.807		
15,700.00	7,903.52	13,248.81	7,783.02	151.34	115.26	86.94	-8,454.54	-562.27	2,205.76	1,952.45	253.31	8.708		
15,723.23	7,903.52	13,272.04	7,783.02	151.77	115.64	86.94	-8,476.50	-554.70	2,205.76	1,951.59	254.17	8.678		
15,800.00	7,903.52	13,348.81	7,783.02	153.22	116.89	86.94	-8,549.08	-529.68	2,205.77	1,948.73	257.04	8.581		
15,823.23	7,903.52	13,372.04	7,783.02	153.66	117.28	86.94	-8,571.04	-522.11	2,205.78	1,947.87	257.91	8.553		
15,900.00	7,903.52	13,448.81	7,783.02	155.10	118.54	86.94	-8,643.62	-497.10	2,205.79	1,945.01	260.78	8.459		
15,923.23	7,903.52	13,472.04	7,783.02	155.54	118.93	86.94	-8,665.58	-489.53	2,205.80	1,944.15	261.65	8.430		
16,000.00	7,903.52	13,548.81	7,783.02	156.99	120.20	86.94	-8,738.17	-464.51	2,205.81	1,941.29	264.52	8.339		
16,023.23	7,903.52	13,572.04	7,783.02	157.43	120.58	86.94	-8,760.12	-456.95	2,205.81	1,940.43	265.38	8.312		
16,100.00	7,903.52	13,648.81	7,783.02	158.87	121.86	86.94	-8,832.71	-431.93	2,205.83	1,937.57	268.26	8.223		
16,123.23	7,903.52	13,672.04	7,783.02	159.31	122.25	86.94	-8,854.67	-424.36	2,205.83	1,936.70	269.13	8.196		
16,200.00	7,903.52	13,748.81	7,783.02	160.76	123.54	86.94	-8,927.25	-399.35	2,205.84	1,933.84	272.00	8.110		
16,223.23	7,903.52	13,772.04	7,783.02	161.20	123.93	86.94	-8,949.21	-391.78	2,205.85	1,932.98	272.87	8.084		
16,300.00	7,903.52	13,848.81	7,783.02	162.64	125.22	86.94	-9,021.79	-366.76	2,205.86	1,930.11	275.74	8.000		
16,323.23	7,903.52	13,872.04	7,783.02	163.08	125.61	86.94	-9,043.75	-359.19	2,205.86	1,929.25	276.61	7.975		
16,400.00	7,903.52	13,948.81	7,783.02	164.53	126.91	86.94	-9,116.33	-334.18	2,205.88	1,926.38	279.49	7.892		
16,423.23	7,903.52	13,972.04	7,783.02	164.97	127.30	86.94	-9,138.29	-326.61	2,205.88	1,925.52	280.36	7.868		
16,500.00	7,903.52	14,048.81	7,783.02	166.42	128.60	86.94	-9,210.88	-301.59	2,205.89	1,922.65	283.24	7.788		
16,523.23	7,903.52	14,072.04	7,783.02	166.86	129.00	86.94	-9,232.84	-294.02	2,205.90	1,921.79	284.11	7.764		
16,600.00	7,903.52	14,148.81	7,783.02	168.30	130.31	86.94	-9,305.42	-269.01	2,205.91	1,918.92	286.99	7.686		
16,623.23	7,903.52	14,172.04	7,783.02	168.74	130.70	86.94	-9,327.38	-261.44	2,205.91	1,918.05	287.86	7.663		
16,700.00	7,903.52	14,248.81	7,783.02	170.19	132.02	86.94	-9,399.96	-236.42	2,205.93	1,915.18	290.74	7.587		
16,723.23	7,903.52	14,272.04	7,783.02	170.63	132.42	86.94	-9,421.92	-228.85	2,205.93	1,914.32	291.61	7.565		
16,800.00	7,903.52	14,348.81	7,783.02	172.08	133.73	86.94	-9,494.50	-203.84	2,205.94	1,911.45	294.50	7.491		
16,823.23	7,903.52	14,372.04	7,783.02	172.52	134.13	86.94	-9,516.46	-196.27	2,205.95	1,910.58	295.37	7.468		
16,900.00	7,903.52	14,448.81	7,783.02	173.97	135.46	86.94	-9,589.05	-171.25	2,205.96	1,907.71	298.25	7.396		
16,923.23	7,903.52	14,472.04	7,783.02	174.41	135.86	86.94	-9,611.01	-163.69	2,205.96	1,906.84	299.12	7.375		
17,000.00	7,903.52	14,548.81	7,783.02	175.86	137.18	86.94	-9,683.59	-138.67	2,205.98	1,903.97	302.01	7.304		
17,023.23	7,903.52	14,572.04	7,783.02	176.29	137.59	86.94	-9,705.55	-131.10	2,205.98	1,903.10	302.88	7.283		
17,100.00	7,903.52	14,648.81	7,783.02	177.74	138.92	86.94	-9,778.13	-106.09	2,205.99	1,900.23	305.77	7.215		
17,123.23	7,903.52	14,672.04	7,783.02	178.18	139.32	86.94	-9,800.09	-98.52	2,206.00	1,899.36	306.64	7.194		
17,200.00	7,903.52	14,748.81	7,783.02	179.63	140.66	86.94	-9,872.67	-73.50	2,206.01	1,896.49	309.52	7.127		
17,223.23	7,903.52	14,772.04	7,783.02	180.07	141.06	86.94	-9,894.63	-65.93	2,206.01	1,895.62	310.40	7.107		
17,300.00	7,903.52	14,848.81	7,783.02	181.52	142.40	86.94	-9,967.22	-40.92	2,206.03	1,892.74	313.29	7.042		
17,323.23	7,903.52	14,872.04	7,783.02	181.96	142.80	86.94	-9,989.17	-33.35	2,206.03	1,891.87	314.16	7.022		
17,400.00	7,903.52	14,948.81	7,783.02	183.41	144.15	86.94	-10,061.76	-8.33	2,206.04	1,889.00	317.05	6.958		
17,423.23	7,903.52	14,972.04	7,783.02	183.85	144.55	86.94	-10,083.72	-0.76	2,206.05	1,888.13	317.92	6.939		
17,500.00	7,903.52	15,048.81	7,783.02	185.30	145.90	86.94	-10,156.30	24.25	2,206.06	1,885.25	320.81	6.877		
17,523.23	7,903.52	15,072.04	7,783.02	185.74	146.31	86.94	-10,178.26	31.82	2,206.06	1,884.38	321.68	6.858		
17,600.00	7,903.52	15,148.81	7,783.02	187.19	147.66	86.94	-10,250.84	56.84	2,206.08	1,881.50	324.57	6.797		
17,623.23	7,903.52	15,172.04	7,783.02	187.63	148.06	86.94	-10,272.80	64.41	2,206.08	1,880.63	325.45	6.779		
17,700.00	7,903.52	15,248.81	7,783.02	189.08	149.42	86.94	-10,345.39	89.42	2,206.09	1,877.76	328.34	6.719		
17,723.23	7,903.52	15,272.04	7,783.02	189.52	149.83	86.94	-10,367.34	96.99	2,206.10	1,876.89	329.21	6.701		
17,800.00	7,903.52	15,348.81	7,783.02	190.98	151.18	86.94	-10,439.93	122.01	2,206.11	1,874.01	332.10	6.643		
17,823.23	7,903.52	15,372.04	7,783.02	191.41	151.59	86.94	-10,461.89	129.57	2,206.11	1,873.14	332.98	6.625		
17,900.00	7,903.52	15,448.81	7,783.02	192.87	152.95	86.94	-10,534.47	154.59	2,206.13	1,870.26	335.87	6.568		
17,923.23	7,903.52	15,472.04	7,783.02	193.31	153.36	86.94	-10,556.43	162.16	2,206.13	1,869.39	336.75	6.551		
18,000.00	7,903.52	15,548.81	7,783.02	194.76	154.72	86.94	-10,629.01	187.17	2,206.14	1,866.51	339.64	6.496		
18,023.23	7,903.52	15,572.04	7,783.02	195.20	155.14	86.94	-10,650.97	194.74	2,206.15	1,865.63	340.51	6.479		
18,100.00	7,903.52	15,648.81	7,783.02	196.65	156.50	86.94	-10,723.55	219.76	2,206.16	1,862.75	343.41	6.424		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

### Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: G-MWD+HRGM+Int, 1100-MWD+AfterInt, 2500-SDI MWD													Offset Well Error:	0.00 ft
Pritt South Pad - Pritt South #207 - OH - SDI Plan 1														
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
18,123.23	7,903.52	15,672.04	7,783.02	197.09	156.91	86.94	-10,745.51	227.33	2,206.17	1,861.88	344.28	6.408		
18,200.00	7,903.52	15,748.81	7,783.02	198.54	158.28	86.94	-10,818.10	252.34	2,206.18	1,859.00	347.18	6.355		
18,223.23	7,903.52	15,772.04	7,783.02	198.98	158.69	86.94	-10,840.06	259.91	2,206.18	1,858.13	348.05	6.339		
18,300.00	7,903.52	15,848.81	7,783.02	200.43	160.06	86.94	-10,912.64	284.93	2,206.20	1,855.25	350.95	6.286		
18,323.23	7,903.52	15,872.04	7,783.02	200.87	160.48	86.94	-10,934.60	292.50	2,206.20	1,854.38	351.82	6.271		
18,400.00	7,903.52	15,948.81	7,783.02	202.33	161.85	86.94	-11,007.18	317.51	2,206.21	1,851.49	354.72	6.220		
18,423.23	7,903.52	15,972.04	7,783.02	202.77	162.26	86.94	-11,029.14	325.08	2,206.22	1,850.62	355.59	6.204		
18,500.00	7,903.52	16,048.81	7,783.02	204.22	163.64	86.94	-11,101.72	350.10	2,206.23	1,847.74	358.49	6.154		
18,523.23	7,903.52	16,072.04	7,783.02	204.66	164.05	86.94	-11,123.68	357.67	2,206.23	1,846.87	359.37	6.139		
18,600.00	7,903.52	16,148.81	7,783.02	206.11	165.43	86.94	-11,196.27	382.68	2,206.25	1,843.98	362.26	6.090		
18,623.23	7,903.52	16,172.04	7,783.02	206.55	165.85	86.94	-11,218.23	390.25	2,206.25	1,843.11	363.14	6.075		
18,700.00	7,903.52	16,248.81	7,783.02	208.01	167.22	86.94	-11,290.81	415.27	2,206.26	1,840.23	366.04	6.027		
18,723.23	7,903.52	16,272.04	7,783.02	208.45	167.64	86.94	-11,312.77	422.83	2,206.27	1,839.35	366.91	6.013		
18,800.00	7,903.52	16,348.81	7,783.02	209.90	169.02	86.94	-11,385.35	447.85	2,206.28	1,836.47	369.81	5.966		
18,823.23	7,903.52	16,372.04	7,783.02	210.34	169.44	86.94	-11,407.31	455.42	2,206.28	1,835.60	370.69	5.952		
18,900.00	7,903.52	16,448.81	7,783.02	211.79	170.82	86.94	-11,479.89	480.43	2,206.30	1,832.71	373.59	5.906		
18,923.23	7,903.52	16,472.04	7,783.02	212.23	171.24	86.94	-11,501.85	488.00	2,206.30	1,831.84	374.46	5.892		
19,000.00	7,903.52	16,548.81	7,783.02	213.69	172.62	86.94	-11,574.44	513.02	2,206.31	1,828.95	377.36	5.847		
19,023.23	7,903.52	16,572.04	7,783.02	214.13	173.04	86.94	-11,596.39	520.59	2,206.32	1,828.08	378.24	5.833		
19,100.00	7,903.52	16,648.81	7,783.02	215.58	174.43	86.94	-11,668.98	545.60	2,206.33	1,825.19	381.14	5.789		
19,123.23	7,903.52	16,672.04	7,783.02	216.02	174.85	86.94	-11,690.94	553.17	2,206.33	1,824.32	382.01	5.776		
19,200.00	7,903.52	16,748.81	7,783.02	217.47	176.24	86.94	-11,763.52	578.19	2,206.35	1,821.43	384.91	5.732		
19,223.23	7,903.52	16,772.04	7,783.02	217.91	176.66	86.94	-11,785.48	585.76	2,206.35	1,820.56	385.79	5.719		
19,300.00	7,903.52	16,848.81	7,783.02	219.37	178.05	86.94	-11,858.06	610.77	2,206.36	1,817.67	388.69	5.676		
19,323.23	7,903.52	16,872.04	7,783.02	219.81	178.47	86.94	-11,880.02	618.34	2,206.37	1,816.80	389.57	5.664		
19,400.00	7,903.52	16,948.81	7,783.02	221.26	179.86	86.94	-11,952.61	643.36	2,206.38	1,813.91	392.47	5.622		
19,423.23	7,903.52	16,972.04	7,783.02	221.70	180.28	86.94	-11,974.56	650.93	2,206.38	1,813.04	393.35	5.609		
19,500.00	7,903.52	17,048.81	7,783.02	223.16	181.67	86.94	-12,047.15	675.94	2,206.40	1,810.15	396.25	5.568		
19,523.23	7,903.52	17,072.04	7,783.02	223.60	182.09	86.94	-12,069.11	683.51	2,206.40	1,809.27	397.13	5.556		
19,600.00	7,903.52	17,148.81	7,783.02	225.05	183.49	86.94	-12,141.69	708.53	2,206.41	1,806.39	400.03	5.516		
19,623.23	7,903.52	17,172.04	7,783.02	225.49	183.91	86.94	-12,163.65	716.09	2,206.42	1,805.51	400.91	5.504		
19,700.00	7,903.52	17,248.81	7,783.02	226.95	185.31	86.94	-12,236.23	741.11	2,206.43	1,802.62	403.81	5.464		
19,723.23	7,903.52	17,272.04	7,783.02	227.39	185.73	86.94	-12,258.19	748.68	2,206.43	1,801.75	404.69	5.452		
19,800.00	7,903.52	17,348.81	7,783.02	228.84	187.13	86.94	-12,330.77	773.69	2,206.45	1,798.86	407.59	5.413		
19,823.23	7,903.52	17,372.04	7,783.02	229.28	187.55	86.94	-12,352.73	781.26	2,206.45	1,797.99	408.47	5.402		
19,900.00	7,903.52	17,448.81	7,783.02	230.74	188.95	86.94	-12,425.32	806.28	2,206.48	1,795.10	411.37	5.364		
19,923.23	7,903.52	17,472.04	7,783.02	231.18	189.37	86.94	-12,447.28	813.85	2,206.47	1,794.22	412.25	5.352		
20,000.00	7,903.52	17,548.81	7,783.02	232.63	190.77	86.94	-12,519.86	838.86	2,206.48	1,791.33	415.15	5.315		
20,023.23	7,903.52	17,572.04	7,783.02	233.07	191.19	86.94	-12,541.82	846.43	2,206.48	1,790.46	416.03	5.304		
20,100.00	7,903.52	17,648.81	7,783.02	234.53	192.60	86.94	-12,614.40	871.45	2,206.50	1,787.57	418.93	5.267		
20,123.23	7,903.52	17,672.04	7,783.02	234.97	193.02	86.94	-12,636.36	879.02	2,206.50	1,786.69	419.81	5.256		
20,200.00	7,903.52	17,748.81	7,783.02	236.42	194.42	86.94	-12,708.94	904.03	2,206.51	1,783.80	422.71	5.220		
20,223.23	7,903.52	17,772.04	7,783.02	236.87	194.85	86.94	-12,730.90	911.60	2,206.52	1,782.93	423.59	5.209		
20,300.00	7,903.52	17,848.81	7,783.02	238.32	196.25	86.94	-12,803.49	936.62	2,206.53	1,780.04	426.50	5.174		
20,323.23	7,903.52	17,872.04	7,783.02	238.76	196.68	86.94	-12,825.45	944.19	2,206.54	1,779.16	427.37	5.163		
20,400.00	7,903.52	17,948.81	7,783.02	240.22	198.08	86.94	-12,898.03	969.20	2,206.55	1,776.27	430.28	5.128		
20,423.23	7,903.52	17,972.04	7,783.02	240.66	198.51	86.94	-12,919.99	976.77	2,206.55	1,775.39	431.16	5.118		
20,500.00	7,903.52	18,048.81	7,783.02	242.11	199.91	86.94	-12,992.57	1,001.79	2,206.57	1,772.50	434.06	5.084		
20,523.23	7,903.52	18,072.04	7,783.02	242.55	200.34	86.94	-13,014.53	1,009.35	2,206.57	1,771.63	434.94	5.073		
20,600.00	7,903.52	18,148.81	7,783.02	244.01	201.75	86.94	-13,087.11	1,034.37	2,206.58	1,768.74	437.85	5.040		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

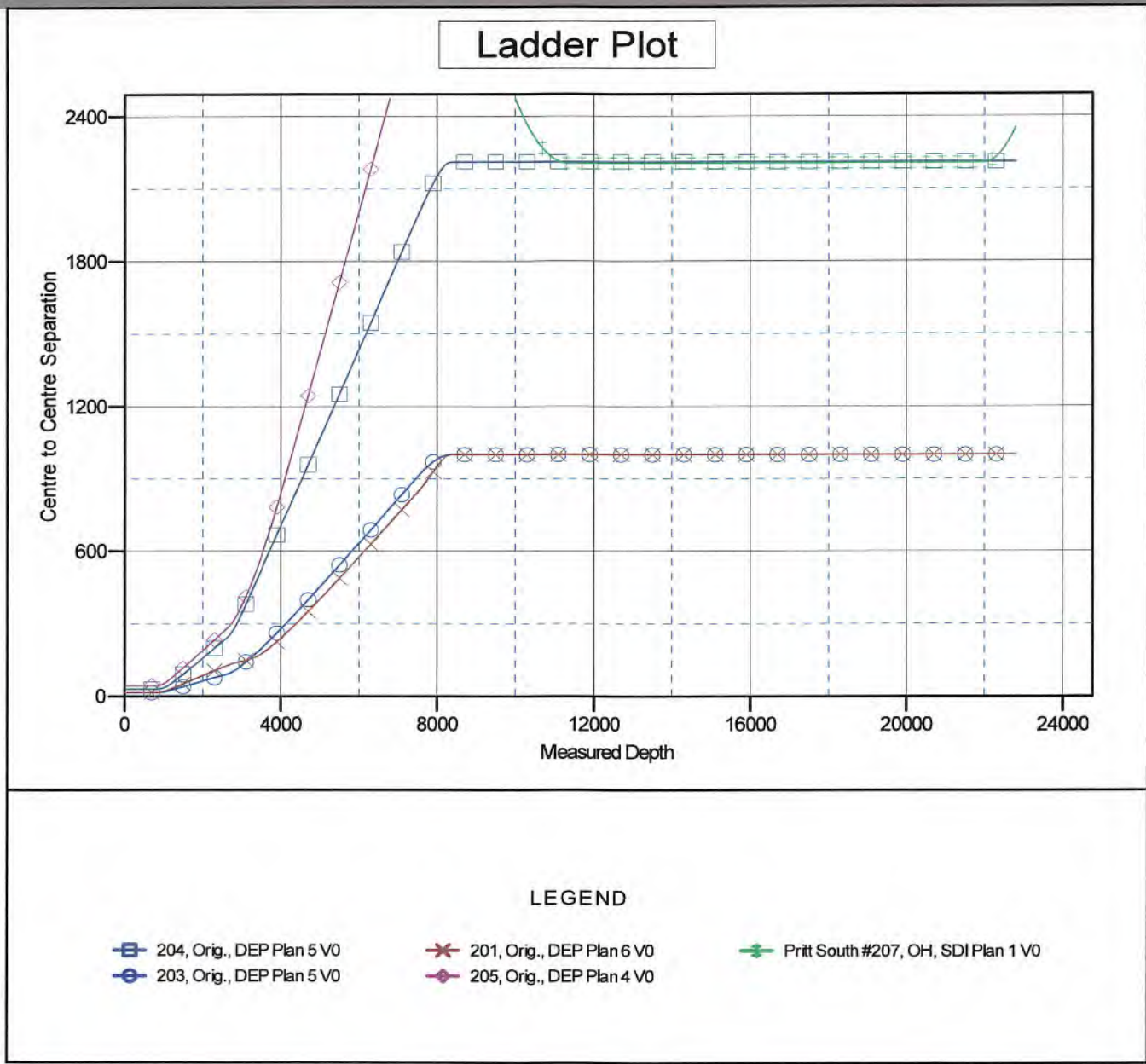
Offset Design      Pritt South Pad - Pritt South #207 - OH - SDI Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HRGM+Int, 1100-MWD+Afterint, 2500-SDI MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
20,623.23	7,903.52	18,172.04	7,783.02	244.45	202.17	86.94	-13,109.07	1,041.94	2,206.59	1,767.86	438.72	5.030		
20,700.00	7,903.52	18,248.81	7,783.02	245.91	203.58	86.94	-13,181.66	1,066.95	2,206.60	1,764.97	441.63	4.996		
20,723.23	7,903.52	18,272.04	7,783.02	246.35	204.01	86.94	-13,203.61	1,074.52	2,206.60	1,764.09	442.51	4.987		
20,800.00	7,903.52	18,348.81	7,783.02	247.80	205.42	86.94	-13,276.20	1,099.54	2,206.62	1,761.20	445.41	4.954		
20,823.23	7,903.52	18,372.04	7,783.02	248.24	205.85	86.94	-13,298.16	1,107.11	2,206.62	1,760.33	446.29	4.944		
20,900.00	7,903.52	18,448.81	7,783.02	249.70	207.26	86.94	-13,370.74	1,132.12	2,206.63	1,757.43	449.20	4.912		
20,923.23	7,903.52	18,472.04	7,783.02	250.14	207.68	86.94	-13,392.70	1,139.69	2,206.64	1,756.56	450.08	4.903		
21,000.00	7,903.52	18,548.81	7,783.02	251.60	209.10	86.94	-13,465.28	1,164.71	2,206.65	1,753.67	452.98	4.871		
21,023.23	7,903.52	18,572.04	7,783.02	252.04	209.52	86.94	-13,487.24	1,172.28	2,206.65	1,752.79	453.86	4.862		
21,100.00	7,903.52	18,648.81	7,783.02	253.49	210.94	86.94	-13,559.82	1,197.29	2,206.67	1,749.90	456.77	4.831		
21,123.23	7,903.52	18,672.04	7,783.02	253.93	211.36	86.94	-13,581.78	1,204.86	2,206.67	1,749.02	457.65	4.822		
21,200.00	7,903.52	18,748.81	7,783.02	255.39	212.78	86.94	-13,654.37	1,229.88	2,206.68	1,746.13	460.55	4.791		
21,223.23	7,903.52	18,772.04	7,783.02	255.83	213.20	86.94	-13,676.33	1,237.45	2,206.69	1,745.25	461.43	4.782		
21,300.00	7,903.52	18,848.81	7,783.02	257.29	214.62	86.94	-13,748.91	1,262.46	2,206.70	1,742.36	464.34	4.752		
21,323.23	7,903.52	18,872.04	7,783.02	257.73	215.05	86.94	-13,770.87	1,270.03	2,206.70	1,741.49	465.22	4.743		
21,400.00	7,903.52	18,948.81	7,783.02	259.18	216.46	86.94	-13,843.45	1,295.05	2,206.72	1,738.59	468.12	4.714		
21,423.23	7,903.52	18,972.04	7,783.02	259.62	216.89	86.94	-13,865.41	1,302.61	2,206.72	1,737.72	469.00	4.705		
21,500.00	7,903.52	19,048.81	7,783.02	261.08	218.31	86.94	-13,937.99	1,327.63	2,206.73	1,734.82	471.91	4.676		
21,523.23	7,903.52	19,072.04	7,783.02	261.52	218.74	86.94	-13,959.95	1,335.20	2,206.74	1,733.95	472.79	4.667		
21,600.00	7,903.52	19,148.81	7,783.02	262.98	220.15	86.94	-14,032.54	1,360.21	2,206.75	1,731.05	475.70	4.639		
21,623.23	7,903.52	19,172.04	7,783.02	263.42	220.58	86.94	-14,054.50	1,367.78	2,206.75	1,730.18	476.58	4.630		
21,700.00	7,903.52	19,248.81	7,783.02	264.88	222.00	86.94	-14,127.08	1,392.80	2,206.77	1,727.28	479.48	4.602		
21,723.23	7,903.52	19,272.04	7,783.02	265.32	222.43	86.94	-14,149.04	1,400.37	2,206.77	1,726.41	480.36	4.594		
21,800.00	7,903.52	19,348.81	7,783.02	266.77	223.85	86.94	-14,221.62	1,425.38	2,206.78	1,723.51	483.27	4.566		
21,823.23	7,903.52	19,372.04	7,783.02	267.21	224.28	86.94	-14,243.58	1,432.95	2,206.79	1,722.64	484.15	4.558		
21,900.00	7,903.52	19,448.81	7,783.02	268.67	225.70	86.94	-14,316.16	1,457.97	2,206.80	1,719.74	487.06	4.531		
21,921.80	7,903.52	19,470.61	7,783.02	269.09	226.10	86.94	-14,336.78	1,465.07	2,206.80	1,718.92	487.89	4.523		
22,000.00	7,903.52	19,532.02	7,783.02	270.57	227.24	86.94	-14,394.83	1,485.08	2,206.88	1,716.69	490.19	4.502 ES, SF		
22,100.00	7,903.52	19,532.02	7,783.02	272.47	227.24	86.94	-14,394.83	1,485.08	2,209.92	1,720.61	489.31	4.516		
22,200.00	7,903.52	19,532.02	7,783.02	274.37	227.24	86.94	-14,394.83	1,485.08	2,217.47	1,730.26	487.21	4.551		
22,300.00	7,903.52	19,532.02	7,783.02	276.26	227.24	86.94	-14,394.83	1,485.08	2,229.49	1,745.55	483.94	4.607		
22,400.00	7,903.52	19,532.02	7,783.02	278.16	227.24	86.94	-14,394.83	1,485.08	2,245.90	1,766.32	479.58	4.683		
22,500.00	7,903.52	19,532.02	7,783.02	280.06	227.24	86.94	-14,394.83	1,485.08	2,266.60	1,792.39	474.22	4.780		
22,600.00	7,903.52	19,532.02	7,783.02	281.96	227.24	86.94	-14,394.83	1,485.08	2,291.49	1,823.51	467.98	4.897		
22,700.00	7,903.52	19,532.02	7,783.02	283.86	227.24	86.94	-14,394.83	1,485.08	2,320.42	1,859.44	460.98	5.034		
22,800.00	7,903.52	19,532.02	7,783.02	285.76	227.24	86.94	-14,394.83	1,485.08	2,353.25	1,899.91	453.34	5.191		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to GL 1332.5' & 27' KB @ 1359.50ft (Ori)	Coordinates are relative to: 202
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, West Virginia Northern Zone
Central Meridian is 79° 30' 0.000 W	Grid Convergence at Surface is: -0.43°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



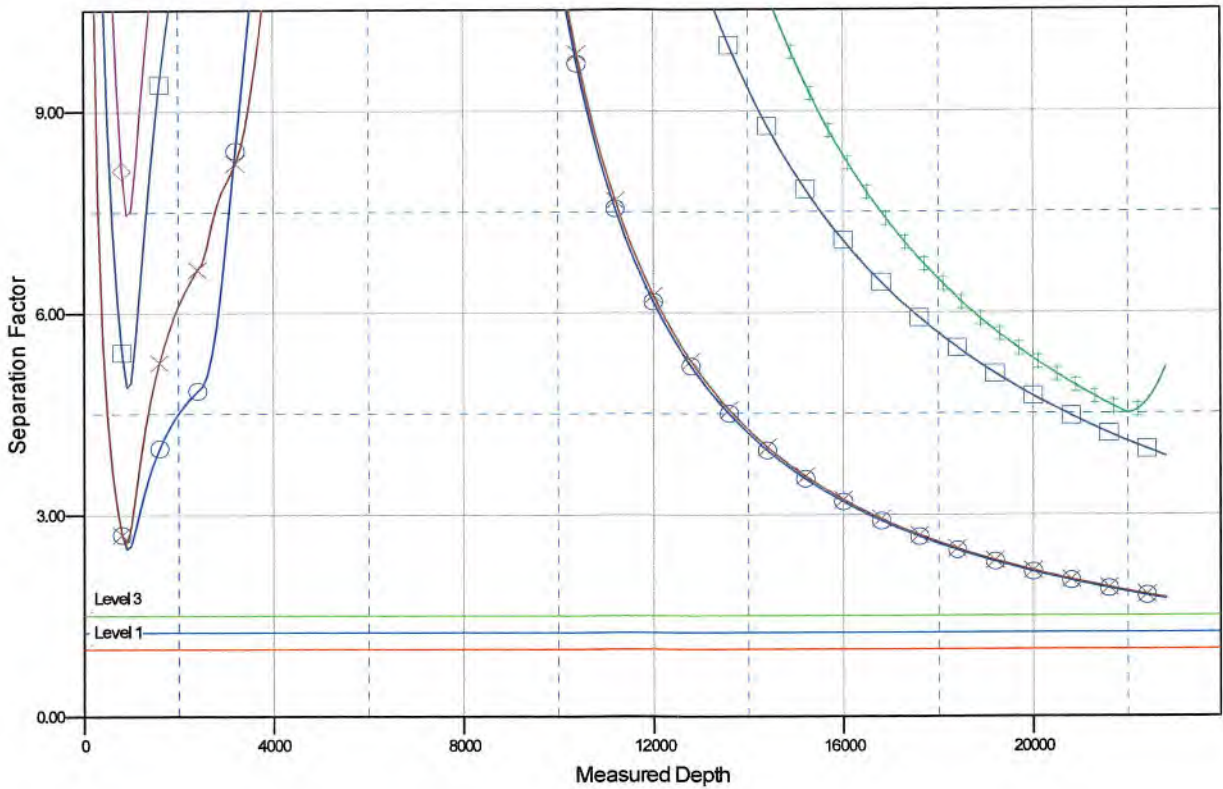
## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 202
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.50ft (Original Well Elev)
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	202	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 4	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to GL 1332.5' & 27' KB @ 1359.50ft (Ori  
 Offset Depths are relative to Offset Datum  
 Central Meridian is 79° 30' 0.000 W

Coordinates are relative to: 202  
 Coordinate System is US State Plane 1983, West Virginia Northern Zone  
 Grid Convergence at Surface is: -0.43°

### Separation Factor Plot



#### LEGEND

- 204, Orig., DEP Plan 5 V0
- x— 201, Orig., DEP Plan 6 V0
- +— Pritt South #207, OH, SDI Plan 1 V0
- 203, Orig., DEP Plan 5 V0
- ◇— 205, Orig., DEP Plan 4 V0



People Powered. Asset Strong.

July 21, 2022

West Virginia Department of Environmental Protection  
Office of Oil and Gas  
ATTN: Taylor Brewer  
601 57th Street SE  
Charleston, WV 25304

RECEIVED  
Office of Oil and Gas  
JUL 25 2022  
WV Department of  
Environmental Protection

**RE: Johnson TFP 40 202, API# 47-091-01363 – Expedited Modification due to well extension**

Dear Taylor,

Enclosed please find the modification for the Johnson TFP 40 202, (API# 47-091-01363). This permit is being modified due to adjusting the wellbore lateral length. The wellhead locations remain the same as the current permit. This well was originally permitted to 22,137 feet. The modification request is to increase the total measured depth to 22,850 feet. Additional leases under the additional section are shown on the revised WW-6A1.

Included are the following updated forms:

- Plat
- WW-6B
- Wellbore Schematic
- WW-6A1, Lease Information
- Area of Review Report
- Site Safety Plan

** Sent Email about wellhead  
* updated WTHs*

Should you have any questions or need any additional information, please feel free to contact me by phone or email.

Sincerely,

Dave Boyer  
Director of Geology & Development Planning  
(c) 724-759-0088  
(e) dboyer@arsenalresources.com

6031 Wallace Road Ext, Suite 101  
Wexford, PA 15090  
P: 724-940-1100  
F: 800-428-0981  
www.arsenalresources.com

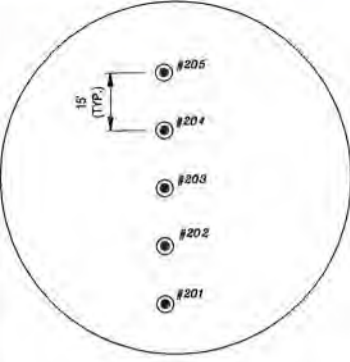
08/12/2022

SURFACE HOLE SURVEYED 39° 17' 30" (NAD27)  
 BOTTOM HOLE SURVEYED 39° 15' 00" (NAD27)

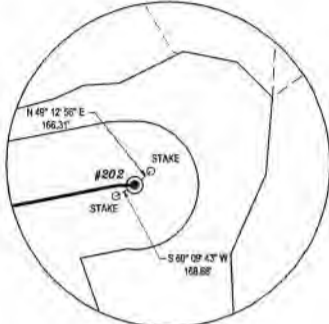
8,603' 822'

Latitude: (NAD27)

(NAD83-WVN) US SURVEY FT.



REFERENCES TO PROPOSED HORIZONTAL WELL SURFACE LOCATIONS NTS



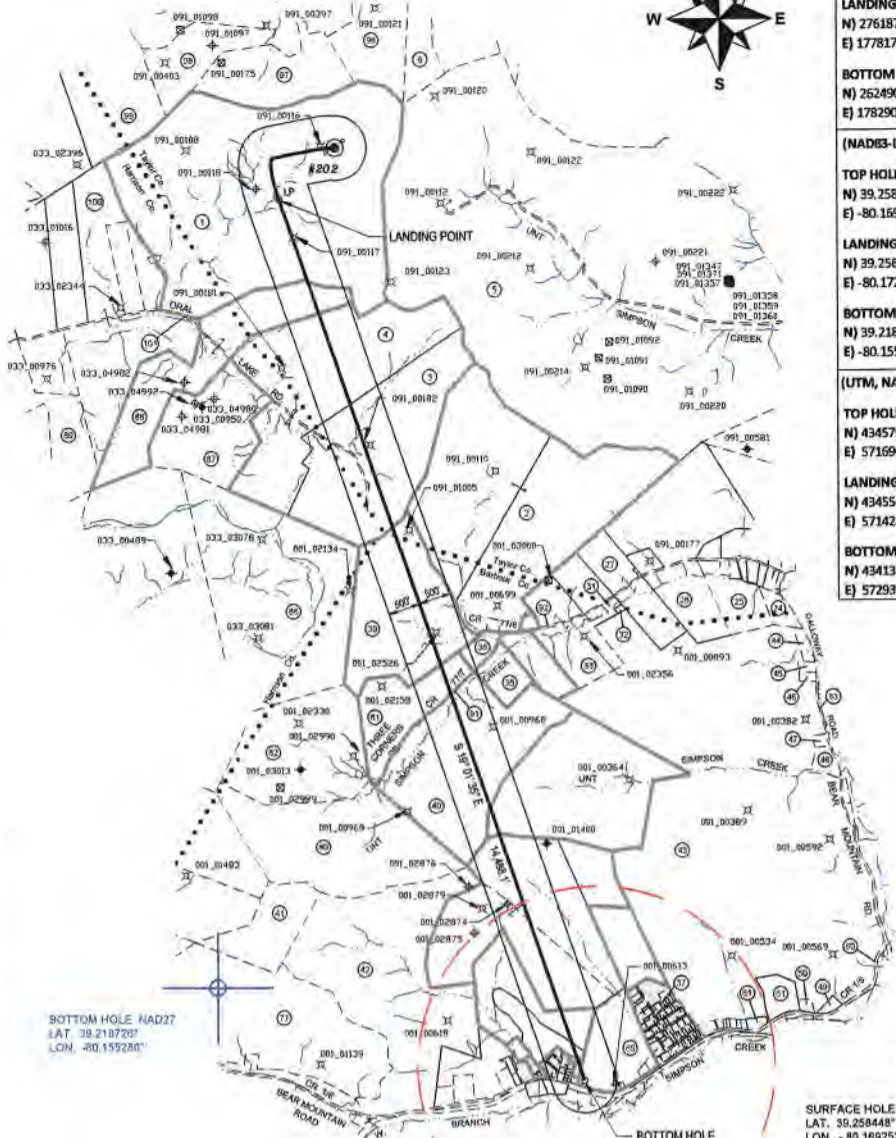
REFERENCES TIES (NTS)

REFERENCE NOTES

- Property lines as shown taken from deeds, tax maps, and field locations. A full boundary survey is not expressed or implied. All bearings are based on grid North. Ownership taken from public records for Taylor, Harrison, and Barbour County, West Virginia Date 2022.
- State Plane Coordinates & NAD83 Lat/Long by differential submeter mapping grade GPS.
- There are no railroads, dwellings, or agricultural buildings within 625 feet of center of pad.
- No water wells found within 250' of the center of well pad.

LEGEND

- PROPOSED WELL LATERAL
- - - PROPOSED WELL TIE LINE
- STREAM
- EXISTING ROAD
- BUFFER
- PROPERTY LINE
- MINERAL TRACT BOUNDARY
- COUNTY BOUNDARY LINE
- #H PROPOSED WELL HEAD
- ⊗ EXISTING WELL HEAD (Active)
- ⊕ EXISTING WELL HEAD (Plugged)
- ⊖ EXISTING WELL HEAD (Abandoned)
- ⊘ EXISTING WELL HEAD (Never Drilled)
- EXISTING WELL HEAD (Future Drill)
- LANDING POINT/BOTTOM HOLE
- ⊙ SURFACE OWNER



BOTTOM HOLE NAD27  
 LAT. 39.2187207  
 LON. -80.1592800

SURFACE HOLE NAD27  
 LAT. 39.2584488  
 LON. -80.1692538

Longitude: (NAD27)

BOTTOM HOLE SURVEYED 80° 07' 30" (NAD27)  
 SURFACE HOLE SURVEYED 80° 10' 00" (NAD27)

FILE#: 22078-001  
 SHEET#: 1 of 3  
 SCALE: 1" = 3000'  
 TICK SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/200

PROVEN SOURCE OF ELEVATION: WV-RTN CORS STATION

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT 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.

Signed: *Herbert L. Parsons, III* 7-18-2022  
 P.S. #2361: Herbert L. Parsons, III P.S.



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
 WVDEP  
 OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304



DATE: JULY 18, 2022  
 JOHNSON TFP-40  
 OPERATOR'S WELL #: # 202  
 API WELL #: 47 091 01363  
 STATE COUNTY PERMIT

Well Type:  Oil  Waste Disposal  Production  Deep  
 Gas  Liquid Injection  Storage  Shallow  
 WATERSHED: SIMPSON CREEK  
 COUNTY / DISTRICT: TAYLOR CO. FLEMINGTON DISTRICT  
 SURFACE OWNER: RENEE JOHNSON  
 OIL & GAS ROYALTY OWNER: SEE WW-6A1

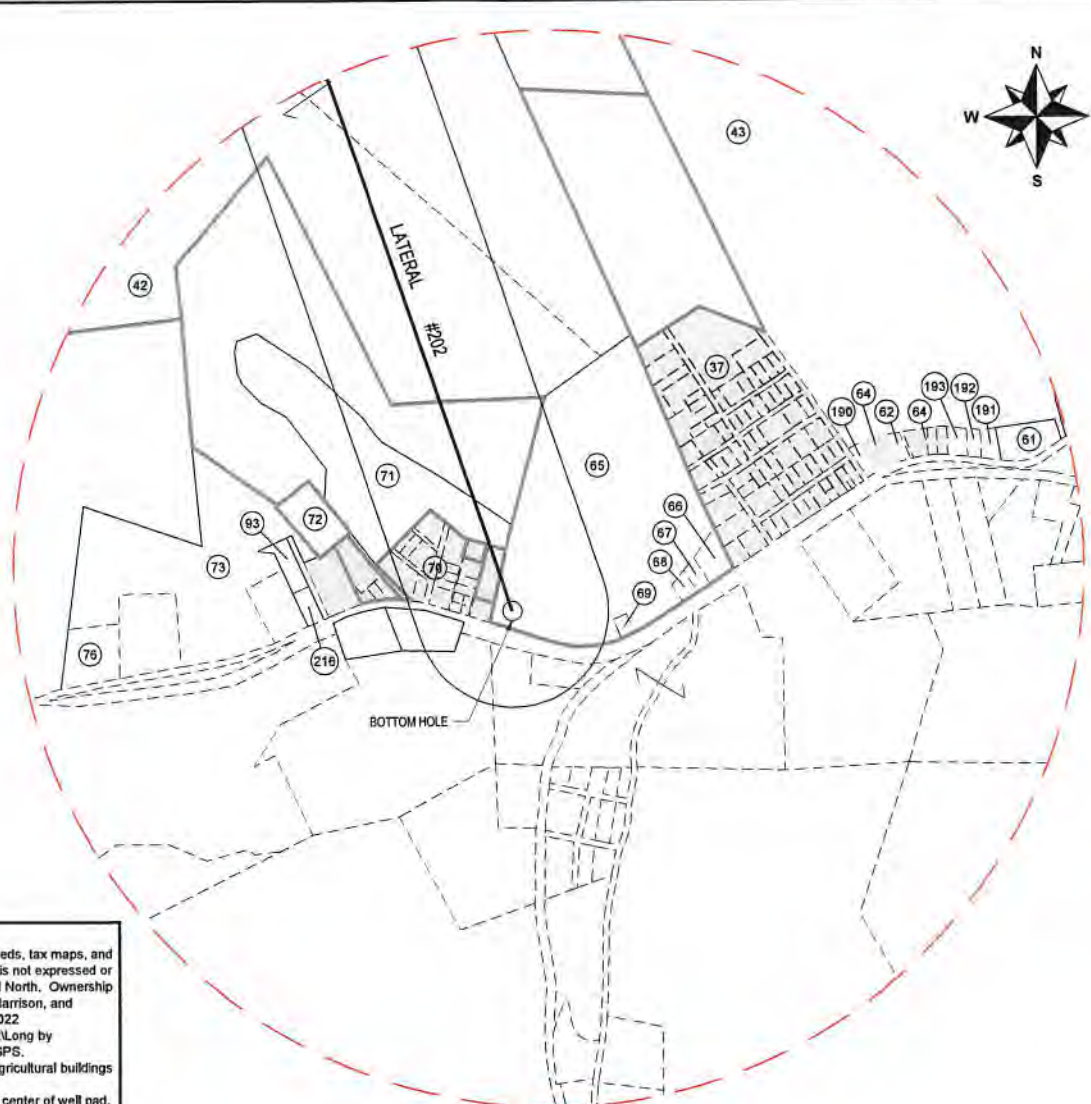
ELEVATION: 1,332.5  
 QUADRANGLE: ROSEMONT, WV  
 ACREAGE: 284 ± 08/12/2022  
 ACREAGE: 284 ±

- DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE
- PLUG OFF FORMATION  PERFORATE NEW FORMATION  PLUG & ABANDON
- CLEAN OUT & REPLUG  OTHER CHANGE SPECIFY: _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 7,903.5' TMD: 22,850.0'

WELL OPERATOR: ARSENAL RESOURCES  
 ADDRESS: 6031 WALLACE ROAD EXTENSION # 300  
 CITY: WEXFORD STATE: PA ZIP: 15090

DESIGNATED AGENT: NATHAN SKEEN  
 ADDRESS: 633 MAIN STREET  
 CITY: BRIDGEPORT STATE: WV ZIP: 26330



**REFERENCE NOTES**

1. Property lines as shown taken from deeds, tax maps, and field locations. A full boundary survey is not expressed or implied. All bearings are based on grid North. Ownership taken from public records for Taylor, Harrison, and Barbour County, West Virginia Date 2022
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3. There are no railroads, dwellings, or agricultural buildings within 625 feet of center of pad.
4. No water wells found within 250' of the center of well pad.

**LEGEND**

	PROPOSED WELL LATERAL
	PROPOSED WELL TIE LINE
	STREAM
	EXISTING ROAD
	BUFFER
	PROPERTY LINE
	MINERAL TRACT BOUNDARY
	COUNTY BOUNDARY LINE
	PROPOSED WELL HEAD
	EXISTING WELL HEAD (Active)
	EXISTING WELL HEAD (Plugged)
	EXISTING WELL HEAD (Abandoned)
	EXISTING WELL HEAD (Never Drilled)
	EXISTING WELL HEAD (Future Drill)
	LANDING POINT/BOTTOM HOLE
	SURFACE OWNER

ENLARGED PLAT AREA

FILE#: 22078-001  
 SHEET#: 2 of 3  
 SCALE: 1" = 1000'  
 TICK SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/200  
 PROVEN SOURCE OF ELEVATION: WV-RTN CORS STATION

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT 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.

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 WVDEP  
 OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304



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 JOHNSON TFP-40  
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 STATE COUNTY PERMIT

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 COUNTY / DISTRICT: TAYLOR CO. FLEMINGTON DISTRICT  
 SURFACE OWNER: RENEE JOHNSON  
 OIL & GAS ROYALTY OWNER: SEE WW-6A1

ELEVATION: 1,332.5  
 QUADRANGLE: ROSEMONT, WV  
 ACREAGE: 284 ± **08/12/2022**  
 ACREAGE: 284 ±

- DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  
 PLUG OFF FORMATION  PERFORATE NEW FORMATION  PLUG & ABANDON  
 CLEAN OUT & REPLUG  OTHER CHANGE SPECIFY: _____

TARGET FORMATION: MARCELLUS

ESTIMATED DEPTH: TVD: 7,903.5' TMD: 22,850.0'

WELL OPERATOR: ARSENAL RESOURCES  
 ADDRESS: 6031 WALLACE ROAD EXTENSION # 300  
 CITY: WEXFORD STATE: PA ZIP: 15090

DESIGNATED AGENT: NATHAN SKEEN  
 ADDRESS: 633 MAIN STREET  
 CITY: BRIDGEPORT STATE: WV ZIP: 26330

SURFACE PARCEL OWNER INFORMATION			ADJOINER PARCEL OWNER INFORMATION				
ID#	DEP#	PARCEL NUMBER	OWNER NAME	ID#	DEP#	PARCEL NUMBER	OWNER NAME
1	033	17-15-0331-0027-0000	JOHNSON RENEE	2	001	01-09-0009-0002-0000	STEWART FARM LLC
58	033	17-15-0351-0010-0000	JOHNSON RENEE	5	091	48-04-0011-0001-0000	CFS FARMS LIMITED LIABILITY CO
4	033	17-15-0351-0012-0000	GCSTREAM LLC	8	091	48-04-0008-0022-0000	GRIPPIN JAMES S & ELAINE M & SURV
3	033	17-15-0351-0013-0000	GCSTREAM LLC	24	091	48-04-0011-0007-0005	SANFORD RICHARD LEE & PAMELA & SURV
39	001	01-09-0009-0001-0000	STEWART FARM LLC	25	091	48-04-0011-0006-0000	RAVIS THOMAS E
81	001	01-09-0009-0019-0000	STEWART FARM LLC	26	091	48-04-0011-0005-0001	RAVIS THOMAS E
40	001	01-09-0009-0020-0000	SEESE ROBERT & BRENDA HWS	27	091	48-04-0011-0003-0000	PROPST PAUL
43	001	01-09-0009-0022-0000	WOLFE LARRY, ROBERT WOLFE & STANLEY WOLFE ET UXES, HWS	31	001	01-09-0009-0008-0000	CLEAVENGER LEONARD D
42	001	01-09-0011-0001-0000	POLINO ENTERPRISES INC	32	001	01-09-0009-0008-0002	CLEAVENGER LEONARD D
71	001	01-09-0012-0061-0000	CHARLTON-FRYER AMANDA S & TIMOTHY R CHARLTON LE	33	001	01-09-0008-0007-0000	CROUSE STEPHEN DALE & MICHAEL LYNN
70	001	PLAN OF LOTS	BROWNTON PLAN OF LOTS	35	001	01-09-0009-0020-0001	SMALLWOOD RUSSELL & ANGELA WRS
85	001	01-09-0012-0027-0000	WOLFE LARRY MICHAEL	37	001	PLAT	CLEAVENGER PLATT
				38	001	01-09-0009-0003-0000	STEWART FARM LLC
				41	001	01-09-0009-0012-0001	POLINO ENTERPRISES INC
				44	001	01-09-0009-0017-0001	MADDIX MICHAEL R & JUDITH L
				45	001	01-09-0009-0011-0000	SALTIS STEVE JR & AMY HWS
				48	001	01-09-0009-0012-0000	SALTIS STEVE JR & AMY R HWS
				47	001	01-09-0009-0013-0000	MURPHY GEORGE H JR & TAMELA J, HWS
				48	001	01-09-0009-0022-0002	WOLFE MICHAEL B
				49	001	01-09-0012-0004-0002	KNOTTS TERRY & DONETTA
				50	001	01-09-0012-0014-0000	MOSESSO JOHN A TRUST
				51	001	01-09-0009-0022-0003	KRIZNER FRANK A & RENEE B HWS
				60		RIGHT-OF-WAY	COUNTY ROUTE 1/8 BEAR MOUNTAIN ROAD
				61	001	01-09-0012-0004-0000	SWIGER ARGYLE C
				62	001	01-09-012A-0107-0001	DARR WILLIAM
				63	001	RIGHT-OF-WAY	GALLOWAY STATE ROUTE 76
				64	001	01-09-012A-0091 thru 94-0000	CRISS DAVID A
				64	001	01-09-012A-0107-0000	CRISS DAVID A
				66	001	01-09-0012-0028-0000	WOLFE LARRY, ROBERT & STANLEY
				67	001	01-09-0012-0027-0002	WOLFE LARRY MICHAEL & ELLEN SUE HWS
				68	001	01-09-0012-0027-0001	WOLFE LARRY MICHAEL
				69	001	01-09-0012-0028-0000	WOLFE LARRY M & ELLEN S HWS
				72	001	01-09-0012-0080-0000	SCHIMANSKY STEVEN & DEBRA HWS
				73	001	01-09-0012-0042-0000	FOSTER ERIC M & TRACI D WRS
				78	001	01-09-0012-0041-0000	TRADER PAUL & LORETTA WRS
				77	001	01-09-0011-0001-0002	BECKWITH LUMBER CO INC
				80	001	01-09-0010-0002-0000	SMITH JO ANN V & GARY M BROWN JR (WS)
				82	001	01-09-0010-0001-0000	SMITH JO ANN V & GARY M BROWN JR (WS)
				86	033	17-15-0351-0023-0000	GCSTREAM LLC
				87	033	17-15-0351-0011-0000	GCSTREAM LLC
				89	033	17-15-0351-0007-0000	WARDER ORAN LEE & JANICE L
				93	001	01-09-012C-0003-0000	ARBAUGH RITA
				96	091	48-04-0008-0021-0000	MILLARD CARLYLE G
				97	091	48-04-0007-0027-0000	CEQUEL III COMMUNICATIONS
				98	091	48-04-0007-0009-0000	CEQUEL III COMMUNICATIONS
				99	091	48-04-0007-0008-0000	FRUM CLINTON A (HEIRS)
				100	033	17-15-0351-0009-0000	JOHNSON RENEE
				190	001	01-09-012A-0090-0000	ELMOND MUREL L (J/E)
				191	001	01-09-0012-0004-0004	TINGLER RUSSEL J
				192	001	01-09-012A-0095-0000	KITTLE FRANK G HRS ET AL
				193	001	01-09-012A-0098-0000	BARTLETT MICHAEL ALLEN SR
				216	001	01-09-012C-0003-0000	COSTELLO HUGO, HRS

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-----	PROPOSED WELL TIE LINE
~~~~~	STREAM
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—————	BUFFER
-----	PROPERTY LINE
—————	MINERAL TRACT BOUNDARY
.....	COUNTY BOUNDARY LINE
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⊙	EXISTING WELL HEAD (Never Drilled)
⊙	EXISTING WELL HEAD (Future Drill)
○	LANDING POINT/BOTTOM HOLE
⊙	SURFACE OWNER

FILE#: 22078-001
SHEET#: 3 of 3
SCALE: 1" = 3000'
TICK SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1/200
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Signed: Herbert L. Parsons 7-18-2022
P.S. #2361: Herbert L. Parsons, III P.S.



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WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304



DATE: JULY 18, 2022
JOHNSON TFP-40
OPERATOR'S WELL #: # 202
API WELL #: 47 091 01363
STATE COUNTY PERMIT

Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow
WATERSHED: SIMPSON CREEK
COUNTY / DISTRICT: TAYLOR CO. FLEMINGTON DISTRICT
SURFACE OWNER: RENEE JOHNSON
OIL & GAS ROYALTY OWNER: SEE VWV-6A1

ELEVATION: 1,332.5
QUADRANGLE: ROSEMONT, WV
ACREAGE: 284 ± 08/12/2022
ACREAGE: 284 ±

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE SPECIFY: _____
TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 7,903.5' TMD: 22,850.0'
WELL OPERATOR: ARSENAL RESOURCES DESIGNATED AGENT: NATHAN SKEEN
ADDRESS: 6031 WALLACE ROAD EXTENSION # 300 ADDRESS: 633 MAIN STREET
CITY: WEXFORD STATE: PA ZIP: 15090 CITY: BRIDGEPORT STATE: WV ZIP: 26330

Arsenal Resources
Johnson TFP 40 201
WW-6A – Notice of Application, Attachment (page 1 of 1)

Water Purveyors:

Renee Johnson
511 Beards Run Road
Bridgeport, WV 26330

Cequel III Communications II LLC
520 Maryville Centre Dr Suite
Saint Louis, MO 63141

Carlyle G. Millard
413 High St
Bridgeport, WV 26330

James and Elaine Grippin
137 Ocello St.
Clarksburg, WV 26301

CFS Farms Limited Liability Co.
P.O. Box 297
Flemington, WV 26347

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<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$
Postage	\$
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7/21/22

Sent To
Street **Renee Johnson**
511 Beards Run Road
City, State **Bridgeport, WV 26330**

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$
Postage	\$
Total Postage and Fees	11.75

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7/21/22

Sent To
Street **Cequel III Communications II LLC**
520 Maryville Centre Drive, Suite 300
City **St Louis, MO 63141**

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7015 1520 0003 0705 3393

U.S. Postal Service™
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<input checked="" type="checkbox"/> Return Receipt (hardcopy)	\$
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$
Postage	\$
Total Postage and Fees	11.75

Postmark Here

7/21/22

Sent To
Street **Carlyle G. Millard**
513 High Street
City, State **Bridgeport, WV 26330**

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7015 1520 0003 0705 3379

U.S. Postal Service™
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OFFICIAL USE

Certified Mail Fee	\$
Extra Services & Fees (check box, add fee as appropriate)	
<input checked="" type="checkbox"/> Return Receipt (hardcopy)	\$
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$
Postage	\$
Total Postage and Fees	11.75

Postmark Here

7/21/22

Sent To
Street **CFS Farms Limited Liability Co.**
P.O. Box 297
City, State **Flemington, WV 26347**

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7015 1520 0003 0705 3386

U.S. Postal Service™
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City, State **Clarksburg, WV 26301**

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

08/12/2022

Agreement to Drill, Complete and Operate Oil & Gas Wells

This Agreement to Drill, Complete and Operate Oil & Gas Wells (this "Agreement"), by and among Arsenal Resources LLC, a West Virginia limited liability company ("Arsenal"), River Ridge Energy, LLC, a Delaware limited liability company ("River Ridge"), and River Ridge Energy, Holdings, LLC, a Delaware limited liability company ("River Ridge Holdings"), is effective as of March 1, 2017. (the "Effective Date") and sets forth the terms pursuant to which Arsenal will drill, complete and operate the Wells (as defined below) on behalf of River Ridge and River Ridge Holdings. Arsenal, River Ridge, and River Ridge Holdings are each a "Party" and are collectively the "Parties". In consideration of the foregoing and the respective agreements hereinafter set forth and the mutual benefits to be derived therefrom, the Parties, intending to be legally bound, hereby agree as follows:

1. **Term:** This Agreement is effective from the Effective Date until terminated by Arsenal on the one hand or River Ridge and River Ridge Holdings on the other hand with 30 days' written notice to the other Party or Parties, as applicable (the "Term").
2. **Authorization to Operate:** River Ridge and River Holdings authorize Arsenal to undertake and perform, on River Ridge and River Ridge Holdings behalf, all operations, including without limitation permit applications, well pad preparation, drilling and completing wells, and marketing gas, oil and other hydrocarbons therefrom with respect to all oil and gas wells to be drilled on oil and gas leasehold acreage held by River Ridge or River Ridge Holdings. River Ridge, River Ridge Holdings and Arsenal are affiliates with a common parent. Arsenal was formed to operate oil and gas leasehold acreage held by River Ridge, River Ridge Holdings and certain other affiliates. Arsenal agrees that it shall, in a good and workmanlike manner and in accordance with industry standards as they prevail in the area, drill, complete and operate oil and gas wells on leasehold acreage owned by River Ridge or River Ridge Holdings from time to time as directed by River Ridge or River Ridge Holdings (collectively, the "Wells").
3. **No Third Party Beneficiary:** This Agreement is for the benefit of the Parties and is not for the benefit of any third party.
4. **Counterparts:** This Agreement may be simultaneously executed in several counterparts and via facsimile or similar electronic transmittal, each of which shall be deemed to be an original and taken together shall constitute one and the same instrument.

[Signature Page Follows]

IN WITNESS WHEREOF, Arsenal, River Ridge, and River Ridge Holdings have caused their duly authorized representatives to execute this Agreement as of the Effective Date.

ARSENAL RESOURCES LLC

By: Joel E. Symonds
Name: Joel E. Symonds
Title: Vice President - Land

RIVER RIDGE ENERGY, LLC

By: Joel E. Symonds
Name: Joel E. Symonds
Title: Vice President - Land

RIVER RIDGE HOLDINGS, LLC

By: Joel E. Symonds
Name: Joel E. Symonds
Title: Vice President - Land

West Virginia Secretary of State — Online Data Services

Business and Licensing

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Business Organization Detail

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MAR KEY LLC

Organization Information								
Org Type	Effective Date	Established Date	Filing Date	Charter	Class	Sec Type	Termination Date	Termination Reason
LLC Limited Liability Company	7/11/2011		7/11/2011	Domestic	Profit			

Organization Information			
Business Purpose	2111 - Mining, Quarrying, Oil & Gas Extraction - Oil and Gas Extraction - Crude Oil and Natural Gas Extraction		Capital Stock
Charter County		Control Number	99Q1F
Charter State	WV	Excess Acres	
At Will Term	A	Member Managed	MBR
At Will Term Years		Par Value	
Authorized Shares		Young Entrepreneur	Not Specified

08/12/2022

Addresses	
Type	Address
Designated Office Address	633 W. MAIN STREET BRIDGEPORT, WV, 26330
Mailing Address	6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090 USA
Notice of Process Address	CORPORATION SERVICE COMPANY 209 WEST WASHINGTON STREET CHARLESTON, WV, 25302
Principal Office Address	6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090 USA
Type	Address

Officers	
Type	Name/Address
Member	ARSENAL RESOURCES DEVELOPMENT LLC 6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090
Organizer	PAUL M HERZING 560 EPSILON DR. PITTSBURGH, PA, 15238 USA
Type	Name/Address

Annual Reports	
Filed For	
2020	
2019	
2018	

08/12/2022

2017
2016
2015
2014
2013
2012
Date filed

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Monday, March 1, 2021 — 9:37 AM

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SENECA-UPSHUR PETROLEUM, LLC

Organization Information								
Org Type	Effective Date	Established Date	Filing Date	Charter	Class	Sec Type	Termination Date	Termination Reason
LLC Limited Liability Company	2/12/1973		2/12/1973	Domestic	Profit			

Organization Information			
Business Purpose	2111 - Mining, Quarrying, Oil & Gas Extraction - Oil and Gas Extraction - Crude Oil and Natural Gas Extraction		Capital Stock
Charter County		Control Number	0
Charter State	WV	Excess Acres	0
At Will Term	A	Member Managed	MBR
At Will Term Years		Par Value	
Authorized Shares		Young Entrepreneur	Not Specified

08/12/2022

Addresses	
Type	Address
Designated Office Address	633 W. MAIN STREET BRIDGEPORT, WV, 26330
Mailing Address	6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090 USA
Notice of Process Address	CORPORATION SERVICE COMPANY 209 WEST WASHINGTON STREET CHARLESTON, WV, 25302
Principal Office Address	6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090 USA
Type	Address

Officers	
Type	Name/Address
Member	RIVER RIDGE ENERGY, LLC 6031 WALLACE ROAD EXTENSION, SUITE 300 WEXFORD, PA, 15090
Organizer	TAMMY J OWEN 300 SUMMERS STREET, STE 1500 PO BOX 2107 CHARLESTON, WV, 25328 USA
Type	Name/Address

DBA			
DBA Name	Description	Effective Date	Termination Date
KEYSPAN PRODUCTION & DEVELOPMENT COMPANY	TRADENAME	6/11/2004	
NATIONAL GRID	TRADENAME	8/17/2007	

08/12/2022

NATIONAL GRID PRODUCTION AND DEVELOPMENT	TRADENAME	12/5/2008	5/9/2012
DBA Name	Description	Effective Date	Termination Date

Name Changes	
Date	Old Name
3/28/2011	SENECA-UPSHUR PETROLEUM, INC.
Date	Old Name

Date	Amendment
6/15/2016	AMENDMENT FILED CHANGING FROM A MANAGER-MANAGED CO. TO A MEMBER-MANAGED CO. >> REMOVED ROBERT KOZEL & STEPHEN A. BISHOP AS MANAGERS & ADDED SOLE MEMBER (C IMAGE).
3/28/2011	CONVERSION: FROM SENECA-UPSHUR PETROLEUM, INC. TO SENECA-UPSHUR PETROLEUM, LLC
7/25/1997	MERGER; MERGING LITTLE SWISS DRILLING COMPANY, A QUAL WV CORP AND PALACE VALLEY PETROLEUM COMPANY, A QUAL WV CORP WITH AND INTO SENECA-UPSHUR PETROLEUM, INC., A QUAL WV CORP, THE SURVIVOR.
Date	Amendment

Annual Reports	
Filed For	
2020	
2019	
2018	
2017	
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2014	
2013	
2012	
2011	

08/12/2022

2010
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For more information, please contact the Secretary of State's Office at 304-558-8000.

Monday, March 1, 2021 — 9:40 AM

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Stansberry, Wade A <wade.a.stansberry@wv.gov>

RE: [External Sender] Johnson TFP 40 Modifications

1 message

Ross Schweitzer <rschweitzer@arsenalresources.com>

Fri, Aug 5, 2022 at 2:44 PM

To: Dave Boyer <dboyer@arsenalresources.com>, "Stansberry, Wade A" <wade.a.stansberry@wv.gov>

Wade,

Here is some additional documentation that we normally include in the permit the show the agreement between Seneca Upshur/River Ridge and Arsenal. Additionally ,MarKey is a part of Arsenal all of which are just different entities for us.

Ross Schweitzer*Sr. Director of Drilling, Construction and Permitting*

Arsenal Resources

[6031 Wallace Road Ext. Suite 101](#)[Wexford, PA 15090](#)

P: 724.940.1137

C: 724.584.1192



From: Dave Boyer <dboyer@arsenalresources.com>**Sent:** Friday, August 05, 2022 2:31 PM**To:** Stansberry, Wade A <wade.a.stansberry@wv.gov>**Cc:** Ross Schweitzer <rschweitzer@arsenalresources.com>**Subject:** RE: [External Sender] Johnson TFP 40 Modifications

Yes, those entities (Mar Key, Seneca-Upshur, & River Ridge) are all held by Arsenal Resources.

Thanks,

Dave

Dave Boyer*Director of Geology & Development Planning*

Arsenal Resources

[6031 Wallace Road Suite 101](#)[Wexford, PA 15090](#)

C: 724.759.0088

08/12/2022



From: Stansberry, Wade A <wade.a.stansberry@wv.gov>
Sent: Friday, August 5, 2022 2:29 PM
To: Dave Boyer <dboyer@arsenalresources.com>
Cc: Ross Schweitzer <rschweitzer@arsenalresources.com>
Subject: Re: [External Sender] Johnson TFP 40 Modifications

In the leases that end in Mar Key, Seneca-Upshur, Arsenal/River Ridge Energy LLC has the agreement to drill through them?

I am wanting to verify and I will proceed with the review and hope to get it to you next week.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

On Fri, Aug 5, 2022 at 1:32 PM Dave Boyer <dboyer@arsenalresources.com> wrote:

Wade,

Our Lease Records Supervisor reviewed the 6A1 documents. She found a typo on Johnson #201 and a revised 6A1 is attached.

All of the other chains appear to be complete ending in either Mar Key, Seneca-Upshur, or River Ridge. I attached the Agreement to Drill, Complete, and Operate Oil & Gas Wells included in the original permit package.

Please let me know if you have any questions or need additional information.

Thanks,

Dave

Dave Boyer

Director of Geology & Development Planning

Arsenal Resources

6031 [Wallace Road Suite 101](#)

[Wexford, PA 15090](#)

08/12/2022

C: 724.759.0088



From: Stansberry, Wade A <wade.a.stansberry@wv.gov>
Sent: Friday, August 5, 2022 11:33 AM
To: Dave Boyer <dboyer@arsenalresources.com>; Ross Schweitzer <rschweitzer@arsenalresources.com>
Subject: [External Sender] Johnson TFP 40 Modifications

Dave/Ross,

The Lease Chains need to be clear to show that River Ridge Energy LLC has the lease and/or agreement to drill through these parcels for:

91-01363

91-01367

91-01368

The corrections/updates can be emailed to me.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

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4 attachments

- WV SOS - Business and Licensing - Corporations - Mar Key.pdf**
88K
- WV SOS Seneca Upshur.pdf**
272K
- River Ridge Arsenal Part 2.pdf**
19K
- River Ridge Arsenal Part 1.pdf**
39K

08/12/2022



Stansberry, Wade A <wade.a.stansberry@wv.gov>

Expedited Modification Horizontal H6A Well Work Permits API: (47-091-01363, 47-091-01367, & 47-091-01368)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov>

Mon, Aug 8, 2022 at 3:58 PM

To: Dave Boyer <Dboyer@arsenalresources.com>, Ross Schweitzer <rschweitzer@arsenalresources.com>, "Greynolds, Kenneth L" <kenneth.l.greynolds@wv.gov>, C Kinsey <ckinsey@wvassessor.com>

I have attached a copy of the newly issued well [permit](#) numbers:

47-091-01363 - JOHNSON TFP 40 202**47-091-01367 - JOHNSON TFP 40 201****47-091-01368 - JOHNSON TFP 40 203**

These will serve as your copy.

Thank you,

Wade A. Stansberry**Environmental Resource Specialist 3****West Virginia Department of Environmental Protection****Office of Oil & Gas****601 57th St. SE****Charleston, WV 25304****(304) 926-0499 ext. 41115****(304) 926-0452 fax****Wade.A.Stansberry@wv.gov**

3 attachments **47-091-01363 - mod.pdf**
6028K **47-091-01367 - mod.pdf**
3689K **47-091-01368 - mod.pdf**
3967K**08/12/2022**



Stansberry, Wade A <wade.a.stansberry@wv.gov>

Re: Expedited Modification Horizontal H6A Well Work Permits API: (47-091-01363, 47-091-01367, & 47-091-01368)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov>

Mon, Aug 8, 2022 at 4:00 PM

To: Dave Boyer <Dboyer@arsenalresources.com>, Ross Schweitzer <rschweitzer@arsenalresources.com>, "Greynolds, Kenneth L" <kenneth.l.greynolds@wv.gov>, C Kinsey <ckinsey@wvassessor.com>

Sorry,

Attached are the official copy.

Thank you,



Wade A. Stansberry**Environmental Resource Specialist 3****West Virginia Department of Environmental Protection****Office of Oil & Gas****601 57th St. SE****Charleston, WV 25304****(304) 926-0499 ext. 41115****(304) 926-0452 fax****Wade.A.Stansberry@wv.gov**

On Mon, Aug 8, 2022 at 3:58 PM Stansberry, Wade A <wade.a.stansberry@wv.gov> wrote:

I have attached a copy of the newly issued well [permit](#) numbers:**47-091-01363 - JOHNSON TFP 40 202****47-091-01367 - JOHNSON TFP 40 201****47-091-01368 - JOHNSON TFP 40 203**


These will serve as your copy.

Thank you,

Wade A. Stansberry**Environmental Resource Specialist 3****West Virginia Department of Environmental Protection****Office of Oil & Gas****601 57th St. SE****Charleston, WV 25304****(304) 926-0499 ext. 41115****(304) 926-0452 fax****Wade.A.Stansberry@wv.gov****3 attachments** **47-091-01363 - mod.pdf**
6028K **47-091-01368 - mod.pdf**
5345K**47-091-01367 - mod.pdf****08/12/2022**

8/8/22, 4:01 PM

State of West Virginia Mail - Re: Expedited Modification Horizontal H6A Well Work Permits API: (47-091-01363, 47-091-01367, & 4...

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08/12/2022