



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-40 203
47-091-01368-00-00

**Lateral Extension. Lateral Leg Length 14443.4' to 20876' Total Measured Depth 22719' to 29150'.
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 blue ink signature of James A. Martin, Chief, is written in a cursive style. Below the signature, the name and title are printed in a black, sans-serif font.

James A. Martin
Chief

Operator's Well Number: JOHNSON TFP-40 203
Farm Name: RENEE JOHNSON
U.S. WELL NUMBER: 47-091-01368-00-00
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 40 203 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: 29,150 ft

11) Proposed Horizontal Leg Length: 20,876 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: _____

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	29,150	29,150	TOC @ 1,950
Tubing							
Liners							

Kenneth Greynolds
Digitally signed by: Kenneth Greynolds
 DN: CN = Kenneth Greynolds email = Kenneth.L.Greynolds@ww.gov C = AD O = WVDEP OU = Oil and Gas
 Date: 2022.07.15 09:06:53 -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		

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.

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

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

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.



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.

Area of Review Report - **Johnson TFP 40** Pad, **203** 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
Walter B Goodwin #2	091-00116	Union Drilling Inc.	Existing	39.25858	-80.169849	4560	Benson	NA
Chester Sinsel #4	091-00123	Diversified Production LLC	Existing	39.252857	-80.165912	4924	Benson	NA
John F Stewart #1	001-00699	Braxton Oil & Gas Corp	Existing	39.239031	-80.159989	4746	Benson	NA
J A Mosesso 1573	001-01400	Union Drilling Inc.	Plugged 1985	39.228912	-80.157245	5080	Big Injun, Riley, Benson	NA
Mabel Cleavenger 234-CH	001-00541	Diversified Production LLC	Existing	39.212954	-80.146889	4840	Riley, Benson	NA
William B Smith 1	001-00296	Diversified Production LLC	Existing	39.21001	-80.146724	4649	Riley, Benson	NA
William B Smith 2	001-00300	Diversified Production LLC	Existing	39.204185	-80.145742	4658	Riley, Benson	NA



ARSENAL

R E S O U R C E S

SITE SAFETY PLAN

JOHNSON TFP 40 WELL PAD #203

911 Address:

4006 Green Valley Rd
Bridgeport, WV 26330

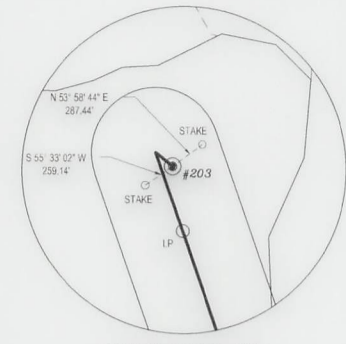


Kenneth Greynolds

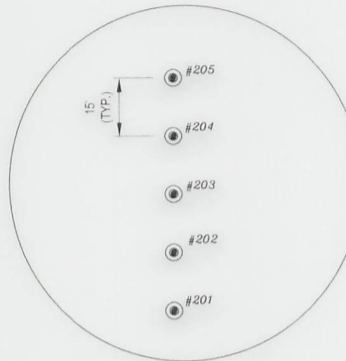
Digitally signed by: Kenneth Greynolds
DN: CN = Kenneth Greynolds email = Kenneth.L.
Greynolds@wv.gov C = AD O = WVDEP OU = Oil and Gas
Date: 2022.07.15 09:07:48 -04'00'

Latitude: (NAD27)

(NAD83-WVN) US SURVEY FT.	
TOP HOLE	N) 277001.722 E) 1779051.662
LANDING POINT	N) 276497.633 E) 1779130.490
BOTTOM HOLE	N) 256762.143 E) 1785935.770
(NAD83-LAT/LONG) DECIMAL	
TOP HOLE	N) 39.258581 E) -80.169060
LANDING POINT	N) 39.257199 E) -80.168769
BOTTOM HOLE	N) 39.203152 E) -80.144237
(UTM, NAD83) METER	
TOP HOLE	N) 4345801.284 E) 571690.396
LANDING POINT	N) 4345648.103 E) 571716.966
BOTTOM HOLE	N) 4339669.804 E) 573890.246



REFERENCES TIES (NTS)



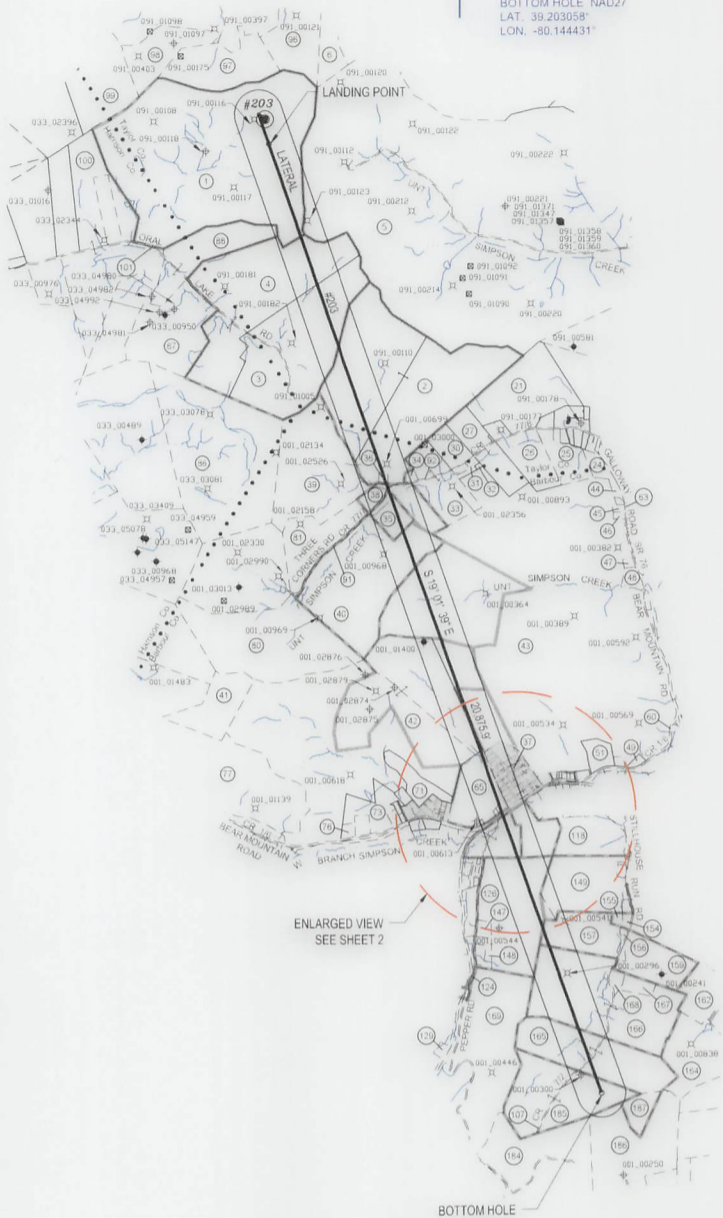
REFERENCES TO PROPOSED HORIZONTAL WELL SURFACE LOCATIONS NTS

REFERENCE NOTES

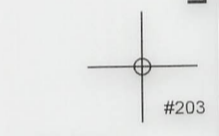
- Property lines as shown taken from deeds, tax maps, and field locations. A full boundary survey is not expressed or implied. All bearings are based on grid North. Ownership taken from public records for Taylor, Harrison, and Barbour County, West Virginia Date 2022
- State Plane Coordinates & NAD83 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



ENLARGED VIEW SEE SHEET 2



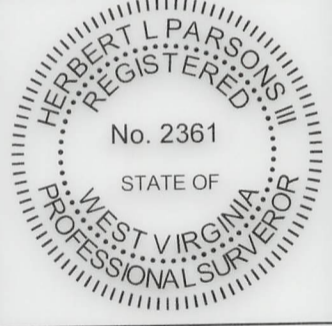
SURFACE HOLE NAD27
 LAT. 39.258489°
 LON. -80.169253°

Longitude: (NAD27)

FILE#: 22078-001
 SHEET#: 1 of 3
 SCALE: 1" = 4000'
 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.



(+) 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 #: # 203
 API WELL #: 47 091 01368
 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

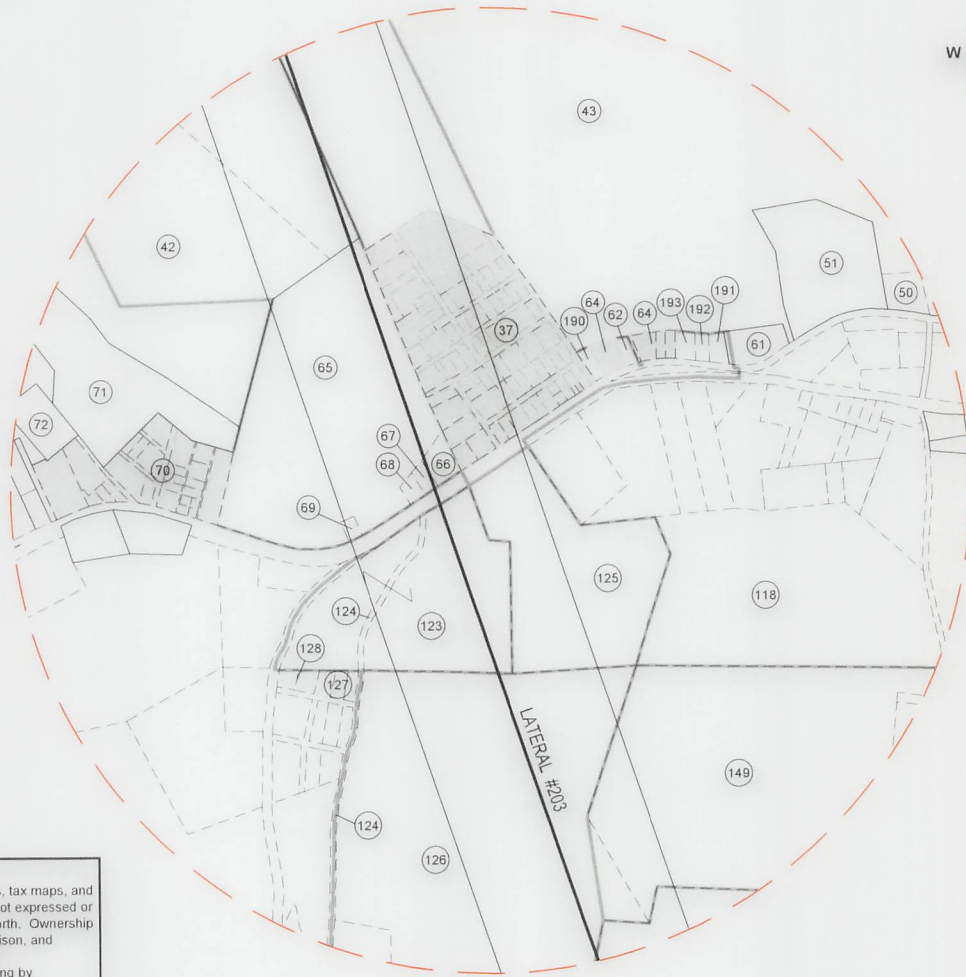
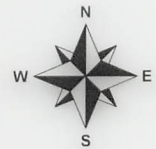
ELEVATION: 1,332.5'
 QUADRANGLE: ROSEMONT WV
 ACREAGE: 284 ±
 ACREAGE: 284 ±

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: 29,150.0'
 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

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



ENLARGED PLAT AREA

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

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- PROPOSED WELL TIE LINE
- STREAM
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- COUNTY BOUNDARY LINE
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- EXISTING WELL HEAD (Abandoned)
- EXISTING WELL HEAD (Never Drilled)
- EXISTING WELL HEAD (Future Drill)
- LANDING POINT/BOTTOM HOLE
- SURFACE OWNER

FILE#: 22078-001

SHEET#: 2 of 3

SCALE: 1" = 1000'

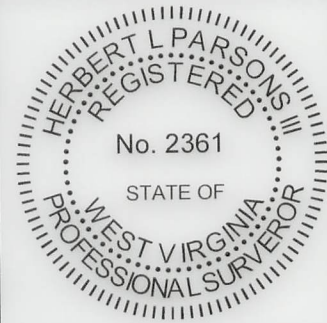
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SURFACE OWNER: RENEE JOHNSON
OIL & GAS ROYALTY OWNER: SEE WW-6A1

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: 29,150.0'

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	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	21	091	46-04-0011-0005-0005	BECKWITH LUMBER COMPANY
2	001	01-09-0009-0002-0000	STEWART FARM LLC	24	091	46-04-0011-0007-0005	SANFORD RICHARD LEE & PAMELA & SURV
36	001	01-09-0009-0004-0000	STEWART FARM LLC	25	091	46-04-0011-0006-0000	RAVIS THOMAS E
38	001	01-09-0009-0003-0000	STEWART FARM LLC	26	091	46-04-0011-0005-0001	RAVIS THOMAS E
35	001	01-09-0009-0020-0001	SMALLWOOD RUSSELL & ANGELA WRS	27	091	46-04-0011-0003-0000	PROPST PAUL
40	001	01-09-0009-0020-0000	SEESE ROBERT & BRENDA HWS	30	091	46-04-0011-0002-0000	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
65	001	01-09-0012-0027-0000	WOLFE LARRY MICHAEL	33	001	01-09-0009-0007-0000	CROUSE STEPHEN DALE & MICHAEL LYNN
66	001	01-09-0012-0026-0000	WOLFE LARRY, ROBERT & STANLEY	34	001	01-09-0009-0006-0000	STEWART FARM LLC
67	001	01-09-0012-0027-0002	WOLFE LARRY MICHAEL & ELLEN SUE HWS	37	001	PLAT	CLEAVENGER PLATT
123	001	01-09-0012-0029-0000	MURRAY SARA N	39	001	01-09-0009-0001-0000	STEWART FARM LLC
126	001	01-09-0012-0047-0000	SHAHAN OKEY C	41	001	01-09-0012-0001-0000	POLINO ENTERPRISES INC
157	001	01-09-0012-0050-0002	KNAPP FRANCES C & JERREL F W S	44	001	01-09-0009-0017-0001	MADDIX MICHAEL R & JUDITH L
166	001	01-09-0012-0050-0000	MARTIN ROBERT E	45	001	01-09-0009-0011-0000	SALTIS STEVE JR & AMY HWS
165	001	01-09-0022-0006-0000	MARTIN ROBERT	46	001	01-09-0009-0012-0000	SALTIS STEVE JR & AMY R HWS
185	001	01-09-0022-0005-0000	MARTIN ROBERT E	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 1/6 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
				68	001	01-09-0012-0027-0001	WOLFE LARRY MICHAEL
				69	001	01-09-0012-0028-0000	WOLFE LARRY M & ELLEN S HWS
				70	001	PLAN OF LOTS	BROWNTON PLAN OF LOTS
				71	001	01-09-0012-0061-0000	CHARLTON-FRYER AMANDA S & TIMOTHY R CHARLTON LIE
				72	001	01-09-0012-0060-0000	SCHIMANSKY STEVEN & DEBRA HWS
				73	001	01-09-0012-0042-0000	FOSTER ERIC M & TRACI D WS
				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)
				81	001	01-09-0009-0019-0000	STEWART FARM LLC
				86	033	17-15-0351-0023-0000	GCSTREAM LLC
				87	033	17-15-0351-0011-0000	GCSTREAM LLC
				88	033	17-15-0351-0010-0000	JOHNSON RENEE
				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
				118	001	01-09-0012-0017-0000	MONTGOMERY MICHAEL J & BERTHA HWS
				125	001	01-09-0012-0025-0000	VUKOVICH ROBERT K
				124		RIGHT-OF-WAY	PEPPER ROAD
				127	001	01-09-012C-0026 & 27-0000	LIPSCOMB ANNA U E MICHAEL J MASSIE
				128	001	01-09-012C-0024 & 25-0000	LIPSCOMB ANNA G MCCORD
				129	001	01-09-0022-0004-0000	MARPLE JAMES D & GENA F DOWELL WS
				147	001	01-09-0012-0047-0002	FARRIS MYRTLE ELLEN
				148	001	01-09-0012-0047-0003	MCCOORD TIMMY
				149	001	01-09-0012-0051-0000	WBL SPE II LLC
				154	001	01-09-0012-0050-0003	DELANEY JESSE PAUL
				155	001	01-09-0012-0050-0005	DELANEY JESSE PAUL & BRANDIE L HWS
				156	001	01-09-0012-0050-0008	KNAPP JERREL
				159	001	01-09-0012-0050-0001	STREETS BRENDA K ET ALS
				162	001	01-09-0012-0055-0000	CORDER WAYNE D & JEANETTE S HWS
				164	001	01-09-0022-0007-0000	WARE SHIRLEY LIVING TRUST
				167	001	01-09-0022-0009-0000	STREETS FRANKLIN D & BRENDA (WROS)
				168	001	01-09-0012-0050-0004	MCCUNE CLAYTON & CHARLOTTE WS
				169	001	01-09-0022-0004-0001	BAKER AARON & MARKEE WS
				184	001	01-04-0003-0019-0000	HUMPHREYS RUSSELL K & ROBIN D HWS
				186	001	01-04-0003-0020-0000	STOUT HARRY J II & HARLEN J
				187	001	01-04-0003-0047-0000	MARTIN ROBERT E
				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-0096-0000	BARTLETT MICHAEL ALLEN SR

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- 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
	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" = 4000'
 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.



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

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

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

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

DATE: JULY 18, 2022

JOHNSON TFP-40
 OPERATOR'S WELL #: # 203

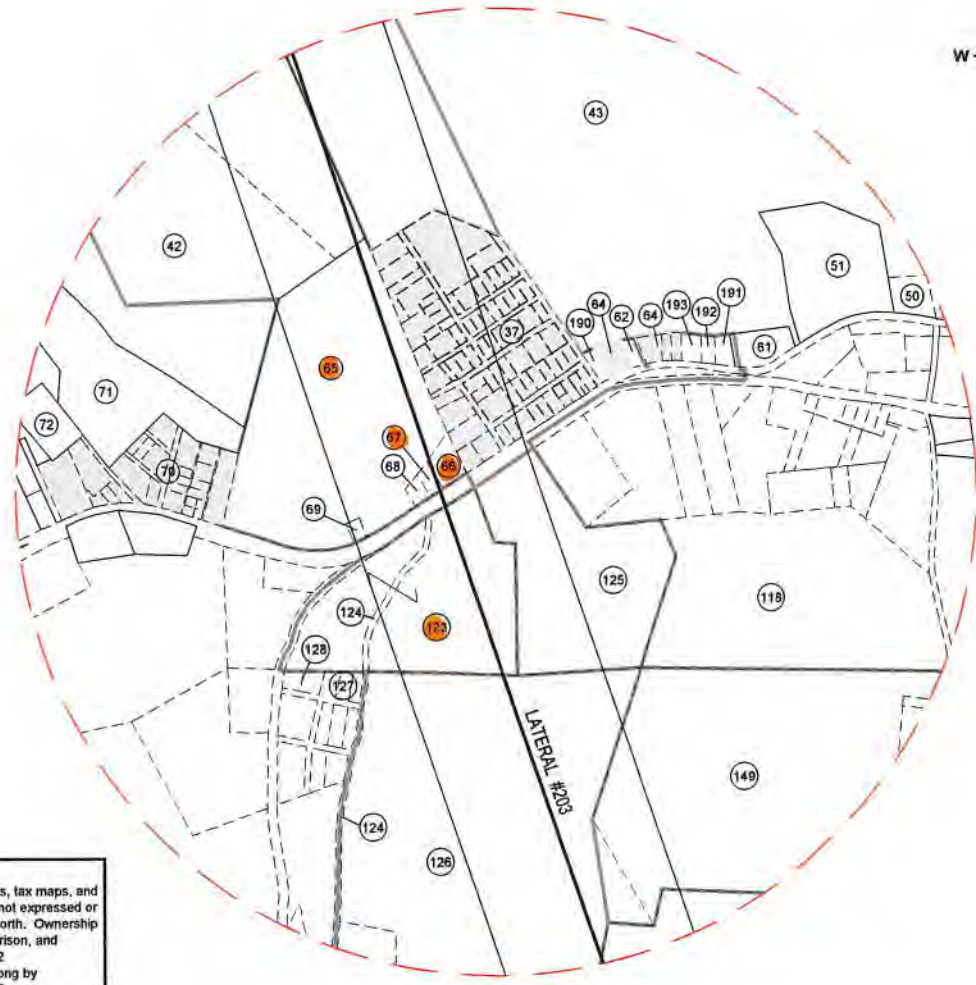
API WELL #: 47 091 01369
 STATE COUNTY PERMIT

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

ESTIMATED DEPTH: TVD: 7,903.5' TMD: 29,150.0'

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

08/12/2022



ENLARGED PLAT AREA

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
 2. State Plane Coordinates & NAD83 Lat/Long by differential submeter mapping grade GPS.
 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

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.
 Signed: Herbert L. Parsons 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 #: # 203
 API WELL #: 47 091 01368
 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: 29,150.0'
 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	17-15-0351-0027-0000	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	21	091	46-04-0011-0005-0005	BECKWITH LUMBER COMPANY
2	001	01-09-0009-0002-0000	STEWART FARM LLC	24	091	46-04-0011-0007-0005	SANFORD RICHARD LEE & PAMELA & SURV
36	001	01-09-0009-0004-0000	STEWART FARM LLC	25	091	46-04-0011-0008-0000	RAVIS THOMAS E
38	001	01-09-0009-0003-0000	STEWART FARM LLC	26	091	46-04-0011-0005-0001	RAVIS THOMAS E
35	001	01-09-0009-0020-0001	SMALLWOOD RUSSELL & ANGELA WRS	27	091	46-04-0011-0003-0000	PROPST PAUL
40	001	01-09-0009-0020-0000	SEESE ROBERT & BRENDA HWS	30	091	46-04-0011-0002-0000	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
65	001	01-09-0012-0027-0000	WOLFE LARRY MICHAEL	33	001	01-09-0009-0007-0000	CROUSE STEPHEN DALE & MICHAEL LYNN
66	001	01-09-0012-0026-0000	WOLFE LARRY, ROBERT & STANLEY	34	001	01-09-0009-0006-0000	STEWART FARM LLC
67	001	01-09-0012-0027-0002	WOLFE LARRY MICHAEL & ELLEN SUE HWS	37	001	PLAT	CLEAVENGER PLATT
123	001	01-09-0012-0029-0000	MURRAY SARA N	39	001	01-09-0009-0001-0000	STEWART FARM LLC
126	001	01-09-0012-0047-0000	SHAHAN CKEY C	41	001	01-09-0012-0001-0000	POLINO ENTERPRISES INC
157	001	01-09-0012-0050-0002	KNAPP FRANCES C & JERREL F WS	44	001	01-09-0009-0017-0001	MADDIX MICHAEL R & JUDITH L
166	001	01-09-0012-0050-0000	MARTIN ROBERT E	45	001	01-09-0009-0011-0000	SALTIS STEVE JR & AMY HWS
165	001	01-09-0022-0006-0000	MARTIN ROBERT	46	001	01-09-0009-0012-0000	SALTIS STEVE JR & AMY R HWS
185	001	01-09-0022-0005-0000	MARTIN ROBERT E	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 1/6 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
				68	001	01-09-0012-0027-0001	WOLFE LARRY MICHAEL
				69	001	01-09-0012-0028-0000	WOLFE LARRY M & ELLEN S HWS
				70	001	PLAN OF LOTS	BROWNTON PLAN OF LOTS
				71	001	01-09-0012-0061-0000	CHARLTON-FRYER AMANDA S & TIMOTHY R CHARLTON L/E
				72	001	01-09-0012-0060-0000	SCHIMANSKY STEVEN & DEBRA HWS
				73	001	01-09-0012-0042-0000	FOSTER ERIC M & TRACI D WS
				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)
				81	001	01-09-0009-0019-0000	STEWART FARM LLC
				86	033	17-15-0351-0023-0000	GCSTREAM LLC
				87	033	17-15-0351-0011-0000	GCSTREAM LLC
				88	033	17-15-0351-0010-0000	JOHNSON RENEE
				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
				116	001	01-09-0012-0017-0000	MONTGOMERY MICHAEL J & BERTHA, HWS
				125	001	01-09-0012-0025-0000	VUKOVICH ROBERT K
				124		RIGHT-OF-WAY	PEPPER ROAD
				127	001	01-09-012C-0026 & 27-0000	LIPSCOMB ANNA L/E MICHAEL J MASSIE
				128	001	01-09-012C-0024 & 25-0000	LIPSCOMB ANNA G MCCORD
				129	001	01-09-0022-0004-0000	MARPLE JAMES D & GENA F DOWELL WS
				147	001	01-09-0012-0047-0002	FARRIS MYRTLE ELLEN
				148	001	01-09-0012-0047-0003	MCCORD TIMMY
				149	001	01-09-0012-0051-0000	WBL SPE II LLC
				154	001	01-09-0012-0050-0003	DELANEY JESSE PAUL
				156	001	01-09-0012-0050-0005	DELANEY JESSE PAUL & BRANDIE L HWS
				156	001	01-09-0012-0050-0008	KNAPP JERREL
				159	001	01-09-0012-0050-0001	STREETS BRENDA K ET ALS
				162	001	01-09-0012-0055-0000	CORDER WAYNE D & JEANETTE S, HWS
				164	001	01-09-0022-0007-0000	WARE SHIRLEY LIVING TRUST
				167	001	01-09-0022-0009-0000	STREETS FRANKLIN D & BRENDA (AROS)
				168	001	01-09-0012-0050-0004	MCCUNE CLAYTON & CHARLOTTE WS
				169	001	01-09-0022-0004-0001	BAKER AARON & MARKEE WS
				184	001	01-04-0003-0019-0000	HUMPHREYS RUSSELL K & ROBIN D HWS
				186	001	01-04-0003-0020-0000	STOUT HARRY J II & HARLEN J
				187	001	01-04-0003-0047-0000	MARTIN ROBERT E
				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-0085-0000	KITTLE FRANK G HRS ET AL
				193	001	01-09-012A-0086-0000	BARTLETT MICHAEL ALLEN SR

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-----	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)
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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" = 4000'  
 TICK SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/200  
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Signed: Herbert L. Parsons 7-16-2022  
 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 #: # 203  
 API WELL #: 47 091 01368  
 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 WV-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: 29,150.0'

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

Attachment to WW-6A1, Johnson 203

Letter Designation/Number Designation on Plat	Grantor, Lessor, Assignor, etc.	Grantee, Lessee, Assignee, etc.	Royalty	Book/Page	Acreage
1 (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	
4 00008217	LAURA GOFF DAVIS HAROLD DOTSON CATHER AND DIANE GOFF CATHER HIS WIFE	NRM Petroleum Corporation	12.50%	1076/550 34/220	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	
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	

**Attachment to WW-6A1, Johnson 203**

<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>
<b>3</b> 00008217	LAURA GOFF DAVIS HAROLD DOTSON CATHER AND DIANE GOFF CATHER HIS WIFE	NRM Petroleum Corporation	12.50%	1076/550 34/220	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	
<b>3</b> 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	
<b>2</b> (00008235)	John F Stewart	Petro-Lewis Corporation	12.50%	33/250 and 75/154	200
	Partnership Properties Co	Petro-Lewis Corporation		77/226	
	Partnership Properties Co	Eastern American Energy Corporation		95/112	
	Eastern American Energy Corporation	Energy Corporation of America		438/429	
	Energy Corporation of America	Greylock Production LLC		178/401	
	Greylock Production, LLC	Mar Key, LLC		179/96	
<b>36</b> (00008235)	John F Stewart	Petro-Lewis Corporation	12.50%	33/250 and 75/154	200
	Partnership Properties Co	Petro-Lewis Corporation		77/226	
	Partnership Properties Co	Eastern American Energy Corporation		95/112	
	Eastern American Energy Corporation	Energy Corporation of America		438/429	
	Energy Corporation of America	Greylock Production LLC		178/401	
	Greylock Production, LLC	Mar Key, LLC		179/96	



**Attachment to WW-6A1, Johnson 203**

<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>
38 00008241	Barbara Ellen Brown	Mar Key, LLC	12.50%	179/544	5
38 00008242	Robert E Seese and Brenda K Seese	Mar Key, LLC	15.00%	179/546	
38 00008243	Shirley Jean Nutt	Mar Key, LLC	12.50%	179/548	
38 00008275	Lee Ann Hancock	Mar Key, LLC	12.50%	180/302	
38 00008276	Carol Ann Dement	Mar Key, LLC	12.50%	180/304	
38 00008330	John Minor Stewart	Mar Key, LLC	12.50%	180/589	
38 00008392	Franklin Delano Stewart	Mar Key, LLC	12.50%	181/13	
38 00008867	Mark Allen Stewart	Mar Key, LLC	12.50%	182/394	
<del>35</del> (00008492)	Coalquest Development LLC	Mar Key, LLC	15.00%	181/240	26
<del>40</del> (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	
<del>43</del> (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	

**Attachment to WW-6A1, Johnson 203**

<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>
	Seneca-Upshur Petroleum, Inc.	Seneca-Upshur Petroleum LLC		16/637 also 447/129	
<b>42</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	
<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	
<b>66</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	
<b>67</b> (00005891)	John A Mosesso, Raymond and Kathryn Chess	Allerton Miller	12.50%	49/227	250

Attachment to WW-6A1, Johnson 203

Letter Designation/Number Designation on Plat	Grantor, Lessor, Assignor, etc.	Grantee, Lessee, Assignee, etc.	Royalty	Book/Page	Acreage
	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		447/129	
<del>123</del> (00008808)	James L Lee	Mar Key, LLC	15.00%	182/335	57.67
<del>126</del> (00008898)	OKEY C SHAHAN	Mar Key LLC	12.5	184/409	74.29
<del>157</del> (00005909)	CHARLES BANISH AND BONNIE BANISH, HIS WIFE	Cumberland and Allegheny Gas Company	12.5	46/401	55
	Cumberland and Allegheny Gas Company	Union Drilling Inc AND Allerton Miller		46/347	
	Allerton Miller	Union Drilling Inc		98/11	
	Union Drilling Inc	Equitable Resources Exploration		325/219	
	Equitable Resources Exploration	Equitable Resources Energy		328/171	
	Equitable Resources Energy Co	Fuel Resources Production & Development		116/81	
	Equitable Resources Energy Co	Enervest East Limited Partnership		129/524	
	Fuel Resources Production & Development	The Houston Exploration Company		136/162	
	Enervest East Limited Partnership	The Houston Exploration Company		138/1	
	The Houston Exploration Company	Seneca-Upshur Petroleum LLC		139/48	
	Seneca-Upshur Petroleum, Inc.	Seneca-Upshur Petroleum LLC		447/129	
<del>166</del> (00005722)	WILLIAM B SMITH AND CLARA SMITH, HIS WIFE	Union Drilling Inc AND Allerton Miller	12.5	47/449	102
	Allerton Miller	Union Drilling Inc		98/11	
	Union Drilling Inc	Equitable Resources Exploration		325/219	
	Equitable Resources Exploration	Equitable Resources Energy		328/171	

**Attachment to WW-6A1, Johnson 203**

<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>
	Equitable Resources Energy Co	Fuel Resources Production & Development		116/81	
	Equitable Resources Energy Co	Enervest East Limited Partnership		129/524	
	Fuel Resources Production & Development	The Houston Exploration Company		136/162	
	Enervest East Limited Partnership	The Houston Exploration Company		138/1	
	The Houston Exploration Company	Seneca-Upshur Petroleum LLC		139/48	
	Seneca-Upshur Petroleum, Inc.	Seneca-Upshur Petroleum LLC		447/129	
<b>165</b> 00005721	WILLIAM B SMITH AND CLARA SMITH HIS WIFE	Union Drilling Inc & Allerton Miller	12.5	47/425	46
	ALLERTON MILLER	UNION DRILLING INC		98/11	
	UNION DRILLING INC	EQUITABLE RESOURCES EXPLORATION		325/219	
	EQUITABLE RESOURCES EXPLORATION	EQUITABLE RESOURCES ENERGY COMPANY		328/171	
	EQUITABLE RESOURCES ENERGY COMPANY	FUEL RESOURCES PRODUCTION & DEVELOPMENT		116/81	
	EQUITABLE RESOURCES ENERGY COMPANY	ENERVEST EAST LIMITED PARTNERSHIP		129/524	
	FUEL RESOURCES PRODUCTION & DEVELOPMENT	THE HOUSTON EXPLORATION COMPANY		383/187	
	ENERVEST EAST LIMITED PARTNERSHIP	THE HOUSTON EXPLORATION COMPANY		138/1	
	THE HOUSTON EXPLORATION COMPANY	SENECA-UPSHUR PETROLEUM INC		139/48	
	SENECA-UPSHUR PETROLEUM INC	SENECA-UPSHUR PETROLEUM LLC		447/129	
<b>185</b> (00008913)	TRIPLE L LAND AND MINERALS LLC	MAR KEY LLC	12.5	184/593	49.75

## **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

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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			
<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
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Monday, March 1, 2021 — 9:37 AM

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## 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	
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Monday, March 1, 2021 — 9:40 AM

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# ARSENAL

R E S O U R C E S

## SITE SAFETY PLAN

### JOHNSON TFP 40 WELL PAD #203

#### 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 09:07:48 -0400

**JOHNSON TFP40 Well Pad #203  
Site Safety Plan Table of Contents**

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  - 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
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## 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**

<b>NAME</b>	<b>TITLE</b>
	Arsenal Resources DRILLING REPRESENTATIVE
	Arsenal Resources SITE SUPERVISOR/REPRESENTATIVE
	STATE INSPECTOR
	DRILLING CONTRACTOR REPRESENTATIVE

#### **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**

<b>NAME</b>	<b>TITLE</b>
	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.





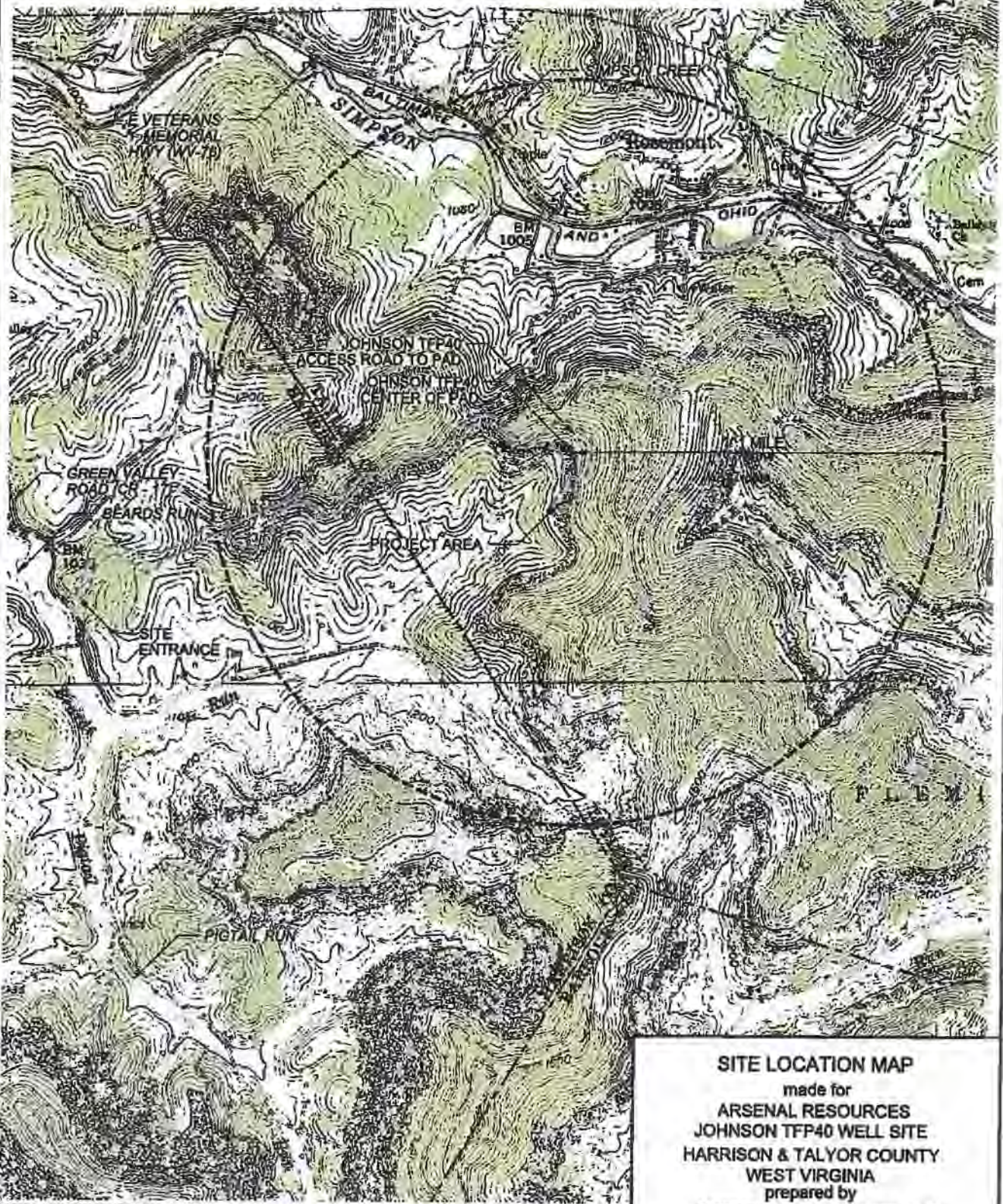
## **B. Topographic Map**

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: 4345150.695  
 E: 589526.425  
 GEOGRAPHIC (DMS)  
 LAT: 39° 15' 10.43"  
 LONG: -80° 11' 3.15"

**ACCESS ROAD TO PAD (NAD83)**  
 UTM (METER)  
 N: 4345004.476  
 E: 571674.923  
 GEOGRAPHIC (DMS)  
 LAT: 39° 15' 34.25"  
 LONG: -80° 10' 8.22"

**CENTER OF PAD (NAD83)**  
 UTM (METER)  
 N: 4345803.620  
 E: 571690.367  
 GEOGRAPHIC (DMS)  
 LAT: 39° 15' 30.97"  
 LONG: -80° 10' 8.62"



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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 & TALYOR COUNTY**  
**WEST VIRGINIA**  
 prepared by  
**DIEFFENBAUCH & HRITZ, LLC**  
 1095 Chaplin Rd Suite 200, Morgantown, WV 26501  
 Phone: 304-985-5555 Fax: 304-985-5567

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 80' 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 1/2" 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 1/4" 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 3/4" 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 3/4" or 8 1/2" hole.
6. Drill 8 3/4" or 8 1/2" 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 #203 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

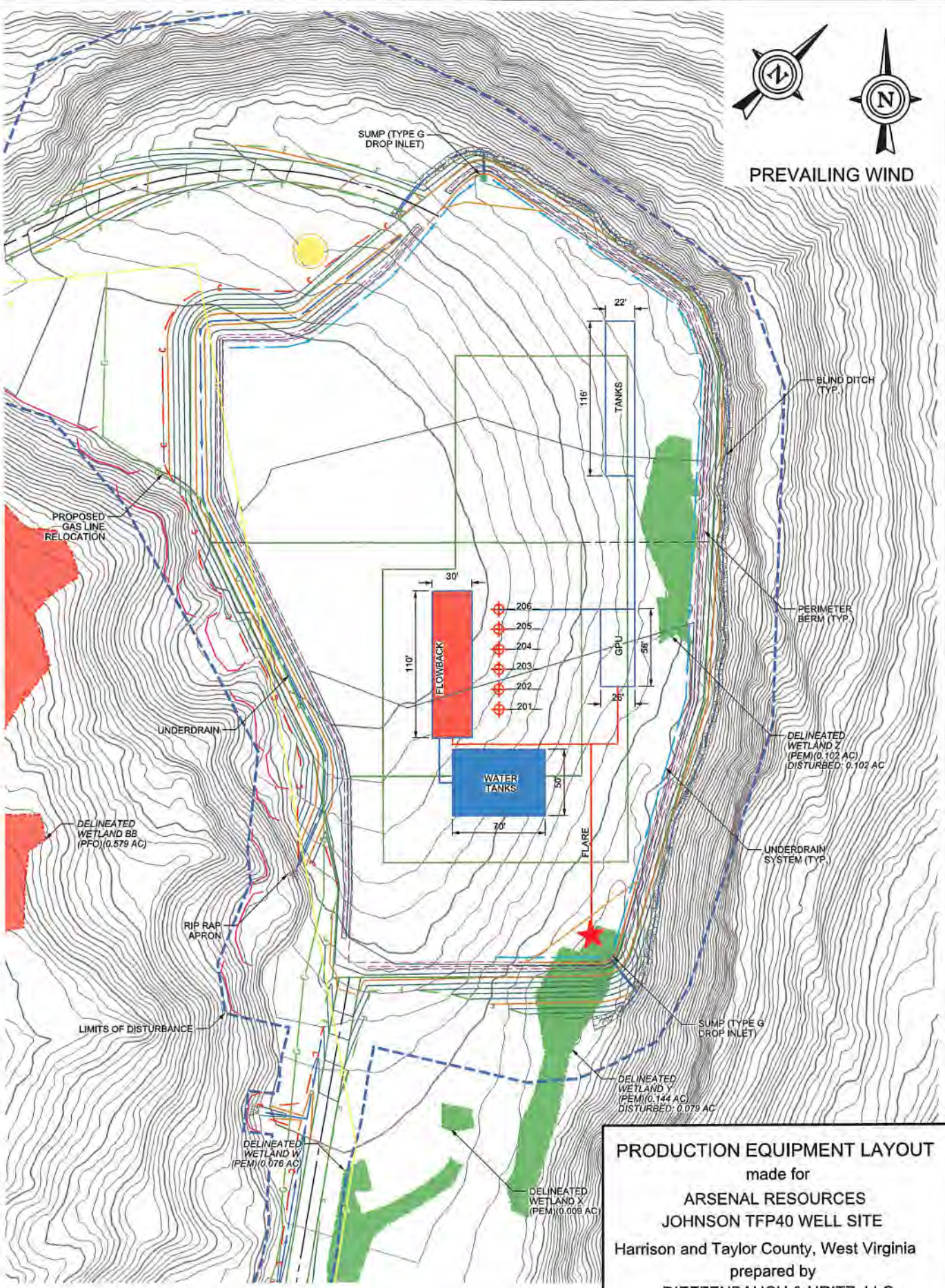
1. Casing and Cementing Standards listed on the Well Work Permit Application Casing and Tubing Program Table have been identified in the table below:

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#	32,293'	32,293'	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.



PREVAILING WIND



K:\Mountainair KeyStone\2017\17078-007 - Johnson TFP40\Common\Production Equipment_Layout.dgn  
8:50:50 AM  
9/21/2018  
1:100

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





## **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*

---

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**

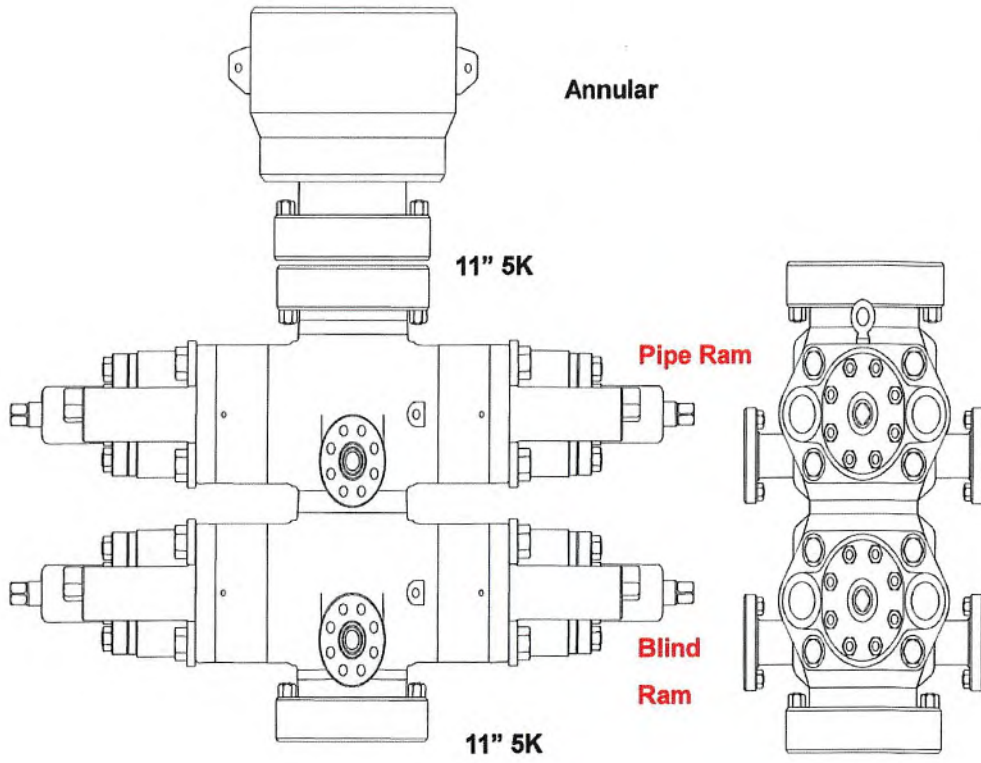
1. Inventory: At least 70,965 pounds of barite will be kept on location plus additional weight at the warehouse. At least 2,075 bbls of drilling fluid will be onsite and additional fluid will be stored both on location and at the warehouse.
2. The number and type of mixing units for mixing the mud on 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.

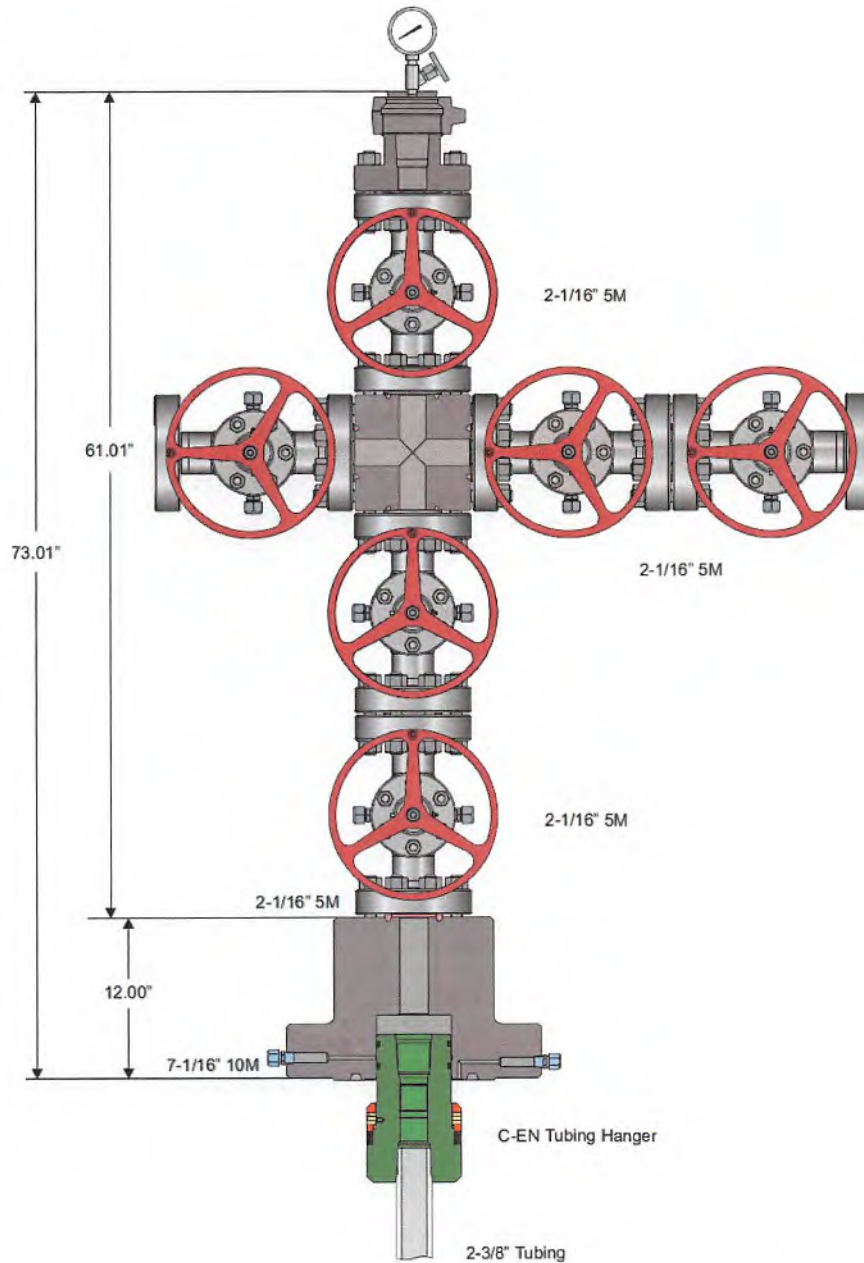


## **F. Inspector Notification**

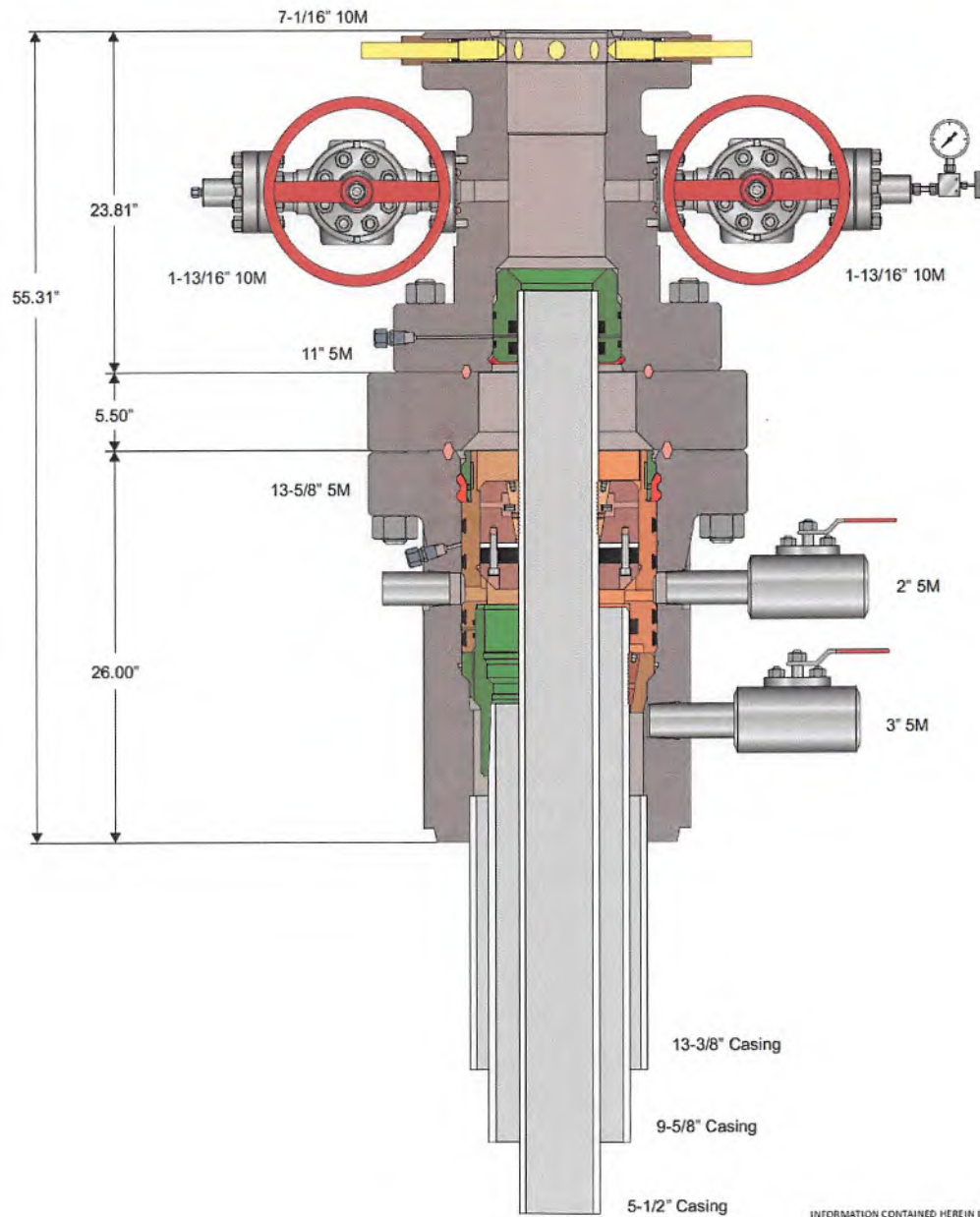
A detailed record of significant drilling events will be recorded in Arsenal Resources well log book. The state inspector will be notified upon any significant drilling events including the encounter of Hydrogen Sulfide Gas, lost circulation, fluid entry, abnormal pressures, etc.

## **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**

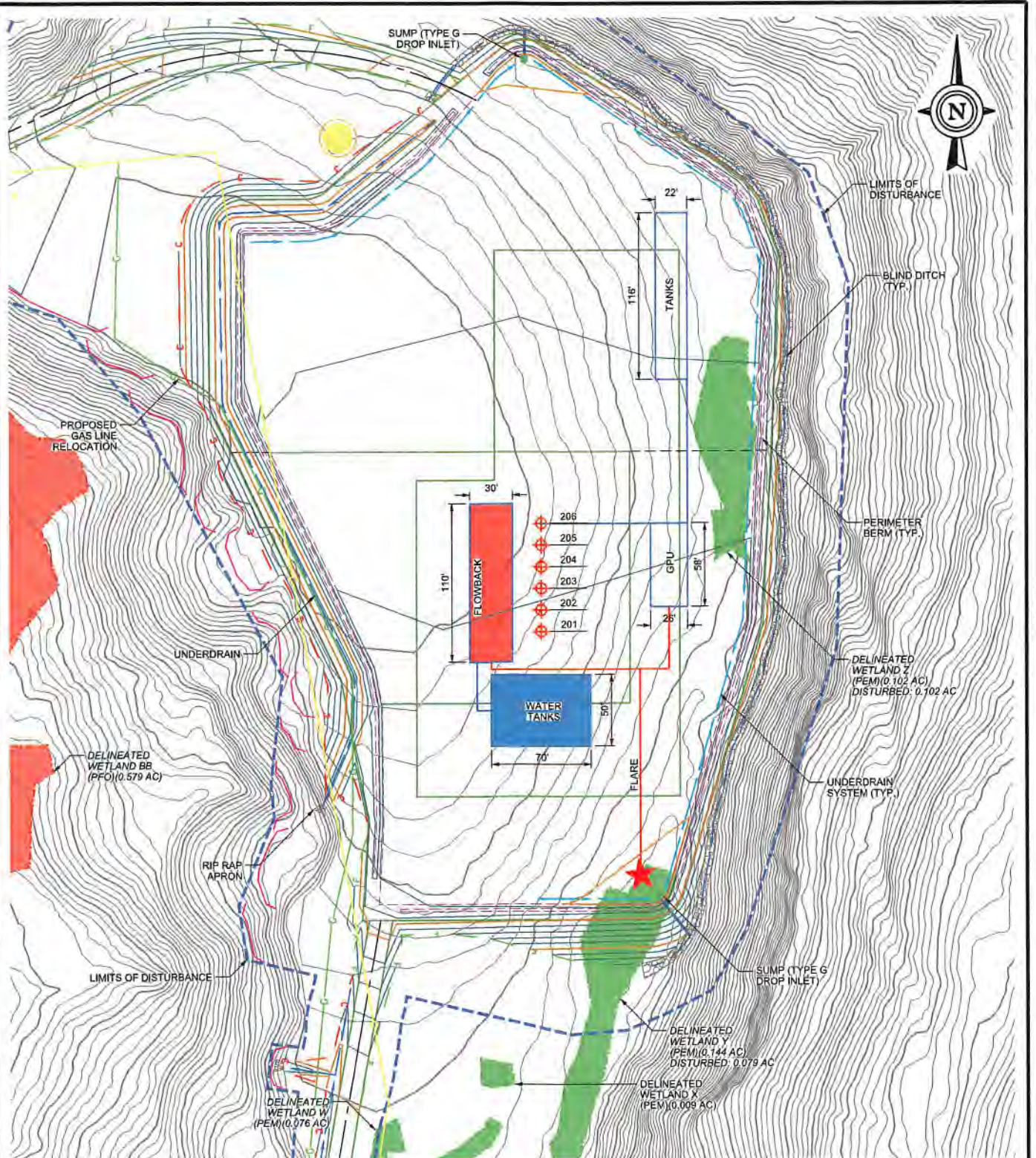
<u>QTY</u>	<u>Description</u>
2	Windssocks with Pole and Bracket
1	Set Well Condition Sign w/Green, Yellow, Red Flags
1	Primary Safe Briefing Area Sign
1	Secondary Safe Briefing Area Sign
1	Oxygen Resuscitator

## **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.



1-100 9/21/2018 8:51:13 AM K:\Mountaineer Keystone\2017\17078-007 - Johnson TFP40\Common\Flowback Schematic Layout.dgn



WELL NO.	STATE PLAN COORDINATE (WVN HAD 83)	LAT/LONG COORDINATE	LAT/LONG COORDINATE (HAD 83) (DMS)	UTM COORDINATE (NAD83-ZONE 17-METER)	EXISTING ELEV (NAVD88) (FT)	PROPOSED ELEV. (NAVD88) (FT)
WELL 201	NORTHING 276971.7221	LAT: 39.258499°	LAT: 39°15'30.60"	NORTHING 4345792.144	1335.08'	1333.5'
	EASTING 1779051.6624	LONG: -80.169060°	LONG: -80°10'08.61"	EASTING 571690.548		
WELL 202	NORTHING 278986.7221	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 4345905.854	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		

SCALE: 0 100 ft.

**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: 304-985-5556

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

203

Orig.

Plan: DEP Plan 5

## 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 203
<b>Company:</b>	Arsenal Resources	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Project:</b>	Taylor County, WV	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site:</b>	Johnson TFP40	<b>North Reference:</b>	Grid
<b>Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Orig.		
<b>Design:</b>	DEP Plan 5		

<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>From:</b>	Map	<b>Easting:</b>	1,779,051.83 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	39.2584990
		<b>Longitude:</b>	-80.1690590
		<b>Grid Convergence:</b>	-0.43 °

<b>Well</b> 203			
<b>Well Position</b>	<b>+N-S</b>	30.1 usft	<b>Northing:</b> 277,001.72 usft
	<b>+E-W</b>	-0.2 usft	<b>Easting:</b> 1,779,051.66 usft
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>
			<b>Ground Level:</b> 1,332.5 usft

<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 5				
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N-S (usft)</b>	<b>+E-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	160.97

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,199.9	4.00	309.61	1,199.6	8.9	-10.7	1.00	1.00	0.00	309.61	
3,280.8	4.00	309.61	3,275.4	101.4	-122.6	0.00	0.00	0.00	0.00	
3,680.7	0.00	360.00	3,675.0	110.3	-133.3	1.00	-1.00	0.00	180.00	Joh_TPF40_203_Zd
7,196.7	0.00	360.00	7,191.0	110.3	-133.3	0.00	0.00	0.00	360.00	
7,497.1	20.06	160.90	7,485.3	61.1	-116.3	6.68	6.68	0.00	160.90	
8,274.1	90.00	160.97	7,903.5	-504.1	78.8	9.00	9.00	0.01	0.08	Joh_TPF40_203_LP
29,150.0	90.00	160.97	7,903.5	-20,239.6	6,884.1	0.00	0.00	0.00	0.00	Joh_TPF40_203_PBl

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<b>Project:</b>	Taylor County, WV	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site:</b>	Johnson TFP40	<b>North Reference:</b>	Grid
<b>Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Orig.		
<b>Design:</b>	DEP Plan 5		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	
<b>KOP 800' MD/ TVD 800'</b>										
900.0	1.00	309.61	900.0	0.6	-0.7	-0.7	1.00	1.00	0.00	
1,000.0	2.00	309.61	1,000.0	2.2	-2.7	-3.0	1.00	1.00	0.00	
1,100.0	3.00	309.61	1,099.9	5.0	-6.0	-6.7	1.00	1.00	0.00	
1,199.9	4.00	309.61	1,199.6	8.9	-10.7	-11.9	1.00	1.00	0.00	
<b>Hold 4° Inc</b>										
1,200.0	4.00	309.61	1,199.7	8.9	-10.8	-11.9	0.00	0.00	0.00	
1,300.0	4.00	309.61	1,299.4	13.3	-16.1	-17.9	0.00	0.00	0.00	
1,400.0	4.00	309.61	1,399.2	17.8	-21.5	-23.8	0.00	0.00	0.00	
1,500.0	4.00	309.61	1,498.9	22.2	-26.9	-29.8	0.00	0.00	0.00	
1,600.0	4.00	309.61	1,598.7	26.7	-32.2	-35.7	0.00	0.00	0.00	
1,700.0	4.00	309.61	1,698.5	31.1	-37.6	-41.7	0.00	0.00	0.00	
1,800.0	4.00	309.61	1,798.2	35.6	-43.0	-47.7	0.00	0.00	0.00	
1,900.0	4.00	309.61	1,898.0	40.0	-48.4	-53.6	0.00	0.00	0.00	
2,000.0	4.00	309.61	1,997.7	44.5	-53.7	-59.6	0.00	0.00	0.00	
2,100.0	4.00	309.61	2,097.5	48.9	-59.1	-65.5	0.00	0.00	0.00	
2,200.0	4.00	309.61	2,197.2	53.4	-64.5	-71.5	0.00	0.00	0.00	
2,300.0	4.00	309.61	2,297.0	57.8	-69.9	-77.4	0.00	0.00	0.00	
2,400.0	4.00	309.61	2,396.7	62.3	-75.2	-83.4	0.00	0.00	0.00	
2,500.0	4.00	309.61	2,496.5	66.7	-80.6	-89.3	0.00	0.00	0.00	
2,600.0	4.00	309.61	2,596.3	71.1	-86.0	-95.3	0.00	0.00	0.00	
2,700.0	4.00	309.61	2,696.0	75.6	-91.4	-101.3	0.00	0.00	0.00	
2,800.0	4.00	309.61	2,795.8	80.0	-96.7	-107.2	0.00	0.00	0.00	
2,900.0	4.00	309.61	2,895.5	84.5	-102.1	-113.2	0.00	0.00	0.00	
3,000.0	4.00	309.61	2,995.3	88.9	-107.5	-119.1	0.00	0.00	0.00	
3,100.0	4.00	309.61	3,095.0	93.4	-112.8	-125.1	0.00	0.00	0.00	
3,200.0	4.00	309.61	3,194.8	97.8	-118.2	-131.0	0.00	0.00	0.00	
3,280.8	4.00	309.61	3,275.4	101.4	-122.6	-135.8	0.00	0.00	0.00	
<b>Drop Vertical</b>										
3,300.0	3.81	309.61	3,294.6	102.3	-123.6	-137.0	1.00	-1.00	0.00	
3,400.0	2.81	309.61	3,394.4	105.9	-128.0	-141.9	1.00	-1.00	0.00	
3,500.0	1.81	309.61	3,494.3	108.5	-131.1	-145.3	1.00	-1.00	0.00	
3,600.0	0.81	309.61	3,594.3	110.0	-132.9	-147.3	1.00	-1.00	0.00	
3,680.7	0.00	360.00	3,675.0	110.3	-133.3	-147.8	1.00	-1.00	0.00	
<b>Hold</b>										
3,700.0	0.00	0.00	3,694.3	110.3	-133.3	-147.8	0.00	0.00	0.00	
3,800.0	0.00	0.00	3,794.3	110.3	-133.3	-147.8	0.00	0.00	0.00	
3,900.0	0.00	0.00	3,894.3	110.3	-133.3	-147.8	0.00	0.00	0.00	
4,000.0	0.00	0.00	3,994.3	110.3	-133.3	-147.8	0.00	0.00	0.00	
4,100.0	0.00	0.00	4,094.3	110.3	-133.3	-147.8	0.00	0.00	0.00	
4,200.0	0.00	0.00	4,194.3	110.3	-133.3	-147.8	0.00	0.00	0.00	
4,300.0	0.00	0.00	4,294.3	110.3	-133.3	-147.8	0.00	0.00	0.00	
4,400.0	0.00	0.00	4,394.3	110.3	-133.3	-147.8	0.00	0.00	0.00	

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<b>Site:</b>	Johnson TFP40	<b>North Reference:</b>	Grid
<b>Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Orig.		
<b>Design:</b>	DEP Plan 5		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,500.0	0.00	0.00	4,494.3	110.3	-133.3	-147.8	0.00	0.00	0.00
4,600.0	0.00	0.00	4,594.3	110.3	-133.3	-147.8	0.00	0.00	0.00
4,700.0	0.00	0.00	4,694.3	110.3	-133.3	-147.8	0.00	0.00	0.00
4,800.0	0.00	0.00	4,794.3	110.3	-133.3	-147.8	0.00	0.00	0.00
4,900.0	0.00	0.00	4,894.3	110.3	-133.3	-147.8	0.00	0.00	0.00
5,000.0	0.00	0.00	4,994.3	110.3	-133.3	-147.8	0.00	0.00	0.00
5,100.0	0.00	0.00	5,094.3	110.3	-133.3	-147.8	0.00	0.00	0.00
5,200.0	0.00	0.00	5,194.3	110.3	-133.3	-147.8	0.00	0.00	0.00
5,300.0	0.00	0.00	5,294.3	110.3	-133.3	-147.8	0.00	0.00	0.00
5,400.0	0.00	0.00	5,394.3	110.3	-133.3	-147.8	0.00	0.00	0.00
5,500.0	0.00	0.00	5,494.3	110.3	-133.3	-147.8	0.00	0.00	0.00
5,600.0	0.00	0.00	5,594.3	110.3	-133.3	-147.8	0.00	0.00	0.00
5,700.0	0.00	0.00	5,694.3	110.3	-133.3	-147.8	0.00	0.00	0.00
5,800.0	0.00	0.00	5,794.3	110.3	-133.3	-147.8	0.00	0.00	0.00
5,900.0	0.00	0.00	5,894.3	110.3	-133.3	-147.8	0.00	0.00	0.00
6,000.0	0.00	0.00	5,994.3	110.3	-133.3	-147.8	0.00	0.00	0.00
6,100.0	0.00	0.00	6,094.3	110.3	-133.3	-147.8	0.00	0.00	0.00
6,200.0	0.00	0.00	6,194.3	110.3	-133.3	-147.8	0.00	0.00	0.00
6,300.0	0.00	0.00	6,294.3	110.3	-133.3	-147.8	0.00	0.00	0.00
6,400.0	0.00	0.00	6,394.3	110.3	-133.3	-147.8	0.00	0.00	0.00
6,500.0	0.00	0.00	6,494.3	110.3	-133.3	-147.8	0.00	0.00	0.00
6,600.0	0.00	0.00	6,594.3	110.3	-133.3	-147.8	0.00	0.00	0.00
6,700.0	0.00	0.00	6,694.3	110.3	-133.3	-147.8	0.00	0.00	0.00
6,800.0	0.00	0.00	6,794.3	110.3	-133.3	-147.8	0.00	0.00	0.00
6,900.0	0.00	0.00	6,894.3	110.3	-133.3	-147.8	0.00	0.00	0.00
7,000.0	0.00	0.00	6,994.3	110.3	-133.3	-147.8	0.00	0.00	0.00
7,100.0	0.00	0.00	7,094.3	110.3	-133.3	-147.8	0.00	0.00	0.00
7,196.7	0.00	0.00	7,191.0	110.3	-133.3	-147.8	0.00	0.00	0.00
<b>KO Curve 6.7°/100</b>									
7,200.0	0.22	160.90	7,194.3	110.3	-133.3	-147.7	6.68	6.68	0.00
7,300.0	6.90	160.90	7,294.0	104.4	-131.3	-141.5	6.68	6.68	0.00
7,400.0	13.58	160.90	7,392.4	87.7	-125.5	-123.8	6.68	6.68	0.00
7,497.1	20.06	160.90	7,485.3	61.1	-116.3	-95.7	6.68	6.68	0.00
<b>Build 9°/100</b>									
7,500.0	20.32	160.90	7,488.0	60.2	-116.0	-94.7	8.99	8.99	0.03
7,600.0	29.32	160.93	7,578.7	20.6	-102.2	-52.8	9.00	9.00	0.02
7,700.0	38.32	160.94	7,661.7	-32.0	-84.1	2.8	9.00	9.00	0.01
7,800.0	47.32	160.95	7,734.9	-96.2	-61.9	70.7	9.00	9.00	0.01
7,900.0	56.32	160.96	7,796.7	-170.4	-36.3	149.3	9.00	9.00	0.01
8,000.0	65.32	160.96	7,845.4	-252.9	-7.8	236.5	9.00	9.00	0.01
8,100.0	74.32	160.97	7,879.8	-341.5	22.8	330.3	9.00	9.00	0.00
8,200.0	83.33	160.97	7,899.2	-434.1	54.7	428.3	9.00	9.00	0.00
8,274.1	90.00	160.97	7,903.5	-504.1	78.8	502.2	9.00	9.00	0.00
<b>LP @ 90° Inc/ 160.97° Az/ 8274.1' MD/ TVD 7903.5'</b>									
8,300.0	90.00	160.97	7,903.5	-528.5	87.3	528.1	0.00	0.00	0.00
8,400.0	90.00	160.97	7,903.5	-623.1	119.9	628.1	0.00	0.00	0.00
8,500.0	90.00	160.97	7,903.5	-717.6	152.4	728.1	0.00	0.00	0.00
8,600.0	90.00	160.97	7,903.5	-812.1	185.0	828.1	0.00	0.00	0.00
8,700.0	90.00	160.97	7,903.5	-906.7	217.6	928.1	0.00	0.00	0.00
8,800.0	90.00	160.97	7,903.5	-1,001.2	250.2	1,028.1	0.00	0.00	0.00
8,900.0	90.00	160.97	7,903.5	-1,095.7	282.8	1,128.1	0.00	0.00	0.00

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<b>Site:</b>	Johnson TFP40	<b>North Reference:</b>	Grid
<b>Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Orig.		
<b>Design:</b>	DEP Plan 5		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,000.0	90.00	160.97	7,903.5	-1,190.3	315.4	1,228.1	0.00	0.00	0.00
9,100.0	90.00	160.97	7,903.5	-1,284.8	348.0	1,328.1	0.00	0.00	0.00
9,200.0	90.00	160.97	7,903.5	-1,379.4	380.6	1,428.1	0.00	0.00	0.00
9,300.0	90.00	160.97	7,903.5	-1,473.9	413.2	1,528.1	0.00	0.00	0.00
9,400.0	90.00	160.97	7,903.5	-1,568.4	445.8	1,628.1	0.00	0.00	0.00
9,500.0	90.00	160.97	7,903.5	-1,663.0	478.4	1,728.1	0.00	0.00	0.00
9,600.0	90.00	160.97	7,903.5	-1,757.5	511.0	1,828.1	0.00	0.00	0.00
9,700.0	90.00	160.97	7,903.5	-1,852.0	543.6	1,928.1	0.00	0.00	0.00
9,800.0	90.00	160.97	7,903.5	-1,946.6	576.2	2,028.1	0.00	0.00	0.00
9,900.0	90.00	160.97	7,903.5	-2,041.1	608.8	2,128.1	0.00	0.00	0.00
10,000.0	90.00	160.97	7,903.5	-2,135.7	641.4	2,228.1	0.00	0.00	0.00
10,100.0	90.00	160.97	7,903.5	-2,230.2	674.0	2,328.1	0.00	0.00	0.00
10,200.0	90.00	160.97	7,903.5	-2,324.7	706.6	2,428.1	0.00	0.00	0.00
10,300.0	90.00	160.97	7,903.5	-2,419.3	739.2	2,528.1	0.00	0.00	0.00
10,400.0	90.00	160.97	7,903.5	-2,513.8	771.8	2,628.1	0.00	0.00	0.00
10,500.0	90.00	160.97	7,903.5	-2,608.3	804.4	2,728.1	0.00	0.00	0.00
10,600.0	90.00	160.97	7,903.5	-2,702.9	837.0	2,828.1	0.00	0.00	0.00
10,700.0	90.00	160.97	7,903.5	-2,797.4	869.6	2,928.1	0.00	0.00	0.00
10,800.0	90.00	160.97	7,903.5	-2,892.0	902.2	3,028.1	0.00	0.00	0.00
10,900.0	90.00	160.97	7,903.5	-2,986.5	934.8	3,128.1	0.00	0.00	0.00
11,000.0	90.00	160.97	7,903.5	-3,081.0	967.4	3,228.1	0.00	0.00	0.00
11,100.0	90.00	160.97	7,903.5	-3,175.6	1,000.0	3,328.1	0.00	0.00	0.00
11,200.0	90.00	160.97	7,903.5	-3,270.1	1,032.6	3,428.1	0.00	0.00	0.00
11,300.0	90.00	160.97	7,903.5	-3,364.6	1,065.2	3,528.1	0.00	0.00	0.00
11,400.0	90.00	160.97	7,903.5	-3,459.2	1,097.8	3,628.1	0.00	0.00	0.00
11,500.0	90.00	160.97	7,903.5	-3,553.7	1,130.4	3,728.1	0.00	0.00	0.00
11,600.0	90.00	160.97	7,903.5	-3,648.3	1,163.0	3,828.1	0.00	0.00	0.00
11,700.0	90.00	160.97	7,903.5	-3,742.8	1,195.6	3,928.1	0.00	0.00	0.00
11,800.0	90.00	160.97	7,903.5	-3,837.3	1,228.2	4,028.1	0.00	0.00	0.00
11,900.0	90.00	160.97	7,903.5	-3,931.9	1,260.8	4,128.1	0.00	0.00	0.00
12,000.0	90.00	160.97	7,903.5	-4,026.4	1,293.4	4,228.1	0.00	0.00	0.00
12,100.0	90.00	160.97	7,903.5	-4,120.9	1,326.0	4,328.1	0.00	0.00	0.00
12,200.0	90.00	160.97	7,903.5	-4,215.5	1,358.6	4,428.1	0.00	0.00	0.00
12,300.0	90.00	160.97	7,903.5	-4,310.0	1,391.2	4,528.1	0.00	0.00	0.00
12,400.0	90.00	160.97	7,903.5	-4,404.5	1,423.8	4,628.1	0.00	0.00	0.00
12,500.0	90.00	160.97	7,903.5	-4,499.1	1,456.4	4,728.1	0.00	0.00	0.00
12,600.0	90.00	160.97	7,903.5	-4,593.6	1,489.0	4,828.1	0.00	0.00	0.00
12,700.0	90.00	160.97	7,903.5	-4,688.2	1,521.6	4,928.1	0.00	0.00	0.00
12,800.0	90.00	160.97	7,903.5	-4,782.7	1,554.2	5,028.1	0.00	0.00	0.00
12,900.0	90.00	160.97	7,903.5	-4,877.2	1,586.8	5,128.1	0.00	0.00	0.00
13,000.0	90.00	160.97	7,903.5	-4,971.8	1,619.4	5,228.1	0.00	0.00	0.00
13,100.0	90.00	160.97	7,903.5	-5,066.3	1,652.0	5,328.1	0.00	0.00	0.00
13,200.0	90.00	160.97	7,903.5	-5,160.8	1,684.6	5,428.1	0.00	0.00	0.00
13,300.0	90.00	160.97	7,903.5	-5,255.4	1,717.2	5,528.1	0.00	0.00	0.00
13,400.0	90.00	160.97	7,903.5	-5,349.9	1,749.8	5,628.1	0.00	0.00	0.00
13,500.0	90.00	160.97	7,903.5	-5,444.5	1,782.4	5,728.1	0.00	0.00	0.00
13,600.0	90.00	160.97	7,903.5	-5,539.0	1,815.0	5,828.1	0.00	0.00	0.00
13,700.0	90.00	160.97	7,903.5	-5,633.5	1,847.6	5,928.1	0.00	0.00	0.00
13,800.0	90.00	160.97	7,903.5	-5,728.1	1,880.2	6,028.1	0.00	0.00	0.00
13,900.0	90.00	160.97	7,903.5	-5,822.6	1,912.8	6,128.1	0.00	0.00	0.00
14,000.0	90.00	160.97	7,903.5	-5,917.1	1,945.4	6,228.1	0.00	0.00	0.00
14,100.0	90.00	160.97	7,903.5	-6,011.7	1,978.0	6,328.1	0.00	0.00	0.00



Planning Report

<b>Database:</b>	Northeast	<b>Local Co-ordinate Reference:</b>	Well 203
<b>Company:</b>	Arsenal Resources	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Project:</b>	Taylor County, WV	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site:</b>	Johnson TFP40	<b>North Reference:</b>	Grid
<b>Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Orig.		
<b>Design:</b>	DEP Plan 5		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,200.0	90.00	160.97	7,903.5	-6,106.2	2,010.6	6,428.1	0.00	0.00	0.00
14,300.0	90.00	160.97	7,903.5	-6,200.8	2,043.2	6,528.1	0.00	0.00	0.00
14,400.0	90.00	160.97	7,903.5	-6,295.3	2,075.8	6,628.1	0.00	0.00	0.00
14,500.0	90.00	160.97	7,903.5	-6,389.8	2,108.4	6,728.1	0.00	0.00	0.00
14,600.0	90.00	160.97	7,903.5	-6,484.4	2,141.0	6,828.1	0.00	0.00	0.00
14,700.0	90.00	160.97	7,903.5	-6,578.9	2,173.6	6,928.1	0.00	0.00	0.00
14,800.0	90.00	160.97	7,903.5	-6,673.4	2,206.2	7,028.1	0.00	0.00	0.00
14,900.0	90.00	160.97	7,903.5	-6,768.0	2,238.8	7,128.1	0.00	0.00	0.00
15,000.0	90.00	160.97	7,903.5	-6,862.5	2,271.4	7,228.1	0.00	0.00	0.00
15,100.0	90.00	160.97	7,903.5	-6,957.1	2,304.0	7,328.1	0.00	0.00	0.00
15,200.0	90.00	160.97	7,903.5	-7,051.6	2,336.6	7,428.1	0.00	0.00	0.00
15,300.0	90.00	160.97	7,903.5	-7,146.1	2,369.2	7,528.1	0.00	0.00	0.00
15,400.0	90.00	160.97	7,903.5	-7,240.7	2,401.8	7,628.1	0.00	0.00	0.00
15,500.0	90.00	160.97	7,903.5	-7,335.2	2,434.4	7,728.1	0.00	0.00	0.00
15,600.0	90.00	160.97	7,903.5	-7,429.7	2,467.0	7,828.1	0.00	0.00	0.00
15,700.0	90.00	160.97	7,903.5	-7,524.3	2,499.6	7,928.1	0.00	0.00	0.00
15,800.0	90.00	160.97	7,903.5	-7,618.8	2,532.2	8,028.1	0.00	0.00	0.00
15,900.0	90.00	160.97	7,903.5	-7,713.4	2,564.8	8,128.1	0.00	0.00	0.00
16,000.0	90.00	160.97	7,903.5	-7,807.9	2,597.4	8,228.1	0.00	0.00	0.00
16,100.0	90.00	160.97	7,903.5	-7,902.4	2,630.0	8,328.1	0.00	0.00	0.00
16,200.0	90.00	160.97	7,903.5	-7,997.0	2,662.6	8,428.1	0.00	0.00	0.00
16,300.0	90.00	160.97	7,903.5	-8,091.5	2,695.1	8,528.1	0.00	0.00	0.00
16,400.0	90.00	160.97	7,903.5	-8,186.0	2,727.7	8,628.1	0.00	0.00	0.00
16,500.0	90.00	160.97	7,903.5	-8,280.6	2,760.3	8,728.1	0.00	0.00	0.00
16,600.0	90.00	160.97	7,903.5	-8,375.1	2,792.9	8,828.1	0.00	0.00	0.00
16,700.0	90.00	160.97	7,903.5	-8,469.6	2,825.5	8,928.1	0.00	0.00	0.00
16,800.0	90.00	160.97	7,903.5	-8,564.2	2,858.1	9,028.1	0.00	0.00	0.00
16,900.0	90.00	160.97	7,903.5	-8,658.7	2,890.7	9,128.1	0.00	0.00	0.00
17,000.0	90.00	160.97	7,903.5	-8,753.3	2,923.3	9,228.1	0.00	0.00	0.00
17,100.0	90.00	160.97	7,903.5	-8,847.8	2,955.9	9,328.1	0.00	0.00	0.00
17,200.0	90.00	160.97	7,903.5	-8,942.3	2,988.5	9,428.1	0.00	0.00	0.00
17,300.0	90.00	160.97	7,903.5	-9,036.9	3,021.1	9,528.1	0.00	0.00	0.00
17,400.0	90.00	160.97	7,903.5	-9,131.4	3,053.7	9,628.1	0.00	0.00	0.00
17,500.0	90.00	160.97	7,903.5	-9,225.9	3,086.3	9,728.1	0.00	0.00	0.00
17,600.0	90.00	160.97	7,903.5	-9,320.5	3,118.9	9,828.1	0.00	0.00	0.00
17,700.0	90.00	160.97	7,903.5	-9,415.0	3,151.5	9,928.1	0.00	0.00	0.00
17,800.0	90.00	160.97	7,903.5	-9,509.6	3,184.1	10,028.1	0.00	0.00	0.00
17,900.0	90.00	160.97	7,903.5	-9,604.1	3,216.7	10,128.1	0.00	0.00	0.00
18,000.0	90.00	160.97	7,903.5	-9,698.6	3,249.3	10,228.1	0.00	0.00	0.00
18,100.0	90.00	160.97	7,903.5	-9,793.2	3,281.9	10,328.1	0.00	0.00	0.00
18,200.0	90.00	160.97	7,903.5	-9,887.7	3,314.5	10,428.1	0.00	0.00	0.00
18,300.0	90.00	160.97	7,903.5	-9,982.2	3,347.1	10,528.1	0.00	0.00	0.00
18,400.0	90.00	160.97	7,903.5	-10,076.8	3,379.7	10,628.1	0.00	0.00	0.00
18,500.0	90.00	160.97	7,903.5	-10,171.3	3,412.3	10,728.1	0.00	0.00	0.00
18,600.0	90.00	160.97	7,903.5	-10,265.9	3,444.9	10,828.1	0.00	0.00	0.00
18,700.0	90.00	160.97	7,903.5	-10,360.4	3,477.5	10,928.1	0.00	0.00	0.00
18,800.0	90.00	160.97	7,903.5	-10,454.9	3,510.1	11,028.1	0.00	0.00	0.00
18,900.0	90.00	160.97	7,903.5	-10,549.5	3,542.7	11,128.1	0.00	0.00	0.00
19,000.0	90.00	160.97	7,903.5	-10,644.0	3,575.3	11,228.1	0.00	0.00	0.00
19,100.0	90.00	160.97	7,903.5	-10,738.5	3,607.9	11,328.1	0.00	0.00	0.00
19,200.0	90.00	160.97	7,903.5	-10,833.1	3,640.5	11,428.1	0.00	0.00	0.00
19,300.0	90.00	160.97	7,903.5	-10,927.6	3,673.1	11,528.1	0.00	0.00	0.00

Planning Report

<b>Database:</b>	Northeast	<b>Local Co-ordinate Reference:</b>	Well 203
<b>Company:</b>	Arsenal Resources	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Project:</b>	Taylor County, WV	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site:</b>	Johnson TFP40	<b>North Reference:</b>	Grid
<b>Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Orig.		
<b>Design:</b>	DEP Plan 5		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
19,400.0	90.00	160.97	7,903.5	-11,022.2	3,705.7	11,628.1	0.00	0.00	0.00	
19,500.0	90.00	160.97	7,903.5	-11,116.7	3,738.3	11,728.1	0.00	0.00	0.00	
19,600.0	90.00	160.97	7,903.5	-11,211.2	3,770.9	11,828.1	0.00	0.00	0.00	
19,700.0	90.00	160.97	7,903.5	-11,305.8	3,803.5	11,928.1	0.00	0.00	0.00	
19,800.0	90.00	160.97	7,903.5	-11,400.3	3,836.1	12,028.1	0.00	0.00	0.00	
19,900.0	90.00	160.97	7,903.5	-11,494.8	3,868.7	12,128.1	0.00	0.00	0.00	
20,000.0	90.00	160.97	7,903.5	-11,589.4	3,901.3	12,228.1	0.00	0.00	0.00	
20,100.0	90.00	160.97	7,903.5	-11,683.9	3,933.9	12,328.1	0.00	0.00	0.00	
20,200.0	90.00	160.97	7,903.5	-11,778.5	3,966.5	12,428.1	0.00	0.00	0.00	
20,300.0	90.00	160.97	7,903.5	-11,873.0	3,999.1	12,528.1	0.00	0.00	0.00	
20,400.0	90.00	160.97	7,903.5	-11,967.5	4,031.7	12,628.1	0.00	0.00	0.00	
20,500.0	90.00	160.97	7,903.5	-12,062.1	4,064.3	12,728.1	0.00	0.00	0.00	
20,600.0	90.00	160.97	7,903.5	-12,156.6	4,096.9	12,828.1	0.00	0.00	0.00	
20,700.0	90.00	160.97	7,903.5	-12,251.1	4,129.5	12,928.1	0.00	0.00	0.00	
20,800.0	90.00	160.97	7,903.5	-12,345.7	4,162.1	13,028.1	0.00	0.00	0.00	
20,900.0	90.00	160.97	7,903.5	-12,440.2	4,194.7	13,128.1	0.00	0.00	0.00	
21,000.0	90.00	160.97	7,903.5	-12,534.7	4,227.3	13,228.1	0.00	0.00	0.00	
21,100.0	90.00	160.97	7,903.5	-12,629.3	4,259.9	13,328.1	0.00	0.00	0.00	
21,200.0	90.00	160.97	7,903.5	-12,723.8	4,292.5	13,428.1	0.00	0.00	0.00	
21,300.0	90.00	160.97	7,903.5	-12,818.4	4,325.1	13,528.1	0.00	0.00	0.00	
21,400.0	90.00	160.97	7,903.5	-12,912.9	4,357.7	13,628.1	0.00	0.00	0.00	
21,500.0	90.00	160.97	7,903.5	-13,007.4	4,390.3	13,728.1	0.00	0.00	0.00	
21,600.0	90.00	160.97	7,903.5	-13,102.0	4,422.9	13,828.1	0.00	0.00	0.00	
21,700.0	90.00	160.97	7,903.5	-13,196.5	4,455.5	13,928.1	0.00	0.00	0.00	
21,800.0	90.00	160.97	7,903.5	-13,291.0	4,488.1	14,028.1	0.00	0.00	0.00	
21,900.0	90.00	160.97	7,903.5	-13,385.6	4,520.7	14,128.1	0.00	0.00	0.00	
22,000.0	90.00	160.97	7,903.5	-13,480.1	4,553.3	14,228.1	0.00	0.00	0.00	
22,100.0	90.00	160.97	7,903.5	-13,574.7	4,585.9	14,328.1	0.00	0.00	0.00	
22,200.0	90.00	160.97	7,903.5	-13,669.2	4,618.5	14,428.1	0.00	0.00	0.00	
22,300.0	90.00	160.97	7,903.5	-13,763.7	4,651.1	14,528.1	0.00	0.00	0.00	
22,400.0	90.00	160.97	7,903.5	-13,858.3	4,683.7	14,628.1	0.00	0.00	0.00	
22,500.0	90.00	160.97	7,903.5	-13,952.8	4,716.3	14,728.1	0.00	0.00	0.00	
22,600.0	90.00	160.97	7,903.5	-14,047.3	4,748.9	14,828.1	0.00	0.00	0.00	
22,700.0	90.00	160.97	7,903.5	-14,141.9	4,781.5	14,928.1	0.00	0.00	0.00	
22,800.0	90.00	160.97	7,903.5	-14,236.4	4,814.1	15,028.1	0.00	0.00	0.00	
22,900.0	90.00	160.97	7,903.5	-14,331.0	4,846.7	15,128.1	0.00	0.00	0.00	
23,000.0	90.00	160.97	7,903.5	-14,425.5	4,879.3	15,228.1	0.00	0.00	0.00	
23,100.0	90.00	160.97	7,903.5	-14,520.0	4,911.9	15,328.1	0.00	0.00	0.00	
23,200.0	90.00	160.97	7,903.5	-14,614.6	4,944.5	15,428.1	0.00	0.00	0.00	
23,300.0	90.00	160.97	7,903.5	-14,709.1	4,977.1	15,528.1	0.00	0.00	0.00	
23,400.0	90.00	160.97	7,903.5	-14,803.6	5,009.7	15,628.1	0.00	0.00	0.00	
23,500.0	90.00	160.97	7,903.5	-14,898.2	5,042.3	15,728.1	0.00	0.00	0.00	
23,600.0	90.00	160.97	7,903.5	-14,992.7	5,074.9	15,828.1	0.00	0.00	0.00	
23,700.0	90.00	160.97	7,903.5	-15,087.3	5,107.5	15,928.1	0.00	0.00	0.00	
23,800.0	90.00	160.97	7,903.5	-15,181.8	5,140.1	16,028.1	0.00	0.00	0.00	
23,900.0	90.00	160.97	7,903.5	-15,276.3	5,172.7	16,128.1	0.00	0.00	0.00	
24,000.0	90.00	160.97	7,903.5	-15,370.9	5,205.3	16,228.1	0.00	0.00	0.00	
24,100.0	90.00	160.97	7,903.5	-15,465.4	5,237.8	16,328.1	0.00	0.00	0.00	
24,200.0	90.00	160.97	7,903.5	-15,559.9	5,270.4	16,428.1	0.00	0.00	0.00	
24,300.0	90.00	160.97	7,903.5	-15,654.5	5,303.0	16,528.1	0.00	0.00	0.00	
24,400.0	90.00	160.97	7,903.5	-15,749.0	5,335.6	16,628.1	0.00	0.00	0.00	
24,500.0	90.00	160.97	7,903.5	-15,843.6	5,368.2	16,728.1	0.00	0.00	0.00	

Planning Report

<b>Database:</b>	Northeast	<b>Local Co-ordinate Reference:</b>	Well 203
<b>Company:</b>	Arsenal Resources	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Project:</b>	Taylor County, WV	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site:</b>	Johnson TFP40	<b>North Reference:</b>	Grid
<b>Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Orig.		
<b>Design:</b>	DEP Plan 5		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
24,600.0	90.00	160.97	7,903.5	-15,938.1	5,400.8	16,828.1	0.00	0.00	0.00	
24,700.0	90.00	160.97	7,903.5	-16,032.6	5,433.4	16,928.1	0.00	0.00	0.00	
24,800.0	90.00	160.97	7,903.5	-16,127.2	5,466.0	17,028.1	0.00	0.00	0.00	
24,899.9	90.00	160.97	7,903.5	-16,221.7	5,498.6	17,128.1	0.00	0.00	0.00	
24,999.9	90.00	160.97	7,903.5	-16,316.2	5,531.2	17,228.1	0.00	0.00	0.00	
25,099.9	90.00	160.97	7,903.5	-16,410.8	5,563.8	17,328.1	0.00	0.00	0.00	
25,199.9	90.00	160.97	7,903.5	-16,505.3	5,596.4	17,428.1	0.00	0.00	0.00	
25,299.9	90.00	160.97	7,903.5	-16,599.8	5,629.0	17,528.1	0.00	0.00	0.00	
25,399.9	90.00	160.97	7,903.5	-16,694.4	5,661.6	17,628.1	0.00	0.00	0.00	
25,499.9	90.00	160.97	7,903.5	-16,788.9	5,694.2	17,728.1	0.00	0.00	0.00	
25,599.9	90.00	160.97	7,903.5	-16,883.5	5,726.8	17,828.1	0.00	0.00	0.00	
25,699.9	90.00	160.97	7,903.5	-16,978.0	5,759.4	17,928.1	0.00	0.00	0.00	
25,799.9	90.00	160.97	7,903.5	-17,072.5	5,792.0	18,028.1	0.00	0.00	0.00	
25,899.9	90.00	160.97	7,903.5	-17,167.1	5,824.6	18,128.1	0.00	0.00	0.00	
25,999.9	90.00	160.97	7,903.5	-17,261.6	5,857.2	18,228.1	0.00	0.00	0.00	
26,099.9	90.00	160.97	7,903.5	-17,356.1	5,889.8	18,328.1	0.00	0.00	0.00	
26,199.9	90.00	160.97	7,903.5	-17,450.7	5,922.4	18,428.1	0.00	0.00	0.00	
26,299.9	90.00	160.97	7,903.5	-17,545.2	5,955.0	18,528.1	0.00	0.00	0.00	
26,399.9	90.00	160.97	7,903.5	-17,639.8	5,987.6	18,628.1	0.00	0.00	0.00	
26,499.9	90.00	160.97	7,903.5	-17,734.3	6,020.2	18,728.1	0.00	0.00	0.00	
26,599.9	90.00	160.97	7,903.5	-17,828.8	6,052.8	18,828.1	0.00	0.00	0.00	
26,699.9	90.00	160.97	7,903.5	-17,923.4	6,085.4	18,928.1	0.00	0.00	0.00	
26,799.9	90.00	160.97	7,903.5	-18,017.9	6,118.0	19,028.1	0.00	0.00	0.00	
26,899.9	90.00	160.97	7,903.5	-18,112.4	6,150.6	19,128.1	0.00	0.00	0.00	
26,999.9	90.00	160.97	7,903.5	-18,207.0	6,183.2	19,228.0	0.00	0.00	0.00	
27,099.9	90.00	160.97	7,903.5	-18,301.5	6,215.8	19,328.0	0.00	0.00	0.00	
27,199.9	90.00	160.97	7,903.5	-18,396.1	6,248.4	19,428.0	0.00	0.00	0.00	
27,299.9	90.00	160.97	7,903.5	-18,490.6	6,281.0	19,528.0	0.00	0.00	0.00	
27,399.9	90.00	160.97	7,903.5	-18,585.1	6,313.6	19,628.0	0.00	0.00	0.00	
27,499.9	90.00	160.97	7,903.5	-18,679.7	6,346.2	19,728.0	0.00	0.00	0.00	
27,599.9	90.00	160.97	7,903.5	-18,774.2	6,378.8	19,828.0	0.00	0.00	0.00	
27,699.9	90.00	160.97	7,903.5	-18,868.7	6,411.4	19,928.0	0.00	0.00	0.00	
27,799.9	90.00	160.97	7,903.5	-18,963.3	6,444.0	20,028.0	0.00	0.00	0.00	
27,899.9	90.00	160.97	7,903.5	-19,057.8	6,476.6	20,128.0	0.00	0.00	0.00	
27,999.9	90.00	160.97	7,903.5	-19,152.4	6,509.2	20,228.0	0.00	0.00	0.00	
28,099.9	90.00	160.97	7,903.5	-19,246.9	6,541.8	20,328.0	0.00	0.00	0.00	
28,199.9	90.00	160.97	7,903.5	-19,341.4	6,574.4	20,428.0	0.00	0.00	0.00	
28,299.9	90.00	160.97	7,903.5	-19,436.0	6,607.0	20,528.0	0.00	0.00	0.00	
28,399.9	90.00	160.97	7,903.5	-19,530.5	6,639.6	20,628.0	0.00	0.00	0.00	
28,499.9	90.00	160.97	7,903.5	-19,625.0	6,672.2	20,728.0	0.00	0.00	0.00	
28,599.9	90.00	160.97	7,903.5	-19,719.6	6,704.8	20,828.0	0.00	0.00	0.00	
28,699.9	90.00	160.97	7,903.5	-19,814.1	6,737.4	20,928.0	0.00	0.00	0.00	
28,799.9	90.00	160.97	7,903.5	-19,908.6	6,770.0	21,028.0	0.00	0.00	0.00	
28,899.9	90.00	160.97	7,903.5	-20,003.2	6,802.6	21,128.0	0.00	0.00	0.00	
28,999.9	90.00	160.97	7,903.5	-20,097.7	6,835.2	21,228.0	0.00	0.00	0.00	
29,099.9	90.00	160.97	7,903.5	-20,192.3	6,867.8	21,328.0	0.00	0.00	0.00	
29,149.0	90.00	160.97	7,903.5	-20,238.6	6,883.8	21,377.1	0.00	0.00	0.00	
<b>TD @ 90° Incl 160.97° Azi 29150.0' MD/ TVD 7903.5'</b>										
29,150.0	90.00	160.97	7,903.5	-20,239.6	6,884.1	21,378.1	0.00	0.00	0.00	

Planning Report

<b>Database:</b>	Northeast	<b>Local Co-ordinate Reference:</b>	Well 203
<b>Company:</b>	Arsenal Resources	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Project:</b>	Taylor County, WV	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site:</b>	Johnson TFP40	<b>North Reference:</b>	Grid
<b>Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Orig.		
<b>Design:</b>	DEP Plan 5		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
Joh_TPF40_203_SHL - plan hits target center - Point	0.00	360.00	0.0	0.0	0.0	277,001.72	1,779,051.66	39.2585816	-80.1690603
Joh_TPF40_203_KOP - plan hits target center - Point	0.00	360.00	800.0	0.0	0.0	277,001.72	1,779,051.66	39.2585816	-80.1690603
Joh_TPF40_203_Zd - plan hits target center - Point	0.00	0.00	3,675.0	110.3	-133.3	277,112.03	1,778,918.35	39.2588818	-80.1695340
Joh_TPF40_203_LP - plan hits target center - Point	0.00	360.00	7,903.5	-504.1	78.8	276,497.63	1,779,130.49	39.2571993	-80.1687687
Joh_TPF40_203_PBHL - plan hits target center - Point	0.00	0.00	7,903.5	-20,239.6	6,884.1	256,762.13	1,785,935.77	39.2031523	-80.1442365

# 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 @ 1359.5usft (Original Well Elev)

**Well #  
203**



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

<b>DEP Use Only</b>	<b>Permit #</b>
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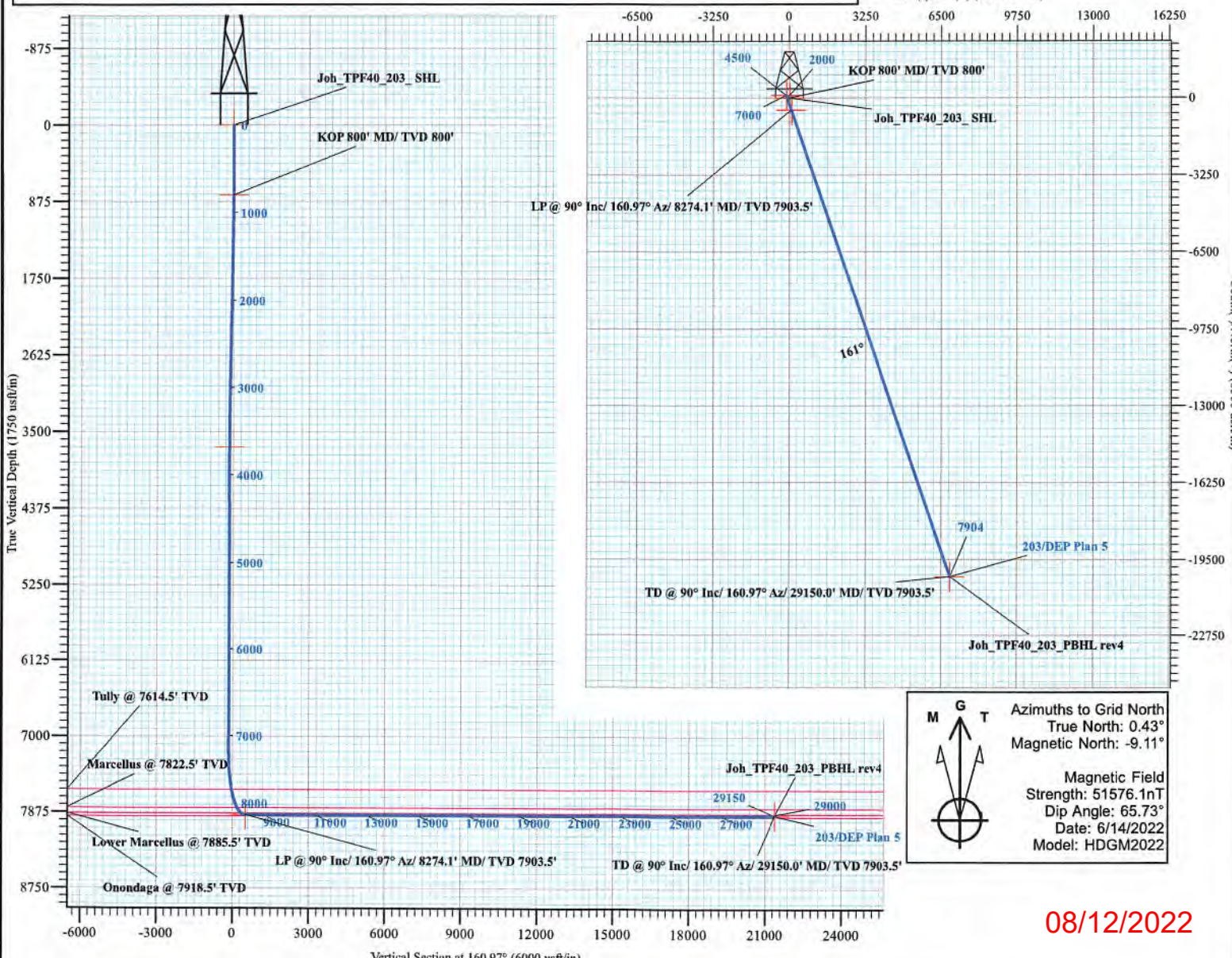
Well/Farm Name: **Johnson TFP40**

NOTES:

Name	TVD	Latitude	Longitude	TMD
Joh_TPF40_203_SHL	0.0	39.2585816	-80.1690604	0
Joh_TPF40_203_KOP	800.0	39.2585816	-80.1690604	800
Joh_TPF40_203_LP	7903.5	39.2571992	-80.1687687	8274.1
Joh_TPF40_203_PBHL rev4	7903.5	39.2031523	-80.1442366	29150.0

**SECTION DETAILS**

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	KOP 800' MD/ TVD 800'
1199.9	4.00	309.61	1199.6	8.9	-10.7	1.00	309.61	-11.9	Hold 4" Inc
3280.8	4.00	309.61	3275.4	101.4	-122.6	0.00	0.00	-135.8	Drop Vertical
3680.7	0.00	360.00	3675.0	110.3	-133.3	1.00	180.00	-147.8	Hold
7196.7	0.00	360.00	7191.0	110.3	-133.3	0.00	360.00	-147.8	KO Curve 6.7"/100
7497.1	20.06	160.90	7485.3	61.1	-116.3	6.68	160.90	-95.7	Build 9"/100
8274.1	90.00	160.97	7903.5	-504.1	78.8	9.00	0.08	502.2	LP @ 90° Inc/ 160.97° Az
29150.0	90.00	160.97	7903.5	-20239.6	6884.1	0.00	0.00	21378.1	



# **Arsenal Resources**

Taylor County, WV  
Johnson TFP40  
203

Orig.  
DEP Plan 5

## **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 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b> DEP Plan 5	
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria
<b>Interpolation Method:</b>	MD Interval 100.0usft
<b>Depth Range:</b>	0.0 to 29,150.0usft
<b>Results Limited by:</b>	Maximum ellipse separation of 1,000.0 usft
<b>Warning Levels Evaluated at:</b>	2.00 Sigma
<b>Error Model:</b>	ISCWSA
<b>Scan Method:</b>	Closest Approach 3D
<b>Error Surface:</b>	Ellipsoid Separation
<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b> Date 7/11/2022				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	800.0	DEP Plan 5 (Orig.)	MWD+HRGM+Int	MWD with High Resolution Geomagnetic model and Ex
800.0	800.0	DEP Plan 5 (Orig.)	MWD+AfterInt	OWSG MWD with High resolution geomagnetic model
2,600.0	29,150.0	DEP Plan 5 (Orig.)	SDI MWD	SDI MWD - Standard ver 1.0.1

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
<b>Johnson TFP40</b>						
201 - Orig. - DEP Plan 6	800.0	800.0	30.0	24.5	5.414	CC, ES
201 - Orig. - DEP Plan 6	26,200.0	26,475.0	2,003.3	1,301.6	2.855	SF
202 - Orig. - DEP Plan 4	800.0	800.0	15.0	9.5	2.707	CC
202 - Orig. - DEP Plan 4	900.0	900.0	15.6	9.3	2.496	ES
202 - Orig. - DEP Plan 4	29,100.0	29,204.2	999.9	185.1	1.227	Level 2, SF
204 - Orig. - DEP Plan 5	866.1	866.0	15.0	9.0	2.490	CC
204 - Orig. - DEP Plan 5	900.0	899.8	15.0	8.8	2.404	ES
204 - Orig. - DEP Plan 5	28,300.0	28,423.8	1,210.7	425.9	1.543	SF
205 - Orig. - DEP Plan 4	800.0	800.0	30.0	24.5	5.413	CC, ES
205 - Orig. - DEP Plan 4	1,000.0	997.8	34.5	27.5	4.964	SF

Offset Design Johnson TFP40 - 201 - Orig. - DEP Plan 6													Offset Site Error:	0.0 usft	
Survey Program: 0-MWD+HRGM+Int, 800-MWD+AfterInt, 2600-SDI MWD													Offset Well Error:		0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning		
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-30.0	0.0	30.0						
100.0	100.0	100.0	100.0	0.3	0.3	180.00	-30.0	0.0	30.0	29.5	0.52	57.325			
200.0	200.0	200.0	200.0	0.6	0.6	180.00	-30.0	0.0	30.0	28.8	1.24	24.189			
300.0	300.0	300.0	300.0	1.0	1.0	180.00	-30.0	0.0	30.0	28.0	1.96	15.329			
400.0	400.0	400.0	400.0	1.3	1.3	180.00	-30.0	0.0	30.0	27.3	2.67	11.219			
500.0	500.0	500.0	500.0	1.7	1.7	180.00	-30.0	0.0	30.0	26.6	3.39	8.847			
600.0	600.0	600.0	600.0	2.1	2.1	180.00	-30.0	0.0	30.0	25.9	4.11	7.303			
700.0	700.0	700.0	700.0	2.4	2.4	180.00	-30.0	0.0	30.0	25.2	4.83	6.218			
800.0	800.0	800.0	800.0	2.8	2.8	180.00	-30.0	0.0	30.0	24.5	5.54	5.414	CC, ES		
900.0	900.0	899.3	899.3	3.1	3.1	-128.42	-31.1	-1.3	31.7	25.4	6.24	5.078			
1,000.0	1,000.0	998.3	998.2	3.5	3.4	-125.50	-34.4	-5.3	36.8	29.8	6.92	5.312			
1,100.0	1,099.9	1,096.9	1,096.4	3.8	3.8	-122.11	-39.9	-11.8	45.4	37.8	7.61	5.968			
1,199.9	1,199.6	1,196.2	1,195.1	4.2	4.1	-120.08	-46.6	-19.7	56.3	48.0	8.30	6.796			
1,300.0	1,299.4	1,295.6	1,294.0	4.6	4.5	-119.42	-53.2	-27.7	67.8	58.8	9.01	7.523			

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

## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 201 - Orig. - DEP Plan 6													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+HRGM+Int. 80G-MWD+AfterInt. 2600-SD  MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
1,400.0	1,399.2	1,395.0	1,392.8	4.9	4.9	-118.95	-59.9	-35.6	79.2	69.5	9.72	8.151		
1,500.0	1,498.9	1,494.3	1,491.6	5.3	5.2	-118.80	-66.6	-43.6	90.7	80.2	10.44	8.689		
1,600.0	1,598.7	1,593.6	1,590.4	5.6	5.6	-118.33	-73.3	-51.6	102.1	91.0	11.15	9.157		
1,700.0	1,698.5	1,693.0	1,689.2	6.0	6.0	-118.11	-79.9	-59.5	113.6	101.7	11.87	9.566		
1,800.0	1,798.2	1,792.3	1,788.0	6.4	6.3	-117.94	-86.6	-67.5	125.0	112.4	12.60	9.927		
1,900.0	1,898.0	1,891.7	1,886.8	6.7	6.7	-117.79	-93.3	-75.4	136.5	123.2	13.32	10.247		
2,000.0	1,997.7	1,991.0	1,985.6	7.1	7.1	-117.67	-100.0	-83.4	147.9	133.9	14.04	10.534		
2,100.0	2,097.5	2,090.4	2,084.4	7.5	7.5	-117.56	-106.6	-91.3	159.4	144.6	14.77	10.791		
2,200.0	2,197.2	2,189.7	2,183.2	7.8	7.8	-117.47	-113.3	-99.3	170.8	155.3	15.50	11.023		
2,300.0	2,297.0	2,289.0	2,282.0	8.2	8.2	-117.39	-120.0	-107.2	182.3	166.1	16.23	11.234		
2,400.0	2,396.8	2,388.4	2,380.8	8.6	8.6	-117.32	-126.7	-115.2	193.8	176.8	16.96	11.426		
2,500.0	2,496.5	2,487.7	2,479.6	8.9	9.0	-117.25	-133.3	-123.1	205.2	187.5	17.69	11.602		
2,600.0	2,596.3	2,587.1	2,578.4	9.1	9.2	-117.20	-140.0	-131.1	216.7	198.6	18.07	11.891		
2,700.0	2,696.0	2,685.2	2,675.8	9.1	9.2	-116.89	-146.6	-140.0	228.3	210.2	18.12	12.603		
2,800.0	2,795.8	2,782.6	2,772.3	9.1	9.3	-115.86	-153.1	-152.0	240.7	222.6	18.14	13.271		
2,900.0	2,895.5	2,879.5	2,867.8	9.2	9.3	-114.21	-159.4	-167.2	254.0	235.8	18.17	13.975		
3,000.0	2,995.3	2,975.6	2,961.9	9.2	9.4	-112.06	-165.7	-185.5	268.4	250.2	18.23	14.724		
3,100.0	3,095.0	3,070.7	3,054.4	9.2	9.4	-109.53	-171.8	-206.7	284.2	265.9	18.30	15.530		
3,200.0	3,194.8	3,164.6	3,145.0	9.3	9.6	-106.74	-177.8	-230.6	301.8	283.4	18.39	16.409		
3,300.0	3,294.6	3,257.2	3,233.5	9.3	9.7	-103.82	-183.6	-257.1	321.4	302.9	18.50	17.374		
3,400.0	3,394.4	3,348.0	3,319.5	9.4	9.9	-100.83	-189.2	-285.9	343.0	324.4	18.59	18.446		
3,500.0	3,494.3	3,437.6	3,403.4	9.4	10.2	-97.64	-194.7	-316.9	367.0	348.3	18.69	19.639		
3,600.0	3,594.3	3,531.3	3,490.7	9.5	10.5	-94.35	-200.3	-350.4	392.9	374.0	18.85	20.836		
3,700.0	3,694.3	3,624.6	3,577.7	9.5	10.8	-141.82	-206.0	-383.8	420.0	400.9	19.02	22.081		
3,800.0	3,794.3	3,717.8	3,664.5	9.6	11.2	-138.60	-211.6	-417.1	448.3	429.1	19.20	23.355		
3,900.0	3,894.3	3,811.0	3,751.4	9.6	11.6	-135.92	-217.2	-450.4	477.8	458.4	19.39	24.646		
4,000.0	3,994.3	3,904.2	3,838.2	9.7	12.0	-133.55	-222.8	-483.8	508.1	488.5	19.59	25.941		
4,100.0	4,094.3	3,997.4	3,925.1	9.8	12.5	-131.44	-228.5	-517.1	539.2	519.4	19.80	27.230		
4,200.0	4,194.3	4,090.6	4,011.9	9.8	13.0	-129.55	-234.1	-550.4	570.8	550.8	20.02	28.506		
4,300.0	4,294.3	4,183.8	4,098.8	9.9	13.5	-127.85	-239.7	-583.7	603.0	582.7	20.26	29.764		
4,400.0	4,394.3	4,277.0	4,185.7	10.0	14.0	-126.33	-245.4	-617.0	635.6	615.1	20.50	31.000		
4,500.0	4,494.3	4,370.2	4,272.5	10.1	14.5	-124.95	-251.0	-650.4	668.6	647.9	20.76	32.210		
4,600.0	4,594.3	4,463.4	4,359.4	10.2	15.1	-123.69	-256.6	-683.7	702.0	680.9	21.02	33.389		
4,700.0	4,694.3	4,556.6	4,446.2	10.3	15.7	-122.55	-262.3	-717.0	735.6	714.3	21.30	34.537		
4,800.0	4,794.3	4,649.8	4,533.1	10.4	16.2	-121.51	-267.9	-750.3	769.4	747.8	21.58	35.652		
4,900.0	4,894.3	4,743.0	4,619.9	10.5	16.8	-120.55	-273.5	-783.6	803.5	781.6	21.87	36.733		
5,000.0	4,994.3	4,836.2	4,706.8	10.6	17.4	-119.67	-279.1	-817.0	837.7	815.5	22.17	37.778		
5,100.0	5,094.3	4,929.4	4,793.6	10.7	18.0	-118.86	-284.8	-850.3	872.1	849.6	22.48	38.788		
5,200.0	5,194.3	5,022.6	4,880.5	10.8	18.6	-118.11	-290.4	-883.6	906.6	883.8	22.80	39.763		
5,300.0	5,294.3	5,115.8	4,967.3	10.9	19.3	-117.41	-296.0	-916.9	941.3	918.2	23.13	40.703		
5,400.0	5,394.3	5,209.0	5,054.2	11.1	19.9	-116.76	-301.7	-950.2	976.1	952.6	23.46	41.608		
5,500.0	5,494.3	5,302.1	5,141.0	11.2	20.5	-116.16	-307.3	-983.6	1,011.0	987.2	23.80	42.479		
5,600.0	5,594.3	5,395.3	5,227.9	11.3	21.1	-115.59	-312.9	-1,016.9	1,046.0	1,021.8	24.15	43.316		
5,700.0	5,694.3	5,488.5	5,314.7	11.5	21.8	-115.07	-318.5	-1,050.2	1,081.1	1,056.6	24.50	44.121		
5,800.0	5,794.3	5,581.7	5,401.6	11.6	22.4	-114.57	-324.2	-1,083.5	1,116.2	1,091.3	24.86	44.894		
5,900.0	5,894.3	5,674.9	5,488.4	11.7	23.1	-114.11	-329.8	-1,116.8	1,151.4	1,126.2	25.23	45.637		
6,000.0	5,994.3	5,768.1	5,575.3	11.9	23.7	-113.67	-335.4	-1,150.2	1,186.7	1,161.1	25.60	46.350		
6,100.0	6,094.3	5,861.3	5,662.1	12.0	24.4	-113.25	-341.1	-1,183.5	1,222.0	1,196.0	25.98	47.035		
6,200.0	6,194.3	5,954.5	5,749.0	12.2	25.0	-112.87	-346.7	-1,216.8	1,257.4	1,231.1	26.37	47.692		
6,300.0	6,294.3	6,047.7	5,835.8	12.3	25.7	-112.50	-352.3	-1,250.1	1,292.9	1,266.1	26.75	48.323		
6,400.0	6,394.3	6,140.9	5,922.7	12.5	26.4	-112.15	-358.0	-1,283.4	1,328.3	1,301.2	27.15	48.926		

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 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 201 - Orig. - DEP Plan 6													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+HRGM+Int, B00-MWD+AfterInt, 2600-SDI MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
6,500.0	6,494.3	6,234.1	6,009.5	12.6	27.0	-111.82	-363.6	-1,316.8	1,363.9	1,336.3	27.55	49.509		
6,600.0	6,594.3	6,327.3	6,096.4	12.8	27.7	-111.51	-369.2	-1,350.1	1,399.4	1,371.5	27.95	50.066		
6,700.0	6,694.3	6,420.5	6,183.2	12.9	28.4	-111.21	-374.8	-1,383.4	1,435.0	1,406.7	28.36	50.599		
6,800.0	6,794.3	6,513.7	6,270.1	13.1	29.0	-110.93	-380.5	-1,416.7	1,470.5	1,441.9	28.77	51.112		
6,900.0	6,894.3	6,606.9	6,357.0	13.2	29.7	-110.66	-386.1	-1,450.0	1,506.3	1,477.1	29.19	51.603		
7,000.0	6,994.3	6,700.1	6,443.8	13.4	30.4	-110.40	-391.7	-1,483.4	1,542.0	1,512.4	29.61	52.074		
7,100.0	7,094.3	6,793.3	6,530.7	13.6	31.1	-110.15	-397.4	-1,516.7	1,577.7	1,547.7	30.04	52.525		
7,200.0	7,194.3	6,886.5	6,617.5	13.7	31.7	89.10	-403.0	-1,550.0	1,613.4	1,583.0	30.47	52.960		
7,300.0	7,294.0	6,979.0	6,703.8	13.9	32.4	87.00	-408.6	-1,583.1	1,649.1	1,618.2	30.82	53.501		
7,400.0	7,392.4	7,069.6	6,788.2	14.0	33.1	85.32	-414.1	-1,615.5	1,684.3	1,653.2	31.11	54.142		
7,500.0	7,488.0	7,157.0	6,869.7	14.1	33.7	83.95	-419.3	-1,646.7	1,719.2	1,687.8	31.34	54.852		
7,600.0	7,578.7	7,239.0	6,946.1	14.2	34.3	82.05	-424.3	-1,676.0	1,753.6	1,722.0	31.55	55.589		
7,700.0	7,661.7	7,313.0	7,015.0	14.4	34.8	80.40	-428.8	-1,702.5	1,787.4	1,755.7	31.76	56.280		
7,800.0	7,734.9	7,377.3	7,074.9	14.7	35.3	78.81	-432.6	-1,725.5	1,821.1	1,789.0	32.09	56.745		
7,900.0	7,796.7	7,430.1	7,124.2	15.2	35.7	77.10	-435.8	-1,744.4	1,854.8	1,822.1	32.73	56.676		
8,000.0	7,845.4	7,470.3	7,161.6	15.8	36.0	75.11	-438.3	-1,758.8	1,888.6	1,855.2	33.57	56.264		
8,100.0	7,879.8	7,496.8	7,186.4	16.6	36.2	72.77	-439.9	-1,768.2	1,923.1	1,888.5	34.62	55.545		
8,200.0	7,899.2	7,509.1	7,197.7	17.6	36.3	70.04	-440.6	-1,772.6	1,957.3	1,921.5	35.95	54.596		
8,300.0	7,903.5	7,507.1	7,196.0	18.8	36.3	67.74	-440.5	-1,771.9	1,991.2	1,954.0	37.20	53.531		
8,400.0	7,903.5	8,787.4	7,903.5	20.0	41.3	90.00	-1,275.2	-1,771.3	2,000.5	1,957.8	42.64	46.920		
8,500.0	7,903.5	8,887.4	7,903.5	21.4	41.6	90.00	-1,369.8	-1,738.7	2,000.5	1,955.5	44.93	44.521		
8,600.0	7,903.5	8,987.4	7,903.5	22.8	42.1	90.00	-1,464.3	-1,706.1	2,000.5	1,953.0	47.42	42.185		
8,700.0	7,903.5	9,087.4	7,903.5	24.3	42.6	90.00	-1,558.8	-1,673.5	2,000.5	1,950.4	50.07	39.952		
8,800.0	7,903.5	9,187.4	7,903.5	25.8	43.2	90.00	-1,653.4	-1,640.9	2,000.5	1,947.6	52.66	37.844		
8,900.0	7,903.5	9,287.4	7,903.5	27.4	43.8	90.00	-1,747.9	-1,608.3	2,000.5	1,944.7	55.77	35.872		
9,000.0	7,903.5	9,387.4	7,903.5	29.0	44.6	90.00	-1,842.5	-1,575.7	2,000.4	1,941.7	58.77	34.037		
9,100.0	7,903.5	9,487.4	7,903.5	30.7	45.4	90.00	-1,937.0	-1,543.1	2,000.4	1,938.6	61.67	32.334		
9,200.0	7,903.5	9,587.4	7,903.5	32.4	46.3	90.00	-2,031.5	-1,510.5	2,000.4	1,935.4	65.04	30.758		
9,300.0	7,903.5	9,687.4	7,903.5	34.1	47.2	90.00	-2,126.1	-1,477.9	2,000.4	1,932.2	68.27	29.301		
9,400.0	7,903.5	9,787.4	7,903.5	35.8	48.2	90.00	-2,220.6	-1,445.3	2,000.4	1,928.9	71.56	27.954		
9,500.0	7,903.5	9,887.4	7,903.5	37.6	49.3	90.00	-2,315.1	-1,412.7	2,000.4	1,925.5	74.90	26.707		
9,600.0	7,903.5	9,987.4	7,903.5	39.3	50.4	90.00	-2,409.7	-1,380.1	2,000.4	1,922.2	78.28	25.553		
9,700.0	7,903.5	10,087.4	7,903.5	41.1	51.6	90.00	-2,504.2	-1,347.5	2,000.4	1,918.7	81.70	24.484		
9,800.0	7,903.5	10,187.4	7,903.5	42.9	52.8	90.00	-2,598.8	-1,314.9	2,000.4	1,915.3	85.16	23.491		
9,900.0	7,903.5	10,287.4	7,903.5	44.7	54.1	90.00	-2,693.3	-1,282.3	2,000.4	1,911.8	88.64	22.566		
10,000.0	7,903.5	10,387.4	7,903.5	46.5	55.4	90.00	-2,787.8	-1,249.7	2,000.4	1,908.3	92.15	21.710		
10,100.0	7,903.5	10,487.4	7,903.5	48.3	56.8	90.00	-2,882.4	-1,217.1	2,000.4	1,904.8	95.68	20.909		
10,200.0	7,903.5	10,587.4	7,903.5	50.1	58.2	90.00	-2,976.9	-1,184.5	2,000.4	1,901.2	99.23	20.160		
10,300.0	7,903.5	10,687.4	7,903.5	51.9	59.6	90.00	-3,071.4	-1,151.9	2,000.4	1,897.6	102.80	19.460		
10,400.0	7,903.5	10,787.4	7,903.5	53.8	61.1	90.00	-3,165.0	-1,119.3	2,000.4	1,894.0	106.38	18.804		
10,500.0	7,903.5	10,887.4	7,903.5	55.6	62.6	90.00	-3,260.5	-1,086.7	2,000.4	1,890.4	109.98	18.189		
10,600.0	7,903.5	10,987.4	7,903.5	57.4	64.1	90.00	-3,355.0	-1,054.1	2,000.4	1,886.8	113.60	17.610		
10,700.0	7,903.5	11,087.4	7,903.5	59.3	65.7	90.00	-3,449.6	-1,021.5	2,000.4	1,883.2	117.22	17.065		
10,800.0	7,903.5	11,187.4	7,903.5	61.1	67.2	90.00	-3,544.1	-988.9	2,000.4	1,879.6	120.86	16.551		
10,900.0	7,903.5	11,287.4	7,903.5	63.0	68.8	90.00	-3,638.7	-956.3	2,000.4	1,875.9	124.51	16.066		
11,000.0	7,903.5	11,387.4	7,903.5	64.8	70.4	90.00	-3,733.2	-923.7	2,000.4	1,872.2	128.17	15.608		
11,100.0	7,903.5	11,487.4	7,903.5	66.7	72.0	90.00	-3,827.7	-891.1	2,000.4	1,868.6	131.83	15.174		
11,200.0	7,903.5	11,587.4	7,903.5	68.5	73.6	90.00	-3,922.3	-858.5	2,000.4	1,864.9	135.51	14.762		
11,300.0	7,903.5	11,687.4	7,903.5	70.4	75.3	90.00	-4,016.8	-825.9	2,000.4	1,861.2	139.19	14.372		
11,400.0	7,903.5	11,787.4	7,903.5	72.3	77.0	90.00	-4,111.3	-793.3	2,000.4	1,857.5	142.88	14.001		

## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 201 - Orig. - DEP Plan 6													Offset Site Error:	0.0 usft
Survey Program: D-MWD+HRGM+Int. 800-MWD+AfterInt. 2600-SDI MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
11,500.0	7,903.5	11,887.4	7,903.5	74.1	78.6	90.00	-4,205.9	-760.7	2,000.4	1,853.8	146.57	13.648		
11,600.0	7,903.5	11,987.4	7,903.5	76.0	80.3	90.00	-4,300.4	-728.1	2,000.4	1,850.1	150.27	13.312		
11,700.0	7,903.5	12,087.4	7,903.5	77.9	82.0	90.00	-4,395.0	-695.5	2,000.4	1,846.4	153.98	12.991		
11,800.0	7,903.5	12,187.4	7,903.5	79.8	83.7	90.00	-4,489.5	-662.9	2,000.4	1,842.7	157.69	12.686		
11,900.0	7,903.5	12,287.4	7,903.5	81.6	85.4	90.00	-4,584.0	-630.3	2,000.4	1,839.0	161.41	12.394		
12,000.0	7,903.5	12,387.4	7,903.5	83.5	87.1	90.00	-4,678.6	-597.7	2,000.4	1,835.3	165.12	12.114		
12,100.0	7,903.5	12,487.4	7,903.5	85.4	88.9	90.00	-4,773.1	-565.1	2,000.4	1,831.5	168.85	11.847		
12,200.0	7,903.5	12,587.4	7,903.5	87.3	90.6	90.00	-4,867.6	-532.5	2,000.4	1,827.8	172.58	11.591		
12,300.0	7,903.5	12,687.4	7,903.5	89.1	92.4	90.00	-4,962.2	-499.9	2,000.4	1,824.1	176.31	11.346		
12,400.0	7,903.5	12,787.4	7,903.5	91.0	94.1	90.00	-5,056.7	-467.3	2,000.4	1,820.3	180.04	11.111		
12,500.0	7,903.5	12,887.4	7,903.5	92.9	95.9	90.00	-5,151.2	-434.7	2,000.4	1,816.6	183.79	10.884		
12,600.0	7,903.5	12,987.4	7,903.5	94.8	97.6	90.00	-5,245.8	-402.1	2,000.4	1,812.9	187.50	10.669		
12,700.0	7,903.5	13,087.4	7,903.5	96.7	99.4	90.00	-5,340.3	-369.5	2,000.4	1,809.1	191.26	10.459		
12,800.0	7,903.5	13,187.4	7,903.5	98.5	101.2	90.00	-5,434.9	-336.9	2,000.4	1,805.4	195.00	10.258		
12,900.0	7,903.5	13,287.4	7,903.5	100.4	103.0	90.00	-5,529.4	-304.3	2,000.4	1,801.6	198.75	10.055		
13,000.0	7,903.5	13,387.4	7,903.5	102.3	104.7	90.00	-5,623.9	-271.7	2,000.4	1,797.9	202.50	9.878		
13,100.0	7,903.5	13,487.4	7,903.5	104.2	106.5	90.00	-5,718.5	-239.1	2,000.4	1,794.1	206.25	9.699		
13,200.0	7,903.5	13,587.4	7,903.5	106.1	108.3	90.00	-5,813.0	-206.5	2,000.4	1,790.4	210.01	9.525		
13,300.0	7,903.5	13,687.4	7,903.5	108.0	110.1	90.00	-5,907.5	-173.9	2,000.4	1,786.6	213.76	9.358		
13,400.0	7,903.5	13,787.4	7,903.5	109.8	111.9	90.00	-6,002.1	-141.3	2,000.4	1,782.8	217.52	9.196		
13,500.0	7,903.5	13,887.4	7,903.5	111.7	113.7	90.00	-6,096.6	-108.7	2,000.4	1,779.1	221.28	9.040		
13,600.0	7,903.5	13,987.4	7,903.5	113.6	115.5	90.00	-6,191.2	-76.1	2,000.4	1,775.3	225.04	8.889		
13,700.0	7,903.5	14,087.4	7,903.5	115.5	117.3	90.00	-6,285.7	-43.5	2,000.4	1,771.6	228.81	8.743		
13,800.0	7,903.5	14,187.4	7,903.5	117.4	119.1	90.00	-6,380.2	-10.9	2,000.4	1,767.8	232.57	8.601		
13,900.0	7,903.5	14,287.4	7,903.5	119.3	121.0	90.00	-6,474.8	21.7	2,000.4	1,764.0	236.34	8.464		
14,000.0	7,903.5	14,387.4	7,903.5	121.2	122.8	90.00	-6,569.3	54.3	2,000.4	1,760.3	240.10	8.331		
14,100.0	7,903.5	14,487.4	7,903.5	123.1	124.6	90.00	-6,663.8	86.9	2,000.4	1,756.5	243.87	8.202		
14,200.0	7,903.5	14,587.4	7,903.5	125.0	126.4	90.00	-6,758.4	119.5	2,000.4	1,752.7	247.64	8.078		
14,300.0	7,903.5	14,687.4	7,903.5	126.9	128.3	90.00	-6,852.9	152.1	2,000.4	1,748.9	251.41	7.956		
14,400.0	7,903.5	14,787.4	7,903.5	128.8	130.1	90.00	-6,947.4	184.7	2,000.3	1,745.2	255.19	7.839		
14,500.0	7,903.5	14,887.4	7,903.5	130.6	131.9	90.00	-7,042.0	217.3	2,000.3	1,741.4	258.96	7.725		
14,600.0	7,903.5	14,987.4	7,903.5	132.5	133.7	90.00	-7,136.5	249.9	2,000.3	1,737.6	262.73	7.614		
14,700.0	7,903.5	15,087.4	7,903.5	134.4	135.6	90.00	-7,231.1	282.5	2,000.3	1,733.8	266.51	7.506		
14,800.0	7,903.5	15,187.4	7,903.5	136.3	137.4	90.00	-7,325.6	315.1	2,000.3	1,730.1	270.29	7.401		
14,900.0	7,903.5	15,287.4	7,903.5	138.2	139.3	90.00	-7,420.1	347.7	2,000.3	1,726.3	274.06	7.299		
15,000.0	7,903.5	15,387.4	7,903.5	140.1	141.1	90.00	-7,514.7	380.3	2,000.3	1,722.5	277.84	7.200		
15,100.0	7,903.5	15,487.4	7,903.5	142.0	142.9	90.00	-7,609.2	412.9	2,000.3	1,718.7	281.62	7.103		
15,200.0	7,903.5	15,587.4	7,903.5	143.9	144.8	90.00	-7,703.7	445.5	2,000.3	1,714.9	285.40	7.009		
15,300.0	7,903.5	15,687.4	7,903.5	145.8	146.6	90.00	-7,798.3	478.1	2,000.3	1,711.2	289.18	6.917		
15,400.0	7,903.5	15,787.4	7,903.5	147.7	148.5	90.00	-7,892.8	510.7	2,000.3	1,707.4	292.96	6.828		
15,500.0	7,903.5	15,887.4	7,903.5	149.6	150.3	90.00	-7,987.3	543.3	2,000.3	1,703.6	296.74	6.741		
15,600.0	7,903.5	15,987.4	7,903.5	151.5	152.2	90.00	-8,081.9	575.9	2,000.3	1,699.8	300.52	6.656		
15,700.0	7,903.5	16,087.4	7,903.5	153.4	154.0	90.00	-8,176.4	608.5	2,000.3	1,696.0	304.31	6.573		
15,800.0	7,903.5	16,187.4	7,903.5	155.3	155.9	90.00	-8,271.0	641.1	2,000.3	1,692.2	308.09	6.493		
15,900.0	7,903.5	16,287.4	7,903.5	157.2	157.7	90.00	-8,365.5	673.7	2,000.3	1,688.4	311.88	6.414		
16,000.0	7,903.5	16,387.4	7,903.5	159.1	159.6	90.00	-8,460.0	706.3	2,000.3	1,684.7	315.66	6.337		
16,100.0	7,903.5	16,487.4	7,903.5	161.0	161.4	90.00	-8,554.6	738.9	2,000.3	1,680.9	319.45	6.262		
16,200.0	7,903.5	16,587.4	7,903.5	162.9	163.3	90.00	-8,649.1	771.5	2,000.3	1,677.1	323.23	6.188		
16,300.0	7,903.5	16,687.4	7,903.5	164.8	165.2	90.00	-8,743.6	804.1	2,000.3	1,673.3	327.02	6.117		
16,400.0	7,903.5	16,787.4	7,903.5	166.7	167.0	90.00	-8,838.2	836.7	2,000.3	1,669.5	330.81	6.047		
16,500.0	7,903.5	16,887.4	7,903.5	168.5	168.9	90.00	-8,932.7	869.3	2,000.3	1,665.7	334.59	5.978		

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

# Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 201 - Orig - DEP Plan 6													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+HRGM+Inl, 800-MWD+AfterInL, 2600-SDI MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
16,600.0	7,903.5	16,987.4	7,903.5	170.4	170.7	90.00	-9,027.3	901.9	2,000.3	1,661.9	338.38	5.911		
16,700.0	7,903.5	17,087.4	7,903.5	172.3	172.6	90.00	-9,121.8	934.5	2,000.3	1,658.1	342.17	5.846		
16,800.0	7,903.5	17,187.4	7,903.5	174.2	174.5	90.00	-9,216.3	967.1	2,000.3	1,654.3	345.96	5.782		
16,900.0	7,903.5	17,287.4	7,903.5	176.1	176.3	90.00	-9,310.9	999.7	2,000.3	1,650.6	349.75	5.719		
17,000.0	7,903.5	17,387.4	7,903.5	178.0	178.2	90.00	-9,405.4	1,032.3	2,000.3	1,646.8	353.54	5.658		
17,100.0	7,903.5	17,487.4	7,903.5	179.9	180.1	90.00	-9,499.9	1,064.9	2,000.3	1,643.0	357.33	5.598		
17,200.0	7,903.5	17,587.4	7,903.5	181.8	181.9	90.00	-9,594.5	1,097.5	2,000.3	1,639.2	361.12	5.539		
17,300.0	7,903.5	17,687.4	7,903.5	183.7	183.8	90.00	-9,689.0	1,130.1	2,000.3	1,635.4	364.91	5.482		
17,400.0	7,903.5	17,787.4	7,903.5	185.6	185.7	90.00	-9,783.5	1,162.7	2,000.3	1,631.6	368.70	5.425		
17,500.0	7,903.5	17,887.4	7,903.5	187.5	187.5	90.00	-9,878.1	1,195.3	2,000.3	1,627.8	372.49	5.370		
17,600.0	7,903.5	17,987.4	7,903.5	189.4	189.4	90.00	-9,972.6	1,227.9	2,000.3	1,624.0	376.28	5.316		
17,700.0	7,903.5	18,087.4	7,903.5	191.3	191.3	90.00	-10,067.2	1,260.5	2,000.3	1,620.2	380.08	5.263		
17,800.0	7,903.5	18,187.4	7,903.5	193.2	193.2	90.00	-10,161.7	1,293.1	2,000.3	1,616.4	383.87	5.211		
17,900.0	7,903.5	18,287.4	7,903.5	195.1	195.0	90.00	-10,256.2	1,325.7	2,000.3	1,612.6	387.66	5.160		
18,000.0	7,903.5	18,387.4	7,903.5	197.0	196.9	90.00	-10,350.8	1,358.3	2,000.3	1,608.8	391.46	5.110		
18,100.0	7,903.5	18,487.4	7,903.5	198.9	198.8	90.00	-10,445.3	1,390.9	2,000.3	1,605.0	395.25	5.061		
18,200.0	7,903.5	18,587.4	7,903.5	200.8	200.6	90.00	-10,539.8	1,423.5	2,000.3	1,601.2	399.04	5.013		
18,300.0	7,903.5	18,687.4	7,903.5	202.7	202.5	90.00	-10,634.4	1,456.1	2,000.3	1,597.4	402.84	4.965		
18,400.0	7,903.5	18,787.4	7,903.5	204.6	204.4	90.00	-10,728.9	1,488.7	2,000.3	1,593.6	406.63	4.919		
18,500.0	7,903.5	18,887.4	7,903.5	206.5	206.3	90.00	-10,823.5	1,521.3	2,000.3	1,589.8	410.43	4.874		
18,600.0	7,903.5	18,987.4	7,903.5	208.4	208.1	90.00	-10,918.0	1,553.9	2,000.3	1,586.0	414.22	4.829		
18,700.0	7,903.5	19,087.4	7,903.5	210.3	210.0	90.00	-11,012.5	1,586.5	2,000.3	1,582.3	418.02	4.785		
18,800.0	7,903.5	19,187.4	7,903.5	212.2	211.9	90.00	-11,107.1	1,619.1	2,000.3	1,578.5	421.81	4.742		
18,900.0	7,903.5	19,287.4	7,903.5	214.1	213.8	90.00	-11,201.6	1,651.7	2,000.3	1,574.7	425.61	4.700		
19,000.0	7,903.5	19,387.4	7,903.5	216.0	215.7	90.00	-11,296.1	1,684.3	2,000.3	1,570.9	429.40	4.658		
19,100.0	7,903.5	19,487.4	7,903.5	217.9	217.5	90.00	-11,390.7	1,716.9	2,000.3	1,567.1	433.20	4.617		
19,200.0	7,903.5	19,587.4	7,903.5	219.8	219.4	90.00	-11,485.2	1,749.5	2,000.3	1,563.3	437.00	4.577		
19,300.0	7,903.5	19,687.4	7,903.5	221.7	221.3	90.00	-11,579.7	1,782.1	2,000.3	1,559.5	440.79	4.538		
19,400.0	7,903.5	19,787.4	7,903.5	223.6	223.2	90.00	-11,674.3	1,814.7	2,000.3	1,555.7	444.59	4.499		
19,500.0	7,903.5	19,887.4	7,903.5	225.5	225.1	90.00	-11,768.8	1,847.3	2,000.3	1,551.9	448.39	4.461		
19,600.0	7,903.5	19,987.4	7,903.5	227.4	226.9	90.00	-11,863.4	1,879.9	2,000.3	1,548.1	452.18	4.424		
19,700.0	7,903.5	20,087.4	7,903.5	229.3	228.8	90.00	-11,957.9	1,912.5	2,000.2	1,544.3	455.98	4.387		
19,800.0	7,903.5	20,187.4	7,903.5	231.2	230.7	90.00	-12,052.4	1,945.1	2,000.2	1,540.5	459.78	4.350		
19,900.0	7,903.5	20,287.4	7,903.5	233.1	232.6	90.00	-12,147.0	1,977.7	2,000.2	1,536.7	463.58	4.315		
20,000.0	7,903.5	20,387.4	7,903.5	235.0	234.5	90.00	-12,241.5	2,010.3	2,000.2	1,532.9	467.37	4.280		
20,100.0	7,903.5	20,487.4	7,903.5	236.9	236.3	90.00	-12,336.0	2,043.0	2,000.2	1,529.1	471.17	4.245		
20,200.0	7,903.5	20,587.4	7,903.5	238.8	238.2	90.00	-12,430.6	2,075.6	2,000.2	1,525.3	474.97	4.211		
20,300.0	7,903.5	20,687.4	7,903.5	240.7	240.1	90.00	-12,525.1	2,108.2	2,000.2	1,521.5	478.77	4.178		
20,400.0	7,903.5	20,787.4	7,903.5	242.6	242.0	90.00	-12,619.7	2,140.8	2,000.2	1,517.7	482.57	4.145		
20,500.0	7,903.5	20,887.4	7,903.5	244.5	243.9	90.00	-12,714.2	2,173.4	2,000.2	1,513.9	486.37	4.113		
20,600.0	7,903.5	20,987.4	7,903.5	246.4	245.8	90.00	-12,808.7	2,206.0	2,000.2	1,510.1	490.17	4.081		
20,700.0	7,903.5	21,087.4	7,903.5	248.3	247.6	90.00	-12,903.3	2,238.6	2,000.2	1,506.3	493.96	4.049		
20,800.0	7,903.5	21,187.4	7,903.5	250.2	249.5	90.00	-12,997.8	2,271.2	2,000.2	1,502.5	497.76	4.018		
20,900.0	7,903.5	21,287.4	7,903.5	252.1	251.4	90.00	-13,092.3	2,303.8	2,000.2	1,498.7	501.56	3.988		
21,000.0	7,903.5	21,387.4	7,903.5	254.0	253.3	90.00	-13,186.9	2,336.4	2,000.2	1,494.9	505.36	3.958		
21,100.0	7,903.5	21,487.4	7,903.5	255.9	255.2	90.00	-13,281.4	2,369.0	2,000.2	1,491.1	509.16	3.928		
21,200.0	7,903.5	21,587.4	7,903.5	257.8	257.1	90.00	-13,375.9	2,401.6	2,000.2	1,487.3	512.96	3.899		
21,300.0	7,903.5	21,687.4	7,903.5	259.7	259.0	90.00	-13,470.5	2,434.2	2,000.2	1,483.5	516.76	3.871		
21,400.0	7,903.5	21,787.4	7,903.5	261.6	260.8	90.00	-13,565.0	2,466.8	2,000.2	1,479.7	520.56	3.842		
21,500.0	7,903.5	21,887.4	7,903.5	263.5	262.7	90.00	-13,659.6	2,499.4	2,000.2	1,475.9	524.36	3.815		

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

### Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 201 - Orig. - DEP Plan 6													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+HRGM+Int, 800-MWD+AfterInt, 2600-SDI MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
21,600.0	7,903.5	21,987.4	7,903.5	265.5	264.6	90.00	-13,754.1	2,532.0	2,000.2	1,472.1	528.16	3.787		
21,700.0	7,903.5	22,067.4	7,903.5	267.4	266.5	90.00	-13,848.6	2,564.6	2,000.2	1,468.2	531.96	3.760		
21,800.0	7,903.5	22,187.4	7,903.5	269.3	268.4	90.00	-13,943.2	2,597.2	2,000.2	1,464.4	535.76	3.733		
21,900.0	7,903.5	22,287.4	7,903.5	271.2	270.3	90.00	-14,037.7	2,629.8	2,000.2	1,460.6	539.56	3.707		
22,000.0	7,903.5	22,387.4	7,903.5	273.1	272.2	90.00	-14,132.2	2,662.4	2,000.2	1,456.8	543.37	3.681		
22,100.0	7,903.5	22,487.4	7,903.5	275.0	274.1	90.00	-14,226.8	2,695.0	2,000.2	1,453.0	547.17	3.655		
22,200.0	7,903.5	22,587.4	7,903.5	276.9	275.9	90.00	-14,321.3	2,727.6	2,000.2	1,449.2	550.97	3.630		
22,300.0	7,903.5	22,687.4	7,903.5	278.8	277.8	90.00	-14,415.9	2,760.2	2,000.2	1,445.4	554.77	3.605		
22,400.0	7,903.5	22,787.4	7,903.5	280.7	279.7	90.00	-14,510.4	2,792.8	2,000.2	1,441.6	558.57	3.581		
22,500.0	7,903.5	22,887.4	7,903.5	282.6	281.6	90.00	-14,604.9	2,825.4	2,000.2	1,437.8	562.37	3.557		
22,600.0	7,903.5	22,987.4	7,903.5	284.5	283.5	90.00	-14,699.5	2,858.0	2,000.2	1,434.0	566.17	3.533		
22,700.0	7,903.5	23,087.4	7,903.5	286.4	285.4	90.00	-14,794.0	2,890.6	2,000.2	1,430.2	569.97	3.509		
22,800.0	7,903.5	23,187.4	7,903.5	288.3	287.3	90.00	-14,888.5	2,923.2	2,000.2	1,426.4	573.78	3.486		
22,900.0	7,903.5	23,287.4	7,903.5	290.2	289.2	90.00	-14,983.1	2,955.8	2,000.2	1,422.6	577.58	3.463		
23,000.0	7,903.5	23,387.4	7,903.5	292.1	291.1	90.00	-15,077.6	2,988.4	2,000.2	1,418.8	581.38	3.440		
23,100.0	7,903.5	23,487.4	7,903.5	294.0	293.0	90.00	-15,172.1	3,021.0	2,000.2	1,415.0	585.18	3.418		
23,200.0	7,903.5	23,587.4	7,903.5	295.9	294.8	90.00	-15,266.7	3,053.6	2,000.2	1,411.2	588.98	3.396		
23,300.0	7,903.5	23,687.4	7,903.5	297.8	296.7	90.00	-15,361.2	3,086.2	2,000.2	1,407.4	592.78	3.374		
23,400.0	7,903.5	23,787.4	7,903.5	299.7	298.6	90.00	-15,455.8	3,118.8	2,000.2	1,403.6	596.59	3.353		
23,500.0	7,903.5	23,887.4	7,903.5	301.6	300.5	90.00	-15,550.3	3,151.4	2,000.2	1,399.8	600.39	3.331		
23,600.0	7,903.5	23,987.4	7,903.5	303.5	302.4	90.00	-15,644.8	3,184.0	2,000.2	1,396.0	604.19	3.310		
23,700.0	7,903.5	24,087.4	7,903.5	305.4	304.3	90.00	-15,739.4	3,216.6	2,000.2	1,392.2	607.99	3.290		
23,800.0	7,903.5	24,187.4	7,903.5	307.3	306.2	90.00	-15,833.9	3,249.2	2,000.2	1,388.4	611.80	3.269		
23,900.0	7,903.5	24,287.4	7,903.5	309.2	308.1	90.00	-15,928.4	3,281.8	2,000.2	1,384.6	615.60	3.249		
24,000.0	7,903.5	24,387.4	7,903.5	311.1	310.0	90.00	-16,023.0	3,314.4	2,000.2	1,380.8	619.40	3.229		
24,100.0	7,903.5	24,487.4	7,903.5	313.0	311.9	90.00	-16,117.5	3,347.0	2,000.2	1,377.0	623.20	3.209		
24,200.0	7,903.5	24,587.4	7,903.5	314.9	313.8	90.00	-16,212.0	3,379.6	2,000.2	1,373.2	627.01	3.190		
24,300.0	7,903.5	24,687.4	7,903.5	316.8	315.7	90.00	-16,306.6	3,412.2	2,000.2	1,369.4	630.81	3.171		
24,400.0	7,903.5	24,787.4	7,903.5	318.7	317.5	90.00	-16,401.1	3,444.8	2,000.2	1,365.5	634.61	3.152		
24,500.0	7,903.5	24,887.4	7,903.5	320.6	319.4	90.00	-16,495.7	3,477.4	2,000.2	1,361.7	638.41	3.133		
24,600.0	7,903.5	24,987.4	7,903.5	322.5	321.3	90.00	-16,590.2	3,510.0	2,000.2	1,357.9	642.22	3.114		
24,700.0	7,903.5	25,087.4	7,903.5	324.4	323.2	90.00	-16,684.7	3,542.6	2,000.2	1,354.1	646.02	3.096		
24,800.0	7,903.5	25,187.4	7,903.5	326.3	325.1	90.00	-16,779.3	3,575.2	2,000.2	1,350.3	649.82	3.078		
24,900.0	7,903.5	25,287.4	7,903.5	328.2	327.0	90.00	-16,873.8	3,607.8	2,000.2	1,346.5	653.63	3.060		
25,000.0	7,903.5	25,387.4	7,903.5	330.1	328.9	90.00	-16,968.3	3,640.4	2,000.1	1,342.7	657.43	3.042		
25,100.0	7,903.5	25,487.4	7,903.5	332.0	330.8	90.00	-17,062.9	3,673.0	2,000.1	1,338.9	661.23	3.025		
25,200.0	7,903.5	25,587.4	7,903.5	333.9	332.7	90.00	-17,157.4	3,705.6	2,000.1	1,335.1	665.04	3.008		
25,300.0	7,903.5	25,687.4	7,903.5	335.8	334.6	90.00	-17,252.0	3,738.2	2,000.1	1,331.3	668.84	2.990		
25,400.0	7,903.5	25,787.4	7,903.5	337.7	336.5	90.00	-17,346.5	3,770.8	2,000.1	1,327.5	672.64	2.974		
25,500.0	7,903.5	25,887.4	7,903.5	339.6	338.4	90.00	-17,441.0	3,803.4	2,000.1	1,323.7	676.45	2.957		
25,600.0	7,903.5	25,987.4	7,903.5	341.5	340.3	90.00	-17,535.5	3,836.0	2,000.1	1,319.9	680.25	2.940		
25,700.0	7,903.5	26,087.4	7,903.5	343.5	342.2	90.00	-17,630.1	3,868.6	2,000.1	1,316.1	684.05	2.924		
25,800.0	7,903.5	26,187.4	7,903.5	345.4	344.1	90.00	-17,724.6	3,901.2	2,000.1	1,312.3	687.86	2.908		
25,900.0	7,903.5	26,287.4	7,903.5	347.3	345.9	90.00	-17,819.2	3,933.8	2,000.1	1,308.5	691.66	2.892		
26,000.0	7,903.5	26,387.4	7,903.5	349.2	347.8	90.00	-17,913.7	3,966.4	2,000.1	1,304.7	695.46	2.876		
26,086.1	7,903.5	26,473.5	7,903.5	350.8	349.5	90.00	-17,995.1	3,994.5	2,000.1	1,301.4	698.74	2.862		
26,100.0	7,903.5	26,475.0	7,903.5	351.1	349.5	90.00	-17,996.5	3,994.9	2,000.2	1,300.9	699.28	2.860		
26,200.0	7,903.5	26,475.0	7,903.5	353.0	349.5	90.00	-17,996.5	3,994.9	2,003.3	1,301.6	701.72	2.855 SF		
26,300.0	7,903.5	26,475.0	7,903.5	354.9	349.5	90.00	-17,996.5	3,994.9	2,011.4	1,309.9	701.51	2.867		
26,400.0	7,903.5	26,475.0	7,903.5	356.8	349.5	90.00	-17,996.5	3,994.9	2,024.4	1,325.6	698.73	2.897		
26,500.0	7,903.5	26,475.0	7,903.5	358.7	349.5	90.00	-17,996.5	3,994.9	2,042.2	1,348.6	693.56	2.945		

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

## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 201 - Orig. - DEP Plan 6													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+HRGM+Int, 800-MWD+AfterInt, 2600-SDI MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
26,600.0	7,903.5	26,475.0	7,903.5	360.6	349.5	90.00	-17,996.5	3,994.9	2,064.7	1,378.5	686.23	3.009		
26,700.0	7,903.5	26,475.0	7,903.5	362.5	349.5	90.00	-17,996.5	3,994.9	2,091.8	1,414.7	677.02	3.090		
26,800.0	7,903.5	26,475.0	7,903.5	364.4	349.5	90.00	-17,996.5	3,994.9	2,123.2	1,456.9	666.25	3.187		
26,900.0	7,903.5	26,475.0	7,903.5	366.3	349.5	90.00	-17,996.5	3,994.9	2,158.8	1,504.6	654.22	3.300		
27,000.0	7,903.5	26,475.0	7,903.5	368.2	349.5	90.00	-17,996.5	3,994.9	2,198.4	1,557.2	641.22	3.428		
27,100.0	7,903.5	26,475.0	7,903.5	370.1	349.5	90.00	-17,996.5	3,994.9	2,241.7	1,614.2	627.54	3.572		
27,200.0	7,903.5	26,475.0	7,903.5	372.0	349.5	90.00	-17,996.5	3,994.9	2,288.6	1,675.2	613.40	3.731		
27,300.0	7,903.5	26,475.0	7,903.5	373.9	349.5	90.00	-17,996.5	3,994.9	2,338.9	1,739.9	599.02	3.905		
27,400.0	7,903.5	26,475.0	7,903.5	375.8	349.5	90.00	-17,996.5	3,994.9	2,392.2	1,807.7	584.56	4.092		
27,500.0	7,903.5	26,475.0	7,903.5	377.7	349.5	90.00	-17,996.5	3,994.9	2,448.5	1,878.3	570.18	4.294		

# Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 202 - Orig. - DEP Plan 4													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+HRGM+Int. 800-MWD+AfterInt. 2600-SDI MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-15.0	0.0	15.0					
100.0	100.0	100.0	100.0	0.3	0.3	180.00	-15.0	0.0	15.0	14.5	0.52	28.660		
200.0	200.0	200.0	200.0	0.6	0.6	180.00	-15.0	0.0	15.0	13.8	1.24	12.094		
300.0	300.0	300.0	300.0	1.0	1.0	180.00	-15.0	0.0	15.0	13.0	1.96	7.664		
400.0	400.0	400.0	400.0	1.3	1.3	180.00	-15.0	0.0	15.0	12.3	2.67	5.609		
500.0	500.0	500.0	500.0	1.7	1.7	180.00	-15.0	0.0	15.0	11.6	3.39	4.423		
600.0	600.0	600.0	600.0	2.1	2.1	180.00	-15.0	0.0	15.0	10.9	4.11	3.651		
700.0	700.0	700.0	700.0	2.4	2.4	180.00	-15.0	0.0	15.0	10.2	4.83	3.109		
800.0	800.0	800.0	800.0	2.8	2.8	180.00	-15.0	0.0	15.0	9.5	5.54	2.707 CC		
900.0	900.0	900.0	900.0	3.1	3.1	-125.66	-15.0	-1.7	15.6	9.3	6.25	2.496 ES		
1,000.0	1,000.0	999.8	999.7	3.5	3.5	-115.62	-15.0	-7.0	17.8	10.8	6.95	2.555		
1,100.0	1,099.9	1,099.7	1,099.3	3.8	3.8	-108.00	-15.0	-13.9	21.5	13.9	7.65	2.812		
1,199.9	1,199.6	1,199.6	1,198.9	4.2	4.2	-106.45	-15.0	-20.9	26.0	17.6	8.36	3.107		
1,300.0	1,299.4	1,299.5	1,298.6	4.6	4.5	-106.96	-15.0	-27.9	30.7	21.6	9.08	3.382		
1,400.0	1,399.2	1,399.4	1,398.3	4.9	4.9	-107.33	-15.0	-34.8	35.4	25.6	9.79	3.616		
1,500.0	1,498.9	1,499.3	1,497.9	5.3	5.3	-107.62	-15.0	-41.8	40.1	29.6	10.52	3.817		
1,600.0	1,598.7	1,599.2	1,597.5	5.6	5.6	-107.84	-15.0	-48.8	44.9	33.6	11.24	3.991		
1,700.0	1,698.5	1,699.1	1,697.2	6.0	6.0	-108.02	-15.0	-55.7	49.6	37.6	11.96	4.144		
1,800.0	1,798.2	1,798.9	1,796.8	6.4	6.3	-108.17	-15.0	-62.7	54.3	41.6	12.69	4.279		
1,900.0	1,898.0	1,898.8	1,896.5	6.7	6.7	-108.30	-15.0	-69.7	59.0	45.6	13.42	4.398		
2,000.0	1,997.7	1,998.7	1,996.1	7.1	7.1	-108.41	-15.0	-76.6	63.7	49.6	14.15	4.505		
2,100.0	2,097.5	2,098.6	2,095.8	7.5	7.4	-108.50	-15.0	-83.6	68.5	53.6	14.88	4.602		
2,200.0	2,197.2	2,198.5	2,195.4	7.8	7.8	-108.58	-15.0	-90.6	73.2	57.6	15.61	4.689		
2,300.0	2,297.0	2,298.4	2,295.1	8.2	8.2	-108.65	-15.0	-97.5	77.9	61.6	16.34	4.768		
2,400.0	2,396.8	2,398.3	2,394.7	8.6	8.5	-108.71	-15.0	-104.5	82.6	65.6	17.07	4.840		
2,500.0	2,496.5	2,498.2	2,494.4	8.9	8.9	-108.77	-15.0	-111.5	87.4	69.6	17.81	4.906		
2,600.0	2,596.3	2,598.1	2,594.0	9.1	9.1	-108.82	-15.0	-118.5	92.1	73.9	18.18	5.066		
2,700.0	2,696.0	2,696.0	2,691.6	9.1	9.1	-108.18	-15.4	-126.7	97.7	79.6	18.19	5.373		
2,800.0	2,795.8	2,793.4	2,788.4	9.1	9.1	-106.20	-16.8	-138.0	105.6	87.4	18.20	5.802		
2,900.0	2,895.5	2,890.3	2,884.1	9.2	9.2	-103.29	-19.2	-152.4	115.8	97.6	18.20	6.362		
3,000.0	2,995.3	2,987.6	2,979.8	9.2	9.2	-99.90	-22.4	-169.7	128.5	110.3	18.24	7.046		
3,100.0	3,095.0	3,085.4	3,076.9	9.2	9.3	-96.93	-25.8	-187.8	142.0	123.6	18.32	7.750		
3,200.0	3,194.8	3,185.3	3,174.0	9.3	9.4	-94.48	-29.3	-205.8	155.8	137.3	18.42	8.457		
3,300.0	3,294.6	3,284.1	3,271.1	9.3	9.5	-92.45	-32.7	-223.9	169.8	151.2	18.53	9.161		
3,400.0	3,394.4	3,382.9	3,368.2	9.4	9.6	-90.48	-36.1	-241.9	184.0	165.3	18.65	9.866		
3,500.0	3,494.3	3,481.5	3,465.1	9.4	9.8	-88.31	-39.6	-260.0	198.4	179.7	18.77	10.573		
3,600.0	3,594.3	3,580.0	3,561.9	9.5	9.9	-85.99	-43.0	-278.0	213.3	194.4	18.89	11.291		
3,700.0	3,694.3	3,678.4	3,658.5	9.5	10.1	-133.94	-46.4	-295.9	228.6	209.6	19.01	12.026		
3,800.0	3,794.3	3,776.6	3,755.0	9.6	10.3	-131.57	-49.8	-313.9	244.5	225.4	19.15	12.771		
3,900.0	3,894.3	3,874.9	3,851.6	9.6	10.5	-129.46	-53.2	-331.8	260.7	241.4	19.29	13.515		
4,000.0	3,994.3	3,973.1	3,948.1	9.7	10.7	-127.64	-56.6	-349.8	277.2	257.8	19.45	14.257		
4,100.0	4,094.3	4,071.4	4,044.7	9.8	10.9	-126.01	-60.0	-367.7	294.0	274.4	19.61	14.991		
4,200.0	4,194.3	4,169.6	4,141.2	9.8	11.1	-124.55	-63.5	-385.7	311.0	291.2	19.79	15.716		
4,300.0	4,294.3	4,267.9	4,237.8	9.9	11.4	-123.24	-66.9	-403.6	328.1	308.1	19.97	16.428		
4,400.0	4,394.3	4,368.1	4,334.3	10.0	11.6	-122.07	-70.3	-421.6	345.4	325.3	20.17	17.126		
4,500.0	4,494.3	4,464.4	4,430.6	10.1	11.9	-121.00	-73.7	-439.5	362.9	342.5	20.37	17.809		
4,600.0	4,594.3	4,562.7	4,527.4	10.2	12.1	-120.03	-77.1	-457.5	380.4	359.8	20.59	18.476		
4,700.0	4,694.3	4,660.9	4,623.9	10.3	12.4	-119.15	-80.5	-475.4	396.0	377.2	20.81	19.125		
4,800.0	4,794.3	4,759.2	4,720.5	10.4	12.7	-118.35	-83.9	-493.4	415.7	394.7	21.04	19.756		
4,900.0	4,894.3	4,857.4	4,817.0	10.5	13.0	-117.60	-87.3	-511.3	433.5	412.3	21.28	20.370		
5,000.0	4,994.3	4,955.7	4,913.5	10.6	13.3	-116.92	-90.6	-529.3	451.4	429.9	21.53	20.964		

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 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 202 - Orig. - DEP Plan 4													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+HRGM+Int, 800-MWD+Afterint, 2600-SDI MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.0	5,094.3	5,053.9	5,010.1	10.7	13.6	-116.29	-94.2	-547.2	469.3	447.5	21.79	21.540		
5,200.0	5,194.3	5,152.2	5,106.6	10.8	13.9	-115.71	-97.6	-565.2	487.3	465.2	22.05	22.097		
5,300.0	5,294.3	5,250.4	5,203.2	10.9	14.2	-115.16	-101.0	-583.2	505.3	483.0	22.32	22.636		
5,400.0	5,394.3	5,348.7	5,299.7	11.1	14.5	-114.66	-104.4	-601.1	523.3	500.7	22.60	23.157		
5,500.0	5,494.3	5,447.0	5,396.2	11.2	14.8	-114.18	-107.8	-619.1	541.4	518.5	22.88	23.660		
5,600.0	5,594.3	5,545.2	5,492.8	11.3	15.2	-113.74	-111.2	-637.0	559.6	536.4	23.17	24.145		
5,700.0	5,694.3	5,643.5	5,589.3	11.5	15.5	-113.33	-114.7	-655.0	577.7	554.2	23.47	24.613		
5,800.0	5,794.3	5,741.7	5,685.9	11.6	15.8	-112.94	-118.1	-672.9	595.9	572.1	23.77	25.064		
5,900.0	5,894.3	5,840.0	5,782.4	11.7	16.2	-112.57	-121.5	-690.9	614.1	590.0	24.08	25.498		
6,000.0	5,994.3	5,938.2	5,879.0	11.9	16.5	-112.23	-124.9	-708.8	632.3	607.9	24.40	25.917		
6,100.0	6,094.3	6,036.5	5,975.5	12.0	16.9	-111.90	-128.3	-726.8	650.6	625.9	24.72	26.319		
6,200.0	6,194.3	6,134.7	6,072.0	12.2	17.2	-111.60	-131.7	-744.7	668.8	643.8	25.04	26.707		
6,300.0	6,294.3	6,233.0	6,168.6	12.3	17.6	-111.31	-135.1	-762.7	687.1	661.8	25.37	27.081		
6,400.0	6,394.3	6,331.2	6,265.1	12.5	17.9	-111.03	-138.5	-780.6	705.4	679.7	25.71	27.440		
6,500.0	6,494.3	6,429.5	6,361.7	12.6	18.3	-110.77	-142.0	-798.6	723.7	697.7	26.05	27.786		
6,600.0	6,594.3	6,527.8	6,458.2	12.8	18.6	-110.52	-145.4	-816.5	742.1	715.7	26.39	28.119		
6,700.0	6,694.3	6,626.0	6,554.7	12.9	19.0	-110.28	-148.8	-834.5	760.4	733.7	26.74	28.439		
6,800.0	6,794.3	6,724.3	6,651.3	13.1	19.4	-110.05	-152.2	-852.4	778.8	751.7	27.09	28.747		
6,900.0	6,894.3	6,822.5	6,747.8	13.2	19.7	-109.84	-155.6	-870.4	797.1	769.7	27.45	29.043		
7,000.0	6,994.3	6,920.8	6,844.4	13.4	20.1	-109.63	-159.0	-888.3	815.5	787.7	27.81	29.329		
7,100.0	7,094.3	7,019.0	6,940.9	13.6	20.5	-109.44	-162.4	-906.3	833.9	805.7	28.17	29.603		
7,200.0	7,194.3	7,117.3	7,037.4	13.7	20.8	89.81	-165.8	-924.2	852.3	823.8	28.54	29.868		
7,300.0	7,294.0	7,215.1	7,133.6	13.9	21.2	89.15	-169.2	-942.1	870.7	841.9	28.84	30.187		
7,400.0	7,392.4	7,311.3	7,228.1	14.0	21.6	89.19	-172.6	-959.7	889.2	860.1	29.11	30.549		
7,500.0	7,488.0	7,410.1	7,325.2	14.1	21.9	89.70	-179.2	-976.7	906.1	878.7	29.36	30.932		
7,600.0	7,578.7	7,516.2	7,428.0	14.2	22.2	89.76	-201.3	-989.4	926.8	897.2	29.65	31.256		
7,700.0	7,661.7	7,628.3	7,532.0	14.4	22.5	89.85	-242.0	-996.0	944.7	914.6	30.10	31.366		
7,800.0	7,734.9	7,746.8	7,633.5	14.7	22.8	89.96	-303.0	-995.0	961.1	930.4	30.72	31.292		
7,900.0	7,796.7	7,872.1	7,727.3	15.2	23.1	90.08	-385.2	-985.3	975.5	943.9	31.57	30.894		
8,000.0	7,845.4	8,003.7	7,807.1	15.8	23.5	90.17	-487.7	-965.7	987.0	954.3	32.74	30.150		
8,100.0	7,879.8	8,140.6	7,866.1	16.6	24.0	90.19	-607.3	-936.2	995.2	960.9	34.27	29.043		
8,200.0	7,899.2	8,280.6	7,899.4	17.6	24.7	90.11	-737.7	-897.6	999.6	963.4	36.16	27.641		
8,300.0	7,903.5	8,404.2	7,903.5	18.8	25.5	90.00	-854.6	-858.3	1,000.2	961.9	38.32	26.100		
8,400.0	7,903.5	8,504.2	7,903.5	20.0	26.3	90.00	-949.2	-825.7	1,000.2	959.6	40.66	24.601		
8,500.0	7,903.5	8,604.2	7,903.5	21.4	27.2	90.00	-1,043.7	-793.1	1,000.2	957.0	43.20	23.153		
8,600.0	7,903.5	8,704.2	7,903.5	22.8	28.2	90.00	-1,138.2	-760.5	1,000.2	954.3	45.92	21.782		
8,700.0	7,903.5	8,804.2	7,903.5	24.3	29.3	90.00	-1,232.8	-727.9	1,000.2	951.4	48.78	20.504		
8,800.0	7,903.5	8,904.2	7,903.5	25.8	30.5	90.00	-1,327.3	-695.3	1,000.2	948.5	51.77	19.321		
8,900.0	7,903.5	9,004.2	7,903.5	27.4	31.8	90.00	-1,421.8	-662.7	1,000.2	945.4	54.86	18.233		
9,000.0	7,903.5	9,104.2	7,903.5	29.0	33.1	90.00	-1,516.4	-630.1	1,000.2	942.2	58.03	17.236		
9,100.0	7,903.5	9,204.2	7,903.5	30.7	34.5	90.00	-1,610.9	-597.5	1,000.2	938.9	61.27	16.323		
9,200.0	7,903.5	9,304.2	7,903.5	32.4	35.9	90.00	-1,705.4	-564.9	1,000.2	935.6	64.58	15.488		
9,300.0	7,903.5	9,404.2	7,903.5	34.1	37.4	90.00	-1,800.0	-532.3	1,000.2	932.3	67.94	14.722		
9,400.0	7,903.5	9,504.2	7,903.5	35.8	38.9	90.00	-1,894.5	-499.7	1,000.2	928.9	71.35	14.019		
9,500.0	7,903.5	9,604.2	7,903.5	37.6	40.5	90.00	-1,989.1	-467.1	1,000.2	925.4	74.79	13.374		
9,600.0	7,903.5	9,704.2	7,903.5	39.3	42.1	90.00	-2,083.6	-434.5	1,000.2	921.9	78.27	12.780		
9,700.0	7,903.5	9,804.2	7,903.5	41.1	43.7	90.00	-2,178.1	-401.9	1,000.2	918.4	81.77	12.231		
9,800.0	7,903.5	9,904.2	7,903.5	42.9	45.3	90.00	-2,272.7	-369.3	1,000.2	914.9	85.31	11.725		
9,900.0	7,903.5	10,004.2	7,903.5	44.7	47.0	90.00	-2,367.2	-336.7	1,000.2	911.3	88.86	11.255		
10,000.0	7,903.5	10,104.2	7,903.5	46.5	48.7	90.00	-2,461.7	-304.1	1,000.2	907.5	92.44	10.820		

# Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 202 - Orig. - DEP Plan 4													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+HRGM+Int, 800-MWD+Afterint, 2600-SDI MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,100.0	7,903.5	10,204.2	7,903.5	48.3	50.4	90.00	-2,556.3	-271.5	1,000.2	904.2	96.04	10.414		
10,200.0	7,903.5	10,304.2	7,903.5	50.1	52.1	90.00	-2,650.8	-238.9	1,000.2	900.6	99.64	10.038		
10,300.0	7,903.5	10,404.2	7,903.5	51.9	53.8	90.00	-2,745.4	-206.3	1,000.2	896.9	103.27	9.686		
10,400.0	7,903.5	10,504.2	7,903.5	53.8	55.5	90.00	-2,839.9	-173.7	1,000.2	893.3	106.90	9.366		
10,500.0	7,903.5	10,604.2	7,903.5	55.6	57.3	90.00	-2,934.4	-141.1	1,000.2	889.6	110.55	9.047		
10,600.0	7,903.5	10,704.2	7,903.5	57.4	59.0	90.00	-3,029.0	-108.5	1,000.2	886.0	114.21	8.757		
10,700.0	7,903.5	10,804.2	7,903.5	59.3	60.8	90.00	-3,123.5	-75.9	1,000.2	882.3	117.88	8.485		
10,800.0	7,903.5	10,904.2	7,903.5	61.1	62.6	90.00	-3,218.0	-43.3	1,000.2	878.6	121.56	8.228		
10,900.0	7,903.5	11,004.2	7,903.5	63.0	64.3	90.00	-3,312.6	-10.7	1,000.2	874.9	125.25	7.986		
11,000.0	7,903.5	11,104.2	7,903.5	64.8	66.1	90.00	-3,407.1	21.9	1,000.2	871.2	128.94	7.757		
11,100.0	7,903.5	11,204.2	7,903.5	66.7	67.9	90.00	-3,501.6	54.5	1,000.2	867.5	132.64	7.541		
11,200.0	7,903.5	11,304.2	7,903.5	68.5	69.7	90.00	-3,596.2	87.1	1,000.2	863.8	136.34	7.336		
11,300.0	7,903.5	11,404.2	7,903.5	70.4	71.5	90.00	-3,690.7	119.7	1,000.2	860.1	140.05	7.141		
11,400.0	7,903.5	11,504.2	7,903.5	72.3	73.3	90.00	-3,785.3	152.3	1,000.2	856.4	143.77	6.957		
11,500.0	7,903.5	11,604.2	7,903.5	74.1	75.1	90.00	-3,879.8	184.9	1,000.2	852.7	147.49	6.781		
11,600.0	7,903.5	11,704.2	7,903.5	76.0	77.0	90.00	-3,974.3	217.5	1,000.2	849.0	151.21	6.614		
11,700.0	7,903.5	11,804.2	7,903.5	77.9	78.8	90.00	-4,068.9	250.1	1,000.2	845.2	154.94	6.455		
11,800.0	7,903.5	11,904.2	7,903.5	79.8	80.6	90.00	-4,163.4	282.7	1,000.2	841.5	158.68	6.303		
11,900.0	7,903.5	12,004.2	7,903.5	81.6	82.4	90.00	-4,257.9	315.3	1,000.2	837.8	162.41	6.158		
12,000.0	7,903.5	12,104.2	7,903.5	83.5	84.3	90.00	-4,352.5	347.9	1,000.2	834.0	166.15	6.020		
12,100.0	7,903.5	12,204.2	7,903.5	85.4	86.1	90.00	-4,447.0	380.5	1,000.2	830.3	169.90	5.887		
12,200.0	7,903.5	12,304.2	7,903.5	87.3	87.9	90.00	-4,541.6	413.1	1,000.2	826.5	173.64	5.760		
12,300.0	7,903.5	12,404.2	7,903.5	89.1	89.8	90.00	-4,636.1	445.7	1,000.2	822.8	177.39	5.638		
12,400.0	7,903.5	12,504.2	7,903.5	91.0	91.6	90.00	-4,730.6	478.3	1,000.2	819.0	181.14	5.521		
12,500.0	7,903.5	12,604.2	7,903.5	92.9	93.5	90.00	-4,825.2	510.9	1,000.2	815.3	184.89	5.409		
12,600.0	7,903.5	12,704.2	7,903.5	94.8	95.3	90.00	-4,919.7	543.5	1,000.2	811.5	188.65	5.302		
12,700.0	7,903.5	12,804.2	7,903.5	96.7	97.2	90.00	-5,014.2	576.1	1,000.2	807.7	192.41	5.198		
12,800.0	7,903.5	12,904.2	7,903.5	98.5	99.0	90.00	-5,108.8	608.7	1,000.2	804.0	196.17	5.098		
12,900.0	7,903.5	13,004.2	7,903.5	100.4	100.9	90.00	-5,203.3	641.3	1,000.2	800.2	199.93	5.003		
13,000.0	7,903.5	13,104.2	7,903.5	102.3	102.7	90.00	-5,297.8	673.9	1,000.2	796.5	203.69	4.910		
13,100.0	7,903.5	13,204.2	7,903.5	104.2	104.6	90.00	-5,392.4	706.5	1,000.1	792.7	207.46	4.821		
13,200.0	7,903.5	13,304.2	7,903.5	106.1	106.5	90.00	-5,486.9	739.1	1,000.1	788.9	211.22	4.735		
13,300.0	7,903.5	13,404.2	7,903.5	108.0	108.3	90.00	-5,581.5	771.7	1,000.1	785.2	214.99	4.652		
13,400.0	7,903.5	13,504.2	7,903.5	109.8	110.2	90.00	-5,676.0	804.3	1,000.1	781.4	218.76	4.572		
13,500.0	7,903.5	13,604.2	7,903.5	111.7	112.1	90.00	-5,770.5	836.9	1,000.1	777.6	222.53	4.494		
13,600.0	7,903.5	13,704.2	7,903.5	113.6	113.9	90.00	-5,865.1	869.5	1,000.1	773.8	226.30	4.419		
13,700.0	7,903.5	13,804.2	7,903.5	115.5	115.8	90.00	-5,959.6	902.1	1,000.1	770.1	230.08	4.347		
13,800.0	7,903.5	13,904.2	7,903.5	117.4	117.7	90.00	-6,054.1	934.7	1,000.1	766.3	233.85	4.277		
13,900.0	7,903.5	14,004.2	7,903.5	119.3	119.5	90.00	-6,148.7	967.3	1,000.1	762.5	237.63	4.209		
14,000.0	7,903.5	14,104.2	7,903.5	121.2	121.4	90.00	-6,243.2	999.9	1,000.1	758.7	241.41	4.143		
14,100.0	7,903.5	14,204.2	7,903.5	123.1	123.3	90.00	-6,337.8	1,032.5	1,000.1	754.9	245.18	4.079		
14,200.0	7,903.5	14,304.2	7,903.5	125.0	125.1	90.00	-6,432.3	1,065.1	1,000.1	751.2	248.96	4.017		
14,300.0	7,903.5	14,404.2	7,903.5	126.9	127.0	90.00	-6,526.8	1,097.7	1,000.1	747.4	252.74	3.957		
14,400.0	7,903.5	14,504.2	7,903.5	128.8	128.9	90.00	-6,621.4	1,130.3	1,000.1	743.6	256.52	3.899		
14,500.0	7,903.5	14,604.2	7,903.5	130.6	130.8	90.00	-6,715.9	1,162.9	1,000.1	739.8	260.30	3.842		
14,600.0	7,903.5	14,704.2	7,903.5	132.5	132.6	90.00	-6,810.4	1,195.5	1,000.1	736.0	264.08	3.787		
14,700.0	7,903.5	14,804.2	7,903.5	134.4	134.5	90.00	-6,905.0	1,228.1	1,000.1	732.3	267.87	3.734		
14,800.0	7,903.5	14,904.2	7,903.5	136.3	136.4	90.00	-6,999.5	1,260.7	1,000.1	728.5	271.65	3.682		
14,900.0	7,903.5	15,004.2	7,903.5	138.2	138.3	90.00	-7,094.0	1,293.3	1,000.1	724.7	275.43	3.631		
15,000.0	7,903.5	15,104.2	7,903.5	140.1	140.2	90.00	-7,188.6	1,325.9	1,000.1	720.9	279.22	3.582		
15,100.0	7,903.5	15,204.2	7,903.5	142.0	142.0	90.00	-7,283.1	1,358.5	1,000.1	717.1	283.00	3.534		

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



## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 202 - Orig. - DEP Plan 4													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+HRGM+Int, 800-MWD+AfterInt, 2600-SDI MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
15,200.0	7,903.5	15,304.2	7,903.5	143.9	143.9	90.00	-7,377.7	1,391.1	1,000.1	713.3	286.79	3.487		
15,300.0	7,903.5	15,404.2	7,903.5	145.8	145.8	90.00	-7,472.2	1,423.7	1,000.1	709.5	290.58	3.442		
15,400.0	7,903.5	15,504.2	7,903.5	147.7	147.7	90.00	-7,566.7	1,456.3	1,000.1	705.7	294.36	3.398		
15,500.0	7,903.5	15,604.2	7,903.5	149.6	149.6	90.00	-7,661.3	1,488.9	1,000.1	702.0	298.15	3.354		
15,600.0	7,903.5	15,704.2	7,903.5	151.5	151.5	90.00	-7,755.8	1,521.5	1,000.1	698.2	301.94	3.312		
15,700.0	7,903.5	15,804.2	7,903.5	153.4	153.3	90.00	-7,850.3	1,554.1	1,000.1	694.4	305.73	3.271		
15,800.0	7,903.5	15,904.2	7,903.5	155.3	155.2	90.00	-7,944.9	1,586.7	1,000.1	690.6	309.52	3.231		
15,900.0	7,903.5	16,004.2	7,903.5	157.2	157.1	90.00	-8,039.4	1,619.3	1,000.1	686.8	313.31	3.192		
16,000.0	7,903.5	16,104.2	7,903.5	159.1	159.0	90.00	-8,134.0	1,651.9	1,000.1	683.0	317.10	3.154		
16,100.0	7,903.5	16,204.2	7,903.5	161.0	160.9	90.00	-8,228.5	1,684.5	1,000.1	679.2	320.89	3.117		
16,200.0	7,903.5	16,304.2	7,903.5	162.9	162.8	90.00	-8,323.0	1,717.1	1,000.1	675.4	324.68	3.080		
16,300.0	7,903.5	16,404.2	7,903.5	164.8	164.6	90.00	-8,417.6	1,749.7	1,000.1	671.6	328.47	3.045		
16,400.0	7,903.5	16,504.2	7,903.5	166.7	166.5	90.00	-8,512.1	1,782.3	1,000.1	667.8	332.26	3.010		
16,500.0	7,903.5	16,604.2	7,903.5	168.5	168.4	90.00	-8,606.6	1,814.9	1,000.1	664.0	336.06	2.976		
16,600.0	7,903.5	16,704.2	7,903.5	170.4	170.3	90.00	-8,701.2	1,847.5	1,000.1	660.2	339.85	2.943		
16,700.0	7,903.5	16,804.2	7,903.5	172.3	172.2	90.00	-8,795.7	1,880.1	1,000.1	656.4	343.64	2.910		
16,800.0	7,903.5	16,904.2	7,903.5	174.2	174.1	90.00	-8,890.2	1,912.7	1,000.1	652.7	347.43	2.878		
16,900.0	7,903.5	17,004.2	7,903.5	176.1	176.0	90.00	-8,984.8	1,945.3	1,000.1	648.9	351.23	2.847		
17,000.0	7,903.5	17,104.2	7,903.5	178.0	177.9	90.00	-9,079.3	1,977.9	1,000.1	645.1	355.02	2.817		
17,100.0	7,903.5	17,204.2	7,903.5	179.9	179.8	90.00	-9,173.9	2,010.5	1,000.1	641.3	358.82	2.787		
17,200.0	7,903.5	17,304.2	7,903.5	181.8	181.6	90.00	-9,268.4	2,043.1	1,000.1	637.5	362.61	2.758		
17,300.0	7,903.5	17,404.2	7,903.5	183.7	183.5	90.00	-9,362.9	2,075.7	1,000.1	633.7	366.40	2.729		
17,400.0	7,903.5	17,504.2	7,903.5	185.6	185.4	90.00	-9,457.5	2,108.3	1,000.1	629.9	370.20	2.701		
17,500.0	7,903.5	17,604.2	7,903.5	187.5	187.3	90.00	-9,552.0	2,140.9	1,000.1	626.1	373.99	2.674		
17,600.0	7,903.5	17,704.2	7,903.5	189.4	189.2	90.00	-9,646.5	2,173.5	1,000.1	622.3	377.79	2.647		
17,700.0	7,903.5	17,804.2	7,903.5	191.3	191.1	90.00	-9,741.1	2,206.1	1,000.1	618.5	381.59	2.621		
17,800.0	7,903.5	17,904.2	7,903.5	193.2	193.0	90.00	-9,835.6	2,238.7	1,000.1	614.7	385.38	2.595		
17,900.0	7,903.5	18,004.2	7,903.5	195.1	194.9	90.00	-9,930.2	2,271.3	1,000.1	610.9	389.18	2.570		
18,000.0	7,903.5	18,104.2	7,903.5	197.0	196.8	90.00	-10,024.7	2,303.9	1,000.1	607.1	392.97	2.545		
18,100.0	7,903.5	18,204.2	7,903.5	198.9	198.7	90.00	-10,119.2	2,336.5	1,000.1	603.3	396.77	2.521		
18,200.0	7,903.5	18,304.2	7,903.5	200.8	200.6	90.00	-10,213.8	2,369.1	1,000.1	599.5	400.57	2.497		
18,300.0	7,903.5	18,404.2	7,903.5	202.7	202.5	90.00	-10,308.3	2,401.7	1,000.1	595.7	404.37	2.473		
18,400.0	7,903.5	18,504.2	7,903.5	204.6	204.3	90.00	-10,402.8	2,434.3	1,000.1	591.9	408.16	2.450		
18,500.0	7,903.5	18,604.2	7,903.5	206.5	206.2	90.00	-10,497.4	2,466.9	1,000.1	588.1	411.96	2.428		
18,600.0	7,903.5	18,704.2	7,903.5	208.4	208.1	90.00	-10,591.9	2,499.5	1,000.1	584.3	415.76	2.405		
18,700.0	7,903.5	18,804.2	7,903.5	210.3	210.0	90.00	-10,686.4	2,532.1	1,000.1	580.5	419.56	2.384		
18,800.0	7,903.5	18,904.2	7,903.5	212.2	211.9	90.00	-10,781.0	2,564.7	1,000.1	576.7	423.35	2.362		
18,900.0	7,903.5	19,004.2	7,903.5	214.1	213.8	90.00	-10,875.5	2,597.3	1,000.1	572.9	427.15	2.341		
19,000.0	7,903.5	19,104.2	7,903.5	216.0	215.7	90.00	-10,970.1	2,629.9	1,000.0	569.1	430.95	2.321		
19,100.0	7,903.5	19,204.2	7,903.5	217.9	217.6	90.00	-11,064.6	2,662.5	1,000.0	565.3	434.75	2.300		
19,200.0	7,903.5	19,304.2	7,903.5	219.8	219.5	90.00	-11,159.1	2,695.1	1,000.0	561.5	438.55	2.280		
19,300.0	7,903.5	19,404.2	7,903.5	221.7	221.4	90.00	-11,253.7	2,727.7	1,000.0	557.7	442.35	2.261		
19,400.0	7,903.5	19,504.2	7,903.5	223.6	223.3	90.00	-11,348.2	2,760.3	1,000.0	553.9	446.15	2.242		
19,500.0	7,903.5	19,604.2	7,903.5	225.5	225.2	90.00	-11,442.7	2,792.9	1,000.0	550.1	449.94	2.223		
19,600.0	7,903.5	19,704.2	7,903.5	227.4	227.1	90.00	-11,537.3	2,825.5	1,000.0	546.3	453.74	2.204		
19,700.0	7,903.5	19,804.2	7,903.5	229.3	229.0	90.00	-11,631.8	2,858.1	1,000.0	542.5	457.54	2.186		
19,800.0	7,903.5	19,904.2	7,903.5	231.2	230.9	90.00	-11,726.4	2,890.7	1,000.0	538.7	461.34	2.168		
19,900.0	7,903.5	20,004.2	7,903.5	233.1	232.8	90.00	-11,820.9	2,923.3	1,000.0	534.9	465.14	2.150		
20,000.0	7,903.5	20,104.2	7,903.5	235.0	234.7	90.00	-11,915.4	2,955.9	1,000.0	531.1	468.94	2.133		
20,100.0	7,903.5	20,204.2	7,903.5	236.9	236.6	90.00	-12,010.0	2,988.5	1,000.0	527.3	472.74	2.115		

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 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 202 - Orig. - DEP Plan 4													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+HRGM+Int. 800-MWD+AfterInt. 2600-SDI MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
20,200.0	7,903.5	20,304.2	7,903.5	238.8	238.5	90.00	-12,104.5	3,021.1	1,000.0	523.5	476.54	2.099		
20,300.0	7,903.5	20,404.2	7,903.5	240.7	240.4	90.00	-12,199.0	3,053.7	1,000.0	519.7	480.34	2.082		
20,400.0	7,903.5	20,504.2	7,903.5	242.6	242.2	90.00	-12,293.6	3,086.3	1,000.0	515.9	484.14	2.066		
20,500.0	7,903.5	20,604.2	7,903.5	244.5	244.1	90.00	-12,388.1	3,118.9	1,000.0	512.1	487.94	2.049		
20,600.0	7,903.5	20,704.2	7,903.5	246.4	246.0	90.00	-12,482.6	3,151.5	1,000.0	508.3	491.74	2.034		
20,700.0	7,903.5	20,804.2	7,903.5	248.3	247.9	90.00	-12,577.2	3,184.1	1,000.0	504.5	495.54	2.018		
20,800.0	7,903.5	20,904.2	7,903.5	250.2	249.8	90.00	-12,671.7	3,216.7	1,000.0	500.7	499.34	2.003		
20,900.0	7,903.5	21,004.2	7,903.5	252.1	251.7	90.00	-12,766.3	3,249.3	1,000.0	496.9	503.14	1.988		
21,000.0	7,903.5	21,104.2	7,903.5	254.0	253.6	90.00	-12,860.8	3,281.9	1,000.0	493.1	506.94	1.973		
21,100.0	7,903.5	21,204.2	7,903.5	255.9	255.5	90.00	-12,955.3	3,314.5	1,000.0	489.3	510.75	1.958		
21,200.0	7,903.5	21,304.2	7,903.5	257.8	257.4	90.00	-13,049.9	3,347.1	1,000.0	485.5	514.55	1.943		
21,300.0	7,903.5	21,404.2	7,903.5	259.7	259.3	90.00	-13,144.4	3,379.7	1,000.0	481.7	518.35	1.929		
21,400.0	7,903.5	21,504.2	7,903.5	261.7	261.2	90.00	-13,238.9	3,412.3	1,000.0	477.9	522.15	1.915		
21,500.0	7,903.5	21,604.2	7,903.5	263.6	263.1	90.00	-13,333.5	3,444.9	1,000.0	474.1	525.95	1.901		
21,600.0	7,903.5	21,704.2	7,903.5	265.5	265.0	90.00	-13,428.0	3,477.5	1,000.0	470.3	529.75	1.888		
21,700.0	7,903.5	21,804.2	7,903.5	267.4	266.9	90.00	-13,522.6	3,510.1	1,000.0	466.5	533.55	1.874		
21,800.0	7,903.5	21,904.2	7,903.5	269.3	268.8	90.00	-13,617.1	3,542.7	1,000.0	462.6	537.35	1.861		
21,900.0	7,903.5	22,004.2	7,903.5	271.2	270.7	90.00	-13,711.6	3,575.3	1,000.0	458.8	541.16	1.848		
22,000.0	7,903.5	22,104.2	7,903.5	273.1	272.6	90.00	-13,806.2	3,607.9	1,000.0	455.0	544.96	1.835		
22,100.0	7,903.5	22,204.2	7,903.5	275.0	274.5	90.00	-13,900.7	3,640.5	1,000.0	451.2	548.76	1.822		
22,200.0	7,903.5	22,304.2	7,903.5	276.9	276.4	90.00	-13,995.2	3,673.1	1,000.0	447.4	552.56	1.810		
22,300.0	7,903.5	22,404.2	7,903.5	278.8	278.3	90.00	-14,089.8	3,705.7	1,000.0	443.6	556.36	1.797		
22,400.0	7,903.5	22,504.2	7,903.5	280.7	280.2	90.00	-14,184.3	3,738.3	1,000.0	439.8	560.16	1.785		
22,500.0	7,903.5	22,604.2	7,903.5	282.6	282.1	90.00	-14,278.8	3,770.9	1,000.0	436.0	563.96	1.773		
22,600.0	7,903.5	22,704.2	7,903.5	284.5	284.0	90.00	-14,373.4	3,803.5	1,000.0	432.2	567.77	1.761		
22,700.0	7,903.5	22,804.2	7,903.5	286.4	285.9	90.00	-14,467.9	3,836.1	1,000.0	428.4	571.57	1.750		
22,800.0	7,903.5	22,904.2	7,903.5	288.3	287.8	90.00	-14,562.5	3,868.7	1,000.0	424.6	575.37	1.738		
22,900.0	7,903.5	23,004.2	7,903.5	290.2	289.7	90.00	-14,657.0	3,901.3	1,000.0	420.8	579.17	1.727		
23,000.0	7,903.5	23,104.2	7,903.5	292.1	291.6	90.00	-14,751.5	3,933.9	1,000.0	417.0	582.97	1.715		
23,100.0	7,903.5	23,204.2	7,903.5	294.0	293.5	90.00	-14,846.1	3,966.5	1,000.0	413.2	586.77	1.704		
23,200.0	7,903.5	23,304.2	7,903.5	295.9	295.4	90.00	-14,940.6	3,999.1	1,000.0	409.4	590.58	1.693		
23,300.0	7,903.5	23,404.2	7,903.5	297.8	297.3	90.00	-15,035.1	4,031.7	1,000.0	405.6	594.38	1.682		
23,400.0	7,903.5	23,504.2	7,903.5	299.7	299.2	90.00	-15,129.7	4,064.3	1,000.0	401.8	598.18	1.672		
23,500.0	7,903.5	23,604.2	7,903.5	301.6	301.1	90.00	-15,224.2	4,096.9	1,000.0	398.0	601.98	1.661		
23,600.0	7,903.5	23,704.2	7,903.5	303.5	303.0	90.00	-15,318.8	4,129.5	1,000.0	394.2	605.78	1.651		
23,700.0	7,903.5	23,804.2	7,903.5	305.4	304.9	90.00	-15,413.3	4,162.1	1,000.0	390.4	609.59	1.640		
23,800.0	7,903.5	23,904.2	7,903.5	307.3	306.8	90.00	-15,507.8	4,194.7	1,000.0	386.6	613.39	1.630		
23,900.0	7,903.5	24,004.2	7,903.5	309.2	308.7	90.00	-15,602.4	4,227.3	1,000.0	382.8	617.19	1.620		
24,000.0	7,903.5	24,104.2	7,903.5	311.1	310.6	90.00	-15,696.9	4,259.9	1,000.0	379.0	620.99	1.610		
24,100.0	7,903.5	24,204.2	7,903.5	313.0	312.5	90.00	-15,791.4	4,292.5	1,000.0	375.2	624.79	1.600		
24,200.0	7,903.5	24,304.2	7,903.5	314.9	314.4	90.00	-15,886.0	4,325.1	1,000.0	371.4	628.60	1.591		
24,300.0	7,903.5	24,404.2	7,903.5	316.8	316.3	90.00	-15,980.5	4,357.7	1,000.0	367.6	632.40	1.581		
24,400.0	7,903.5	24,504.2	7,903.5	318.7	318.2	90.00	-16,075.0	4,390.3	1,000.0	363.8	636.20	1.572		
24,500.0	7,903.5	24,604.2	7,903.5	320.6	320.1	90.00	-16,169.6	4,422.9	1,000.0	360.0	640.00	1.562		
24,600.0	7,903.5	24,704.2	7,903.5	322.5	322.0	90.00	-16,264.1	4,455.5	1,000.0	356.2	643.80	1.553		
24,700.0	7,903.5	24,804.2	7,903.5	324.4	323.9	90.00	-16,358.7	4,488.1	1,000.0	352.3	647.61	1.544		
24,800.0	7,903.5	24,904.2	7,903.5	326.3	325.8	90.00	-16,453.2	4,520.7	1,000.0	348.5	651.41	1.535		
24,900.0	7,903.5	25,004.2	7,903.5	328.2	327.7	90.00	-16,547.7	4,553.3	1,000.0	344.7	655.21	1.526		
25,000.0	7,903.5	25,104.2	7,903.5	330.1	329.6	90.00	-16,642.3	4,585.9	999.9	340.9	659.01	1.517		
25,100.0	7,903.5	25,204.2	7,903.5	332.0	331.5	90.00	-16,736.8	4,618.5	999.9	337.1	662.81	1.509		
25,200.0	7,903.5	25,304.2	7,903.5	333.9	333.4	90.00	-16,831.3	4,651.1	999.9	333.3	666.61	1.500		

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 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 202 - Orig. - DEP Plan 4													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+HRGM+Int, 800-MWD+AfterInt, 2500-SDI MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
25,300.0	7,903.5	25,404.2	7,903.5	335.8	335.3	90.00	-16,925.9	4,683.7	999.9	329.5	670.42	1.492	Level 3	
25,400.0	7,903.5	25,504.2	7,903.5	337.7	337.2	90.00	-17,020.4	4,716.3	999.9	325.7	674.22	1.483	Level 3	
25,500.0	7,903.5	25,604.2	7,903.5	339.6	339.1	90.00	-17,115.0	4,748.9	999.9	321.9	678.02	1.475	Level 3	
25,600.0	7,903.5	25,704.2	7,903.5	341.6	341.0	90.00	-17,209.5	4,781.5	999.9	318.1	681.82	1.467	Level 3	
25,700.0	7,903.5	25,804.2	7,903.5	343.5	342.9	90.00	-17,304.0	4,814.1	999.9	314.3	685.62	1.458	Level 3	
25,800.0	7,903.5	25,904.2	7,903.5	345.4	344.8	90.00	-17,398.6	4,846.7	999.9	310.5	689.42	1.450	Level 3	
25,900.0	7,903.5	26,004.2	7,903.5	347.3	346.7	90.00	-17,493.1	4,879.3	999.9	306.7	693.22	1.442	Level 3	
26,000.0	7,903.5	26,104.2	7,903.5	349.2	348.6	90.00	-17,587.6	4,911.9	999.9	302.9	697.02	1.435	Level 3	
26,100.0	7,903.5	26,204.2	7,903.5	351.1	350.5	90.00	-17,682.2	4,944.5	999.9	299.1	700.83	1.427	Level 3	
26,200.0	7,903.5	26,304.2	7,903.5	353.0	352.4	90.00	-17,776.7	4,977.1	999.9	295.3	704.63	1.419	Level 3	
26,300.0	7,903.5	26,404.2	7,903.5	354.9	354.3	90.00	-17,871.2	5,009.7	999.9	291.5	708.43	1.411	Level 3	
26,400.0	7,903.5	26,504.2	7,903.5	356.8	356.2	90.00	-17,965.8	5,042.3	999.9	287.7	712.23	1.404	Level 3	
26,500.0	7,903.5	26,604.2	7,903.5	358.7	358.1	90.00	-18,060.3	5,074.9	999.9	283.9	716.03	1.396	Level 3	
26,600.0	7,903.5	26,704.2	7,903.5	360.6	360.0	90.00	-18,154.9	5,107.5	999.9	280.1	719.83	1.389	Level 3	
26,700.0	7,903.5	26,804.2	7,903.5	362.5	361.9	90.00	-18,249.4	5,140.1	999.9	276.3	723.63	1.382	Level 3	
26,800.0	7,903.5	26,904.2	7,903.5	364.4	363.8	90.00	-18,343.9	5,172.7	999.9	272.5	727.43	1.375	Level 3	
26,900.0	7,903.5	27,004.2	7,903.5	366.3	365.7	90.00	-18,438.5	5,205.3	999.9	268.7	731.23	1.367	Level 3	
27,000.0	7,903.5	27,104.2	7,903.5	368.2	367.6	90.00	-18,533.0	5,237.9	999.9	264.9	735.03	1.360	Level 3	
27,100.0	7,903.5	27,204.2	7,903.5	370.1	369.5	90.00	-18,627.5	5,270.5	999.9	261.1	738.83	1.353	Level 3	
27,200.0	7,903.5	27,304.2	7,903.5	372.0	371.4	90.00	-18,722.1	5,303.1	999.9	257.3	742.63	1.346	Level 3	
27,300.0	7,903.5	27,404.2	7,903.5	373.9	373.3	90.00	-18,816.6	5,335.7	999.9	253.5	746.43	1.340	Level 3	
27,400.0	7,903.5	27,504.2	7,903.5	375.8	375.2	90.00	-18,911.2	5,368.3	999.9	249.7	750.23	1.333	Level 3	
27,500.0	7,903.5	27,604.2	7,903.5	377.7	377.1	90.00	-19,005.7	5,400.9	999.9	245.9	754.03	1.326	Level 3	
27,600.0	7,903.5	27,704.2	7,903.5	379.6	379.0	90.00	-19,100.2	5,433.5	999.9	242.1	757.83	1.319	Level 3	
27,700.0	7,903.5	27,804.2	7,903.5	381.5	380.9	90.00	-19,194.8	5,466.1	999.9	238.3	761.63	1.313	Level 3	
27,800.0	7,903.5	27,904.2	7,903.5	383.4	382.8	90.00	-19,289.3	5,498.7	999.9	234.5	765.43	1.306	Level 3	
27,900.0	7,903.5	28,004.2	7,903.5	385.3	384.7	90.00	-19,383.8	5,531.3	999.9	230.7	769.23	1.300	Level 3	
28,000.0	7,903.5	28,104.2	7,903.5	387.2	386.6	90.00	-19,478.4	5,563.9	999.9	226.9	773.03	1.293	Level 3	
28,100.0	7,903.5	28,204.2	7,903.5	389.1	388.5	90.00	-19,572.9	5,596.5	999.9	223.1	776.83	1.287	Level 3	
28,200.0	7,903.5	28,304.2	7,903.5	391.0	390.4	90.00	-19,667.4	5,629.1	999.9	219.3	780.62	1.281	Level 3	
28,300.0	7,903.5	28,404.2	7,903.5	392.9	392.3	90.00	-19,762.0	5,661.7	999.9	215.5	784.42	1.275	Level 3	
28,400.0	7,903.5	28,504.2	7,903.5	394.8	394.2	90.00	-19,856.5	5,694.3	999.9	211.7	788.22	1.269	Level 3	
28,500.0	7,903.5	28,604.2	7,903.5	396.7	396.1	90.00	-19,951.1	5,726.9	999.9	207.9	792.02	1.262	Level 3	
28,600.0	7,903.5	28,704.2	7,903.5	398.6	398.0	90.00	-20,045.6	5,759.5	999.9	204.1	795.81	1.256	Level 3	
28,700.0	7,903.5	28,804.2	7,903.5	400.5	400.0	90.00	-20,140.1	5,792.1	999.9	200.3	799.61	1.250	Level 3	
28,800.0	7,903.5	28,904.2	7,903.5	402.5	401.9	90.00	-20,234.7	5,824.7	999.9	196.5	803.40	1.245	Level 2	
28,900.0	7,903.5	29,004.2	7,903.5	404.4	403.8	90.00	-20,329.2	5,857.3	999.9	192.7	807.20	1.239	Level 2	
29,000.0	7,903.5	29,104.2	7,903.5	406.3	405.7	90.00	-20,423.7	5,889.9	999.9	188.9	811.00	1.233	Level 2	
29,100.0	7,903.5	29,204.2	7,903.5	408.2	407.6	90.00	-20,518.3	5,922.5	999.9	185.1	814.79	1.227	Level 2, SF	

## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 204 - Orig. - DEP Plan 5													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+HRGM+Int, B00-MWD+AfterInt, 2600-SDI MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	0.00	15.0	0.0	15.0					
100.0	100.0	100.0	100.0	0.3	0.3	0.00	15.0	0.0	15.0	14.5	0.52	28.660		
200.0	200.0	200.0	200.0	0.6	0.6	0.00	15.0	0.0	15.0	13.8	1.24	12.094		
300.0	300.0	300.0	300.0	1.0	1.0	0.00	15.0	0.0	15.0	13.0	1.96	7.664		
400.0	400.0	400.0	400.0	1.3	1.3	0.00	15.0	0.0	15.0	12.3	2.67	5.609		
500.0	500.0	500.0	500.0	1.7	1.7	0.00	15.0	0.0	15.0	11.6	3.39	4.423		
600.0	600.0	600.0	600.0	2.1	2.1	0.00	15.0	0.0	15.0	10.9	4.11	3.651		
700.0	700.0	700.0	700.0	2.4	2.4	0.00	15.0	0.0	15.0	10.2	4.83	3.109		
800.0	800.0	800.0	800.0	2.8	2.8	0.00	15.0	0.0	15.0	9.5	5.54	2.707		
866.1	866.1	866.0	866.0	3.0	3.0	54.35	15.2	0.7	15.0	9.0	6.01	2.490 CC		
900.0	900.0	899.8	899.8	3.1	3.1	59.45	15.4	1.7	15.0	8.8	6.25	2.404 ES		
1,000.0	1,000.0	999.3	999.1	3.5	3.5	83.66	16.6	6.7	17.2	10.2	6.94	2.475		
1,100.0	1,099.9	1,098.7	1,098.3	3.8	3.8	106.34	18.1	13.5	23.6	16.0	7.64	3.089		
1,199.9	1,199.6	1,198.0	1,197.3	4.2	4.2	120.92	19.7	20.3	32.9	24.6	8.34	3.945		
1,300.0	1,299.4	1,297.3	1,296.4	4.6	4.5	129.74	21.2	27.0	44.0	34.9	9.04	4.860		
1,400.0	1,399.2	1,396.5	1,395.3	4.9	4.9	134.95	22.8	33.7	55.6	45.9	9.75	5.703		
1,500.0	1,498.9	1,495.7	1,494.3	5.3	5.3	138.35	24.3	40.5	67.6	57.1	10.46	6.459		
1,600.0	1,598.7	1,594.9	1,593.3	5.6	5.6	140.71	25.9	47.2	79.7	68.5	11.17	7.134		
1,700.0	1,698.5	1,694.1	1,692.3	6.0	6.0	142.45	27.5	54.0	91.9	80.0	11.88	7.735		
1,800.0	1,798.2	1,793.3	1,791.3	6.4	6.3	143.79	29.0	60.7	104.2	91.6	12.59	8.273		
1,900.0	1,898.0	1,892.6	1,890.2	6.7	6.7	144.84	30.6	67.5	116.5	103.2	13.30	8.756		
2,000.0	1,997.7	1,991.8	1,989.2	7.1	7.1	145.69	32.1	74.2	128.8	114.8	14.02	9.191		
2,100.0	2,097.5	2,091.0	2,088.2	7.5	7.4	146.39	33.7	81.0	141.2	126.5	14.73	9.586		
2,200.0	2,197.2	2,190.2	2,187.2	7.8	7.8	146.97	35.2	87.7	153.6	138.1	15.44	9.944		
2,300.0	2,297.0	2,289.4	2,286.1	8.2	8.2	147.47	36.8	94.4	166.0	149.8	16.16	10.272		
2,400.0	2,396.8	2,388.7	2,385.1	8.6	8.5	147.90	38.4	101.2	178.4	161.5	16.88	10.572		
2,500.0	2,496.5	2,487.9	2,484.1	8.9	8.9	148.28	39.9	107.9	190.8	173.2	17.59	10.848		
2,600.0	2,596.3	2,587.1	2,583.1	9.1	9.1	148.61	41.5	114.7	203.3	185.3	17.97	11.314		
2,700.0	2,696.0	2,680.9	2,676.6	9.1	9.1	148.78	43.2	122.0	216.7	198.8	17.98	12.056		
2,800.0	2,795.8	2,772.8	2,767.9	9.1	9.2	148.86	45.5	132.1	233.1	215.2	17.95	12.989		
2,900.0	2,895.5	2,863.8	2,857.9	9.2	9.2	148.31	48.4	144.9	252.4	234.5	17.92	14.090		
3,000.0	2,995.3	2,955.7	2,948.4	9.2	9.2	147.80	52.1	160.5	274.5	256.6	17.91	15.329		
3,100.0	3,095.0	3,053.0	3,044.1	9.2	9.3	147.27	56.0	177.8	297.4	279.4	17.98	16.540		
3,200.0	3,194.8	3,150.4	3,139.8	9.3	9.4	146.83	60.0	195.1	320.3	302.2	18.07	17.729		
3,300.0	3,294.6	3,247.7	3,235.5	9.3	9.5	146.46	64.0	212.3	343.2	325.0	18.16	18.894		
3,400.0	3,394.4	3,345.2	3,331.4	9.4	9.6	146.14	68.0	229.7	365.2	346.9	18.26	19.993		
3,500.0	3,494.3	3,443.0	3,427.5	9.4	9.7	145.71	72.0	247.0	385.7	367.3	18.37	20.992		
3,600.0	3,594.3	3,541.0	3,524.0	9.5	9.9	145.19	76.0	264.4	404.9	386.4	18.49	21.894		
3,700.0	3,694.3	3,639.3	3,620.6	9.5	10.0	94.17	80.1	281.9	422.8	404.1	18.62	22.701		
3,800.0	3,794.3	3,737.6	3,717.2	9.6	10.2	93.47	84.1	299.3	440.2	421.5	18.77	23.460		
3,900.0	3,894.3	3,836.0	3,813.9	9.6	10.4	92.62	88.1	316.8	457.8	438.8	18.92	24.196		
4,000.0	3,994.3	3,934.3	3,910.6	9.7	10.6	92.22	92.2	334.3	475.3	456.3	19.08	24.910		
4,100.0	4,094.3	4,032.9	4,007.6	9.8	10.8	91.66	96.2	351.8	493.0	473.7	19.26	25.599		
4,200.0	4,194.3	4,135.2	4,108.1	9.8	11.0	90.89	100.5	369.5	510.2	490.7	19.47	26.210		
4,300.0	4,294.3	4,237.2	4,208.2	9.9	11.2	89.79	112.3	386.4	526.8	507.1	19.68	26.772		
4,400.0	4,394.3	4,335.6	4,304.7	10.0	11.4	88.56	123.8	402.3	543.2	523.3	19.89	27.315		
4,500.0	4,494.3	4,433.6	4,400.7	10.1	11.7	87.40	135.3	418.0	559.8	539.7	20.10	27.845		
4,600.0	4,594.3	4,531.6	4,496.7	10.2	11.9	86.31	146.8	433.8	576.6	556.3	20.33	28.361		
4,700.0	4,694.3	4,629.6	4,592.7	10.3	12.2	85.29	158.4	449.6	593.6	573.1	20.57	28.864		
4,800.0	4,794.3	4,727.6	4,688.8	10.4	12.5	84.32	169.9	465.4	610.8	590.0	20.81	29.351		
4,900.0	4,894.3	4,825.6	4,784.8	10.5	12.8	83.40	181.4	481.2	628.2	607.1	21.06	29.823		

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 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 204 - Orig. - DEP Plan 5													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+HRGM+Int, 800-MWD+AfterInt, 2600-SDI MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.0	4,994.3	4,923.6	4,880.8	10.6	13.1	82.53	192.9	496.9	645.7	624.4	21.32	30.280		
5,100.0	5,094.3	5,021.5	4,976.8	10.7	13.4	81.71	204.4	512.7	663.3	641.7	21.59	30.721		
5,200.0	5,194.3	5,119.5	5,072.9	10.8	13.7	80.93	216.0	528.5	681.1	659.2	21.87	31.148		
5,300.0	5,294.3	5,217.5	5,168.9	10.9	14.0	80.19	227.5	544.3	699.0	676.8	22.15	31.559		
5,400.0	5,394.3	5,315.5	5,264.9	11.1	14.3	79.49	239.0	560.0	717.0	694.5	22.44	31.955		
5,500.0	5,494.3	5,413.5	5,360.9	11.2	14.6	78.82	250.5	575.8	735.1	712.3	22.73	32.336		
5,600.0	5,594.3	5,511.5	5,457.0	11.3	15.0	78.18	262.0	591.6	753.2	730.2	23.03	32.703		
5,700.0	5,694.3	5,609.5	5,553.0	11.5	15.3	77.57	273.6	607.4	771.5	748.2	23.34	33.056		
5,800.0	5,794.3	5,707.5	5,649.0	11.6	15.6	76.99	285.1	623.2	789.9	766.2	23.65	33.395		
5,900.0	5,894.3	5,805.5	5,745.0	11.7	16.0	76.44	296.6	638.9	808.3	784.3	23.97	33.721		
6,000.0	5,994.3	5,903.5	5,841.1	11.9	16.3	75.91	308.1	654.7	826.8	802.5	24.29	34.033		
6,100.0	6,094.3	6,001.5	5,937.1	12.0	16.7	75.40	319.6	670.5	845.4	820.7	24.62	34.333		
6,200.0	6,194.3	6,099.5	6,033.1	12.2	17.0	74.92	331.2	686.3	864.0	839.0	24.96	34.621		
6,300.0	6,294.3	6,197.5	6,129.1	12.3	17.4	74.46	342.7	702.1	882.7	857.4	25.29	34.896		
6,400.0	6,394.3	6,295.4	6,225.2	12.5	17.8	74.01	354.2	717.8	901.4	875.8	25.64	35.161		
6,500.0	6,494.3	6,393.4	6,321.2	12.6	18.1	73.59	365.7	733.6	920.2	894.2	25.98	35.415		
6,600.0	6,594.3	6,491.4	6,417.2	12.8	18.5	73.18	377.2	749.4	939.0	912.7	26.33	35.658		
6,700.0	6,694.3	6,589.4	6,513.2	12.9	18.9	72.78	388.7	765.2	957.9	931.2	26.69	35.891		
6,800.0	6,794.3	6,687.4	6,609.3	13.1	19.2	72.40	400.3	781.0	976.8	949.8	27.05	36.114		
6,900.0	6,894.3	6,785.4	6,705.3	13.2	19.6	72.04	411.8	796.7	995.8	968.4	27.41	36.328		
7,000.0	6,994.3	6,883.4	6,801.3	13.4	20.0	71.69	423.3	812.5	1,014.8	987.0	27.78	36.532		
7,100.0	7,094.3	6,981.4	6,897.3	13.6	20.4	71.35	434.8	828.3	1,033.8	1,005.7	28.15	36.728		
7,200.0	7,194.3	7,079.4	6,993.4	13.7	20.8	-89.83	446.3	844.1	1,052.9	1,024.4	28.52	36.917		
7,300.0	7,294.0	7,176.8	7,088.8	13.9	21.1	-89.18	457.8	859.8	1,072.0	1,043.1	28.84	37.174		
7,400.0	7,392.4	7,272.1	7,182.2	14.0	21.5	-89.07	469.0	875.1	1,091.2	1,062.1	29.11	37.479		
7,500.0	7,488.0	7,367.9	7,276.1	14.1	21.9	-89.42	479.4	890.8	1,110.0	1,081.6	29.39	37.806		
7,600.0	7,578.7	7,474.3	7,380.1	14.2	22.2	-89.51	478.0	912.7	1,130.8	1,101.1	29.71	38.067		
7,700.0	7,661.7	7,588.8	7,488.7	14.4	22.5	-89.65	457.8	942.0	1,150.1	1,120.0	30.11	38.190		
7,800.0	7,734.9	7,712.4	7,598.4	14.7	22.8	-89.84	415.0	979.3	1,168.0	1,137.3	30.67	38.076		
7,900.0	7,796.7	7,846.1	7,703.3	15.2	23.2	-90.05	346.1	1,024.7	1,183.7	1,152.2	31.47	37.609		
8,000.0	7,845.4	7,989.8	7,795.1	15.8	23.5	-90.23	249.2	1,077.0	1,196.4	1,163.8	32.65	36.648		
8,100.0	7,879.8	8,141.7	7,863.6	16.6	24.1	-90.29	126.4	1,133.4	1,205.3	1,171.1	34.21	35.228		
8,200.0	7,899.2	8,298.4	7,899.5	17.6	24.9	-90.16	-15.0	1,189.6	1,209.8	1,173.6	36.18	33.435		
8,300.0	7,903.5	8,424.6	7,903.5	18.8	25.7	-90.00	-134.0	1,231.4	1,210.3	1,171.9	38.38	31.532		
8,400.0	7,903.5	8,524.6	7,903.5	20.0	26.5	-90.00	-228.5	1,264.0	1,210.3	1,169.5	40.73	29.716		
8,500.0	7,903.5	8,624.6	7,903.5	21.4	27.4	-90.00	-323.1	1,296.6	1,210.3	1,167.0	43.28	27.965		
8,600.0	7,903.5	8,724.6	7,903.5	22.8	28.4	-90.00	-417.6	1,329.2	1,210.3	1,164.3	46.00	26.310		
8,700.0	7,903.5	8,824.6	7,903.5	24.3	29.5	-90.00	-512.1	1,361.8	1,210.3	1,161.4	48.87	24.765		
8,800.0	7,903.5	8,924.6	7,903.5	25.8	30.7	-90.00	-606.7	1,394.4	1,210.3	1,158.4	51.86	23.338		
8,900.0	7,903.5	9,024.6	7,903.5	27.4	32.0	-90.00	-701.2	1,427.0	1,210.3	1,155.3	54.95	22.026		
9,000.0	7,903.5	9,124.6	7,903.5	29.0	33.4	-90.00	-795.7	1,459.6	1,210.3	1,152.2	58.12	20.823		
9,100.0	7,903.5	9,224.6	7,903.5	30.7	34.8	-90.00	-890.3	1,492.2	1,210.3	1,148.9	61.37	19.721		
9,200.0	7,903.5	9,324.6	7,903.5	32.4	36.2	-90.00	-984.8	1,524.8	1,210.3	1,145.6	64.68	18.712		
9,300.0	7,903.5	9,424.6	7,903.5	34.1	37.7	-90.00	-1,079.4	1,557.4	1,210.3	1,142.2	68.04	17.788		
9,400.0	7,903.5	9,524.6	7,903.5	35.8	39.2	-90.00	-1,173.9	1,590.0	1,210.3	1,138.8	71.45	16.940		
9,500.0	7,903.5	9,624.6	7,903.5	37.6	40.8	-90.00	-1,268.4	1,622.6	1,210.3	1,135.4	74.89	16.161		
9,600.0	7,903.5	9,724.6	7,903.5	39.3	42.3	-90.00	-1,363.0	1,655.2	1,210.3	1,131.9	78.37	15.443		
9,700.0	7,903.5	9,824.6	7,903.5	41.1	43.9	-90.00	-1,457.5	1,687.8	1,210.3	1,128.4	81.88	14.782		
9,800.0	7,903.5	9,924.6	7,903.5	42.9	45.6	-90.00	-1,552.0	1,720.4	1,210.3	1,124.9	85.41	14.170		
9,900.0	7,903.5	10,024.6	7,903.5	44.7	47.2	-90.00	-1,646.6	1,753.0	1,210.3	1,121.3	88.97	13.604		

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

## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 204 - Orig. - DEP Plan 5													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+HRGM+Int. 800-MWD+AfterInt. 2600-SDI MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,000.0	7,903.5	10,124.6	7,903.5	46.5	48.9	-90.00	-1,741.1	1,785.6	1,210.3	1,117.8	92.55	13.078		
10,100.0	7,903.5	10,224.6	7,903.5	48.3	50.6	-90.00	-1,835.6	1,816.2	1,210.3	1,114.2	96.14	12.589		
10,200.0	7,903.5	10,324.6	7,903.5	50.1	52.3	-90.00	-1,930.2	1,890.8	1,210.3	1,110.6	99.75	12.133		
10,300.0	7,903.5	10,424.6	7,903.5	51.9	54.0	-90.00	-2,024.7	1,853.4	1,210.3	1,106.9	103.38	11.708		
10,400.0	7,903.5	10,524.6	7,903.5	53.8	55.7	-90.00	-2,119.3	1,916.0	1,210.3	1,103.3	107.02	11.310		
10,500.0	7,903.5	10,624.6	7,903.5	55.6	57.5	-90.00	-2,213.8	1,948.6	1,210.3	1,099.6	110.66	10.937		
10,600.0	7,903.5	10,724.6	7,903.5	57.4	59.2	-90.00	-2,308.3	1,981.2	1,210.3	1,096.0	114.32	10.567		
10,700.0	7,903.5	10,824.6	7,903.5	59.3	61.0	-90.00	-2,402.9	2,013.8	1,210.3	1,092.3	117.99	10.257		
10,800.0	7,903.5	10,924.6	7,903.5	61.1	62.8	-90.00	-2,497.4	2,046.4	1,210.3	1,088.6	121.67	9.947		
10,900.0	7,903.5	11,024.6	7,903.5	63.0	64.5	-90.00	-2,591.9	2,079.0	1,210.3	1,085.0	125.36	9.655		
11,000.0	7,903.5	11,124.6	7,903.5	64.8	66.3	-90.00	-2,686.5	2,111.6	1,210.3	1,081.3	129.05	9.379		
11,100.0	7,903.5	11,224.6	7,903.5	66.7	68.1	-90.00	-2,781.0	2,144.2	1,210.3	1,077.6	132.75	9.117		
11,200.0	7,903.5	11,324.6	7,903.5	68.5	69.9	-90.00	-2,875.5	2,176.8	1,210.3	1,073.9	136.46	8.870		
11,300.0	7,903.5	11,424.6	7,903.5	70.4	71.7	-90.00	-2,970.1	2,209.4	1,210.3	1,070.2	140.17	8.635		
11,400.0	7,903.5	11,524.6	7,903.5	72.3	73.5	-90.00	-3,064.6	2,242.0	1,210.3	1,066.4	143.88	8.412		
11,500.0	7,903.5	11,624.6	7,903.5	74.1	75.3	-90.00	-3,159.2	2,274.6	1,210.3	1,062.7	147.51	8.200		
11,600.0	7,903.5	11,724.6	7,903.5	76.0	77.1	-90.00	-3,253.7	2,307.2	1,210.3	1,059.0	151.33	7.998		
11,700.0	7,903.5	11,824.6	7,903.5	77.9	79.0	-90.00	-3,348.2	2,339.8	1,210.3	1,055.3	155.06	7.806		
11,800.0	7,903.5	11,924.6	7,903.5	79.8	80.8	-90.00	-3,442.8	2,372.4	1,210.3	1,051.5	158.79	7.622		
11,900.0	7,903.5	12,024.6	7,903.5	81.6	82.6	-90.00	-3,537.3	2,405.0	1,210.3	1,047.8	162.53	7.447		
12,000.0	7,903.5	12,124.6	7,903.5	83.5	84.5	-90.00	-3,631.8	2,437.6	1,210.3	1,044.1	166.27	7.279		
12,100.0	7,903.5	12,224.6	7,903.5	85.4	86.3	-90.00	-3,726.4	2,470.2	1,210.3	1,040.3	170.01	7.119		
12,200.0	7,903.5	12,324.6	7,903.5	87.3	88.1	-90.00	-3,820.9	2,502.8	1,210.3	1,036.6	173.76	6.966		
12,300.0	7,903.5	12,424.6	7,903.5	89.1	90.0	-90.00	-3,915.5	2,535.4	1,210.3	1,032.8	177.51	6.819		
12,400.0	7,903.5	12,524.6	7,903.5	91.0	91.8	-90.00	-4,010.0	2,568.0	1,210.3	1,029.1	181.26	6.677		
12,500.0	7,903.5	12,624.6	7,903.5	92.9	93.7	-90.00	-4,104.5	2,600.6	1,210.3	1,025.3	185.01	6.542		
12,600.0	7,903.5	12,724.6	7,903.5	94.8	95.5	-90.00	-4,199.1	2,633.2	1,210.4	1,021.6	188.77	6.412		
12,700.0	7,903.5	12,824.6	7,903.5	96.7	97.4	-90.00	-4,293.6	2,665.8	1,210.4	1,017.8	192.53	6.297		
12,800.0	7,903.5	12,924.6	7,903.5	98.5	99.2	-90.00	-4,388.1	2,698.4	1,210.4	1,014.1	196.29	6.166		
12,900.0	7,903.5	13,024.6	7,903.5	100.4	101.1	-90.00	-4,482.7	2,731.0	1,210.4	1,010.3	200.05	6.050		
13,000.0	7,903.5	13,124.6	7,903.5	102.3	102.9	-90.00	-4,577.2	2,763.6	1,210.4	1,006.5	203.81	5.939		
13,100.0	7,903.5	13,224.6	7,903.5	104.2	104.8	-90.00	-4,671.7	2,796.2	1,210.4	1,002.8	207.58	5.831		
13,200.0	7,903.5	13,324.6	7,903.5	106.1	106.6	-90.00	-4,766.3	2,828.8	1,210.4	999.0	211.35	5.727		
13,300.0	7,903.5	13,424.6	7,903.5	108.0	108.5	-90.00	-4,860.8	2,861.4	1,210.4	995.3	215.11	5.627		
13,400.0	7,903.5	13,524.6	7,903.5	109.8	110.4	-90.00	-4,955.4	2,894.0	1,210.4	991.5	218.88	5.530		
13,500.0	7,903.5	13,624.6	7,903.5	111.7	112.2	-90.00	-5,049.9	2,926.6	1,210.4	987.7	222.65	5.436		
13,600.0	7,903.5	13,724.6	7,903.5	113.6	114.1	-90.00	-5,144.4	2,959.2	1,210.4	983.9	226.43	5.346		
13,700.0	7,903.5	13,824.6	7,903.5	115.5	115.9	-90.00	-5,239.0	2,991.8	1,210.4	980.2	230.20	5.258		
13,800.0	7,903.5	13,924.6	7,903.5	117.4	117.8	-90.00	-5,333.5	3,024.4	1,210.4	976.4	233.98	5.173		
13,900.0	7,903.5	14,024.6	7,903.5	119.3	119.7	-90.00	-5,428.0	3,057.0	1,210.4	972.6	237.75	5.091		
14,000.0	7,903.5	14,124.6	7,903.5	121.2	121.6	-90.00	-5,522.6	3,089.6	1,210.4	968.9	241.53	5.011		
14,100.0	7,903.5	14,224.6	7,903.5	123.1	123.4	-90.00	-5,617.1	3,122.2	1,210.4	965.1	245.31	4.934		
14,200.0	7,903.5	14,324.6	7,903.5	125.0	125.3	-90.00	-5,711.7	3,154.8	1,210.4	961.3	249.09	4.859		
14,300.0	7,903.5	14,424.6	7,903.5	126.9	127.2	-90.00	-5,806.2	3,187.4	1,210.4	957.5	252.87	4.787		
14,400.0	7,903.5	14,524.6	7,903.5	128.8	129.0	-90.00	-5,900.7	3,220.0	1,210.4	953.7	256.65	4.716		
14,500.0	7,903.5	14,624.6	7,903.5	130.6	130.9	-90.00	-5,995.3	3,252.6	1,210.4	950.0	260.43	4.648		
14,600.0	7,903.5	14,724.6	7,903.5	132.5	132.8	-90.00	-6,089.8	3,285.2	1,210.4	946.2	264.21	4.581		
14,700.0	7,903.5	14,824.6	7,903.5	134.4	134.7	-90.00	-6,184.3	3,317.8	1,210.4	942.4	267.99	4.517		
14,800.0	7,903.5	14,924.6	7,903.5	136.3	136.5	-90.00	-6,278.9	3,350.4	1,210.4	938.6	271.78	4.454		
14,900.0	7,903.5	15,024.6	7,903.5	138.2	138.4	-90.00	-6,373.4	3,383.0	1,210.4	934.8	275.56	4.392		
15,000.0	7,903.5	15,124.6	7,903.5	140.1	140.3	-90.00	-6,467.9	3,415.6	1,210.4	931.1	279.35	4.333		

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 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 204 - Orig. - DEP Plan 5													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+HRGM+Int, 600-MWD+AfterInt, 2600-SDI MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
15,100.0	7,903.5	15,224.6	7,903.5	142.0	142.2	-90.00	-6,562.5	3,448.2	1,210.4	927.3	283.13	4.275		
15,200.0	7,903.5	15,324.6	7,903.5	143.9	144.1	-90.00	-6,657.0	3,480.8	1,210.4	923.5	286.92	4.219		
15,300.0	7,903.5	15,424.6	7,903.5	145.8	145.9	-90.00	-6,751.6	3,513.5	1,210.4	919.7	290.71	4.164		
15,400.0	7,903.5	15,524.6	7,903.5	147.7	147.8	-90.00	-6,846.1	3,546.1	1,210.4	915.9	294.49	4.110		
15,500.0	7,903.5	15,624.6	7,903.5	149.6	149.7	-90.00	-6,940.6	3,578.7	1,210.4	912.1	298.28	4.058		
15,600.0	7,903.5	15,724.6	7,903.5	151.5	151.6	-90.00	-7,035.2	3,611.3	1,210.4	908.3	302.07	4.007		
15,700.0	7,903.5	15,824.6	7,903.5	153.4	153.5	-90.00	-7,129.7	3,643.9	1,210.4	904.6	305.86	3.957		
15,800.0	7,903.5	15,924.6	7,903.5	155.3	155.4	-90.00	-7,224.2	3,676.5	1,210.4	900.8	309.65	3.909		
15,900.0	7,903.5	16,024.6	7,903.5	157.2	157.2	-90.00	-7,318.8	3,709.1	1,210.4	897.0	313.44	3.862		
16,000.0	7,903.5	16,124.6	7,903.5	159.1	159.1	-90.00	-7,413.3	3,741.7	1,210.4	893.2	317.23	3.816		
16,100.0	7,903.5	16,224.6	7,903.5	161.0	161.0	-90.00	-7,507.8	3,774.3	1,210.4	889.4	321.02	3.771		
16,200.0	7,903.5	16,324.6	7,903.5	162.9	162.9	-90.00	-7,602.4	3,806.9	1,210.4	885.6	324.81	3.727		
16,300.0	7,903.5	16,424.6	7,903.5	164.8	164.8	-90.00	-7,696.9	3,839.5	1,210.4	881.8	328.60	3.684		
16,400.0	7,903.5	16,524.6	7,903.5	166.7	166.7	-90.00	-7,791.5	3,872.1	1,210.4	878.0	332.40	3.642		
16,500.0	7,903.5	16,624.6	7,903.5	168.6	168.6	-90.00	-7,886.0	3,904.7	1,210.4	874.2	336.19	3.600		
16,600.0	7,903.5	16,724.6	7,903.5	170.4	170.4	-90.00	-7,980.5	3,937.3	1,210.4	870.4	339.98	3.560		
16,700.0	7,903.5	16,824.6	7,903.5	172.3	172.3	-90.00	-8,075.1	3,969.9	1,210.4	866.7	343.77	3.521		
16,800.0	7,903.5	16,924.6	7,903.5	174.2	174.2	-90.00	-8,169.6	4,002.5	1,210.4	862.9	347.57	3.483		
16,900.0	7,903.5	17,024.6	7,903.5	176.1	176.1	-90.00	-8,264.1	4,035.1	1,210.4	859.1	351.36	3.445		
17,000.0	7,903.5	17,124.6	7,903.5	178.0	178.0	-90.00	-8,358.7	4,067.7	1,210.4	855.3	355.16	3.408		
17,100.0	7,903.5	17,224.6	7,903.5	179.9	179.9	-90.00	-8,453.2	4,100.3	1,210.4	851.5	358.95	3.372		
17,200.0	7,903.5	17,324.6	7,903.5	181.8	181.8	-90.00	-8,547.8	4,132.9	1,210.4	847.7	362.75	3.337		
17,300.0	7,903.5	17,424.6	7,903.5	183.7	183.7	-90.00	-8,642.3	4,165.5	1,210.4	843.9	366.54	3.302		
17,400.0	7,903.5	17,524.6	7,903.5	185.6	185.6	-90.00	-8,736.8	4,198.1	1,210.4	840.1	370.34	3.269		
17,500.0	7,903.5	17,624.6	7,903.5	187.5	187.4	-90.00	-8,831.4	4,230.7	1,210.4	836.3	374.13	3.235		
17,600.0	7,903.5	17,724.6	7,903.5	189.4	189.3	-90.00	-8,925.9	4,263.3	1,210.5	832.5	377.93	3.203		
17,700.0	7,903.5	17,824.6	7,903.5	191.3	191.2	-90.00	-9,020.4	4,295.9	1,210.5	828.7	381.72	3.171		
17,800.0	7,903.5	17,924.6	7,903.5	193.2	193.1	-90.00	-9,115.0	4,328.5	1,210.5	824.9	385.52	3.140		
17,900.0	7,903.5	18,024.6	7,903.5	195.1	195.0	-90.00	-9,209.5	4,361.1	1,210.5	821.1	389.32	3.109		
18,000.0	7,903.5	18,124.6	7,903.5	197.0	196.9	-90.00	-9,304.0	4,393.7	1,210.5	817.3	393.12	3.079		
18,100.0	7,903.5	18,224.6	7,903.5	198.9	198.8	-90.00	-9,398.6	4,426.3	1,210.5	813.5	396.91	3.050		
18,200.0	7,903.5	18,324.6	7,903.5	200.8	200.7	-90.00	-9,493.1	4,458.9	1,210.5	809.8	400.71	3.021		
18,300.0	7,903.5	18,424.6	7,903.5	202.7	202.6	-90.00	-9,587.7	4,491.5	1,210.5	806.0	404.51	2.992		
18,400.0	7,903.5	18,524.6	7,903.5	204.6	204.5	-90.00	-9,682.2	4,524.1	1,210.5	802.2	408.31	2.965		
18,500.0	7,903.5	18,624.6	7,903.5	206.5	206.4	-90.00	-9,776.7	4,556.7	1,210.5	798.4	412.10	2.937		
18,600.0	7,903.5	18,724.6	7,903.5	208.4	208.3	-90.00	-9,871.3	4,589.3	1,210.5	794.6	415.90	2.910		
18,700.0	7,903.5	18,824.6	7,903.5	210.3	210.2	-90.00	-9,965.8	4,621.9	1,210.5	790.8	419.70	2.884		
18,800.0	7,903.5	18,924.6	7,903.5	212.2	212.0	-90.00	-10,060.3	4,654.5	1,210.5	787.0	423.50	2.858		
18,900.0	7,903.5	19,024.6	7,903.5	214.1	213.9	-90.00	-10,154.9	4,687.1	1,210.5	783.2	427.30	2.833		
19,000.0	7,903.5	19,124.6	7,903.5	216.0	215.8	-90.00	-10,249.4	4,719.7	1,210.5	779.4	431.10	2.808		
19,100.0	7,903.5	19,224.6	7,903.5	217.9	217.7	-90.00	-10,344.0	4,752.3	1,210.5	775.6	434.90	2.783		
19,200.0	7,903.5	19,324.6	7,903.5	219.8	219.6	-90.00	-10,438.5	4,784.9	1,210.5	771.8	438.70	2.759		
19,300.0	7,903.5	19,424.6	7,903.5	221.7	221.5	-90.00	-10,533.0	4,817.5	1,210.5	768.0	442.50	2.736		
19,400.0	7,903.5	19,524.6	7,903.5	223.6	223.4	-90.00	-10,627.6	4,850.1	1,210.5	764.2	446.30	2.712		
19,500.0	7,903.5	19,624.6	7,903.5	225.5	225.3	-90.00	-10,722.1	4,882.7	1,210.5	760.4	450.10	2.689		
19,600.0	7,903.5	19,724.6	7,903.5	227.4	227.2	-90.00	-10,816.6	4,915.3	1,210.5	756.6	453.90	2.667		
19,700.0	7,903.5	19,824.6	7,903.5	229.3	229.1	-90.00	-10,911.2	4,947.9	1,210.5	752.8	457.70	2.645		
19,800.0	7,903.5	19,924.6	7,903.5	231.2	231.0	-90.00	-11,005.7	4,980.5	1,210.5	749.0	461.50	2.623		
19,900.0	7,903.5	20,024.6	7,903.5	233.1	232.9	-90.00	-11,100.2	5,013.1	1,210.5	745.2	465.30	2.602		
20,000.0	7,903.5	20,124.6	7,903.5	235.0	234.8	-90.00	-11,194.8	5,045.7	1,210.5	741.4	469.10	2.580		

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 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 204 - Orig. - DEP Plan 5													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+HRGM+Inf, 600-MWD+AfterInt, 2600-SDI MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
20,100.0	7,903.5	20,224.6	7,903.5	236.9	236.7	-90.00	-11,289.3	5,078.3	1,210.5	737.6	472.90	2.560		
20,200.0	7,903.5	20,324.6	7,903.5	238.8	238.6	-90.00	-11,383.9	5,110.9	1,210.5	733.8	476.70	2.539		
20,300.0	7,903.5	20,424.6	7,903.5	240.7	240.5	-90.00	-11,478.4	5,143.5	1,210.5	730.0	480.50	2.519		
20,400.0	7,903.5	20,524.6	7,903.5	242.6	242.4	-90.00	-11,572.9	5,176.1	1,210.5	726.2	484.30	2.500		
20,500.0	7,903.5	20,624.6	7,903.5	244.5	244.3	-90.00	-11,667.5	5,208.7	1,210.5	722.4	488.10	2.480		
20,600.0	7,903.5	20,724.6	7,903.5	246.4	246.2	-90.00	-11,762.0	5,241.3	1,210.5	718.6	491.90	2.461		
20,700.0	7,903.5	20,824.6	7,903.5	248.3	248.1	-90.00	-11,856.5	5,273.9	1,210.5	714.8	495.70	2.442		
20,800.0	7,903.5	20,924.6	7,903.5	250.2	250.0	-90.00	-11,951.1	5,306.5	1,210.5	711.0	499.51	2.423		
20,900.0	7,903.5	21,024.6	7,903.5	252.1	251.9	-90.00	-12,045.6	5,339.1	1,210.5	707.2	503.31	2.405		
21,000.0	7,903.5	21,124.6	7,903.5	254.0	253.8	-90.00	-12,140.1	5,371.7	1,210.5	703.4	507.11	2.387		
21,100.0	7,903.5	21,224.6	7,903.5	255.9	255.6	-90.00	-12,234.7	5,404.3	1,210.5	699.6	510.91	2.369		
21,200.0	7,903.5	21,324.6	7,903.5	257.8	257.5	-90.00	-12,329.2	5,436.9	1,210.5	695.8	514.71	2.352		
21,300.0	7,903.5	21,424.6	7,903.5	259.7	259.4	-90.00	-12,423.8	5,469.5	1,210.5	692.0	518.51	2.335		
21,400.0	7,903.5	21,524.6	7,903.5	261.7	261.3	-90.00	-12,518.3	5,502.1	1,210.5	688.2	522.32	2.318		
21,500.0	7,903.5	21,624.6	7,903.5	263.6	263.2	-90.00	-12,612.8	5,534.7	1,210.5	684.4	526.12	2.301		
21,600.0	7,903.5	21,724.6	7,903.5	265.5	265.1	-90.00	-12,707.4	5,567.3	1,210.5	680.6	529.92	2.284		
21,700.0	7,903.5	21,824.6	7,903.5	267.4	267.0	-90.00	-12,801.9	5,599.9	1,210.5	676.8	533.72	2.268		
21,800.0	7,903.5	21,924.6	7,903.5	269.3	268.9	-90.00	-12,896.4	5,632.5	1,210.5	673.0	537.53	2.252		
21,900.0	7,903.5	22,024.6	7,903.5	271.2	270.8	-90.00	-12,991.0	5,665.1	1,210.5	669.2	541.33	2.236		
22,000.0	7,903.5	22,124.6	7,903.5	273.1	272.7	-90.00	-13,085.5	5,697.7	1,210.5	665.4	545.13	2.221		
22,100.0	7,903.5	22,224.6	7,903.5	275.0	274.6	-90.00	-13,180.1	5,730.3	1,210.5	661.6	548.93	2.205		
22,200.0	7,903.5	22,324.6	7,903.5	276.9	276.5	-90.00	-13,274.6	5,762.9	1,210.5	657.8	552.74	2.190		
22,300.0	7,903.5	22,424.6	7,903.5	278.8	278.4	-90.00	-13,369.1	5,795.5	1,210.5	654.0	556.54	2.175		
22,400.0	7,903.5	22,524.6	7,903.5	280.7	280.3	-90.00	-13,463.7	5,828.1	1,210.5	650.2	560.34	2.160		
22,500.0	7,903.5	22,624.6	7,903.5	282.6	282.2	-90.00	-13,558.2	5,860.7	1,210.5	646.4	564.14	2.146		
22,600.0	7,903.5	22,724.6	7,903.5	284.5	284.1	-90.00	-13,652.7	5,893.3	1,210.6	642.6	567.95	2.131		
22,700.0	7,903.5	22,824.6	7,903.5	286.4	286.0	-90.00	-13,747.3	5,925.9	1,210.6	638.8	571.75	2.117		
22,800.0	7,903.5	22,924.6	7,903.5	288.3	287.9	-90.00	-13,841.8	5,958.5	1,210.6	635.0	575.55	2.103		
22,900.0	7,903.5	23,024.6	7,903.5	290.2	289.8	-90.00	-13,936.3	5,991.1	1,210.6	631.2	579.36	2.089		
23,000.0	7,903.5	23,124.6	7,903.5	292.1	291.7	-90.00	-14,030.9	6,023.7	1,210.6	627.4	583.16	2.076		
23,100.0	7,903.5	23,224.6	7,903.5	294.0	293.6	-90.00	-14,125.4	6,056.3	1,210.6	623.6	586.96	2.062		
23,200.0	7,903.5	23,324.6	7,903.5	295.9	295.5	-90.00	-14,220.0	6,088.9	1,210.6	619.8	590.77	2.049		
23,300.0	7,903.5	23,424.6	7,903.5	297.8	297.4	-90.00	-14,314.5	6,121.5	1,210.6	616.0	594.57	2.036		
23,400.0	7,903.5	23,524.6	7,903.5	299.7	299.3	-90.00	-14,409.0	6,154.1	1,210.6	612.2	598.37	2.023		
23,500.0	7,903.5	23,624.6	7,903.5	301.6	301.2	-90.00	-14,503.6	6,186.7	1,210.6	608.4	602.18	2.010		
23,600.0	7,903.5	23,724.6	7,903.5	303.5	303.1	-90.00	-14,598.1	6,219.3	1,210.6	604.6	605.98	1.998		
23,700.0	7,903.5	23,824.6	7,903.5	305.4	305.0	-90.00	-14,692.6	6,251.9	1,210.6	600.8	609.78	1.985		
23,800.0	7,903.5	23,924.6	7,903.5	307.3	306.9	-90.00	-14,787.2	6,284.5	1,210.6	597.0	613.59	1.973		
23,900.0	7,903.5	24,024.6	7,903.5	309.2	308.8	-90.00	-14,881.7	6,317.1	1,210.6	593.2	617.39	1.961		
24,000.0	7,903.5	24,124.6	7,903.5	311.1	310.7	-90.00	-14,976.3	6,349.7	1,210.6	589.4	621.19	1.949		
24,100.0	7,903.5	24,224.6	7,903.5	313.0	312.6	-90.00	-15,070.8	6,382.3	1,210.6	585.6	625.00	1.937		
24,200.0	7,903.5	24,324.6	7,903.5	314.9	314.5	-90.00	-15,165.3	6,414.9	1,210.6	581.8	628.80	1.925		
24,300.0	7,903.5	24,424.6	7,903.5	316.8	316.4	-90.00	-15,259.9	6,447.5	1,210.6	578.0	632.61	1.914		
24,400.0	7,903.5	24,524.6	7,903.5	318.7	318.3	-90.00	-15,354.4	6,480.1	1,210.6	574.2	636.41	1.902		
24,500.0	7,903.5	24,624.6	7,903.5	320.6	320.2	-90.00	-15,448.9	6,512.7	1,210.6	570.4	640.21	1.891		
24,600.0	7,903.5	24,724.6	7,903.5	322.5	322.1	-90.00	-15,543.5	6,545.3	1,210.6	566.6	644.02	1.880		
24,700.0	7,903.5	24,824.6	7,903.5	324.4	324.0	-90.00	-15,638.0	6,577.9	1,210.6	562.8	647.82	1.869		
24,800.0	7,903.5	24,924.6	7,903.5	326.3	325.9	-90.00	-15,732.5	6,610.5	1,210.6	559.0	651.63	1.858		
24,900.0	7,903.5	25,024.6	7,903.5	328.2	327.8	-90.00	-15,827.1	6,643.1	1,210.6	555.2	655.43	1.847		
25,000.0	7,903.5	25,124.6	7,903.5	330.1	329.7	-90.00	-15,921.6	6,675.7	1,210.6	551.4	659.23	1.836		
25,100.0	7,903.5	25,224.6	7,903.5	332.0	331.5	-90.00	-16,016.2	6,708.3	1,210.6	547.6	663.04	1.826		

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



## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
Johnson TFP40 - 204 - Orig. - DEP Plan 5													Offset Well Error:	0.0 usft
Survey Program: 0-MWD+HRGM+Int, 800-MWD+AfterInt, 2600-SDI MWD														
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
25,200.0	7,903.5	25,324.6	7,903.5	333.9	333.5	-90.00	-16,110.7	6,740.9	1,210.6	543.8	666.84	1.815		
25,300.0	7,903.5	25,424.6	7,903.5	335.8	335.4	-90.00	-16,205.2	6,773.5	1,210.6	540.0	670.65	1.805		
25,400.0	7,903.5	25,524.6	7,903.5	337.7	337.3	-90.00	-16,299.8	6,806.1	1,210.6	536.2	674.45	1.795		
25,500.0	7,903.5	25,624.6	7,903.5	339.6	339.2	-90.00	-16,394.3	6,838.7	1,210.6	532.4	678.26	1.785		
25,600.0	7,903.5	25,724.6	7,903.5	341.6	341.1	-90.00	-16,488.8	6,871.3	1,210.6	528.6	682.06	1.775		
25,700.0	7,903.5	25,824.6	7,903.5	343.5	343.0	-90.00	-16,583.4	6,903.9	1,210.6	524.8	685.86	1.765		
25,800.0	7,903.5	25,924.6	7,903.5	345.4	344.9	-90.00	-16,677.9	6,936.5	1,210.6	520.9	689.67	1.755		
25,900.0	7,903.5	26,024.6	7,903.5	347.3	346.8	-90.00	-16,772.5	6,969.1	1,210.6	517.1	693.47	1.746		
26,000.0	7,903.5	26,124.6	7,903.5	349.2	348.7	-90.00	-16,867.0	7,001.7	1,210.6	513.3	697.28	1.736		
26,100.0	7,903.5	26,224.6	7,903.5	351.1	350.6	-90.00	-16,961.5	7,034.3	1,210.6	509.5	701.08	1.727		
26,200.0	7,903.5	26,324.6	7,903.5	353.0	352.5	-90.00	-17,056.1	7,066.9	1,210.6	505.7	704.88	1.717		
26,300.0	7,903.5	26,424.6	7,903.5	354.9	354.4	-90.00	-17,150.6	7,099.5	1,210.6	501.9	708.69	1.708		
26,400.0	7,903.5	26,524.6	7,903.5	356.8	356.3	-90.00	-17,245.1	7,132.1	1,210.6	498.1	712.49	1.699		
26,500.0	7,903.5	26,624.6	7,903.5	358.7	358.2	-90.00	-17,339.7	7,164.7	1,210.6	494.3	716.30	1.690		
26,600.0	7,903.5	26,724.6	7,903.5	360.6	360.1	-90.00	-17,434.2	7,197.3	1,210.6	490.5	720.10	1.681		
26,700.0	7,903.5	26,824.6	7,903.5	362.5	362.0	-90.00	-17,528.7	7,229.9	1,210.6	486.7	723.91	1.672		
26,800.0	7,903.5	26,924.6	7,903.5	364.4	363.9	-90.00	-17,623.3	7,262.5	1,210.6	482.9	727.71	1.664		
26,900.0	7,903.5	27,024.6	7,903.5	366.3	365.8	-90.00	-17,717.8	7,295.1	1,210.6	479.1	731.52	1.655		
27,000.0	7,903.5	27,124.6	7,903.5	368.2	367.7	-90.00	-17,812.4	7,327.7	1,210.6	475.3	735.32	1.646		
27,100.0	7,903.5	27,224.6	7,903.5	370.1	369.6	-90.00	-17,906.9	7,360.3	1,210.6	471.5	739.13	1.638		
27,200.0	7,903.5	27,324.6	7,903.5	372.0	371.5	-90.00	-18,001.4	7,392.9	1,210.6	467.7	742.93	1.630		
27,300.0	7,903.5	27,424.6	7,903.5	373.9	373.4	-90.00	-18,095.0	7,425.5	1,210.6	463.9	746.73	1.621		
27,400.0	7,903.5	27,524.6	7,903.5	375.8	375.3	-90.00	-18,190.5	7,458.1	1,210.6	460.1	750.54	1.613		
27,500.0	7,903.5	27,624.6	7,903.5	377.7	377.2	-90.00	-18,285.0	7,490.7	1,210.7	456.3	754.34	1.605		
27,600.0	7,903.5	27,724.6	7,903.5	379.6	379.1	-90.00	-18,379.6	7,523.3	1,210.7	452.5	758.15	1.597		
27,700.0	7,903.5	27,824.6	7,903.5	381.5	381.0	-90.00	-18,474.1	7,555.9	1,210.7	448.7	761.95	1.589		
27,800.0	7,903.5	27,924.6	7,903.5	383.4	382.9	-90.00	-18,568.6	7,588.5	1,210.7	444.9	765.76	1.581		
27,900.0	7,903.5	28,024.6	7,903.5	385.3	384.8	-90.00	-18,663.2	7,621.1	1,210.7	441.1	769.56	1.573		
28,000.0	7,903.5	28,124.6	7,903.5	387.2	386.7	-90.00	-18,757.7	7,653.7	1,210.7	437.3	773.37	1.565		
28,100.0	7,903.5	28,224.6	7,903.5	389.1	388.6	-90.00	-18,852.3	7,686.3	1,210.7	433.5	777.17	1.558		
28,200.0	7,903.5	28,324.6	7,903.5	391.0	390.5	-90.00	-18,946.8	7,718.9	1,210.7	429.7	780.97	1.550		
28,209.3	7,903.5	28,334.0	7,903.5	391.2	390.7	-90.00	-18,955.6	7,722.0	1,210.7	429.3	781.33	1.549		
28,300.0	7,903.5	28,423.8	7,903.5	392.9	392.4	-90.00	-19,040.5	7,751.3	1,210.7	425.9	784.79	1.543 SF		
28,400.0	7,903.5	28,423.8	7,903.5	394.8	392.4	-90.00	-19,040.5	7,751.3	1,214.9	432.2	782.65	1.552		
28,500.0	7,903.5	28,423.8	7,903.5	396.7	392.4	-90.00	-19,040.5	7,751.3	1,227.2	460.5	766.73	1.601		
28,600.0	7,903.5	28,423.8	7,903.5	398.6	392.4	-90.00	-19,040.5	7,751.3	1,247.5	507.0	740.45	1.685		
28,700.0	7,903.5	28,423.8	7,903.5	400.5	392.4	-90.00	-19,040.5	7,751.3	1,275.3	567.4	707.91	1.802		
28,800.0	7,903.5	28,423.8	7,903.5	402.5	392.4	-90.00	-19,040.5	7,751.3	1,310.2	637.6	672.53	1.948		
28,900.0	7,903.5	28,423.8	7,903.5	404.4	392.4	-90.00	-19,040.5	7,751.3	1,351.6	714.9	636.68	2.123		
29,000.0	7,903.5	28,423.8	7,903.5	406.3	392.4	-90.00	-19,040.5	7,751.3	1,396.9	797.1	601.80	2.325		
29,100.0	7,903.5	28,423.8	7,903.5	408.2	392.4	-90.00	-19,040.5	7,751.3	1,451.6	882.9	568.71	2.552		

## Anticollision Report

<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 205 - Orig. - DEP Plan 4													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+HRGM+Int, 800-MWD+AfterInt, 2600-SDI MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.0	0.0	0.0	0.0	0.0	0.0	0.00	30.0	0.0	30.0					
100.0	100.0	100.0	100.0	0.3	0.3	0.00	30.0	0.0	30.0	29.5	0.52	57.321		
200.0	200.0	200.0	200.0	0.6	0.6	0.00	30.0	0.0	30.0	28.8	1.24	24.187		
300.0	300.0	300.0	300.0	1.0	1.0	0.00	30.0	0.0	30.0	28.0	1.96	15.328		
400.0	400.0	400.0	400.0	1.3	1.3	0.00	30.0	0.0	30.0	27.3	2.67	11.218		
500.0	500.0	500.0	500.0	1.7	1.7	0.00	30.0	0.0	30.0	26.6	3.39	8.847		
600.0	600.0	600.0	600.0	2.1	2.1	0.00	30.0	0.0	30.0	25.9	4.11	7.303		
700.0	700.0	700.0	700.0	2.4	2.4	0.00	30.0	0.0	30.0	25.2	4.83	6.218		
800.0	800.0	800.0	800.0	2.8	2.8	0.00	30.0	0.0	30.0	24.5	5.54	5.413 CC, ES		
900.0	900.0	899.0	899.0	3.1	3.1	52.95	31.6	0.7	31.0	24.8	6.25	4.967		
1,000.0	1,000.0	997.8	997.7	3.5	3.5	59.61	36.2	2.9	34.5	27.5	6.95	4.964 SF		
1,100.0	1,099.9	1,096.2	1,095.7	3.8	3.8	67.98	43.9	6.5	41.0	33.4	7.64	5.374		
1,199.9	1,199.6	1,195.5	1,194.4	4.2	4.2	75.97	53.3	10.9	49.6	41.3	8.35	5.946		
1,300.0	1,299.4	1,295.0	1,293.3	4.6	4.6	82.44	62.7	15.2	58.8	49.7	9.06	6.489		
1,400.0	1,399.2	1,394.3	1,392.2	4.9	4.9	87.12	72.1	19.6	68.5	58.7	9.78	7.005		
1,500.0	1,498.9	1,493.7	1,491.0	5.3	5.3	90.63	81.5	24.0	78.5	68.0	10.50	7.482		
1,600.0	1,598.7	1,593.1	1,589.9	5.6	5.7	93.34	90.9	28.4	88.8	77.6	11.22	7.916		
1,700.0	1,698.5	1,692.5	1,688.7	6.0	6.0	95.48	100.4	32.8	99.2	87.3	11.94	8.310		
1,800.0	1,798.2	1,791.9	1,787.6	6.4	6.4	97.21	109.8	37.2	109.6	97.1	12.67	8.666		
1,900.0	1,898.0	1,891.3	1,886.4	6.7	6.8	98.64	119.2	41.6	120.4	107.0	13.39	8.989		
2,000.0	1,997.7	1,990.7	1,985.3	7.1	7.2	99.84	128.6	46.0	131.1	116.9	14.12	9.283		
2,100.0	2,097.5	2,090.1	2,084.1	7.5	7.5	100.85	138.0	50.4	141.8	126.9	14.85	9.551		
2,200.0	2,197.2	2,189.5	2,183.0	7.8	7.9	101.73	147.4	54.8	152.6	137.0	15.57	9.795		
2,300.0	2,297.0	2,288.9	2,281.8	8.2	8.3	102.48	156.9	59.2	163.4	147.0	16.30	10.019		
2,400.0	2,396.8	2,388.3	2,380.7	8.6	8.7	103.15	166.3	63.5	174.2	157.1	17.03	10.225		
2,500.0	2,496.5	2,487.7	2,479.5	8.9	9.1	103.73	175.7	67.9	185.0	167.2	17.76	10.415		
2,600.0	2,596.3	2,587.1	2,578.4	9.1	9.3	104.26	185.1	72.3	195.9	177.7	18.15	10.793		
2,700.0	2,696.0	2,681.8	2,672.5	9.1	9.3	104.82	194.2	77.4	207.6	189.4	18.17	11.426		
2,800.0	2,795.8	2,774.6	2,764.5	9.1	9.3	105.69	203.4	85.4	222.2	204.0	18.14	12.244		
2,900.0	2,895.5	2,866.3	2,855.1	9.2	9.4	106.76	212.9	96.1	239.6	221.5	18.12	13.226		
3,000.0	2,995.3	2,957.0	2,944.2	9.2	9.4	107.97	222.5	109.6	259.9	241.9	18.09	14.373		
3,100.0	3,095.0	3,046.3	3,031.6	9.2	9.5	109.24	232.4	125.6	283.2	265.1	18.05	15.687		
3,200.0	3,194.8	3,134.2	3,116.9	9.3	9.6	110.52	242.3	144.0	309.3	291.3	18.02	17.168		
3,300.0	3,294.6	3,220.6	3,200.2	9.3	9.7	111.82	252.3	164.6	338.3	320.4	17.98	18.815		
3,400.0	3,394.4	3,305.4	3,281.4	9.4	9.8	113.15	262.4	187.3	369.7	351.8	17.94	20.614		
3,500.0	3,494.3	3,388.9	3,360.4	9.4	10.0	114.25	272.5	212.0	403.2	385.3	17.89	22.539		
3,600.0	3,594.3	3,470.9	3,437.4	9.5	10.2	115.16	282.7	238.5	438.6	420.7	17.84	24.582		
3,700.0	3,694.3	3,551.5	3,512.2	9.5	10.5	65.46	292.9	266.6	475.8	458.0	17.80	26.739		
3,800.0	3,794.3	3,630.3	3,584.6	9.6	10.8	65.83	303.0	296.1	515.3	497.6	17.76	29.023		
3,900.0	3,894.3	3,709.1	3,656.1	9.6	11.1	66.23	313.3	327.6	557.2	539.4	17.75	31.395		
4,000.0	3,994.3	3,799.5	3,737.6	9.7	11.6	66.65	325.2	364.6	599.9	582.0	17.93	33.463		
4,100.0	4,094.3	3,889.5	3,819.2	9.8	12.1	67.02	337.1	401.5	642.7	624.6	18.13	35.454		
4,200.0	4,194.3	3,980.1	3,900.8	9.8	12.6	67.34	349.0	438.4	685.5	667.2	18.35	37.367		
4,300.0	4,294.3	4,070.4	3,982.3	9.9	13.1	67.63	360.8	475.3	728.4	709.8	18.58	39.204		
4,400.0	4,394.3	4,160.7	4,063.9	10.0	13.7	67.88	372.7	512.2	771.2	752.4	18.83	40.965		
4,500.0	4,494.3	4,251.0	4,145.4	10.1	14.3	68.11	384.6	549.2	814.0	795.0	19.09	42.652		
4,600.0	4,594.3	4,341.3	4,227.0	10.2	15.0	68.31	396.4	586.1	856.9	837.5	19.36	44.266		
4,700.0	4,694.3	4,431.6	4,308.6	10.3	15.6	68.49	408.3	623.0	899.8	880.1	19.64	45.807		
4,800.0	4,794.3	4,521.9	4,390.1	10.4	16.3	68.66	420.2	659.9	942.6	922.7	19.94	47.276		
4,900.0	4,894.3	4,612.3	4,471.7	10.5	16.9	68.81	432.1	696.8	985.5	965.3	20.25	48.675		
5,000.0	4,994.3	4,702.6	4,553.2	10.6	17.6	68.95	443.9	733.7	1,028.4	1,007.8	20.57	50.007		

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

### Anticollision Report

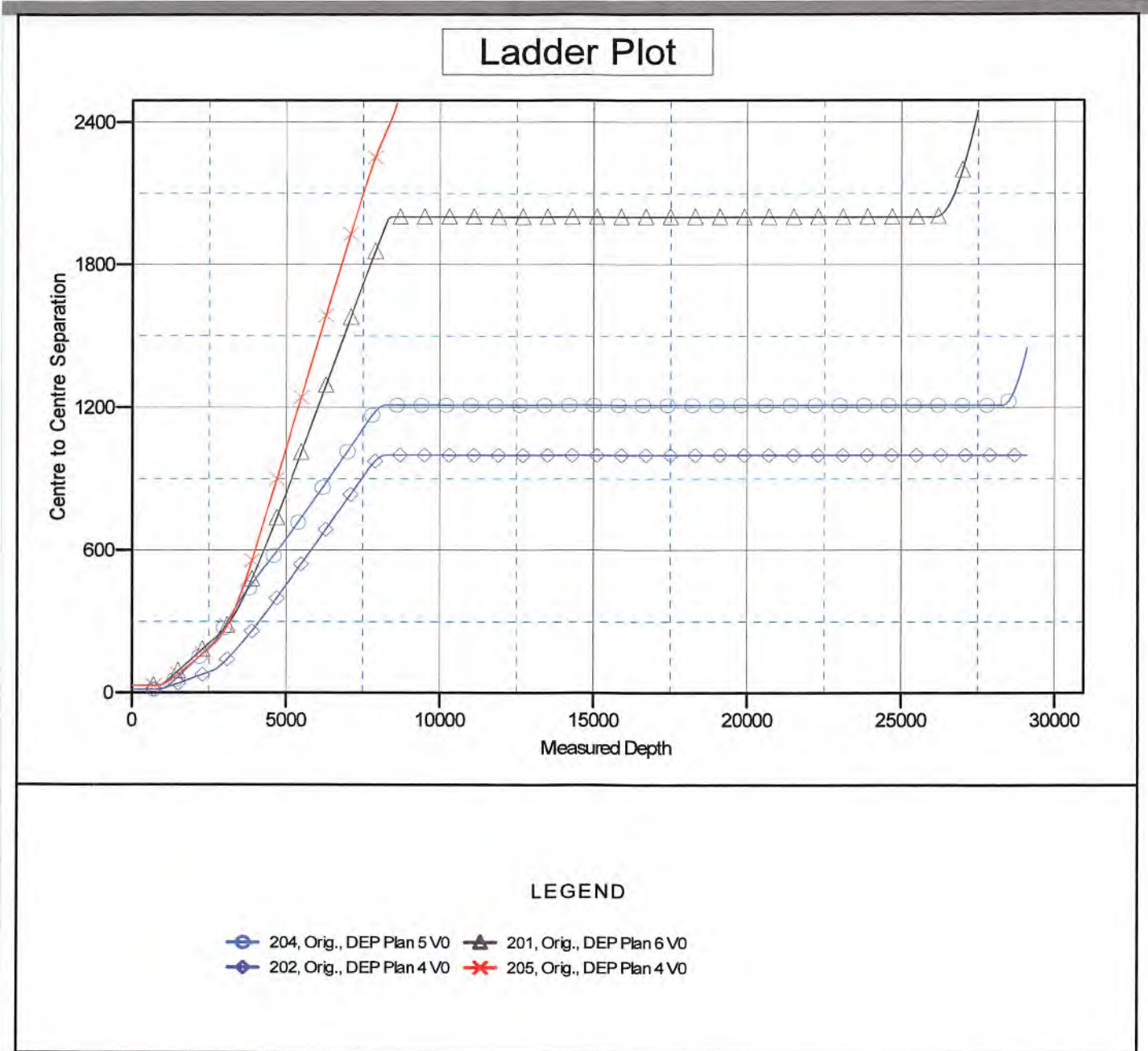
<b>Company:</b>	Arsenal Resources	<b>Local Co-ordinate Reference:</b>	Well 203
<b>Project:</b>	Taylor County, WV	<b>TVD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Reference Site:</b>	Johnson TFP40	<b>MD Reference:</b>	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	203	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Orig.	<b>Database:</b>	Northeast
<b>Reference Design:</b>	DEP Plan 5	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Johnson TFP40 - 205 - Orig. - DEP Plan 4													Offset Site Error:	0.0 usft
Survey Program: 0-MWD+HRGM+Int, 800-MWD+AfterInt, 2600-SDI MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
		Reference Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
5,100.0	5,094.3	4,792.9	4,634.6	10.7	18.3	69.08	455.8	770.7	1,071.3	1,050.4	20.89	51.272		
5,200.0	5,194.3	4,883.2	4,716.4	10.8	19.0	69.20	467.7	807.6	1,114.2	1,092.9	21.23	52.476		
5,300.0	5,294.3	4,973.5	4,797.9	10.9	19.7	69.31	479.6	844.5	1,157.1	1,135.5	21.58	53.620		
5,400.0	5,394.3	5,063.8	4,879.5	11.1	20.5	69.41	491.4	881.4	1,200.0	1,178.0	21.94	54.705		
5,500.0	5,494.3	5,154.1	4,961.1	11.2	21.2	69.51	503.3	918.3	1,242.9	1,220.6	22.30	55.736		
5,600.0	5,594.3	5,244.4	5,042.6	11.3	21.9	69.60	515.2	955.3	1,285.8	1,263.1	22.67	56.714		
5,700.0	5,694.3	5,334.7	5,124.2	11.5	22.7	69.68	527.1	992.2	1,328.7	1,305.6	23.05	57.641		
5,800.0	5,794.3	5,425.1	5,205.7	11.6	23.4	69.76	538.9	1,029.1	1,371.6	1,348.2	23.44	58.520		
5,900.0	5,894.3	5,515.4	5,287.3	11.7	24.2	69.83	550.8	1,066.0	1,414.5	1,390.7	23.83	59.354		
6,000.0	5,994.3	5,605.7	5,368.9	11.9	24.9	69.90	562.7	1,102.9	1,457.4	1,433.2	24.23	60.144		
6,100.0	6,094.3	5,696.0	5,450.4	12.0	25.7	69.97	574.5	1,139.8	1,500.3	1,475.7	24.64	60.892		
6,200.0	6,194.3	5,786.3	5,532.0	12.2	26.5	70.03	586.4	1,176.8	1,543.3	1,518.2	25.05	61.602		
6,300.0	6,294.3	5,876.6	5,613.5	12.3	27.2	70.09	598.3	1,213.7	1,586.2	1,560.7	25.47	62.274		
6,400.0	6,394.3	5,966.9	5,695.1	12.5	28.0	70.14	610.2	1,250.6	1,629.1	1,603.2	25.89	62.912		
6,500.0	6,494.3	6,057.2	5,776.7	12.6	28.8	70.19	622.0	1,287.5	1,672.0	1,645.7	26.32	63.516		
6,600.0	6,594.3	6,147.5	5,858.2	12.8	29.5	70.24	633.9	1,324.4	1,714.9	1,688.2	26.76	64.089		
6,700.0	6,694.3	6,237.8	5,939.8	12.9	30.3	70.29	645.8	1,361.4	1,757.8	1,730.6	27.20	64.633		
6,800.0	6,794.3	6,328.2	6,021.3	13.1	31.1	70.33	657.7	1,398.3	1,800.8	1,773.1	27.64	65.149		
6,900.0	6,894.3	6,418.5	6,102.9	13.2	31.9	70.38	669.5	1,435.2	1,843.7	1,815.6	28.09	65.638		
7,000.0	6,994.3	6,508.8	6,184.5	13.4	32.7	70.42	681.4	1,472.1	1,886.6	1,858.1	28.54	66.102		
7,100.0	7,094.3	6,599.1	6,266.0	13.6	33.4	70.46	693.3	1,509.0	1,929.5	1,900.5	29.00	66.543		
7,200.0	7,194.3	6,689.4	6,347.6	13.7	34.2	-90.30	705.1	1,545.9	1,972.5	1,943.0	29.46	66.962		
7,300.0	7,294.0	6,779.5	6,429.0	13.9	35.0	-87.29	717.0	1,582.8	2,015.3	1,985.4	29.89	67.434		
7,400.0	7,392.4	6,868.5	6,509.4	14.0	35.8	-84.67	728.7	1,619.2	2,057.8	2,027.5	30.32	67.879		
7,500.0	7,488.0	6,955.2	6,587.6	14.1	36.5	-82.39	740.1	1,654.6	2,099.5	2,068.7	30.76	68.256		
7,600.0	7,578.7	7,037.5	6,661.9	14.2	37.3	-79.52	750.9	1,688.2	2,140.0	2,108.8	31.25	68.491		
7,700.0	7,661.7	7,112.9	6,730.1	14.4	37.9	-77.04	760.8	1,719.1	2,178.9	2,147.1	31.81	68.488		
7,800.0	7,734.9	7,179.7	6,790.4	14.7	38.5	-74.84	769.6	1,746.4	2,216.2	2,183.7	32.52	68.150		
7,900.0	7,796.7	7,236.2	6,841.4	15.2	39.0	-72.77	777.0	1,769.5	2,251.9	2,218.5	33.40	67.413		
8,000.0	7,845.4	7,281.0	6,881.8	15.8	39.4	-70.74	782.9	1,787.8	2,285.9	2,251.4	34.49	66.278		
8,100.0	7,879.8	7,312.9	6,910.7	16.6	39.7	-68.64	787.1	1,800.8	2,318.3	2,282.6	35.77	64.810		
8,200.0	7,899.2	7,331.3	6,927.3	17.6	39.8	-66.43	789.5	1,806.3	2,348.9	2,311.7	37.21	63.123		
8,300.0	7,903.5	7,336.1	6,931.6	18.8	39.9	-64.73	790.2	1,810.3	2,377.5	2,338.7	38.75	61.353		
8,400.0	7,903.5	7,337.0	6,932.4	20.0	39.9	-64.75	790.3	1,810.7	2,408.2	2,367.8	40.38	59.643		
8,500.0	7,903.5	7,337.9	6,933.2	21.4	39.9	-64.77	790.4	1,811.0	2,442.6	2,400.6	42.06	58.069		
8,600.0	7,903.5	7,338.8	6,934.0	22.8	39.9	-64.80	790.5	1,811.4	2,480.6	2,436.8	43.78	56.658		

# Anticollision Report

Company:	Arsenal Resources	Local Co-ordinate Reference:	Well 203
Project:	Taylor County, WV	TVD Reference:	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
Reference Site:	Johnson TFP40	MD Reference:	GL 1332.5' & 27' KB @ 1359.5usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Orig.	Database:	Northeast
Reference Design:	DEP Plan 5	Offset TVD Reference:	Offset Datum

Reference Depths are relative to GL 1332.5' & 27' KB @ 1359.5usft (O)      Coordinates are relative to: 203  
 Offset Depths are relative to Offset Datum      Coordinate System is US State Plane 1983, West Virginia Northern Zone  
 Central Meridian is -79.5000000      Grid Convergence at Surface is: -0.43°



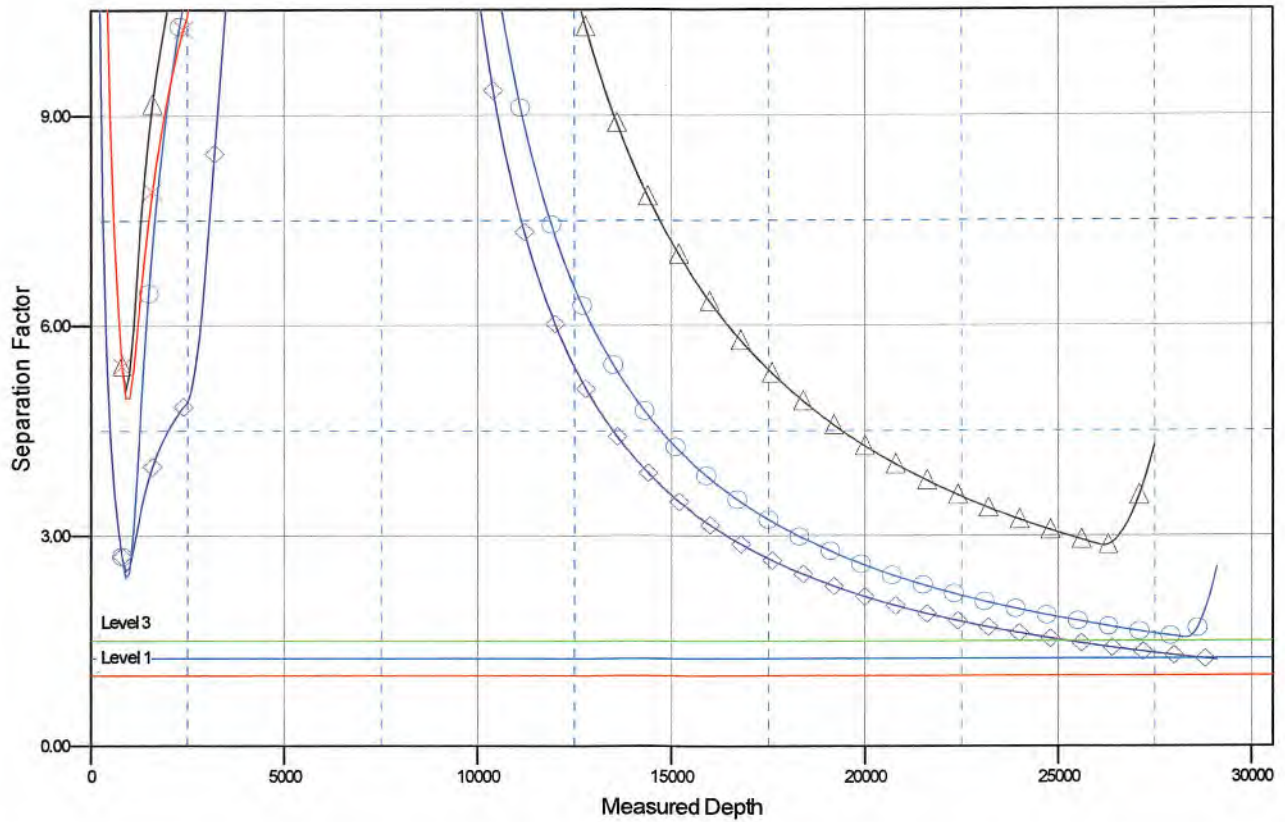
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 Coordinate System is US State Plane 1983, West Virginia Northern Zone  
 Grid Convergence at Surface is: -0.43°

### Separation Factor Plot



#### LEGEND

- 204, Orig., DEP Plan 5 V0
- △— 201, Orig., DEP Plan 6 V0
- ◇— 202, Orig., DEP Plan 4 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

~~CHK~~ \$5150⁰⁰  
CHK# 0000118974  
6/23/22

RECEIVED  
Office of Oil and Gas  
JUL 25 2022

WV Department of  
Environmental Protection

**RE: Johnson TFP 40 203, API# 47-091-01368 – Expedited Modification due to well extension**

Dear Taylor,

Enclosed please find the modification for the Johnson TFP 40 203, (API# 47-091-01368). 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 22,719 feet. The modification request is to increase the total measured depth to 29,150 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

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° 12' 30" (NAD27)

Latitude: (NAD27)

(NAD83-WVN) US SURVEY FT.

TOP HOLE  
 N) 277001.722  
 E) 1779051.662  
 LANDING POINT  
 N) 276497.633  
 E) 1779130.490  
 BOTTOM HOLE  
 N) 256762.143  
 E) 1785935.770

(NAD83-LAT/LONG) DECIMAL

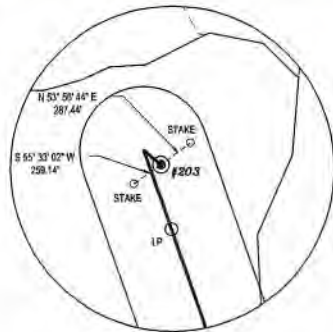
TOP HOLE  
 N) 39.258581  
 E) -80.169060  
 LANDING POINT  
 N) 39.257199  
 E) -80.168769  
 BOTTOM HOLE  
 N) 39.203152  
 E) -80.144237

(UTM, NAD83) METER

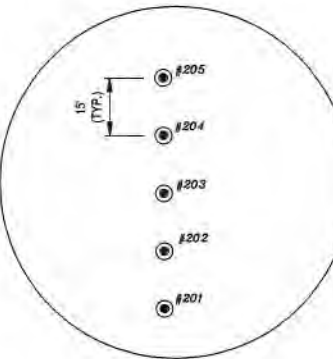
TOP HOLE  
 N) 4345801.284  
 E) 571690.396  
 LANDING POINT  
 N) 4345648.103  
 E) 571716.966  
 BOTTOM HOLE  
 N) 4339669.804  
 E) 573890.246

Longitude: (NAD27)

SURFACE HOLE NAD27  
 LAT. 39.258469°  
 LON. -80.169253°



REFERENCES TIES (NTS)

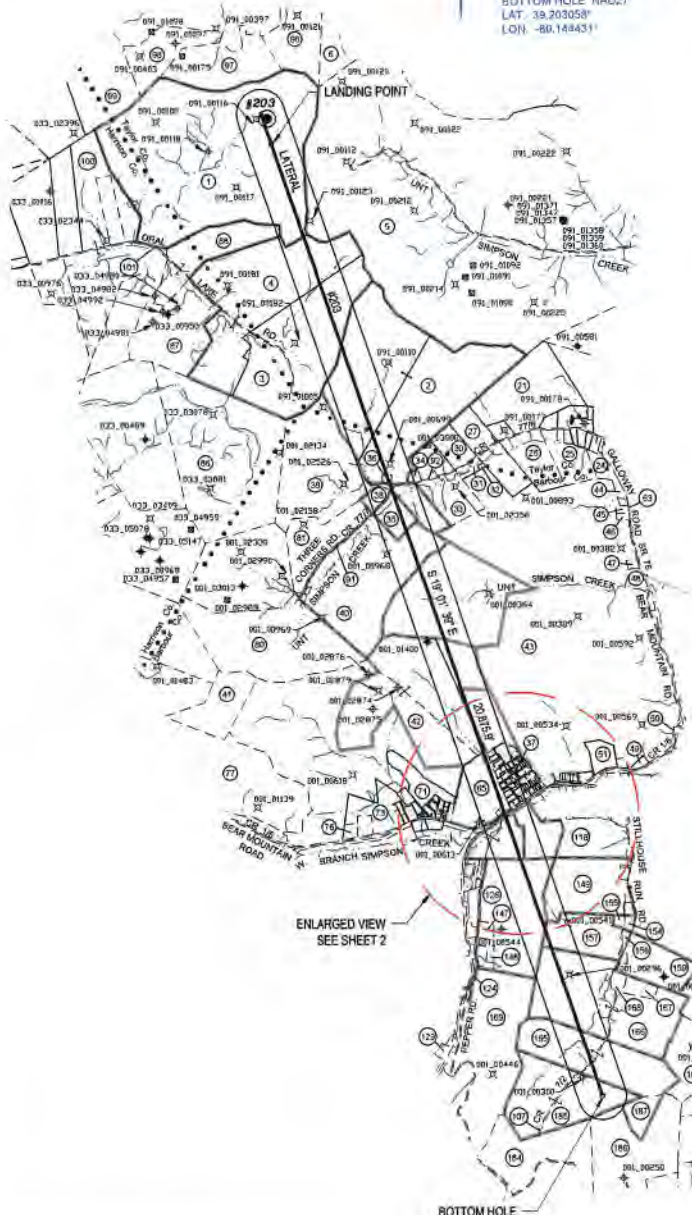


REFERENCES TO PROPOSED HORIZONTAL WELL SURFACE LOCATIONS NTS

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  
 2. State Plane Coordinates & NAD83 Lat/Long by differential submeter mapping grade GPS.  
 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
- #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



ENLARGED VIEW SEE SHEET 2

BOTTOM HOLE

FILE#: 22078-001  
 SHEET#: 1 of 3  
 SCALE: 1" = 4000'  
 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.



(+) 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 #: # 203

API WELL #: 47 091  
 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 VW-6A1

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

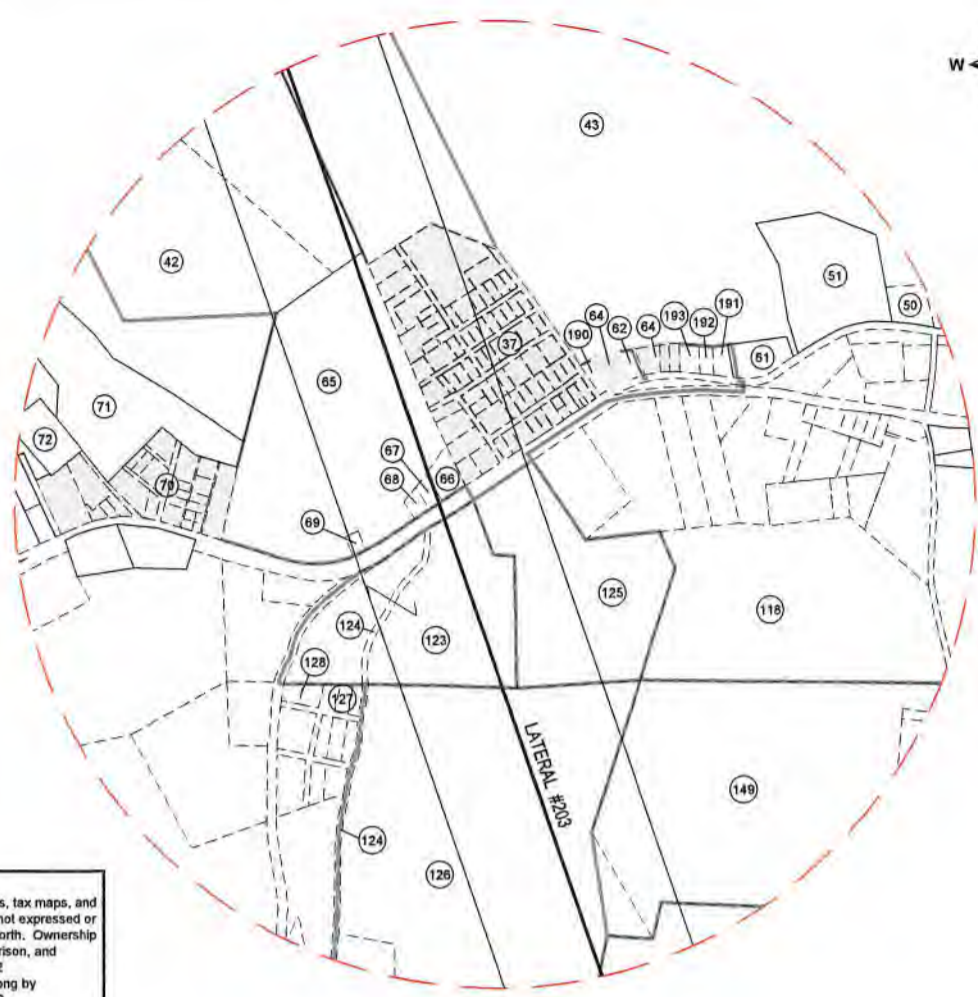
- DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE
- PLUG OFF FORMATION  PERFORATE NEW FORMATION  PLUG & ABANDON
- CLEAN OUT & REPLUG  OTHER CHANGE SPECIFY: _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 7,903.5' TMD: 29,150.0'

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

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



ENLARGED PLAT AREA

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	STREAM
	EXISTING ROAD
	BUFFER
	PROPERTY LINE
	MINERAL TRACT BOUNDARY
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	LANDING POINT/BOTTOM HOLE
	SURFACE OWNER

FILE#: 22078-001  
 SHEET#: 2 of 3  
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Signed: Herbert L. Parsons 7-18-2022  
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 OIL & GAS ROYALTY OWNER: SEE WW-6A1

ELEVATION: 1,332.5  
 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: _____

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 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	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	21	091	46-04-0011-0005-0005	BECKWITH LUMBER COMPANY
2	001	01-09-0009-0002-0000	STEWART FARM LLC	24	061	46-04-0011-0007-0005	SANFORD RICHARD LEE & PAMELA & SURV
36	001	01-09-0009-0004-0000	STEWART FARM LLC	25	091	46-04-0011-0006-0000	RAVIS THOMAS E
38	001	01-09-0009-0003-0000	STEWART FARM LLC	26	091	46-04-0011-0005-0001	RAVIS THOMAS E
35	001	01-09-0009-0020-0001	SMALLWOOD RUSSELL & ANGELA WRS	27	091	46-04-0011-0003-0000	PROPST PAUL
40	001	01-09-0009-0020-0000	SEESE ROBERT & BRENDA HWS	30	061	46-04-0011-0002-0000	PROPST PAUL
43	001	01-09-0009-0022-0000	WOLFE LARRY, ROBERT WOLFE & STANLEY WOLFE ET UXES, HWS	31	001	01-09-0008-0008-0000	CLEAVENGER LEONARD D
42	001	01-09-0011-0001-0000	POLINO ENTERPRISES INC	32	001	01-09-0008-0008-0002	CLEAVENGER LEONARD D
65	001	01-09-0012-0027-0000	WOLFE LARRY MICHAEL	33	001	01-09-0009-0007-0000	CROUSE STEPHEN DALE & MICHAEL LYNN
66	001	01-09-0012-0028-0000	WOLFE LARRY, ROBERT & STANLEY	34	001	01-09-0009-0006-0000	STEWART FARM LLC
67	001	01-09-0012-0027-0002	WOLFE LARRY MICHAEL & ELLEN SUE HWS	37	001	PLAT	CLEAVENGER PLATT
123	001	01-09-0012-0029-0000	MURRAY SARA N	39	001	01-09-0009-0001-0000	STEWART FARM LLC
126	001	01-09-0012-0047-0000	SHAHAN OKEY C	41	001	01-09-0012-0001-0000	POLINO ENTERPRISES INC
157	001	01-09-0012-0050-0002	KNAPP FRANCES C & JERREL F W S	44	001	01-09-0009-0017-0001	MADDIX MICHAEL R & JUDITH L
166	001	01-09-0012-0050-0000	MARTIN ROBERT E	45	001	01-09-0009-0011-0000	SALTIS STEVE JR & AMY HWS
165	001	01-09-0022-0006-0000	MARTIN ROBERT	46	001	01-09-0009-0012-0000	SALTIS STEVE JR & AMY R HWS
185	001	01-09-0022-0005-0000	MARTIN ROBERT E	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 1/6 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
				68	001	01-09-0012-0027-0001	WOLFE LARRY MICHAEL
				69	001	01-09-0012-0028-0000	WOLFE LARRY M & ELLEN S HWS
				70	001	PLAN OF LOTS	BROWNTON PLAN OF LOTS
				71	001	01-09-0012-0061-0000	CHARLTON-FRYER AMANDA S & TIMOTHY R CHARLTON L/E
				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 (W/S)
				81	001	01-09-0009-0019-0000	STEWART FARM LLC
				86	033	17-15-0351-0023-0000	GCSTREAM LLC
				87	033	17-15-0351-0011-0000	GCSTREAM LLC
				88	033	17-15-0351-0010-0000	JOHNSON RENEE
				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
				118	001	01-09-0012-0017-0000	MONTGOMERY MICHAEL J & BERTHA, HWS
				125	001	01-09-0012-0025-0000	VUKOVICH ROBERT K
				124		RIGHT-OF-WAY	PEPPER ROAD
				127	001	01-09-012C-0026 & 27-0000	LIPSCOMB ANNA L/E MICHAEL J MASSIE
				128	001	01-09-012C-0024 & 25-0000	LIPSCOMB ANNA G MCCORD
				129	001	01-09-0022-0004-0000	MARPLE JAMES D & GENA F DOWELL WS
				147	001	01-09-0012-0047-0002	FARRIS MYRTLE ELLEN
				148	001	01-09-0012-0047-0003	MCCORD TIMMY
				149	001	01-09-0012-0051-0000	WEL SPE II LLC
				154	001	01-09-0012-0050-0003	DELANEY JESSE PAUL
				155	001	01-09-0012-0050-0005	DELANEY JESSE PAUL & BRANDIE L HWS
				156	001	01-09-0012-0050-0008	KNAPP JERREL
				159	001	01-09-0012-0050-0001	STREETS BRENDA K ET ALS
				162	001	01-09-0012-0055-0000	CORDER WAYNE D & JEANETTE S, HWS
				164	001	01-09-0022-0007-0000	WARE SHIRLEY LIVING TRUST
				167	001	01-09-0022-0009-0000	STREETS FRANKLIN D & BRENDA (WROS)
				168	001	01-09-0012-0050-0004	MCCLINE CLAYTON & CHARLOTTE WS
				169	001	01-09-0022-0004-0001	BAKER AARON & MARKEE WS
				184	001	01-04-0003-0019-0000	HUMPHREYS RUSSELL K & ROBIN D HWS
				186	001	01-04-0003-0020-0000	STOUT HARRY J II & HARLEN J
				187	001	01-04-0003-0047-0000	MARTIN ROBERT E
				190	001	01-09-012A-0090-0000	ELMONO 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-0096-0000	BARTLETT MICHAEL ALLEN SR

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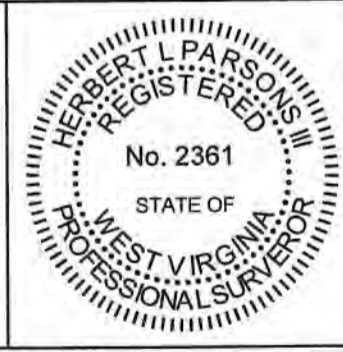
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FILE#: 22078-001  
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 OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304

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

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

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

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

DATE: JULY 18, 2022  
 OPERATOR'S WELL #: JOHNSON TFP-40 # 203  
 API WELL #: 47 091  
 STATE COUNTY PERMIT

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

ESTIMATED DEPTH: TVD: 7,903.5' TMD: 29,150.0'  
 DESIGNATED AGENT: NATHAN SKEEN  
 ADDRESS: 633 MAIN STREET  
 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	\$
Total Postage and Fees	\$ 11.75

Postmark Here

7/21/22

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

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

7015 1520 0003 0705 3416

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Domestic Mail Only

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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

Postmark Here

7/21/22

Sent To  
Street Cequel III Communications II LLC  
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City, St St Louis, MO 63141

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P.O. Box 297  
City, St Flemington, WV 26347

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<input type="checkbox"/> Adult Signature Required	\$
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Sent To  
Street James and Elaine Grippin  
137 Ocello Street  
City, St Clarksburg, WV 26301

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08/12/2022



Stansberry, Wade A &lt;wade.a.stansberry@wv.gov&gt;

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**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 &lt;Dboyer@arsenalresources.com&gt;, Ross Schweitzer &lt;rschweitzer@arsenalresources.com&gt;, "Greynolds, Kenneth L" &lt;kenneth.l.greynolds@wv.gov&gt;, C Kinsey &lt;ckinsey@wvassessor.com&gt;

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](mailto:Wade.A.Stansberry@wv.gov)**

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**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 &lt;wade.a.stansberry@wv.gov&gt;

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

1 message

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

Mon, Aug 8, 2022 at 4:00 PM

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

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](mailto:Wade.A.Stansberry@wv.gov)**

On Mon, Aug 8, 2022 at 3:58 PM Stansberry, Wade A &lt;wade.a.stansberry@wv.gov&gt; 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](mailto:Wade.A.Stansberry@wv.gov)**

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**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...

 5066K

08/12/2022