



## Authorization For Expenditure

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12/28/16

CIMAREX ENERGY CO	11/09/2016
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Anadarko	PERINE BIA 1-32H	CANA NORTHWEST PROSPECT	350012-464.01	2216111
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Sec. 32-16N-12W, Blaine Co., OK	County Blaine	OK	Oil Gas	Expl Prod	X
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Type				Depth
Original Estimate	X			16,590'
Revised Estimate		12/01/2016	07/15/2017	
Supplemental Estimate			Osage	11,880'

**Project Description**  
Drill and complete a horizontal test. Drill to 1500', set surface casing. Drill to 9660' set intermediate casing. Drill to 11100' set drilling liner. Drill to 12200' (Pilot Hole). Run OH Logs and sidewall cores. Plug Back to 11306' (KOP). Drill curve at 10 DLS build rate to +/- 11880' TVD and a +/- 4340' long lateral in the Osage formation. Run and cement production casing. Frac +/- 21 stages. Drill out plugs and run production tubing. Flow to sales through new facility

Intangibles	Dry Hole Cost	After Casing Point	Completed Well Cost
Drilling Costs	\$3,557,000		\$3,557,000
Completion Costs		\$3,066,089	\$3,066,089
Total Intangible Costs	\$3,557,000	\$3,066,089	\$6,623,089

Tangibles			
Well Equipment	\$500,000	\$352,162	\$852,162
Lease Equipment		\$371,237	\$371,237
Total Tangible Well Cost	\$500,000	\$723,399	\$1,223,399

Plug and Abandon Cost	\$0	\$0	\$0
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Total Well Cost	\$4,057,000	\$3,789,488	\$7,846,488
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1. All tubulars, well or lease equipment is priced by COPAS and CEPS guidelines using the Historic Price Multiplier.

Unless otherwise indicated below, you, as a non-operating working interest owner, agree to be covered by Operator's well control insurance procured by Operator so long as Operator conducts operations hereunder and to pay your prorated share of the premiums therefore. If you elect to purchase your own well control insurance, you must provide a certificate of such insurance acceptable to Operator, as to form and limits, at the time this AFE is returned, if available, but in no event later than commencement of drilling operations. You agree that failure to provide the certificate of insurance, as provided herein, will result in your being covered by insurance procured by Operator.

☐ I elect to purchase my own well control insurance policy.

Well control insurance procured by Operator, provides, among other terms, for \$20,000,000 (100% W.I.) of Combined Single Limit coverage for well control and related redrilling and clean-up/pollution expense covering drilling (through completion) with a \$1,000,000 (100% W.I.) deductible.

**Marketing**  
Cimarex sells its gas under arm's-length contracts with third party purchasers. Such contracts may include fees. In addition, penalties may be incurred for insufficient volumes delivered over time. Should you choose to market your share of gas with Cimarex, you will be subject to all of the terms of such contracts. Upon written request to Cimarex's Marketing Department, we will share with you the terms and conditions pursuant to which gas will be sold. Failure to make an election below shall be deemed an election to market your gas with Cimarex under the terms and conditions set forth above.

☐ I elect to take my gas in kind.

☐ I elect to market my gas with Cimarex pursuant to the terms and conditions of its contract.

The above costs are estimates only and anticipate trouble free operations without any foreseeable change in plans. The actual costs may exceed the estimated costs without affecting the authorization for expenditure herein granted. By approval of this AFE, the working interest owner agrees to pay its proportionate share of actual legal, curative, regulatory and well costs under term of the joint operating agreement, regulatory order or other applicable agreement covering this well.

## Cimarex Energy Co. Approval

Manager	Regional Manager

## Joint Interest Approval


CD 16-58517



1/9/17





## Project Cost Estimate

Lease Name:

						BCP - Drilling		ACP - Drilling		Completion /	
						(Dry Hole Cost)				Stimulation	
Intangibles						Codes		Codes		Codes	
Roads & Location Preparation / Restoration						DIDC.100	\$153,000			STIM.100	\$11,000
Damages						DIDC.105	\$25,000				
Mud / Fluids Disposal Charges						DIDC.255	\$82,000			STIM.255	\$60,000
Day Rate	49.50	DH Days	4.00	ACP Days @	\$17,500.00	Per Day	DIDC.115	\$866,000	DICC.120	\$70,000	
Misc Preparation Cost (mouse hole, rat hole, pads, pile clusters, misc.)						DIDC.120	\$26,000				
Bits						DIDC.125	\$205,000	DICC.125	\$0	STIM.125	\$0
Fuel \$1.50 Per Gallon ##### Gallons Per Day						DIDC.135	\$134,000	DICC.130	\$0		
Water for Drilling Rig / Completion Fluids (Not Frac Water)						DIDC.140	\$16,000	DICC.135	\$1,000	STIM.135	\$35,000
Mud & Additives						DIDC.145	\$449,000				
Surface Rentals						DIDC.150	\$55,000	DICC.140	\$0	STIM.140	\$129,000
Downhole Rentals						DIDC.155	\$70,000			STIM.145	\$46,000
Formation Evaluation (DST, Coring including evaluation, G&G Services)						DIDC.160	\$60,000			STIM.150	\$0
Mud Logging 47.50 Days @ \$1,000.00 Per Day						DIDC.170	\$48,000				
Open Hole Logging						DIDC.180	\$200,000				
Cementing & Float Equipment						DIDC.185	\$44,000	DICC.155	\$75,000		
Tubular Inspections						DIDC.190	\$20,000	DICC.160	\$10,000	STIM.160	\$4,000
Casing Crews						DIDC.195	\$11,000	DICC.165	\$15,000	STIM.165	\$0
Extra Labor, Welding, Etc.						DIDC.200	\$5,000	DICC.170	\$5,000	STIM.170	\$0
Land Transportation (Trucking for tangibles)						DIDC.205	\$10,000	DICC.175	\$13,000	STIM.175	\$5,000
Supervision \$3,500.00 Per Day						DIDC.210	\$205,000	DICC.180	\$14,000	STIM.180	\$62,000
Trailer House / Camp / Catering						DIDC.280	\$22,000	DICC.255	\$4,000	STIM.280	\$8,000
Other Misc Expenses						DIDC.220	\$1,000	DICC.190	\$0	STIM.190	\$8,000
Overhead						DIDC.225	\$20,000	DICC.195	\$5,000		
Remedial Cementing						DIDC.231	\$0			STIM.215	\$0
MOB/DEMOB						DIDC.240	\$173,000				
Directional Drilling Services						DIDC.245	\$355,000				
Crane for Construction											
Solids Control						DIDC.260	\$35,000				
Well Control Equip (Snubbing Svcs.)						DIDC.265	\$30,000	DICC.240	\$6,000	STIM.240	\$12,000
Fishing & Sidetrack Operations						DIDC.270	\$40,000	DICC.245	\$0	STIM.245	\$0
Completion Rig										STIM.115	\$0
Coil Tubing										STIM.260	\$63,000
Completion Logging, Perforating, WL Units, WL Surveys										STIM.200	\$68,000
Composite Plugs										STIM.390	\$26,000
Stimulation Pumping Charges, Chemicals, Additives, Sand										STIM.210	\$1,464,000
Stimulation Water / Water Transfer / Water Storage										STIM.395	\$131,000
Cimarex Owned Frac / Rental Equipment										STIM.305	\$40,000
Legal / Regulatory / Curative						DIDC.300	\$20,000				
Well Control Insurance \$0.50 Per Foot						DIDC.285	\$8,000				
Contingency 0.0 % of Drilling Intangibles						DIDC.435	\$169,000	DICC.220	\$13,000	STIM.220	\$109,000
Construction For Flow Lines											
Construction For Sales P/L											
Total Intangible Cost							\$3,557,000		\$231,000		\$2,281,000

Tangible - Well Equipment										
Casing	Size	Feet	\$ / Foot							
Drive Pipe	0	0.00	\$0.00	DWEB.150	\$0					
Conductor Pipe	0	0.00	\$0.00	DWEB.130	\$0					
Water String	0	0.00	\$0.00	DWEB.135	\$0					
Surface Casing	13.375	1500.00	\$36.00	DWEB.140	\$54,000					
Intermediate Casing 1	9.625	9660.00	\$28.00	DWEB.145	\$270,000					
Intermediate Casing 2	0	0.00	\$0.00	DWEB.155	\$0					
Drilling Liner	7.625	1700.00	\$30.00	DWEB.160	\$51,000					
Production Casing or Liner	5.5	16590.00	\$14.00			DWEA.100	\$232,000			
Production Tie-Back	0	0.00	\$0.00			DWEA.165	\$0	STIMT.101	\$0	
Tubing	0	0.00	\$0.00					STIMT.105	\$0	
Wellhead, Tree, Chokes				DWEB.115	\$25,000	DWEA.120	\$50,000	STIMT.120	\$25,000	
Liner Hanger, Isolation Packer				DWEB.100	\$100,000	DWEA.125	\$0			
Packer, Nipples								STIMT.400	\$0	
Pumping Unit, Engine								STIMT.405	\$0	
Downhole Lift Equipment (BHP, Rods, Anchors, ESP, GVLs, PC Pump)								STIMT.410	\$0	
Tangible - Lease Equipment										
N/C Lease Equipment										
Tanks, Tanks Steps, Stairs										
Battery (Heater Treater, Separator, Gas Treating Equipment)										
Secondary Containments										
Overhead Power Distribution (electric line to facility)										
Facility Electrical & Automation										
SWD Connection										
Flow Lines (Line Pipe from wellhead to central facility)										
Pipeline to Sales										
Meters and Metering Equipment										
Total Tangibles					\$500,000		\$282,000		\$25,000	

P&A Costs	DIDC.295	\$0	DICC.275	\$0		
Total Cost		\$4,057,000		\$513,000		\$2,306,000



Lease Name:

					Construction				
Intangibles									
Roads & Location Preparation / Restoration					CON.100	\$4,000	PCOM.100	\$1,000	\$169,000
Damages					CON.105	\$0			\$25,000
Mud / Fluids Disposal Charges							PCOM.255	\$165,995	\$307,995
Day Rate	49.50	DH Days	4.00	ACP Days @		\$17,500.00	Per Day		\$936,000
Misc Preparation Cost (mouse hole, rat hole, pads, pile clusters, misc.)									\$26,000
Bits							PCOM.125	\$0	\$205,000
Fuel	\$1.50	Per Gallon	#####	Gallons Per Day			PCOM.130	\$0	\$134,000
Water for Drilling Rig / Completion Fluids (Not Frac Water)							PCOM.135	\$1,000	\$53,000
Mud & Additives									\$449,000
Surface Rentals					CON.140	\$9,650	PCOM.140	\$206,457	\$400,107
Downhole Rentals							PCOM.145	\$0	\$116,000
Formation Evaluation (DST, Coring including evaluation, G&G Services)									\$60,000
Mud Logging		47.50	Days @	\$1,000.00	Per Day				\$48,000
Open Hole Logging									\$200,000
Cementing & Float Equipment									\$119,000
Tubular Inspections							PCOM.160	\$3,700	\$37,700
Casing Crews									\$26,000
Extra Labor, Welding, Etc.					CON.170	\$74,550	PCOM.170	\$0	\$84,550
Land Transportation (Trucking for tangibles)					CON.175	\$12,000	PCOM.175	\$6,000	\$46,000
Supervision				\$3,500.00	Per Day	CON.180	\$5,950	PCOM.180	\$2,550
Trailer House / Camp / Catering									\$34,000
Other Misc Expenses					CON.190	\$4,000	PCOM.190	\$0	\$13,000
Overhead									\$25,000
Remedial Cementing							PCOM.215	\$0	\$0
MOB/DEMOB									\$173,000
Directional Drilling Services									\$355,000
Crane for Construction					CON.230	\$0			\$0
Solids Control									\$35,000
Well Control Equip (Snubbing Svcs.)							PCOM.240	\$16,900	\$64,900
Fishing & Sidetrack Operations							PCOM.245	\$0	\$40,000
Completion Rig							PCOM.115	\$14,000	\$14,000
Coil Tubing							PCOM.260	\$0	\$63,000
Completion Logging, Perforating, WL Units, WL Surveys							PCOM.200	\$0	\$68,000
Composite Plugs							PCOM.390	\$0	\$26,000
Stimulation Pumping Charges, Chemicals, Additives, Sand							PCOM.210	\$0	\$1,464,000
Stimulation Water / Water Transfer / Water Storage									\$131,000
Cimarex Owned Frac / Rental Equipment									\$40,000
Legal / Regulatory / Curative					CON.300	\$0			\$20,000
Well Control Insurance						\$0.50	Per Foot		\$8,000
Contingency		0.0	% of Drilling Intangibles		CON.220	\$5,507	PCOM.220	\$20,830	\$317,337
Construction For Flow Lines					CON.310	\$0			\$0
Construction For Sales P/L					CON.265	\$0			\$0
<b>Total Intangible Cost</b>						<b>\$115,657</b>		<b>\$438,432</b>	<b>\$6,623,089</b>

Tangible - Well Equipment									
Casing	Size	Feet	\$ / Foot						
Drive Pipe	0	0.00	\$0.00						\$0
Conductor Pipe	0	0.00	\$0.00						\$0
Water String	0	0.00	\$0.00						\$0
Surface Casing	13.375	1500.00	\$36.00						\$54,000
Intermediate Casing 1	9.625	9660.00	\$28.00						\$270,000
Intermediate Casing 2	0	0.00	\$0.00						\$0
Drilling Liner	7.625	1700.00	\$30.00						\$51,000
Production Casing or Liner	5.5	16590.00	\$14.00						\$232,000
Production Tie-Back	0	0.00	\$0.00						\$0
Tubing	0	0.00	\$0.00				PCOMT.105	\$43,362	\$43,362
Wellhead, Tree, Chokes									\$100,000
Liner Hanger, Isolation Packer									\$100,000
Packer, Nipples							PCOMT.400	\$1,800	\$1,800
Pumping Unit, Engine							PCOMT.405	\$0	\$0
Downhole Lift Equipment (BHP, Rads, Anchors, ESP, GVLs, PC Pump)							PCOMT.410	\$0	\$0
Tangible Equipment									
N/C Lease Equipment					CONT.400	\$69,387			\$69,387
Tanks, Tanks Steps, Stairs					CONT.405	\$54,758			\$54,758
Battery (Heater Treater, Separator, Gas Treating Equipment)					CONT.410	\$129,700			\$129,700
Secondary Containments					CONT.415	\$8,500			\$8,500
Overhead Power Distribution (electric line to facility)					CONT.420	\$0			\$0
Facility Electrical & Automation					CONT.425	\$35,000			\$35,000
SWD Connection					CONT.430	\$0			\$0
Flow Lines (Line Pipe from wellhead to central facility)					CONT.435	\$23,200			\$23,200
Pipeline to Sales					CONT.440	\$0			\$0
Meters and Metering Equipment					CONT.445	\$50,692			\$50,692
<b>Total Tangibles</b>						<b>\$371,237</b>		<b>\$45,162</b>	<b>\$1,223,399</b>

P&A Costs									\$0
<b>Total Cost</b>						<b>\$486,894</b>		<b>\$483,594</b>	<b>\$7,846,488</b>