



## Authorization For Expenditure

Company Entity <b>CIMAREX ENERGY CO</b>	Date Prepared <b>04/15/2016</b>
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Region	Well Name	Prospect or Field Name	Property Number	Drilling AFE No.
Anadarko	GATZ 1H-3019X	LONE ROCK WASHINGTON PROSPECT	350021-098.01	2216067

Location	County	State	Type Well
SHL: 150' FSL & 330' FEL SEC 30-11N-7W BHL: 150'FNL & 330' FEL SEC 19-11N-7W	Canadian	OK	Oil Gas
			Expl Prod
			X

Estimate Type	Est. Start Date	Est. Comp Date	Formation	Ttl Measured Depth
Original Estimate	X	06/01/2016	08/01/2016	WOODFORD
Revised Estimate				Ttl Vertical Depth
Supplemental Estimate				11,110'

**Project Description**  
Drill and complete a horizontal test. Drill to 1500', set surface casing. Drill to 10150', set intermediate casing. Drill to 10628' (KOP). Drill curve at 12 DLS build rate to +/- 11110' TVD and a +/- 9730' long lateral in the Woodford formation. Run and cement production casing. Stage frac in 55 stages. Drill out plugs. Run production tubing. Flow to sales through new facility.

Intangibles	Dry Hole Cost	After Casing Point	Completed Well Cost
Drilling Costs	\$2,917,000		\$2,917,000
Completion Costs		\$5,658,177	\$5,658,177
<b>Total Intangible Costs</b>	<b>\$2,917,000</b>	<b>\$5,658,177</b>	<b>\$8,575,177</b>

Tangibles			
Well Equipment	\$420,000	\$539,800	\$959,800
Lease Equipment		\$347,773	\$347,773
<b>Total Tangible Well Cost</b>	<b>\$420,000</b>	<b>\$887,573</b>	<b>\$1,307,573</b>

Plug and Abandon Cost	\$0	\$0	\$0
<b>Total Well Cost</b>	<b>\$3,337,000</b>	<b>\$6,545,750</b>	<b>\$9,882,750</b>

**Comments on Well Costs**  
1. All tubulars, well or lease equipment is priced by COPAS and CEPS guidelines using the Historic Price Multiplier.

**Well Control Insurance**  
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 Election**  
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.

**Comments on AFE**  
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

Prepared by	Drilling and Completion Manager	Regional Manager

## Joint Interest Approval

Company	By	Date



CD16-122T





# Project Cost Estimate

Lease Name:

Intangibles	BCP - Drilling		ACP - Drilling		Completion / Stimulation
	(Dry Hole Cost)				
	Codes		Codes		Codes
Roads & Location Preparation / Restoration	DIDC.100	\$200,000			STIM.100 \$30,000
Damages	DIDC.105	\$26,000			
Mud / Fluids Disposal Charges	DIDC.255	\$120,000			STIM.255 \$60,000
Day Rate	32.00	DH Days	5.00	ACP Days @	\$27,500.00 Per Day
Misc Preparation Cost (mouse hole, rat hole, pads, pile clusters, misc.)	DIDC.120	\$30,000			
Bits	DIDC.125	\$130,000	DICC.125	\$0	STIM.125 \$0
Fuel	\$1.50	Per Gallon	#####	Gallons Per Day	
Water for Drilling Rig / Completion Fluids (Not Frac Water)	DIDC.135	\$86,000	DICC.130	\$0	
Mud & Additives	DIDC.140	\$15,000	DICC.135	\$1,000	STIM.135 \$5,000
Surface Rentals	DIDC.145	\$300,000			
Downhole Rentals	DIDC.150	\$55,000	DICC.140	\$0	STIM.140 \$150,000
Formation Evaluation (DST, Coring including evaluation, G&G Services)	DIDC.155	\$45,000			STIM.145 \$80,000
Mud Logging	DIDC.160	\$0			STIM.150 \$0
Open Hole Logging	DIDC.170	\$30,000			
Cementing & Float Equipment	DIDC.180	\$0			
Tubular Inspections	DIDC.185	\$50,000	DICC.155	\$100,000	
Casing Crews	DIDC.190	\$15,000	DICC.160	\$5,000	STIM.160 \$0
Extra Labor, Welding, Etc.	DIDC.195	\$15,000	DICC.165	\$17,000	STIM.165 \$0
Land Transportation (Trucking for tangibles)	DIDC.200	\$10,000	DICC.170	\$2,000	STIM.170 \$0
Supervision	DIDC.205	\$14,000	DICC.175	\$9,000	STIM.175 \$5,000
Trailer House / Camp / Catering	DIDC.210	\$141,000	DICC.180	\$10,000	STIM.180 \$67,000
Other Misc Expenses	DIDC.215	\$21,000	DICC.255	\$2,000	STIM.280 \$13,000
Overhead	DIDC.220	\$1,000	DICC.190	\$0	STIM.190 \$25,000
Remedial Cementing	DIDC.225	\$10,000	DICC.195	\$5,000	
MOB/DEMOB	DIDC.231	\$0			STIM.215 \$0
Directional Drilling Services	DIDC.240	\$195,000			
Crane for Construction	DIDC.245	\$300,000			
Solids Control	DIDC.260	\$25,000			
Well Control Equip (Snubbing Svcs.)	DIDC.265	\$28,000	DICC.240	\$4,000	STIM.240 \$20,000
Fishing & Sidetrack Operations	DIDC.270	\$0	DICC.245	\$0	STIM.245 \$0
Completion Rig					STIM.115 \$0
Coil Tubing					STIM.260 \$200,000
Completion Logging, Perforating, WL Units, WL Surveys					STIM.200 \$251,000
Composite Plugs					STIM.390 \$83,000
Stimulation Pumping Charges, Chemicals, Additives, Sand					STIM.210 \$3,244,000
Stimulation Water / Water Transfer / Water Storage					STIM.395 \$411,000
Cimarex Owned Frac / Rental Equipment					STIM.305 \$50,000
Legal / Regulatory / Curative	DIDC.300	\$15,000			
Well Control Insurance	DIDC.285	\$21,000			
Contingency	5.0	% of Drilling Intangibles	DIDC.435	\$139,000	DICC.220 \$13,000 STIM.220 \$235,000
Construction For Flow Lines					
Construction For Sales P/L					
Total Intangible Cost		\$2,917,000		\$272,000	\$4,929,000

Tangible - Well Equipment					
	Size	Feet	\$ / Foot		
Casing					
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	\$40.00	DWEB.140	\$60,000
Intermediate Casing 1	9.625	10150.00	\$32.00	DWEB.145	\$325,000
Intermediate Casing 2	0	0.00	\$0.00	DWEB.155	\$0
Drilling Liner	0	0.00	\$0.00	DWEB.160	\$0
Production Casing or Liner	5.5	21110.00	\$18.00	DWEA.100	\$380,000
Production Tie-Back	0	0.00	\$0.00	DWEA.165	\$0
Tubing	2.375	10730.00	\$5.10	STIMT.101	\$0
Wellhead, Tree, Chokes				STIMT.105	\$0
Liner Hanger, Isolation Packer				STIMT.120	\$40,000
Packer, Nipples					
Pumping Unit, Engine				STIMT.400	\$5,000
Downhole Lift Equipment (BHP, Rods, Anchors, ESP, GVLS, PC Pump)				STIMT.405	\$0
Tangible - Lease Equipment				STIMT.410	\$0
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				\$420,000	\$423,000 \$45,000
P&A Costs				DIDC.295 \$0	DICC.275 \$0
Total Cost				\$3,337,000	\$695,000 \$4,974,000





# Project Cost Estimate

Lease Name:

		Production	Post	Total Well
		Equipment /	Completion	Cost
		Codes	Codes	
Intangibles				
Roads & Location Preparation / Restoration		CON.100	PCOM.100	\$233,500
Damages		CON.105		\$26,000
Mud / Fluids Disposal Charges			PCOM.255	\$271,800
Day Rate	32.00 DH Days 5.00 ACP Days @ \$27,500.00 Per Day			\$984,000
Misc Preparation Cost (mouse hole, rat hole, pads, pile clusters, misc.)				\$30,000
Bits			PCOM.125	\$130,000
Fuel	\$1.50 Per Gallon ##### Gallons Per Day		PCOM.130	\$86,000
Water for Drilling Rig / Completion Fluids (Not Frac Water)			PCOM.135	\$22,000
Mud & Additives				\$300,000
Surface Rentals		CON.140	PCOM.140	\$388,127
Downhole Rentals			PCOM.145	\$125,000
Formation Evaluation (DST, Coring including evaluation, G&G Services)				\$0
Mud Logging	30.00 Days @ \$1,000.00 Per Day			\$30,000
Open Hole Logging				\$0
Cementing & Float Equipment				\$150,000
Tubular Inspections			PCOM.160	\$23,700
Casing Crews				\$32,000
Extra Labor, Welding, Etc.		CON.170	PCOM.170	\$95,000
Land Transportation (Trucking for tangibles)		CON.175	PCOM.175	\$44,600
Supervision	\$3,800.00 Per Day	CON.180	PCOM.180	\$238,400
Trailer House / Camp / Catering				\$36,000
Other Misc Expenses		CON.190	PCOM.190	\$29,900
Overhead				\$15,000
Remedial Cementing			PCOM.215	\$0
MOB/DEMOB				\$195,000
Directional Drilling Services				\$300,000
Crane for Construction		CON.230		\$4,000
Solids Control				\$25,000
Well Control Equip (Snubbing Svcs.)			PCOM.240	\$77,350
Fishing & Sidetrack Operations			PCOM.245	\$0
Completion Rig			PCOM.115	\$13,800
Coil Tubing			PCOM.260	\$200,000
Completion Logging, Perforating, WL Units, WL Surveys			PCOM.200	\$254,500
Composite Plugs			PCOM.390	\$83,000
Stimulation Pumping Charges, Chemicals, Additives, Sand			PCOM.210	\$3,244,000
Stimulation Water / Water Transfer / Water Storage				\$411,000
Cimarex Owned Frac / Rental Equipment				\$50,000
Legal / Regulatory / Curative		CON.300		\$15,000
Well Control Insurance	\$1.00 Per Foot			\$21,000
Contingency	5.0 % of Drilling Intangibles	CON.220	PCOM.220	\$387,000
Construction For Flow Lines		CON.310		\$3,500
Construction For Sales P/L		CON.265		\$0
<b>Total Intangible Cost</b>				<b>\$117,500</b>
				<b>\$339,677</b>
				<b>\$8,575,177</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	\$40.00			\$60,000
Intermediate Casing 1	9.625	10150.00	\$32.00			\$325,000
Intermediate Casing 2	0	0.00	\$0.00			\$0
Drilling Liner	0	0.00	\$0.00			\$0
Production Casing or Liner	5.5	21110.00	\$18.00			\$380,000
Production Tie-Back	0	0.00	\$0.00			\$0
Tubing	2.375	10730.00	\$5.10		PCOMT.105	\$70,000
Wellhead, Tree, Chokes						\$118,000
Liner Hanger, Isolation Packer						\$0
Packer, Nipples					PCOMT.400	\$1,800
Pumping Unit, Engine					PCOMT.405	\$0
Downhole Lift Equipment (BHP, Rods, Anchors, ESP, GVLS, PC Pump)					PCOMT.410	\$0
Tangible - Lease Equipment						
N/C Lease Equipment				CONT.400	\$74,448	\$74,448
Tanks, Tanks Steps, Stairs				CONT.405	\$34,650	\$34,650
Battery (Heater Treater, Separator, Gas Treating Equipment)				CONT.410	\$87,075	\$87,075
Secondary Containments				CONT.415	\$25,700	\$25,700
Overhead Power Distribution (electric line to facility)				CONT.420	\$3,000	\$3,000
Facility Electrical & Automation				CONT.425	\$57,200	\$57,200
SWD Connection				CONT.430	\$0	\$0
Flow Lines (Line Pipe from wellhead to central facility)				CONT.435	\$28,200	\$28,200
Pipeline to Sales				CONT.440	\$0	\$0
Meters and Metering Equipment				CONT.445	\$37,500	\$37,500
<b>Total Tangibles</b>					<b>\$347,773</b>	<b>\$71,800</b>
						<b>\$1,307,573</b>

P&A Costs						\$0
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<b>Total Cost</b>				<b>\$465,273</b>	<b>\$411,477</b>	<b>\$9,882,750</b>
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