



Authorization For Expenditure

Cimarex Energy Co	Prepared March 31, 2016
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Region	Lehman 1-11H	Cana NW	350012-434.01	2216070
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Location	11-15N-11W	Blaine	OK	Type Oil Gas	Expl x	Prod x
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Original Estimate	x			Meramec	Depth 16,720'
Revised Estimate					
Supplemental Estimate					11,790'

Project
Drill and complete a horizontal test. Drill to 1500', set surface casing. Drill to 9460', set intermediate casing. Drill to 11312' (KOP). Drill curve at 12 DLS build rate to +/- 11790' TVD and a +/- 4540' long lateral in the Meramec formation. Run and cement production casing. Stage frac in 30 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	\$2,704,000		\$2,704,000
Completion Costs		\$3,519,500	\$3,519,500
Total Intangible Costs	\$2,704,000	\$3,519,500	\$6,223,500

Tangibles			
Well Equipment	\$366,000	\$407,000	\$773,000
Lease Equipment		\$345,000	\$345,000
Total Tangible Well Cost	\$366,000	\$752,000	\$1,118,000

Plug and Abandon Cost	\$0	\$0	\$0
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Total Well Cost	\$3,070,000	\$4,271,500	\$7,341,500
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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.

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

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
David Jones	Randy Reynolds	

Joint Interest Approval

Company		

3/31/2016 9:12 AM





Project Cost Estimate

Well Name:

Intangibles					
Roads & Location Preparation / Restoration	DIC100	\$185,000		STIM100	\$32,000
Damages	DIC105	\$30,000			
Mud / Fluids Disposal Charges	DIC255	\$95,000		STIM255	\$60,000
Day Rate	DIC115	\$788,000	DICC120	\$79,000	
Misc Preparation Cost (mouse hole, rat hole, pads, pile clusters, misc.)	DIC120	\$27,000			
Bits	DIC125	\$200,000	DICC125		STIM125
Fuel	DIC135	\$97,000	DICC130		
Water for Drilling Rig / Completion Fluids (Not Frac Water)	DIC140	\$13,000	DICC135	\$1,000	STIM135
Mud & Additives	DIC145	\$253,000			
Surface Rentals	DIC150	\$64,000	DICC140		STIM140
Downhole Rentals	DIC155	\$22,000			STIM145
Formation Evaluation (DST, Coring including evaluation, G&G Services)	DIC160				STIM150
Mud Logging	DIC170	\$24,000			
Open Hole Logging	DIC180				
Cementing & Float Equipment	DIC185	\$41,000	DICC155	\$45,000	
Tubular Inspections	DIC190	\$10,000	DICC160	\$6,000	STIM160
Casing Crews	DIC195	\$14,000	DICC165	\$13,000	STIM165
Extra Labor, Welding, Etc.	DIC200	\$15,000	DICC170	\$5,000	STIM170
Land Transportation (Trucking for tangibles)	DIC205	\$18,000	DICC175	\$8,000	STIM175
Supervision	DIC210	\$126,000	DICC180	\$13,000	STIM180
Trailer House / Camp / Catering	DIC280	\$28,000	DICC255		STIM280
Other Misc Expenses	DIC220	\$1,000	DICC190		STIM190
Overhead	DIC225	\$10,000	DICC195	\$5,000	
Remedial Cementing	DIC231				STIM215
MOB/DEMOB	DIC240	\$180,000			
Directional Drilling Services	DIC245	\$230,000			
Crane for Construction					
Solids Control	DIC260	\$30,000			
Well Control Equip (Snubbing Svcs.)	DIC265	\$37,000	DICC240	\$7,000	STIM240
Fishing & Sidetrack Operations	DIC270		DICC245		STIM245
Completion Rig					STIM315
Coil Tubing					STIM260
Completion Logging, Perforating, WL Units, WL Surveys					STIM200
Composite Plugs					STIM390
Stimulation Pumping Charges, Chemicals, Additives, Sand					STIM210
Stimulation Water / Water Transfer / Water Storage					STIM395
Cimarex Owned Frac / Rental Equipment					STIM305
Legal / Regulatory / Curative	DIC300	\$20,000			
Well Control Insurance	DIC285	\$17,000			
Contingency	DIC435	\$129,000	DICC220	\$9,000	STIM220
Construction For Flow Lines					
Construction For Sales P/L					
Total Intangible Cost		\$2,704,000		\$191,000	\$2,791,000

Casing	Size	Feet	\$ / Foot						
Drive Pipe				DWEB150	\$0				
Conductor Pipe				DWEB130	\$0				
Water String	13 3/8"	1500	\$38.00	DWEB140	\$57,000				
Surface Casing	9 5/8"	9460	\$29.50	DWEB145	\$279,000				
Intermediate Casing 1	0	0	\$0.00	DWEB155	\$0				
Intermediate Casing 2	0	0	\$0.00	DWEB160	\$0				
Drilling Liner	5 1/2"	16720	\$15.75			DWEA100	\$263,000		
Production Casing or Liner	0	0	\$0.00			DWEA105		STIM101	
Production Tie-Back	0	0	\$0.00					STIM105	
Tubing	2 3/8"	11410	\$4.50						
Wellhead, Tree, Chokes				DWEB115	\$30,000	DWEA120	\$46,000	STIM120	\$40,000
Liner Hanger, Isolation Packer				DWEB100		DWEA125			
Packer, Nipples								STIM100	\$5,000
Pumping Unit, Engine								STIM105	
Downhole Lift Equipment (BHP, Rods, Anchors, ESP, GVLs, PC Pump)								STIM110	

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				\$366,000	\$309,000
					\$45,000

P&A Costs	DIC295	\$0	DICC275	\$0	
Total Cost		\$3,070,000		\$500,000	\$2,836,000



Project Cost Estimate

Well Name:

Intangibles					
Roads & Location Preparation / Restoration	CON.100	\$9,000	PCOM.100	\$1,000	\$227,000
Damages	CON.105				\$30,000
Mud / Fluids Disposal Charges			PCOM.255	\$130,000	\$285,000
Day Rate	30.00	DH Days	3.00	ACP Days @	\$28,500 Per Day
Misc Preparation Cost (mouse hole, rat hole, pads, pile clusters, misc.)					\$27,000
Bits			PCOM.125		\$200,000
Fuel		\$1,800 Per Gallon	1,800	Gallons Per Day	
Water for Drilling Rig / Completion Fluids (Not Frac Water)			PCOM.130		\$97,000
Mud & Additives			PCOM.135	\$3,500	\$25,500
Surface Rentals		Per Day	CON.140	\$5,000	PCOM.140
Downhole Rentals			PCOM.145		\$55,000
Formation Evaluation (DST, Coring including evaluation, G&G Services)					\$0
Mud Logging	24.00	Days @	\$1,000	Per Day	\$24,000
Open Hole Logging					\$0
Cementing & Float Equipment					\$86,000
Tubular Inspections			PCOM.160	\$2,500	\$18,500
Casing Crews					\$27,000
Extra Labor, Welding, Etc.			CON.170	\$79,000	PCOM.170
Land Transportation (Trucking for tangibles)			CON.175	\$15,000	PCOM.175
Supervision	\$4,200	Per Day	CON.180	\$5,000	PCOM.180
Trailer House / Camp / Catering		Per Day		\$9,000	\$205,000
Other Misc Expenses			CON.190	\$5,000	PCOM.190
Overhead					\$26,000
Remedial Cementing				PCOM.215	\$15,000
MOB/DEMOB					\$0
Directional Drilling Services					\$180,000
Crane for Construction			CON.230	\$0	\$230,000
Solids Control		Per Day			\$0
Well Control Equip (Snubbing Svcs.)		Per Day		PCOM.240	\$30,000
Fishing & Sidetrack Operations				PCOM.245	\$23,000
Completion Rig				PCOM.115	\$87,000
Coil Tubing				PCOM.260	\$0
Completion Logging, Perforating, WL Units, WL Surveys				PCOM.200	\$14,000
Composite Plugs				PCOM.390	\$88,000
Stimulation Pumping Charges, Chemicals, Additives, Sand				PCOM.210	\$110,000
Stimulation Water / Water Transfer / Water Storage					\$75,000
Cimarex Owned Frac / Rental Equipment					\$1,745,000
Legal / Regulatory / Curative			CON.300		\$219,000
Well Control Insurance	\$1.00	Per Foot			\$41,000
Contingency	5%	% of Drilling Intangibles	CON.220		\$20,000
Construction For Flow Lines			CON.310	\$3,500	PCOM.220
Construction For Sales P/L			CON.265		\$271,000
Total Intangible Cost					\$3,500
					\$0
					\$121,500
					\$415,000
					\$6,223,500

Casing	Size	Feet	\$ / Foot			
Drive Pipe						\$0
Conductor Pipe						\$0
Water String						\$0
Surface Casing	13 3/8"	1500	\$38.00			\$57,000
Intermediate Casing 1	9 5/8"	9460	\$29.50			\$279,000
Intermediate Casing 2	0	0	\$0.00			\$0
Drilling Liner	0	0	\$0.00			\$0
Production Casing or Liner	5 1/2"	16720	\$15.75			\$263,000
Production Tie-Back	0	0	\$0.00			\$0
Tubing	2 3/8"	11410	\$4.50		PCOMT.105	\$51,000
Wellhead, Tree, Chokes						\$116,000
Liner Hanger, Isolation Packer						\$0
Packer, Nipples					PCOMT.400	\$2,000
Pumping Unit, Engine					PCOMT.405	\$7,000
Downhole Lift Equipment (BHP, Rods, Anchors, ESP, GVLS, PC Pump)					PCOMT.410	\$0

N/C Lease Equipment	CONT.400	\$60,000			\$60,000
Tanks, Tanks Steps, Stairs	CONT.405	\$61,000			\$61,000
Battery (Heater Treater, Separator, Gas Treating Equipment)	CONT.410	\$105,000			\$105,000
Secondary Containments	CONT.415	\$14,000			\$14,000
Overhead Power Distribution (electric line to facility)	CONT.420	\$3,000			\$3,000
Facility Electrical & Automation	CONT.425	\$32,000			\$32,000
SWD Connection	CONT.430	\$20,000			\$20,000
Flow Lines (Line Pipe from wellhead to central facility)	CONT.435	\$50,000			\$50,000
Pipeline to Sales	CONT.440				\$0
Meters and Metering Equipment	CONT.445				\$0
Total Tangibles		\$345,000		\$53,000	\$1,118,000

P&A Costs					\$0
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Total Cost		\$466,500		\$469,000	\$7,341,500
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