

**COG OPERATING LLC
AUTHORITY FOR EXPENDITURE
DRILLING**

WELL NAME: Nelson Federal Corn 13H	PROSPECT NAME: Maljamar (Lowe) - #713083	950 lb-ft
SHL: 2358' FSL & 1895' FWL, Sec. 15 (UL-K)	STATE & COUNTY: New Mexico, Lea	1.6 Mile
BHL: 330' FNL & 1650' FWL, Sec. 10 (UL-C)	OBJECTIVE: Drill and Complete	
FORMATION: Yaso Formation	DEPTH: 13,100	
LEGAL: NESW of Section 15, T17S-R32E, Lea County, NM	TVD: 5,775	

		Drig - Rig Release(D)	Completion(C)	Tank Bttv Construct(TB)	Pmpg Equipment(PEQ)	TOTAL
INTANGIBLE COSTS						
Title/Curative/Permit	201	11,000				11,000
Insurance	202	6,000	302			6,000
Damages/Right of Way	203	12,000	303			12,000
Survey/State Location	204	3,000		351		3,000
Location/Plat/Road Expense	205	50,000	305	5,000	353	130,000
Drilling / Completion Overhead	206	5,000	306	7,000		12,000
Turnkey Contract	207		307			0
Footage Contract	208		308			0
Daywork Contract	209	247,000	309			247,000
Directional Drilling Services	210	165,000	310			165,000
Fuel & Power	211	31,000	311	1,000	354	32,000
Water	212	45,000	312	310,000	358	355,000
Bits	213	39,000	313	5,000	359	44,000
Mud & Chemicals	214	47,000	314		370	47,000
Drill Stem Test	215		315			0
Coring & Analysis	216					0
Cement Surface	217	34,000				34,000
Cement Intermediate	218	19,000				19,000
Cement 2nd Intermediate/Production	219	81,000				81,000
Cement Squeeze & Other (Kickoff Plug)	220				371	0
Float Equipment & Centralizers	221	12,000				12,000
Casing Crews & Equipment	222	13,000				13,000
Fishing Tools & Service	223		323		372	0
Geologic/Engineering	224		324		373	0
Contract Labor	225	4,250	325	4,000	355	180,250
Company Supervision	226		326	15,000	357	17,000
Contract Supervision	227	28,000	327	120,000	358	148,000
Testing Casing/Tubing	228	3,500	328	5,000	377	8,500
Mud Logging Unit	229	27,000	329			27,000
Logging	230	18,580			378	18,580
Perforating/Wireline Services	231	1,500	331	185,000		186,500
Stimulation/Treating			332	1,100,000	380	1,100,000
Completion Unit			333	70,000	381	70,000
Swabbing Unit			334		382	0
Rentals-Surface	235	55,000	335	200,000	359	270,000
Rentals-Subsurface	236	46,000	336	25,000	384	71,000
Trucking/Formation Rig Mobilization	237	43,000	337	85,000	380	112,000
Welding Services	238	4,000	338	1,000	361	5,000
Water Disposal	239		339	10,000	362	10,000
Plug to Abandon	240		340		387	0
Salemic Analysis	241		341			0
Miscellaneous	242		342		389	0
Contingency	243	21,190	343	50,000	383	71,190
Closed Loop & Environmental	244	97,000	344		384	97,000
Coil Tubing			345			0
Flowback Crews & Equip			347	25,000		25,000
Offset Directional/Frac	248		348	25,000		25,000
TOTAL INTANGIBLES		1,167,000	2,229,000	240,000	8,000	3,644,000

		Drig - Rig Release(D)	Completion(C)	Tank Bttv Construct(TB)	Pmpg Equipment(PEQ)	TOTAL
TANGIBLE COSTS						
Surface Casing	401	25,000				25,000
Intermediate Casing	402	44,000				44,000
Production Casing/Liner	403	177,000				177,000
Tubing			504	18,000	530	18,000
Wellhead Equipment	405	6,900	505	22,000	531	30,900
Pumping Unit					506	64,000
Prime Mover					507	0
Rode					508	15,000
Pumps-Sub Surface (BH)			509	50,000	532	50,000
Tanks				510	80,000	80,000
Flowlines				511	100,000	100,000
Heater Treater/Separator				512	75,000	75,000
Electrical System				513		28,000
Packers/Anchors/Hangers	414		514	2,000	534	2,000
Couplings/Fittings/Valves	415	500		515	175,000	175,500
Dehydration				517		0
Injection Plant/CO2 Equipment				518		0
Pumps-Surface				521	12,000	12,000
Instrumentation/SCADA/POC				522	85,000	85,000
Miscellaneous	419	500	519		535	500
Contingency	420	100	520		536	100
Metals/LACT				525		0
Flares/Combustors/Emission				526	35,000	35,000
Gas Lift/Compression			527		528	0
TOTAL TANGIBLES		256,000	92,000	562,000	107,000	1,017,000
TOTAL WELL COSTS		1,423,000	2,321,000	802,000	115,000	4,661,000

% of Total Well Cost

31%

50%

17%

2%

COG Operating LLC

Carl Bird/Paul Fiegel

Date Prepared:

6/1/16

COG Operating LLC

By:

We approve

% Working Interest

Company:

By:

Printed Name:

Title:

Date:

This AFE is only an estimate. By signing you agree to pay your share of the actual costs incurred