Submit within 30 days of well completion

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Revised November 9, 2012

1. WELL API NO. 30-015-42992
2. Well Name: CEDAR CANYON 29 FEDERAL COM #002H
3. Well Number: 002H

HYDRAULIC FRACTURING FLUID DISCLOSURE

☒ Original
☐ Amendment

4. Surface Hole Location:
Unit P Lot N Section 29 Township 24S Range 29E
Feet from 230 N/S Line N
Feet from 330 E/W Line E
5. Bottom-Hole Location:
Unit P Lot P Section 29 Township 24S Range 29E
Feet from 456 N/S Line N
Feet from 152 E/W Line W
6. Latitude 32.195064286 Longitude -103.99911016
7. County: Eddy

8. Operator Name and Address:
COG OPERATING LLC
PO Box 4294
Houston, TX 77210-4294

9. ZIP Code: 88220
10. Phone Number: 713-366-5716

11. Last Fracture Date: 12/26/2016 Frac Performed by: SCHLUMBERGER

12. Production Type: O

13. Pool Code(s): 50371

14. Gross Fractured Interval: 8,632 ft to 13,152 ft

15. True Vertical Depth (TVD): 8,357 ft

16. Total Volume of Fluid Pumped: 9,362,742 gals

17. Total of Water + Recycled Water Pumped: N/A

18. Percent Fluid from Water Pumped: Not Disclosed

19. HYDRAULIC FLUID COMPOSITION AND CONCENTRATION:

Trade Name	Supplier	Purpose	Ingredients	CAS # (Chemical Abstract Service) #	Maximum Ingredient Concentration in Additive (% by mass)	Maximum Ingredient Concentration in HF Fluid (% by mass)
Proppant Transport	Schlumberger	Acid Corrosion Inhibitor, Acid Intensifier, Demulsifier, Water Gelling Agent, Temporary Clay Stabilizer	Water (Including Mix Water Supplied by Client)*	CAS Not Assigned	0%	89.24313%
			Crystalline phosphorous salt	Proprietary	0.00006%	0.00006%
			1, 2, 3 - Propanetriol	56-81-5	0.00044%	0E-05%
			Urea	57-13-6	0.00069%	0.00006%
			Tetrasodium Ethylenediaminetetraacetate dihydrate	GeBerat	0.00703%	0.00076%
			Acetic acid	64-19-7	16-20%	16-20%
			2-Butoxy-N,N,N-trimethylethanaminium chloride	64-18-1	3.4806%	0.20252%
			Propanal (impurity)	67-64-1	0.00211%	0.00022%
			Propan-2-ol	67-63-0	0.00393%	0.00006%
			Oxirane	75-21-8	1E-05%	1E-05%
			Propylene oxide	75-56-9	1E-05%	1E-05%
			2-Propenamid (impurity)	GeBerat	0.00019%	2E-05%
			Methanol (impurity)	67-56-1	0.00211%	0.00022%
			Ethylene Glycol	107-21-1	0.01703%	0.00056%
			Fumaric acid	110-17-8	0.00222%	0.00023%
			Citric acid	113-85-1	16-20%	16-20%
			1,4-Dioxane (impurity)	123-91-1	1E-05%	1E-05%
			Sodium chloride	7647-14-5	0.00211%	0.00022%
			Chromium Ethylene Diamine Tetra Acetate (impurity)	139-33-3	0.00019%	2E-05%
			Potassium oleate	143-18-0	1E-05%	1E-05%
			Trisodium Ethylenediaminetetraacetate	150-38-9	0.00019%	2E-05%
			Cocoamidopropylhydroxysultaine	140-01-6	1E-05%	1E-05%
			Decamethyl cyclopentasiloxane	GeBerat	1E-05%	1E-05%
			Octamethyl cyclotetrasiloxane	556-67-2	1E-05%	1E-05%
			Methanesulfonic acid, hydroxy-, monosodium salt	870-72-4	0.02108%	0.00227%
			Sodium hydroxide	1310-73-2	0.16849%	0.01812%
			Borinatrio acid ie	1319-33-1	0.09811%	0.00644%
			Sodium tetraborate	1330-43-4	0.05742%	0.3068%
			Sodium Glycolate (impurity)	2836-32-0	0.00059%	6E-05%
			Methanesulfonic acid (impurity)	75-75-2	0.00211%	0.00022%
			Potassium chloride	7447-40-7	1E-05%	1E-05%
			Silicon Dioxide	7631-86-9	0.003%	0.00032%
			Sodium hydrogensulphite	7631-90-5	0.02108%	0.00227%
			Hydrochloric acid	7647-01-0	0.77664%	0.08355%
			Magnesium nitrate	10377-60-3	0.09811%	0.00644%
			Monosodium fumarate	7704-73-6	0.00222%	0.00023%
			Diammonium peroxidisulphate	7727-54-0	0.16849%	0.01849%
			Sodium sulfate	7757-82-6	0.00091%	0.0001%
			Copper(II) sulfate	7758-98-7	1E-05%	1E-05%
			Glycerine	7783-20-2	0.00393%	0.00006%
			Magnesium chloride	7786-30-3	0.09241%	0.00689%
			Guar gum	9000-30-0	0.60234%	0.06463%
			poly(ethyleneethylene)	9002-84-0	0.00011%	1E-05%
			Dodecyl poly(oxyethylene) ether	9002-92-0	1E-05%	1E-05%
			Ethylene oxide polymer with oxirane	9003-11-6	1E-05%	1E-05%
			Starch, acid	9005-84-9	0.00222%	0.00023%
			Calcium chloride	10043-52-4	0.01132%	0.00123%
			Magnesium sulate hydrate (salt.)	14987-04-4	0.00505%	1E-05%
			Quartz, Crystalline silica	14808-60-7	97.6401%	10.2694%
			Polyethylene monohexadecylacrylate copolymer	25038-72-6	0.00606%	0.0006%
			Isodecanol with 7 Moles Ethylene Oxide	26183-52-8	0.00091%	1E-05%
			Glycols, polyethylene, monodidecaic,2 ether	27306-79-2	1E-05%	1E-05%
			Methylthiirane glycol monohexyl ether	31726-34-8	0.0484%	0.00312%
			4Ccarbide, 2-dicarbamato-2-methylpropanesulfonic acid, sodium salt polymer	39193-85-1	0.05911%	0.00606%
			Alcohol Ethoxylate Propoxylate Blend	39392-21-3	1E-05%	1E-05%
			Nonylphenol ethoxylated with ethylene oxide and propylene oxide	52601-07-2	0.00022%	2E-05%
			Glass fibers	65676-86-0	0.05693%	0.00584%
			Amines, dicoco alcyltheyl	67178-83-3	0.00041%	4E-05%
			Dicoco dimethyl quaternary ammonium chloride	67178-77-3	0.00412%	0.00044%
			Amines, tallow alcyl, ethoxylated	61791-26-2	0.00051%	2E-05%
			Dimethyl siloxanes and silicones	63148-62-9	1E-05%	1E-05%
			Fatty acid, tall oil, compounds with polyethylene	61790-69-0	1E-05%	1E-05%
			Siloxanes and silicones, dimethyl, reaction products with silica	67762-90-7	1E-05%	1E-05%
			Phenol, 4,4'(1-methylethylidene)bis-, polymer with 2-chloromethyloxirane, hydrogenated, glycidyl ether	68123-18-2	0.00051%	2E-05%
			Fatty acid, tall oil, reaction products with acetophenone	68188-40-9	0.00144%	0.00016%
			Alcohols, C12-C14, ethoxylated	68551-12-2	0.0012%	0.00013%
			Alcohols, C11-14, ethoxylated	78330-21-9	1E-05%	1E-05%
			Methanol	67-56-1	0.00211%	0.00022%
			Polymer of 2-acrylamido-2-methylpropanesulfonic acid sodium salt and methyl acrylate	136793-29-8	0.06633%	0.00695%
					0%	0%

* Proprietary Technology

I, as Operator, hereby certify that the information shown on this disclosure form is true and complete to the best of my knowledge and belief.

Signature: Signed Electronically Printed Name: David Stewart Title: Sr. Regulatory Advisor

Date: 2/15/2017

E-mail Address: david_stewart@cog.com

*BROCO does not require the reporting of information beyond MSDS data as described in 29 CFR 1910.1200. *BROCO does not require the reporting or disclosure of proprietary, trade secret or confidential business information