Submit within 45 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 February 15, 2012

1. WELL API NO.
30-039-31194

2. Well Name:
ENCHILADA #002X

3. Well Number:
002X

HYDRAULIC FRACTURING FLUID DISCLOSURE

☒ Original

☐ Amendment

4. Surface Hole Location:
Unit:H Lot:H Section:16 Township:23N Range:06W
Feet from:1933 N/S Line:N
Feet from:662 E/W Line:E

5. Bottom Hole Location:
Unit:H Lot:H Section:16 Township:23N Range:06W
Feet from:1933 N/S Line:N
Feet from:662 E/W Line:E

6. latitude: 0 longitude: 0

7. County:
Rio Arriba

8. Operator Name and Address:
LOGOS OPERATING, LLC
4001 N. Butler, Bldg 7101
Farmington 87401

9. OGRID: 289408

10. Phone Number: 832-794-1355

11. Last Fracture Date: 10/4/2013 Frac Performed by: Baker Hughes

12. Production Type:
O

13. Pool Code(s):
13379

14. Gross Fractured Interval:
5,308 ft to 5,597 ft

15. True Vertical Depth (TVD):
6,359 ft

16. Total Volume of Fluid Pumped:
459,942 gals

17. **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)
Water	Operator	Carrier	Water	7732-18-5	100%	88.39083%
HCl, 10.1 - 15%	Baker Hughes	Acidizing	Hydrochloric Acid	7647-01-0	15%	0.20054%
			Water	7732-18-5	85%	1.13641%
Alpha 1427	Baker Hughes	Biocide	Didecyl Dimethyl Ammonium Chloride	7173-51-5	10%	0.00466%
			Ethanol	64-17-5	5%	0.00233%
			Glutaraldehyde	111-30-8	30%	0.01398%
			Quaternary Ammonium Compound	68424-85-1	5%	0.00233%
GBW-5	Baker Hughes	Breaker	Ammonium persulphate	7727-54-0	100%	0.00807%
ClayCare, drum	Baker Hughes	Clay Control	Choline Chloride	67-48-1	75%	0.03916%
			Water	7732-18-5	30%	0.01566%
ClayCare, ClayTreat-2C, 330 gl tote	Baker Hughes	Clay Control	Choline Chloride	67-48-1	75%	0.03302%
			Water	7732-18-5	30%	0.01321%
CI-27	Baker Hughes	Corrosion Inhibitor	Fatty Acids	Trade Secret	30%	0.00092%
			Methanol	67-56-1	60%	0.00185%
			Olefin	Trade Secret	5%	0.00015%
			Polyoxyalkylenes	Trade Secret	30%	0.00092%
			Propargyl Alcohol	107-19-7	10%	0.00031%
			Thiourea Polymer	68527-49-1	30%	0.00092%
CorrSorb 3600, 25 lb pail	Baker Hughes	Corrosion Inhibitor	Acid Phosphate Ester	9046-01-9	10%	0.00058%
			Crystalline Silica: Quartz	14808-60-7	1%	6E-05%
			Ethylene Glycol	107-21-1	1%	6E-05%
			Quaternary Ammonium Compound	61789-71-7	30%	0.00173%
FAW-22	Baker Hughes	Foamer	Alkyl Sulfate (1 of 3)	Trade Secret	1%	0.00137%
			Alkyl Sulfate (2 of 3)	Trade Secret	1%	0.00137%
			Alkyl Sulfate (3 of 3)	Trade Secret	1%	0.00137%
			Ammonium Alkyl Ether Sulfate	Trade Secret	10%	0.01368%
			Ethoxylated Alcohol	Trade Secret	1%	0.00137%
			Isopropanol	67-63-0	30%	0.04105%
			Sodium Sulfonate	68439-57-6	30%	0.04105%
MaxPerm-20A, 265 gallon tote	Baker Hughes	Friction Reducer	Oxyalkylated Alcohol	Trade Secret	5%	0.00244%
			Petroleum Distillates	64742-47-8	30%	0.01463%
			Polyacrylate	Trade Secret	60%	0.02927%
			Sodium Chloride	7647-14-5	3%	0.00146%
Ferrotrol 300L (Totes)	Baker Hughes	Iron Control	Citric Acid	77-92-9	60%	0.00436%
Nitrogen	Baker Hughes	Nitrogen	Liquid Nitrogen	7727-37-9	100%	9.06685%
NE-900, tote	Baker Hughes	Non-emulsifier	Methanol	67-56-1	30%	0.00034%
			Nonyl phenyl polyethylene glycol ether	9016-45-9	10%	0.00011%
Parasorb 5005, 50 lb bag	Baker Hughes	Paraffin Inhibitor	Calcined Diatomaceous Earth	91053-39-3	100%	0.02305%
			Complex Ester	Trade Secret	30%	0.00691%
			Crystalline Silica: Quartz (SiO2)	14808-60-7	1%	0.00023%
			Ethylene-Vinyl Acetate Copolymer	Trade Secret	5%	0.00115%
			Heavy Aromatic Naphtha	64742-94-5	10%	0.0023%
			Mineral Oil	8042-47-5	5%	0.00115%
			Naphthalene	91-20-3	1%	0.00023%
Sand, White, 100 mesh	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100%	0.64079%
ScaleSorb 3, (25# pail)	Baker Hughes	Scale Inhibitor	Amino Alkyl Phosphonic Acid	Trade Secret	30%	0.00259%
			Crystalline Silica: Quartz (SiO2)	14808-60-7	1%	9E-05%
			Diatomaceous Earth, Calcined	91053-39-3	100%	0.00864%
			Phosphonic Acid	13598-36-2	1%	9E-05%
GasFlo G, 330 gal tote	Baker Hughes	Surfactant	Methanol	67-56-1	30%	0.02533%
			Oxyalkylated Alkylphenol (1)	Trade Secret	10%	0.00844%
			Oxyalkylated Alkylphenol (2)	Trade Secret	10%	0.00844%
			Oxyalkylated Amine	Trade Secret	3%	0.00253%
			Polyoxyalkylene	Trade Secret	10%	0.00844%
Ingredients shown above are subject to 29 CFR 1910			Copolymer	Trade Secret	0%	0.0004491%
			Ethylene Glycol	107-21-1	0%	0.0013682%
			Fatty Amide Deriavative	70851-08-0	0%	0.0013682%
			Formaldehyde	50-00-0	0%	0.0013697%
			Oleate Ester	1338-43-8	0%	0.0014634%
			Polysorbate	9005-65-6	0%	0.0014634%
			Sodium Chloride	7647-14-5	0%	0.0013836%
			Sodium Sulfate	7757-82-6	0%	0.0013682%
			Water	7732-18-5	0%	0.1609446%

18. 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: Tamra Sessions Title: Operations Technician

Date: 10/24/2013

E-mail Address: tsessions@logosresourcesllc.com

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