

	Energy, Minerals and Natural Resources Oil Conservation Division 1220 S. St Francis Dr. Santa Fe, NM 87505						1. WELL API NO: 30-043-21165	
						2. Well Name: JICARILLA O #003E		
						3. Well Number: 003E		
HYDRAULIC FRACTURING FLUID DISCLOSURE ☒ Original ☐ Amendment						4. Surface Hole Location: Unit:O Lot:Z00 Section:10 Township:22N Range:03W Feet from:919 N/S Line:S Feet from:1738 E/W Line:E		
						5. Bottom Hole Location: Unit:O Lot:Z00 Section:10 Township:22N Range:03W Feet from:919 N/S Line:S Feet from:1738 E/W Line:E		
						6. latitude: 0 longitude: 0		
						7. County: Sandoval		
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: 1/15/2014 Frac Performed by: Baker Hughes						12. Production Type: O		
13. Pool Code(s): 39189						14. Gross Fractured Interval: 5,258 ft to 6,732 ft		
15. True Vertical Depth (TVD): 6,870 ft						16. Total Volume of Fluid Pumped: 637,942 gals		
17. Total Volume of Re-Use Water Pumped: N/A						18. Percent of Re-Use Water in Fluid 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)		
Water	Operator	Carrier	Water	7732-18-5	100%	86.43224%		
HCl, 10.1 - 15%	Baker Hughes	Acidizing	Hydrochloric Acid	7647-01-0	15%	0.14138%		
			Water	7732-18-5	85%	0.80117%		
Alpha 1427	Baker Hughes	Biocide	Didecyl Dimethyl Ammonium Chloride	7173-51-5	10%	0.00633%		
			Ethanol	64-17-5	5%	0.00316%		
			Glutaraldehyde	111-30-8	30%	0.01898%		
			Quaternary Ammonium Compound	68424-85-1	5%	0.00316%		
GBW-5	Baker Hughes	Breaker	Ammonium persulfate	7727-54-0	100%	0.00431%		
ClayCare, ClayTreat-2C, 330 gl tote	Baker Hughes	Clay Control	Choline Chloride	67-48-1	75%	0.07128%		
			Water	7732-18-5	30%	0.02851%		
CI-27	Baker Hughes	Corrosion Inhibitor	Fatty Acids	Trade Secret	30%	0.00065%		
			Methanol	67-56-1	60%	0.0013%		
			Olefin	Trade Secret	5%	0.00011%		
			Polyoxyalkylenes	Trade Secret	30%	0.00065%		
			Propargyl Alcohol	107-19-7	10%	0.00022%		
			Thiourea Polymer	68527-49-1	30%	0.00065%		
CorrSorb 3600, 25 lb pail	Baker Hughes	Corrosion Inhibitor	Acid Phosphate Ester	9046-01-9	10%	0.00081%		
			Crystalline Silica: Quartz	14808-60-7	1%	8E-05%		
			Ethylene Glycol	107-21-1	1%	8E-05%		
			Quaternary Ammonium Compound	61789-71-7	30%	0.00244%		
BioSealers MR	Baker Hughes	Degradable Sealers	Non-Hazardous Ingredient	Trade Secret	100%	0.00081%		
FAW-22	Baker Hughes	Foamer	Alkyl Sulfate (1 of 3)	Trade Secret	1%	0.00059%		
			Alkyl Sulfate (2 of 3)	Trade Secret	1%	0.00059%		
			Alkyl Sulfate (3 of 3)	Trade Secret	1%	0.00059%		
			Ammonium Alkyl Ether Sulfate	Trade Secret	10%	0.00587%		
			Isopropanol	67-63-0	30%	0.01762%		
			Sodium Sulfonate	68439-57-6	30%	0.01762%		
MaxPerm-20A, 265 gallon tote	Baker Hughes	Friction Reducer	Oxyalkylated Alcohol	Trade Secret	5%	0.00176%		
			Petroleum Distillates	64742-47-8	30%	0.01053%		
			Polyacrylate	Trade Secret	60%	0.02107%		
			Sodium Chloride	7647-14-5	3%	0.00105%		
Ferrotrol 300L Nitrogen	Baker Hughes	Iron Control	Citric Acid	77-92-9	60%	0.00307%		
NE-900, tote	Baker Hughes	Nitrogen	Liquid Nitrogen	7727-37-9	100%	6.16317%		
	Baker Hughes	Non-emulsifier	Methanol	67-56-1	30%	0.00032%		
			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%	0.0325%		
			Complex Ester	Trade Secret	30%	0.00975%		
			Crystalline Silica: Quartz (SiO2)	14808-60-7	1%	0.00032%		
			Ethylene-Vinyl Acetate Copolymer	Trade Secret	5%	0.00162%		
			Heavy Aromatic Naphtha	64742-94-5	10%	0.00325%		
			Mineral Oil	8042-47-5	5%	0.00162%		
			Naphthalene	91-20-3	1%	0.00032%		
Sand, White, 100 mesh	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100%	6.6002%		
Sand, non-API, 40/70 mesh	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100%	5.39066%		
ScaleSorb 3, (25# pail)	Baker Hughes	Scale Inhibitor	Amino Alkyl Phosphonic Acid	Trade Secret	30%	0.00244%		
			Crystalline Silica: Quartz (SiO2)	14808-60-7	1%	8E-05%		
			Diatomaceous Earth, Calcined	91053-39-3	100%	0.00812%		
			Phosphonic Acid	13598-36-2	1%	8E-05%		