

30-015-40793



MURCHISON OIL & GAS, INC.

NM OIL CONSERVATION
ARTESIA DISTRICT

APR 17 2017

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2nd copy

Murchison Oil and Gas

Ogden North
Ogden #8
Ogden #8HML
Ogden #8HML

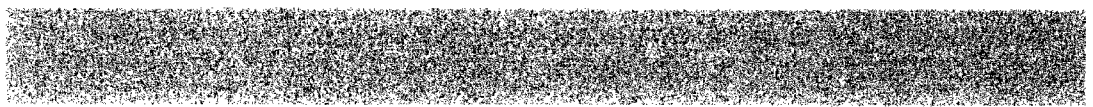
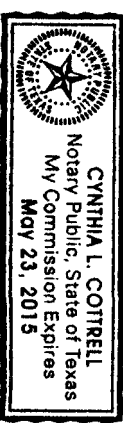
Survey: Ogden 8HML

MOJO EOW Survey

06 November, 2012

This survey is correct to the best of my knowledge and is supported by actual field data.

Notarized this date 8th of November, (Signature)
2012. Signature of Cynthia L. Cottrell Notary
Signature County of Collin State of Texas





Murchison Oil and Gas
Ogden North
Ogden #8
Ogden #8HML
Ogden #8HML
Ogden #8HML

Well Ogden #8HML
WELL @ 3375.2usft (4)
WELL @ 3375.2usft (4)
Grid
Minimum Curvature
EDM 5000.1 Single User Db

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Eastern Zone

System Datum:

Mean Sea Level

Site Position: Map
From: Map
Position Uncertainty: 1.0 usft

Northing: 422,609.00 usft
Easting: 565,133.00 usft
Slot Radius: 15 "

Latitude: 32° 9' 42.505 N
Longitude: 104° 15' 23.167 W
Grid Convergence: 0.04 °

Well Position
+N/S 0.0 usft
+E/W 0.0 usft
Position Uncertainty 0.0 usft

Northing: 423,109.00 usft
Easting: 565,133.00 usft
Wellhead Elevation: usft

Latitude: 32° 9' 47.453 N
Longitude: 104° 15' 23.163 W
Ground Level: 3,361.6 usft

Ogden #8HML

IGRF200510

25/09/2012

7.73

60.01

48.419

Audit Notes:

Version: 1.0

Phase: ACTUAL

Tie On Depth: 0.0

0.0

0.0

0.0

180.43

Date 06/11/2012

410.0 5,478.0 Ogden 8HML (Ogden #8HML)

MWD

MWD - Standard



06/11/2012 8:08:38AM



06/11/2012 8:08:38AM

Well Ogden #8HML
WELL @ 3375.2ustf (4)
WELL @ 3375.2ustf (4)
Grnd
Minimum Curvature
EDM 5000.1 Single User Db

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443
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[illegible]



Year	Age Group	Gender	Region	Country	Population (millions)	Life Expectancy (years)	Healthcare Expenditure (USD billions)	Healthcare Expenditure (USD per capita)	Healthcare Expenditure (USD per 1,000 people)	
4,764.0	90.90	179.40	2,041.7	-1,333.5	-3,073.7	1.7	420,035.30	565,134.73	3,073.60	0.93
4,807.0	91.20	179.70	2,040.9	-1,334.3	-3,116.7	2.1	419,992.31	565,135.07	3,116.59	0.99
4,850.0	90.30	180.60	2,040.4	-1,334.8	-3,159.7	2.0	419,949.31	565,134.96	3,159.59	2.96
4,892.0	90.70	181.00	2,040.0	-1,335.2	-3,201.7	1.4	419,907.32	565,134.37	3,201.58	1.35
4,935.0	90.30	182.00	2,039.6	-1,335.6	-3,244.7	0.2	419,864.33	565,133.25	3,244.57	2.50
4,979.0	89.40	180.90	2,039.7	-1,335.5	-3,288.7	-0.9	419,820.35	565,132.13	3,288.57	3.23
5,021.0	88.10	179.60	2,040.7	-1,334.5	-3,330.6	-1.1	419,778.36	565,131.95	3,330.55	4.38
5,064.0	88.70	179.60	2,041.9	-1,333.3	-3,373.6	-0.8	419,735.38	565,132.25	3,373.53	1.40
5,107.0	89.10	179.30	2,042.7	-1,332.5	-3,416.6	-0.3	419,692.39	565,132.66	3,416.52	1.16
5,150.0	89.10	179.30	2,043.4	-1,331.8	-3,459.6	0.2	419,649.40	565,133.19	3,459.51	0.00
5,193.0	89.50	179.20	2,043.9	-1,331.3	-3,502.6	0.7	419,606.40	565,133.75	3,502.49	0.96
5,238.0	90.10	179.30	2,044.0	-1,331.2	-3,547.6	1.3	419,561.41	565,134.34	3,547.48	1.35
5,281.0	90.90	179.50	2,043.7	-1,331.5	-3,590.6	1.8	419,518.41	565,134.79	3,590.47	1.92
5,326.0	91.20	179.10	2,042.8	-1,332.4	-3,635.6	2.3	419,473.42	565,135.34	3,635.46	1.11
5,371.0	91.60	179.00	2,041.7	-1,333.5	-3,680.6	3.1	419,428.44	565,136.08	3,680.43	0.92
5,416.0	92.10	179.20	2,040.3	-1,334.9	-3,725.5	3.8	419,383.47	565,136.79	3,725.40	1.20
5,433.0	91.90	178.90	2,039.7	-1,335.5	-3,742.5	4.1	419,366.49	565,137.07	3,742.38	2.12
5,476.0	91.90	178.90	2,038.2	-1,337.0	-3,787.5	4.9	419,321.52	565,137.94	3,787.34	0.00

Date:



MURCHISON OIL & GAS, INC.

Murchison Oil and Gas

Ogden North

Ogden #8

Ogden #8HML

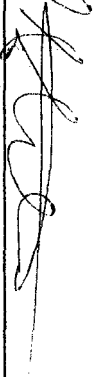
Ogden 8HML ST 1 Rev 1

Survey: Ogden 8HML ST1

MOJO EOW Survey

06 November, 2012

This survey is correct to the best of my knowledge and is supported by actual field data.

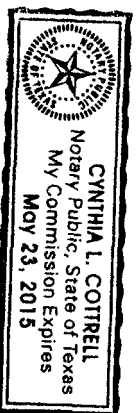


(Signature)

Notarized this date 2nd of November, 2012. Cynthia L. Cottrell

Notary

Signature County of Collin State of Texas



MOJO

Company	Murchison Oil and Gas	Well @ 3373.6usft (4)
Field	Ogden North	Well @ 3373.6usft (4)
Site	Ogden #8	Well @ 3373.6usft (4)
Well	Ogden #8HML	Minimum Curvature
Headstock	Ogden 8HML ST 1 Rev 1	EDM 5000.1 Single User Db
Design	Ogden 8HML ST 1 Rev 1	

Project	Ogden North, Pinnate Appraisal Well	System Datum:	Mean Sea Level
Map System:	US State Plane 1983		
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Ogden #8	Northing:	422,609.00 usft	Latitude:	32° 9' 42.505 N
Site Position:	Map	Easting:	565,133.00 usft	Longitude:	104° 15' 23.167 W
Position Uncertainty:	1.0 usft	Slot Radius:	15°	Grid Convergence:	0.04°

Well	Ogden #8HML	Northing:	423,109.00 usft	Latitude:	32° 9' 47.453 N
Well Position	+N/-S	Easting:	565,133.00 usft	Longitude:	104° 15' 23.163 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,361.6 usft

Wellbore	Ogden 8HML ST 1 Rev 1	Depth	7.73	Dir Angle	60.01	Field Strength	48,419
Wellbore	IGRF200510	Sample Date	25/09/2012				

Design	Ogden 8HML ST 1 Rev 1	Phase:	ACTUAL	Tie On Depth:	3,516.0
Audit Notes:	1.0				
Vertical Section	Depth From (TVD)	W/L	SE/LN	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	181.82	



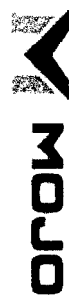
Company	Muchison Oil and Gas	Well Ogden #8HML
Project	Ogden North	Well @ 3373.6usft (4)
Block	Ogden #8	Well @ 3373.6usft (4)
Well	Ogden #8HML	Grid
Wellpoint	Ogden 8HML ST 1 Rev 1	Minimum Curvature
Destination	Ogden 8HML ST 1 Rev 1	EDM 5000.1 Single User Db

Station	Point	Survey (Meters)	Distance	Angle	Height	Northing	Easting	U-Coord	U-Coord
408.4	3,516.0	Ogden 8HML (Ogden #8HML)	MWD	MWD - Standard					
3,559.0	5,540.0	Ogden 8HML ST 1 Rev 1	MWD	MWD - Standard					
3,516.0	88.60	178.49	2,048.8	-1,324.8	-1,827.6	-1.6	421,281.44	565,131.39	1,826.69
3,559.0	88.20	181.80	2,049.7	-1,323.9	-1,870.5	-1.7	421,238.46	565,131.28	1,869.66
3,602.0	88.90	182.30	2,050.7	-1,322.9	-1,913.5	-3.3	421,195.50	565,129.74	1,912.64
3,645.0	90.40	183.60	2,051.0	-1,322.6	-1,956.4	-5.5	421,152.56	565,127.53	1,955.63
3,688.0	90.60	187.30	2,050.6	-1,323.0	-1,999.2	-9.6	421,109.76	565,123.44	1,998.53
3,731.0	90.60	187.20	2,050.2	-1,323.4	-2,041.9	-15.0	421,067.11	565,118.02	2,041.34
3,774.0	90.40	186.80	2,049.8	-1,323.8	-2,084.6	-20.2	421,024.43	565,112.78	2,084.16
3,817.0	90.60	187.50	2,049.4	-1,324.2	-2,127.2	-25.6	420,981.77	565,107.42	2,126.97
3,860.0	90.60	188.40	2,049.0	-1,324.6	-2,169.8	-31.5	420,939.18	565,101.48	2,169.72
3,903.0	90.50	188.40	2,048.6	-1,325.0	-2,212.4	-37.8	420,896.65	565,095.20	2,212.44
3,946.0	90.50	189.10	2,048.2	-1,325.4	-2,254.9	-44.3	420,854.15	565,088.65	2,255.12
3,989.0	90.20	189.20	2,047.9	-1,325.7	-2,297.3	-51.2	420,811.70	565,081.62	2,297.77
4,032.0	90.90	190.40	2,047.5	-1,326.1	-2,339.7	-58.5	420,769.33	565,074.50	2,340.35
4,075.0	91.10	192.70	2,046.8	-1,326.8	-2,381.8	-67.1	420,727.21	565,065.89	2,382.72
4,118.0	89.40	193.70	2,046.6	-1,327.0	-2,423.7	-76.9	420,685.35	565,056.07	2,424.87
4,162.0	89.50	193.90	2,047.0	-1,326.6	-2,466.4	-87.4	420,642.62	565,045.88	2,467.91
4,205.0	89.80	193.60	2,047.3	-1,326.3	-2,508.1	-97.6	420,600.85	565,035.36	2,509.98
4,248.0	89.40	193.60	2,047.6	-1,326.0	-2,549.9	-107.8	420,559.06	565,025.25	2,552.08
4,290.0	88.10	193.50	2,048.5	-1,325.1	-2,590.8	-117.6	420,518.24	565,015.41	2,593.19
4,333.0	88.10	192.90	2,049.9	-1,323.7	-2,632.6	-127.4	420,476.40	565,005.59	2,635.32
4,376.0	90.00	191.50	2,050.6	-1,323.0	-2,674.6	-136.5	420,434.38	564,996.51	2,677.61

Company: Murchison Oil and Gas
 Project: Ogden North
 Site: Ogden #8
 Well: Ogden #8HML
 Wellbore: Ogden 8HML ST 1 Rev 1
 Design: Ogden 8HML ST 1 Rev 1

Well: Ogden #8HML
 Well @ 3373.6ust (4)
 Well @ 3373.6ust (4)
 Grid: Minimum Curvature
 EDM 5000.1 Single User Db

Station	NO	PC	AP (azimuth)	NO	TPASS	MS	DB	Height	Easting	N. Geo	Angle
(feet)	(ft)	(ft)	(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(degrees)
4,419.0	90.40	191.40	2,050.5	-1,323.1	-2,716.8	-145.0	420,392.23	564,987.97	2,720.00	0.96	
4,462.0	90.70	191.70	2,050.1	-1,323.5	-2,758.9	-153.6	420,350.11	564,979.36	2,762.38	0.99	
4,506.0	91.20	191.80	2,049.3	-1,324.3	-2,802.0	-162.6	420,307.03	564,970.41	2,805.71	1.16	
4,549.0	91.80	191.30	2,048.2	-1,325.4	-2,844.1	-171.2	420,264.92	564,961.80	2,848.08	1.82	
4,591.0	90.30	192.60	2,047.4	-1,326.2	-2,885.2	-179.9	420,223.84	564,953.10	2,889.42	4.73	
4,634.0	91.30	193.50	2,046.8	-1,326.8	-2,927.0	-189.6	420,181.95	564,943.40	2,931.59	3.13	
4,678.0	91.80	193.20	2,045.6	-1,328.0	-2,969.8	-199.8	420,139.16	564,933.24	2,974.68	1.33	
4,721.0	91.40	194.90	2,044.4	-1,329.2	-3,011.5	-210.2	420,097.46	564,922.81	3,016.69	4.06	
4,764.0	91.00	194.50	2,043.5	-1,330.1	-3,053.1	-221.1	420,055.88	564,911.90	3,058.60	1.32	
4,807.0	90.00	194.20	2,043.2	-1,330.4	-3,094.8	-231.8	420,014.22	564,901.24	3,100.57	2.43	
4,850.0	90.30	193.80	2,043.0	-1,330.6	-3,136.5	-242.2	419,972.50	564,890.84	3,142.60	1.16	
4,892.0	91.30	194.10	2,042.5	-1,331.1	-3,177.3	-252.3	419,931.75	564,880.71	3,183.66	2.49	
4,935.0	91.70	193.70	2,041.3	-1,332.3	-3,219.0	-262.6	419,890.02	564,870.39	3,225.69	1.32	
4,979.0	90.60	195.20	2,040.5	-1,333.1	-3,261.6	-273.6	419,847.42	564,859.41	3,268.82	4.23	
5,021.0	91.20	195.20	2,039.8	-1,333.8	-3,302.1	-284.6	419,806.90	564,848.40	3,309.47	1.43	
5,054.0	91.30	194.90	2,039.1	-1,334.5	-3,334.0	-293.2	419,775.04	564,839.83	3,341.59	0.96	
5,107.0	89.80	194.90	2,038.6	-1,335.0	-3,385.2	-306.8	419,723.82	564,826.21	3,393.21	2.83	
5,150.0	90.50	195.20	2,038.5	-1,335.1	-3,426.7	-318.0	419,682.30	564,815.04	3,435.06	1.77	
5,193.0	91.50	195.50	2,037.7	-1,335.9	-3,468.2	-329.3	419,640.84	564,803.66	3,476.86	2.43	
5,236.0	91.20	195.80	2,036.7	-1,336.9	-3,509.6	-340.9	419,599.44	564,792.06	3,518.61	0.99	
5,281.0	90.20	195.60	2,036.1	-1,337.5	-3,552.9	-353.1	419,556.13	564,779.89	3,562.29	2.27	
5,326.0	90.60	195.20	2,035.8	-1,337.8	-3,596.3	-365.1	419,512.74	564,767.94	3,606.03	1.26	
5,371.0	91.20	195.10	2,035.1	-1,338.5	-3,639.7	-376.8	419,469.31	564,756.18	3,649.81	1.35	
5,416.0	91.80	194.90	2,033.9	-1,339.7	-3,683.1	-388.5	419,425.86	564,744.54	3,693.61	1.41	
5,461.0	92.30	194.90	2,032.3	-1,341.3	-3,726.6	-400.0	419,382.40	564,732.97	3,737.41	1.11	
5,495.0	92.80	195.00	2,030.8	-1,342.8	-3,759.4	-408.8	419,349.59	564,724.21	3,770.49	1.50	
5,540.0	92.80	195.00	2,028.6	-1,345.0	-3,802.8	-420.4	419,306.17	564,712.58	3,814.25	0.00	



Company	Murchison Oil and Gas	Well	Well @ 3373.6usft (4)
Project	Ogden North	Grid	well @ 3373.6usft (4)
Site	Ogden #8	Minimum Curvature	EDM 5000.1 Single User Db
Well	Ogden #8HML		
Wellbore	Ogden 8HML ST 1 Rev 1		
Depth	Ogden 8HML ST 1 Rev 1		

Category	Interval	Depth (feet)	Interval	Depth (feet)	Interval	Depth (feet)	Interval	Depth (feet)
		375.4		375.4		9 5/8"		
		2,342.4		2,027.3		7"		

Checked By: _____ Approved By: _____ Date: _____



MURCHISON OIL & GAS, INC.

Murchison Oil and Gas

Ogden North

Ogden #8

Ogden #8HML

Ogden 8HML ST 2 Rev 1

Survey: Ogden 8HML ST2

MOJO EOW Survey

06 November, 2012

This survey is correct to the best of my knowledge and is supported by actual field data.

(Signature)

Notarized this date 8th of November, 2012. Cynthia L. Cottrell

Notary

Signature County of Collin State of Texas



MOJO





Company:	Murchison Oil and Gas	Well:	Ogden #8HML
Project:	Ogden North	Well @:	3373.6ust (4)
Well:	Ogden #8HML	Well @:	3373.6ust (4)
Well:	Ogden 8HML ST 2 Rev 1	Grid:	EDM 5000, 1 Single User Db
Well:	Ogden 8HML ST 2 Rev 1	Minimum Curvature	
Project:	Ogden North, Pinnale Appraisal Well	System Datum:	Mean Sea Level
Map System:	US State Plane 1983		
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Position:	Map	North:	422,609.00	East:	565,133.00	Grid Convergence:	0.04°
Position Uncertainty:	1.00	North:	422,609.00	East:	565,133.00	Grid Convergence:	0.04°

Well:	Ogden #8HML	Well Position:	+N-S	0.00	Wellhead Elevation:	423,109.00	Latitude:	32° 9' 47.453 N
		Well Position:	+E-W	0.00		565,133.00	Longitude:	104° 15' 23.163 W
		Position Uncertainty:		0.00		ust	Ground Level:	3,361.6

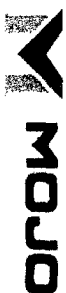
Well:	Ogden 8HML ST 2 Rev 1	Wellhead Elevation:	423,109.00	Latitude:	32° 9' 47.453 N
		Wellhead Elevation:	565,133.00	Longitude:	104° 15' 23.163 W
		Position Uncertainty:	0.00	Ground Level:	3,361.6

Design:	Ogden 8HML ST 2 Rev 1	Version:	1.0	Phase:	ACTUAL	Tie On Depth:	3,000.0
Vertical Sample:	Depth from RVD	Depth from RVD	0.0	Depth from RVD	0.0	Depth from RVD	191.18

Well Ogdan #81-ML
well @ 3373 6ustt (4)
well @ 3373 6ustt (4)
Grid
Minimum Curvature
EDM 5000.1 Single User Db
© 1997-2000, 2002
www.earthlink.net

[illegible]

3,000.0	89.16	178.73	2,047.7	-1,325.9	-1,311.9	-17.9	421,797.09	565,115.10	1,290.46	0.00
3,043.0	84.70	181.20	2,050.0	-1,323.6	-1,354.8	-17.9	421,754.17	565,115.13	1,332.58	11.85
3,086.0	85.40	183.90	2,053.7	-1,319.9	-1,397.6	-19.8	421,711.38	565,113.22	1,374.93	6.46
3,129.0	86.20	186.50	2,056.8	-1,316.8	-1,440.3	-23.7	421,666.67	565,109.33	1,417.58	6.33
3,172.0	88.90	189.00	2,058.7	-1,314.9	-1,482.9	-29.5	421,626.11	565,103.54	1,460.46	8.55
3,215.0	90.30	190.00	2,059.0	-1,314.6	-1,525.3	-36.6	421,583.71	565,096.44	1,503.44	4.00
3,258.0	90.50	190.40	2,058.7	-1,314.9	-1,567.6	-44.2	421,541.39	565,088.83	1,546.43	1.04
3,301.0	90.80	190.90	2,058.2	-1,315.4	-1,609.9	-52.1	421,499.13	565,080.88	1,589.42	1.36
3,344.0	90.60	192.70	2,057.7	-1,315.9	-1,652.0	-60.9	421,457.04	565,072.09	1,632.42	4.21
3,387.0	90.60	194.60	2,057.2	-1,316.4	-1,693.7	-71.1	421,415.26	565,061.94	1,675.37	4.42
3,430.0	92.80	196.00	2,055.9	-1,317.7	-1,735.2	-82.4	421,373.81	565,050.60	1,718.24	6.06
3,473.0	93.10	196.70	2,053.7	-1,319.9	-1,776.4	-94.5	421,332.60	565,038.51	1,761.01	1.77
3,516.0	92.50	197.80	2,051.6	-1,322.0	-1,817.4	-107.2	421,291.59	565,025.78	1,803.71	2.91
3,559.0	91.00	197.80	2,050.3	-1,323.3	-1,858.3	-120.4	421,250.66	565,012.64	1,846.41	3.49
3,602.0	90.20	197.80	2,049.9	-1,323.7	-1,899.3	-133.5	421,209.73	564,999.50	1,889.12	1.86
3,645.0	90.40	197.60	2,049.6	-1,324.0	-1,940.2	-146.6	421,168.76	564,986.42	1,931.84	0.66
3,688.0	89.90	197.70	2,049.5	-1,324.1	-1,981.2	-159.6	421,127.79	564,973.38	1,974.56	1.19
3,731.0	89.20	197.50	2,049.9	-1,323.7	-2,022.2	-172.6	421,086.80	564,960.38	2,017.29	1.69
3,774.0	89.30	198.10	2,050.4	-1,323.2	-2,063.1	-185.8	421,045.86	564,947.24	2,060.00	1.41
3,817.0	90.80	199.20	2,050.4	-1,323.2	-2,103.9	-199.5	421,005.12	564,933.49	2,102.63	4.33
3,860.0	92.20	199.00	2,049.3	-1,324.3	-2,144.5	-213.6	420,964.50	564,919.42	2,145.21	3.29



COMPASS 5000.1 Build 56

MOJO EOW Survey



Company: Murchison Oil and Gas
 Project: Ogden North
 Site: Ogden #8
 Well: Ogden #8HML
 Wellbore: Ogden 8HML ST 2 Rev 1
 Design: Ogden 8HML ST 2 Rev 1

Location: Ogden North
 Survey: Ogden North
 Station: Ogden North
 Datum: NAD 83
 Unit: Feet

Well: Ogden #8HML
 well @ 3373.6usft (4)
 well @ 3373.6usft (4)
 Grid
 Minimum Curvature
 EDM 5000.1 Single User Db

Survey	MD (usft)	True (°)	Adjusted (°)	VD (usft)	(V)OSS (usft)	MS (usft)	EDP (usft)	Northing (usft)	Easting (usft)	V-Seg (usft)	DEG (°)
	5,064.0	90.90	196.90	2,033.4	-1,340.2	-3,286.2	-594.5	419,822.75	564,538.47	3,339.16	2.29
	5,107.0	89.90	199.10	2,033.1	-1,340.5	-3,327.1	-607.8	419,781.86	564,526.19	3,381.85	5.62
	5,150.0	89.80	201.10	2,033.2	-1,340.4	-3,367.5	-622.6	419,741.48	564,510.41	3,424.33	4.66
	5,193.0	90.90	201.10	2,033.0	-1,340.6	-3,407.6	-638.1	419,701.37	564,494.93	3,466.68	2.56
	5,236.0	88.50	203.30	2,033.2	-1,340.4	-3,447.4	-654.3	419,661.56	564,478.68	3,508.88	7.57
	5,281.0	88.90	202.80	2,034.2	-1,339.4	-3,488.8	-671.9	419,620.16	564,461.07	3,552.91	1.42
	5,326.0	89.40	202.20	2,034.9	-1,338.7	-3,530.4	-689.1	419,578.59	564,443.85	3,597.03	1.74
	5,371.0	90.00	201.90	2,035.1	-1,338.5	-3,572.1	-706.0	419,536.89	564,426.96	3,641.22	1.49
	5,416.0	90.70	201.90	2,034.8	-1,338.8	-3,613.9	-722.8	419,495.13	564,410.17	3,685.44	1.56
	5,461.0	91.50	201.40	2,034.0	-1,339.6	-3,655.7	-739.4	419,453.32	564,393.58	3,729.68	2.10
	5,506.0	92.20	201.40	2,032.5	-1,341.1	-3,697.6	-755.8	419,411.44	564,377.16	3,773.94	1.56
	5,551.0	92.90	201.00	2,030.5	-1,343.1	-3,739.5	-772.1	419,369.53	564,360.91	3,818.21	1.79
	5,596.0	93.30	200.30	2,028.1	-1,345.5	-3,781.5	-787.9	419,327.48	564,345.06	3,862.53	1.79
	5,641.0	93.30	200.30	2,025.5	-1,348.1	-3,823.7	-803.5	419,285.35	564,329.47	3,906.89	0.00

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Home	Casing Diameter (")	True Diameter (")
375.4	375.4	9.5/8"	9-5/8	12-1/4
2,342.4	2,027.3	7"	7	8-3/4

Checked By: _____

Approved By: _____

Date: _____



MURCHISON OIL & GAS, INC.

Murchison Oil and Gas

Ogden North

Ogden #8

Ogden #8HML

Ogden 8HML ST 3 Rev 1

Survey: Ogden 8HML ST3

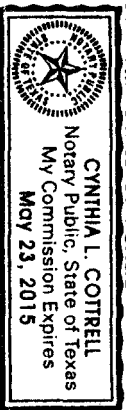
MOJO EOW Survey

06 November, 2012

This survey is correct to the best of my knowledge and is supported by actual field data.  (Signature)

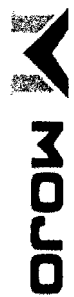
Notarized this date 8th of November, 2012. Cynthia L. Cottrell Notary

Signature County of Collin State of Texas



MOJO





Company:	Murchison Oil and Gas	Well Ogden #8HML
Project:	Ogden North	well @ 3373.6usft (4)
Site:	Ogden #8	well @ 3373.6usft (4)
Well:	Ogden #8HML	Grid
Wellbore:	Ogden 8HML ST 3 Rev 1	Minimum Curvature
Direction:	Ogden 8HML ST 3 Rev 1	EDM 5000.1 Single User Db

Project:	Ogden North, Pinnale Appraisal Well		
Map System:	US State Plane 1983	System Datum:	
Geo Datum:	North American Datum 1983	Mean Sea Level	
Map Zone:	New Mexico Eastern Zone		

Site:	Ogden #8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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Well	Ogden #8HML					
Well Position	+N/-S	0.0 usft	Northing:	423,109.00 usft	Latitude:	32° 9' 47.453 N
	+E/-W	0.0 usft	Easting:	565,133.00 usft	Longitude:	104° 15' 23.163 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,361.6 usft	

Wellbore	Ogden 8HML ST 3 Rev 1				
Magnetics	Model Name	Sample Date	Depth (m)	Dip Angle (°)	Field Strength (nT)
	IGRF2005.10	25/09/2012	7.73	60.01	48.419

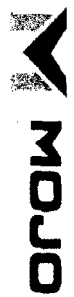
Design:	Ogden 8HML ST 3 Rev 1					
Audit Notes:						
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	3,731.0	
Vertical Section:	Depth From (TTD)	usft	N/S	usft	E/W	usft
	0.0	0.0	0.0	0.0	188.31	

Station	Response	Date	05/11/2012
408.4	3.000.0	Ogden 8HML (Ogden #8HML)	MWD
3.043.0	3.731.0	Ogden 8HML ST2 (Ogden 8HML ST 2 Rev	MWD
3.774.0	5.900.0	Ogden 8HML ST3 (Ogden 8HML ST 3 Rev	MWD
			MWD - Standard
			MWD - Standard
			MWD - Standard

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	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3,731.0	89.20	197.50	2,049.9	-1,323.7	-2,022.2	-172.6	421,086.80	564,960.38	2,025.92	0.00	3,774.0	88.00	196.10	2,050.9	-1,322.7	-2,063.1	-185.8	421,045.87	564,947.24	2,068.31	3.12	3,817.0	87.60	207.40	2,052.6	-1,321.0	-2,103.6	-200.3	421,005.44	564,932.73	2,110.42	7.72	3,860.0	89.20	204.40	2,053.8	-1,319.8	-2,143.2	-217.0	420,966.85	564,916.00	2,162.01	7.90	3,903.0	90.80	205.90	2,053.8	-1,319.8	-2,182.1	-235.3	420,926.93	564,897.73	2,193.17	5.10	3,946.0	90.80	207.90	2,053.2	-1,320.4	-2,220.4	-254.7	420,888.58	564,878.28	2,233.92	4.66	3,989.0	90.80	206.90	2,052.6	-1,321.0	-2,258.6	-274.5	420,850.41	564,858.49	2,274.55	2.33	4,032.0	91.00	206.40	2,051.9	-1,321.7	-2,297.0	-293.8	420,811.99	564,839.21	2,315.36	1.22	4,075.0	91.20	206.10	2,051.1	-1,322.5	-2,335.6	-312.8	420,773.43	564,820.19	2,356.26	0.84	4,118.0	90.90	206.80	2,050.3	-1,323.3	-2,374.1	-332.0	420,734.93	564,801.04	2,397.12	1.77	4,162.0	90.40	208.70	2,049.8	-1,323.8	-2,413.0	-352.4	420,696.00	564,780.56	2,438.60	4.46	4,205.0	90.00	208.90	2,049.6	-1,324.0	-2,450.7	-373.2	420,656.32	564,759.84	2,478.88	1.06	4,248.0	91.30	210.90	2,049.1	-1,324.5	-2,488.0	-394.6	420,621.05	564,738.41	2,518.86	5.55	4,290.0	91.90	211.70	2,048.0	-1,325.6	-2,523.8	-416.4	420,586.17	564,716.60	2,557.51	2.38	4,333.0	91.30	213.60	2,046.8	-1,326.8	-2,560.0	-439.6	420,548.99	564,693.41	2,596.67	4.63	4,376.0	90.20	213.90	2,046.2	-1,327.4	-2,595.8	-463.5	420,513.24	564,669.52	2,635.50	2.65	4,419.0	89.90	211.70	2,046.2	-1,327.4	-2,631.9	-486.8	420,477.09	564,646.23	2,674.62	5.16	4,462.0	89.70	213.90	2,046.3	-1,327.3	-2,668.0	-510.1	420,440.95	564,622.94	2,713.75	5.14	4,506.0	91.00	214.70	2,046.0	-1,327.6	-2,704.4	-534.9	420,404.61	564,598.14	2,753.30	3.47	4,549.0	90.70	214.80	2,045.4	-1,328.2	-2,739.7	-559.4	420,369.28	564,573.64	2,791.80	0.74																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								



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Checked By: _____ Approved By: _____ Date: _____



MURCHISON OIL & GAS, INC.

Murchison Oil and Gas

Ogden North

Ogden #8

Ogden #8HML

Ogden 8HML ST4 Rev 1

Survey: Ogden 8HML ST4

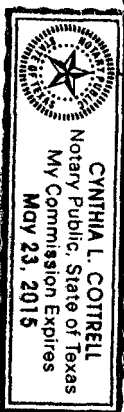
MOJO EOW Survey

06 November, 2012

This survey is correct to the best of my knowledge and is supported by actual field data.  (Signature)

Notarized this date 8th of November, 2012. Cynthia L. Cottrell Notary

Signature Cynthia L. Cottrell County of Collin State of Texas



MOJO

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Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

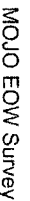
Well	Ogden #8-HML		
Well Position	+N/S +E/W	0.0 usft 0.0 usft	423,108.00 usft 565,133.00 usft
Position Uncertainty		0.0 usft	usft
		Wellhead Elevation:	Latitude: 32° 9' 47.453 N Longitude: 104° 15' 23.163 W Ground Level: 3,364.6 usft

Design: Ogden 8-INHL STD Rev 1				
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 2,870.0
Vertical Section	Surface Elevation (feet)	111.5	111.5	111.5
	0.0	0.0	0.0	192.94



Case No.	Case Name	Date	06/11/2012
1	Case 1	06/11/2012	06/11/2012
2	Case 2	06/11/2012	06/11/2012
3	Case 3	06/11/2012	06/11/2012
4	Case 4	06/11/2012	06/11/2012
5	Case 5	06/11/2012	06/11/2012
6	Case 6	06/11/2012	06/11/2012
7	Case 7	06/11/2012	06/11/2012
8	Case 8	06/11/2012	06/11/2012
9	Case 9	06/11/2012	06/11/2012
10	Case 10	06/11/2012	06/11/2012
11	Case 11	06/11/2012	06/11/2012
12	Case 12	06/11/2012	06/11/2012
13	Case 13	06/11/2012	06/11/2012
14	Case 14	06/11/2012	06/11/2012
15	Case 15	06/11/2012	06/11/2012
16	Case 16	06/11/2012	06/11/2012
17	Case 17	06/11/2012	06/11/2012
18	Case 18	06/11/2012	06/11/2012
19	Case 19	06/11/2012	06/11/2012
20	Case 20	06/11/2012	06/11/2012
21	Case 21	06/11/2012	06/11/2012
22	Case 22	06/11/2012	06/11/2012
23	Case 23	06/11/2012	06/11/2012
24	Case 24	06/11/2012	06/11/2012
25	Case 25	06/11/2012	06/11/2012
26	Case 26	06/11/2012	06/11/2012
27	Case 27	06/11/2012	06/11/2012
28	Case 28	06/11/2012	06/11/2012
29	Case 29	06/11/2012	06/11/2012
30	Case 30	06/11/2012	06/11/2012
31	Case 31	06/11/2012	06/11/2012
32	Case 32	06/11/2012	06/11/2012
33	Case 33	06/11/2012	06/11/2012
34	Case 34	06/11/2012	06/11/2012
35	Case 35	06/11/2012	06/11/2012
36	Case 36	06/11/2012	06/11/2012
37	Case 37	06/11/2012	06/11/2012
38	Case 38	06/11/2012	06/11/2012
39	Case 39	06/11/2012	06/11/2012
40	Case 40	06/11/2012	06/11/2012
41	Case 41	06/11/2012	06/11/2012
42	Case 42	06/11/2012	06/11/2012
43	Case 43	06/11/2012	06/11/2012
44	Case 44	06/11/2012	06/11/2012
45	Case 45	06/11/2012	06/11/2012
46	Case 46	06/11/2012	06/11/2012
47	Case 47	06/11/2012	06/11/2012
48	Case 48	06/11/2012	06/11/2012
49	Case 49	06/11/2012	06/11/2012
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52	Case 52	06/11/2012	06/11/2012
53	Case 53	06/11/2012	06/11/2012
54	Case 54	06/11/2012	06/11/2012
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68	Case 68	06/11/2012	06/11/2012
69	Case 69	06/11/2012	06/11/2012
70	Case 70	06/11/2012	06/11/2012
71	Case 71	06/11/2012	06/11/2012
7			

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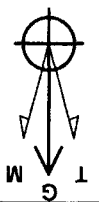
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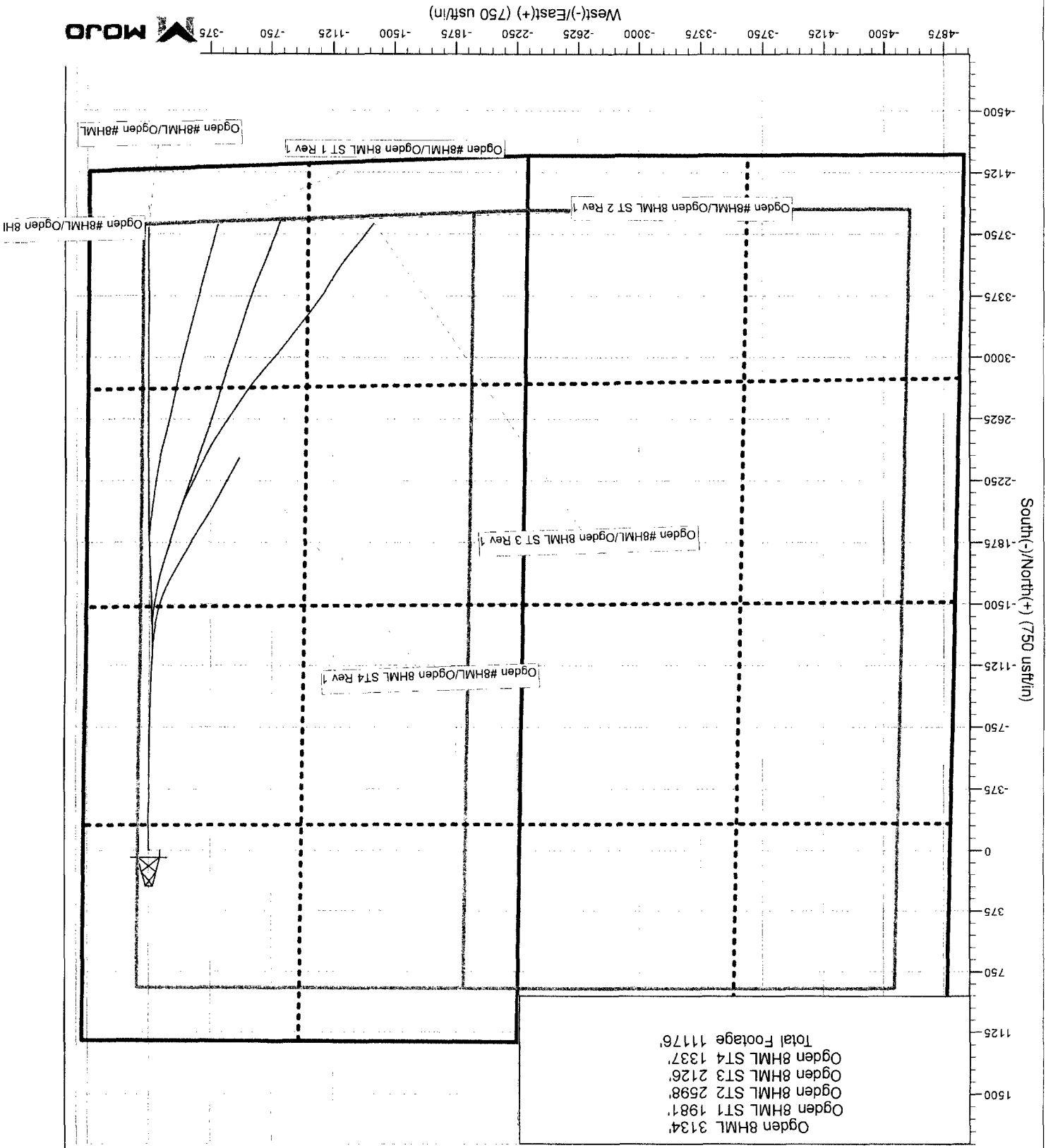
Project: Ogden North
 Site: Ogden #8
 Well: Ogden #8HML
 Wellbore: Ogden #8HML
 Design: Ogden #8HML

MURCHISON OIL & GAS, INC.

Azimuths to Grid North
 True North: -0.04°
 Magnetic North: 7.69°
 Magnetic Field
 Strength: 48419.35nT
 Dip Angle: 60.01°
 Date: 25/09/2012
 Model: IGRF200510



Ogden 8HML 3134'
 Ogden 8HML ST1 1981'
 Ogden 8HML ST2 2598'
 Ogden 8HML ST3 2126'
 Ogden 8HML ST4 1337'
 Total Footage 11176'



South(-)/North(+) (750 usft/in)

West(-)/East(+) (750 usft/in)

