MURCHISON OIL & GAS, INC.

30-015-40042

Murchison Oil and Gas

Paddock
Grizzly Bear 2H
Grizzly Bear 2H
Grizzly Bear 2H

Survey: Grizzly Bear 002H

MOJO Survey

08 August, 2012

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

(Signature)
Notarized this date 10th of August, 2012.

Notary Signature
County of Collin
State of Texas

CYNTHIA L. COTTRELL
Notary Public, State of Texas
My Commission Expires
May 23, 2015

MOJO
DIRECTIONAL CORPORATION

Company:	Murchison Oil and Gas	**Local Co-ordinate Reference:**	Well Grizzly Bear 2H
Project:	Paddock	**TVD Reference:**	WELL @ 3728 3usft (HWD 4)
Site:	Grizzly Bear 2H	**MD Reference:**	WELL @ 3728 3usft (HWD 4)
Well:	Grizzly Bear 2H	**North Reference:**	Grid
Wellbore:	Grizzly Bear 2H	**Survey Calculation Method:**	Minimum Curvature
Design:	Grizzly Bear 2H	**Database:**	EDM 5000.1 Single User Db

Project Paddock, Horizontal Development Wells

Map System.	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone.	New Mexico Eastern Zone		Using geodetic scale factor

Site Grizzly Bear 2H

Site Position:		**Northing:**	677,390.06 usft	**Latitude:**	32° 51' 43.160 N
From:	Lat/Long	**Easting:**	606,289.07 usft	**Longitude:**	104° 7' 18.485 W
Position Uncertainty:	1.0 usft	***Slot Radius:***	15 "	***Grid Convergence:***	0.11 °

Well Grizzly Bear 2H

Well Position	**+N/-S**	0.0 usft	**Northing:**	677,390.06 usft	**Latitude:**	32° 51' 43.160 N
	+E/-W	0.0 usft	**Easting:**	606,289.07 usft	**Longitude:**	104° 7' 18.485 W
Position Uncertainty		1.0 usft	**Wellhead Elevation:**	0.0 usft	**Ground Level:**	3,716.3 usft

Wellbore Grizzly Bear 2H

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/03/2012	7.79	60.69	48,902

Design Grizzly Bear 2H

Audit Notes:

Version.	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	270.83

Survey Program **Date** 08/08/2012

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
406.0	8,414.0	Grizzly Bear 002H (Grizzly Bear 2H)	MWD	MWD - Standard

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Well:	Grizzly Bear 2H	**North Reference:**	Grid
Wellbore:	Grizzly Bear 2H	**Survey Calculation Method:**	Minimum Curvature
Design:	Grizzly Bear 2H	**Database:**	EDM 5000 1 Single User Db

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	V. Sec (usft)	DLeg (°/100usft)
0.0	0.00	0.00	0.0	3,728.3	0.0	0.0	677,390.06	606,289.07	0.00	0.00
52.0	0.10	67.40	52.0	3,676.3	0.0	0.0	677,390.07	606,289.11	-0.04	0.20
14" Conductor										
377.0	0.74	67.40	377.0	3,351.3	0.9	2.3	677,390.99	606,291.33	-2.24	0.20
9 5/8" Surface Casing										
406.0	0.80	67.40	406.0	3,322.3	1.1	2.6	677,391.14	606,291.69	-2.60	0.20
497.0	0.90	65.50	497.0	3,231.3	1.6	3.9	677,391.69	606,292.92	-3.83	0.11
592.0	0.90	70.90	592.0	3,136.3	2.2	5.2	677,392.24	606,294.31	-5.21	0.09
683.0	0.80	155.00	683.0	3,045.3	1.8	6.2	677,391.90	606,295.25	-6.15	1.25
804.0	0.80	145.00	803.9	2,924.4	0.4	7.0	677,390.44	606,296.09	-7.02	0.12
939.0	0.60	166.60	938.9	2,789.4	-1.1	7.7	677,388.98	606,296.80	-7.74	0.24
1,066.0	0.69	171.34	1,065.9	2,662.4	-2.5	8.0	677,387.57	606,297.07	-8.03	0.09
Seven Rivers										
1,074.0	0.70	171.60	1,073.9	2,654.4	-2.6	8.0	677,387.48	606,297.08	-8.05	0.09
1,119.0	0.70	195.40	1,118.9	2,609.4	-3.1	8.0	677,386.94	606,297.05	-8.02	0.64
1,164.0	0.60	221.90	1,163.9	2,564.4	-3.6	7.7	677,386.50	606,296.82	-7.80	0.70
1,208.0	0.50	235.90	1,207.9	2,520.4	-3.8	7.4	677,386.22	606,296.51	-7.49	0.38
1,254.0	0.50	228.90	1,253.9	2,474.4	-4.1	7.1	677,385.98	606,296.19	-7.18	0.13
1,299.0	0.50	216.30	1,298.9	2,429.4	-4.4	6.9	677,385.69	606,295.92	-6.92	0.24
1,343.0	0.60	230.30	1,342.9	2,385.4	-4.7	6.6	677,385.39	606,295.63	-6.63	0.38
1,388.0	0.60	222.60	1,387.9	2,340.4	-5.0	6.2	677,385.06	606,295.29	-6.29	0.18
1,433.0	0.60	217.10	1,432.9	2,295.4	-5.4	5.9	677,384.70	606,294.99	-6.00	0.13
1,477.0	0.70	220.10	1,476.9	2,251.4	-5.7	5.6	677,384.31	606,294.68	-5.69	0.24
1,522.0	0.60	212.80	1,521.9	2,206.4	-6.2	5.3	677,383.90	606,294.37	-5.39	0.29
1,567.0	0.50	219.60	1,566.9	2,161.4	-6.5	5.1	677,383.55	606,294.12	-5.14	0.27
1,612.0	0.60	265.20	1,611.9	2,116.4	-6.7	4.7	677,383.38	606,293.76	-4.79	0.97
1,615.0	0.59	266.47	1,614.9	2,113.4	-6.7	4.7	677,383.38	606,293.73	-4.76	0.54
Queen										

Company	Murchison Oil and Gas	**Local Co-ordinate Reference**	Well Grizzly Bear 2H
Project	Paddock	**TVD Reference**	WELL @ 3728 3usft (HWD 4)
Site	Grizzly Bear 2H	**MD Reference**	WELL @ 3728 3usft (HWD 4)
Well	Grizzly Bear 2H	**North Reference**	Grid
Wellbore	Grizzly Bear 2H	**Survey Calculation Method**	Minimum Curvature
Design	Grizzly Bear 2H	**Database**	EDM 5000 1 Single User Db

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	V Sec (usft)	DLeg (°/100usft)
1,657 0	0 50	288 30	1,656 9	2,071 4	-6 6	4.3	677,383 43	606,293 34	-4 37	0 54
1,702 0	0 60	296 30	1,701.9	2,026 4	-6.5	3 9	677,383 59	606,292 94	-3 97	0.28
1,747 0	0 80	298 00	1,746 9	1,981 4	-6 2	3 4	677,383 84	606,292 45	-3 47	0 45
1,792 0	0 60	286 50	1,791 9	1,936 4	-6 0	2 9	677,384.06	606,291 95	-2 97	0 54
1,837 0	0 70	297 80	1,836.9	1,891 4	-5 8	2 4	677,384 25	606,291 48	-2 50	0 36
1,882.0	0 70	298.50	1,881 9	1,846 4	-5 5	1.9	677,384 51	606,291 00	-2 01	0.02
1,927 0	0 50	294 40	1,926 9	1,801 4	-5 3	1 5	677,384 72	606,290 58	-1 58	0 45
1,972 0	0 60	284 40	1,971 9	1,756 4	-5 2	1 1	677,384.86	606,290 17	-1 17	0 31
2,017 0	0 60	295 60	2,016.9	1,711 4	-5 0	0 7	677,385 02	606,289 73	-0 73	0 26
2,062.0	0 60	291 90	2,061.9	1,666 4	-4 8	0 2	677,385 21	606,289 30	-0 30	0 09
2,107.0	0 50	308.60	2,106 9	1,621 4	-4 6	-0.1	677,385 42	606,288 93	0 08	0 42
2,152 0	0.50	298.40	2,151.9	1,576 4	-4 4	-0.5	677,385 64	606,288 60	0 41	0 20
2,197 0	0 60	300 50	2,196.9	1,531 4	-4 2	-0 8	677,385 85	606,288 22	0 79	0 23
2,242 0	0 40	302 40	2,241 9	1,486 4	-4 0	-1 2	677,386.06	606,287 89	1 12	0 45
2,287 0	0 60	292.20	2 286 9	1,441 4	-3 8	-1 5	677,386 23	606,287 54	1 48	0 48
2,332 0	0 50	294.40	2,331.9	1,396 4	-3 7	-1 9	677,386 40	606,287 14	1 88	0 23
2,376 0	0 60	282 10	2,375 9	1,352 4	-3 5	-2 3	677,386 53	606,286 74	2 28	0.35
2,403 0	0 60	278 56	2,402 9	1,325 4	-3 5	-2 6	677,386 58	606,286 46	2 56	0 14
San Andres										
2,421.0	0 60	276 20	2,420 9	1,307 4	-3 5	-2 8	677,386 60	606,286 28	2 74	0 14
2 466 0	0 40	286 20	2,465 9	1,262 4	-3 4	-3 2	677,386 67	606,285 89	3 13	0 48
2,511 0	0 40	290 90	2,510 8	1,217 5	-3 3	-3 5	677,386.77	606,285 59	3.43	0 07
2,556.0	0 50	293 10	2,555.8	1,172 5	-3 2	-3.8	677,386 91	606,285 27	3 76	0 23
2,601 0	0 30	266 80	2 600 8	1,127 5	-3 1	-4.1	677,386 98	606,284 97	4 06	0 59
2,646.0	0 50	273 40	2 645 8	1,082 5	-3 1	-4 4	677,386.98	606,284 65	4 37	0 46
2,691.0	0 40	296 20	2,690.8	1,037 5	-3 0	-4 8	677,387 06	606,284 32	4 71	0 45
2 736 0	0 40	294 60	2,735.8	992 5	-2 9	-5 0	677,387 20	606,284 03	5 00	0.02

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Project	Paddock	**TVD Reference**	WELL @ 3728 3usft (HWD 4)
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Well	Grizzly Bear 2H	**North Reference**	Grid
Wellbore	Grizzly Bear 2H	**Survey Calculation Method**	Minimum Curvature
Design	Grizzly Bear 2H	**Database**	EDM 5000 1 Single User Db

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	V Sec (usft)	DLeg (°/100usft)
2,781 0	0.50	284 70	2,780 8	947.5	-2 7	-5 4	677,387 31	606,283 70	5 33	0 28
2 826.0	0.40	257 40	2,825 8	902.5	-2 7	-5 7	677,387 33	606,283 36	5 67	0 52
2,871 0	0 40	258 50	2,870 8	857 5	-2 8	-6 0	677,387 26	606,283 05	5 98	0 02
2,916 0	0 40	260 30	2,915 8	812.5	-2 9	-6 3	677,387 20	606,282 74	6 29	0 03
2,960 0	0 30	246 10	2,959.8	768 5	-2 9	-6 6	677,387 13	606,282 49	6 54	0 30
3,005 0	0 40	264 80	3,004 8	723 5	-3 0	-6 9	677,387 07	606,282 22	6 81	0 33
3,051 0	0 50	243 70	3 050 8	677.5	-3 1	-7 2	677,386 97	606,281 88	7 14	0 42
3,095 0	0 30	266 30	3 094 8	633 5	-3 2	-7 5	677,386 87	606,281 59	7 43	0 57
3,141 0	0.40	244 40	3,140.8	587 5	-3 3	-7 7	677,386 80	606,281 33	7 69	0 36
3,186 0	3 00	267 20	3,185 8	542 5	-3 4	-9 1	677 386 67	606,280 01	9 01	5 86
3,231 0	5 90	275 10	3,230 7	497.6	-3 2	-12 5	677,386 82	606,276 53	12 49	6 57
3,276 0	7.40	272 60	3,275 4	452 9	-2 9	-17 7	677,387 16	606,271 33	17 70	3 39
3,321.0	9.50	269 20	3,319 9	408 4	-2 8	-24 3	677,387 24	606,264 72	24 30	4 79
3,366 0	11.60	268.80	3,364 1	364 2	-3 0	-32 6	677,387 09	606,256 49	32 54	4 67
3,411 0	11.90	268 60	3,408 2	320.1	-3 2	-41 7	677,386 88	606,247.33	41 70	0 67
3,455 0	12 60	265 80	3,451 2	277 1	-3 6	-51 1	677,386 42	606,238 01	51 01	2 09
3,500 0	14.40	262 50	3,494 9	233 4	-4 7	-61 5	677,385 33	606,227 56	61 44	4 35
3,545 0	17.70	262 20	3,538 2	190 1	-6 4	-73 8	677 383 67	606,215.24	73 74	7 34
3,590 0	19.80	262 20	3,580 8	147 5	-8 3	-88 2	677,381 71	606,200.91	88 04	4 67
3,635 0	24 00	265 40	3,622 5	105.8	-10 1	-104 9	677,379 94	606 184 23	104 69	9 70
3,680 0	28.80	268 40	3,662 8	65.5	-11 2	-124 8	677 378 90	606,164 26	124 65	11 07
3,725 0	33 20	271 00	3,701 4	26 9	-11 2	-148 0	677 378 81	606,141 09	147 81	10 22
3,770 0	36 00	273 30	3,738 4	-10 1	-10 3	-173 5	677,379 79	606,115 57	173 35	6 86
3,797 0	38 82	273 99	3,759 9	-31 6	-9 2	-189 9	677,380 83	606 099.20	189 73	10 55
Glorietta										
3,815 0	40.70	274 40	3,773 7	-45 4	-8 4	-201 4	677,381 68	606 087 72	201 22	10 55

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Design	Grizzly Bear 2H	**Database**	EDM 5000 1 Single User Db

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3,885 0	47.76	275 36	3 823 8	-95 5	-4 2	-250 0	677,385 86	606,039 11	249 90	10 14
7"										
3,923 0	51 60	275 80	3,848 4	-120 1	-1 4	-278 8	677,388 68	606,010 29	278 76	10 14
3,968 0	54.80	276 80	3,875 4	-147 1	2 6	-314 6	677,392 64	605,974 48	314 62	7 33
4,013 0	58.10	277 00	3,900.2	-171 9	7 1	-351 8	677,397 14	605,937 26	351 91	7 34
4,058 0	63 50	276 40	3,922 2	-193 9	11 7	-390 8	677,401 72	605,898 26	390 97	12 06
4,103 0	69 30	276 80	3,940 2	-211.9	16 4	-431 8	677,406 46	605,857 32	431 98	12 91
4,148 0	74 80	276 30	3,954 0	-225 7	21 3	-474 3	677,411 33	605,814 81	474 56	12 27
4,191 0	79 20	276 30	3,963 7	-235 4	25 9	-515 9	677,415 93	605,773 18	516 26	10 23
4,234 0	82.90	274 30	3,970 4	-242 1	29 8	-558 2	677,419 85	605,730 90	558 60	9 75
4,277 0	87 90	273.90	3,973 8	-245.5	32 9	-601 0	677,422 91	605,688 16	601 37	11 66
4,320.0	91 90	272 20	3,973 9	-245.6	35 1	-643 9	677,425 20	605,645 24	644 33	10 11
4,363 0	93.10	270 70	3,972 0	-243 7	36 2	-686 8	677,426 29	605 602 30	687 29	4 46
4,406 0	91.30	270 60	3,970 4	-242 1	36 7	-729 8	677,426 77	605,559 34	730 25	4 19
4,449.0	91 20	270 60	3,969 5	-241 2	37 2	-772.8	677,427 22	605,516 35	773 24	0 23
4,492 0	91 40	270 10	3,968 5	-240.2	37 4	-815 8	677,427 49	605,473 37	816 23	1 25
4,535 0	91 60	268 80	3,967 4	-239 1	37.0	-858 8	677,427 07	605,430 39	859 20	3 06
4,578.0	91 90	267 90	3,966 0	-237.7	35 8	-901 7	677,425 84	605,387.43	902 14	2 21
4,621 0	92 00	268 10	3,964 6	-236 3	34 3	-944 7	677,424 34	605,344 49	945 06	0 52
4,664 0	92.60	267 80	3,962 9	-234.6	32 7	-987 6	677,422 80	605,301 55	987 97	1 56
4,707 0	92.30	267 60	3,961 0	-232.7	31 0	-1,030 5	677,421 08	605,258.63	1,030 87	0 84
4,750 0	92 30	267 50	3,959 3	-231.0	29 2	-1,073 5	677,419 24	605,215 71	1,073 76	0 23
4,793 0	92.70	267 60	3,957 4	-229 1	27 4	-1,116 4	677,417 40	605,172 79	1,116 65	0 96
4,836 0	92 60	268 00	3,955 4	-227.1	25 7	-1,159 3	677,415 75	605 129 87	1,159 55	0 96
4,878 0	92.40	268 00	3,953 6	-225.3	24 2	-1,201 2	677,414 29	605,087.94	1,201 46	0 48
4,921 0	91.60	268 20	3,952 1	-223 8	22 8	-1,244 2	677,412 87	605,045 00	1,244 38	1 92
4,964 0	91.60	268 00	3,950 9	-222.6	21.4	-1,287 1	677,411.44	605 002.04	1,287 31	0 46

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Wellbore	Grizzly Bear 2H	**Survey Calculation Method**	Minimum Curvature
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Survey

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5,007 0	91 30	268.50	3,949 8	-221 5	20 1	-1,330 1	677,410 13	604,959 08	1,330 26	1 36
5,050 0	90 50	268 10	3,949 1	-220 8	18 8	-1,373 1	677,408 85	604,916 11	1,373 21	2 08
5 093 0	90 90	268 60	3,948 6	-220 3	17 6	-1,416 1	677,407 61	604,873 13	1,416 16	1 49
5,136 0	91 60	269 90	3,947 7	-219 4	17 0	-1,459 0	677 407.05	604,830 15	1,459 14	3 43
5,181.0	91 80	269 70	3,946 3	-218 0	16 8	-1,504 0	677,406 90	604,785 18	1,504 11	0 63
5,223 0	91 70	269 60	3,945 1	-216 8	16 6	-1 546 0	677,406.64	604,743 20	1,546 08	0.34
5,266 0	91 70	269 10	3,943.8	-215 5	16 1	-1,589 0	677,406 15	604,700 23	1,589 05	1 16
5,309 0	91 90	269.20	3 942.4	-214 1	15 5	-1,632 0	677,405 51	604,657 26	1,632 01	0 52
5,352 0	92 10	269 60	3,940 9	-212 6	15 0	-1,674 9	677,405 06	604,614 29	1,674 97	1 04
5,395 0	92 30	269 60	3,939 3	-211 0	14 7	-1,717 9	677,404 76	604,571 33	1,717 93	0 47
5,438 0	92 20	269 70	3,937 6	-209 3	14 4	-1,760 9	677,404 50	604,528 36	1,760 88	0 33
5,481.0	92 00	269 40	3,936.0	-207 7	14 1	-1,803 8	677 404 16	604,485 40	1,803 84	0.84
5,524 0	91 90	269 50	3,934 5	-206.2	13 7	-1,846 8	677,403 75	604,442 43	1,846 81	0.33
5 567 0	90 60	270 00	3,933 6	-205.3	13 5	-1,889 8	677,403 56	604,399 44	1,889 79	3 24
5.610 0	90 60	269 60	3,933.2	-204 9	13 4	-1,932 8	677,403 41	604,356 45	1,932 78	0.93
5.653 0	90 80	270 60	3,932.6	-204 3	13 4	-1,975 8	677,403 49	604,313 46	1,975 77	2.37
5,696 0	91 10	270 10	3,931 9	-203 6	13 7	-2,018 8	677,403.75	604,270 47	2,018 76	1.36
5.739 0	91 00	270 00	3,931 1	-202.8	13 7	-2,061 8	677 403 79	604,227 48	2,061 75	0.33
5,782 0	90 50	269 70	3,930 6	-202 3	13 6	-2,104 8	677,403 68	604,184 49	2,104 74	1.36
5,825.0	90 70	269 80	3,930.1	-201 8	13 4	-2,147 8	677 403 49	604,141 49	2,147 73	0 52
5 868 0	90 80	271 40	3,929.6	-201 3	13 9	-2,190 8	677 403.94	604,098 50	2,190 73	3 73
5 911.0	90 70	271 20	3,929.0	-200 7	14 9	-2,233 7	677,404 91	604,055 52	2,233 72	0 52
5,954 0	91 50	271 70	3,928 2	-199 9	15 9	-2 276 7	677,406 00	604,012 55	2,276 71	2 19
5 997.0	91 50	271 80	3,927.0	-198 7	17 3	-2,319 7	677,407 31	603,969 59	2,319 69	0 23
6.040.0	91 20	271 50	3,926 0	-197 7	18 5	-2,362 7	677,408.55	603,926 62	2,362 67	0 99
6,083.0	90 90	271 80	3,925.2	-196 9	19 7	-2,405 6	677,409.79	603,883 65	2,405 66	0 99
6 126.0	90 80	271 80	3,924 6	-196 3	21 1	-2,448.6	677,411.14	603,840 68	2,448 65	0 23