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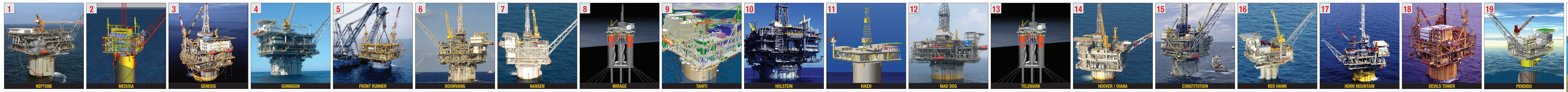

2009 WORLDWIDE SURVEY OF SPAR, DDCV, and MinDOC VESSELS

Sorted by Water Depth

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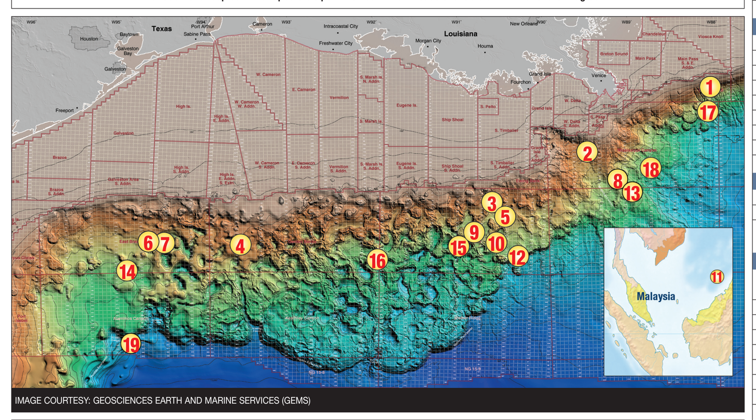

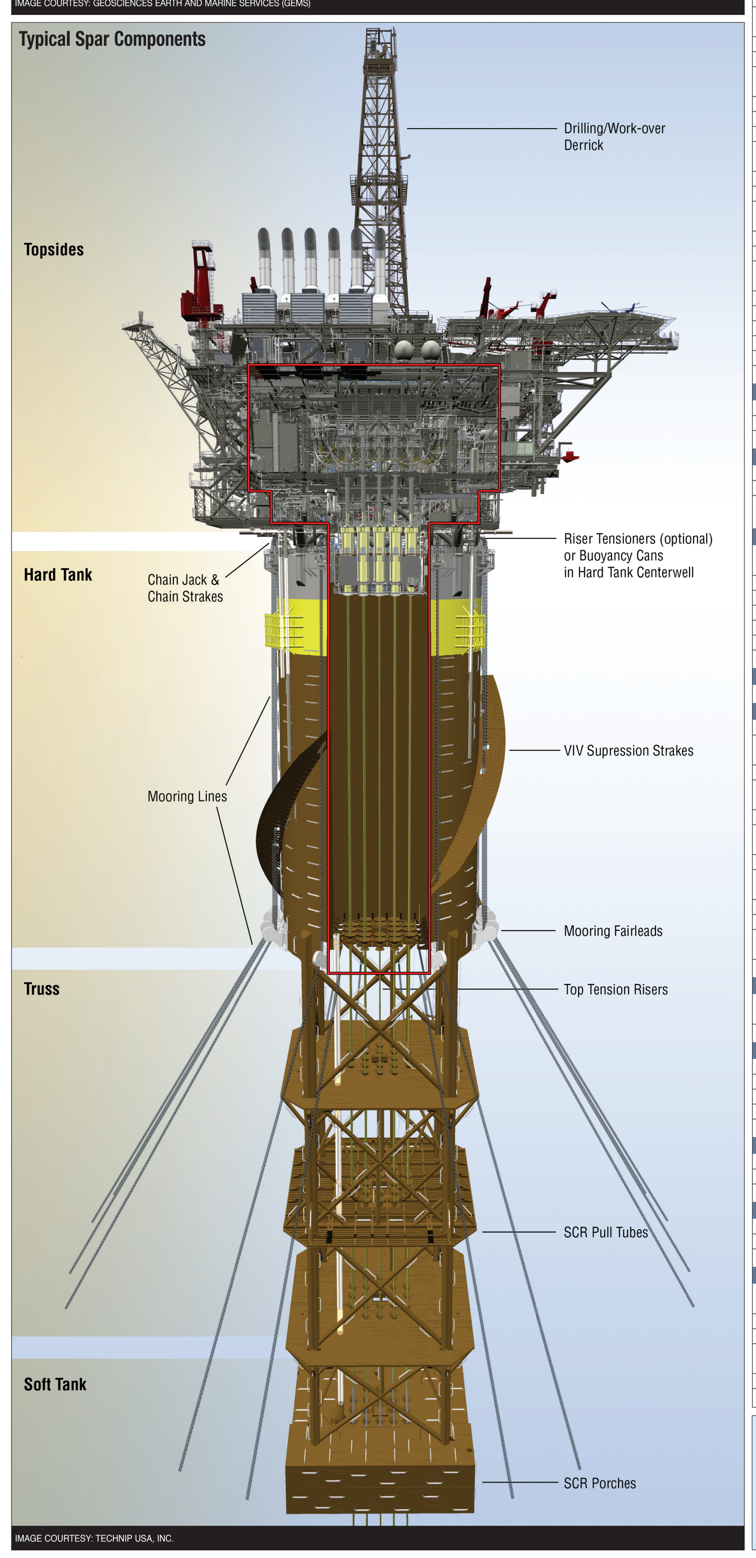

FACILITY INDUSTRY NAME / OTHER NAME OR REFERENCE	1 NEPTUNE (3)	2 MEDUSA (14)	3 GENESIS (6)	4 GUNNISON Global Producer VII	5 FRONT RUNNER	6 BOOMVANG Global Producer VI	7 NANSEN (4) Global Producer V
1.0 FIELD OPERATOR & PARTNERS / OWNERS							
1.1 Field Operator / Partner 1	Anadarko	Murphy	Chevron	Anadarko	Murphy	Anadarko	Anadarko
1.1.1 Partner 1 Percent Ownership	50.0%	60.0%	56.7%	50.0%	37.5%	30.0%	50.0%
1.2 Field Partner(s)	Eni (50%)	Eni (25%) Callon (15%)	ExxonMobil (38.38%) BHP (4.95%)	Nexen (30%) Helix (20%)	Eni (37.5%) StatoilHydro (25%)	Shell (50%) Marubeni (20%)	Devon Energy (50%)
1.3 Facility Owner(s)	Field Partners	Medusa Spar LLC (Note 16)	Field Partners				
2.0 LOCATION INFORMATION							
2.1 General Location	GOM	GOM	GOM	GOM	GOM	GOM	GOM
2.2 Block(s)	VK 825, 826, 869, 870	MC 538, 582	GC 205	GB 667, 668, 669	GC 338, 339	EB 642, 643, 683	EB 602, 646, 690, 691
2.3 Water Depth (ft)	1,930	2,223	2,599	3,150	3,330	3,453	3,678
(m)	588	678	792	960	1,015	1,052	1,121
3.0 RESERVOIR							
3.1 Reserves (MBOE)	~ 75 MBOE	90 MBOE	~ 160 MBOE	120 MBOE	175 MBOE	70 - 90 MBOE	160 - 180 MBOE
3.2 Estimated Field Life (Years)	~ 15 Years	~ 7 Years	15 Years	~ 12 Years	16 Years	~ 12 Years	~ 16 Years
4.0 WELL INFORMATION							
4.1 Dry Tree or Wet Tree	Dry	Dry	Dry	Dry	Dry	Dry	Dry
4.2 Number of Dry Tree Wells	13	8	20	7	8	5	9
4.3 Number of Wet Trees (SS Tiebacks)	3	6	0	3	2	3	4
4.4 Total Number of Wells	16	14	20	10	10	8	13
4.5 Subsea Tieback Fields							
4.5.1 Field A & (Wells)				Durango (1)	Front Runner (1)	W. Boomvang (1)	Nansen N. (2)
4.5.2 Field B & (Wells)				E. & W. Gunnison (2)	Front Runner S. (1)	E. Boomvang (2)	Navajo (1)
4.5.3 Field C & (Wells)	Swordfish (3)			Dawson Deep (1)	(Quatrain - Future)	Hack Wilson (1)	NW Nansen (4)
4.6 Well Types							
4.6.1 Producers	16	10	20	10	10	8	13
4.6.2 Water Injectors	0	0	0	0	0	0	0
4.6.3 Totals	16	10	20	10	10	8	13
4.7 Wells Pre-Drilled	7			10			
5.0 RISER INFORMATION							
5.1 Production Riser - Number of Barriers	Single Cased	Dual Cased	Single Cased	Single Cased	Dual Cased	Single Cased	Single Cased
5.2 Production Riser - Sizes	9-5/8"	13-3/8" & 9-5/8"	13-3/8"	10"	13-3/8" & 9-5/8"	9-5/8"	9-5/8"
5.3 Tensioning Method (Note 11)	TTR	TTR	TTR	TTR	TTR	TTR	TTR
5.4 Riser System (Per Riser) Quantity, Dia. x Length	3 Air Cans (6.75' x 62')	1 Air Can	5 Air Cans (8' x 63')	1 Air Can (9.6' x 175')		1 Air Can (9.5' x 188')	1 Air Can (9.5' x 188')
6.0 HULL INFORMATION							
6.1 Type	Classic (1st Gen.)	Truss (2nd Gen.)	Classic (1st Gen.)	Truss (2nd Gen.)	Truss (2nd Gen.)	Truss (2nd Gen.)	Truss (2nd Gen.)
6.2 Slots	16	9	20	9	8	9	9
6.3 Diameter	72' (21.9 m)	94' (28.6 m)	122' (37.2 m)	98' (29.9 m)	94' (28.6 m)	90' (27.4 m)	90' (27.4 m)
6.4 Length	705' (215 m)	586' (178.6 m)	705' (214.9 m)	549' (167 m)	587' (179 m)	543' (165.5 m)	543' (165.5 m)
6.5 Hard Tank Length	275' (83.8 m)			232' (70.7 m)		238' (72.5 m)	238' (72.5 m)
6.6 Freeboard	55' (16.8 m)	50' (15.2 m)	55' (16.8 m)	50' (15.2 m)		50' (15.2 m)	50' (15.2 m)
6.7 Draft	650' (198.1 m)	536' (163.4 m)	650' (198.1 m)	499' (152.1 m)		493' (150.2 m)	493' (150.2 m)
6.8 Center Well Dimensions	32' x 32'	42' x 42'	58' x 58'	42' x 42'		40' x 40'	40' x 40'
6.9 Number of Heave Plates	0	3	0	3		3	3
7.0 WELL PATTERN INFORMATION							
7.1 Well Pattern at Production Deck	4 x 4	3 x 3	5 x 5	3 x 3	3 x 3	3 x 3	3 x 3
7.2 Well Spacing at Production Deck	8' x 8'			11'-0"		10'-6"	10'-6"
7.3 Well Pattern on Sea Floor	2 x 8 @ 20' Spac.		140' Dia. @ 20' Spac.	2 x 5 @ 30' Spac.			
8.0 TOPSIDE FACILITIES							
8.1 Process Capabilities							
8.1.1 Oil Production MBOPD	35	40	55	40	60	40	40
8.1.2 Gas Production MMSCFD	60	110	72	200	110	200	200
8.1.3 Produced Water MBWPD	10	20		40	20	40	40
8.1.4 Water Injection MBPD	0	0	0	0		0	0
8.1.5 Gas Injection MMSCFD	0	0	35	0	0	0	0
8.1.6 Gas Lift MMSCFD	16	0		12	0	12	12
8.1.7 Gas Lift per Well MMSCFD	1	0		2	0	2	2
8.1.8 Total Liquids Capacity MBOPD	37			60		60	60
8.2 Number of Trains	1			3		3	3
8.2.1 Upstream of LP Separators	1			1 Gas		1 Gas	1 Gas
8.2.2 Downstream of LP Separators	1			2 Oil		2 Oil	2 Oil
8.3 Number of Modules	1		3	1		1	1
8.4 Quarters Size							
8.4.1 Production (Persons)	18		110	20	24	20	20
8.4.2 Drilling (Persons)							
8.4.3 Temporary (Persons)	48			48		48	48
8.5 Levels			3	3	3	3	3
8.6 Power Generation kW	3,000		9,000	8,000		8,000	8,000
8.6.1 Number of Generators	3			2		2	2
8.6.2 Model	SOLAR - Saturn 1000 kW			SOLAR - Taurus 60, 4250 hp		SOLAR - Taurus 60, 4250 hp	SOLAR - Taurus 60, 4250 hp
8.6.3 Backup	300 kW Diesel			700 kW Diesel		700 kW Diesel	700 kW Diesel
8.7 Compression				52 MMSCFD @ 1850 PSIG		52 MMSCFD @ 1850 PSIG	52 MMSCFD @ 1850 PSIG
8.7.1 Number of Compressors	3			2		2	2
8.7.2 Model	Superior WH 76			Dresser-Rand HOS7		Dresser-Rand HOS7	Dresser-Rand HOS7
8.8 Oil Pipeline Pumps Pumps, HP/Pump	8 @ 200 HP			3 @ 700 HP		4 @ 700 HP	4 @ 700 HP
8.9 Deck Dimensions							
8.9.1 Workover / Drilling	101' x 136'		175' x 175'	113' x 159'		75' x 154'	75' x 154'
8.9.2 Mezzanine	81' x 125'						
8.9.3 Production	101' x 136'		175' x 175'	127' x 162.5'		115' x 154'	115' x 154'
8.9.4 Cellar	N/A		175' x 175'	127' x 176'		115' x 154'	115' x 154'
8.10 Total Deck Area ft2	33,300		95,000	58,682		46,970	46,970
8.11 Platform Orientation °from true North	+15°			+15°		+15°	+15°
8.12 Flare Boom Orientation	Platform North			Platform North		Platform North	Platform North
9.0 RIG							
9.1 Spar Rig Type	1,000 HP Workover	1,000 HP Workover	3,000 HP Drilling / Compl. Rig	1,500 HP Workover	1,500 HP Workover	1,000 HP Workover	1,000 HP Workover
9.2 Contractor & Rig	Nabors / Pool		Nabors Offshore Drilling	Nabors		Nabors	Nabors
9.3 Max. Static Spar Offset for Drilling / Workover	Yes, 288' (87.8 m)		No	Yes		Yes, 350' Max	Yes, 350' Max
10.0 MOORING SYSTEM							
10.1 Type	6 Semi-Taut Catenary	10 (3,3,4) Taut Catenary	14 (3,4,3,4)	9 (3 x 3)	9 (3 x 3)	9 (3 x 3) Taut Catenary	9 (3 x 3)
10.2 Description	Chain & Wire	Chain & Wire	Chain & Wire	Chain & Wire	Chain & Wire	Chain & Wire	Chain & Wire
10.3 Anchoring	Anchor Piles 84" O.D. x 180' L		Anchor Piles 8' O.D.	Anchor Piles 7' O.D. x 220'L		Anchor Piles 84" O.D. x 232' L	Anchor Piles 84" O.D. x 232' L
11.0 ENGINEERING & PROJECT MANAGEMENT							
11.1 FEED		SparTEC / Technip		Mustang Engineering / CSO			
11.2 Hull Engineering	Deep Oil Technology	J. Ray McDermott	Technip	Technip	J. Ray McDermott	Technip	Technip
11.3 Topside Facilities	J. Ray McDermott	J. Ray McDermott	J. Ray McDermott	Mustang Engineering	J. Ray McDermott	Mustang Engineering	Mustang Engineering
11.4 Mooring Engineering	Technip	J. Ray McDermott	Technip	Technip	J. Ray McDermott	Technip	Technip
11.5 Subsea				JP Kenney		Intec Engineering	Intec Engineering
11.6 Procurement	J. Ray McDermott	J. Ray McDermott	J. Ray McDermott	Kerr-McGee	J. Ray McDermott	Kerr-McGee & SII	Kerr-McGee & SII
11.7 Project Management	Kerr-McGee & SII	SparTEC		Kerr-McGee / Technip Offshore	SparTEC	Kerr-McGee & SII	Kerr-McGee & SII
12.0 CLASSIFICATIONS SOCIETY							
12.1 Classification Organization & Hull Class Designation	ABS - FOI (Note 2)	ABS - FOI	ABS - FOI	ABS - FOI	ABS - FOI	ABS - FOI	ABS - FOI
13.0 FABRICATORS							
13.1 Contract Type & Prime Contractor	Multiple	EPCI - SparTEC	Multiple	Multiple	EPCI - SparTEC	Multiple	Multiple
13.2 Topsides							
13.2.1 Fabricator	J. Ray McDermott	J. Ray McDermott	J. Ray McDermott	Gulf Island Fabrication	J. Ray McDermott	J. Ray McDermott	J. Ray McDermott
13.2.2 Location	Morgan City, LA, USA	Veracruz, Mex. & Harbor Is., TX, USA	Morgan City, LA, USA	Houma, LA, USA	Veracruz, Mex. & Harbor Is., TX, USA	Morgan City, LA, USA	Morgan City, LA, USA
13.3 Hull							
13.3.1 Fabricator	Technip	J. Ray McDermott	Technip	Technip	J. Ray McDermott	Technip	Technip
13.3.2 Location	Pori, Finland	Jebel Ali, UAE	Pori, Finland	Pori, Finland	United Arab Emirates	Pori, Finland	Pori, Finland
13.4 Final Hull Assembly							
13.4.1 Assembly	Litton Ingalls Shipbuilding	J. Ray McDermott	Technip	Technip	J. Ray McDermott	Technip	Technip
13.4.2 Location	Pascagoula, MS, USA	Harbor Island, TX, USA	Ingleside, TX, USA	Pori, Finland	Harbor Island, TX, USA	Pori, Finland	Pori, Finland
13.5 Hull & Topsides Installation							
13.5.1 Installation Contractor	J. Ray McDermott	J. Ray McDermott	J. Ray McDermott	Heerema	J. Ray McDermott	J. Ray McDermott	J. Ray McDermott
13.5.2 Topsides Installation Method	Derrick Barge	Derrick Barge	Derrick Barge	Derrick Barge	Derrick Barge	Derrick Barge	Derrick Barge
13.5.3 Installation Vessel	DB-50	DB 50 / Shearleg	DB-50	MSV Balder / MSV Hermod	DB 50 / Shearleg	DB-50 (Hull) / DCV Balder (Topside)	DB-50 (Hull) / 101 & 50 (Topside)
13.6 Tree Manufacturer							
13.6.1 Dry Tree Contractor							
13.6.2 Wet Tree Contractor						FMC Energy Systems	FMC Energy Systems
14.0 TRANSPORTATION							
14.1 Hull Transporter/Vessel	Dockwise - Mighty Servant I	Dockwise - Blue Marlin	Dockwise - Transshelf	Dockwise - Mighty Servant I	Dockwise - Transshelf / Mighty Servant 1	Dockwise - Mighty Servant I	Dockwise - Mighty Servant I
14.2 Trips & Method	1 Dry Tow - 21 days	1 Dry Tow - 41 Days	2 Dry Tows - 24 days	1 Dry Tow - 24 days	1 Dry Tow - 23 days	1 Dry Tow - 21 Days	1 Dry Tow - 28 days
15.0 MILESTONES & DURATIONS							
15.1 Technical Discovery Date (per MMS)	1-Nov-87	23-Aug-98	1-Sep-88	22-May-00	23-Jan-01	13-Dec-97	25-Sep-99
15.2 Commercial Discovery Date	1-Nov-87	25-Oct-99	1-Sep-88	22-May-00	23-Jan-01	4-Nov-99	25-Sep-99
15.3 Project Sanction Date	15-Dec-94	15-Mar-01	15-May-95	23-Oct-01	15-Jan-02	1-Jul-00	15-Mar-00
15.4 Installation Date (Hull)	20-Sep-96	Jan., 2003	18-Jun-99	21-Aug-03	2-Jul-04	1-Dec-01	23-Oct-01
15.5 First Oil or Gas Date	10-Mar-97	24-Nov-03	28-Jan-99	11-Dec-03	7-Dec-04	24-Jun-02	28-Jan-02
16.0 CYCLE TIMES							
16.1 Discovery to Sanction (Months)	85.3	16.6	80.2	17.0	11.7	30.5	5.6
16.2 Sanction to First Oil/Gas (Months)	26.8	32.3	44.4	25.5	34.7	23.7	22.4
16.3 Discovery to First Oil/Gas (Months)	112.1	48.9	124.6	42.5	46.4	54.2	28.0
17.0 WEIGHT							
17.1 Topsides Weight (Metric Tons)	2,903	5,443	11,340	5,171		4,899	4,844
17.2 Facility Payload (Metric tons)	5,987	8,890	15,377	9,770		7,938	7,938
17.3 Hull Dry Weight (Metric Tons)	11,698	11,700	26,036	12,115	12,785	10,850	10,850
18.0 EXPORT PIPELINE INFORMATION							
18.1 Gas Export or Disposal Via:	Dauphin Island Gathering	El Paso	Transco	Triton Gathering (Shell)	Discovery Pipeline Co.	Williams Field Services -Gulf Coast Co.	Williams Field Services -Gulf Coast Co.
18.2 Gas Export Pipeline Size/Capacity	8" for 70 MMSCFD	12" for 160 MMSCFD	10" for 72 MMSCFD	16" for 275 MMSCFD	16"	18" for 400 MMSCFD	12" for 400 MMSCFD
18.3 Gas Export Length	17.5 Miles (28 Km)	37 Miles (60 Km)	58 Miles (92 Km)	41 Miles (66 Km)	12 Miles (19 Km)	38 Miles (66 Km)	38 Miles (66 Km)
18.4 Oil Export Via:	BP	Equilon	Equilon Enterprises	Williams Energy Services	Poseidon Oil Pipeline	Williams Oil Gathering	Williams Oil Gathering
18.5 Oil Export Pipeline Size/Capacity	8" for 40 MMBPOD	12" for 45 MMBPOD	14" for 55 MMBPOD	18" for 84 MMBPOD	14" for 65 MMBPOD	16" for 80 MMBPOD	12" for 80 MMBPOD
18.6 Oil Export Length	17.5 Miles (28 Km)	34 Miles (55 Km)	57 Miles (92 Km)	96 Miles (155 Km)	40 Miles (64 Km)	38 Miles (66 Km)	38 Miles (66 Km)

FACILITY INDUSTRY NAME / OTHER NAME OR REFERENCE	8 MIRAGE	9 TAHITI	10 HOLSTEIN (8,13)	11 KIKEH (15)	12 MAD DOG	13 TELEMARK
1.0 FIELD OPERATOR & PARTNERS / OWNERS						
1.1 Field Operator / Partner 1	ATP	Chevron	BP	Murphy	BP	ATP
1.1.1 Partner 1 Percent Ownership	100.0%	58.0%	50.0%	80.0%	60.5%	100.0%
1.2 Field Partner(s)	—	StatoilHydro (25%) Total (17%)	Shell (50%)	PETRONAS Carigali Sdn. Bhd. (20%)	BHP Billiton (23.9%) Chevron (15.6%)	
1.3 Facility Owner(s)		Field Partners (100%)	Field Partners (100%)	Field Partners (100%)	Field Partners (100%)	
2.0 LOCATION INFORMATION						
2.1 General Location	GOM	GOM	GOM	MALAYSIA	GOM	GOM
2.2 Block(s)	MC 942	GC 641	GC 644, 645	Blk K	GC 781, 738, 782, 825, 826, 783, 739	AV 63
2.3 Water Depth (ft)	4,000	4,100	4,344	4,364	4,420	4,450
(m)	1,219	1,250	1,324	1,330	1,347	1,356
3.0 RESERVOIR						
3.1 Reserves (MBOE)	333 MBOE	400 - 500 MBOE	300 MBOE	440 MBOE	~ 300 MBOE	
3.2 Estimated Field Life (Years)	~ 20 Years	~ 25 Years	25-30 Years	~ 17 Years	~ 25 Years	~ 20 Years
4.0 WELL INFORMATION						
4.1 Dry Tree or Wet Tree	Dry	Wet	Dry	Dry	Dry	Dry
4.2 Number of Dry Tree Wells	4	0	15	10	14	4
4.3 Number of Wet Trees (SS Tiebacks)	3 (Future)	6 (initial)	0	16	0	TBD (Future)
4.4 Total Number of Wells	7	6 (initial)	15	26	14	4
4.5 Subsea Tieback Fields						
4.5.1 Field A & (Wells)	Mirage		0			TBD
4.5.2 Field B & (Wells)	Morgus		0			TBD
4.5.3 Field C & (Wells)	Telemark		0			TBD
4.6 Well Types						
4.6.1 Producers		6 initial + 9 max fut	10	16	14	4
4.6.2 Water Injectors		7 max future	5	7	0	0
4.6.3 Totals	0		15	23	14	4
4.7 Wells Pre-Drilled		6	6		4	
5.0 RISER INFORMATION						
5.1 Production Riser - Number of Barriers	Dual Cased	NA	Dual Cased		Dual Cased	Dual Cased
5.2 Production Riser - Sizes	10-3/4" & 7-5/8"	NA	14-7/8" & 11-3/4"	9-5/8"	13-7/8" & 10-3/4"	10-3/4" & 7-5/8"
5.3 Tensioning Method (Note 11)	TTR	NA	TTR		TTR	TTR
5.4 Riser System (Per Riser) Quantity, Dia. x Length	hyd tensioners	NA	Note 12	104.992	13 Air Can (13', 220')	hyd tensioners
6.0 HULL INFORMATION						
6.1 Type	MinDOC 3	Truss (2nd Gen.)	Truss (2nd Gen.)	Truss (2nd Gen.)	Truss (2nd Gen.)	MinDOC 3
6.2 Slots	6	NA	21 (Note 9)	24	16	6
6.3 Diameter	3 @ 52' (16 m)	128' (39.0 m)	149.28' (45.5 m)	106' (32.3 m)	128' (39 m)	3 @ 52' (16 m)
6.4 Length	485' (148 m)	555' (169.2 m)	745'-11" (227.3 m)	465 ' (141.7 m)	555' (169.1 m)	485' (148 m)
6.5 Hard Tank Length		271' (82.6 m)	291'-2" (88.7 m)		245'	
6.6 Freeboard	55' (181 m)	55' (16.8 m)	55' (16.8 m)	35' (10.66 m)	50'	55' (181 m)
6.7 Draft	435' (133 m)	500' (152.4 m)	690'-11"	430 ' (131 m)	505'	435' (133 m)
6.8 Center Well Dimensions	55' x 55'	50' x 50'	75' x 75'		60' x 60'	55' x 55'
6.9 Number of Heave Plates	1	2	3	2	2	1
7.0 WELL PATTERN INFORMATION						
7.1 Well Pattern at Production Deck	2 x 3	NA	5 x 5	5 x 5	4 x4	2 x 3
7.2 Well Spacing at Production Deck	16'x25'	NA	11'-6"	11'-0"	11'-6"	16'x25'
7.3 Well Pattern on Sea Floor		NA	35' Spac.	156' Dia. Circle	Dual circle w/outer circle 162' well spaced approx. 50' apart	
8.0 TOPSIDE FACILITIES						
8.1 Process Capabilities						
8.1.1 Oil Production MBOPD	25	125	113	Processing on	120	25
8.1.2 Gas Production MMSCFD	50 (Expansion to 100)	70	150	Kikeh FPSO	40	50 (Expansion to 100)
8.1.3 Produced Water MBWPD	15	120	20		50	15
8.1.4 Water Injection MBPD		100 (Future)	90			None
8.1.5 Gas Injection MMSCFD		0	None		0	None
8.1.6 Gas Lift MMSCFD		0	(50 Future)		40	TBD
8.1.7 Gas Lift per Well MMSCFD		0	(5 Future)		5	
8.1.8 Total Liquids Capacity MBOPD	30	215	113		170	25
8.2 Number of Trains					2	
8.2.1 Upstream of LP Separators	1	1	1		2	1
8.2.2 Downstream of LP Separators	1	1	1		2	1
8.3 Number of Modules	2	3	3		1	2
8.4 Quarters Size						
8.4.1 Production (Persons)	20	100	140		30	20
8.4.2 Drilling (Persons)					70	
8.4.3 Temporary (Persons)	80		24		24	80
8.5 Levels		4				
8.6 Power Generation kW		30,000	19,000		5,500	
8.6.1 Number of Generators	1	3	3		3	2
8.6.2 Model	Solar Taurus C-50	Solar Titan 130	LM2500		Solar Taurus T-70	Solar Centaur 50
8.6.3 Backup	1250 kW Aux	1825 kW Diesel	800 kW Diesel		800 kW Diesel	1250 kW Diesel
8.7 Compression		73 MMSCFD @ 1535 PSIG	2300 PSIG			
8.7.1 Number of Compressors	1 (1 Future)	2 Trains - 3 each	2		2	1 (1 Future)
8.7.2 Model	Solar C-40	DresserRand	DresserRand		Solar Taurus 60	Solar Centaur 50
8.8 Oil Pipeline Pumps Pumps, HP/Pump	3 @ 700 HP	3 @ 50%	3 @ 50% pumps		3 @ 50% pumps	3 @ 50%, 700 HP
8.9 Deck Dimensions						
8.9.1 Workover / Drilling	215' x 65' + 110' x 65'	189' x 229' (main)	223' x 183'-6"		210' x 155'	215' x 65' + 110' x 65'
8.9.2 Mezzanine		189' x 229'	81'-6" x 183'-6"		210' x 155'	
8.9.3 Production	215' x 95' + 125' x 95'	189' x 229'	223' x 183'-6"		210' x 155'	215' x 95' + 125' x 95'
8.9.4 Cellar	3 @ 52'dia	89' x 109'	223' x 161'		Spar Deck 210' x 155'	3 @ 52'dia
8.10 Total Deck Area ft2		139,000			130,200 ft 2	
8.11 Platform Orientation °from true North	24°	-17°	+28o		+18o	24°
8.12 Flare Boom Orientation	Platform West	Platform North	-45o from Platform North		West from Platform North	Platform West
9.0 RIG						
9.1 Spar Rig Type	2,000 HP Drilling Rig	None	3,000 HP Drilling Rig	TADU - Tender Assisted Drilling Unit	4,600 HP Drilling Rig	2,000 HP Drilling Rig
9.2 Contractor & Rig	Nabors Offshore Drilling	N/A	Pride International	Smedvig Asia - West Setia	Pride International	Nabors Offshore Drilling
9.3 Max. Static Spar Offset for Drilling / Workover	No	N/A				No
10.0 MOORING SYSTEM						
10.1 Type	12 (3 x 4)	13 (4,4,5)	16 (4 x 4)	10 (2,3,3,2)	11 (4,3,4) Taut Legs	12 (3 x 4)
10.2 Description	Chain-Poly-Chain	Chain-Poly-Chain	Chain & Wire	Chain & Wire	Chain-Poly-Chain	Chain-Poly-Chain
10.3 Anchoring	Anchor Pile	Driven Piles; 84" OD x 254' L	Suction Piles		Suction Piles	Anchor Pile
11.0 ENGINEERING & PROJECT MANAGEMENT						
11.1 FEED		Mustang Engineering & Technip	Mustang Engineering	Mustang Engineering & J P Kenny	Mustang Engineering	
11.2 Hull Engineering	Bennett	Technip	Technip	Technip	Technip	Bennett
11.3 Topside Facilities	Mustang Engineering	Mustang Engineering	Mustang Engineering	Technip	Mustang Engineering	M&H Energy Services
11.4 Mooring Engineering	Intermoor	Technip	Technip	Technip	Technip	Intermoor
11.5 Subsea	Technip	Cameron & Technip		Aker Kvaerner		Technip
11.6 Procurement	Bluewater Industries	Chevron & Various	BP	Technip	BP	Bluewater Industries
11.7 Project Management	Bluewater Industries	Chevron	BP		BP	Bluewater Industries
12.0 CLASSIFICATIONS SOCIETY						
12.1 Classification Organization & Hull Class Designation	ABS - FOI	ABS - FOI	ABS - FOI	DNV - 01 Deep Draft Installation	ABS - FOI	ABS - FOI
13.0 FABRICATORS						
13.1 Contract Type & Prime Contractor	Multiple	Multiple	Multiple	MMHE	Multiple	Multiple
13.2 Topsides						
13.2.1 Fabricator	Gulf Island Fabricators	Gulf Marine Fabricators	J. Ray McDermott	Malaysia Marine & Heavy Engineering	J. Ray McDermott	Gulf Island Fabricators
13.2.2 Location	Houma, LA, USA	Ingleside, TX, USA	Morgan City, LA, USA	Pasir Gudang, Malaysia	Morgan City, LA, USA	Houma, LA, USA
13.3 Hull						
13.3.1 Fabricator	Gulf Island Fabricators	Technip	Technip	Malaysia Marine & Heavy Engineering	Technip	Gulf Island Fabricators
13.3.2 Location	Ingleside, TX, USA	Pori, Finland	Pori, Finland	Pasir Gudang, Malaysia	Pori, Finland	Ingleside, TX, USA
13.4 Final Hull Assembly						
13.4.1 Assembly	Gulf Island Fabricators	Technip	Technip	Malaysia Marine & Heavy Engineering	Technip	Gulf Island Fabricators
13.4.2 Location	Ingleside, TX, USA	Pori, Finland	Ingleside, TX, USA	Pasir Gudang, Malaysia	Pori, Finland	Ingleside, TX, USA
13.5 Hull & Topsides Installation						
13.5.1 Installation Contractor	J. Ray McDermott	Heerema	Heerema	Technip	Heerema	J. Ray McDermott
13.5.2 Topsides Installation Method	Derrick Barge	Derrick Barge	Derrick Barge	Floatover	Derrick Barge	Derrick Barge
13.5.3 Installation Vessel	DB-50	DCV Balder/DCV Thialf	DCV Thialf		DCV Balder / DCV Thialf	DB-50
13.6 Tree Manufacturer						
13.6.1 Dry Tree Contractor	Dril-Quip	NA		FMC		
13.6.2 Wet Tree Contractor		Cameron		Aker Kvaerner		
14.0 TRANSPORTATION						
14.1 Hull Transporter/Vessel		Dockwise - Mighty Servant 1	Dockwise - Black Marlin	Dockwise - Mighty Servant 1	Dockwise - Mighty Servant I	
14.2 Trips & Method	1 Wet Tow - 4 days	1 Dry Tow - 25 days	1 Dry Tow - 23 days		1 Dry Tow - 27 days	1 Wet Tow - 4 days
15.0 MILESTONES & DURATIONS						
15.1 Technical Discovery Date (per MMS)			9-Jan-99		24-Nov-98	
15.2 Commercial Discovery Date	22-May-00	11-Apr-02	11-Feb-99	30-Jul-02	24-Dec-98	18-Mar-00
15.3 Project Sanction Date	25-Feb-05	15-Aug-05	15-Sep-01	13-Sep-04	13-Feb-02	
15.4 Installation Date (Hull)		1-Aug-08	11-Jul-04	1-Nov-06	8-Dec-04	
15.5 First Oil or Gas Date	15-Mar-09		12-Dec-04	1-Oct-07	13-Jan-05	
16.0 CYCLE TIMES						
16.1 Discovery to Sanction (Months)	57.0	40.1	31.0	25.4	37.6	
16.2 Sanction to First Oil/Gas (Months)	48.5	43.4	38.8	36.5	34.9	
16.3 Discovery to First Oil/Gas (Months)		83.5	69.8	61.9	72.5	
17.0 WEIGHT						
17.1 Topsides Weight (Metric Tons)	9,091	18,950	15,766	5,428		9,091
17.2 Facility Payload (Metric tons)		26,230	23,991	9,770	22,226	
17.3 Hull Dry Weight (Metric Tons)	16,273	21,800	21,327	13,426	18,934	16,273
18.0 EXPORT PIPELINE INFORMATION						
18.1 Gas Export or Disposal Via:	Discovery Pipeline @ GI-115	Discovery Producer Services	Cleopatra Gas Pipeline		Cleopatra Gas Pipeline	Discovery Pipeline @ GI-115
18.2 Gas Export Pipeline Size/Capacity	8" - 10" for 100 MMSCFD	16" for 200 MMSCFD	20"		24"	8" (proposed)
18.3 Gas Export Length		34 Miles	70 Miles (112 Km)		70 Miles (112 Km)	10.6 Miles (proposed)
18.4 Oil Export Via:	Shell Mars 18" Equilon Line	Amberjack Pipeline Company	Caesar Oil Pipeline	Shuttle Tanker	Caesar Oil Pipeline	Shell Mars 18" Equilon Line
18.5 Oil Export Pipeline Size/Capacity	10"	24" for 325 MBOPD	28"		16"	10" proposed
18.6 Oil Export Length		54 Miles	70 Miles (112 Km)		70 Miles (112 Km)	11.0 Miles (Proposed)

FACILITY INDUSTRY NAME / OTHER NAME OR REFERENCE	14 HOOVER / DIANA (1) Deep Draft Caisson Vessel (DDCV)	15 CONSTITUTION Global Producer X	16 RED HAWK (5) Global Producer IX	17 HORN MOUNTAIN	18 DEVILS TOWER	19 PERDIDO (7)
1.0 FIELD OPERATOR & PARTNERS / OWNERS						
1.1 Field Operator / Partner 1	ExxonMobil	Anadarko	Anadarko	BP	Eni	Shell
1.1.1 Partner 1 Percent Ownership	66.7%	100.0%	50.0%	66.7%	75.0%	35.0%
1.2 Field Partner(s)	BP (33.33%)	—	Devon Energy (50%)	Occidental (33.33%)	Marubeni (25%)	Chevron (37.5%) BP (27.5%)
1.3 Facility Owner(s)	Field Partners				Williams Energy	Field Partners (100%)
2.0 LOCATION INFORMATION						
2.1 General Location	GOM	GOM	GOM	GOM	GOM	GOM
2.2 Block(s)	AC 25, 65; EB 945, 946, 989	GC 680	GB 876, 877	MC 126, 127	MC 773	AC 857
2.3 Water Depth (ft)	4,800	4,970	5,300	5,423	5,610	7,817
(m)	1,463	1,515	1,615	1,653	1,710	2,383
3.0 RESERVOIR						
3.1 Reserves (MBOE)	+ / - 320 MBOE	110 MBOE	417 MBOE	~150 MBOE	80 - 100 MBOE	TBA
3.2 Estimated Field Life (Years)	15 - 20 Years	~ 12 Years	~ 12 Years	~ 14 Years	8 - 9 Years	~ 20 Years
4.0 WELL INFORMATION						
4.1 Dry Tree or Wet Tree	Dry	Dry	Wet	Dry	Dry	Wet
4.2 Number of Dry Tree Wells	6	6	0	10	8	0
4.3 Number of Wet Trees (SS Tiebacks)	5	2	2	0	0	35
4.4 Total Number of Wells	11	8	2	10	8	35
4.5 Subsea Tieback Fields						
4.5.1 Field A & (Wells)	Diana (5)	Ticonderoga (2)	Red Hawk (2)		Triton (MC 728)	Great White (30)
4.5.2 Field B & (Wells)	Marshall				Goldfinger (MC 772)	Tobago (1)
4.5.3 Field C & (Wells)	Madison				Bass Lite (AT 426)	Silvertip (2)
4.6 Well Types						
4.6.1 Producers	11	8	2	8	4	30
4.6.2 Water Injectors	0	0	0	2	0	5
4.6.3 Totals	11	8	2	10	4	35
4.7 Wells Pre-Drilled		8		10	8	9
5.0 RISER INFORMATION						
5.1 Production Riser - Number of Barriers	Dual Cased	Dual Cased	N/A	Dual Cased	Single Cased	Single Barrier Riser with subsea control valves
5.2 Production Riser - Sizes		12"	N/A	12-3/4" & 9-5/8"	11-3/4"	14"
5.3 Tensioning Method (Note 11)	TTR	TTR	N/A	TTR	TTR	Hydro-pneumatic
5.4 Riser System (Per Riser) Quantity, Dia. x Length	Ram Style / Air Cans		N/A	1 Air Can (12' x 232')	1 Air Can (12.3' x 196')	5, 14 in OD x 7,817' long
6.0 HULL INFORMATION						
6.1 Type	Classic (DDCV)	Truss (2nd Gen.)	Cell (3rd Gen.)	Truss (2nd Gen.)	Truss (2nd Gen.)	Truss (2nd Gen.)
6.2 Slots	12	6	0	14	8	6
6.3 Diameter	122' (37.2 m)	98' (29.87 m)	64' (19.5 m) (Note 10)	106' (32.3 m)	94' (28.65 m)	118' (36.0 m)
6.4 Length	705' (214.9 m)	554' (168.8 m)	560' (170.7 m)	555' (169.1 m)	586' (178.6 m)	555' (170.0 m)
6.5 Hard Tank Length			280' (85.3 m)	226' (68.9 m)	241'-6"	264'
6.6 Freeboard		50' (15.2 m)	50' (15.2 m)	50' (15.2 m)	50' (15.2 m)	50'
6.7 Draft	650' (198.1 m)	504' (153.6 m)	520' (158.5 m)	505' (153.9 m)	536' (163.4 m)	505'
6.8 Center Well Dimensions	45' x 45'	42' x 42'	N/A	52' x 52'	42' x 42'	46' x 46'
6.9 Number of Heave Plates	0	3	4	3	3	2
7.0 WELL PATTERN INFORMATION						
7.1 Well Pattern at Production Deck			N/A	4 x 4	3 x 3	3 x 2
7.2 Well Spacing at Production Deck			N/A	13'		13', 2'
7.3 Well Pattern on Sea Floor	50' Min. Spac.		3 x 4 @50' Spac.	2 x 4	350' Diameter	
8.0 TOPSIDE FACILITIES						
8.1 Process Capabilities						
8.1.1 Oil Production MBOPD	100	70	Future	65	60	100
8.1.2 Gas Production MMSCFD	325	200	120 (300 Future)	68	110	200
8.1.3 Produced Water MBWPD	60	40	0	30	40	40
8.1.4 Water Injection MBPD	0	0	0	40	0	80
8.1.5 Gas Injection MMSCFD		0	0	0	0	
8.1.6 Gas Lift MMSCFD		12	0	24	24	
8.1.7 Gas Lift per Well MMSCFD		2	0	3	3	
8.1.8 Total Liquids Capacity MBOPD		90	1		95	100 MPLPD
8.2 Number of Trains		3	1			
8.2.1 Upstream of LP Separators		1 Gas	2		3	5
8.2.2 Downstream of LP Separators		2 Oil	2 Gas		1	1
8.3 Number of Modules	2	1	1	1	1	1
8.4 Quarters Size						150
8.4.1 Production (Persons)	60	20	12	77	26	90
8.4.2 Drilling (Persons)	68					40
8.4.3 Temporary (Persons)	12	40	24		54	
8.5 Levels	3		3	3	3	3
8.6 Power Generation kW		8,000	1,600	12,600		26
8.6.1 Number of Generators	4	2	2	3	2	6
8.6.2 Model	SOLAR - Tauras 60	SOLAR - Taurus 60, 4250 hp	Recip	SOLAR - Tauras 60	SOLAR-Taurus 60	SOLAR T-60
8.6.3 Backup		700 kW Diesel	800 kW Diesel	1000kW Diesel	750 kW Diesel	E-Gen 1000KW
8.7 Compression		52 MMSCFD @ 1850 PSIG	(Future)			
8.7.1 Number of Compressors	5	3	2	2	2	2
8.7.2 Model	SOLAR - Taurus	DresserRand HOS7	TBD	Dresser Rand D8R8b	Solar - Contaur	Solar Titan driven Mann-Turbo
8.8 Oil Pipeline Pumps Pumps, HP/Pump	3 @ 1,500 HP	3 @ 700 HP	None	3 @	4 @ 1625 HP	3 @ 4000 HP each
8.9 Deck Dimensions						
8.9.1 Workover / Drilling	205' x 205'	113' x 159'		170' x 125'	137'-6" x 165'	192' x 151'
8.9.2 Mezzanine			112' x 133'			None
8.9.3 Production	205' x 205'	127' x 162.5'	112' x 133'	170' x 125'	152'-6" x 180'	+106 ft above waterline
8.9.4 Cellar	205' x 205'	127' x 176'		170' x 125'	137'-6" x 145'	+76 ft above waterline
8.10 Total Deck Area ft2	126,075	58,682	36,617	63,750	77,000	87,000
8.11 Platform Orientation °from true North		0°	+30°	+45°	-41°	61° counter-clockwise from grid N
8.12 Flare Boom Orientation		True North	Platform North	Platform North	Platform North	61° counter-clockwise from grid N
9.0 RIG						
9.1 Spar Rig Type	3,000 HP Drilling / Compl. Rig	1,500 HP Workover	None	1,500 HP Workover	1,000 HP Workover	(MASE) Minimum Area Self Erecting
9.2 Contractor & Rig	Ensco	Nabors	N/A		Pride International	H & P
9.3 Max. Static Spar Offset for Drilling / Workover	Yes, Directly Over Wells	Yes	No	Yes, 325' (99.1 m)	Yes	175 ft
10.0 MOORING SYSTEM						
10.1 Type	12 (4 x 3) Taut Catenary	9 (3 x 3)	6 Taut Legs	9 (3 x 3) Taut Catenary	9 (3 x 3) Taut Legs	9-Point Active Spread Mooring
10.2 Description	Chain & Wire	Chain & Wire	Chain-Poly-Chain	Chain & Wire	Chain & Wire	Plat. Chain, Synth. Line, Ground Chain
10.3 Anchoring	Suction Anchors 21' O.D. x 105' L	Anchor Pile	Suction Anchors 18' O.D. x 78' L	Suction Piles 3 @ 18'D x 90'L and 6 @ 18'D x 95'L	Suction Piles	Suction Piles
11.0 ENGINEERING & PROJECT MANAGEMENT						
11.1 FEED		Mustang Engineering / CSO	Various			Technip / Alliance Engineering / Heerema
11.2 Hull Engineering	Technip	Technip	Technip	Technip	SparTec	Technip
11.3 Topside Facilities	Mustang Engineering	Mustang Engineering	Technip	Alliance Engineering	J. Ray McDermott	Alliance Engineering
11.4 Mooring Engineering	Technip	Technip	Technip	Technip	J. Ray McDermott	Technip
11.5 Subsea		JP Kenney	JP Kenny		N/A	Shell / FMC
11.6 Procurement		Kerr-McGee	Technip Offshore		J. Ray McDermott	Shell / Technip
11.7 Project Management		Kerr-McGee / TOI	Kerr-McGee / Technip Offshore		J. Ray McDermott	Shell
12.0 CLASSIFICATIONS SOCIETY						
12.1 Classification Organization & Hull Class Designation	ABS - FOI	ABS - FOI	ABS - FOI	ABS - FOI	ABS - FOI	N/A
13.0 FABRICATORS						
13.1 Contract Type & Prime Contractor	Multiple	Multiple	EPCI - Technip	Multiple	EPCI - SparTEC	Multiple
13.2 Topsides						
13.2.1 Fabricator	Kellogg Brown & Root	Gulf Island Fabrication	Gulf Marine Fabricators	Aker Gulf Marine	J. Ray McDermott	Kiewit Offshore
13.2.2 Location	Greens Bayou, TX, USA	Houma, LA, USA	Ingleside, TX, USA	Ingleside, TX, USA	Veracruz, Mex. & Harbor Is., TX, USA	Corpus Christi, TX, USA
13.3 Hull						
13.3.1 Fabricator	Technip	Technip	Technip	Technip	J. Ray McDermott	Technip
13.3.2 Location	Pori, Finland	Pori, Finland	Ingleside, TX, USA	Pori, Finland	Batam Island, Indonesia	Pori, Finland
13.4 Final Hull Assembly						
13.4.1 Assembly	Technip	Technip	Technip	Technip	J. Ray McDermott	Technip/ Kiewit
13.4.2 Location	Ingleside, TX, USA	Pori, Finland	Ingleside, TX, USA	Pori, Finland	Batam Island, Indonesia	Ingleside, TX, USA
13.5 Hull & Topsides Installation						
13.5.1 Installation Contractor	Saipem UK International, Ltd.	Heerema Marine Contractors	Technip-Hull Heerema-Topsides	Heerema	J. Ray McDermott	Heerema Marine Contractors
13.5.2 Topsides Installation Method	Derrick Barge	Derrick Barge	Derrick Barge	Derrick Barge	Derrick Barge	Derrick Barge
13.5.3 Installation Vessel	Saipem S-7000	MSV Balder / MSV Hermod	TOI / Dove HMC / DCV Balder	DCV Balder	DB 50 / Shearleg	Balder/ Thialf
13.6 Tree Manufacturer						
13.6.1 Dry Tree Contractor						
13.6.2 Wet Tree Contractor						FMC
14.0 TRANSPORTATION						
14.1 Hull Transporter/Vessel	Dockwise-Transshelf/ Mighty Servant 1	Dockwise - Mighty Servant 3	N/A	Dockwise - Mighty Servant I	Dockwise - Black Marlin	Dockwise - Mighty Servant I
14.2 Trips & Method	2 Dry Tows	1 Dry Tow - 23 days	1 Wet Tow - 2 days	1 Dry Tow	1 Dry Tow - 49 days	Trans-Atlantic Dry Tow
15.0 MILESTONES & DURATIONS						
15.1 Technical Discovery Date (per MMS)	3-Aug-90		15-Aug-01	1-Jan-93	13-Dec-99	
15.2 Commercial Discovery Date	15-Jan-97	5-Nov-01	15-Aug-01	29-Jul-99	15-Feb-00	6-Mar-02
15.3 Project Sanction Date	1-Sep-97	13-Jan-04	12-Jul-02	15-Oct-00	16-Jun-01	26-Oct-06
15.4 Installation Date (Hull)	1-Nov-99	10-Oct-05	19-Mar-04	2-Jul-02	3-Sep-04	1-Oct-08
15.5 First Oil or Gas Date	31-May-00	27-Mar-06	19-Jul-04	21-Nov-02	5-Apr-04	TBA
16.0 CYCLE TIMES						
16.1 Discovery to Sanction (Months)	84.8	26.2	10.9	14.6	16.0	53.7
16.2 Sanction to First Oil/Gas (Months)	32.9	26.4	24.2	25.1	33.6	TBD
16.3 Discovery to First Oil/Gas (Months)	117.7	52.6	35.1	39.7	49.6	TBD
17.0 WEIGHT						
17.1 Topsides Weight (Metric Tons)	15,613	5,320	3,357	3,992	3,456	11,250 Facility (Dry Weight)
17.2 Facility Payload (Metric tons)	24,040	9,770	4,264	9,979	7,711	18,250 Operating (Facility + Rig)
17.3 Hull Dry Weight (Metric Tons)	32,505	13,426	6,532	13,272	10,623	20,573
18.0 EXPORT PIPELINE INFORMATION						
18.1 Gas Export or Disposal Via:	East Breaks Gathering Co.	Enterprise Products Partners (Gulfterra)	Phoenix Gas Pipeline	Horn Mountain JV	Williams Energy Services	Williams Field Services
18.2 Gas Export Pipeline Size/Capacity	20" for 400 MMSCFD	14" - 16"	18" for 300 MMSCFD	10"	14" - 18" for 350 MMSCFD	18" Pipeline
18.3 Gas Export Length	85 Miles (136 Km)	30 Miles (48 km)	76 Miles (125 Km)	41 Miles (65 Km)	102 Miles (188 Km)	107 Miles
18.4 Oil Export Via:	Hoover Offshore Oil Pipeline Systems	Enterprise Products N/A Partners (Gulfterra)	Horn Moutain JV	Williams Energy Services	Williams Field Services	
18.5 Oil Export Pipeline Size/Capacity	20" for 120 MMBPOD	14" to 16"	N/A	12"	14"-18" for 150 MMBPOD	18 in Pipeline
18.6 Oil Export Length	150 Miles (245 Km)	67 Miles (108 Km)	N/A	37 Miles (57 Km)	117 Miles (188 Km)	74 Miles

Notes:
1. DDCV - Deep Draft Caisson Vessel
2. FOI - Maltese Cross A1, Floating Offshore Installation
3. Neptune is the world's first spar. It is the first 1st generation spar.
4. The Nansen spar is the world's first truss spar. It is the first 2nd generation spar.
5 The Red Hawk spar is the world's first cell spar. It is also the first 3rd generation spar.
6. The Genesis spar is the world's first drilling/production spar.
7. Perdido is the world's deepest water depth spar and the world's deepest drilling & production facility.
8. Has the 4 corners deleted.
9. Center slot is for moonpool.
10. 7 Tubes of 18' diameter
11. TTR - Top Tension Riser
12. Supported by Spar
13. Holstein is the world's largest spar.
14. Medusa Spar LLC ownership is: 50% Oceaneering, 40% Murphy Oil, 10% Callon Petroleum. Meduss Spar LLC ownership has no R & M obligations.
15. First floatover mating of a SPAR topside and hull and the first use of a specialized Fluid Transfer Line between a SPAR and an FPSO.

Information Accuracy: Every attempt has been made to locate and contact all the spar operators operating around the world. No operators were intentionally excluded from the survey. We have attempted to make the survey as complete and accurate as possible. However, we make no guarantee that it is all inclusive. The information was collected from company brochures, websites, press releases, articles, personal interviews, phone interviews and, major part, by operator/ contractor-supplied data. Neither Mustang Engineering, L.P., nor *Offshore Magazine* guarantees or assumes any responsibility or liability for any reliance on the information presented.

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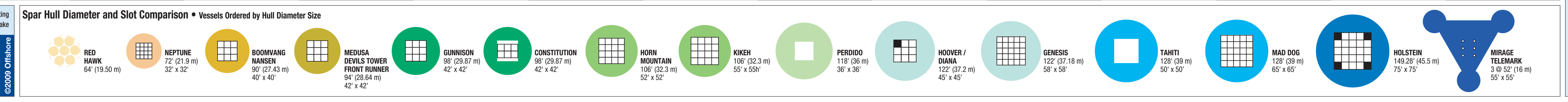

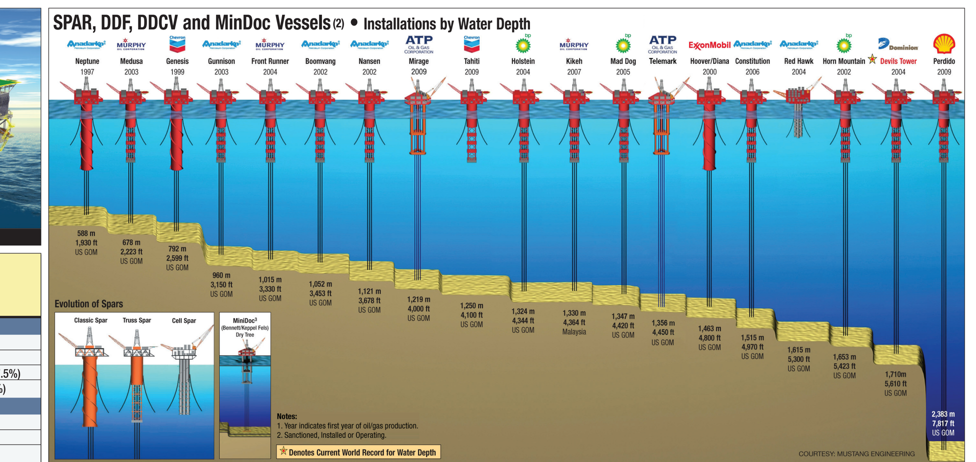

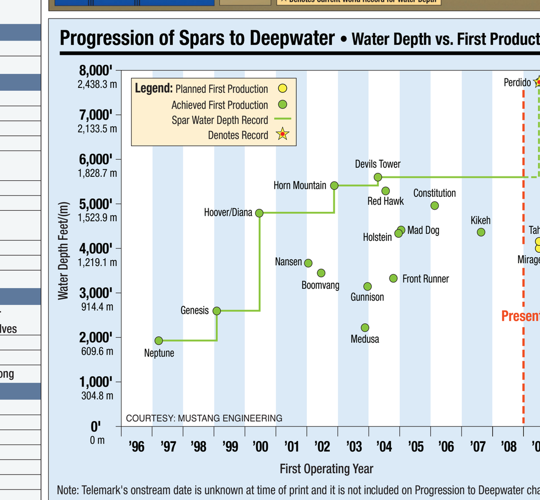

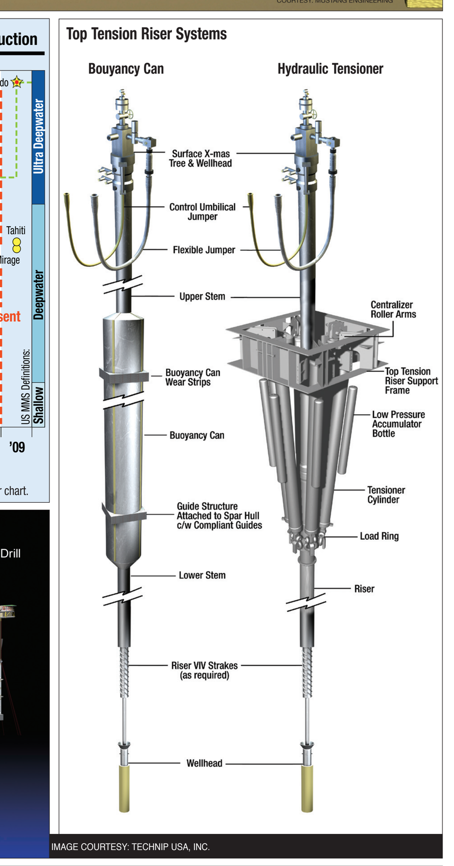

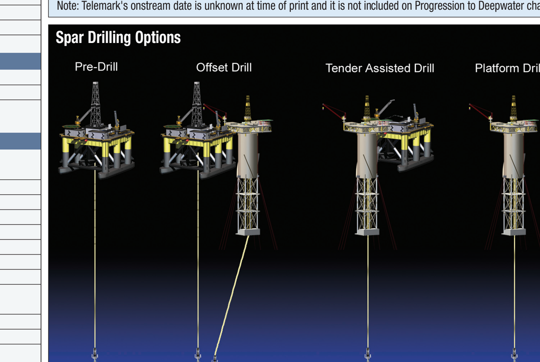

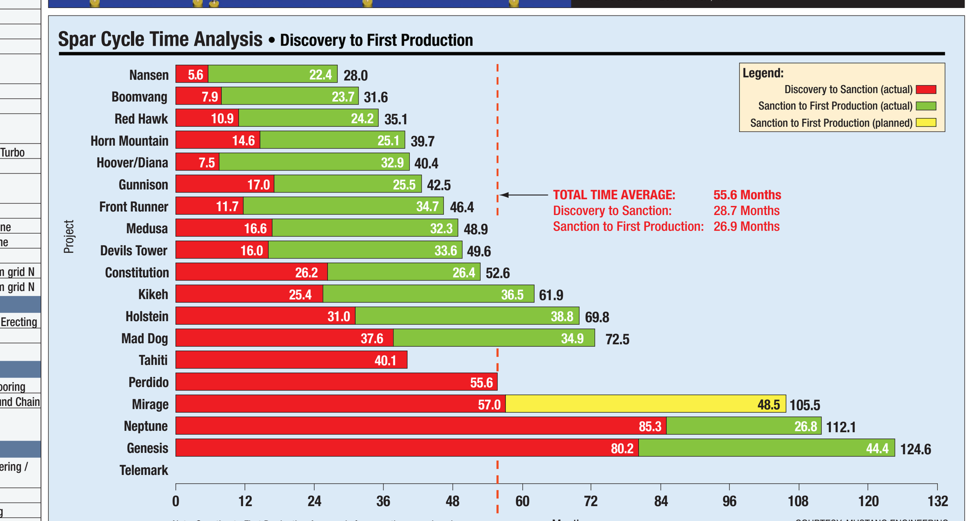

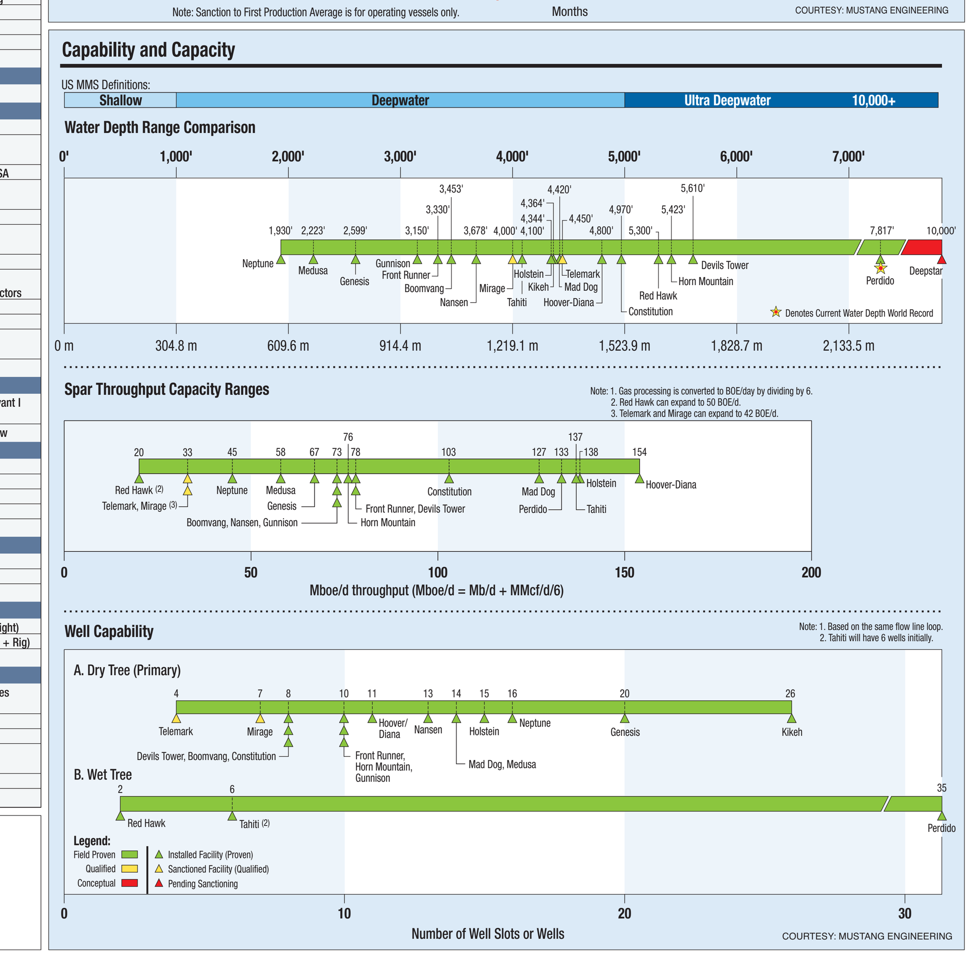

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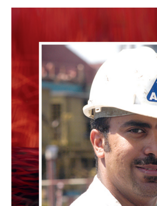

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