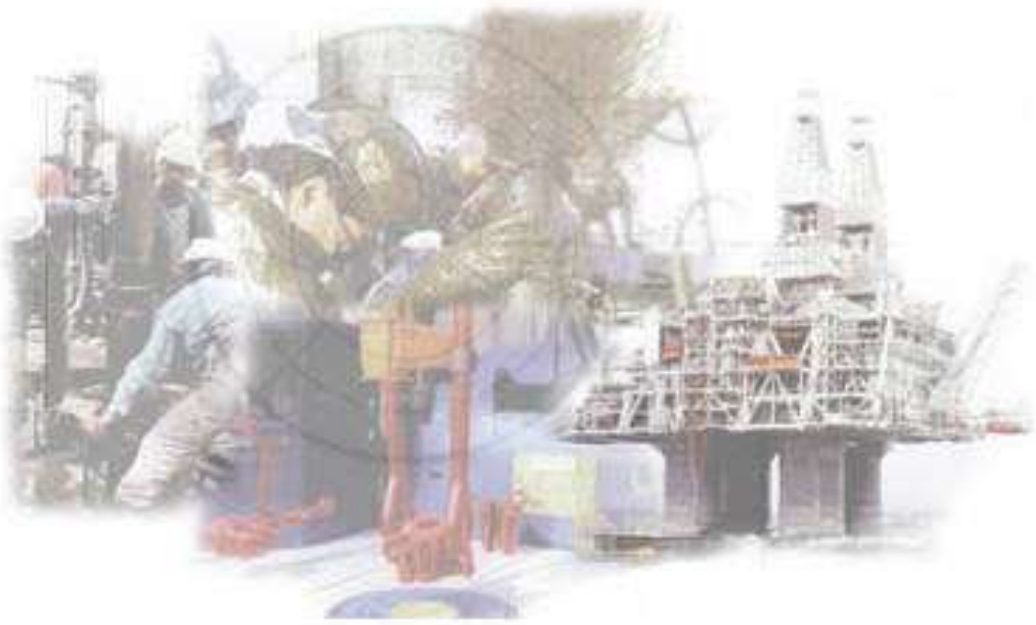




Drilling Engineering



Drilling engineering

Revision 1.0, 02 August 2008

By Peter Aird

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Drilling Engineering

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Drilling Engineering










D1. Daily Drilling Essentials

Table 1: Daily drilling essentials

Cat No	File Description	Type	Size
E01 Drill eng rev 1	08/04/201...	Microsoft Excel 97-2003 ...	302 KB
E02 Daily drilling spreadsheets rev 1	08/04/201...	Microsoft Excel 97-2003 ...	119 KB
E03 Daily Drilling time depth NPT reporting	03/10/200...	Microsoft Excel 97-2003 ...	550 KB
E04LOT	08/04/201...	Microsoft Excel 97-2003 ...	45 KB
E05 DC & DP & tool joints Data rev 1	08/04/201...	Microsoft Office Excel 200...	60 KB
E05 DC & DP & tool joints Data	22/08/200...	Microsoft Excel 97-2003 ...	149 KB
E06 Ton miles calculations	10/05/200...	Microsoft Excel 97-2003 ...	30 KB
E07 Daily time curve with no incentive plan	08/04/201...	Microsoft Excel 97-2003 ...	105 KB
E08 Riser margin	08/04/201...	Microsoft Excel 97-2003 ...	27 KB
E09 Offshore subsea	08/04/201...	Microsoft Excel 97-2003 ...	60 KB
E10 Tank Volumes	08/04/201...	Microsoft Excel 97-2003 ...	163 KB
E11 30TALLY	14/03/201...	Microsoft Excel 97-2003 ...	30 KB
E12 20tally	14/03/201...	Microsoft Excel 97-2003 ...	43 KB
E13 1338 tally	14/03/201...	Microsoft Excel 97-2003 ...	72 KB
E14 978 tally	14/03/201...	Microsoft Excel 97-2003 ...	224 KB
E15 DrillPipeTalley	08/04/201...	Microsoft Excel 97-2003 ...	184 KB
E16 Jetsize_By_Previous_Bit_Run	15/09/200...	Microsoft Excel 97-2003 ...	83 KB
E17 Bit record	25/02/200...	Microsoft Excel 97-2003 ...	52 KB
E18 Bit_Record	15/09/200...	Microsoft Excel 97-2003 ...	112 KB
E19 Hole opening	20/10/200...	Microsoft Excel 97-2003 ...	25 KB
E20 Volume Calcs	30/05/200...	Microsoft Excel 97-2003 ...	16 KB



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 36 units & definitions	03/10/200...	Mathcad Document	610 KB
 37 Units; force work torque and power	03/10/200...	Mathcad Document	159 KB
 38 drillstring and wellbore capacities	14/04/200...	Mathcad Document	62 KB
 39 mud tank volume calcs	10/03/200...	Mathcad Document	24 KB
 40 mech properties of steel	10/03/200...	Mathcad Document	22 KB
 41 More mech prop of steel	10/03/200...	Mathcad Document	20 KB
 42 tubular weights	22/08/200...	Mathcad Document	195 KB
 43 Daily drilling mud pump calcs	10/03/200...	Mathcad Document	25 KB
 44 Drillstring and Ann vol daily calcs	22/08/200...	Mathcad Document	174 KB
 45 Drilling Engineering Drilling bits	22/08/200...	Adobe Acrobat Document	898 KB
 46 Rock Bit TFA calc	22/08/200...	Mathcad Document	39 KB
 47 Bit TFA calc	08/03/200...	Mathcad Document	12 KB
 48 Bit nozzle selection	26/05/200...	Mathcad Document	1,849 KB
 49 bit calculations	26/05/200...	Mathcad Document	38 KB
 50 bit cost p foot	26/05/200...	Mathcad Document	16 KB
 51 Hole opening optimisation	21/01/200...	Adobe Acrobat Document	79 KB
 52 Bit optimisation calcs and evaluation	08/04/201...	Adobe Acrobat Document	74 KB
 53 Triplex Mud pump evaluation	30/09/200...	Mathcad Document	146 KB



Drilling Engineering

D2. Drilling Optimisation / Loss controls





























Table 2: Drilling Optimisation and Loss controls

Cat No	File Description	Type	Size
01	Drill ops planning checklist	15/04/2001 ... Adobe Acrobat Document	35 KB
02	Hazard check list	08/03/2001 ... Adobe Acrobat Document	25 KB
03	benchmarking	17/08/2001 ... Adobe Acrobat Document	46 KB
04	Loss waste report form	17/05/2009 ... Adobe Acrobat Document	21 KB
05	Loss control management	16/04/2001 ... Adobe Acrobat Document	49 KB
06	Risk analysis of drilling performance and loss	21/04/2001 ... Adobe Acrobat Document	41 KB
07	Drilling Engineering - cost per foot and break ...	11/04/2010 ... Adobe Acrobat Document	510 KB
08	Drilling Engineering - optimisation analysis	11/04/2010 ... Adobe Acrobat Document	84 KB
09	NCR Template	16/05/2009 ... Microsoft Excel 97-2003 W...	19 KB
10	Incident Report Form	17/05/2009 ... Microsoft Excel 97-2003 W...	38 KB
11	loss & waste wellsheet	12/09/2006 ... Microsoft Excel 97-2003 W...	62 KB
12	Drilling optimisation worksheets	03/10/2009 ... Microsoft Excel 97-2003 W...	201 KB
13	Service Company Evaluation	02/10/2005 ... Microsoft Excel 97-2003 W...	22 KB
14	NPT form	17/05/2009 ... Microsoft Excel 97-2003 W...	32 KB
15	Penetration Rate Prediction	03/04/2003 ... Microsoft Excel 97-2003 W...	38 KB

Drilling Engineering

D3. Hydraulics and hole cleaning

Table 3: Hydraulics and hole cleaning

Cat No	File Description	File Type	Size
 001	Drilling Engineering Workbook - Fl...	12/04/201...	Adobe Acrobat Document 357 KB
 01	Drilling Engineering Hydraulics	12/04/201...	Adobe Acrobat Document 869 KB
 002	Drilling hydraulics, hole cleaning ...	12/04/201...	Adobe Acrobat Document 505 KB
 02	API 13D Bingham plastic model	08/04/201...	Mathcad Document 269 KB
 02a	API 13D Newtonian model	18/03/200...	Mathcad Document 264 KB
 03	API 13D Power law model	26/05/200...	Mathcad Document 271 KB
 04	Modified power HB model.	12/05/200...	Mathcad Document 282 KB
 05	basic mud models rheology calcula...	22/08/200...	Mathcad Document 280 KB
 06	effect of mud weight increase rev 1	22/08/200...	Mathcad Document 101 KB
 07	cuttings concentration	08/04/201...	Mathcad Document 638 KB
 08	riserless vertical hole cleaning	08/04/201...	Mathcad Document 676 KB
 09	Riserless sections length considerati...	08/04/201...	Mathcad Document 552 KB
 10	26inch riserless drilling example	13/11/200...	Mathcad Document 726 KB
 11	17.5inch optimal riserless sand.silt d...	14/12/200...	Mathcad Document 274 KB
 12	12.25 riserless drilling rev 1.0	16/07/200...	Mathcad Document 2,032 KB
 13	Hes Bulkley risless drill example	04/11/200...	Mathcad Document 302 KB
 14	Optimising riserless drilling example	04/11/200...	Mathcad Document 760 KB
 15	Hydraulics and hole cleaning exam...	08/04/201...	Mathcad Document 263 KB
 16	Pressure loss and bit optimisation	21/08/200...	Mathcad Document 309 KB
 17	8.5 drill ops example	15/11/200...	Mathcad Document 492 KB
 18	12.25 wellbore swab and surge	15/03/200...	Mathcad Document 267 KB
 19	8.5 wellbore swab and surge	15/03/200...	Mathcad Document 268 KB
 20	8.375 wbore & 7inch liner swab & s...	21/08/200...	Mathcad Document 135 KB
 21	Hydraulics 3.0 field units	03/06/200...	Microsoft Excel 97-2003 ... 139 KB
 22	8.5 TD old BHA (3.1)	08/04/201...	Microsoft Excel 97-2003 ... 162 KB
 23	Hydraulics kPa	21/01/200...	Microsoft Excel 97-2003 ... 108 KB
 24	Hydraulics field units land 3.2	13/10/200...	Microsoft Excel 97-2003 ... 151 KB
 25	swabsurg	16/04/200...	Microsoft Excel 97-2003 ... 156 KB








































Drilling Engineering

D4. Well Control Engineering

Table 4: Well Control

Cat No	File Description	File Type	Size
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Drilling Engineering


	01 Drilling Engineering - well control introduc...	11/04/2010 11:04	Adobe Acrobat D...	200 KB
	02 BWC Fundamental Formula Sheet	30/03/2010 21:41	Adobe Acrobat D...	41 KB
	03 well control calcs field units	21/01/2000 04:58	Adobe Acrobat D...	111 KB
	04 well control calcs SI	09/03/2001 01:07	Adobe Acrobat D...	14 KB
	05 Drilling Engineering Kick control & BO pre...	22/08/2009 13:46	Adobe Acrobat D...	726 KB
	06 Gas definitions	16/04/2001 06:55	Adobe Acrobat D...	7 KB
	07 Exercises for IWCF Training	03/04/2003 16:24	Adobe Acrobat D...	1,914 KB
	08 Well control principles and practices Part 1	03/04/2003 16:24	Adobe Acrobat D...	5,319 KB
	09 Well control equipment part 2	03/04/2003 16:24	Adobe Acrobat D...	5,349 KB
	10 Supervisor Formula Sheet	30/03/2010 21:41	Adobe Acrobat D...	50 KB
	11 WFD_Input	29/04/2004 08:47	Microsoft Office ...	106 KB
	13 IWCF field units calcs	14/12/2006 14:27	Mathcad Document	384 KB
	14 gas column pressure	27/11/2006 16:46	Mathcad Document	48 KB
	15 shallow kill mud	17/03/2004 07:13	Mathcad Document	12 KB
	16 12.25 kick tolerance ppg	16/11/2007 11:21	Mathcad Document	94 KB
	17 12.25 wellbore gas cut mud rev1	20/12/2006 14:44	Mathcad Document	380 KB
	18 HCL pill hydrostatics	12/04/2010 21:07	Mathcad Document	77 KB
	19 Advanced drillers method	12/04/2010 07:02	Microsoft Excel 97...	58 KB
	20 BOP	16/04/2001 10:46	Microsoft Excel 97...	66 KB
	21 accumulators	12/04/2010 07:05	Microsoft Excel 97...	29 KB
	22 Chevron WELL CONTROL	12/04/2010 07:06	Microsoft Excel 97...	559 KB
	23 Driller's Method, kPa	09/05/2000 19:37	Microsoft Excel 97...	122 KB
	24 horizontal kill	08/08/1994 16:04	Microsoft Excel W...	150 KB
	25 Pre recorded-Kill Sheets	12/04/2010 07:15	Microsoft Excel 97...	798 KB
	26 Wt & Wt Vert & directional kPa	13/04/2010 06:12	Microsoft Excel 97...	192 KB
	27 Subsea Kill sheet field units	12/04/2010 07:17	Microsoft Excel 97...	46 KB
	28 Well Control Toolkit 2000 ver 7	06/11/2001 15:24	Microsoft Excel 97...	670 KB
	29 Charlie Prentic Wellcont	03/10/2003 09:30	Microsoft Excel 97...	318 KB
	30 Charlie Prentice Well Control WB	12/04/2010 07:27	Microsoft Excel 97...	466 KB
	31 IWCF Kill Sheet Rev	10/05/2009 11:44	Microsoft Excel 97...	116 KB
	32 INFLUX & Ktol	03/10/2009 22:50	Microsoft Excel 97...	41 KB
	33 KICKCALC	03/10/2009 22:52	Microsoft Excel 97...	48 KB
	34 KTOL_CJS rev 1.1	14/03/2005 11:27	Microsoft Excel 97...	75 KB
	35 Lubricate_and_Bleed_Procedure	15/09/2008 23:37	Microsoft Excel 97...	102 KB
	36 Volumetric_Method	12/04/2010 07:30	Microsoft Excel 97...	55 KB
	37 SI 2nd wc calcs	29/04/2004 08:47	Microsoft Excel 97...	45 KB
	38 Stripping Worksheets	14/11/2002 08:27	Microsoft Excel 97...	53 KB



Drilling Engineering

D5. Drilling Fluids Engineering

Table 5: Drilling fluids engineering.

Cat No	File Description	File Type	Size
 01 Drlg fluids T-box Nov 1.2	12/04/2010 07:40	Microsoft Excel 97-200...	112 KB
 02 API Data	19/02/2009 21:24	Microsoft Excel 97-200...	168 KB
 03 Fluid Densities	26/10/2000 21:15	Microsoft Excel 97-200...	31 KB
 04 Mud_Solids_Analysis	15/09/2008 23:37	Microsoft Excel 97-200...	62 KB
 05 PITS SYSTEM	29/03/2010 21:35	Microsoft Excel 97-200...	6,875 KB
 06 mudcalc31a	22/04/2010 18:42	Microsoft Excel 97-200...	400 KB



Drilling Engineering

D6. Casing & Cement engineering

Table 6: Casing & Cement engineering

Cat No	File Description	Rev	Date
01	Drilling Engineering - Casing and cementing Intro...	11/04/201...	Adobe Acrobat Document 91 KB
02	Drilling Engineering - Cementing	22/08/200...	Adobe Acrobat Document 1,555 KB
03	Casing sizes and expandables	13/04/201...	Adobe Acrobat Document 3,559 KB
04	balanced plug 1	04/11/200...	Mathcad Document 120 KB
05	primary cementation calcs 1	03/05/200...	Mathcad Document 108 KB
06	primary cmt calcs 1 (offshore rig)	16/05/200...	Mathcad Document 190 KB
07	will casing float	16/05/200...	Mathcad Document 174 KB
08	squeeze cementation	16/05/200...	Mathcad Document 130 KB
09	foamed cementing	16/05/200...	Mathcad Document 660 KB
10	Cond 30.20in cmt calcs 1	12/04/200...	Mathcad Document 182 KB
11	13.38 primary cementation calcs 2	14/11/200...	Mathcad Document 128 KB
12	9 58 primary cement job	04/11/200...	Mathcad Document 242 KB
13	7inch liner primary cement job	09/07/200...	Mathcad Document 189 KB
14	North Sea offshore well cmt progs ver5	28/11/199...	Microsoft Excel 97-2003 ... 704 KB
15	Offshore cementing calcs suite	22/04/201...	Microsoft Excel 97-2003 ... 282 KB
16	Offshore cementing	15/03/200...	Microsoft Excel 97-2003 ... 44 KB
17	Liner cementing	13/04/201...	Microsoft Excel 97-2003 ... 61 KB
18	Squeeze_Cementing_Job	15/09/200...	Microsoft Excel 97-2003 ... 80 KB
19	Cement Plug Report 2010	13/04/201...	Microsoft Excel 97-2003 ... 122 KB
20	Cement cost sheet example	29/03/201...	Microsoft Excel 97-2003 ... 41 KB



Drilling Engineering

D7. Preventing and freeing stuck pipe.












Table 7: Preventing and freeing stuck pipe

Cat No	File Description	File Type	Size
01 Stuck pipe assessment	09/03/2001 10:24	Adobe Acrobat D...	81 KB
02 Stuck pipe fundamentals	24/01/2000 05:17	Adobe Acrobat D...	474 KB
03 Stuck pipe immediate actions	09/03/2001 10:21	Adobe Acrobat D...	22 KB
04 Freeing stuck pipe	13/03/2004 15:05	Adobe Acrobat D...	247 KB
05 stuck pipe case historys	13/03/2004 14:44	Adobe Acrobat D...	459 KB
06 Stuck pipe and lost circ avoidance	13/03/2004 15:27	Adobe Acrobat D...	92 KB
07 stuck pipe flowcharts	13/03/2004 14:22	Adobe Acrobat D...	65 KB
08 Drilling Engineering - Stuck pipe	12/04/2010 07:43	Adobe Acrobat D...	64 KB
09 axial submerged loading, stuck pipe	08/07/2004 12:51	Mathcad Document	649 KB
10 axial submerged loading	08/07/2004 12:51	Mathcad Document	1,205 KB
11 Pressure area effect on submerged bo...	13/03/2004 08:33	Adobe Acrobat D...	46 KB
12 stuck submerged bodies	13/03/2004 08:39	Adobe Acrobat D...	56 KB

Drilling Engineering








D8. Fishing and Milling Engineering

Table 8: Fishing and Milling Engineering

Cat No	File Description	File Type	Size
 01 Fishing Calculation Worksheets	30/07/2000 20:14	Microsoft Excel 97-2003 W...	33 KB
 02 Optimum fishing time	16/04/2001 10:16	Adobe Acrobat Document	36 KB
 03 optimum fishing	01/07/2000 23:10	Microsoft Excel 97-2003 W...	321 KB
 04 13 3-8 Section Mill	12/04/2010 15:05	Microsoft Excel 97-2003 W...	38 KB
 05 Eccentric Casing	21/10/1998 11:52	Microsoft Excel 97-2003 W...	138 KB
 06 Calc Torque	26/10/2000 21:57	Microsoft Excel 97-2003 W...	17 KB
 07 DP Torsional Yield Strength	10/05/2009 11:18	Microsoft Excel 97-2003 W...	24 KB
 08 Pipe Yield	14/10/2000 13:53	Microsoft Excel 97-2003 W...	14 KB
 09 Stretch & Free Point Calculator	10/05/2009 11:15	Microsoft Excel 97-2003 W...	92 KB
 10 Jarring	08/10/2000 12:11	Microsoft Excel 97-2003 W...	16 KB
 11 Lockomatic hole opener	30/07/2004 13:09	Microsoft Excel 97-2003 W...	84 KB

D9. Pressure Engineering

Table 9: Pressure Engineering

Cat No	File Description	Rev	Date
 01 Rock Mechanics in Wellbore Construction	21/08/2009 ...	Adobe Acrobat Document	1,735 KB
 02 leak off test template example	04/11/2007 ...	Mathcad Document	84 KB
 03 fracture gradient estimation	17/03/2004 ...	Mathcad Document	10 KB
 04 pressure_prediction worksheets	22/04/2010 ...	Microsoft Excel 97-2003 ...	396 KB
 05 9.625_Csg_Cmt_FIT make up NEW	03/11/2007 ...	Microsoft Excel 97-2003 ...	169 KB
 06 rtts-test	14/03/2010 ...	Microsoft Excel 97-2003 ...	141 KB
 10 LOT	25/06/2001 ...	Microsoft Excel 97-2003 ...	37 KB



Drilling Engineering

D10. Bit design optimisation & hydraulics

Table 10: Bits, design optimisation & Hydraulics

Cat No	File Description	File Type	Size
01 Drilling Engineering - Bit technology	11/04/201...	Adobe Acrobat Document	275 KB
02 12.25 bit calcs example	14/04/200...	Mathcad Document	140 KB
03 8.5 bit calcs example	14/04/200...	Mathcad Document	107 KB
04 Pressure loss and bit optimisation	17/04/200...	Mathcad Document	330 KB
05 Bit Summary Sheet	16/05/200...	Microsoft Excel 97-2003 ...	96 KB
05 Pressure loss and bit optimisation	04/11/200...	Mathcad Document	412 KB
06 8.5bit hydraulics assessment 8th July	10/05/200...	Microsoft Excel 97-2003 ...	102 KB



Drilling Engineering

D11. Deepwater Engineering














Table 11: Deepwater Engineering

Cat No	File Description	File Type	Size
01 dual gradient mud mix calculations	15/03/2004 14:53	Adobe Acrobat Document	34 KB
02 dynamic drill mud cost estimation	15/03/2004 14:55	Adobe Acrobat Document	37 KB
03 riserless cuttings concentration	15/03/2004 14:57	Adobe Acrobat Document	32 KB
04 set down test rev 1	04/11/2007 11:08	Mathcad Document	96 KB
05 mud mat capacity rev 1	04/11/2007 09:54	Mathcad Document	28 KB
06 WOB while jetting rev 1	04/11/2007 10:15	Mathcad Document	63 KB
07 conductor safety factor rev 1	04/11/2007 10:10	Mathcad Document	131 KB
08 soil resistance calcs rev 1	04/11/2007 09:19	Mathcad Document	60 KB
09 set up time rev 1	04/11/2007 10:07	Mathcad Document	158 KB
10 conductor length requirements rev 1	04/11/2007 09:12	Mathcad Document	122 KB
11 bending no deflection rev 1	04/11/2007 09:38	Mathcad Document	38 KB
12 bending cantilever model rev 1	04/11/2007 09:41	Mathcad Document	75 KB
13 conductor buckling	11/11/2007 17:54	Mathcad Document	129 KB
14 structural string capacity rev 1	04/11/2007 09:16	Mathcad Document	64 KB
15 dual gradient mud mix calculations	16/11/2007 14:18	Mathcad Document	65 KB
16 dynamic drill mud cost estimation	16/11/2007 14:18	Mathcad Document	62 KB
17 Riser margin	29/04/2004 08:47	Microsoft Excel 97-2003 ...	39 KB
18 riser concepts evaluation	29/04/2004 08:46	Microsoft Office Word 97 ...	321 KB
19 2h, Riser Tens & Wt Smary	15/02/2009 03:58	Microsoft Excel 97-2003 ...	54 KB
20 deepwater norm	25/05/2001 09:44	Microsoft Excel 97-2003 ...	20 KB
21 deepwater calcs	29/04/2004 08:47	Microsoft Excel 97-2003 ...	58 KB
22 Acoustic and ROV accum. requirements	25/11/2002 07:52	Microsoft Excel 97-2003 ...	62 KB

Drilling Engineering

D12. Directional & ERD Drilling

Table 12: Directional & ERD Drilling

Cat No	File Description	File Type	Size
 001	Drilling Engineering - Direcitonal drilling	11/04/2010 11:07	Adobe Acrobat Docume... 1,455 KB
 02	Survey Calculations	05/05/2004 19:30	Adobe Acrobat Docume... 471 KB
 03	MSC direcitonal drilling course exercise 50pages	24/01/2000 09:36	Adobe Acrobat Docume... 139 KB
 04	directional all stuff	13/02/2001 17:14	Microsoft Excel 97-2003 ... 138 KB
 05	Lat Long Conversions	07/09/2005 16:08	Microsoft Excel 97-2003 ... 95 KB
 05	min curv J shaped well	29/04/2006 19:22	Mathcad Document 108 KB
 05	target East North and Az	23/09/2004 06:06	Mathcad Document 16 KB
 06	convert rad-deg. min.sec	10/03/2004 17:11	Mathcad Document 14 KB
 06	min curv S shaped well	10/03/2004 15:46	Mathcad Document 28 KB
 06	NMDCL	10/05/2009 11:11	Microsoft Excel 97-2003 ... 128 KB
 07	Directional drilling EQUATION	27/07/1997 12:36	Microsoft Excel 97-2003 ... 166 KB
 08	min curv build and hold	27/07/2004 13:18	Mathcad Document 990 KB
 09	Vertical section with location target	10/03/2004 17:15	Mathcad Document 18 KB

D13. Air, Mist and Foam Engineering

Table 13: Air, Mist and Foam Engineering

Cat No	File Description	File Type	Size
 AIR_DRIL		25/07/1993 23:01	Microsoft Excel 97... 20 KB



Drilling Engineering

D14. Managed Pressure Drilling

Table 14: Managed Pressure Drilling

Cat No	File Description	File Type	Size
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D15. Under balanced Drilling

Table 15: Under balanced Drilling

Cat No	File Description	File Type	Size
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Drilling Engineering

D16. Horizontal and Lateral Drilling

Table 16: Horizontal & Lateral Drilling

Cat No	File Description	File Type	Size
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D17. Drilling Mechanics and Dynamics

Table 17: Drilling Mechanics and Dynamics.

Cat No	File Description	File Type	Size	
01f	Max load on blocks (no amp) rev 1	04/11/2007 12:59	Mathcad Document	49 KB
02f	Dynamic amp and hook load rev 1	04/11/2007 13:01	Mathcad Document	77 KB
03f	Dynamic casing loads rev 1	04/11/2007 13:05	Mathcad Document	139 KB
04f	Drawworks braking load	08/07/2004 12:52	Mathcad Document	10 KB
05f	Landing string requirement rev 1	04/11/2007 13:11	Mathcad Document	151 KB
06f	Dyn riser load disconnect with mud r...	04/11/2007 13:13	Mathcad Document	93 KB
08f	WOB variation for locked compensat...	04/11/2007 13:18	Mathcad Document	123 KB

Drilling Engineering

D18. BHA and drillstring design

Table 18: BHA && Drillstring Design

Cat No	File Description	File Type	Size
001	Drilling Engineering Workbook- Drillstring basics	11/04/201...	Adobe Acrobat Docum... 454 KB
02	Drilling Engineering Drillstring design	22/08/200...	Adobe Acrobat Docum... 2,943 KB
03	drillstring calcs 1	29/03/201...	Adobe Acrobat Docum... 115 KB
04	Initial design max drillstring length	13/03/200...	Adobe Acrobat Docum... 34 KB
05	Initial design; collapse	13/03/200...	Adobe Acrobat Docum... 36 KB
06	Vertical well BHA design	21/08/200...	Adobe Acrobat Docum... 99 KB
07	Maximum tong height	13/03/200...	Adobe Acrobat Docum... 85 KB
08	critical buckling	13/03/200...	Adobe Acrobat Docum... 47 KB
09	Type A BHA design	13/03/200...	Adobe Acrobat Docum... 40 KB
10	Type B BHA design	13/03/200...	Adobe Acrobat Docum... 46 KB
11	Type C BHA design	13/03/200...	Adobe Acrobat Docum... 46 KB
12	Vertical wellbore axial drag	11/03/200...	Adobe Acrobat Docum... 64 KB
13	dstring drag, Friction & angle	11/03/200...	Adobe Acrobat Docum... 75 KB
14	Torque friction & angle	11/03/200...	Adobe Acrobat Docum... 43 KB
15	Axial drag build and sail section	11/03/200...	Adobe Acrobat Docum... 85 KB
16	Axial drag J shaped well	11/03/200...	Adobe Acrobat Docum... 94 KB
17	Axial drag S shaped well	11/03/200...	Adobe Acrobat Docum... 111 KB
18	Torque & drag 'S' well	11/03/200...	Adobe Acrobat Docum... 138 KB
19	Torque and Drag calculations	05/05/200...	Adobe Acrobat Docum... 208 KB

D19. Downhole equipment Engineering

Table 19: Downhole equipment engineering

Cat No	File Description	File Type	Size
	Surface hole shock sub calcs	30/11/2006 14:19	Mathcad Document 1,497 KB
	Underreaming TFA optimisation	16/02/2007 07:22	Mathcad Document 110 KB



Drilling Engineering

D20. Rig Equipment Engineering

Table 20: Rig Equipment Engineering

Cat No	File Description	File Type	
01 Drilling Engineering, Rotary drilling rig	22/08/2009 13:54	Adobe Acrobat D...	1,663 KB
02 Rig Rating	08/06/2006 15:00	Microsoft Excel 97...	89 KB
03 MUD GAS SEPARATOR	19/11/2002 19:42	Microsoft Excel 97...	237 KB
04 MGS calcs	14/04/2010 20:07	Microsoft Excel 97...	25 KB
05 rig mud pump charts	14/04/2010 20:08	Mathcad Document	185 KB
06 mud pump requirements rev 1	04/11/2007 11:14	Mathcad Document	42 KB
07 Maximum tong height	13/03/2004 11:00	Mathcad Document	2,744 KB
08 drawworks rev 1	04/11/2007 11:08	Mathcad Document	46 KB
09 Drawworks braking load	08/07/2004 12:52	Mathcad Document	8 KB
10 block line loads	10/11/2007 16:31	Mathcad Document	102 KB
11 drilling derrick loading rev 1	04/11/2007 11:07	Mathcad Document	127 KB
12 drilling derrick casing rev 1	04/11/2007 11:23	Mathcad Document	175 KB
13 derrick loading, BOP run rev 1	04/11/2007 11:35	Mathcad Document	213 KB

D21. Spare

Table 21: Spare

Cat No	File Description	File Type	
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Drilling Engineering

D22. Subsea Engineering

Table 22: Subsea Engineering

Cat No	File Description	File Type	Size
01 Riser checklist	17/08/200...	Adobe Acrobat Document	37 KB
02 Riser Tally	13/06/200...	Microsoft Excel 97-2003 ...	130 KB
03 Riser margin	10/05/200...	Microsoft Excel 97-2003 ...	35 KB
04 Riser vibration analysis	05/02/199...	Adobe Acrobat Document	183 KB
05 KD 2-1 Draft Riser Analysis	13/06/200...	Microsoft Excel 97-2003 ...	1,280 KB
06 SBOP Riser Tension & Wt Summary	03/11/200...	Microsoft Excel 97-2003 ...	49 KB
07 Scarabeo 5 15K BOP schematic	12/06/199...	Adobe Acrobat Document	14 KB
08 Stackup Spar Drilling and Production riser	09/08/199...	Adobe Acrobat Document	180 KB
09 Subsea design philosophy	10/01/200...	Adobe Acrobat Document	15 KB
10 well test subsea controls	10/01/200...	Adobe Acrobat Document	247 KB

D23. Spare

Table 23: Spare

Cat No	File Description	File Type	Size
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D24. Spare

Table 24: Spare.

Cat No	File Description	File Type	Size
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