

The background of the entire page is a high-contrast, black and white photograph of an oil drilling rig. The central focus is the tall, vertical derrick structure, which is supported by a complex network of steel beams and cables. The rig is situated on a platform, and the overall scene is industrial and somewhat grainy, typical of a high-contrast scan.

SANTOS

FINAL WELL REPORT

BUTTRESS #1

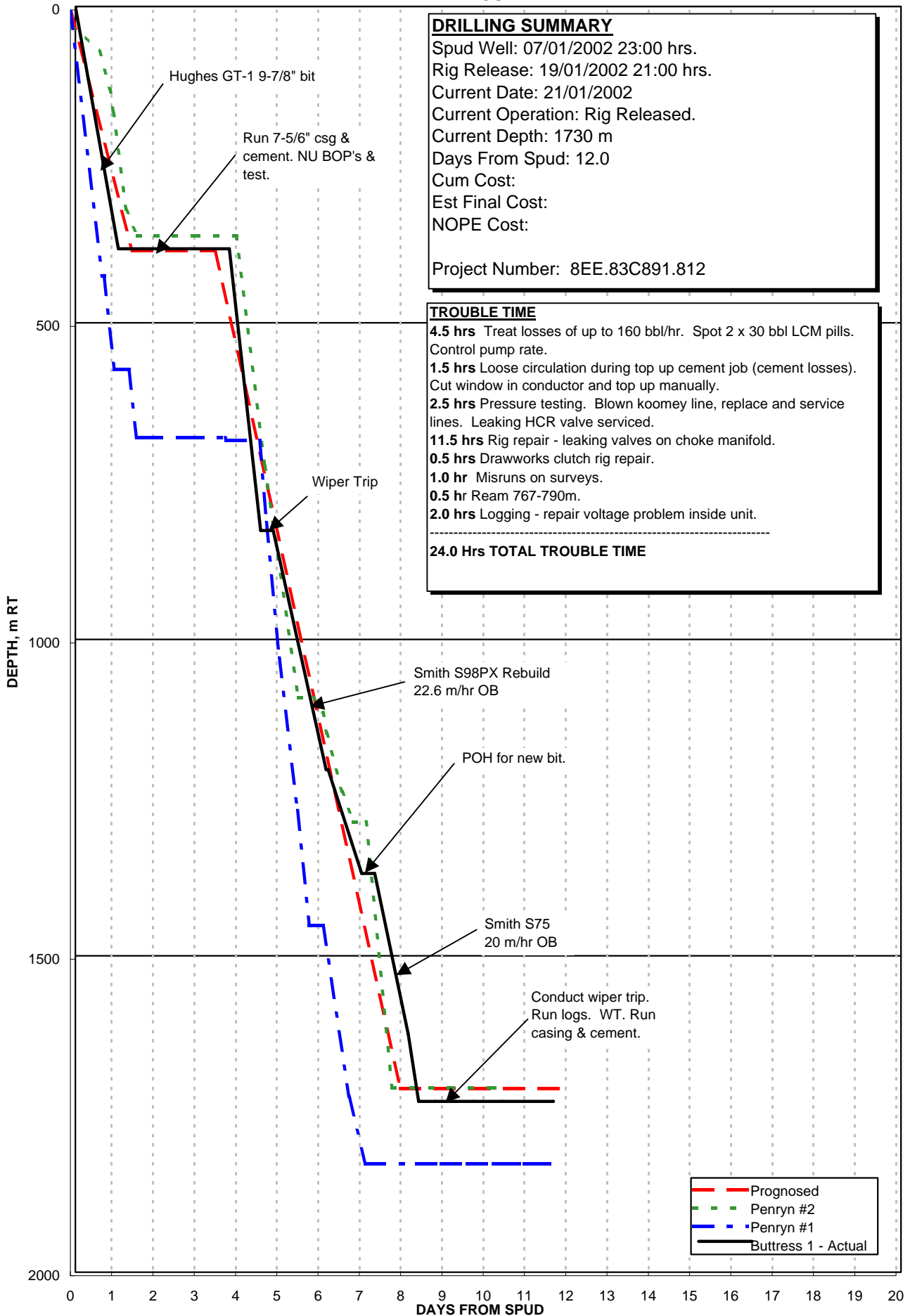
Drilling Supervisor(s)	: Graham Klenner
Drilling Engineer(s)	: J. Bevern
Report Author	: T. Robertson
Report Supervisor	: M. Bill
Date of Issue	: 19th April 2002

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Section 1 – Well Summary
Time vs Depth Curve

BUTTRESS 1 TIME v DEPTH CURVE



Section 2 – Well History
Well History Report

BUTTRESS #1

Drilling Co.: OD&E

Rig: OD&E #30

RT above GL: 4 m Lat : 38 deg 31 min 0.10 sec Spud Date: 08/01/2002 Release Date: 19/01/2002
 GL above MSL : 45 m Long : 142 deg 48 min 30.08 sec Spud Time: 07:00:00 Release Time: 21:00:00

Well History

#	DATE	DEPTH	WELL HISTORY (24 Hr Summary)
10	08/01/2002	250	Spud well and drill ahead, with surveys to 223m.
11	09/01/2002	383	Drill to casing point. POOH. Rig and run Surface casing.
12	10/01/2002	383	Nipple up and test Bops. Prepare 6 3/4" BHA.
13	11/01/2002	386	RIH, Drill float, shoe track, float shoe & rat hole. Drill 3m new hole. Complete Rig repairs
14	12/01/2002	828	Drill main Hole. Wiper trip.
15	13/01/2002	1,128	Ream and Wash to btm, Drill Ahead with Surveys @ 150 m intervals.
16	14/01/2002	1,340	Drill, Wiper trip, Drill ahead w/- surveys @ 150m intervals.
17	15/01/2002	1,504	Drill main Hole. H.F.N.B. Hole Good Condition. Cont Drill.
18	16/01/2002	1,730	Delete this line and enter a brief (240 chars max) summary of the last 24 hrs here
19	17/01/2002	1,730	Logg. RIH wiper trip.
20	18/01/2002	1,730	RIH. Circ bttms up and con mud. lay out sideways. Rig & run monobore.
21	19/01/2002	1,730	Run & Cement 3.5" MonoBore. WOC. Set slips. Nipple Down Bops. Install Xmas Tree & Test. Release rig.

Section 3 – Drilling Data
Bit Record
FIT/LOT Report

BUTTRESS #1

Drilling Co.: OD&E

Rig : OD&E #30

RT above GL : 4 mtrs
GL above MSL : 45 mtrsLat : 38 deg 31 min 0.10 sec
Long : 142 deg 48 min 30.08 secSpud Date: 08/01/2002
Spud Time: 07:00:00Release Date: 19/01/2002
Release Time: 21:00:00**BIT RECORD**

DATE	BIT#	SIZE "	IADC	SER	MFR	TYPE	JETS	D.IN mtrs	D.OUT mtrs	MTRG	HRS o/b	SPP psi	FLW gpm	WOB k-lbs	RPM	MW ppg	TFA sq.in	VEL mps	HHP /sq"	ROP m/hr	I	O1	D	L	B	G	O2	R
09/01/2002	1	9.88	117	A33JB	HUGHES	GT 1	3x20	0	383	383	17.8	750	516	8.0	100	8.9	0.921	55	0.00	21.5	2	2	RR		E	I	NO	TD
15/01/2002	2	6.75		JS3693	SMITH	S98PX	4x11	383	1,370	987	42.0	1686	315	5.7	107	9.0	0.371	82	2.97	23.5	2	3	LT	N2	X	I	CT	PR
16/01/2002	3	6.75		JS7017	SMITH	S75PX	5x11	1,370	1,730	360	17.6	1650	295	8.9	113	9.3	0.464	60	1.48	20.5	2	1	CT	N	X	I	RR	TD

WELL: Buttress # 1

RIG: OD&E 30

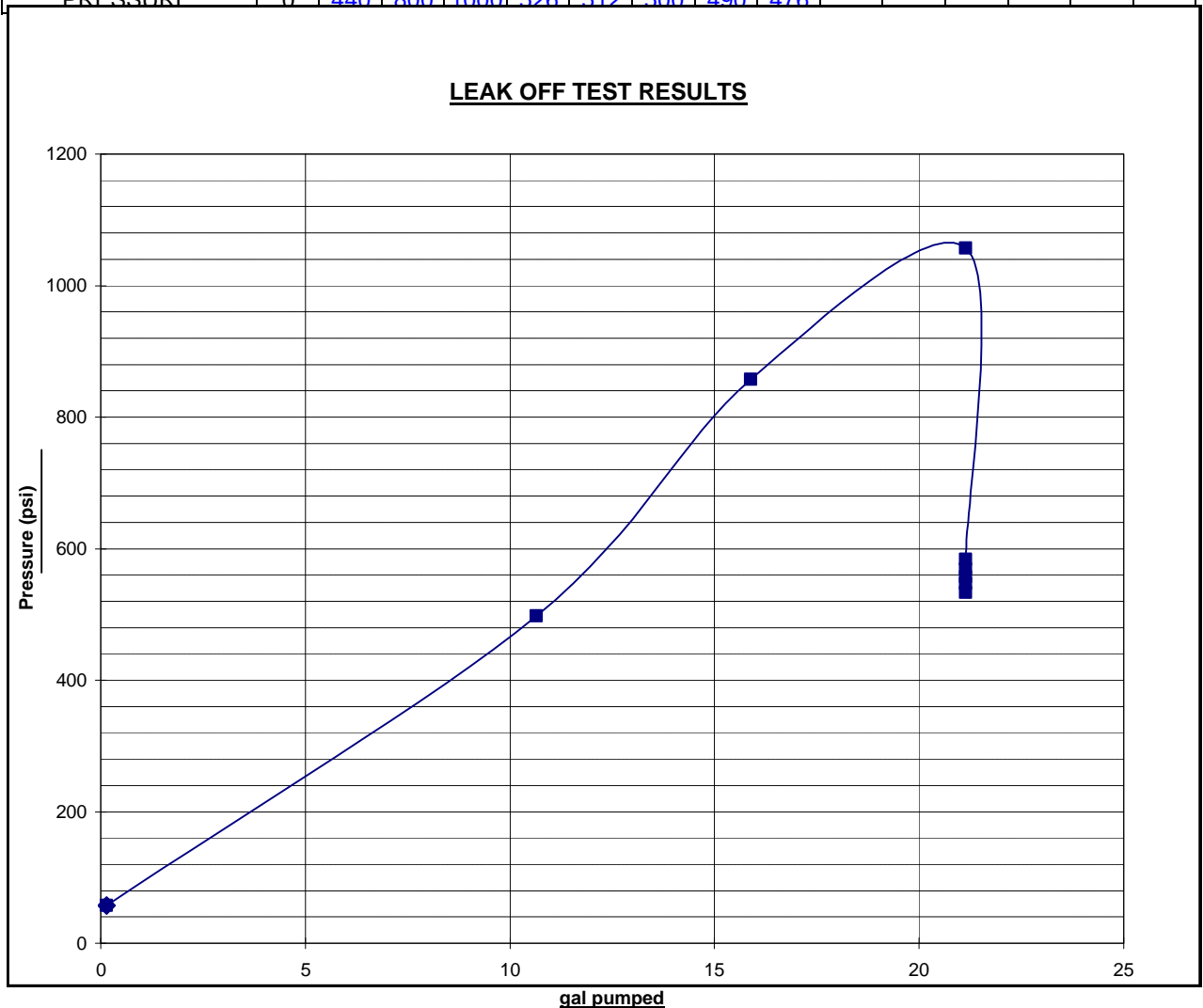
DATE: 19/04/2002

CASING SIZE: 7 5/8 (inch)

SANTOS SUPERVISOR: Graham Klenner

- A. MUD DENSITY IN USE: 8.6 (ppg)
 B. HOLE DEPTH: 1256 (ft)
 C. SHOE DEPTH: 1240 (ft)
 D. LEAK-OFF PRESSURE (GRAPH): 527 (psi)
 E. EQUIVALENT DENSITY:
 LEAK-OFF PRES. (D) (psi) + MUD DENSITY IN USE (A) (ppg) **16.8 (ppg) (EMW)**
 SHOE DEPTH (C) (ft) x 0.052
 F. MAXIMUM PRESSURE RECORDED: 1000 (psi)
 G. VOLUME PUMPED: 21 (gallons)
 H. VOLUME REGAINED: 15.8 (gallons)

		1min	2min	3min	4min	5min							
GALS PUMPED	0	10.5	15.75	21	21	21	21	21	21				
PRESSURE	0	440	800	1000	526	512	500	490	476				



Section 4 – Casing and Cementing

Casing and Cementing Report/s

Wellhead Installation Report/Plug and Abandonment Report

Santos

Santos Ltd
A.C.N. 007 550 923

CASING AND CEMENTING REPORT

Well Name: **Buttress # 1**

FORM

DQMS F-220

Casing type: Surface casing Intermediate Casing Production Casing Completion tubing

Originated by: G Klenner Date: 9-Jan-02 Checked by: JNB Date: 11-Jan-02

Hole Size: 9 7/8" T.D.: 383 Rig: ODE Rig 30 Date: Cemented by: Dowel

PRE-FLUSH 0 bbls. @ Additives: _____ SPACER 40 bbls @ 8.4 ppg Mains water

CEMENT

LEAD SLURRY: 93 sacks class "G"
Slurry Yield: 3.38 cu.ft./sack
Mixwater Req't: 21.43 gal./sack
Actual Slurry Pumped: 56.0 bbls @ 11.0 ppg
314 cu ft

(Job was planned for top of lead slurry to surface using 50% excess)

TAIL SLURRY: 110 sacks class "G"
Slurry Yield: 1.19 cu.ft./sack
Mixwater Req't: 15.6 gal./sack
Actual Slurry Pumped: 23.0 bbls @ 15.6 ppg
129 cu ft

(Job was planned for top of tail slurry at 340m using 50% excess).

ADDITIVES

	%	Amount
D020 Bentonite	4	395 lbs
S001 Accelerator	1.5	149 lbs
D144 Antifoam	0.01 ga/sx	2 gal

D145A Dispersant	0.05 gal/sx	5 gal
D144 Antifoam	0.01 gal/sx	1 gal
S001 Accelerator	0.5	51 lbs

DISPLACEMENT

Theoretical Displ.: 55 bbl. Fluid: Mud 9 ppg
Actual Displ. bbl @ 2 BPM Bumped plug with 450 psi
Displaced via RIG / CEMENTING UNIT Pressure Tested to: 2000 psi
Bleed back: 0.5 bbl

ACTIVITY	Time	Returns to Surface:	102 bbls mud	0 bbls Cement
Start Running csg.	13:30	Reciprocated/Rotated Casing:	No - casing chained down.	
Casing on Bottom	17:00	Top Up Job run:	Yes / No	73 sx class G
Start Circulation	17:15	Plug Set make/type:	Weatherford non rotating.	
Pump Preflush (Rig)	18:20	Centraliser type/depth:	Weatherford Bow Spring at 371, 360, 351, 328, 305 and 17 m.	
Start Pressure Test	18:40	Remarks:	Top up job with stinger pumped 12 bbls and lost circulation.	
Start Mixing	19:00		Cut window in conductor and topped up with dry cement and water.	
Finish Mixing	19:25			
Start Displacing	19:25			
Stop Displ./Bump	19:40			
Press. test	19:50			

No. JOINTS	SIZE OD	WT lb/ft	GRADE	THREAD	M	FROM	TO
Stick up						0.00	0.00
Rotary table to top of bradenhead					4.71	0.00	4.71
Bradenhead. Woods 5k 9" x 7 5/8"					0.86	4.71	5.57
32	7 5/8"	26.4	L80	BTC	345.66	5.57	351.23
Pup jnt	7 5/8"	26.4	L80	BTC	2.94	351.23	354.17
Float Collar	7 5/8"	26.4	L80	BTC	0.41	354.17	354.58
2	7 5/8"	26.4	L80	BTC	23.10	354.58	377.68
Float Shoe	7 5/8"	26.4	L80	BTC	0.47	377.68	378.15

Theoretical Bouyed wt of casing(klb):	29 klb	Bradenhead Height above GL	0.00 metres
Actual wt of casing (last joint run-block wt, klb)	klb	Marker jts Left	2
Hanging wt (after cementing and pressure bleed off)	33 klb	Total Jts on Loc	40
Casing wt just prior to setting slips	N/A	Total No. Run	32
	(Indicator wt - Blocks = Csg wt)	No. Left	5

<h1 style="margin:0;">Santos</h1> <p style="font-size: small; margin: 5px 0;">Santos Ltd A.C.N. 007 550 923</p>	CASING AND CEMENTING REPORT			FORM		
	Well Name:		Buttress # 1		DQMS F-220	

Casing type: <input type="checkbox"/> Surface casing <input type="checkbox"/> Intermediate Casing <input checked="" type="checkbox"/> Production Casing <input type="checkbox"/> Completion tubing						
Originated by: G Klenner		Date: 19th Jan 02		Checked by: JNB		Date: 24-Jan-02
Hole Size: 6.75	T.D.: 1730	Rig: ODE Rig 30	Date:	Cemented by:	Dowel	
PRE-FLUSH 10 bbls. @ H20			SPACER 40 bbls@ 8.4 ppg			
Additives: -----			Mains water 8 ppb sapp, 9.2 ppg KCL			

CEMENT				ADDITIVES			
LEAD SLURRY:	328	sacks class	"G"	DO20 Bentonite	4	%	1674 lbs
Slurry Yield:	2.58	cu.ft./sack		S001 Accelerator	0		0 lbs
Mixwater Req't:	15.55	gal./sack		D144 Antifoam	0.01	ga/sx	5 gal
Actual Slurry Pumped:	157.0	bbls @	11.8	DO81 Retarder	0.05	gal/sx	23 gal
	846	cu/ft cu ft					
TAIL SLURRY:	121	sacks class	"G"	D145A Dispersant	0.05	gal/sx	7.2 gal
Slurry Yield:	1.19	cu.ft./sack		D144 Antifoam	0.01	gal/sx	1.5 gal
Mixwater Req't:	5.31	gal./sack		DO81 Retarder	0.01	gal/sx	1.5 gal
Actual Slurry Pumped:	28.0	bbls @	15.6 ppg				
	144	cu/ft cu ft					

DISPLACEMENT				Fluid: Mud 9.4 ppg			
Theoretical Displ.:	49	bbl.		Bumped plug with		1200 psi	
Actual Displ.	49.5	bbl @	5 BPM	Pressure Tested to:		2000 psi	
Displaced via	Dowel			Bleed back:		0.5 bbl	

ACTIVITY	Time	Returns to Surface:	35	preflush and sapp flush	0	bbls Cement
Start Running csg.	18:00	Reciprocated/Rotated Casing:	yes			
Casing on Bottom	04:00	Top Up Job run:	Yes / No	No		sx class G
Start Circulation	03:30	Plug Set make/type:	Baker lycn			
Pump Preflush (Rig)	05:00	Centraliser type/depth:	weathrtford, 1704,1691,1679,1654,1629,1604,1579,1554,			
Start Pressure Test	06:05	Remarks:	356,331.00			
Start Mixing	06:18	Full returns.				
Finish Mixing	07:02	Unable to run past 1717m HUD.				
Start Displacing	07:07	Bump plug .				
Bump	07:15	set slips w/- 40 k above string wt.				
Press. test	07:24					

No. JOINTS	SIZE OD	WT lb/ft	GRADE	THREAD	M	FROM	TO
Rotary table to top of bradenhead					4.93	0.00	4.93
Bradenhead. Woods 5k 9" x 7 5/8"					0.54	4.93	5.47
1 cut jnt	3 1/2'	9.2	13cr95	Fox	6.47	5.47	11.94
127	3 1/2'	9.2	13cr95	Fox	1567.07	11.94	1579.01
marker jt	3 1/2"	9.2	13cr95	Fox	1.24	1579.01	1580.25
10	3 1/2"	9.2	13Cr95	Fox	123.59	1580.25	1703.84
Float shoe	3 1/2"	9.2		Fox	0.37	1703.84	1704.21
1	3 1/2"	9.2	13Cr95	Fox	12.36	1704.21	1716.57
Shoe	3 1/2'	9.2		Fox	0.43	1716.57	1717.00

Theoretical Bouyed wt of casing(klb):	45	Bradenhead Height above GL	0.00
Actual wt of casing (last joint run-block wt, klb)	44	Marker jts Left	0.00
Hanging wt (after cementing and pressure bleed off)	42	Total Jts on Loc	160
Casing wt just prior to setting slips	82	Total No. Run	139
	(Indicator wt - Blocks = Csg wt)	No. Left	21

Buttress 1

7-5/8"BTC x 3-1/2"Kawasaki Fox.



Components

Xmas Tree Assembly No. A0084				Serial No.
Description	Manufacturer	Part No.	Size/Rating	Model
Tree Cap	WGPC	2233-3-AS1	3-1/8" 5,000	Bowen
Crown Valve				
Flow Cross	WGPC	2255-3	3-1/8"5Kx2-1/16"5K	
Kill/Vent Valve	CIW	141501-31-62-02	2-1/16"5K	FL
Companion Flange	WGPC	306230	2-1/16"5K	
Production Wing Valve	WGPC	306162	3-1/8"5K BB	2200
Blind Flange	WGPC	1140AU	3-1/8"x 2"NPT	
Upper Master Valve	WGPC	306162	3-1/8"5K BB	2200
Lower Master Valve	WGPC	308143	3-1/8"5K CC1	2200
Adaptor Flange	WGPC	314979	9"5K Hubx3-1/8"5K	2 x 3-1/2"P
Tubing Head				
Production Annulus Valve				
Companion Flange				
Casing Spool				
Intermediate Annulus Valve				
Companion Flange				
Casing Head	WGPC	314958	9"5Kx7-5/8"BTC	WG2LH
Slip & Seal	WGPC	318640	9"x3-1/2"	WG22
Surface Annulus Valve	WGPC	305843	2-1/16"5K	2200
Companion Flange	WGPC	306230	2-1/16"5K	
Casing Swage	N/A			

General Comments :- No swage req'd 7-5/8"BTC straight into body, first completion running the wellhead,

Company Man Duncan New / Graham Keller Rig Rep. Patch / Darren Whithead