



| Baroid

Engineered Fluid Solutions Customized to Maximize Wellbore Value

TIAS Oil
63-4 W6M
63-4 W6M
0

DRILLING FLUIDS PROGRAM

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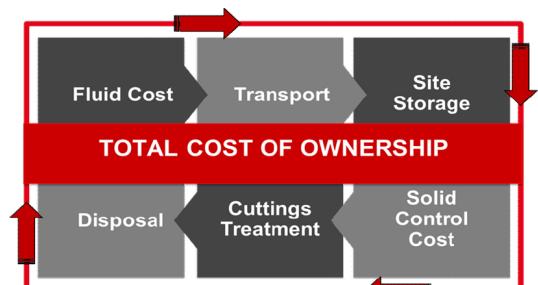
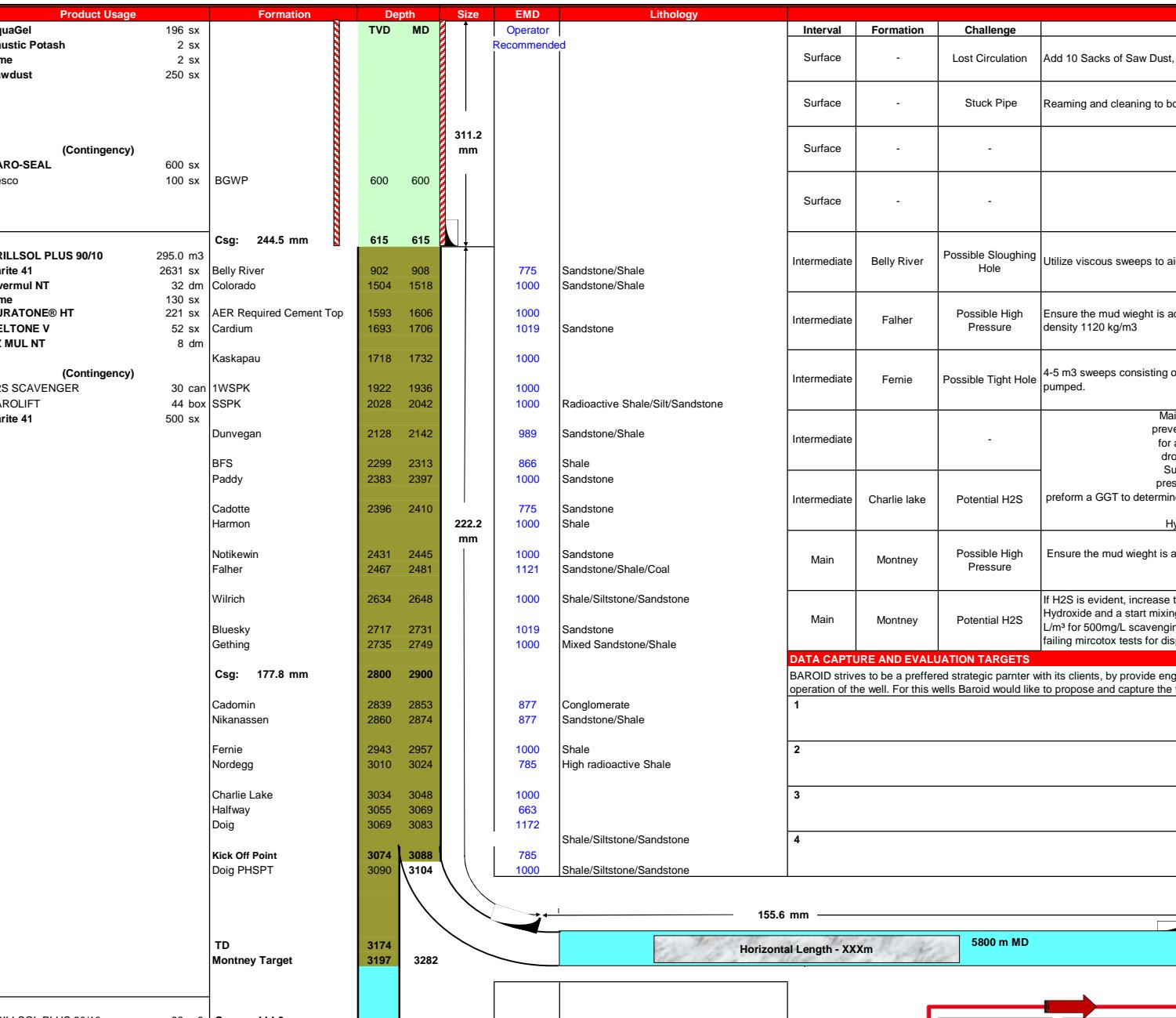
Date: April 4, 2017



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Engineered Fluid Solutions Customized to Maximize Wellbore Value

Mud System		Formulations and Volumes		Microtox	Procedures & Maintenance
Aquagel		Product	Concentration		
Interval		0 - 615 m	AquaGel	35.0 kg/m ³	
Density (kg/m ³)		ALAP	Caustic Potash	10.0	
Viscosity (sec/L)		35-40	Lime		
Yield Point (Pa)		12-16	Sawdust		
Plastic Vis (mPa.s)		6-8			
pH		10-11			
			Volume	m ³	
			Tanks	60.0	
			Hole	46.8	
			Dilution	20.0	
			TOTAL	126.8	
Tight-Emulsion System		Product	Concentration		
Interval		615 - 3282 m	DRILLSOL PLUS 90/10		
Density (kg/m ³)		Min 1020 kg/m ³	Barite 41	184.9	
Keep ALAP			Invermul NT	20.0	
Increase to 1180 kg/m ³ prior to Doig		Max 1100 kg/3	Lime	10.0	
Viscosity (sec/L)		45-50	DURATONE® HT	17	
Yield Point (Pa)		24-30	GELTONE V	4	
Plastic Vis (mPa.s)		12-15	EZ MUL NT	4.5	
pH		10-11			
HTHP		Maintain an all-oil HPHT filtrate	(Contingency)		
			H2S SCAVENGER	2 L/m ³	
			BAROLIFT	1 kg/m ³	
			Barite 41		
			Volume	m ³	
			Tank	60.0	
			Casing	24.8	
			Hole	103.4	
			Losses	0.04	106.7
			TOTAL (Required)	294.9	
			TOTAL (Returned)	188.2	
Tight-Emulsion System		Product	Concentration		
Interval		3282 - 5882 m	DRILLSOL PLUS 90/10		
Density (kg/m ³)		Min 1180 kg/m ³	Barite 41	441.6	
Keep ALAP			Invermul NT	20.0	
		Max 1200 kg/3	Lime	10.0	
Viscosity (sec/L)		45-50	DURATONE® HT	17.0	
Yield Point (Pa)		24-30	GELTONE V	4	
Plastic Vis (mPa.s)		12-15	EZ MUL NT	5	
pH		10-11			
HTHP		Maintain an all-oil HPHT filtrate	(Contingency)		
			H2S SCAVENGER	2	
			BAROLIFT	1	
			Barite		
			Volume	m ³	
			Tank	60.0	
			Casing	69.9	
			Hole	49.4	
			Losses	0.04	104.0
			TOTAL	104.0	
					for a higher ROP, centrifuge cutting at surface then mud up to 1180 kg/m ³



Using the above listed products in a concentration greater than the Microtox Confirmation level may cause the mud system to fail Microtox.

Note: This does not take into consideration the cumulative effect of multiple products in a mud system. All Microtox test results are performed by an independent certified Laboratory and a hard copy is on file in Baroid's Calgary office.

AROID Technical Services: (Cellular)

BAROID Invert Plant:

BAROID
Drilling Fluid Cost Estimate

HALLIBURTON
 Baroid

Well Name: **63-4 W6M**
 Engineering: Ali Deris

Surface Hole: 0 - 615 metres
 Mud Type: **Aquagel**

Location: **63-4 W6M**
 Stock Point: 0

Total Depth: **5882 m**

Product	Size	Price List	Estimate	Est. Cost
AquaGel	22.7 kg	\$12.69	196	\$2,487.24
Caustic Potash	25 kg	\$194.05	2	\$388.10
Lime	22.7 kg	\$40.80	2	\$81.60
Sawdust	9 kg	\$7.38	250	\$1,845.00
0	22.7 kg		0	\$0.00
0	22.7 kg		0	\$0.00
0	22.7 kg		0	\$0.00
0	22.7 kg		0	\$0.00
				Interval Cost
				\$4,801.94

Intermediate: 615 - 3282

Mud Type: **Tight-Emulsion System**

Product	Size	Price List	Estimate	Est. Cost
DRILLSOL PLUS 90	m3	\$961.46	295	\$283,630.70
Barite 41	40 kg	\$37.82	2631	\$99,504.42
Invermul NT	190 kg	\$1,948.61	32	\$62,355.52
Lime	22.7 kg	\$23.91	130	\$3,108.30
DURATONE® HT	22.7 kg	\$265.84	221	\$58,750.64
GELTONE V	22.7 kg	\$183.99	52	\$9,567.48
EZ MUL NT	22.7 kg	\$2,566.03	8	\$20,528.24
				Interval Cost
				\$537,445.30

Main Hole: 3282 - 5882 metres

Mud Type: **Tight-Emulsion System**

Product	Size	Price List	Estimate	Est. Cost
DRILLSOL PLUS 90	m3	\$961.46	96	\$92,300.16
Barite 41	22.7 kg	\$37.82	1060	\$40,089.20
Invermul NT	22.7 kg	\$1,948.61	11	\$21,434.71
Lime	22.7 kg	\$23.91	43	\$1,028.13
DURATONE® HT	22.7 kg	\$265.84	72	\$19,140.48
GELTONE V	22.7 kg	\$266.84	17	\$4,536.28
EZ MUL NT	22.7 kg	\$267.84	3	\$803.52
				Interval Cost
				\$179,332.48

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Drilling Fluid Cost Estimate

HALLIBURTON
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CONTINGENCY Materials

Miscellaneous Charges

Product	Size	Price List	Estimate	Est. Cost
Pallets - DT	ea			\$0.00
Pallets - Cr	ea			\$0.00
Engineering				
<4 hrs	day			\$0.00
4-8 hrs	day			\$0.00
>8 hrs	day			\$0.00
Envir.disposal	drum	\$60.00	1	\$60.00
Envir.disposal	pail			\$0.00
			Misc. Cost	\$60.00

TOTAL COST with Contingency: \$881,519.93

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