Mudmaster

Product selection, geology guide and fluid control for horizontal directional drilling.

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Pick the product
Function and dosage per m³

02 · PAGE 2
Match the ground
Base fluid and additives per formation

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Test and adjust
Targets and action thresholds

01

Product range

● Primary function ○ Secondary

Product	Description	Viscosity	Thinner	Filtration control	Surfactant	Lubricant	Suspension	Inhibitor	Treatment kg per m³
CEBOGEL® OCMA	Viscosifier	●		●			●		65 – 80
TUNNEL-GEL® MAX	Viscosifier	●		●			●		30 – 40
TUNNEL-GEL® PLUS	High-yield gellant viscosifier	●		●			○		28 – 35
TUNNEL-GEL® PRO	Clay inhibitive viscosifier	●		●		○	○	●	25 – 30
TUNNEL-GEL® SW	Salt-water bentonite	●		●			○		25 – 35
QUIK-TROL® LV / PAC™-L	Low viscosity filtration control			●				○	0.5 – 1.5
QUIK-TROL® / PAC™-R	Filtration control	○		●				○	0.5 – 1
EZ-MUD® GOLD EU	Shale/clay stabilizer, filtration control			○		○		●	0.5 – 1.5
NO-SAG® / BARAZAN® D	Suspension enhancer	○					●		0.25 – 1.5
PENETROL® DRY EU	Non-ionic surfactant				●			○	1 – 3
N-SEAL™	Acid soluble loss of circulation material			●			○		3 – 10
CEBO HYBRID-GEL	Biodegradable fluid system	○		●			○		3 – 5
CEBO HYBRID-GEL PRO	Clay inhibitive pure polymer system	○		●		○	○	●	3 – 6

Bentonites · base viscosifiers **Additives** · polymers, surfactant, LCM **Polymer systems** · bentonite-free

Geology guide

Find the formation, read across the challenge you expect, then build the fluid on the recommended base with the listed additives. Dosages on page 1.

Formation	Challenges	Base	Additional additives
 **Cobbles**	Borehole caving; lost circulation	**CEBOGEL® OCMA**	QUIK-TROL® LV · N-SEAL™
	Poor steering; stuck tooling	**TUNNEL-GEL® MAX**	QUIK-TROL® LV · NO-SAG®
 **Gravel**	Borehole caving; fluid loss	**CEBOGEL® OCMA**	QUIK-TROL® LV · N-SEAL™
	Cuttings settling; abrasive wear	**TUNNEL-GEL® MAX**	QUIK-TROL® · NO-SAG®
 **Sand & gravel**	Borehole collapse; high fluid loss	**TUNNEL-GEL® MAX**	QUIK-TROL® LV
	Poor cuttings suspension; pack-off	**TUNNEL-GEL® PLUS**	QUIK-TROL® · NO-SAG®
 **Sand**	Borehole sloughing; high filtration	**TUNNEL-GEL® PLUS**	QUIK-TROL®
	Cuttings-bed buildup; inadvertent returns	**TUNNEL-GEL® MAX**	QUIK-TROL® LV
 **Sand & clay**	Unstable soil transitions; clay dispersion	**TUNNEL-GEL® PLUS**	QUIK-TROL® · EZ-MUD® GOLD EU
	Sand settling; restricted returns	**TUNNEL-GEL® PRO**	QUIK-TROL® LV
 **Dry clay**	Rapid hydration; viscosity build-up	**TUNNEL-GEL® PRO**	QUIK-TROL® LV
	Bit balling; plugged nozzles	**TUNNEL-GEL® PLUS**	EZ-MUD® GOLD EU
 **Sticky / swelling clay**	Clay swelling; borehole constriction	**TUNNEL-GEL® PRO**	QUIK-TROL® LV · PENETROL® DRY EU
	High torque; stuck pipe	**TUNNEL-GEL® PLUS**	EZ-MUD® GOLD EU
 **Rock**	Slow penetration; steering difficulty	**TUNNEL-GEL® PLUS**	NO-SAG® · QUIK-TROL®
	Tool wear / vibration; losses in fractures	**ULTRAFOAM™ EU**	EZ-MUD® GOLD EU · QUIK-TROL® LV
 **Salt water environment**	Reduced bentonite yield; fluid flocculation	**CEBOGEL® OCMA**	NO-SAG®
	High filtration; equipment corrosion	**TUNNEL-GEL® SW**	QUIK-TROL® LV

Fluid control

Test the make-up water first, then monitor the fluid throughout the bore. When a reading crosses its action threshold, apply the recommended action and retest.

Property	Test equipment	Target range	Action threshold	Recommended action
Total hardness	Hardness test strips	**< 100 mg/L**	**≥ 100 mg/L**	Treat make-up water with soda ash (0.5–1 kg/m³); retest before mixing.
pH	pH test strips	**pH 8.5 – 9.5**	**< 8.5 or > 9.5**	Adjust make-up water gradually to pH 8.5–9.5; retest before adding products.
Marsh funnel viscosity	Marsh funnel	**50 – 80 sec**	**Outside 50–80 sec or > 5% change**	**Low:** increase bentonite/polymer. **High:** dilute or add thinner and reduce concentration.
Mud weight	Mud balance	**< 1.2 g/cm³ (recycled)**	**≥ 1.20 g/cm³ or ≥ 0.02 change**	Use solids control or dilute; increase circulation and reduce penetration rate.
Filtration rate	API filter press	**< 15 ml / 30 min**	**≥ 15 ml/30 min or > 20% increase**	Add filtration-control polymer; verify concentration, monitor and maintain.
Sand content	Sand content test kit	**< 1% after recycling**	**≥ 1%**	Improve solids control; check shaker screens and recycling equipment for damage or misalignment.
Yield point	Rheometer	**Based on geology + annular velocity**	**Significant deviation from baseline; poor cuttings transport or excessive pump pressure**	**Poor cuttings returns:** increase YP. **High pressure/viscosity:** check for contaminants, sufficient flow rate and solids control equipment.
Low-shear yield point	Rheometer	**Based on geology + annular velocity**	**Material deviation from baseline; cuttings settling, poor returns or excessive pump pressure**	**Low:** increase low-shear suspension and retest. **High:** improve solids control and check for contaminants.
Gel strength 10 sec / 10 min	Rheometer	**Project-specific; rapid, flat gel based**	**Poor initial suspension, or progressive gel buildup from 10 sec to 10 min**	**Low initial gel:** add bentonite or NO-SAG®. **Progressive gels:** improve solids control and check for contaminants.

TREATMENT RATES

All dosages in this guide are given in kg per m³ of drilling fluid.

YOUR SUPPLIER

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