SC DrillTech

Solutions for Drilling Fluids Solids Control

DRILLING FLUIDS | SOLIDS CONTROL | DRILLING WASTE MANAGEMENT

COMMON FAILURE CENTER

FIELD INSPECTION CHECKLIST PACK

13 UNITS | **111** INSPECTION CHECKS

A printable, rig-ready inspection checklist for every unit in the solids-control and drilling-waste circuit — from the flowline to the waste skip.
Built from the SC DrillTech Common Failure Center · 199 failure modes.

Measured, not guessed.

scdrilltech.com/failure-center

Independent · Vendor-neutral · 26+ years GCC and MENA field experience

FIELD INSPECTION CHECKLIST PACK

Contents — the complete circuit

How to use: print, take it to the unit, tick each line. Anything you can't tick is a finding to act on.

Flowline, Header Box & Flow Divider

01

- [ ] **Slope & supports** continuous downhill fall, no sags/back-falls, supports sound and correctly spaced.
- [ ] **Diameter & flow** open-channel (not full-bore) at max return rate for the largest hole section.
- [ ] **Access** inspection/clean-out hatches at low points, bends and upstream of the possum belly.
- [ ] **Flow indication** flow paddle/sensor fitted, free, clean and live at the driller's console.
- [ ] **Wall integrity** ultrasonic thickness at elbows/wear points; no weeping, pitting or external corrosion.
- [ ] **Header box** volume adequate; weir clean and level; full-width calm overflow, not a jet.
- [ ] **Flow divider** even loading across all shakers; gates free and adjustable.
- [ ] **Instrumentation** flow-out/level sensors calibrated and uncoated; flow-out vs flow-in trended.
- [ ] **Electrical/area** devices and wiring rated for the area; bonding/grounding intact.
- [ ] **Gumbo/solids** no solids beds at low points; gumbo management for reactive sections.

RIG / WELL	DATE	INSPECTED BY

Shale Shaker

02

- [ ] **G-force** measured stroke × rpm gives 4–8 G (per OEM); both vibrator motors balanced.
- [ ] **Pool** sits ~two-thirds up the deck; no end-of-deck overflow at max rate.
- [ ] **Screens** correct API mesh, no blinding/coating, no tears, tensioned to spec.
- [ ] **Deck** rubbers/cords/crown sound; no edge bypass; angle correct and adjustable.
- [ ] **Feed** full-width calm weir overflow; no jet or side-bias.
- [ ] **Mechanicals** bearings, springs/isolators, basket welds, belts/air system sound.
- [ ] **Electrical** motors megger OK, overloads set to FLA, Ex rating and bonding intact, enclosures sealed.
- [ ] **Discharge** cuttings convey and are reasonably dry; mud-on-cuttings acceptable.
- [ ] **Capacity** enough decks/area for max rate; finest workable screen running.
- [ ] **Bypass** controlled and closed in normal operation.

RIG / WELL	DATE	INSPECTED BY

Mud Cleaner

03

- [ ] **Screen mesh** passes barite, retains drilled solids; both streams sampled to confirm.
- [ ] **Discard stream** drilled solids (not barite) going over the screen.
- [ ] **Return stream** barite (not drilled solids) in the underflow back to mud.
- [ ] **Cones** spraying correctly; parts inspected for wear; design feed head.
- [ ] **Screen condition** no blinding, coating or tears; deck rubbers sound.
- [ ] **Balance** cone underflow matched to screen capacity; no screen flooding.
- [ ] **Duty** deployed on weighted mud only.
- [ ] **Screen-stage mechanicals** vibrator, springs, deck maintained.

RIG / WELL	DATE	INSPECTED BY

Desander

04

- [ ] **Feed head** measured feed pressure gives the design head for the mud weight.
- [ ] **Discharge** every cone sprays (light umbrella), none roping or plugged.
- [ ] **Cones** bodies, apexes and vortex finders inspected for wear; correct apex sizes fitted.
- [ ] **Manifold** even feed across the bank; no blockages.
- [ ] **Duty** not run on weighted mud (barite protected); desander ahead of desilter.
- [ ] **Feed pump** dedicated and sized for the head; not shared/undersized.
- [ ] **Routing** suction upstream, discharge downstream; no re-processing/short-circuit.
- [ ] **Streams** overflow clean of sand; underflow at target dryness.

RIG / WELL	DATE	INSPECTED BY

Desilter

05

- [ ] **Feed head** measured pressure gives the design head for the mud weight.
- [ ] **Discharge** every small cone sprays; none roping or plugged.
- [ ] **Cones** bodies, apexes, vortex finders inspected (wear is fast); correct apex sizes.
- [ ] **Manifold** even feed; no blockages.
- [ ] **Duty** bare desilter not on weighted mud (else convert to mud cleaner).
- [ ] **Order** desander ahead; junk/sand scalped upstream.
- [ ] **Feed pump** dedicated and sized.
- [ ] **Streams** overflow clear of silt; underflow at target.

RIG / WELL	DATE	INSPECTED BY

Decanter Centrifuge

06

- [ ] **Duty match** machine type/speed suits barite recovery or LGS removal as intended.
- [ ] **Feed** steady, controlled, within rated capacity; dilution water correct.
- [ ] **Set points** bowl speed, pond depth and differential set for the duty; centrate and cake sampled.
- [ ] **Torque** trended and within range; torque protection set correctly.
- [ ] **Bearings** vibration/temperature trended; lube clean and to schedule.
- [ ] **Scroll/bowl** flight tiles and discharge ports inspected for wear at overhaul.
- [ ] **Balance/vibration** no abnormal vibration; protection sensors live.
- [ ] **Electrical** VFDs healthy, Ex rating and bonding intact, enclosures sealed.
- [ ] **Upstream** shakers/hydrocyclones conditioning the feed (centrifuge not overloaded).
- [ ] **Streams** centrate clean and cake at target dryness for the duty.

RIG / WELL	DATE	INSPECTED BY

Vacuum Degasser

07

- [ ] **Vacuum** design vacuum held; vessel/seals leak-free; gauge reading true.
- [ ] **Vacuum source** vacuum pump or eductor motive flow healthy; nozzle clean.
- [ ] **Internals** spray plates/weirs/vanes clean and unfouled.
- [ ] **Level control** float/level operating; no flooding or vacuum break.
- [ ] **Routing** suction from gas-cut compartment, discharge downstream, no short-circuit.
- [ ] **Gas split** entrained → degasser, free/kick → MGS; lineups correct.
- [ ] **Pumps** charge/centrifugal pumps not cavitating on gas-cut mud.
- [ ] **Electrical** motors/starters healthy, Ex rating and bonding intact, vent safe.
- [ ] **Operation** unit running and lined up through gas-bearing sections.
- [ ] **Foam** chemically stabilised foam managed with defoamer.

RIG / WELL	DATE	INSPECTED BY

Mud System & Tanks

08

- [ ] **Sequence** removal units lined up to the correct compartments in order; no re-processing/bypass.
- [ ] **Volume** adequate active/surface volume and buffer for the rate.
- [ ] **Routing** no inlet-to-suction short-circuit; equalisation correct.
- [ ] **Sand trap** present after the shaker and cleaned.
- [ ] **Dead zones** no settled beds; agitation covers the tanks; barite suspended.
- [ ] **Structure** tanks, welds, valves, gates and equalisation lines sound.
- [ ] **Mud guns** nozzles and lines clear; coverage maintained.
- [ ] **PVT/level** pit-volume and level sensors calibrated, uncoated, alarmed.
- [ ] **Suction** level maintained; no gas-cut mud or starvation at the charge pumps.

RIG / WELL	DATE	INSPECTED BY

Agitators & Impellers

09

- [ ] **Suspension** no settled beds or barite sag; mud weight consistent top-to-bottom.
- [ ] **Coverage** agitators sized, numbered and placed for the whole compartment; mud guns supplementing.
- [ ] **Impeller** correct type, not worn; producing the intended flow.
- [ ] **Shaft/mount** rigid mount, true shaft, no whirl or vibration.
- [ ] **Seals** intact; gear oil clean and uncontaminated.
- [ ] **Gearbox/bearings** no abnormal noise, heat or vibration; lubrication maintained.
- [ ] **Motor** healthy (megger/current), overloads set, Ex rating and bonding intact, enclosures sealed.

RIG / WELL	DATE	INSPECTED BY

Centrifugal Pumps

10

- [ ] **Duty** delivered head/flow meets the requirement (cyclone feed head / charge / transfer).
- [ ] **Suction** flooded, unrestricted, adequate NPSH; no gas-cut mud at the suction.
- [ ] **No cavitation** no gravel noise or vibration; impeller undamaged.
- [ ] **Seals/bearings** no leaks; bearings cool and quiet; lubrication maintained.
- [ ] **Impeller/casing** wear within limits; clearances and wear plates sound.
- [ ] **Alignment** coupling and shaft aligned; baseplate rigid; piping strain-free.
- [ ] **Operating point** near the design point; not throttled hard or dead-headed.
- [ ] **Motor** healthy, overloads set, Ex rating and bonding intact.

RIG / WELL	DATE	INSPECTED BY

Mixing Hoppers & Eductors

11

- [ ] **Vacuum** strong draw at the hopper; motive pump pressure correct.
- [ ] **Nozzle/throat** inspected for wear; vacuum restored if down.
- [ ] **Shear** adequate for the products; not over-recirculating.
- [ ] **Discharge** into a well-agitated zone; product blends.
- [ ] **Dust** product wets in cleanly; dust-control practice followed.
- [ ] **Hopper/valves/lines** no bridging, sticking, erosion or leaks.

RIG / WELL	DATE	INSPECTED BY

Filtration Units

12

- [ ] **Filtrate clarity** sampled and meeting the completion-fluid spec.
- [ ] **Rating** element micron/beta matched to target and load; coarse-to-fine staging.
- [ ] **Integrity** seals/O-rings sound, elements seated, no bypass; housing leak-free.
- [ ] **Differential** trended; elements changed at the limit (not run collapsed).
- [ ] **DE units** precoat and body feed correct; septum maintained.
- [ ] **Compatibility** materials suit the brine type and temperature.
- [ ] **Flow** within rating; vented; no surging or air binding.
- [ ] **Discipline** regular filtrate sampling and integrity checks after change-outs.

RIG / WELL	DATE	INSPECTED BY

Drilling Waste Management

- [ ] **Transfer** augers/vacuum/lobe units sized, hardfaced, unplugged; interim holding for surges.
- [ ] **Cuttings dryer** screen bowl and flights inspected; air knife and oil-cooling working; feed steady; vibration normal.
- [ ] **Dryer output** recovered fluid clean; OOC driven toward spec.
- [ ] **Dewatering** waste centrifuge tuned; chemistry jar-tested and dosed; effluent meets limits.
- [ ] **OOC** treated cuttings sampled against the OOC/retention limit and trended.
- [ ] **Disposal route** matched to classification and documented; thermal/injection/licensed as required.
- [ ] **Segregation** OBM/WBM/brine streams kept separate.
- [ ] **Containment** bunding, skips and housekeeping sound; no spills.
- [ ] **Measurement** fluid recovery and OOC measured and trended — not assumed.

RIG / WELL	DATE	INSPECTED BY

SC DrillTech

Solutions for Drilling Fluids Solids Control

DRILLING FLUIDS | SOLIDS CONTROL | DRILLING WASTE MANAGEMENT

Found a failure that isn't in the checklist?

Some failures only show up as a pattern across the whole train. If you've worked the unit and it still isn't right, an independent evaluation looks at the system — not just the symptom.

The full reference · 199 failure modes · 13 units

scdrilltech.com/failure-center

Measured, not guessed.

SC DrillTech · Independent · Vendor-neutral · scdrilltech.com