READY TO INSPECT — FIELD CHECKLIST

Reverse osmosis system quarterly maintenance checklist

A quarterly reverse osmosis system round is short on purpose: it catches the wear items that fail between annual services. This checklist is sized for a tech with a phone. Every item says what to look at and the photo that proves the round happened. Work is commonly verified against manufacturer's published instructions, IPC / UPC plumbing codes. Confirm the edition your authority having jurisdiction has adopted.

Who runs it: The water-treatment or plumbing tech on the quarterly round of the RO skid. When: Every quarter, since a loaded prefilter starves the pump and a fouling membrane both show up here before product quality falls off.

Prefiltration

- [ ] Sediment prefilters checked and pressure drop noted
  Cartridge or housing condition checked, inlet-to-outlet pressure drop across the prefilters read and compared to a clean set.
  2 photos required
- [ ] Carbon stage condition and interval verified
  Carbon cartridge or bed within its service life, no channeling or bypass, dechlorination stage protecting the membrane confirmed in place.
  1 photo required
- [ ] Free chlorine tested after the carbon stage
  Sample from the carbon outlet or RO feed port reads no chlorine on the test kit; where a softener feeds the skid, hardness tested at the same port against the membrane maker's limit.
  1 photo required

Membrane performance

- [ ] Operating and permeate pressures read at the gauges
  Feed, concentrate and permeate pressures read off the skid gauges and compared against the unit's normal operating range.
  2 photos required
- [ ] Permeate flow and product-quality reading observed
  Permeate flow and the product-quality meter observed and logged as displayed, trended against the last visit. The reading is recorded, not judged against an invented limit.
  2 photos required
- [ ] Concentrate flow read at the flowmeter
  Concentrate or reject flowmeter read at the same moment as the permeate flow, both compared with the commissioning baseline for the same feed temperature.
  1 photo required
- [ ] Feed conductivity read alongside the permeate
  Feed conductivity read where a feed monitor is fitted, or with a hand meter, at the same time as the permeate, so salt rejection can be compared with the baseline and last quarter.
  1 photo required
- [ ] Recovery rate worked out from the flow log
  Permeate and concentrate flows from the log give the recovery, compared with the commissioning design; a drift upward is flagged, since it scales the tail membranes.
  No photo required
- [ ] Pressure drop across the membrane array trended
  Feed minus concentrate pressure worked out from the gauge readings and compared with the commissioning baseline, a rising drop pointing to fouling at the lead membranes.
  No photo required

Pump and leaks

- [ ] High-pressure pump running normally
  Pump holding pressure without cavitation noise, vibration or overheating, no cycling on a starved inlet.
  1 photo required

- [ ] Skid, housings and fittings checked for leaks
  No weeping at housing seals, membrane vessel end caps or fittings, no moisture tracking under the skid. 1 photo required

Controls and discharge

- [ ] Controller alarms and alarm history read
  RO controller showing no active alarm, history since the last visit read, low feed pressure, high conductivity and tank-full events recorded. 1 photo required
- [ ] Drain air gap at the concentrate outlet checked
  Concentrate and flush lines discharge above the drain rim with an air gap, no hose pushed down into the drain, no backup or overflow at the receptor. 1 photo required
- [ ] UV unit on the product line checked where fitted
  Lamp-on indicator or intensity reading normal, lamp hours against the manufacturer's replacement interval, no alarm at the UV controller. No photo required