

Oil analysis report TR-OA-2026-0614

Gearbox oil - WTG-07 - Quellmoor Ridge

Field	Value
Customer	Contoso Renewables, Quellmoor Ridge Wind Farm
Asset	WTG-07 main gearbox, Fabrikam FGT-3200, serial FGT-3200-18-07752
Lubricant	Proseware PWG 220 (ISO VG 220), in service since 2025-10-15
Sample ID	TR-26-11873
Sampled	2026-06-10 by Callum Rydings (sampling valve, oil at operating temperature)
Received / reported	2026-06-12 / 2026-06-17
Analyst	Imogen Thackwray, Senior Lubrication Analyst

OVERALL CONDITION: ALERT - action required

Test	Method	Result	Unit	Alert limit	Status
Viscosity at 40 °C	kinematic	229	mm ² /s	198 to 242	normal
Viscosity at 100 °C	kinematic	26.1	mm ² /s	-	normal
Water	coulometric titration	180	ppm	300	normal
Total acid number	titration	0.9	mg KOH/g	1.5	normal
Iron (Fe)	ICP	64	ppm	50	ALERT
Copper (Cu)	ICP	7	ppm	25	normal
Chromium (Cr)	ICP	2	ppm	10	normal
Silicon (Si)	ICP	9	ppm	15	normal
PQ index	ferrous debris	112	-	60	ALERT
Particle count	ISO 4406	20/18/15	code	19/17/14	ALERT

Comments

Ferrous wear has increased sharply since the previous sample (TR-OA-2026-0241 of 2026-03-17: Fe 31 ppm, PQ index 44). Large ferrous particles (PQ index 112) together with normal copper indicate rolling-element bearing distress rather than gear wear. Viscosity and water content are normal for PWG 220.

Recommendations

1. Review the vibration trend of the output stage bearings.
2. Inspect the HSS bearings by endoscope.
3. Replace the filter element and resample within 30 days.

Trend

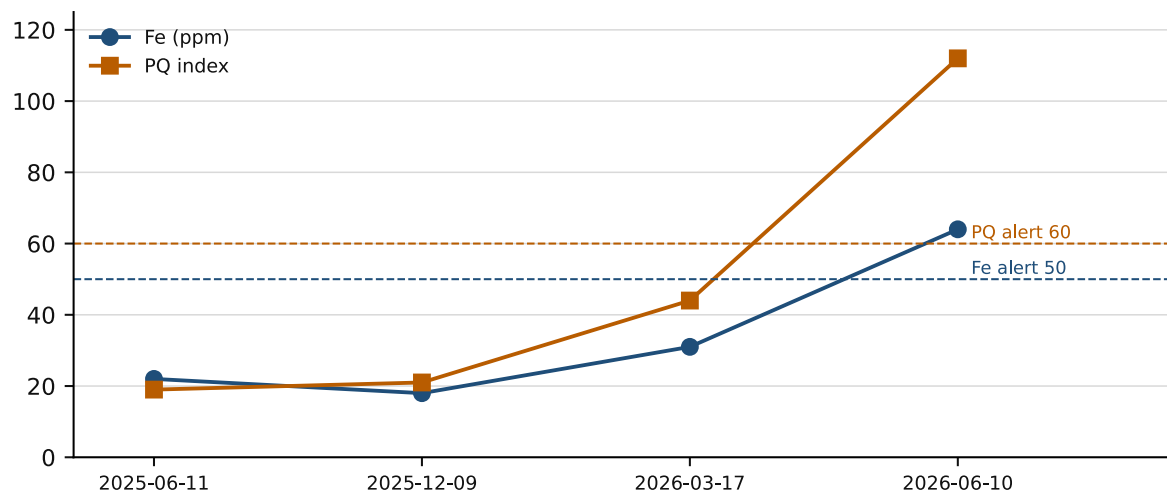


Figure 1 - Iron and PQ index of the WTG-07 gearbox oil

Sample date	Report	Oil	Fe (ppm)	PQ index	Viscosity 40 °C	Status
2025-06-11	TR-OA-2025-0388	PWG 320	22	19	318	NORMAL
2025-12-09	TR-OA-2025-0951	PWG 220	18	21	221	NORMAL
2026-03-17	TR-OA-2026-0241	PWG 220	31	44	224	NORMAL
2026-06-10	TR-OA-2026-0614	PWG 220	64	112	229	ALERT

Results relate only to the sample received. Report approved by Imogen Thackwray, Senior Lubrication Analyst, Trey Research Laboratories.