

LAB REPORT

Unit id **Steam turbine**
 Component **Lubricating oil 9T**
 Lab number **1704448**



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OELCHECK GmbH · Kerschelweg 28 · 83098 Brannenburg

Manufacturer: **AEG-Kanis**
 Oil brand name: **Mobil DTE 846**
 Oil quantity in system: **13000 l**

Example report
 Analysis scope: Turbine Oil Kit 9 (revision)

Diagnosis for the current laboratory values

Wear metals are only present in negligible concentrations. Hardly any abrasive or corrosive wear is therefore visible. The cleanliness class of the oil complies with the requirements. The water content is within the normal range. The water separability is slightly improved. The foaming tendency is strongly increased. The trend, however, is steady. The oil is fit for further use, if the increased foaming tendency does not cause operational problems. All the other data detected are within the permissible or expected value range. If no oil change has happened yet, it is possible to continue using the oil under similar operating conditions and under continuation of the usual maintenance schedule. I recommend that you send the next sample at the next service interval or at your regular inspection for trend analysis.

Dipl.-Ing. Andy Böhme (CLS)

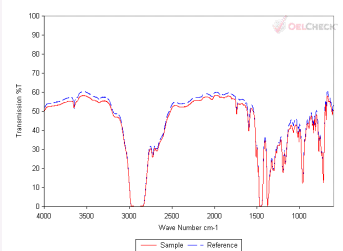
Sample Rating



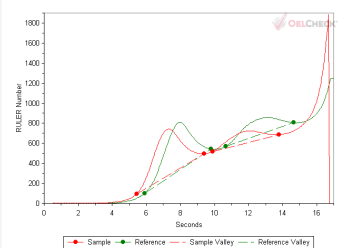
Normal

ANALYSIS RESULTS			Current sample	Previous samples			
LAB NUMBER			1704448	1704449	1704450	1704451	
SAMPLE RATING			✓	✓	✓	✓	
Date tested			16.05.2025	13.05.2024	19.05.2023	23.05.2022	
Date of sample taken			08.05.2025	05.05.2024	13.05.2023	16.05.2022	
Date of last oil change			16.10.2018	16.10.2018	16.10.2018	16.10.2018	
Top-up since change	l		200	-	-	-	
Operating time since change	a		6,5	5,5	4,5	3,5	
Total operating time	a		23,5	22,5	21,5	20,5	
Oil changed			no	no	no	-	
WEAR							
Iron	Fe	mg/kg	0	0	0	0	
Chrome	Cr	mg/kg	0	0	0	0	
Tin	Sn	mg/kg	0	1	0	0	
Aluminum	Al	mg/kg	0	0	0	0	
Nickel	Ni	mg/kg	0	0	0	0	
Copper	Cu	mg/kg	2	1	0	0	
Lead	Pb	mg/kg	0	0	0	0	
Molybdenum	Mo	mg/kg	0	0	0	0	
Manganese	Mn	mg/kg	0	0	0	0	
PQ index	-		< 25	< 25	< 25	< 25	
CONTAMINATION							
Silicon	Si	mg/kg	1	0	0	0	
Potassium	K	mg/kg	0	0	0	0	
Sodium	Na	mg/kg	2	0	0	0	
Lithium	Li	mg/kg	0	0	0	0	
Water K. F.	ppm		< 30	< 30	< 30	< 30	
OIL CONDITION							
Viscosity at 40°C	mm²/s		43.93	43.98	43.89	43.87	
Viscosity at 100°C	mm²/s		7.05	7.09	7.01	7.08	
Viscosity index	-		120	121	118	121	
Oxidation	A/cm		1	1	1	1	
IR index	-		99.85	99.95	99.93	99.92	
Color	Color index		1.5	1.5	1.5	1.5	
ADDITIVES							
Calcium	Ca	mg/kg	1	0	0	0	
Magnesium	Mg	mg/kg	0	0	0	0	
Boron	B	mg/kg	0	0	0	0	
Zinc	Zn	mg/kg	1	0	1	0	
Phosphorus	P	mg/kg	1173	1172	1071	1103	
Barium	Ba	mg/kg	0	0	0	0	
Sulphur	S	mg/kg	19	11	17	18	

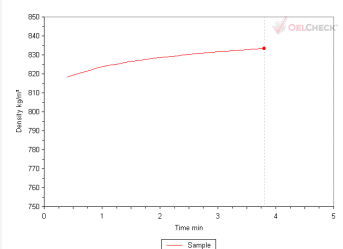
Infrared Spectrum



RULER Diagram



Air-release properties



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Oil quantity in system: **13000 l**

Example report
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Date of sample taken		08.05.2025	05.05.2024	13.05.2023	16.05.2022
Date of last oil change		16.10.2018	16.10.2018	16.10.2018	16.10.2018
Top-up since change	l	200	-	-	-
Operating time since change	a	6,5	5,5	4,5	3,5
Total operating time	a	23,5	22,5	21,5	20,5
Oil changed		no	no	no	-
ADDITIONAL TESTS					
AN / NN	mgKOH/g	< 0.10	< 0.10	< 0.10	< 0.10
MPC		7.40	3.10	8.10	5.40
Air-release properties	min	3.8	4.6	4.4	4.4
Air release at temperature	°C	50	50	50	50
Water separation (steam)	s	139	162	164	162
Density 15°C	kg/m³	859	859	859	859
Foam test seq. I	ml/ml	590/0	640/0	630/0	560/0
Cleanliness class	ISO 4406	16/14/11	16/14/11	16/14/11	16/15/11
A: >4µm = ISO >4µm	Particles/100ml	42724	32249	52338	43770
B: >6µm = ISO >6µm	Particles/100ml	12224	11567	14460	16075
C: >14µm = ISO >14µm	Particles/100ml	1527	1584	1369	1466
D: >21µm	Particles/100ml	465	444	242	386
E: >38µm	Particles/100ml	43	25	13	0
F: >70µm	Particles/100ml	0	0	0	0
Cleanliness class	SAE AS 4059	6A	6A	7A	6A
Antioxidant 1 - RULER	%	91.8	75.1	92.6	101.3
Antioxidant 2 - RULER	%	67.9	63.9	71.1	71.7



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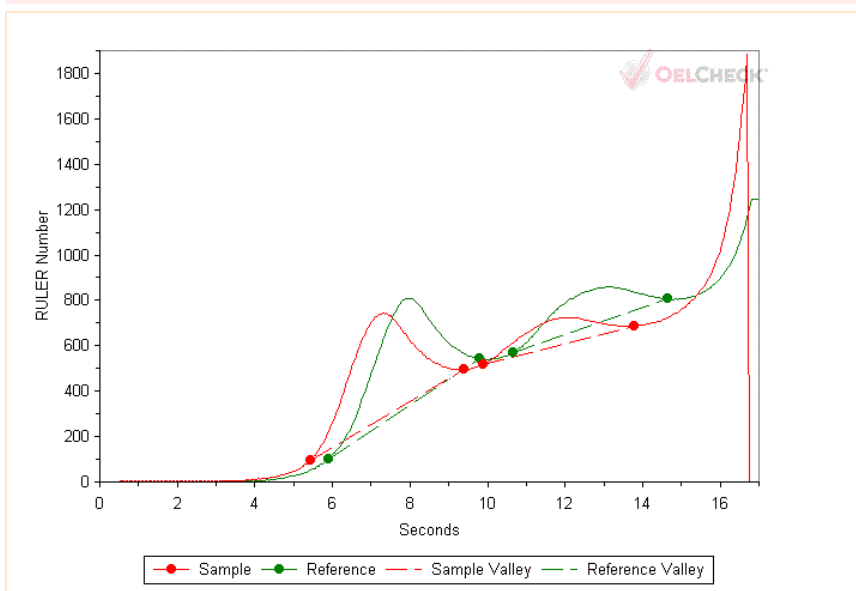
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Evaluation of the oxidation inhibitors

There is no significant change in comparison to the previous sample.

Dipl.-Ing. Andy Böhme (CLS)

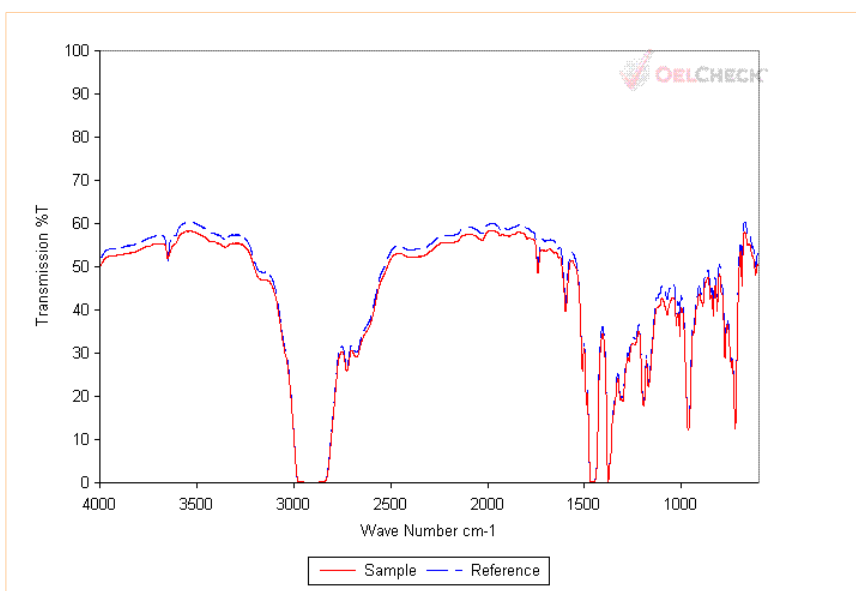


ANALYSIS RESULTS

LAB NUMBER		Current sample
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Date tested		16.05.2025
Date of sample taken		08.05.2025
Date of last oil change		16.10.2018
Top-up since change	l	200
Operating time since change	a	6,5
Total operating time	a	23,5
Oil changed		no

Antioxidant/RULER

Antioxidant 1 - RULER	%	91,8
Antioxidant 2 - RULER	%	67,9
Electrolyte solution		Green
Sample volume	µl	400



Antioxidant/FT-IR



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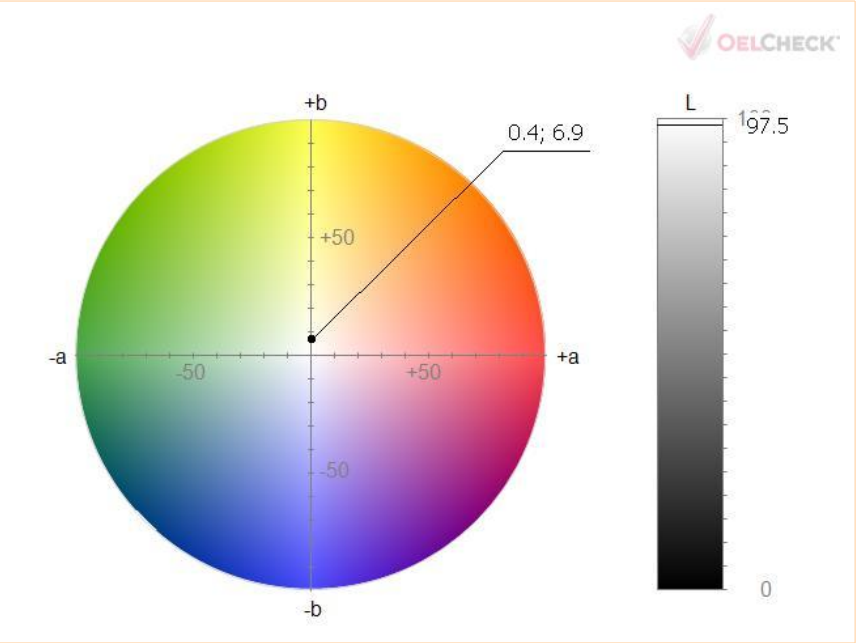


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Diagnosis of the MPC test
The MPC value is within a normal range. There is no risk for the formation of varnish.
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Top-up since change	l	200
Operating time since change	a	6,5
Total operating time	a	23,5
Oil changed		no

MPC test	
MPC	7,40
Luminance L	97,50
Redness index a	0,40
Yellowness index b	6,90

