

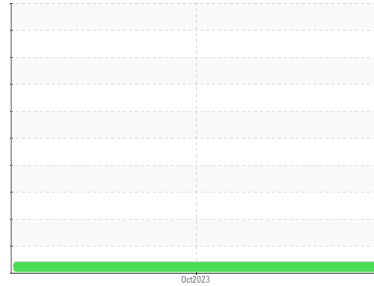


PROBLEM SUMMARY

Sample Rating Trend

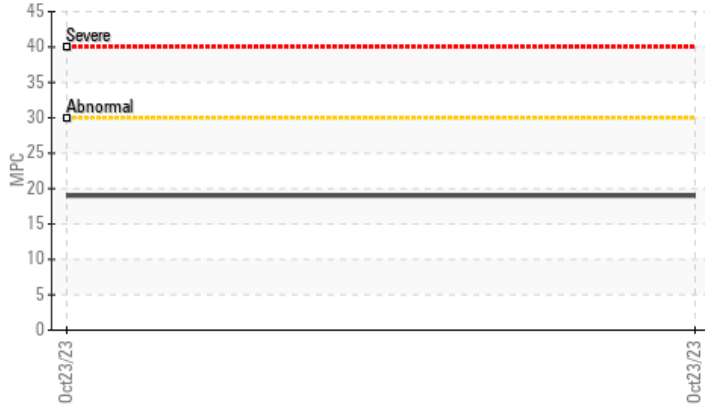
INSOLUBLES

Area
WATER INJECTION [02592052]
 Machine Id
44-T-2550A (44-P-2540A)
 Component
Turbine
 Fluid
MOBIL DTE 832 (--- LTR)



COMPONENT CONDITION SUMMARY

▲ Varnish Potential



RECOMMENDATION

We recommend an early resample to monitor this condition. No other corrective action is recommended at this time. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

PROBLEMATIC TEST RESULTS

Sample Status				MARGINAL	---	---
MPC Varnish Potential	Scale	ASTM D7843(m)*	>15	▲ 19	---	---

Customer Id: MAKMOU
 Sample No.: WC0814811
 Lab Number: 02591448
 Test Package: AOM 3



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Bill Quesnel CLS,OMA II,MLA-III,LLA-I +1
 (289)291-4641 x4641
Bill.Quesnel@wearcheck.com

To change component or sample information:
 Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We recommend an early resample to monitor this condition.
Information Required	---	---	?	NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

HISTORICAL DIAGNOSIS



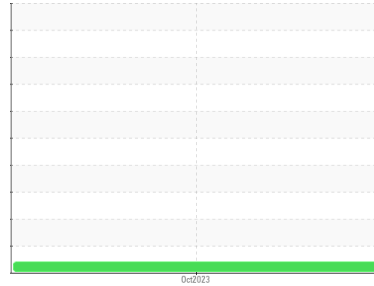
OIL ANALYSIS REPORT

Sample Rating Trend

INSOLUBLES

Area
WATER INJECTION [02592052]
Machine Id
44-T-2550A (44-P-2540A)

Component
Turbine
Fluid
MOBIL DTE 832 (--- LTR)



DIAGNOSIS

Recommendation

We recommend an early resample to monitor this condition. No other corrective action is recommended at this time. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

Wear

All component wear rates are normal. The ferrography results are normal indicating no abnormal wear in the system.

Contaminants

MPC (Membrane Patch Colorimetry) test indicates a light concentration of varnish present. The water content is negligible.

Oil Condition

Rust Prevention test (ASTM D665) indicates the oil retains good anti-corrosion properties. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0814811	---	---
Sample Date	Client Info		23 Oct 2023	---	---
Machine Age	hrs	Client Info	0	---	---
Oil Age	hrs	Client Info	0	---	---
Oil Changed	Client Info		N/A	---	---
Sample Status			MARGINAL	---	---

WEAR METALS	method	limit/base	current	history1	history2
PQ	ASTM D8184*		0	---	---
Iron	ppm	ASTM D5185(m) >15	0	---	---
Chromium	ppm	ASTM D5185(m) >4	0	---	---
Nickel	ppm	ASTM D5185(m) >2	<1	---	---
Titanium	ppm	ASTM D5185(m)	0	---	---
Silver	ppm	ASTM D5185(m)	<1	---	---
Aluminum	ppm	ASTM D5185(m) >10	0	---	---
Lead	ppm	ASTM D5185(m)	<1	---	---
Copper	ppm	ASTM D5185(m) >5	<1	---	---
Tin	ppm	ASTM D5185(m) >5	0	---	---
Antimony	ppm	ASTM D5185(m)	0	---	---
Vanadium	ppm	ASTM D5185(m)	0	---	---
Beryllium	ppm	ASTM D5185(m)	0	---	---
Cadmium	ppm	ASTM D5185(m)	0	---	---

ADDITIVES	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	<1	---	---
Barium	ppm	ASTM D5185(m)	0	---	---
Molybdenum	ppm	ASTM D5185(m)	0	---	---
Manganese	ppm	ASTM D5185(m)	0	---	---
Magnesium	ppm	ASTM D5185(m)	<1	---	---
Calcium	ppm	ASTM D5185(m)	0	---	---
Phosphorus	ppm	ASTM D5185(m)	945	---	---
Zinc	ppm	ASTM D5185(m)	1	---	---
Sulfur	ppm	ASTM D5185(m)	100	---	---
Lithium	ppm	ASTM D5185(m)	<1	---	---

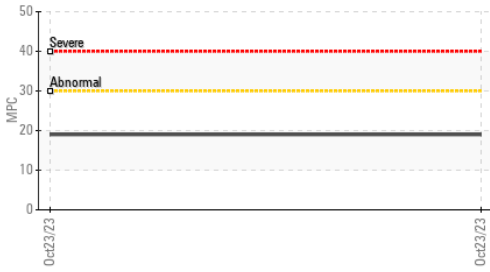
CONTAMINANTS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >15	0	---	---
Sodium	ppm	ASTM D5185(m)	<1	---	---
Potassium	ppm	ASTM D5185(m) >20	<1	---	---
Water	%	ASTM D6304* >0.03	0.002	---	---
ppm Water	ppm	ASTM D6304* >300	24.9	---	---

INFRA-RED	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	0	---	---
Nitration	Abs/cm	ASTM D7624*	2.8	---	---
Sulfation	Abs/.1mm	ASTM D7415*	13.9	---	---



OIL ANALYSIS REPORT

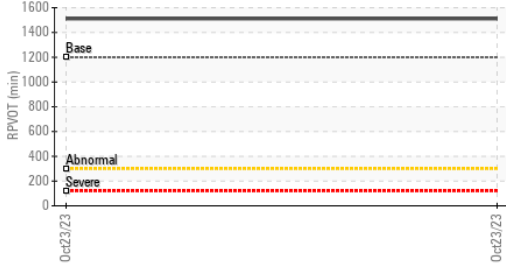
▲ Varnish Potential



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	404	---	---
Particles >6µm	ASTM D7647	>640	165	---	---
Particles >14µm	ASTM D7647	>80	21	---	---
Particles >21µm	ASTM D7647	>20	6	---	---
Particles >38µm	ASTM D7647	>4	1	---	---
Particles >71µm	ASTM D7647	>3	0	---	---
Oil Cleanliness	ISO 4406 (c)	>18/16/13	16/15/12	---	---

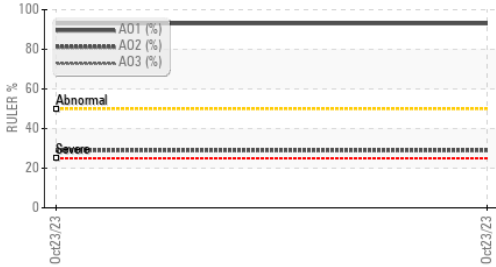
FLUID DEGRADATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm ASTM D7414*		3.8	---	---
Acid Number (AN)	mg KOH/g ASTM D974*		0.15	---	---
Anti-Oxidant 1	% ASTM D6971*	<25	93	---	---
Anti-Oxidant 2	% ASTM D6971*	<25	29	---	---
MPC Varnish Potential	Scale ASTM D7843(m)*	>15	▲ 19	---	---

RPVOT



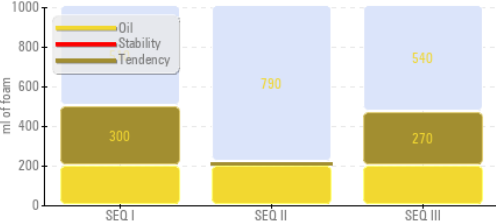
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar Visual*	NONE	NONE	---	---
Yellow Metal	scalar Visual*	NONE	NONE	---	---
Precipitate	scalar Visual*	NONE	NONE	---	---
Silt	scalar Visual*	NONE	NONE	---	---
Debris	scalar Visual*	NONE	NONE	---	---
Sand/Dirt	scalar Visual*	NONE	NONE	---	---
Appearance	scalar Visual*	NORML	NORML	---	---
Odor	scalar Visual*	NORML	NORML	---	---
Emulsified Water	scalar Visual*	>0.03	NEG	---	---
Free Water	scalar Visual*		NEG	---	---

Remaining Life (RULER)



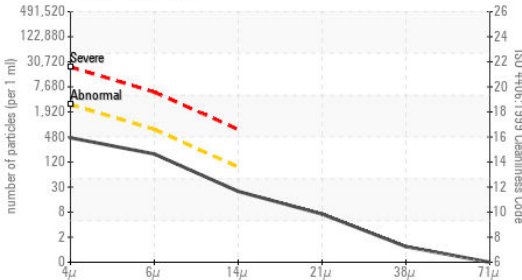
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt ASTM D7279(m)	29.6	32.4	---	---
Visc @ 100°C	cSt ASTM D7279(m)	5.4	5.8	---	---
Viscosity Index (VI)	Scale ASTM D2270*	110	122	---	---
Separability	oil/h2o/em ASTM D1401*	40/40/0	43/37/0 (15)	---	---
Air Release Time	min ASTM D3427*	2	2.30	---	---
Foam Tendency	I/II/III ASTM D892*	20	300/20/270	---	---
Foam Stability	I/II/III ASTM D892*	0	0/0/0	---	---
ASTM Color	scalar ASTM D1500*		6.5	---	---
Rust Prevention	PASS/FAIL ASTM D665*	PASS	PASS	---	---
Oxidation Test (RPVOT)	minutes ASTM D2272*	1200	1511	---	---

Foaming SEQ I/II/III



SEDIMENT	method	limit/base	current	history1	history2
Pentane Insolubles	% ASTM D893(m)*		0.030	---	---
Toluene Insolubles	% ASTM D893(m)*		0.019	---	---

Particle Count



SAMPLE IMAGES

method	limit/base	current	history1	history2
Color			no image	no image
Bottom			no image	no image
MPC			no image	no image



Laboratory Sample No.
Lab Number
Unique Number
Test Package

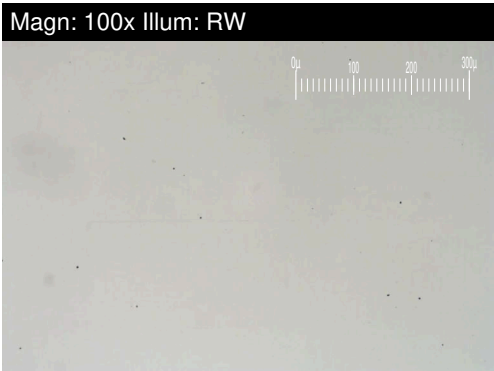
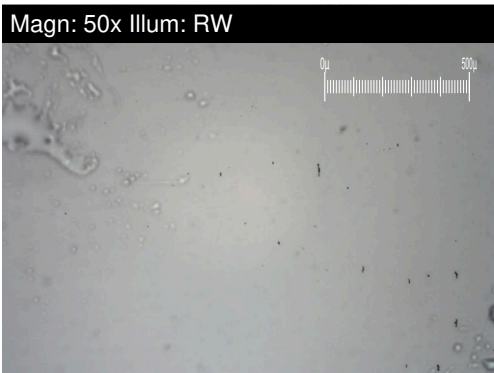
To discuss this sample report, cc
Test denoted (*) outside scope o
Validity of results and interpretation are based on the sample and information as supplied.

F: (709)364-3501



FERROGRAPHY REPORT

Area
WATER INJECTION [02592052]
 Machine Id
44-T-2550A (44-P-2540A)
 Component
Turbine
 Fluid
MOBIL DTE 832 (--- LTR)

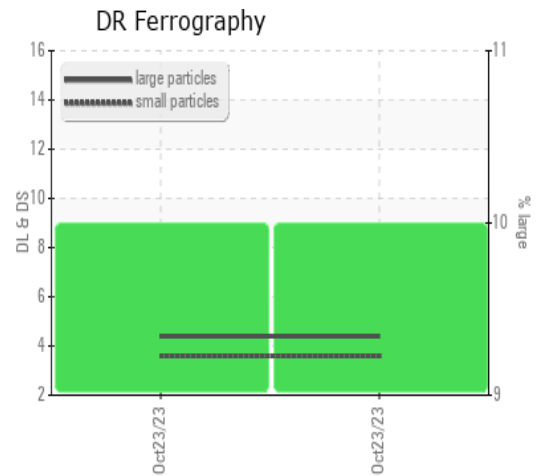


DR-FERROGRAPHY		method	limit/base	current	history1	history2
Large Particles		DR-Ferr*		4.4	---	---
Small Particles		DR-Ferr*		3.6	---	---
Total Particles		DR-Ferr*	>---	8	---	---
Large Particles Percentage	%	DR-Ferr*		10	---	---
Severity Index		DR-Ferr*		4	---	---

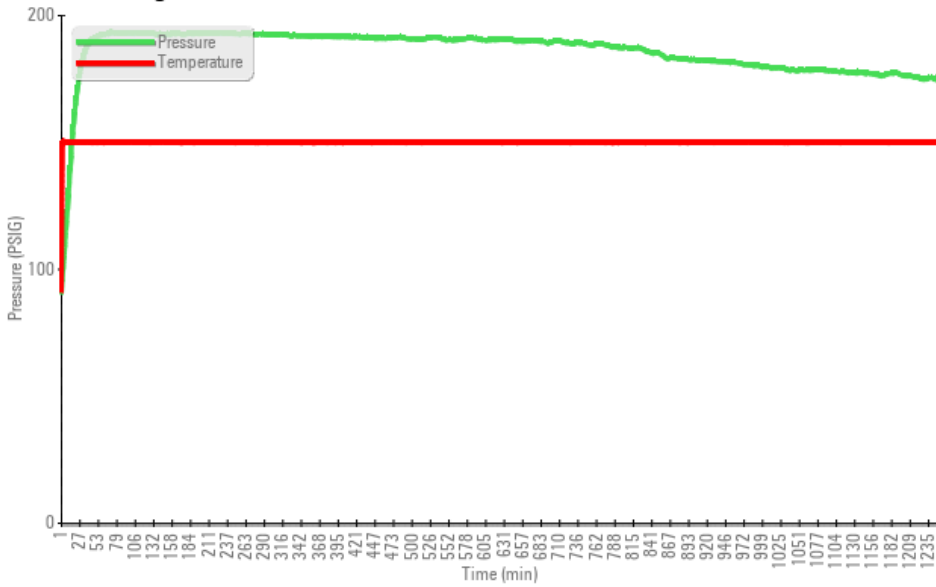
FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		2		
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*				
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*		1		
Ferrous Black Oxides	Scale 0-10	ASTM D7684*				
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*				
Ferrous Other	Scale 0-10	ASTM D7684*				
Nonferrous Rubbing	Scale 0-10	ASTM D7684*				
Nonferrous Sliding	Scale 0-10	ASTM D7684*				
Nonferrous Cutting	Scale 0-10	ASTM D7684*				
Nonferrous Rolling	Scale 0-10	ASTM D7684*				
Nonferrous Other	Scale 0-10	ASTM D7684*				
Carbonaceous Material	Scale 0-10	ASTM D7684*				
Lubricant Degradation	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*		2		
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*				

WEAR

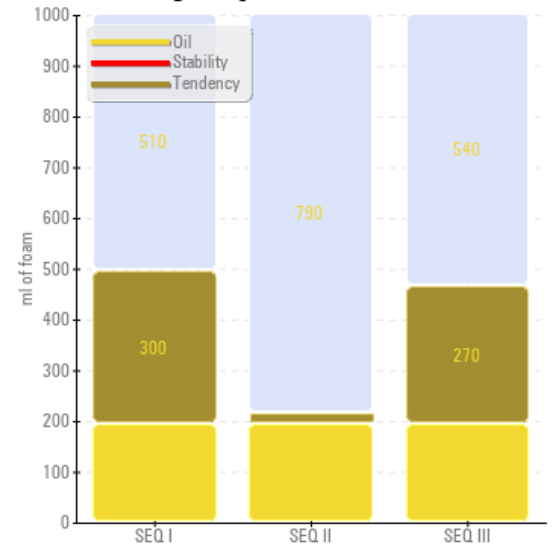
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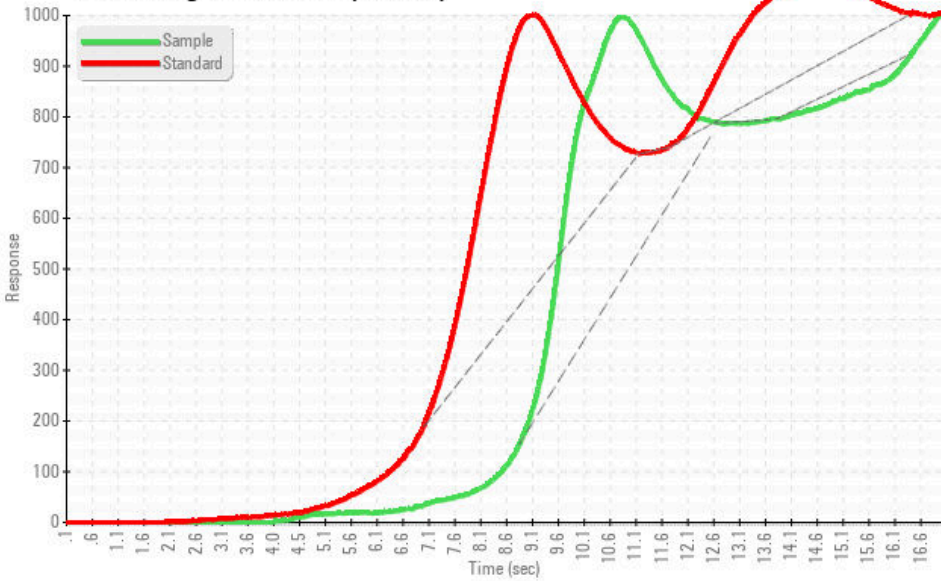
Rotating Pressure Vessel Oxidation Test



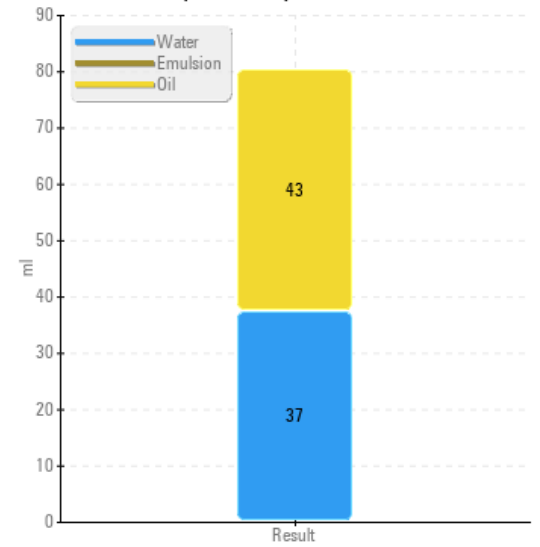
Foaming SEQ I/II/III



Remaining Useful Life (RULER)



Water Separability



MPC (Varnish Test)



Sample Color & Clarity

