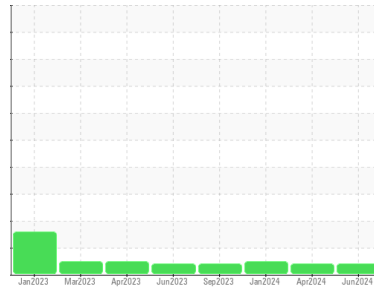




OIL ANALYSIS REPORT

Sample Rating Trend



INSOLUBLES

Machine Id

CATES FG2

Component

Compressor

Fluid

MOBIL SHC 627 (--- GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

MPC (Membrane Patch Colorimetry) test indicates a moderate concentration of varnish present. The amount and size of particulates present in the system are acceptable.

Fluid Condition

Linear Sweep Voltammetry (RULER – ASTM D6971) testing indicates normal levels of anti-oxidants present in the oil. 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		WC0896680	WC0896683	WC0896670
Sample Date	Client Info		20 Jun 2024	30 Apr 2024	16 Jan 2024
Machine Age	hrs	Client Info	143000	230000	143000
Oil Age	hrs	Client Info	143000	143000	143000
Oil Changed		Client Info	N/A	N/A	N/A
Sample Status			ABNORMAL	MARGINAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >50	1	<1	0
Chromium	ppm	ASTM D5185m >5	<1	<1	<1
Nickel	ppm	ASTM D5185m	<1	<1	0
Titanium	ppm	ASTM D5185m	<1	<1	<1
Silver	ppm	ASTM D5185m	<1	0	0
Aluminum	ppm	ASTM D5185m >15	3	1	2
Lead	ppm	ASTM D5185m >65	<1	<1	0
Copper	ppm	ASTM D5185m >65	1	<1	<1
Tin	ppm	ASTM D5185m >10	<1	<1	<1
Vanadium	ppm	ASTM D5185m	<1	0	0
Cadmium	ppm	ASTM D5185m	<1	<1	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	0
Barium	ppm	ASTM D5185m	<1	0	0
Molybdenum	ppm	ASTM D5185m	<1	0	0
Manganese	ppm	ASTM D5185m	<1	0	0
Magnesium	ppm	ASTM D5185m	4	0	0
Calcium	ppm	ASTM D5185m	92	5	0
Phosphorus	ppm	ASTM D5185m	164	138	148
Zinc	ppm	ASTM D5185m	28	0	0
Sulfur	ppm	ASTM D5185m	516	215	198

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >35	1	<1	0
Sodium	ppm	ASTM D5185m	0	0	0
Potassium	ppm	ASTM D5185m >20	2	1	1
Water	%	ASTM D6304 >0.1	0.002	0.001	0.020
ppm Water	ppm	ASTM D6304 >1000	16	8	200

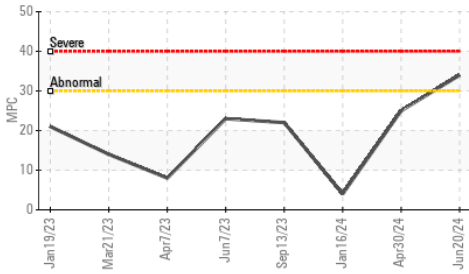
FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>10000	230	377	322
Particles >6µm	ASTM D7647	>2500	104	97	77
Particles >14µm	ASTM D7647	>320	18	20	7
Particles >21µm	ASTM D7647	>80	6	9	2
Particles >38µm	ASTM D7647	>20	1	1	1
Particles >71µm	ASTM D7647	>4	0	0	0
Oil Cleanliness	ISO 4406 (c)	>20/18/15	15/14/11	16/14/11	16/13/10

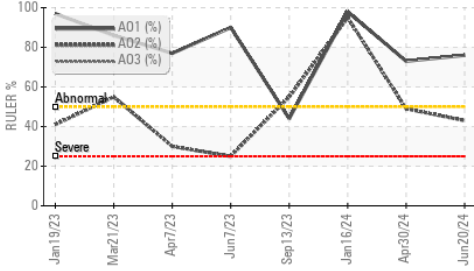


OIL ANALYSIS REPORT

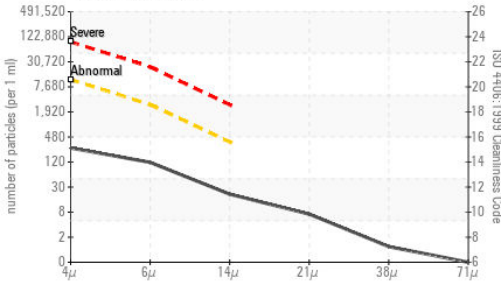
▲ Varnish Potential



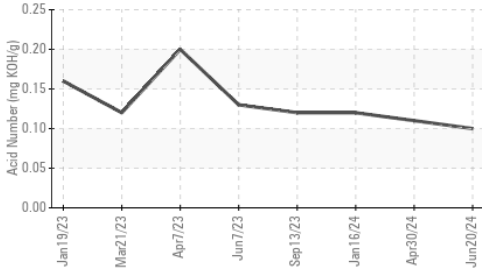
Remaining Life (RULER)



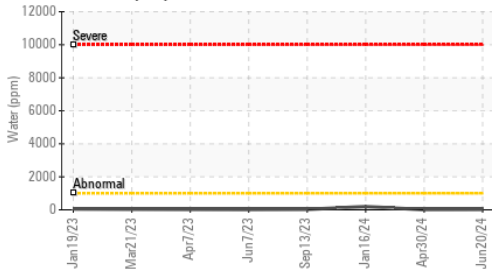
Particle Count



Acid Number



Water (KF)

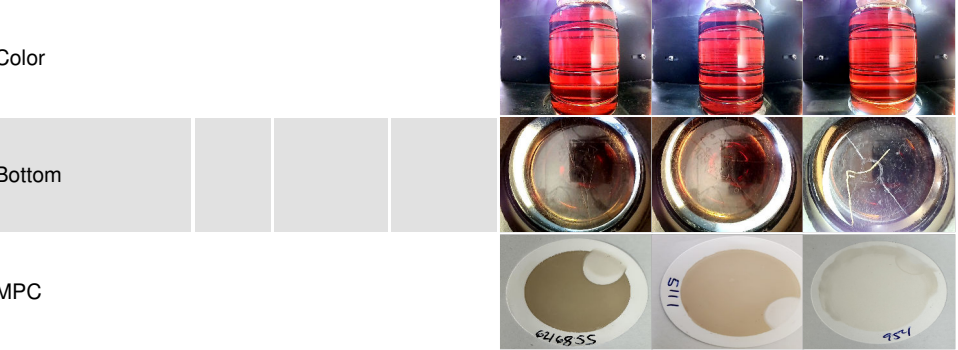


FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.10	0.11	0.12
Anti-Oxidant 1	%	ASTM D6971	76	73	98
Anti-Oxidant 2	%	ASTM D6971	43	49	95
MPC Varnish Potential	Scale	ASTM D7843	▲ 34	▲ 25	4

VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	0.2%
Free Water	scalar	*Visual	NEG	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 40°C	cSt	ASTM D445	99.1	120	118	119

SAMPLE IMAGES



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : WC0896680

Lab Number : **06216855**

Unique Number : 11089719

Test Package : AOM 1 (Additional Tests: KF)

Received : 21 Jun 2024

Tested : 05 Jul 2024

Diagnosed : 05 Jul 2024 - Doug Bogart

NORTH CAROLINA STATE UNIVERSITY

621 MOTOR POOL DR, FACILITIES DIVISION WAREHOUSE

RALEIGH, NC

US 27607

Contact: PAUL WALKER

apwalke3@ncsu.edu

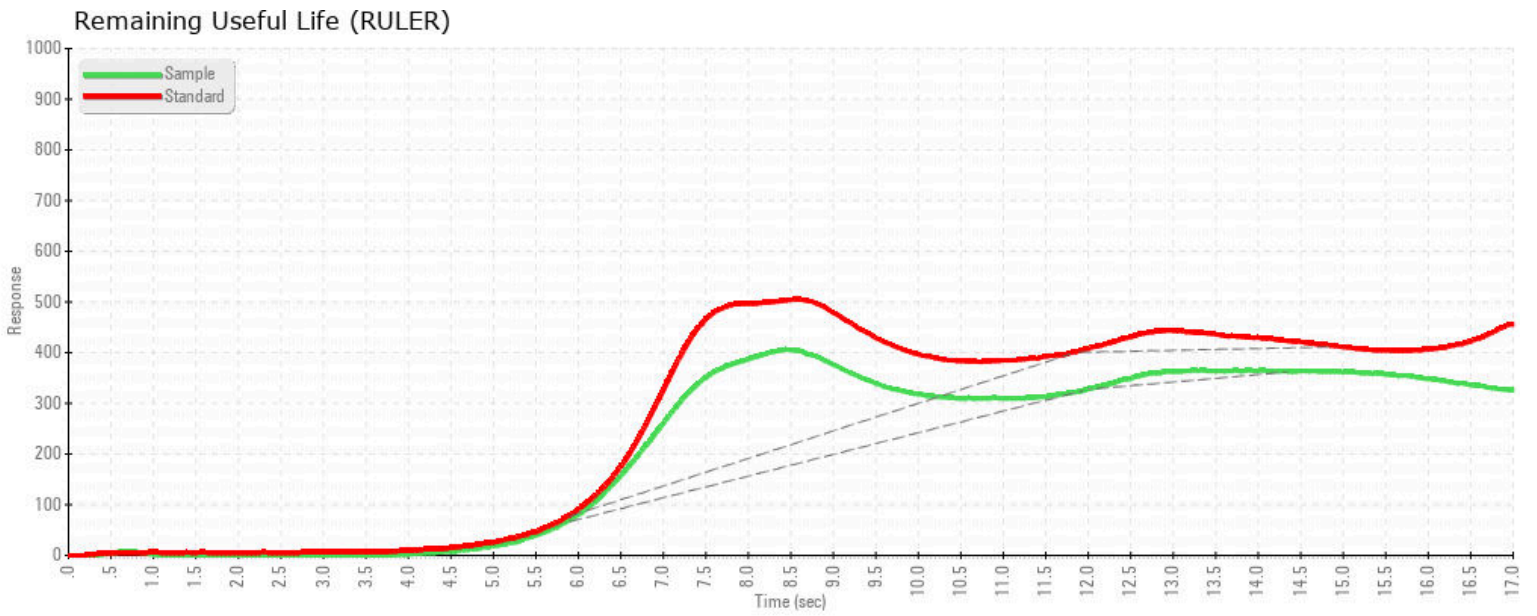
T: (919)513-3646

F:

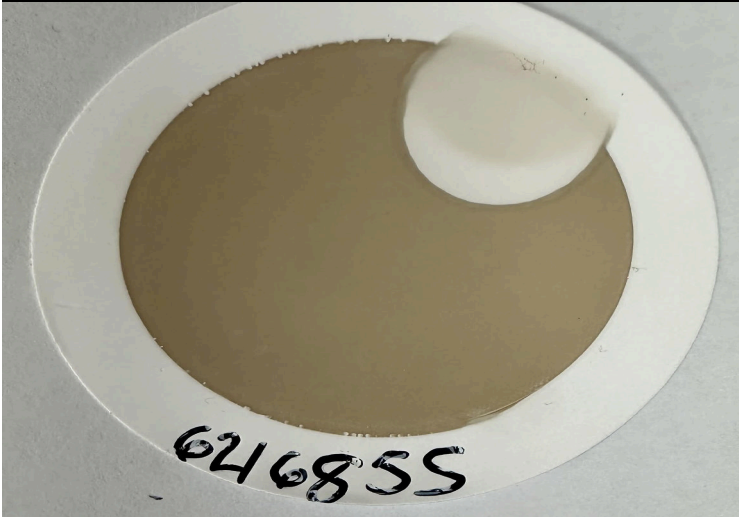
To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)



MPC (Varnish Test)



Sample Color & Clarity



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