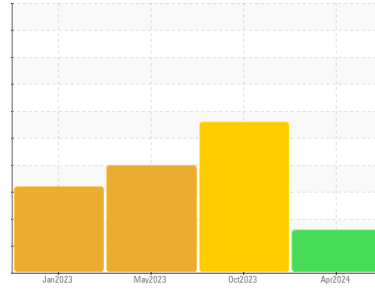




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id

15
Component
Diesel Engine
Fluid

DISEL ENGINE OIL SAE 15W40 (--- QTS)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

The aluminum level is abnormal. All other component wear rates are normal.

Contamination

Fuel content negligible. There is an abnormal amount of solids and carbon present in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION

method	limit/base	current	history1	history2	
Sample Number	Client Info	WC0904758	WC0828096	WC0799996	
Sample Date	Client Info	01 Apr 2024	31 Oct 2023	11 May 2023	
Machine Age	mls	Client Info	124508	0	114425
Oil Age	mls	Client Info	0	0	0
Oil Changed	Client Info	Changed	Changed	Changed	
Sample Status		ABNORMAL	SEVERE	SEVERE	

CONTAMINATION

method	limit/base	current	history1	history2	
Water	WC Method	>0.2	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185m	>100	42	51	45
Chromium	ppm	ASTM D5185m	>20	<1	1	1
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m		73	54	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	▲ 21	11	16
Lead	ppm	ASTM D5185m	>40	0	2	0
Copper	ppm	ASTM D5185m	>330	1	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0

ADDITIVES

method	limit/base	current	history1	history2		
Boron	ppm	ASTM D5185m	250	92	51	45
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	10	7	8
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	450	405	432	633
Calcium	ppm	ASTM D5185m	3000	1515	1326	1203
Phosphorus	ppm	ASTM D5185m	1150	930	885	964
Zinc	ppm	ASTM D5185m	1350	1066	1033	1119
Sulfur	ppm	ASTM D5185m	4250	3900	3240	4079

CONTAMINANTS

method	limit/base	current	history1	history2		
Silicon	ppm	ASTM D5185m	>25	8	5	5
Sodium	ppm	ASTM D5185m	>158	8	6	7
Potassium	ppm	ASTM D5185m	>20	19	13	10
Fuel	%	ASTM D3524	>5	1.2	▲ 8.3	▲ 9.5
Glycol	%	*ASTM D2982		NEG	NEG	NEG

INFRA-RED

method	limit/base	current	history1	history2		
Soot %	%	*ASTM D7844	>3	▲ 3.7	▲ 7.1	▲ 5.6
Nitration	Abs/cm	*ASTM D7624	>20	13.8	40.1	16.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	27.2	55.2	33.5

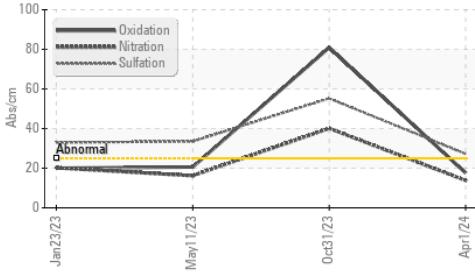
FLUID DEGRADATION

method	limit/base	current	history1	history2		
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.6	80.9	20.6
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.8	▲ 0.0	---

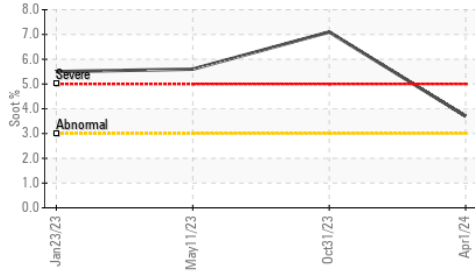


OIL ANALYSIS REPORT

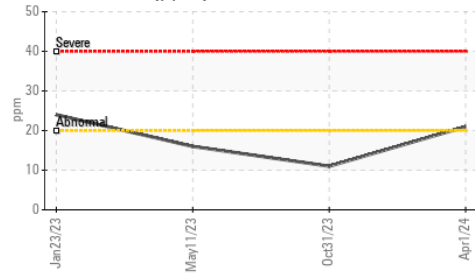
▲ FT-IR (Direct Trend)



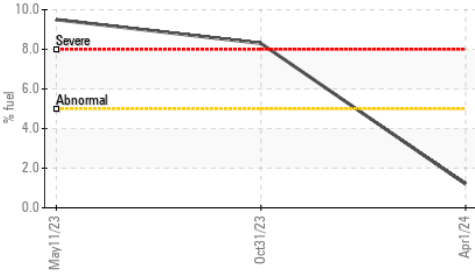
▲ Soot %



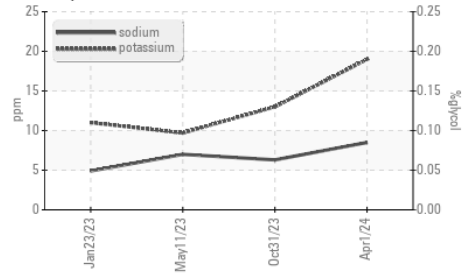
▲ Aluminum (ppm)



Fuel Dilution



Glycol Contamination

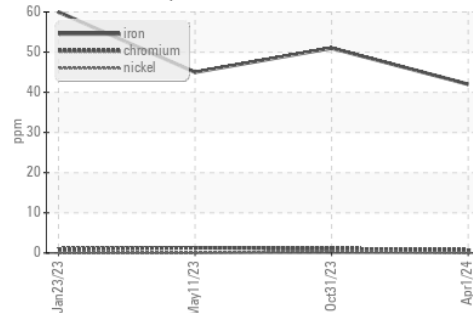


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

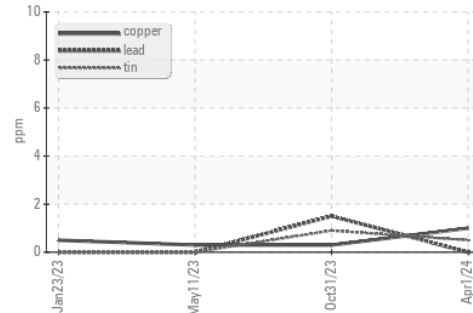
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	13.4	▲ 16.3

GRAPHS

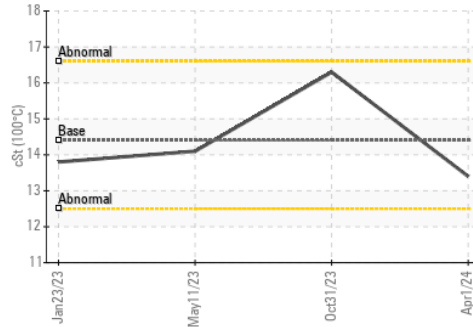
Ferrous Alloys



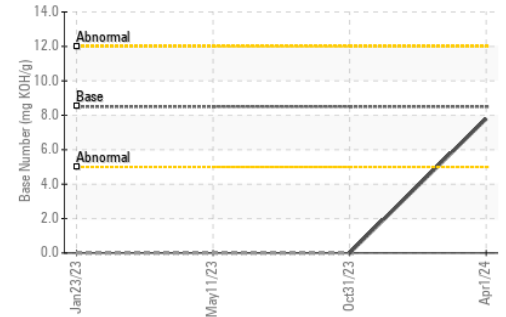
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : WC0904758

Lab Number : 06183752

Unique Number : 11035078

Test Package : FLEET (Additional Tests: Glycol, PercentFuel)

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)

Received : 17 May 2024

Tested : 22 May 2024

Diagnosed : 22 May 2024 - Jonathan Hester

CASWELL COUNTY SCHOOL BUS

353 COUNTY HOME ROAD

YANCEYVILLE, NC

US 27379

Contact: DEBRA MOORE

debra.moore@caswell.k12.nc.us

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