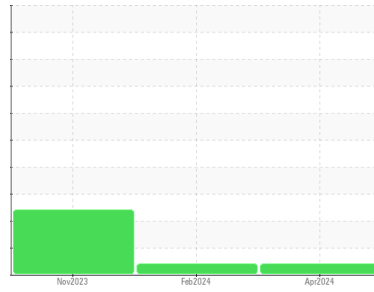




OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY



Area

MINING

Machine Id

ME-56 SHUTTLEWAGON SW-25 52513046A

Component

Diesel Engine

Fluid

CAT DIESEL ENGINE OIL 15W40 (--- GAL)

DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0910927	WC0909654	WC0866103
Sample Date	Client Info		15 Apr 2024	28 Feb 2024	01 Nov 2023
Machine Age	hrs	Client Info	10300	10894	0
Oil Age	hrs	Client Info	500	500	500
Oil Changed	Client Info		Changed	Changed	N/A
Sample Status			ATTENTION	ATTENTION	ABNORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<1.0	<1.0	▲ 4.2
Water	WC Method	>0.2	NEG	NEG	NEG
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	9	12	11
Chromium	ppm	ASTM D5185m >20	0	<1	<1
Nickel	ppm	ASTM D5185m >4	0	<1	<1
Titanium	ppm	ASTM D5185m	0	<1	<1
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >20	0	2	2
Lead	ppm	ASTM D5185m >40	0	<1	1
Copper	ppm	ASTM D5185m >330	0	<1	3
Tin	ppm	ASTM D5185m >15	0	<1	<1
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	0	0	<1

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	43	55	● 12
Barium	ppm	ASTM D5185m	0	0	5
Molybdenum	ppm	ASTM D5185m	39	40	● 49
Manganese	ppm	ASTM D5185m	0	<1	<1
Magnesium	ppm	ASTM D5185m	478	472	● 433
Calcium	ppm	ASTM D5185m	2053	1589	1638
Phosphorus	ppm	ASTM D5185m	1011	979	894
Zinc	ppm	ASTM D5185m 1460	1231	1116	1043
Sulfur	ppm	ASTM D5185m	3913	3265	2973

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	4	5	6
Sodium	ppm	ASTM D5185m	1	3	62
Potassium	ppm	ASTM D5185m >20	0	1	3

INFRA-RED

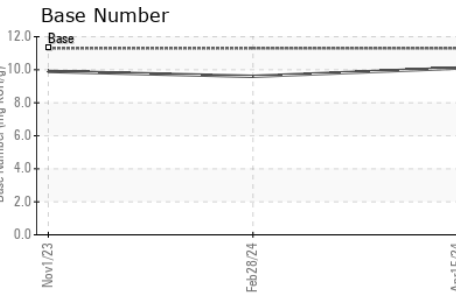
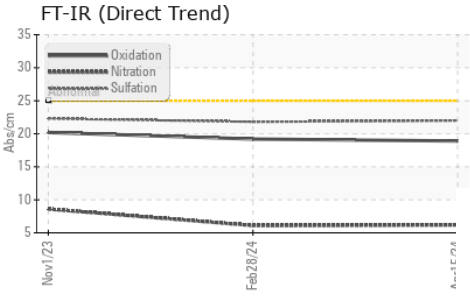
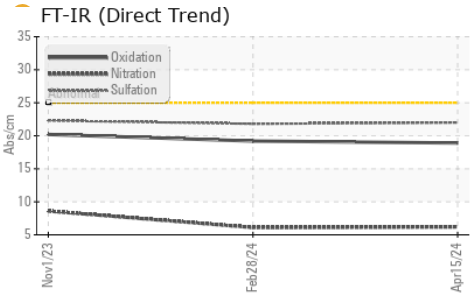
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.3	0.2	0.4
Nitration	Abs/cm	*ASTM D7624 >20	6.2	6.1	8.6
Sulfation	Abs/.1mm	*ASTM D7415 >30	22.0	21.8	22.3

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	18.9	19.2	20.2
Base Number (BN)	mg KOH/g	ASTM D2896 11.3	10.1	9.6	9.9



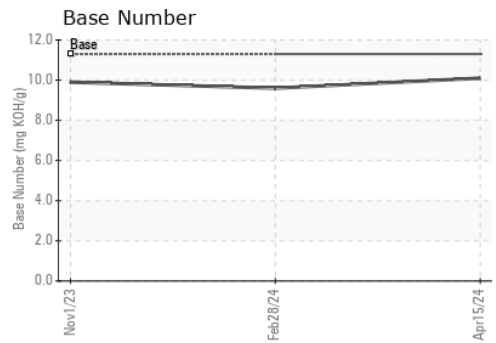
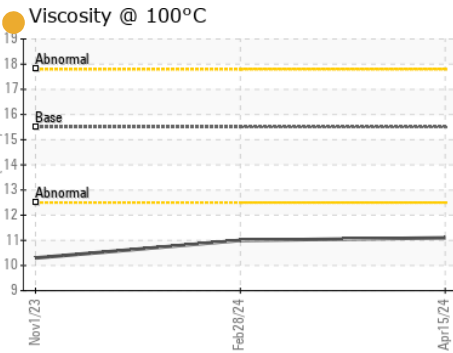
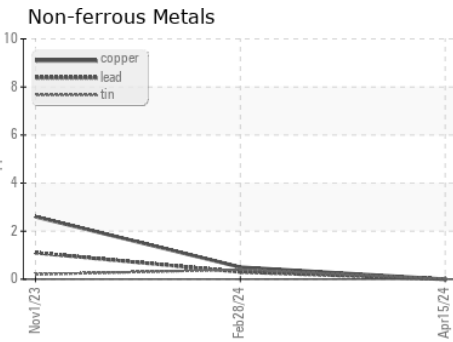
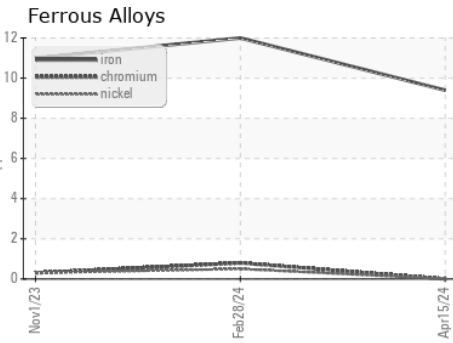
OIL ANALYSIS REPORT



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	15.5	● 11.1	● 11.0	▲ 10.3

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0910927 **Received** : 24 Apr 2024
Lab Number : 06158717 **Tested** : 25 Apr 2024
Unique Number : 10994140 **Diagnosed** : 25 Apr 2024 - Angela Borella
Test Package : CONST (Additional Tests: TBN)

COVIA - CAMDEN - 094
 1700 SAND MILL RD
 CAMDEN, TN
 US 38320
 Contact: TRACY KEE
 tracy.kee@coviacorp.com

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)