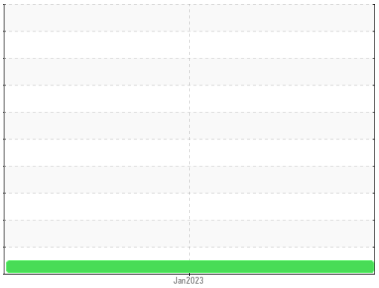
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
TIMMINS TRANSPORT
Component
Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor. Please note that this is a corrected copy for laboratory data update for particle count.

Wear
All component wear rates are normal.

Contamination
There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0584594**	---	---
Sample Date		Client Info		**09 Jan 2023**	---	---
Machine Age	mls	Client Info		**182089**	---	---
Oil Age	mls	Client Info		**20000**	---	---
Oil Changed		Client Info		**Not Changd**	---	---
Sample Status				**NORMAL**	---	---

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	---	---
Water		WC Method	>0.2	**NEG**	---	---
Glycol		WC Method		**NEG**	---	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**52**	---	---
Chromium	ppm	ASTM D5185m	>20	**1**	---	---
Nickel	ppm	ASTM D5185m	>4	**0**	---	---
Titanium	ppm	ASTM D5185m		**<1**	---	---
Silver	ppm	ASTM D5185m	>3	**0**	---	---
Aluminum	ppm	ASTM D5185m	>20	**7**	---	---
Lead	ppm	ASTM D5185m	>40	**17**	---	---
Copper	ppm	ASTM D5185m	>330	**9**	---	---
Tin	ppm	ASTM D5185m	>15	**2**	---	---
Vanadium	ppm	ASTM D5185m		**0**	---	---
Cadmium	ppm	ASTM D5185m		**0**	---	---

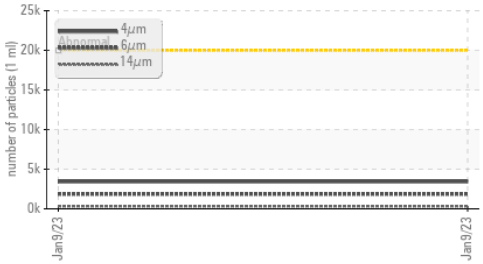
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	316	**38**	---	---
Barium	ppm	ASTM D5185m	0.0	**0**	---	---
Molybdenum	ppm	ASTM D5185m	1.2	**43**	---	---
Manganese	ppm	ASTM D5185m		**1**	---	---
Magnesium	ppm	ASTM D5185m	24	**253**	---	---
Calcium	ppm	ASTM D5185m	2292	**1990**	---	---
Phosphorus	ppm	ASTM D5185m	1064	**870**	---	---
Zinc	ppm	ASTM D5185m	1160	**1063**	---	---
Sulfur	ppm	ASTM D5185m	4996	**2857**	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**11**	---	---
Sodium	ppm	ASTM D5185m		**2**	---	---
Potassium	ppm	ASTM D5185m	>20	**22**	---	---

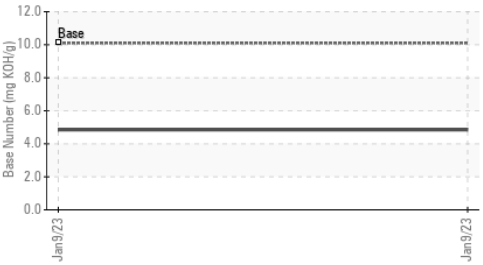
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.6**	---	---
Nitration	Abs/cm	*ASTM D7624	>20	**12.1**	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**29.1**	---	---

OIL ANALYSIS REPORT

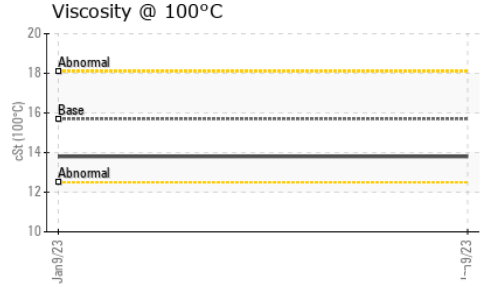
Particle Trend



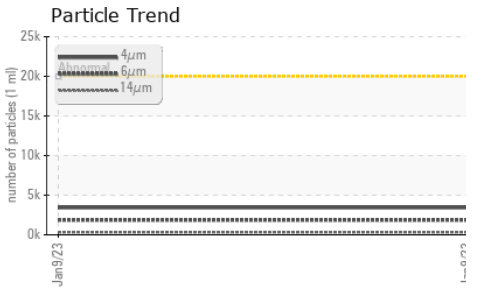
Base Number



Viscosity @ 100°C



Particle Trend



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	**3428**	---	---
Particles >6µm		ASTM D7647	>5000	**1867**	---	---
Particles >14µm		ASTM D7647	>640	**318**	---	---
Particles >21µm		ASTM D7647	>160	**107**	---	---
Particles >38µm		ASTM D7647	>40	**17**	---	---
Particles >71µm		ASTM D7647	>10	**2**	---	---
Oil Cleanliness		ISO 4406 (c)	>21/19/16	**19/18/15**	---	---

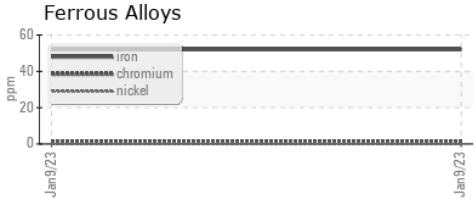
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**25.9**	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	**4.85**	---	---

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	>0.2	**NEG**	---	---
Free Water	scalar	*Visual		**NEG**	---	---

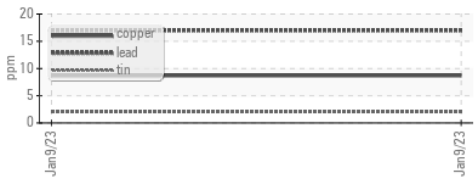
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.7	**13.8**	---	---

GRAPHS

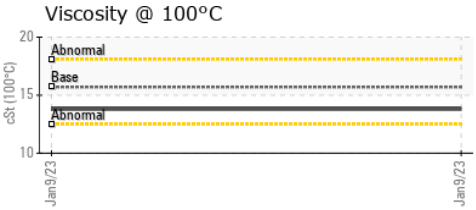
Ferrous Alloys



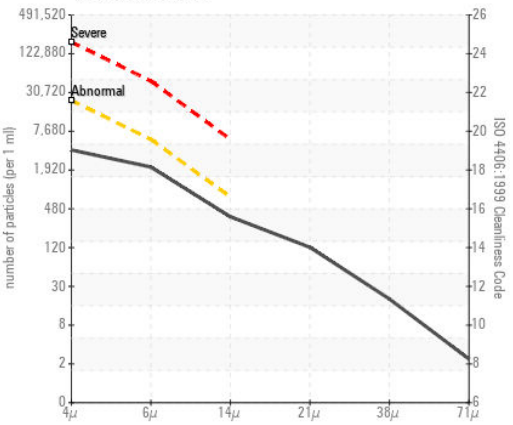
Non-ferrous Metals



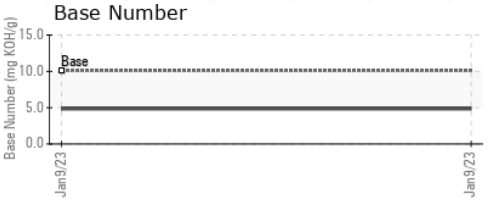
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0584594
Lab Number : 05741672
Unique Number : 10296271
Test Package : MOB 2 (Additional Tests: PrtCount)

Received : 17 Jan 2023
Tested : 19 Jan 2023
Diagnosed : 19 Jan 2023 - Doug Bogart

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)

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