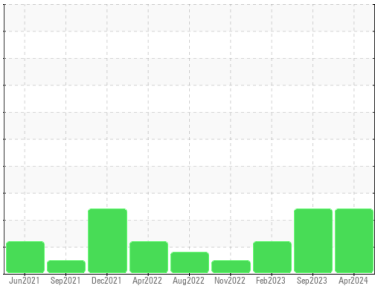
PROBLEM SUMMARY

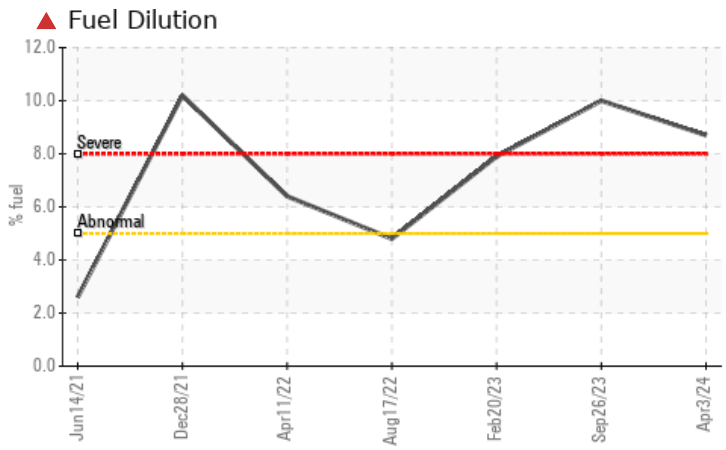
Sample Rating Trend

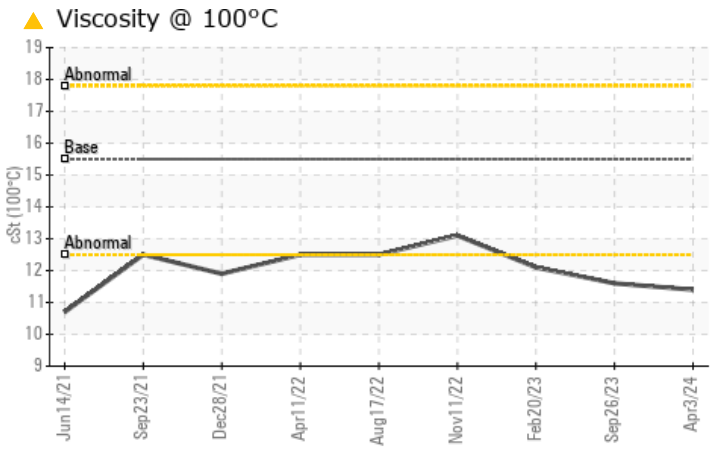


FUEL

Machine Id
CT32
Component
Diesel Engine
Fluid
SHELL ROTELLA T3 15W40 (--- QTS)

COMPONENT CONDITION SUMMARY





RECOMMENDATION

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	SEVERE	ABNORMAL
Fuel	%	ASTM D3524	>5	▲ **8.7**	▲ 10.0	▲ 7.9
Visc @ 100°C	cSt	ASTM D445	15.5	▲ **11.4**	▲ 11.6	▲ 12.1

Customer Id: CUSKAL
Sample No.: WC0889906
Lab Number: 06141970
Test Package: CONST

To manage this report scan the QR code

To discuss the diagnosis or test data:
Wes Davis +1 905-569-8600 x223
wesd@wearcheck.ca

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We recommend an early resample to monitor this condition.
Information Required	---	---	?	Please specify the component make and model with your next sample.
Check Fuel/injector System	---	---	?	We advise that you check the fuel injection system.

HISTORICAL DIAGNOSIS

FUEL

26 Sep 2023 Diag: Wes Davis
We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample.Metal levels are typical for a new component breaking in. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

view report

FUEL

20 Feb 2023 Diag: Jonathan Hester
We advise that you check the fuel injection system. Resample at the next service interval to monitor.All component wear rates are normal. There is a moderate amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

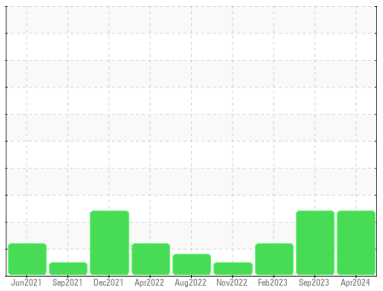
NORMAL

11 Nov 2022 Diag: Wes Davis
Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the component make and model with your next sample.Metal levels are typical for a new component breaking in. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Machine Id
CT32
Component
Diesel Engine
Fluid
SHELL ROTELLA T3 15W40 (--- QTS)

DIAGNOSIS

▲ Recommendation
We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample.

Wear
Metal levels are typical for a new component breaking in.

▲ Contamination
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

▲ Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0889906**	WC0791716	WC0725151
Sample Date		Client Info		**03 Apr 2024**	26 Sep 2023	20 Feb 2023
Machine Age	mls	Client Info		**47742**	40645	31131
Oil Age	mls	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	Changed	N/A
Sample Status				**SEVERE**	SEVERE	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
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	**59**	60	34
Chromium	ppm	ASTM D5185m	>20	**3**	4	2
Nickel	ppm	ASTM D5185m	>4	**0**	<1	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**2**	0	2
Lead	ppm	ASTM D5185m	>40	**0**	<1	0
Copper	ppm	ASTM D5185m	>330	**<1**	1	0
Tin	ppm	ASTM D5185m	>15	**0**	<1	0
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	10	**47**	8	60
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	10	**55**	10	45
Manganese	ppm	ASTM D5185m		**<1**	<1	0
Magnesium	ppm	ASTM D5185m	10	**350**	64	309
Calcium	ppm	ASTM D5185m	2600	**1882**	2031	1796
Phosphorus	ppm	ASTM D5185m	1050	**991**	843	937
Zinc	ppm	ASTM D5185m	1250	**1180**	1022	1132
Sulfur	ppm	ASTM D5185m	3900	**3703**	3318	3204

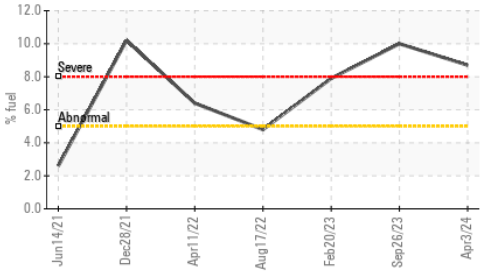
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**7**	7	5
Sodium	ppm	ASTM D5185m		**2**	2	<1
Potassium	ppm	ASTM D5185m	>20	**0**	0	0
Fuel	%	ASTM D3524	>5	**▲ 8.7**	▲ 10.0	▲ 7.9

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.4**	0.4	0.4
Nitration	Abs/cm	*ASTM D7624	>20	**8.5**	8.2	7.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	**19.1**	18.2	18.6

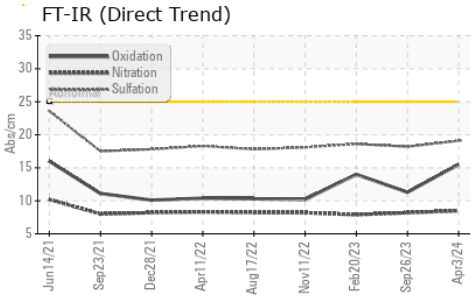
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**15.5**	11.3	14.0
Base Number (BN)	mg KOH/g	ASTM D2896	10.6	**7.2**	6.0	8.3

OIL ANALYSIS REPORT

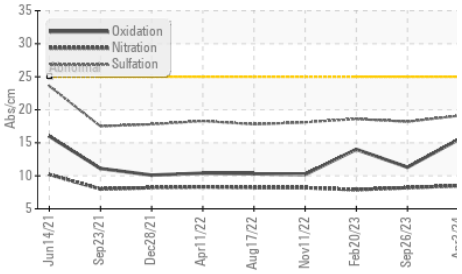
Fuel Dilution



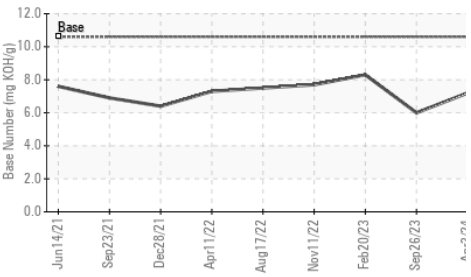
FT-IR (Direct Trend)



FT-IR (Direct Trend)



Base Number

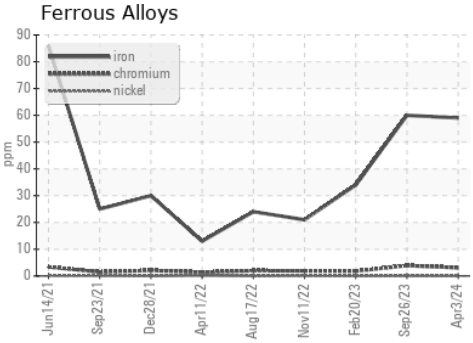


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

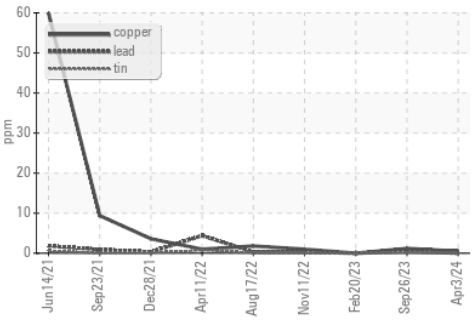
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.5	▲ **11.4**	▲ 11.6	▲ 12.1

GRAPHS

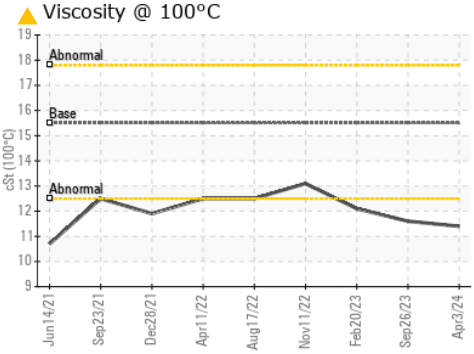
Ferrous Alloys



Non-ferrous Metals



▲ Viscosity @ 100°C



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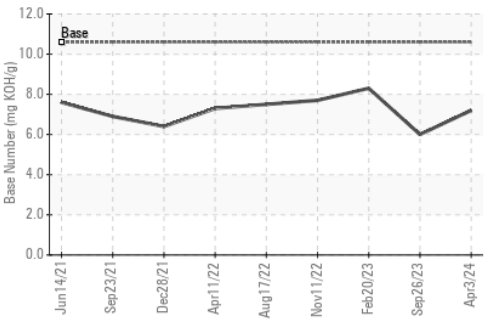

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0889906
Lab Number : 06141970
Unique Number : 10966778
Test Package : CONST (Additional Tests: PercentFuel, TBN)

Received : 08 Apr 2024
Tested : 10 Apr 2024
Diagnosed : 10 Apr 2024 - Wes Davis

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)

CUSHNIE CONSTRUCTION CO INC
4702 LAE RD
KALAHEO, HI
US 96741
Contact: RALPH CUSHNIE
ralph@cushniecci.com
T: (808)332-9000
F: (808)332-9400