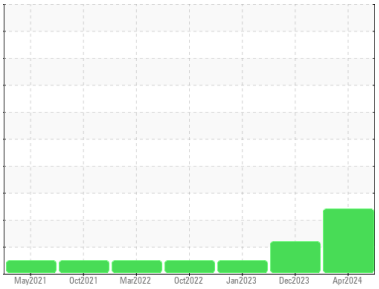
PROBLEM SUMMARY

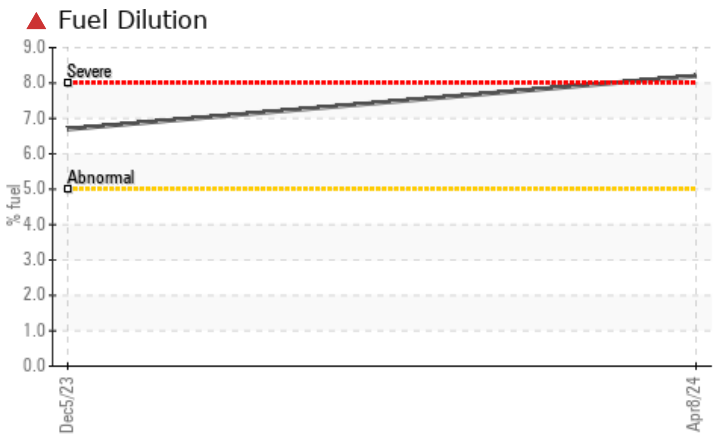
Area
[22031]
Machine Id
40-142
Component
Diesel Engine
Fluid
CONOCO PHILLIPS GUARDOL ECT 15W40 (--- GAL)

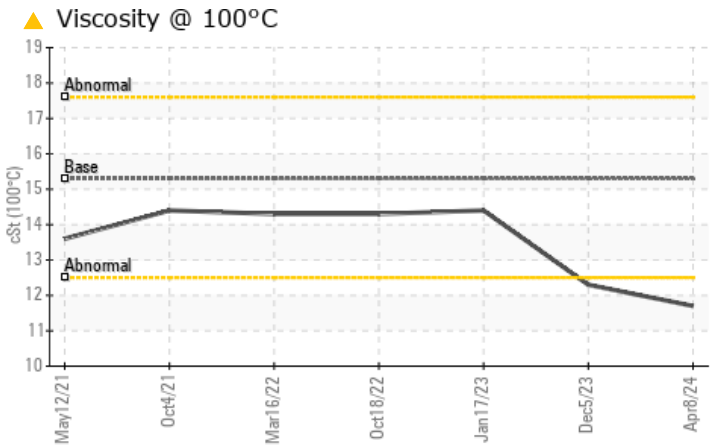
Sample Rating Trend



FUEL

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.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	ABNORMAL	NORMAL
Fuel	%	ASTM D3524	>5	▲ **8.2**	▲ 6.7	<1.0
Visc @ 100°C	cSt	ASTM D445	15.3	▲ **11.7**	▲ 12.3	14.4

Customer Id: MANTUL
Sample No.: WC0923354
Lab Number: 06149311
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.
Check Fuel/injector System	---	---	?	We advise that you check the fuel injection system.

HISTORICAL DIAGNOSIS

FUEL

05 Dec 2023 Diag: Wes Davis
The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.All component wear rates are normal. There is a moderate 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

NORMAL

17 Jan 2023 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.All component wear rates are normal. 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

NORMAL

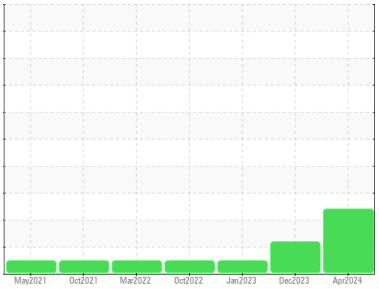
18 Oct 2022 Diag: Wes Davis
Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

OIL ANALYSIS REPORT

Area
[22031]
Machine Id
40-142
Component
Diesel Engine
Fluid
CONOCO PHILLIPS GUARDOL ECT 15W40 (--- GAL)

Sample Rating Trend



FUEL

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.

Wear
All component wear rates are normal.

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. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0923354**	WC0836233	WC0754796
Sample Date		Client Info		**08 Apr 2024**	05 Dec 2023	17 Jan 2023
Machine Age	hrs	Client Info		**8218**	7895	7425
Oil Age	hrs	Client Info		**323**	470	248
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	ABNORMAL	NORMAL

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	**13**	10	14
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>4	**0**	0	<1
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**2**	2	2
Lead	ppm	ASTM D5185m	>40	**0**	0	<1
Copper	ppm	ASTM D5185m	>330	**2**	2	1
Tin	ppm	ASTM D5185m	>15	**0**	<1	<1
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	85	**56**	44	50
Barium	ppm	ASTM D5185m		**0**	<1	<1
Molybdenum	ppm	ASTM D5185m		**6**	24	18
Manganese	ppm	ASTM D5185m		**<1**	0	<1
Magnesium	ppm	ASTM D5185m	350	**695**	517	795
Calcium	ppm	ASTM D5185m	1800	**1253**	1347	1243
Phosphorus	ppm	ASTM D5185m	1000	**1034**	925	1061
Zinc	ppm	ASTM D5185m	1100	**1168**	1123	1235
Sulfur	ppm	ASTM D5185m	3500	**4089**	3385	4294

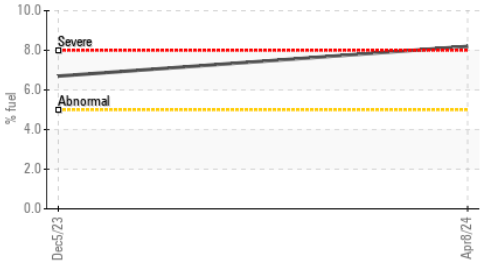
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**4**	3	5
Sodium	ppm	ASTM D5185m		**2**	0	2
Potassium	ppm	ASTM D5185m	>20	**1**	3	3
Fuel	%	ASTM D3524	>5	▲ **8.2**	▲ 6.7	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.7**	0.7	0.4
Nitration	Abs/cm	*ASTM D7624	>20	**8.6**	8.7	7.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	**19.7**	19.4	19.4

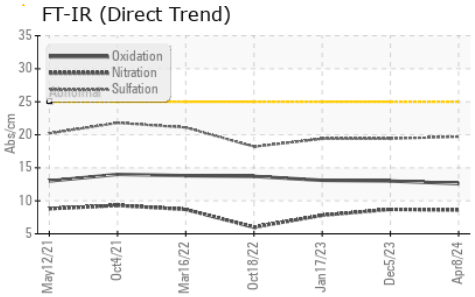
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**12.6**	13.0	13.1
Base Number (BN)	mg KOH/g	ASTM D2896	9.5	**8.1**	6.7	9.0

OIL ANALYSIS REPORT

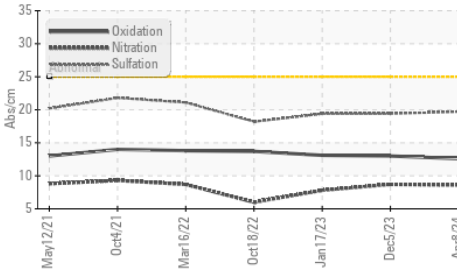
▲ Fuel Dilution



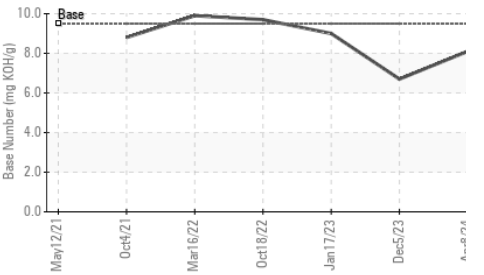
FT-IR (Direct Trend)



FT-IR (Direct Trend)



Base Number

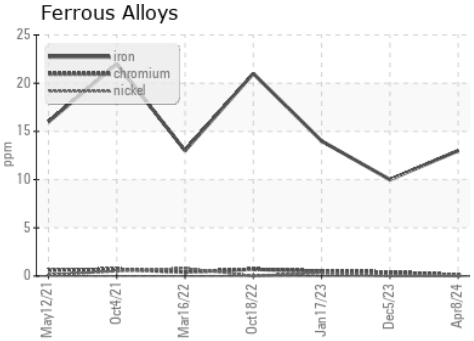


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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

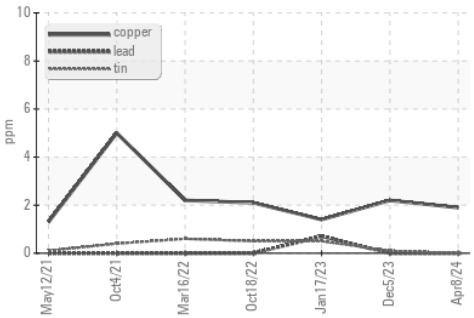
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.3	▲ **11.7**	▲ 12.3	14.4

GRAPHS

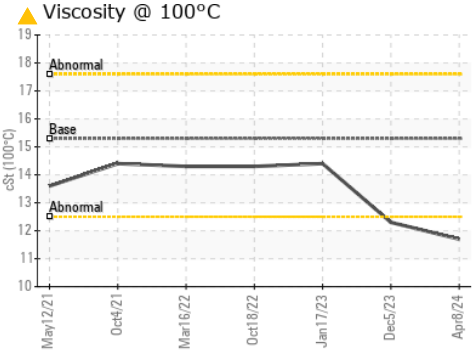
Ferrous Alloys



Non-ferrous Metals



▲ Viscosity @ 100°C



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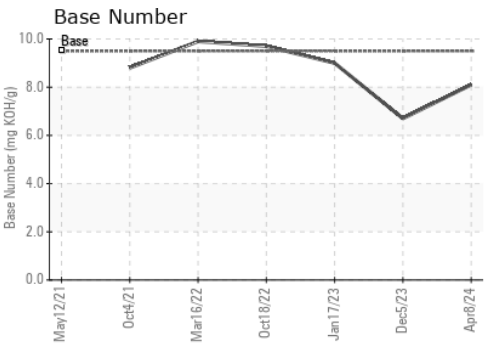

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0923354
Lab Number : 06149311
Unique Number : 10979389
Test Package : CONST (Additional Tests: PercentFuel, TBN)

Received : 15 Apr 2024
Tested : 17 Apr 2024
Diagnosed : 17 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)

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Report Id: MANTUL [WUSCAR] 06149311 (Generated: 04/17/2024 17:03:11) Rev: 1

Submitted By: JAMES STEELMON