OIL ANALYSIS REPORT

WEAR	SEVERE
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
938503
Component
Diesel Engine
Fluid
CHEVRON DELO 400 XLE 15W40 (--- QTS)

RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

WEAR

Cylinder, crank, or cam shaft wear is indicated.

CONTAMINATION

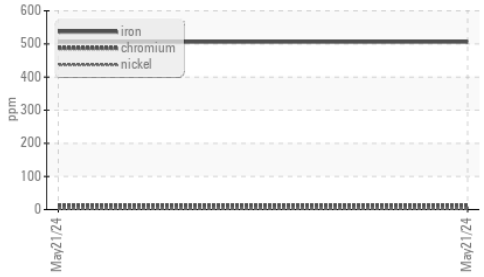
There is an abnormal amount of solids and carbon present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

FLUID CONDITION

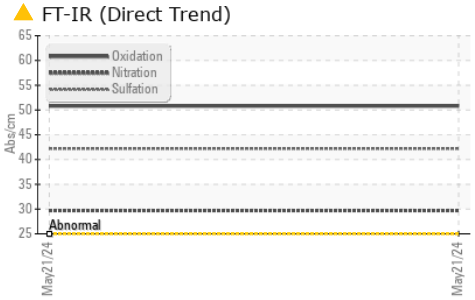
The oil viscosity is higher than normal. The BN level is low.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		RY0123439	---	---
Sample Date		Client Info		21 May 2024	---	---
Machine Age	mls	Client Info		0	---	---
Oil Age	mls	Client Info		0	---	---
Filter Age	mls	Client Info		0	---	---
Oil Changed		Client Info		Changed	---	---
Filter Changed		Client Info		Changed	---	---
Sample Status				SEVERE	---	---
Iron	ppm	ASTM D5185m	>100	▲ 506	---	---
Chromium	ppm	ASTM D5185m	>20	11	---	---
Nickel	ppm	ASTM D5185m	>4	2	---	---
Titanium	ppm	ASTM D5185m		<1	---	---
Silver	ppm	ASTM D5185m	>3	0	---	---
Aluminum	ppm	ASTM D5185m	>20	● 16	---	---
Lead	ppm	ASTM D5185m	>40	0	---	---
Copper	ppm	ASTM D5185m	>330	137	---	---
Tin	ppm	ASTM D5185m	>15	2	---	---
Vanadium	ppm	ASTM D5185m		<1	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---
Silicon	ppm	ASTM D5185m	>25	▲ 37	---	---
Potassium	ppm	ASTM D5185m	>20	2	---	---
Fuel	%	ASTM D3524	>5	<1.0	---	---
Water		WC Method	>0.2	NEG	---	---
Glycol		WC Method		NEG	---	---
Soot %	%	*ASTM D7844	>3	▲ 4.8	---	---
Nitration	Abs/cm	*ASTM D7624	>20	29.7	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	42.2	---	---
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	---	---
Sodium	ppm	ASTM D5185m		7	---	---
Boron	ppm	ASTM D5185m		5	---	---
Barium	ppm	ASTM D5185m		0	---	---
Molybdenum	ppm	ASTM D5185m		57	---	---
Manganese	ppm	ASTM D5185m		10	---	---
Magnesium	ppm	ASTM D5185m		884	---	---
Calcium	ppm	ASTM D5185m		1030	---	---
Phosphorus	ppm	ASTM D5185m	760	899	---	---
Zinc	ppm	ASTM D5185m	830	1137	---	---
Sulfur	ppm	ASTM D5185m	2770	2488	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	50.8	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	10.7	▲ 0.0	---	---
Visc @ 100°C	cSt	ASTM D445	14.9	▲ 18.4	---	---

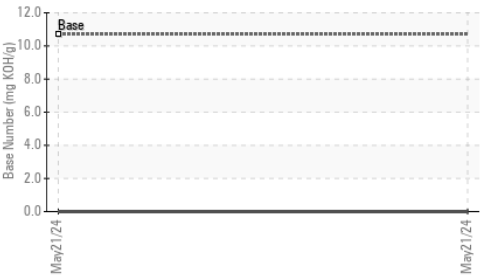
Ferrous Alloys



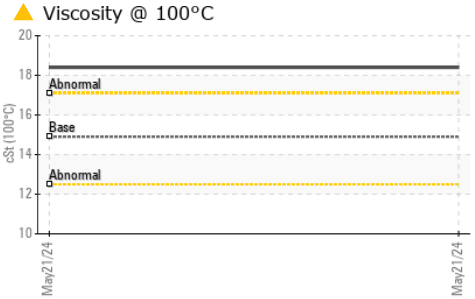
FT-IR (Direct Trend)



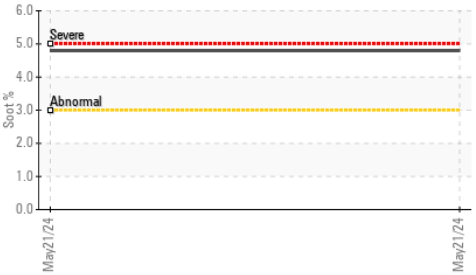
Base Number



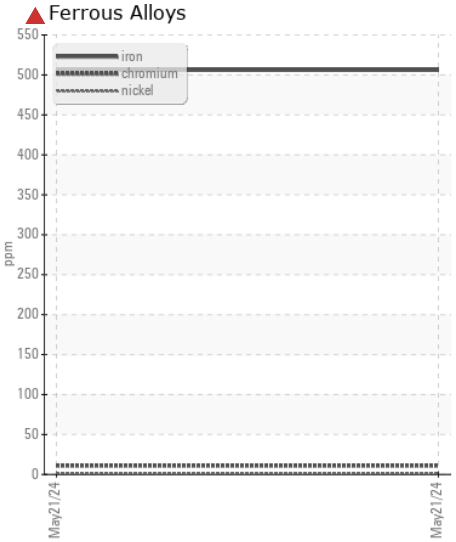
Viscosity @ 100°C



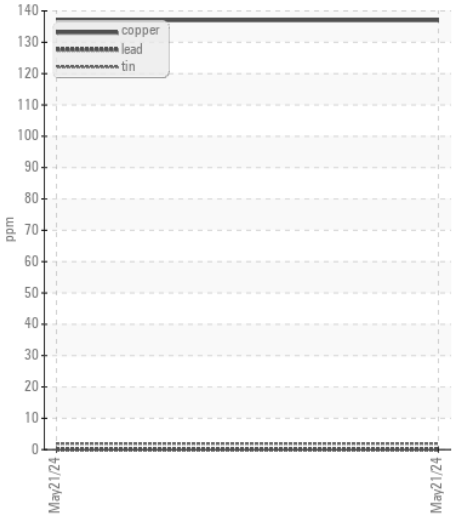
Soot %



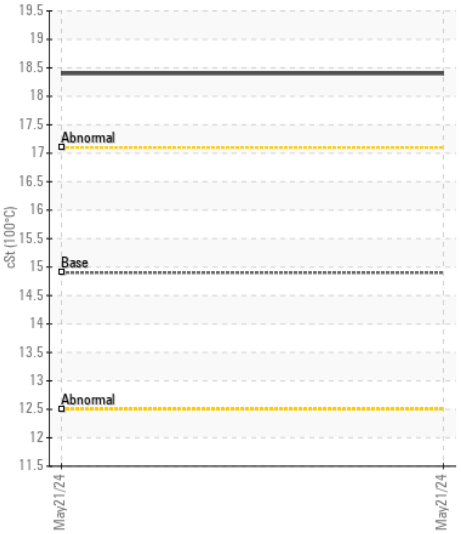
Ferrous Alloys



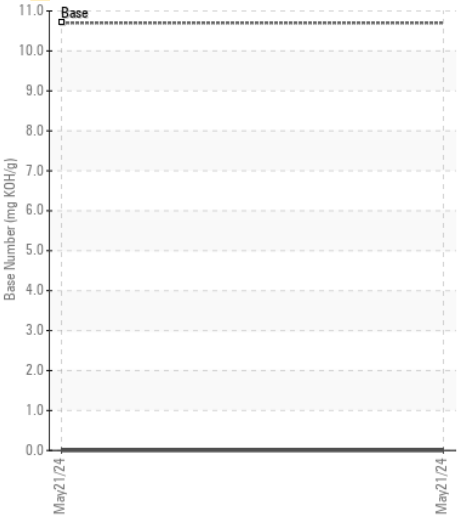
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RY0123439 **Received** : 22 May 2024
Lab Number : 06187306 **Tested** : 28 May 2024
Unique Number : 11044058 **Diagnosed** : 28 May 2024 - Jonathan Hester
Test Package : FLEET (Additional Tests: FuelDilution)

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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