



OIL ANALYSIS REPORT

Sample Rating Trend

FUEL

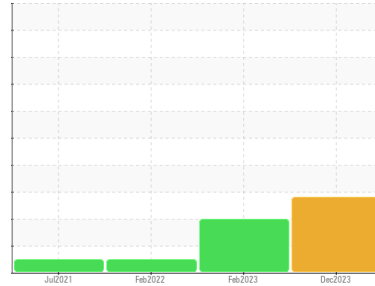


Area
[42511085]

Machine Id
R233

Component
Diesel Engine

Fluid
CHEVRON DELO 400 XLE 10W30 (--- GAL)



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

Iron ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated.

Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition

The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0853233	WC0737577	WC0654379
Sample Date	Client Info		09 Dec 2023	04 Feb 2023	19 Feb 2022
Machine Age	kms	Client Info	337316	296842	263222
Oil Age	kms	Client Info	0	0	0
Oil Changed	Client Info		Changed	Not Changd	Not Changd
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	0.0

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184*		0	---	---
Iron	ppm	ASTM D5185(m) >90	▲ 153	31	63
Chromium	ppm	ASTM D5185(m) >20	8	1	3
Nickel	ppm	ASTM D5185(m) >2	<1	0	<1
Titanium	ppm	ASTM D5185(m) >2	0	<1	<1
Silver	ppm	ASTM D5185(m) >2	<1	0	<1
Aluminum	ppm	ASTM D5185(m) >20	13	3	5
Lead	ppm	ASTM D5185(m) >40	13	1	4
Copper	ppm	ASTM D5185(m) >330	2	1	3
Tin	ppm	ASTM D5185(m) >15	2	<1	1
Antimony	ppm	ASTM D5185(m)	0	0	0
Vanadium	ppm	ASTM D5185(m)	0	0	0
Beryllium	ppm	ASTM D5185(m)	0	0	0
Cadmium	ppm	ASTM D5185(m)	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	29	▲ 54	31
Barium	ppm	ASTM D5185(m)	0	0	0
Molybdenum	ppm	ASTM D5185(m)	4	▲ 5	9
Manganese	ppm	ASTM D5185(m)	1	<1	1
Magnesium	ppm	ASTM D5185(m)	660	711	682
Calcium	ppm	ASTM D5185(m)	1224	1361	1343
Phosphorus	ppm	ASTM D5185(m)	608	731	686
Zinc	ppm	ASTM D5185(m)	716	759	779
Sulfur	ppm	ASTM D5185(m)	2137	2499	2384
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >25	10	5	5
Sodium	ppm	ASTM D5185(m)	4	3	4
Potassium	ppm	ASTM D5185(m) >20	20	4	11
Fuel	%	ASTM D7593* >3.0	◆ 7.8	▲ 4.1	<1.0

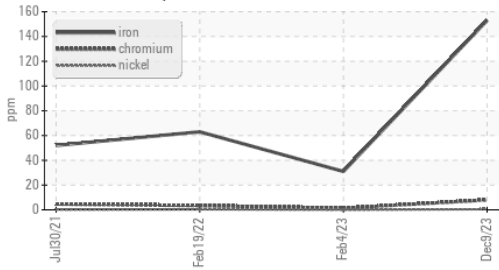
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844* >6	1.1	0	0.2
Nitration	Abs/cm	ASTM D7624* >20	26.3	12.6	10.4
Sulfation	Abs./1mm	ASTM D7415* >30	45.4	23.7	21.2



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▲ Ferrous Alloys



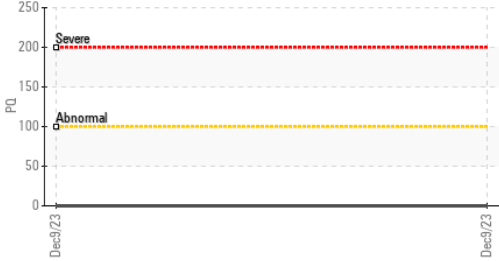
FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	ASTM D7414*	>25	74.9	22.2	21.6

VISUAL	method	limit/base	current	history1	history2	
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	.2%
Free Water	scalar	Visual*		NEG	NEG	NEG

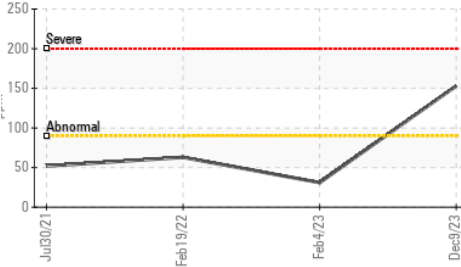
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	12.0	▲ 10.8	10.4

GRAPHS

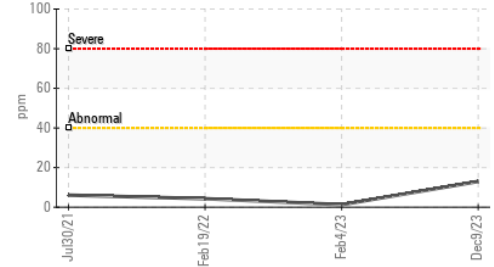
PQ



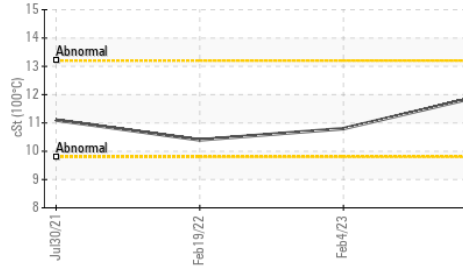
▲ Iron (ppm)



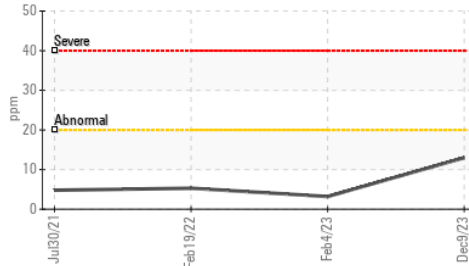
Lead (ppm)



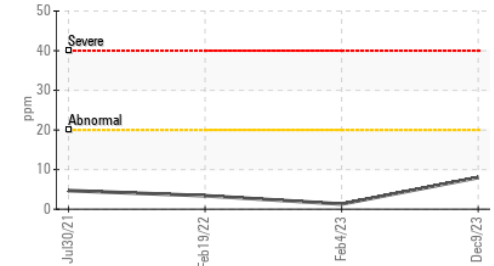
Viscosity @ 100°C



Aluminum (ppm)



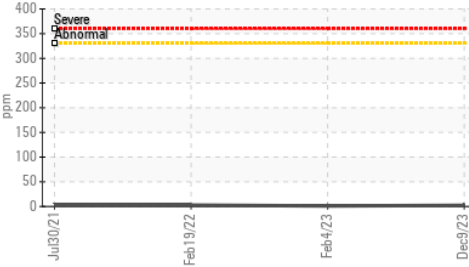
Chromium (ppm)



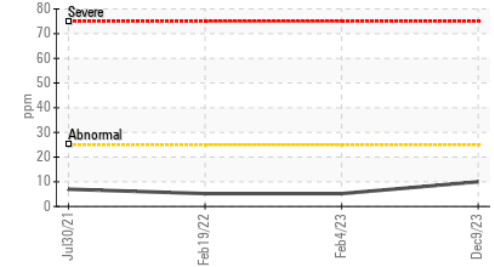
PQ



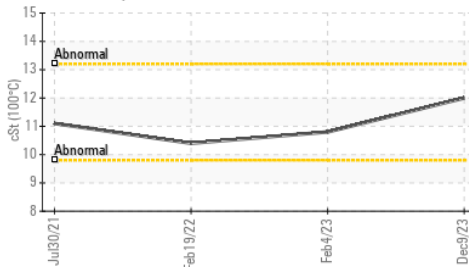
Copper (ppm)



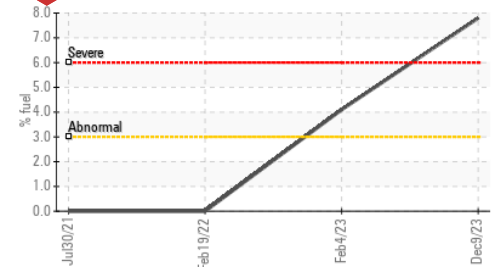
Silicon (ppm)



Viscosity @ 100°C



● Fuel Dilution



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0853233 **Received** : 12 Dec 2023
Lab Number : 02602529 **Diagnosed** : 13 Dec 2023
Unique Number : 5695614 **Diagnostician** : Kevin Marson
Test Package : MOB 1 (Additional Tests: FUELDILUTION, PercentFuel, PQ)

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

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