MOB I WEAR CHECK

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL

Machine Id
CUMMINS 166
Component
Diesel Engine
Fluid
ESSO XD-3 EXTRA 15W40 (--- GAL)

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.

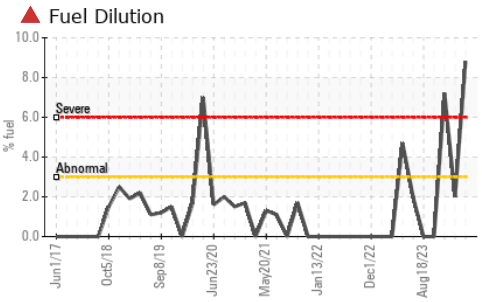
CONTAMINATION

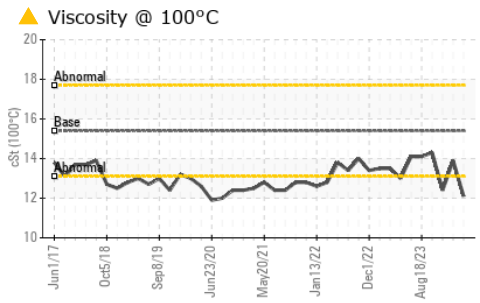
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

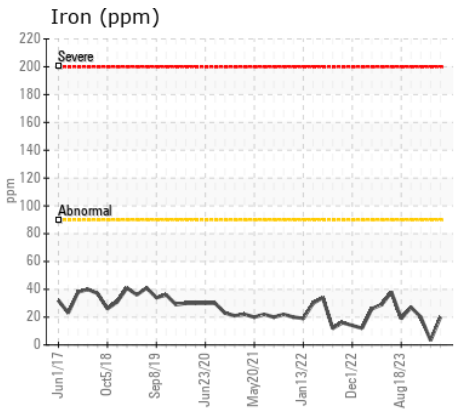
FLUID CONDITION

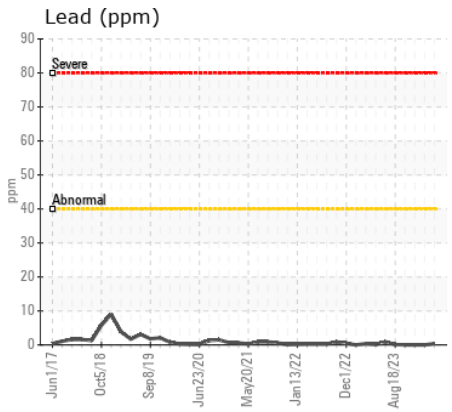
Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

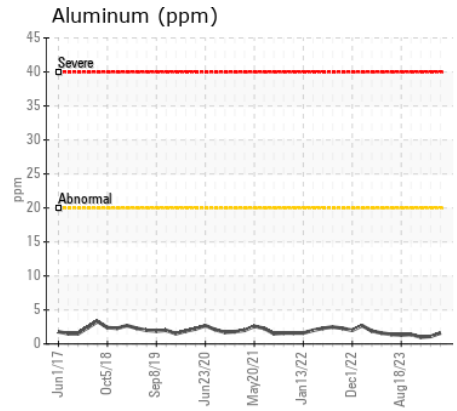
Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		**WC0889117**	WC0866614	WC0866598
Sample Date		Client Info		**22 Feb 2024**	18 Dec 2023	11 Dec 2023
Machine Age	kms	Client Info		**0**	0	0
Oil Age	kms	Client Info		**9160**	143	9085
Filter Age	kms	Client Info		**9160**	143	9085
Oil Changed		Client Info		**Changed**	Changed	Changed
Filter Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**SEVERE**	MARGINAL	SEVERE
Iron	ppm	ASTM D5185(m)	>90	**20**	3	20
Chromium	ppm	ASTM D5185(m)	>20	**1**	0	<1
Nickel	ppm	ASTM D5185(m)	>2	**<1**	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	**0**	0	0
Silver	ppm	ASTM D5185(m)	>2	**0**	0	<1
Aluminum	ppm	ASTM D5185(m)	>20	**2**	1	1
Lead	ppm	ASTM D5185(m)	>40	**<1**	0	0
Copper	ppm	ASTM D5185(m)	>330	**<1**	<1	<1
Tin	ppm	ASTM D5185(m)	>15	**0**	0	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Silicon	ppm	ASTM D5185(m)	>25	**5**	3	5
Potassium	ppm	ASTM D5185(m)	>20	**6**	6	5
Fuel	%	ASTM D7593*	>3.0	▲ **8.8**	▲ 2	▲ 7.2
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG
Soot %	%	ASTM D7844*	>6	**0.9**	0	0.8
Nitration	Abs/cm	ASTM D7624*	>20	**10.6**	5.6	10.0
Sulfation	Abs/.1mm	ASTM D7415*	>30	**25.3**	20.7	24.7
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Sodium	ppm	ASTM D5185(m)	>192	**4**	2	6
Boron	ppm	ASTM D5185(m)		**60**	144	68
Barium	ppm	ASTM D5185(m)		**0**	0	<1
Molybdenum	ppm	ASTM D5185(m)		**1**	1	0
Manganese	ppm	ASTM D5185(m)		**0**	0	0
Magnesium	ppm	ASTM D5185(m)		**20**	20	13
Calcium	ppm	ASTM D5185(m)	3780	**2068**	2018	2055
Phosphorus	ppm	ASTM D5185(m)	1370	**886**	915	858
Zinc	ppm	ASTM D5185(m)	1500	**1046**	1040	1057
Sulfur	ppm	ASTM D5185(m)	3800	**2754**	2907	2708
Oxidation	Abs/.1mm	ASTM D7414*	>25	**21.3**	16.6	21.0
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	▲ **12.1**	13.9	▲ 12.4

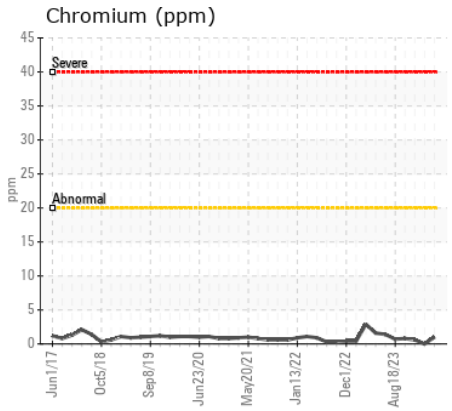


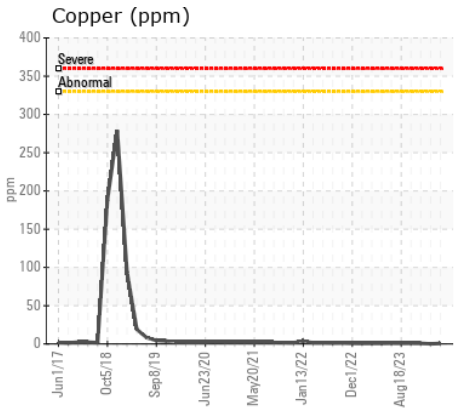


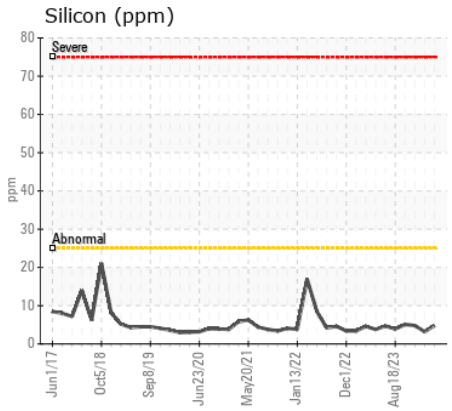


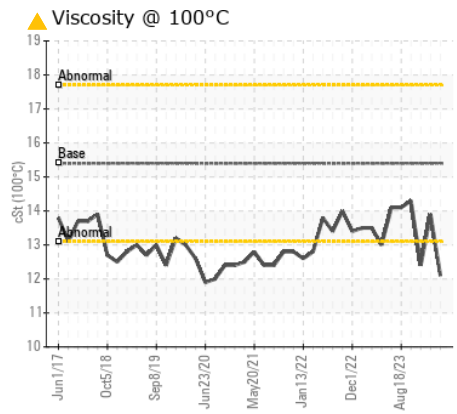


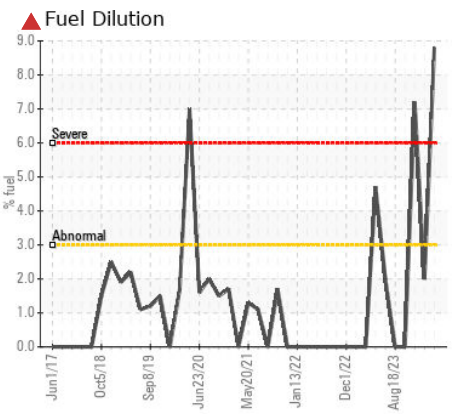












ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0889117 **Received** : 04 Mar 2024
Lab Number : 02619538 **Tested** : 05 Mar 2024
Unique Number : 5736648 **Diagnosed** : 05 Mar 2024 - Wes Davis
Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel)

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.

CITY OF THUNDER BAY
AUTO MAINTENANCE STORES, 570 FORT WILLIAM ROAD
THUNDER BAY, ON
CA P7B 2Z8
Contact: Sean Malcolm
sean.malcolm@thunderbay.ca
T: (807)684-2716
F: (807)344-0237