MOB

WEAR CHECK

OIL ANALYSIS REPORT

WEAR	ATTENTION
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
CUMMINS 177
Component
Diesel Engine
Fluid
ESSO XD-3 EXTRA 15W40 (24 LTR)

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. The oil change at the time of sampling has been noted. We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

WEAR

Copper ppm levels are noted. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other component wear rates are normal.

CONTAMINATION

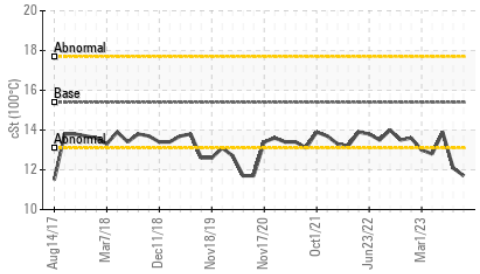
Light fuel dilution occurring. There is a moderate concentration of dirt present in the oil.

FLUID CONDITION

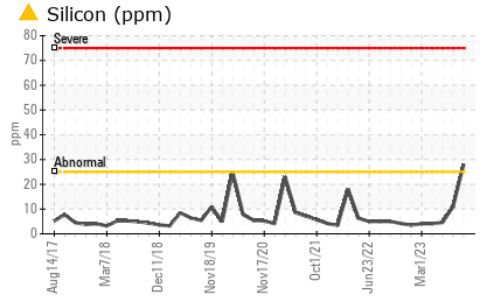
Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0889063	WC0816372	WC0816461
Sample Date		Client Info		02 Apr 2024	25 Sep 2023	05 Jun 2023
Machine Age	kms	Client Info		0	0	0
Oil Age	kms	Client Info		9190	10103	10069
Filter Age	kms	Client Info		9190	10103	10069
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	MARGINAL	NORMAL
Iron	ppm	ASTM D5185(m)	>90	36	6	11
Chromium	ppm	ASTM D5185(m)	>20	<1	0	<1
Nickel	ppm	ASTM D5185(m)	>2	<1	0	<1
Titanium	ppm	ASTM D5185(m)	>2	0	0	<1
Silver	ppm	ASTM D5185(m)	>2	0	<1	0
Aluminum	ppm	ASTM D5185(m)	>20	4	2	2
Lead	ppm	ASTM D5185(m)	>40	5	<1	<1
Copper	ppm	ASTM D5185(m)	>330	● 201	4	12
Tin	ppm	ASTM D5185(m)	>15	<1	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
Silicon	ppm	ASTM D5185(m)	>25	▲ 28	11	5
Potassium	ppm	ASTM D5185(m)	>20	10	2	5
Fuel	%	ASTM D7593*	>3.0	▲ 1.3	▲ 1	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>6	0.1	0.1	0.4
Nitration	Abs/cm	ASTM D7624*	>20	8.1	5.7	9.4
Sulfation	Abs/.1mm	ASTM D7415*	>30	19.8	20.2	24.5
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Sodium	ppm	ASTM D5185(m)	>192	5	4	4
Boron	ppm	ASTM D5185(m)		23	99	66
Barium	ppm	ASTM D5185(m)		11	<1	0
Molybdenum	ppm	ASTM D5185(m)		10	50	17
Manganese	ppm	ASTM D5185(m)		<1	0	<1
Magnesium	ppm	ASTM D5185(m)		71	333	176
Calcium	ppm	ASTM D5185(m)	3780	2368	1817	2253
Phosphorus	ppm	ASTM D5185(m)	1370	855	982	1069
Zinc	ppm	ASTM D5185(m)	1500	1057	1163	1230
Sulfur	ppm	ASTM D5185(m)	3800	2665	2765	2932
Oxidation	Abs/.1mm	ASTM D7414*	>25	14.6	15.9	22.1
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	▲ 11.7	12.1	13.9

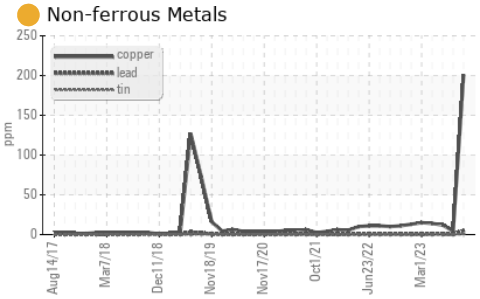
Viscosity @ 100°C



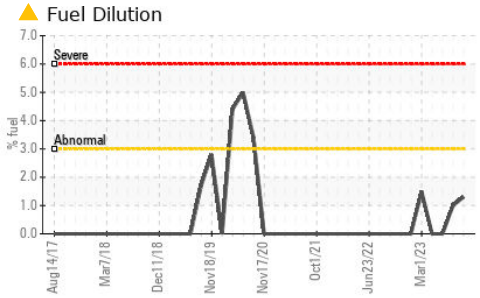
Silicon (ppm)



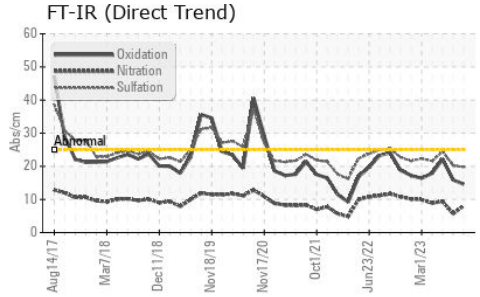
Non-ferrous Metals



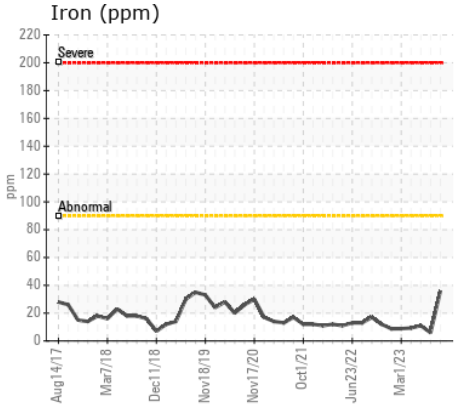
Fuel Dilution



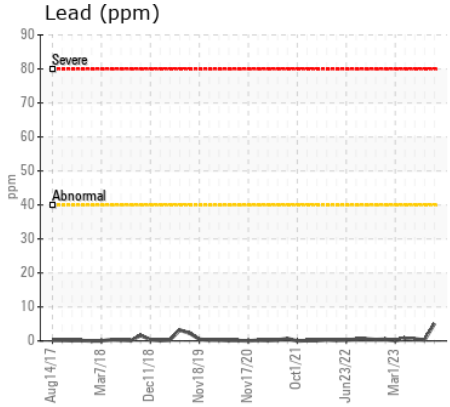
FT-IR (Direct Trend)



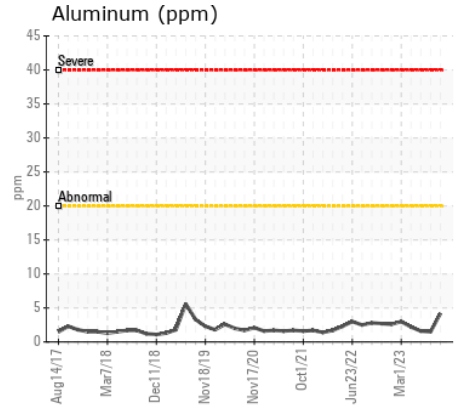
Iron (ppm)



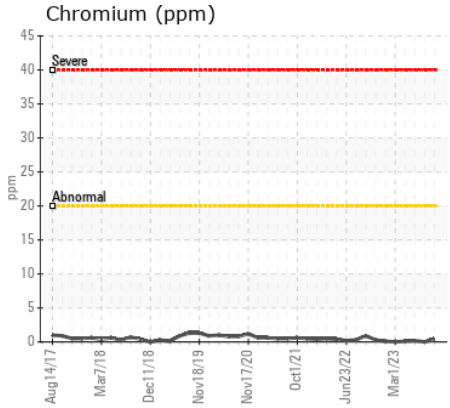
Lead (ppm)



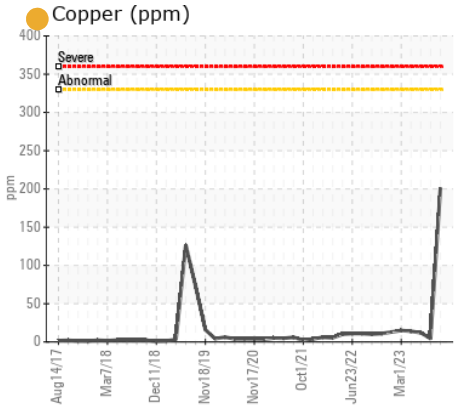
Aluminum (ppm)



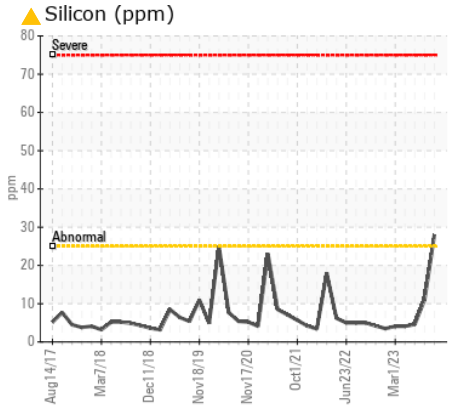
Chromium (ppm)



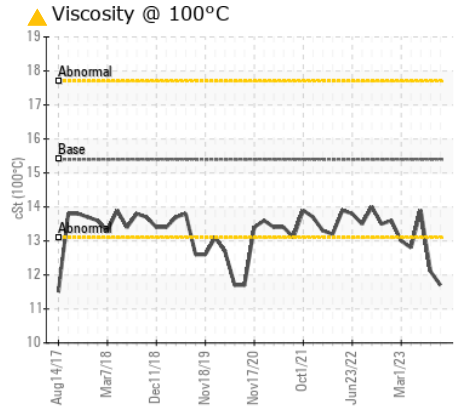
Copper (ppm)



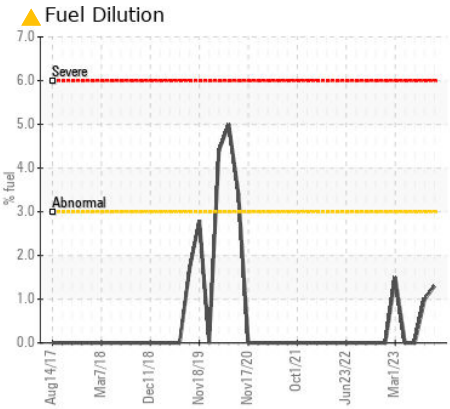
Silicon (ppm)



Viscosity @ 100°C



Fuel Dilution



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0889063 **Received** : 08 Apr 2024
Lab Number : 02627297 **Tested** : 10 Apr 2024
Unique Number : 5760429 **Diagnosed** : 10 Apr 2024 - Kevin Marson
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.

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