



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
CUMMINS 168
Component
Rear Diesel Engine
Fluid
ESSO XD-3 EXTRA 15W40 (--- GAL)

RECOMMENDATION

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0889073	WC0889127	WC0866612
Sample Date		Client Info		26 Mar 2024	15 Feb 2024	18 Dec 2023
Machine Age	kms	Client Info		0	0	0
Oil Age	kms	Client Info		9292	9255	9374
Filter Age	kms	Client Info		9292	9255	9374
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>75	12	15	11
Chromium	ppm	ASTM D5185(m)	>5	0	<1	<1
Nickel	ppm	ASTM D5185(m)	>4	<1	0	<1
Titanium	ppm	ASTM D5185(m)	>2	0	0	0
Silver	ppm	ASTM D5185(m)	>2	0	0	0
Aluminum	ppm	ASTM D5185(m)	>15	1	2	1
Lead	ppm	ASTM D5185(m)	>25	0	0	0
Copper	ppm	ASTM D5185(m)	>100	<1	1	1
Tin	ppm	ASTM D5185(m)	>4	0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0

CONTAMINATION

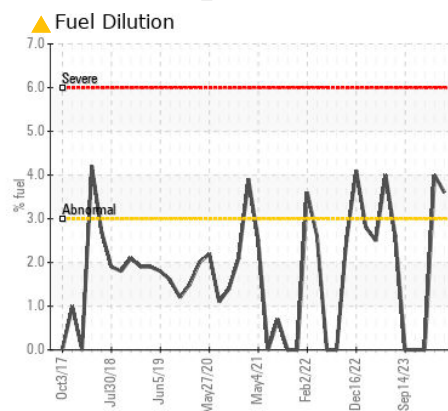
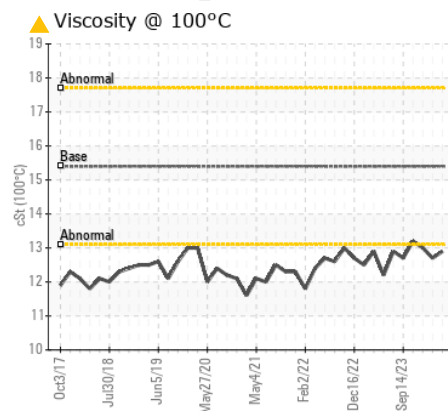
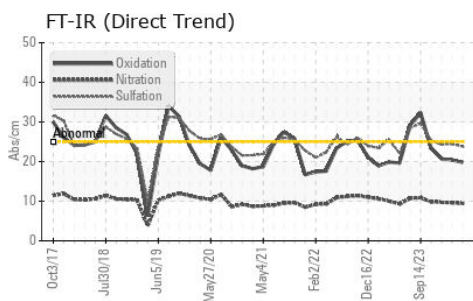
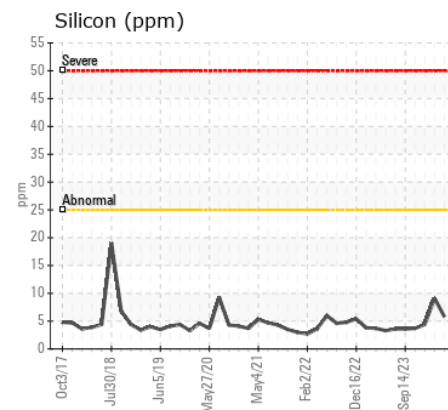
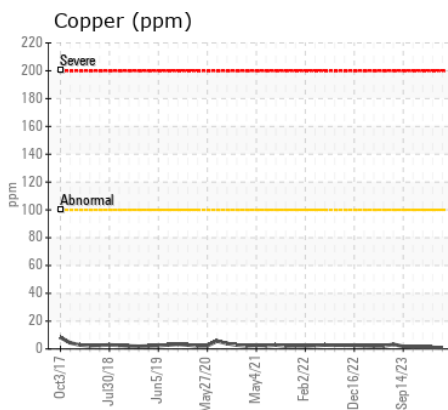
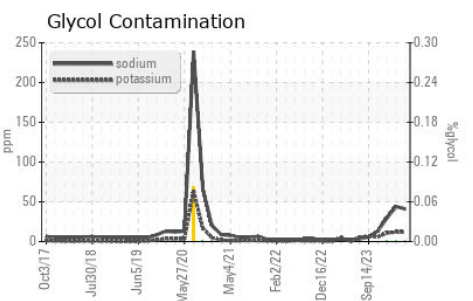
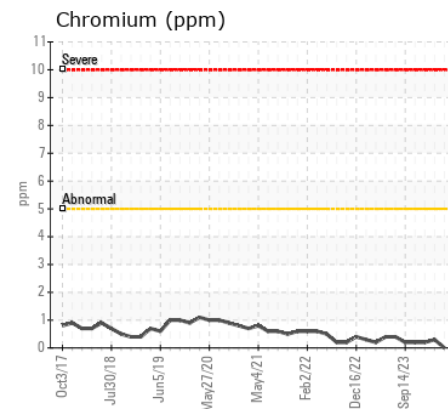
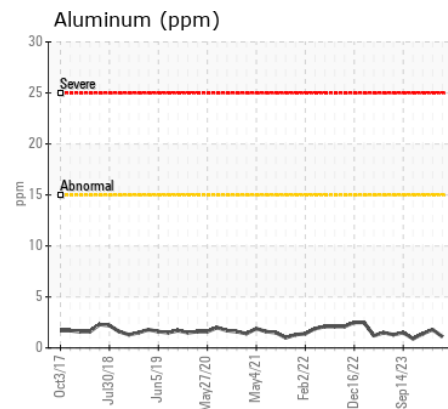
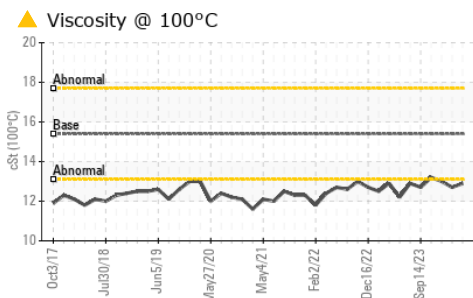
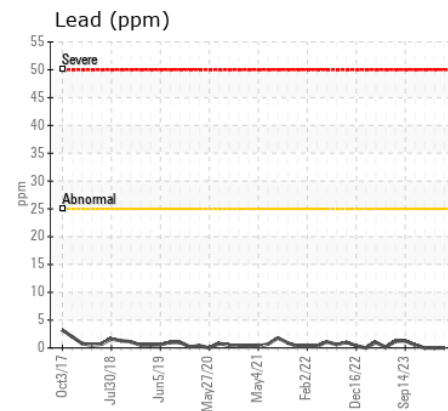
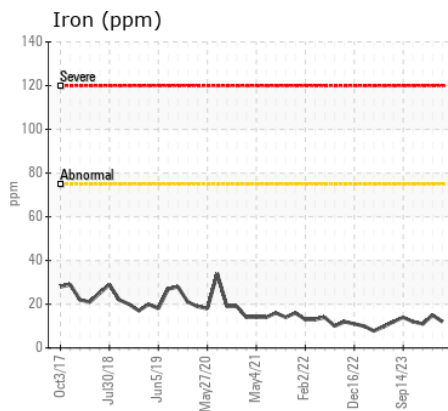
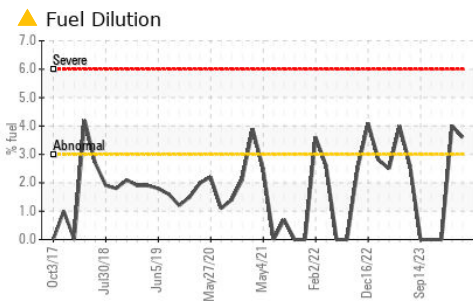
There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Silicon	ppm	ASTM D5185(m)	>25	6	9	4
Potassium	ppm	ASTM D5185(m)	>20	12	12	11
Fuel	%	ASTM D7593*	>3.0	▲ 3.6	▲ 4	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	ASTM D7922*		0.0	0.0	0.0
Soot %	%	ASTM D7844*	>6	0.4	0.5	0.5
Nitration	Abs/cm	ASTM D7624*	>20	9.4	9.6	9.7
Sulfation	Abs/.1mm	ASTM D7415*	>30	23.8	24.4	24.3
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185(m)	>192	41	44	30
Boron	ppm	ASTM D5185(m)		67	58	65
Barium	ppm	ASTM D5185(m)		0	0	0
Molybdenum	ppm	ASTM D5185(m)		0	1	<1
Manganese	ppm	ASTM D5185(m)		0	0	0
Magnesium	ppm	ASTM D5185(m)		16	21	15
Calcium	ppm	ASTM D5185(m)	3780	2197	2134	2192
Phosphorus	ppm	ASTM D5185(m)	1370	936	907	926
Zinc	ppm	ASTM D5185(m)	1500	1135	1088	1109
Sulfur	ppm	ASTM D5185(m)	3800	2752	2868	2944
Oxidation	Abs/.1mm	ASTM D7414*	>25	19.8	20.4	20.7
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	▲ 12.9	▲ 12.7	13.0



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0889073
Lab Number : 02626343
Unique Number : 5759475
Test Package : MOB 1 (Additional Tests: Glycol, PercentFuel)
Received : 03 Apr 2024
Tested : 04 Apr 2024
Diagnosed : 04 Apr 2024 - Wes Davis

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

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.