



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
CUMMINS 232
Component
Rear Diesel Engine
Fluid
ESSO XD-3 EXTRA 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0889013	WC0889116	WC0889103
Sample Date		Client Info		22 Apr 2024	22 Feb 2024	28 Dec 2023
Machine Age	kms	Client Info		0	0	0
Oil Age	kms	Client Info		9041	8949	9275
Filter Age	kms	Client Info		9041	8949	9275
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>90	6	6	6
Chromium	ppm	ASTM D5185(m)	>20	0	<1	0
Nickel	ppm	ASTM D5185(m)	>2	0	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	0	0	0
Silver	ppm	ASTM D5185(m)	>2	0	0	0
Aluminum	ppm	ASTM D5185(m)	>20	2	2	1
Lead	ppm	ASTM D5185(m)	>40	0	<1	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

CONTAMINATION

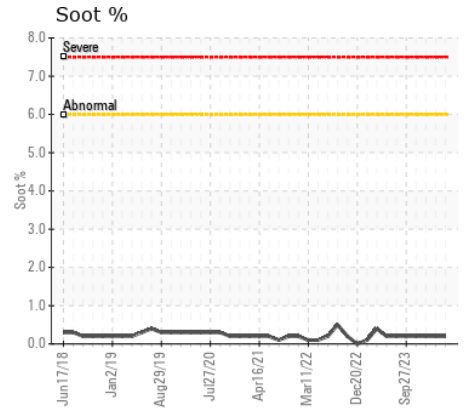
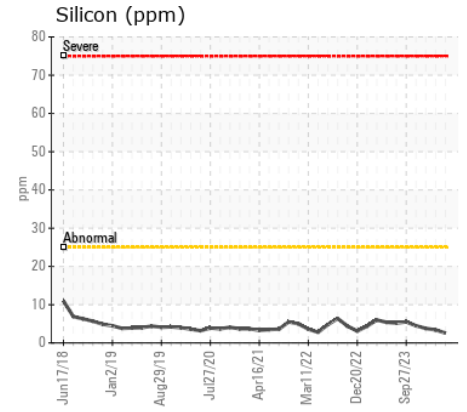
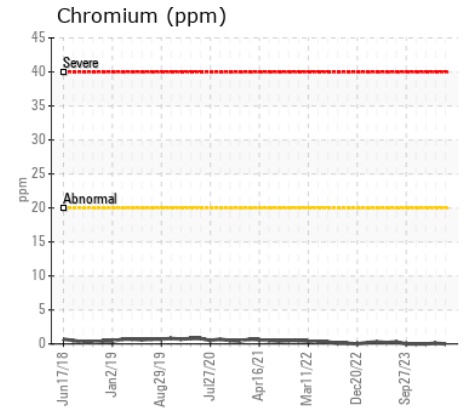
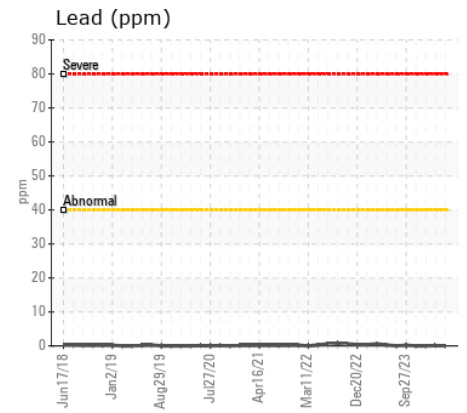
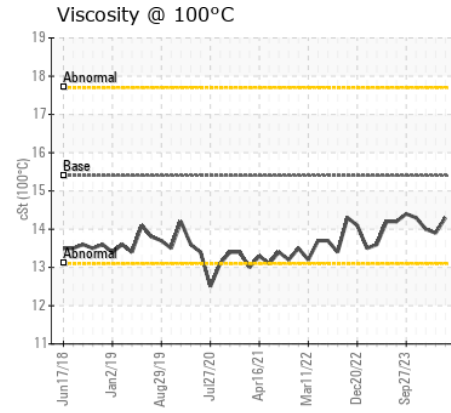
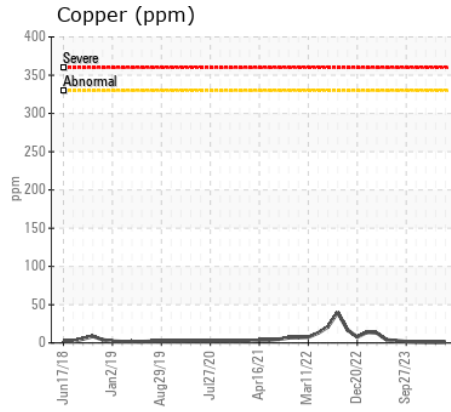
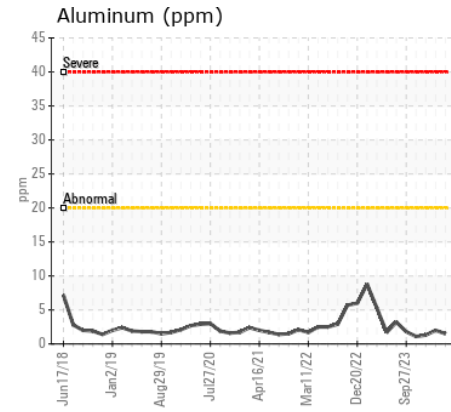
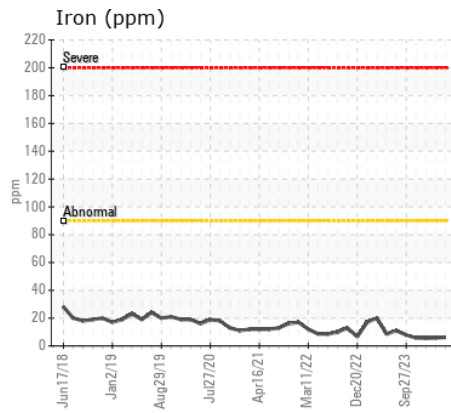
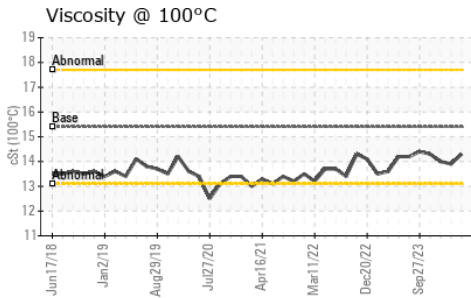
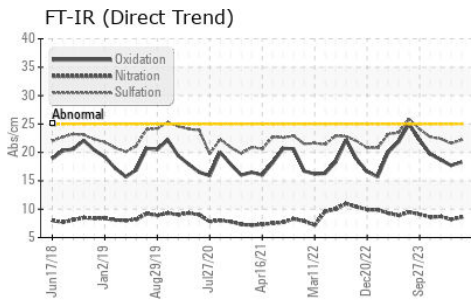
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>25	3	3	4
Potassium	ppm	ASTM D5185(m)	>20	6	5	5
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>6	0.2	0.2	0.2
Nitration	Abs/cm	ASTM D7624*	>20	8.6	8.2	8.7
Sulfation	Abs/.1mm	ASTM D7415*	>30	22.2	21.6	22.4
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)	>192	2	2	2
Boron	ppm	ASTM D5185(m)		106	112	111
Barium	ppm	ASTM D5185(m)		0	0	0
Molybdenum	ppm	ASTM D5185(m)		<1	1	<1
Manganese	ppm	ASTM D5185(m)		0	0	0
Magnesium	ppm	ASTM D5185(m)		17	20	14
Calcium	ppm	ASTM D5185(m)	3780	2221	2163	2201
Phosphorus	ppm	ASTM D5185(m)	1370	939	939	973
Zinc	ppm	ASTM D5185(m)	1500	1137	1117	1132
Sulfur	ppm	ASTM D5185(m)	3800	2781	2967	2995
Oxidation	Abs/.1mm	ASTM D7414*	>25	18.3	17.7	18.7
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	14.3	13.9	14.0



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0889013
Lab Number : 02631928
Unique Number : 5773081
Test Package : MOB 1

Received : 29 Apr 2024
Tested : 29 Apr 2024
Diagnosed : 29 Apr 2024 - Wes Davis

CITY OF THUNDER BAY
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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.