



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id  
**CUMMINS 180**  
 Component  
**Rear Diesel Engine**  
 Fluid  
**ESSO XD-3 EXTRA 15W40 (24 LTR)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0888981</b>	WC0889187	WC0866502
Sample Date		Client Info		<b>12 Apr 2024</b>	22 Jan 2024	30 Nov 2023
Machine Age	kms	Client Info		<b>0</b>	0	0
Oil Age	kms	Client Info		<b>10957</b>	8938	9681
Filter Age	kms	Client Info		<b>10957</b>	8938	9681
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>90	<b>22</b>	7	9
Chromium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185(m)	>2	<b>0</b>	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)	>2	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185(m)	>20	<b>2</b>	1	1
Lead	ppm	ASTM D5185(m)	>40	<b>0</b>	<1	0
Copper	ppm	ASTM D5185(m)	>330	<b>&lt;1</b>	<1	<1
Tin	ppm	ASTM D5185(m)	>15	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0

## CONTAMINATION

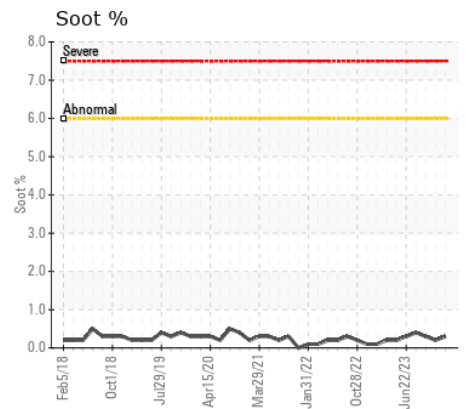
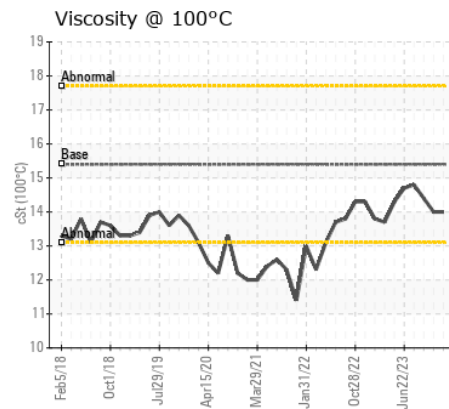
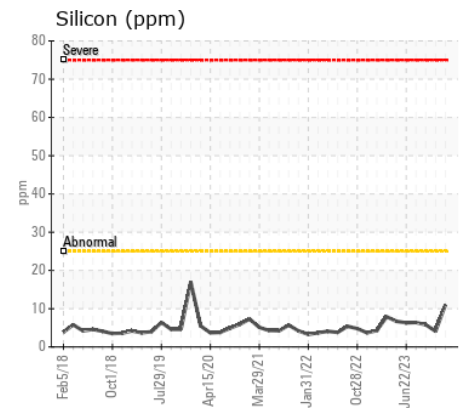
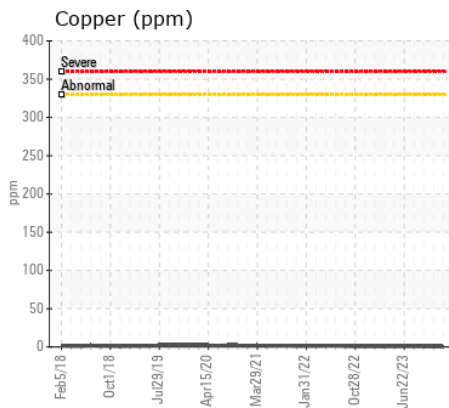
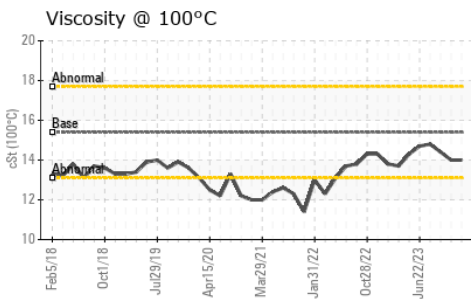
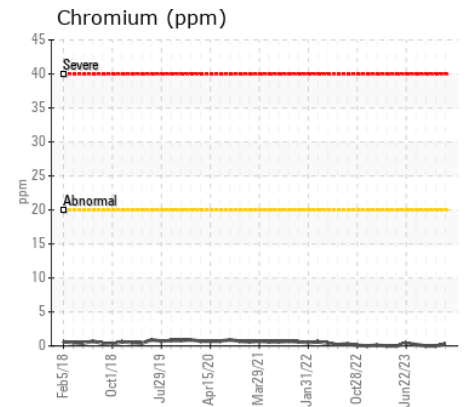
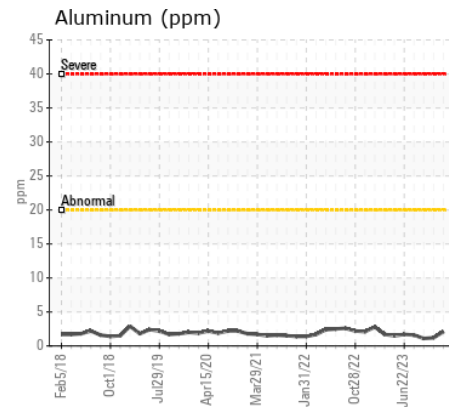
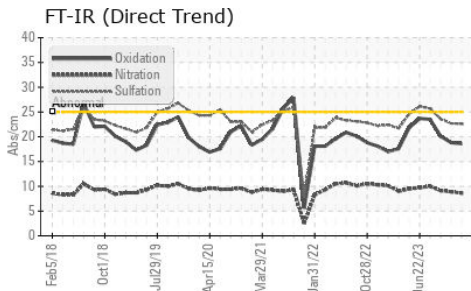
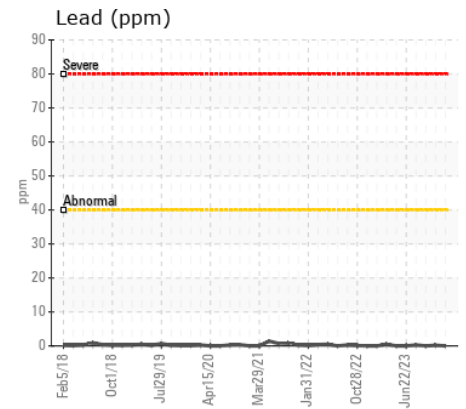
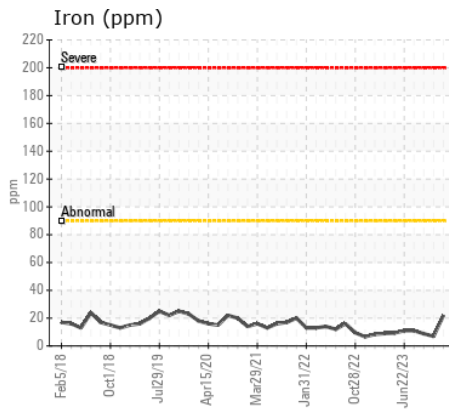
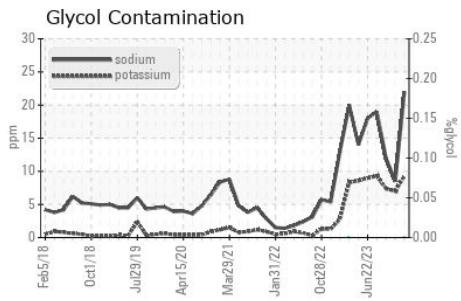
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>25	<b>11</b>	4	6
Potassium	ppm	ASTM D5185(m)	>20	<b>9</b>	7	7
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol	%	ASTM D7922*		<b>0.0</b>	NEG	NEG
Soot %	%	ASTM D7844*	>6	<b>0.3</b>	0.2	0.3
Nitration	Abs/cm	ASTM D7624*	>20	<b>8.6</b>	8.9	9.1
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>22.6</b>	22.7	23.6
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

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

Sodium	ppm	ASTM D5185(m)	>192	<b>22</b>	8	12
Boron	ppm	ASTM D5185(m)		<b>91</b>	95	93
Barium	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Molybdenum	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1
Manganese	ppm	ASTM D5185(m)		<b>&lt;1</b>	0	0
Magnesium	ppm	ASTM D5185(m)		<b>23</b>	17	14
Calcium	ppm	ASTM D5185(m)	3780	<b>2234</b>	2228	2261
Phosphorus	ppm	ASTM D5185(m)	1370	<b>939</b>	955	980
Zinc	ppm	ASTM D5185(m)	1500	<b>1153</b>	1173	1208
Sulfur	ppm	ASTM D5185(m)	3800	<b>2761</b>	3026	2903
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>18.6</b>	18.8	20.1
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	<b>14.0</b>	14.0	14.4



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0888981 **Received** : 22 Apr 2024  
**Lab Number** : 02630517 **Tested** : 23 Apr 2024  
**Unique Number** : 5763649 **Diagnosed** : 23 Apr 2024 - Kevin Marson  
**Test Package** : MOB 1 ( Additional Tests: Glycol )

**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.