



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>ABNORMAL</b>
FLUID CONDITION	<b>ATTENTION</b>

Machine Id  
**CUMMINS 228**  
Component  
**Rear Diesel Engine**  
Fluid  
**ESSO XD-3 EXTRA 15W40 (--- GAL)**

## RECOMMENDATION

We advise that you check for the source of the coolant leak. 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		<b>WC0866618</b>	WC0889053	WC0889140
Sample Date		Client Info		<b>24 May 2024</b>	02 Apr 2024	07 Feb 2024
Machine Age	kms	Client Info		<b>0</b>	0	0
Oil Age	kms	Client Info		<b>9650</b>	9772	9042
Filter Age	kms	Client Info		<b>9650</b>	9772	9042
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>ABNORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>90	<b>8</b>	7	5
Chromium	ppm	ASTM D5185(m)	>20	<b>0</b>	0	0
Nickel	ppm	ASTM D5185(m)	>2	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>20	<b>3</b>	2	1
Lead	ppm	ASTM D5185(m)	>40	<b>0</b>	0	0
Copper	ppm	ASTM D5185(m)	>330	<b>13</b>	2	2
Tin	ppm	ASTM D5185(m)	>15	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0

## CONTAMINATION

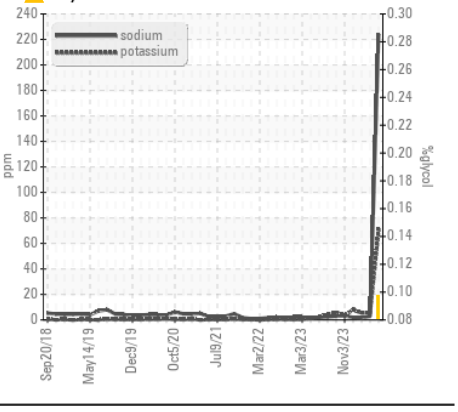
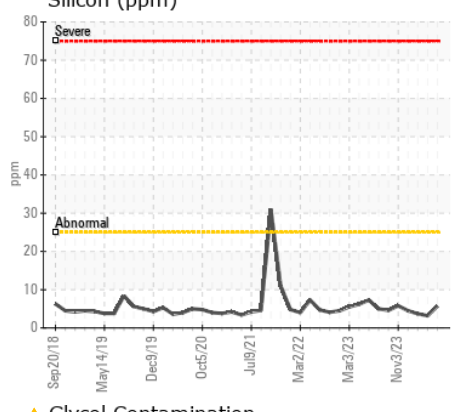
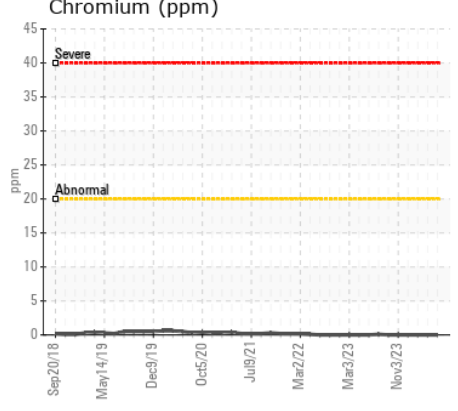
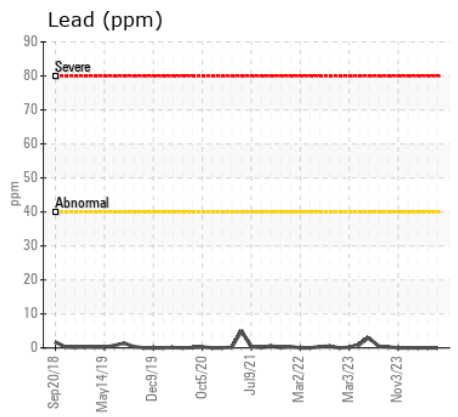
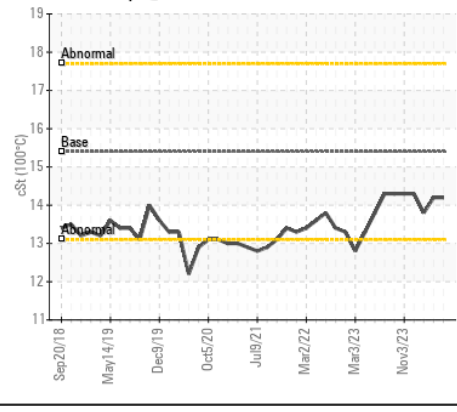
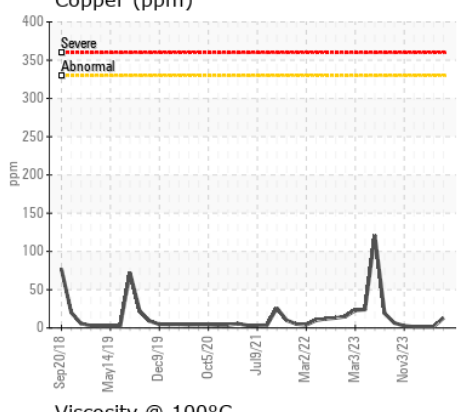
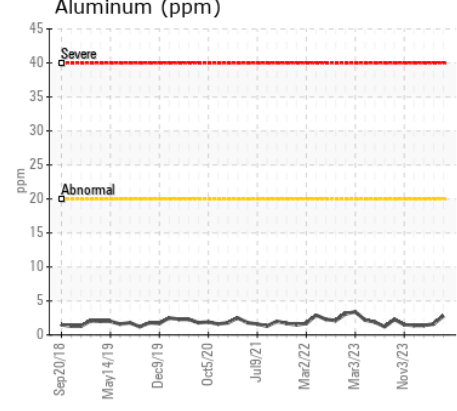
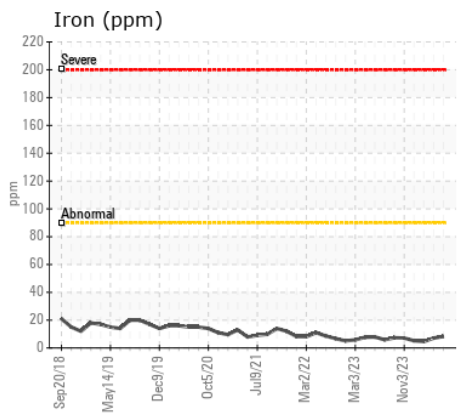
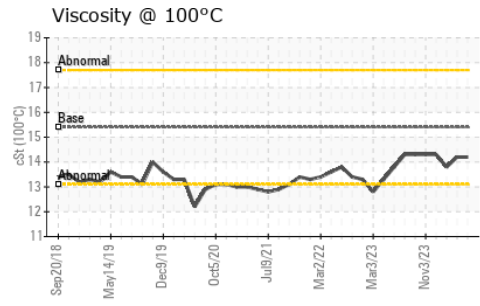
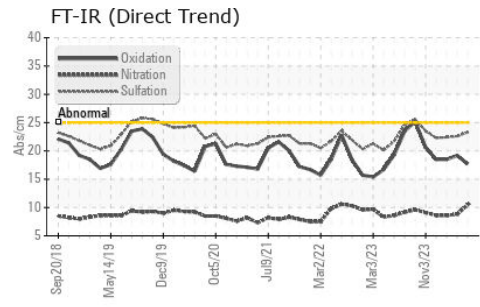
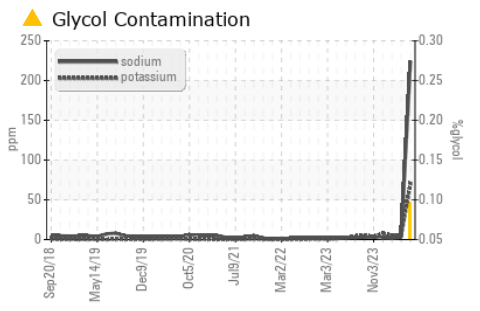
Test for glycol is positive. There is a moderate concentration of glycol present in the oil.

Silicon	ppm	ASTM D5185(m)	>25	<b>6</b>	3	4
Potassium	ppm	ASTM D5185(m)	>20	<b>▲ 70</b>	6	6
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>▲ 0.097</b>	NEG	NEG
Soot %	%	ASTM D7844*	>6	<b>0.2</b>	0.2	0.2
Nitration	Abs/cm	ASTM D7624*	>20	<b>10.5</b>	8.8	8.6
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>23.3</b>	22.6	22.4
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

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

Sodium	ppm	ASTM D5185(m)	>192	<b>● 224</b>	3	2
Boron	ppm	ASTM D5185(m)		<b>25</b>	106	105
Barium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m)		<b>4</b>	0	1
Manganese	ppm	ASTM D5185(m)		<b>&lt;1</b>	0	0
Magnesium	ppm	ASTM D5185(m)		<b>17</b>	15	20
Calcium	ppm	ASTM D5185(m)	3780	<b>2066</b>	2181	2193
Phosphorus	ppm	ASTM D5185(m)	1370	<b>919</b>	936	936
Zinc	ppm	ASTM D5185(m)	1500	<b>1122</b>	1172	1121
Sulfur	ppm	ASTM D5185(m)	3800	<b>2694</b>	2784	2970
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>17.7</b>	19.2	18.5
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	<b>14.2</b>	14.2	13.8



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0866618  
**Lab Number** : 02638812  
**Unique Number** : 5787974  
**Test Package** : MOB 1 ( Additional Tests: Glycol )

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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.