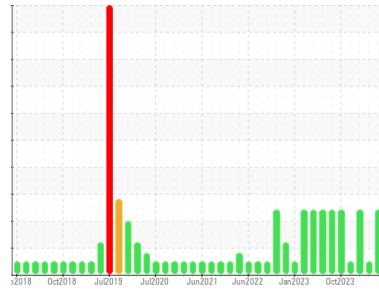




OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id
CUMMINS 178
 Component
Rear Diesel Engine
 Fluid
ESSO XD-3 EXTRA 15W40 (--- GAL)

DIAGNOSIS

▲ Recommendation

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

Wear

All component wear rates are normal.

▲ Contamination

Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative.

● Fluid Condition

The condition of the oil is acceptable for the time in service (see recommendation).

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0889001	WC0889119	WC0889179
Sample Date	Client Info		08 Apr 2024	21 Feb 2024	27 Dec 2023
Machine Age	kms	Client Info	0	0	0
Oil Age	kms	Client Info	8972	0	9832
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			ABNORMAL	NORMAL	ABNORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>3.0	<1.0	<1.0	<1.0
Water	WC Method	>0.2	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>90	14	13	19
Chromium	ppm	ASTM D5185(m)	>20	<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>2	<1	<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	3
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
Antimony	ppm	ASTM D5185(m)		0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m)		97	93	83
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	22	20
Calcium	ppm	ASTM D5185(m)	3780	2215	2212	2064
Phosphorus	ppm	ASTM D5185(m)	1370	957	966	976
Zinc	ppm	ASTM D5185(m)	1500	1162	1139	1149
Sulfur	ppm	ASTM D5185(m)	3800	2826	2996	3168
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>25	5	4	6
Sodium	ppm	ASTM D5185(m)	>192	194	77	291
Potassium	ppm	ASTM D5185(m)	>20	57	24	74
Glycol	%	ASTM D7922*		0.0	0.0	0.0

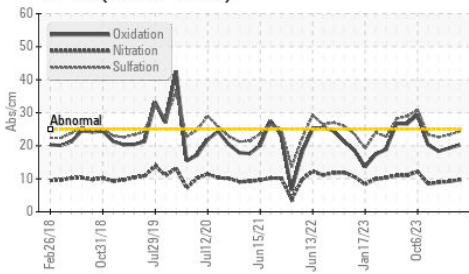
INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*	>6	0.4	0.3	0.3
Nitration	Abs/cm	ASTM D7624*	>20	9.7	9.2	8.9
Sulfation	Abs/.1mm	ASTM D7415*	>30	24.3	23.3	22.6

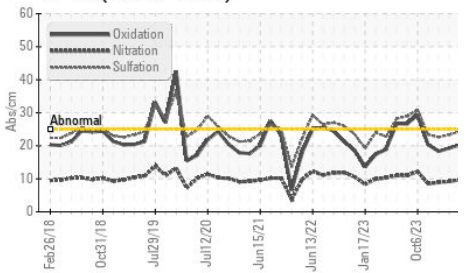


OIL ANALYSIS REPORT

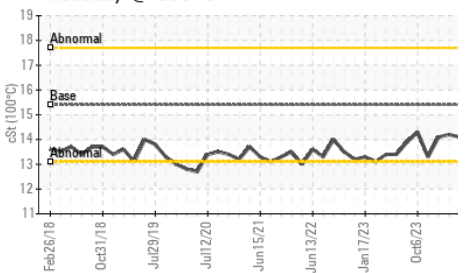
FT-IR (Direct Trend)



FT-IR (Direct Trend)



Viscosity @ 100°C

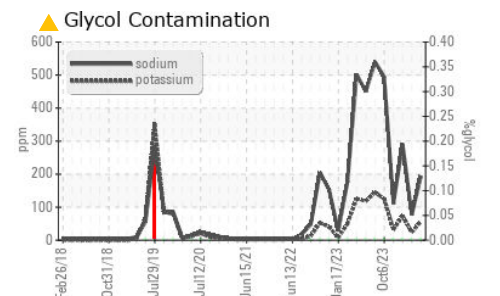
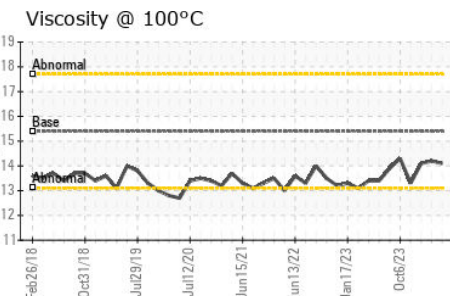
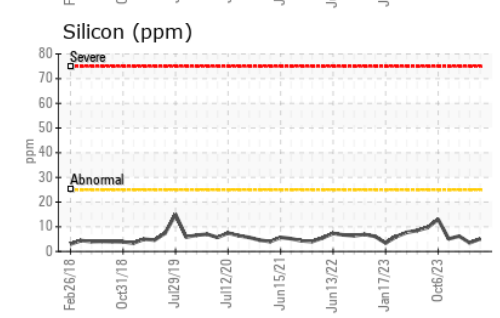
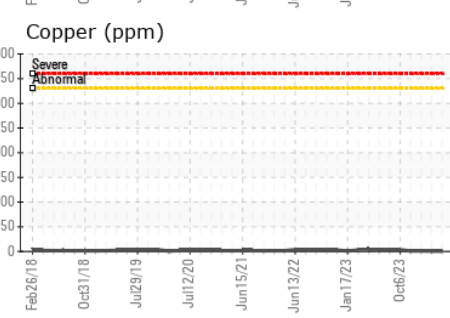
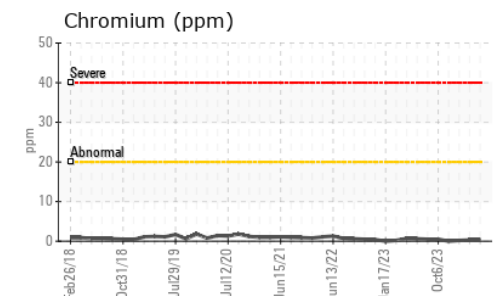
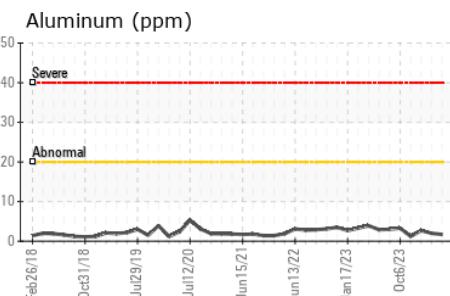
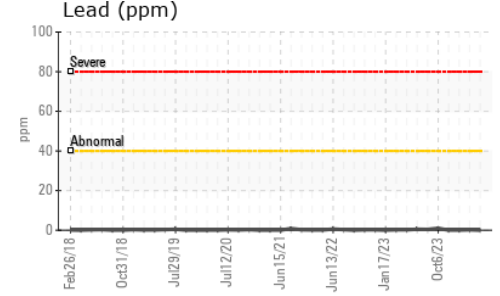
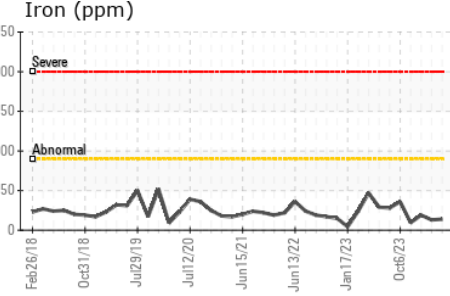


Viscosity @ 100°C



FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	ASTM D7414*	>25	20.2	19.3	18.3
VISUAL						
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG
FLUID PROPERTIES						
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	14.1	14.2	14.1

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0889001 **Received** : 15 Apr 2024
Lab Number : 02628774 **Tested** : 16 Apr 2024
Unique Number : 5761906 **Diagnosed** : 17 Apr 2024 - Kevin Marson
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.