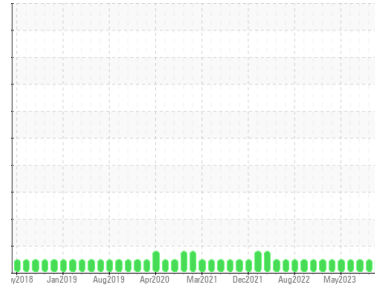




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
CUMMINS 229

Component
Rear Diesel Engine

Fluid
ESSO XD-3 EXTRA 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			WC0866504	WC0866562	WC0816410
Sample Date	Client Info			04 Dec 2023	23 Oct 2023	16 Aug 2023
Machine Age	kms	Client Info		0	0	0
Oil Age	kms	Client Info		9075	10970	8636
Oil Changed	Client Info			Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

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
Glycol	WC Method			NEG	NEG	0.0

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>90	6	13	9
Chromium	ppm	ASTM D5185(m)	>20	0	<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	<1	<1	0
Aluminum	ppm	ASTM D5185(m)	>20	1	3	2
Lead	ppm	ASTM D5185(m)	>40	0	<1	0
Copper	ppm	ASTM D5185(m)	>330	3	6	5
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

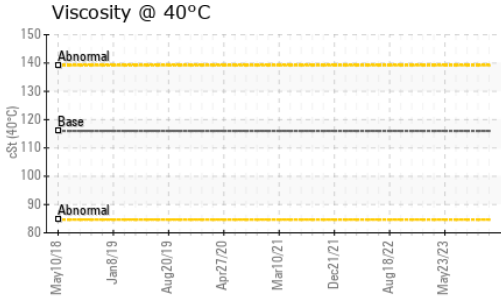
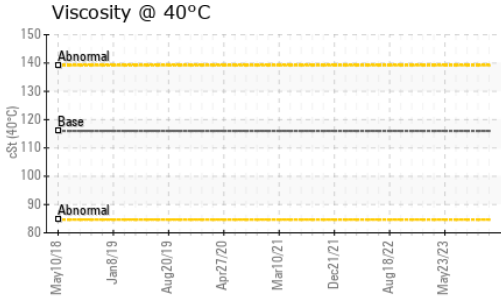
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		120	77	98
Barium	ppm	ASTM D5185(m)		<1	<1	0
Molybdenum	ppm	ASTM D5185(m)		<1	<1	3
Manganese	ppm	ASTM D5185(m)		0	0	0
Magnesium	ppm	ASTM D5185(m)		13	16	41
Calcium	ppm	ASTM D5185(m)	3780	2184	2150	2166
Phosphorus	ppm	ASTM D5185(m)	1370	946	875	1010
Zinc	ppm	ASTM D5185(m)	1500	1156	1049	1163
Sulfur	ppm	ASTM D5185(m)	3800	2865	2758	2901
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	3	6	6
Sodium	ppm	ASTM D5185(m)	>192	7	18	20
Potassium	ppm	ASTM D5185(m)	>20	6	8	9

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>6	0.2	0.4	0.3
Nitration	Abs/cm	ASTM D7624*	>20	8.6	9.8	9.0
Sulfation	Abs./1mm	ASTM D7415*	>30	22.4	25.7	25.0



OIL ANALYSIS REPORT

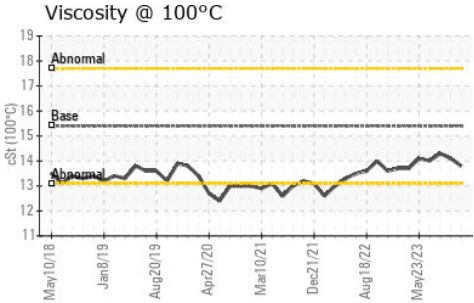
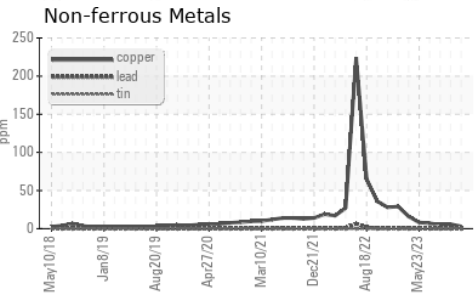
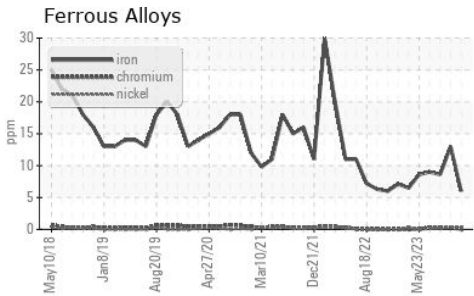


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs./1mm	ASTM D7414*	>25	19.0	24.9	22.7

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---
Precipitate	scalar	Visual*	NONE	NONE	---	---
Silt	scalar	Visual*	NONE	NONE	---	---
Debris	scalar	Visual*	NONE	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	NORML	---	---
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	116	104	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	13.8	14.1	14.3
Viscosity Index (VI)	Scale	ASTM D2270*	140	133	---	---

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0866504
Lab Number : **02601606**
Unique Number : 5694691
Test Package : MOB 1 (Additional Tests: KV40, PrtCount, VI, Visual)

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.