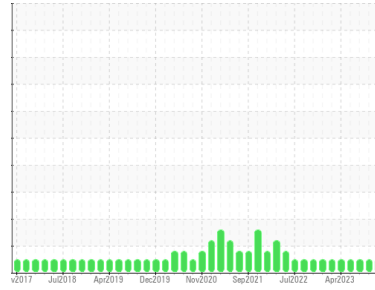




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
CUMMINS 180

Component
Rear Diesel Engine

Fluid
ESSO XD-3 EXTRA 15W40 (24 LTR)

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 BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			WC0866502	WC0866458	WC0816418
Sample Date	Client Info			30 Nov 2023	19 Oct 2023	22 Jun 2023
Machine Age	kms	Client Info		0	0	0
Oil Age	kms	Client Info		9681	10754	9283
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	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>90	9	11	11
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	2	2
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

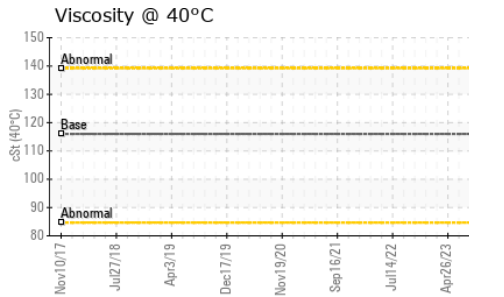
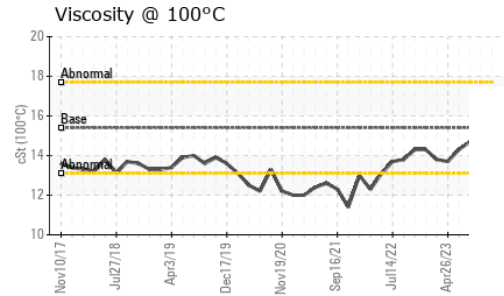
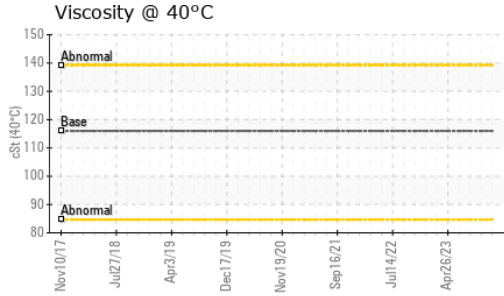
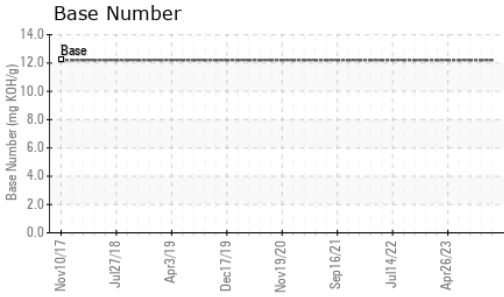
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		93	71	73
Barium	ppm	ASTM D5185(m)		<1	<1	0
Molybdenum	ppm	ASTM D5185(m)		<1	<1	3
Manganese	ppm	ASTM D5185(m)		0	0	<1
Magnesium	ppm	ASTM D5185(m)		14	20	36
Calcium	ppm	ASTM D5185(m)	3780	2261	2266	2221
Phosphorus	ppm	ASTM D5185(m)	1370	980	956	957
Zinc	ppm	ASTM D5185(m)	1500	1208	1166	1130
Sulfur	ppm	ASTM D5185(m)	3800	2903	2896	2849
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	6	6	6
Sodium	ppm	ASTM D5185(m)	>192	12	19	18
Potassium	ppm	ASTM D5185(m)	>20	7	9	9

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>6	0.3	0.4	0.3
Nitration	Abs/cm	ASTM D7624*	>20	9.1	10.0	9.7
Sulfation	Abs./1mm	ASTM D7415*	>30	23.6	25.7	26.1



OIL ANALYSIS REPORT

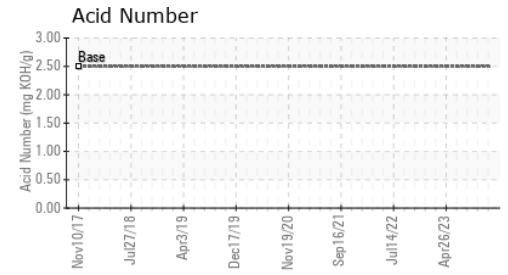
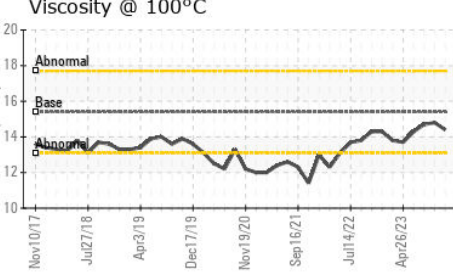
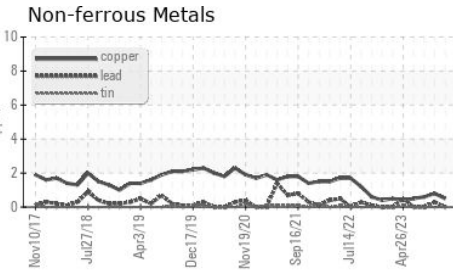
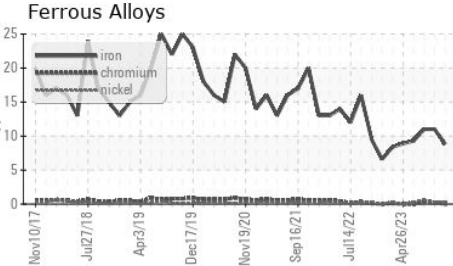


FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	ASTM D7414*	>25	20.1	23.5	23.7
Acid Number (AN)	mg KOH/g	ASTM D974*	2.5	2.84	---	---
Base Number (BN)	mg KOH/g	ASTM D2896*	12.2	5.51	---	---

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	110	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	14.4	14.8	14.7
Viscosity Index (VI)	Scale	ASTM D2270*	140	133	---	---

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0866502 **Received** : 07 Dec 2023
Lab Number : **02601607** **Diagnosed** : 11 Dec 2023
Unique Number : 5694692 **Diagnostician** : Kevin Marson
Test Package : MOB 2 (Additional Tests: KV40, PrtCount, TAN Auto, TAN Man, VI, Visual)
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.

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