



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	MARGINAL
FLUID CONDITION	NORMAL

Machine Id
CUMMINS 166
Component
Diesel Engine
Fluid
ESSO XD-3 EXTRA 15W40 (--- GAL)

RECOMMENDATION

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0866508	WC0866537	WC0888975
Sample Date		Client Info		24 Jun 2024	21 May 2024	10 May 2024
Machine Age	kms	Client Info		0	0	0
Oil Age	kms	Client Info		9108	1272	8634
Filter Age	kms	Client Info		9108	1272	8634
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				MARGINAL	ABNORMAL	SEVERE

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>90	10	5	18
Chromium	ppm	ASTM D5185(m)	>20	<1	0	<1
Nickel	ppm	ASTM D5185(m)	>2	<1	0	0
Titanium	ppm	ASTM D5185(m)	>2	0	0	0
Silver	ppm	ASTM D5185(m)	>2	0	0	0
Aluminum	ppm	ASTM D5185(m)	>20	1	<1	1
Lead	ppm	ASTM D5185(m)	>40	0	0	0
Copper	ppm	ASTM D5185(m)	>330	<1	<1	<1
Tin	ppm	ASTM D5185(m)	>15	0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0

CONTAMINATION

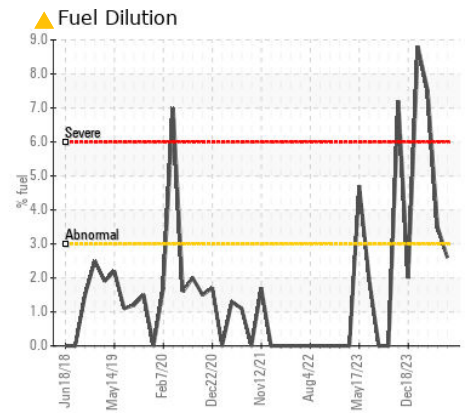
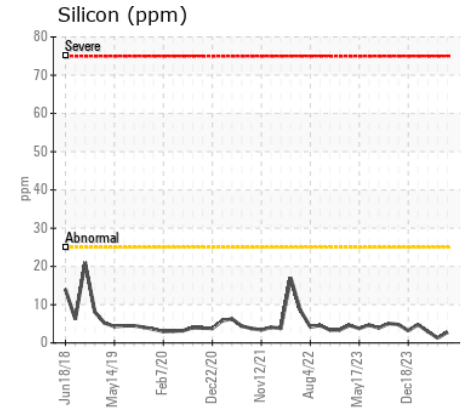
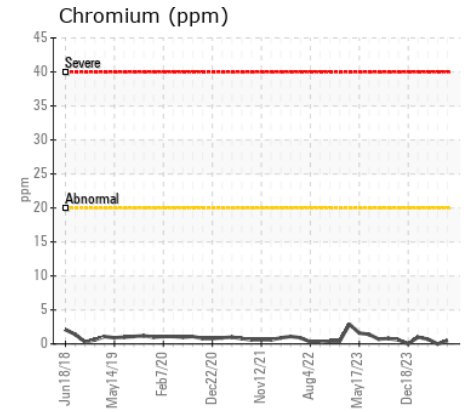
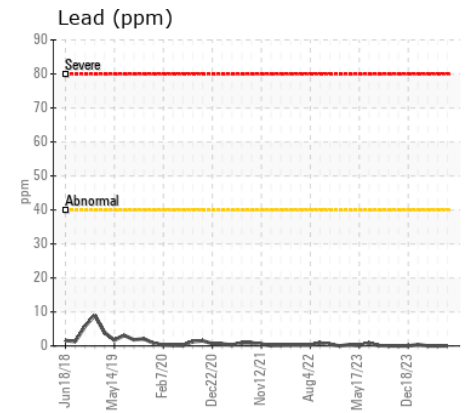
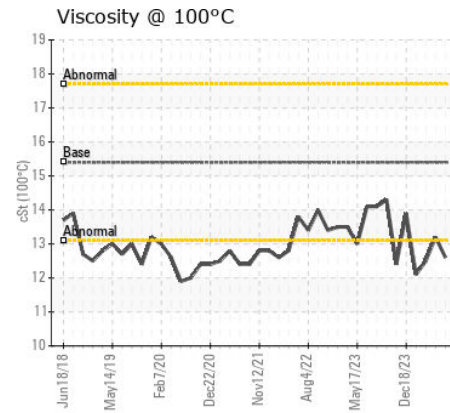
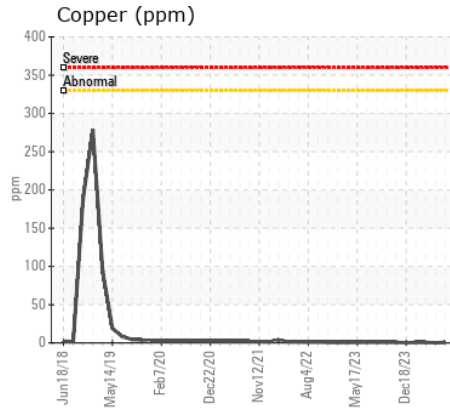
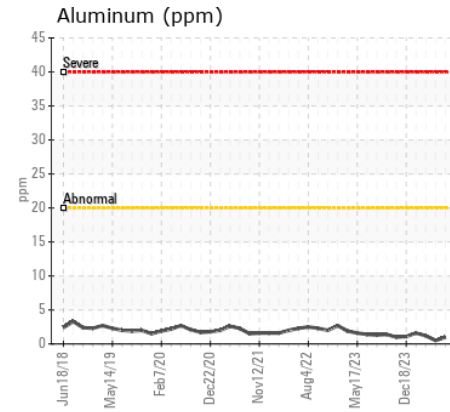
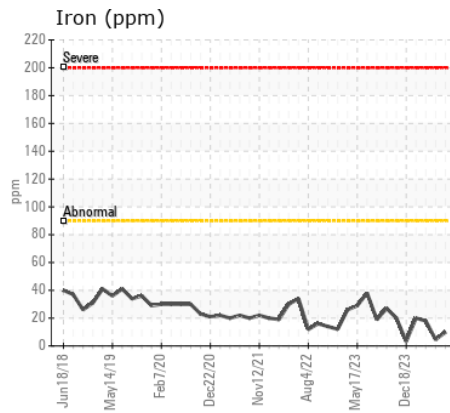
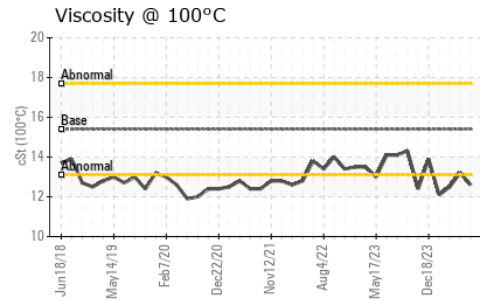
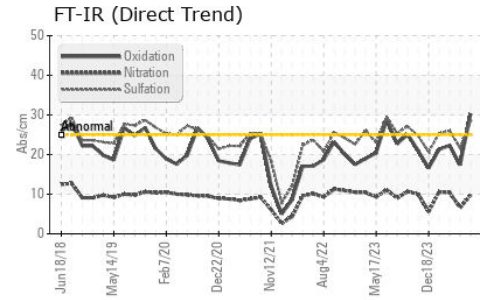
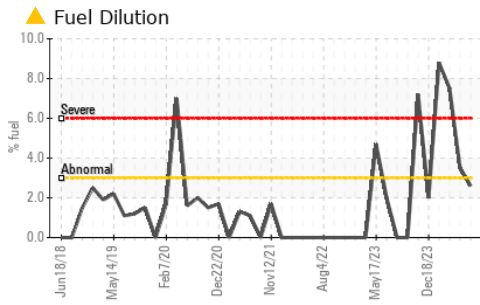
Light fuel dilution occurring. No other contaminants were detected in the oil.

Silicon	ppm	ASTM D5185(m)	>25	3	1	3
Potassium	ppm	ASTM D5185(m)	>20	5	6	6
Fuel	%	ASTM D7593*	>3.0	▲ 2.6	▲ 3.5	▲ 7.5
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>6	0.7	0.2	0.9
Nitration	Abs/cm	ASTM D7624*	>20	9.8	6.6	10.4
Sulfation	Abs/.1mm	ASTM D7415*	>30	28.3	21.6	26.0
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

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

Sodium	ppm	ASTM D5185(m)	>192	3	2	4
Boron	ppm	ASTM D5185(m)		77	139	68
Barium	ppm	ASTM D5185(m)		0	0	0
Molybdenum	ppm	ASTM D5185(m)		<1	0	0
Manganese	ppm	ASTM D5185(m)		0	0	0
Magnesium	ppm	ASTM D5185(m)		12	11	15
Calcium	ppm	ASTM D5185(m)	3780	2100	2141	2048
Phosphorus	ppm	ASTM D5185(m)	1370	898	939	903
Zinc	ppm	ASTM D5185(m)	1500	1078	1099	1081
Sulfur	ppm	ASTM D5185(m)	3800	2730	2824	2681
Oxidation	Abs/.1mm	ASTM D7414*	>25	30.3	17.4	22.3
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	12.6	13.2	▲ 12.5



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0866508
Lab Number : 02645387
Unique Number : 5802926
Test Package : MOB 1 (Additional Tests: PercentFuel)

Received : 04 Jul 2024
Tested : 05 Jul 2024
Diagnosed : 05 Jul 2024 - Kevin Marson

CITY OF THUNDER BAY
 AUTO MAINTENANCE STORES, 570 FORT WILLIAM ROAD
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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.