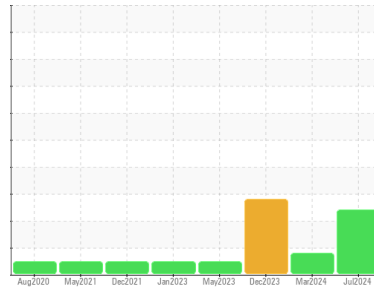




OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Area
3000 series
 Machine Id
Freightliner 3224
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (26 LTR)

DIAGNOSIS

Recommendation
 We advise that you check the fuel injection system. 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
 There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition
 Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			WC0958801	WC0899647	WC0886691
Sample Date	Client Info			07 Jul 2024	10 Mar 2024	16 Dec 2023
Machine Age	mls	Client Info		212110	225862	202507
Oil Age	mls	Client Info		9603	20277	10817
Oil Changed	Client Info			Changed	Changed	Changed
Sample Status				SEVERE	ABNORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
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)	>75	69	▲ 78	27
Chromium	ppm	ASTM D5185(m)	>5	4	3	2
Nickel	ppm	ASTM D5185(m)	>4	<1	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	<1	0	4
Silver	ppm	ASTM D5185(m)	>2	<1	0	0
Aluminum	ppm	ASTM D5185(m)	>15	4	7	4
Lead	ppm	ASTM D5185(m)	>25	3	4	4
Copper	ppm	ASTM D5185(m)	>100	108	9	135
Tin	ppm	ASTM D5185(m)	>4	0	<1	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

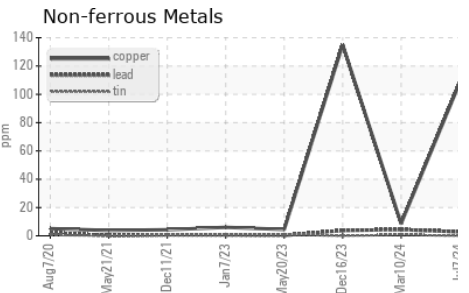
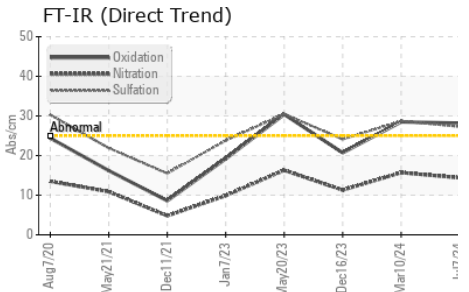
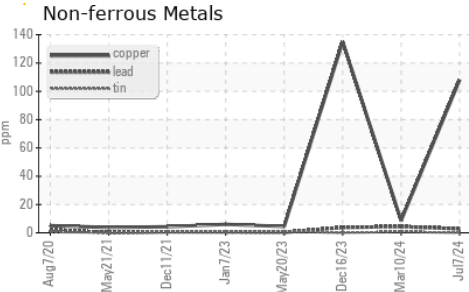
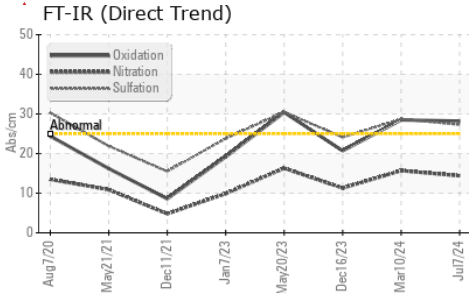
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	3	3	● 87
Barium	ppm	ASTM D5185(m)	0	<1	0	<1
Molybdenum	ppm	ASTM D5185(m)	60	60	66	● 16
Manganese	ppm	ASTM D5185(m)	0	<1	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	951	1019	● 117
Calcium	ppm	ASTM D5185(m)	1070	1121	1196	● 2062
Phosphorus	ppm	ASTM D5185(m)	1150	989	1040	976
Zinc	ppm	ASTM D5185(m)	1270	1207	1284	1137
Sulfur	ppm	ASTM D5185(m)	2060	2009	2520	2911
Lithium	ppm	ASTM D5185(m)		<1	<1	2

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	5	8	4
Sodium	ppm	ASTM D5185(m)		7	10	26
Potassium	ppm	ASTM D5185(m)	>20	4	16	27
Fuel	%	ASTM D7593*	>3.0	▲ 8.2	<1.0	▲ 1.4

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>6	1.6	0.9	0.6
Nitration	Abs/cm	ASTM D7624*	>20	14.4	15.7	11.3
Sulfation	Abs.1mm	ASTM D7415*	>30	27.3	28.7	24.1



OIL ANALYSIS REPORT

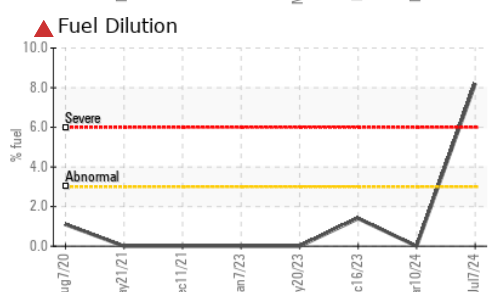
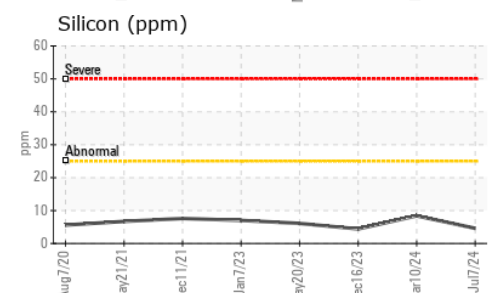
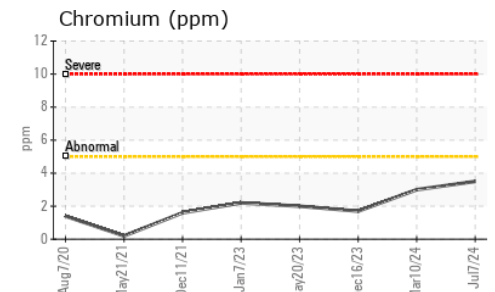
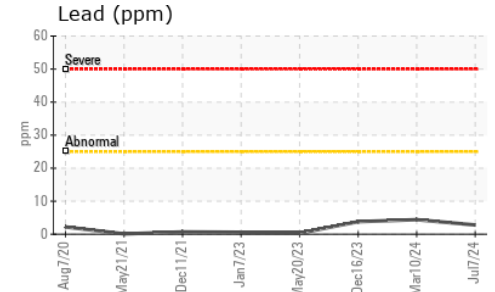
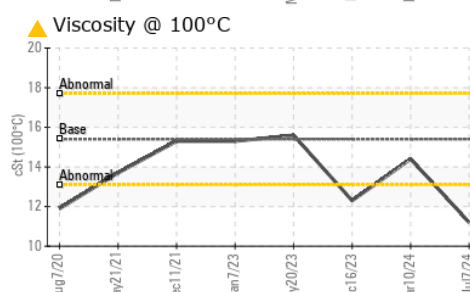
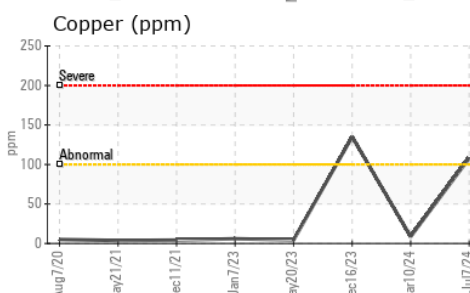
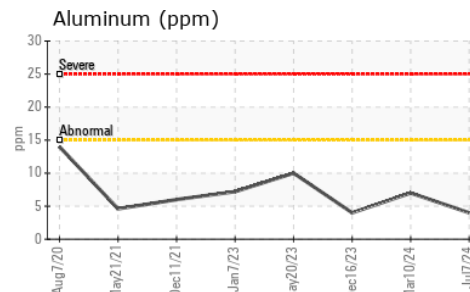
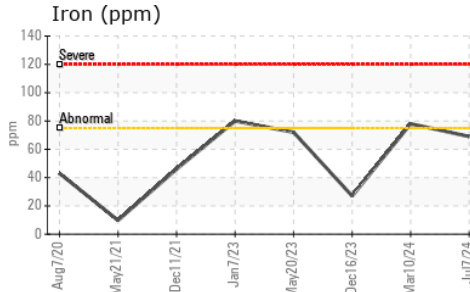


FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	ASTM D7414*	>25	28.2	28.5	20.7

VISUAL	method	limit/base	current	history1	history2	
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 @ 100°C	cSt	ASTM D7279(m)	15.4	▲ 11.2	14.4	▲ 12.3

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0958801
Lab Number : 02646543
Unique Number : 5812095
Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel)

MANITOU LIN TRANSPORT (GARAGE)
 1335 SHAWSON DRIVE
 MISSISSAUGA, ON
 CA L4W 1C4
 Contact: Travis Spence
 tspence@manitoulintransport.com

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.

F: (905)564-6361