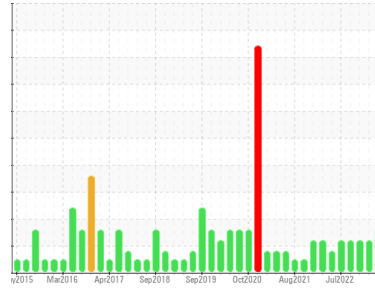




OIL ANALYSIS REPORT

Sample Rating Trend



SOOT



Area
55000 Series
 Machine Id
Toronto Freightliner 55016

Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (40 LTR)

DIAGNOSIS

Recommendation

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 moderate amount of fuel present in the oil. Light concentration of carbon/soot present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition

The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0828180	WC0794937	WC0769932
Sample Date	Client Info		24 Jul 2023	13 Apr 2023	24 Jan 2023
Machine Age	mls	Client Info	802996	777732	765768
Oil Age	mls	Client Info	15009	11964	13661
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			ABNORMAL	ABNORMAL	ABNORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >200	43	17	23
Chromium	ppm	ASTM D5185(m) >10	3	1	2
Nickel	ppm	ASTM D5185(m) >4	<1	<1	<1
Titanium	ppm	ASTM D5185(m) >2	0	0	<1
Silver	ppm	ASTM D5185(m) >2	0	0	0
Aluminum	ppm	ASTM D5185(m) >30	5	3	4
Lead	ppm	ASTM D5185(m) >30	2	<1	<1
Copper	ppm	ASTM D5185(m) >30	2	<1	<1
Tin	ppm	ASTM D5185(m) >4	1	<1	<1
Antimony	ppm	ASTM D5185(m)	0	<1	<1
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	6	8	1
Barium	ppm	ASTM D5185(m) 0	0	0	0
Molybdenum	ppm	ASTM D5185(m) 60	53	59	61
Manganese	ppm	ASTM D5185(m) 0	<1	<1	<1
Magnesium	ppm	ASTM D5185(m) 1010	876	907	996
Calcium	ppm	ASTM D5185(m) 1070	1055	1070	1106
Phosphorus	ppm	ASTM D5185(m) 1150	988	1061	1101
Zinc	ppm	ASTM D5185(m) 1270	1123	1143	1214
Sulfur	ppm	ASTM D5185(m) 2060	2412	2637	2686
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >30	3	4	4
Sodium	ppm	ASTM D5185(m)	92	34	22
Potassium	ppm	ASTM D5185(m) >20	1	2	1
Fuel	%	ASTM D7593* >3.0	▲ 4.3	▲ 4.1	▲ 3
Glycol	%	ASTM D7922*	0.0	NEG	NEG

INFRA-RED

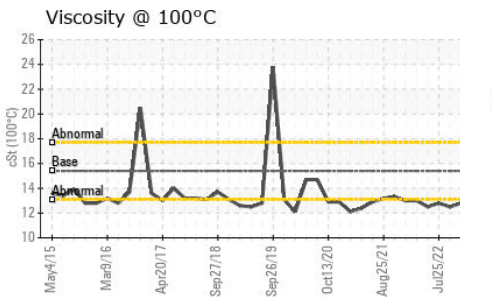
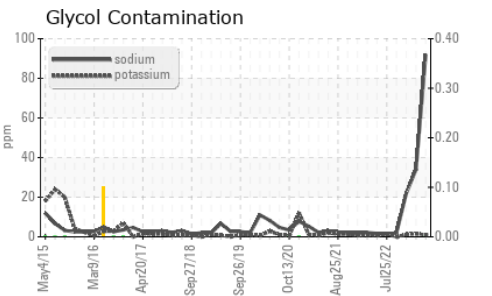
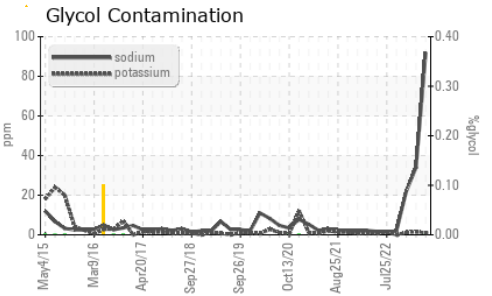
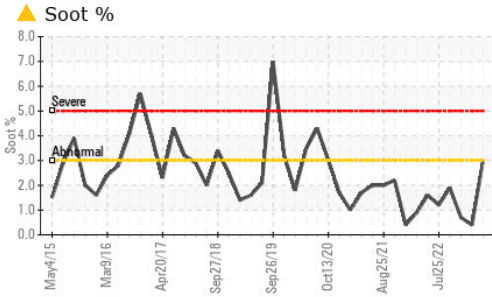
	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844* >3	▲ 3	0.4	0.7
Nitration	Abs/cm	ASTM D7624* >20	8.5	6.9	7.4
Sulfation	Abs/.1mm	ASTM D7415* >30	24.6	18.8	21.1

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414* >25	14.4	13.8	14.5



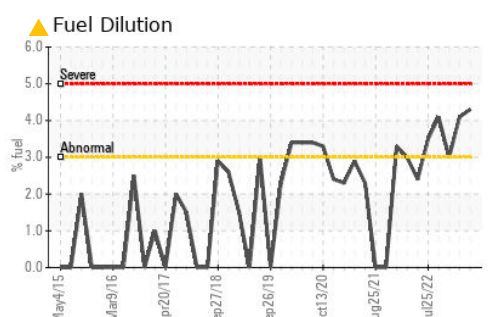
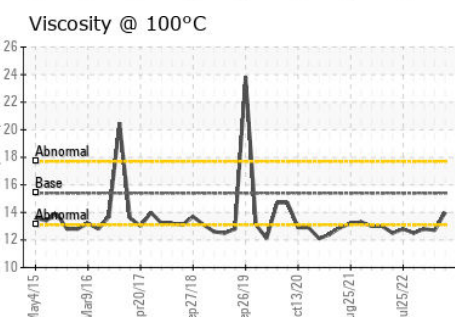
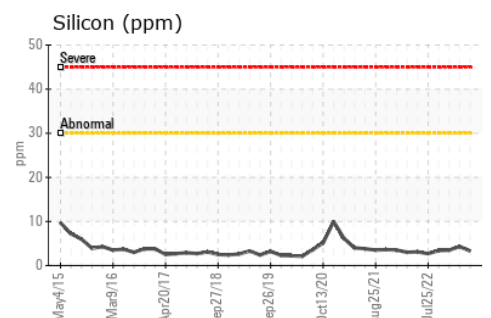
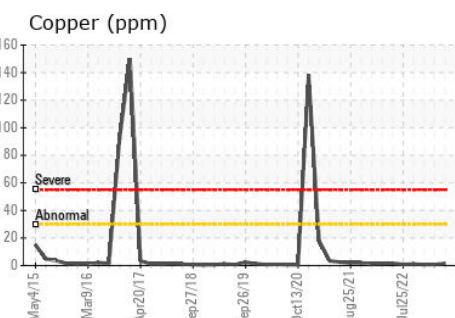
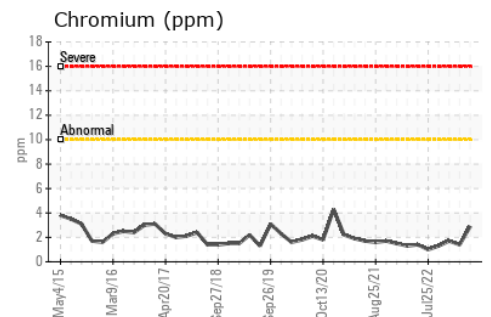
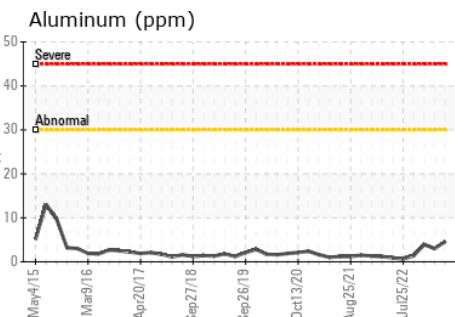
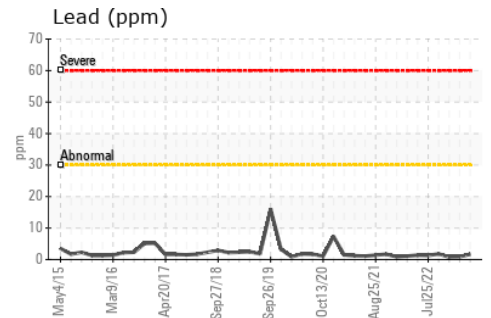
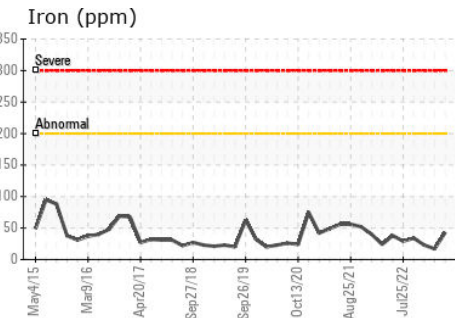
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	14.0	12.7

GRAPHS



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0828180 **Received** : 16 Aug 2023
Lab Number : 02576127 **Diagnosed** : 17 Aug 2023
Unique Number : 5629187 **Diagnostician** : Wes Davis
Test Package : MOB 1 (Additional Tests: FuelDilution, Glycol, PercentFuel)

MANITOU LIN TRANSPORT
 75 MUMFORD ROAD
 LIVELY, ON
 CA P3Y 1L1
 Contact: Todd Smith
 tosmith@manitoulintransport.com
 T: (705)562-3302
 F: x:

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.