

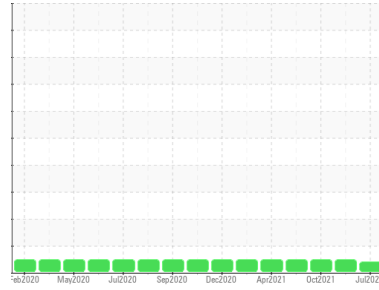


OIL ANALYSIS REPORT

Sample Rating Trend

VISCOSITY

Area
4000 Series
 Machine Id
Navistar 4343
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (16 LTR)



DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. The fluid was specified as PETRO CANADA DURON SHP 15W40, however, a fluid match indicates that this fluid is SAE 30 Diesel Engine Oil. Please confirm the oil type and grade on your next sample.

Wear

All component wear rates are normal.

Contamination

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

Fluid Condition

Viscosity of sample indicates oil is within SAE 30 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0466677	WC0651269	WC0631633
Sample Date	Client Info		18 Jul 2023	26 Jan 2022	21 Oct 2021
Machine Age	mls	Client Info	253396	130613	123830
Oil Age	mls	Client Info	192937	6787	3356
Oil Changed	Client Info		N/A	Changed	Changed
Sample Status			ABNORMAL	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Glycol	WC Method		NEG	0.0	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >100	26	19	7
Chromium	ppm	ASTM D5185(m) >20	<1	<1	<1
Nickel	ppm	ASTM D5185(m) >4	<1	<1	0
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m) >3	0	0	<1
Aluminum	ppm	ASTM D5185(m) >20	4	16	6
Lead	ppm	ASTM D5185(m) >40	0	0	0
Copper	ppm	ASTM D5185(m) >330	2	1	1
Tin	ppm	ASTM D5185(m) >15	0	<1	<1
Antimony	ppm	ASTM D5185(m)	0	<1	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	26	5	11
Barium	ppm	ASTM D5185(m) 0	0	0	0
Molybdenum	ppm	ASTM D5185(m) 60	12	60	60
Manganese	ppm	ASTM D5185(m) 0	<1	<1	<1
Magnesium	ppm	ASTM D5185(m) 1010	156	1013	984
Calcium	ppm	ASTM D5185(m) 1070	2168	1060	1083
Phosphorus	ppm	ASTM D5185(m) 1150	1067	1072	1103
Zinc	ppm	ASTM D5185(m) 1270	1204	1226	1257
Sulfur	ppm	ASTM D5185(m) 2060	3192	2644	2784
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >25	4	9	4
Sodium	ppm	ASTM D5185(m)	6	12	3
Potassium	ppm	ASTM D5185(m) >20	4	12	8
Fuel	%	ASTM D7593* >5	1.3	<1.0	<1.0

INFRA-RED

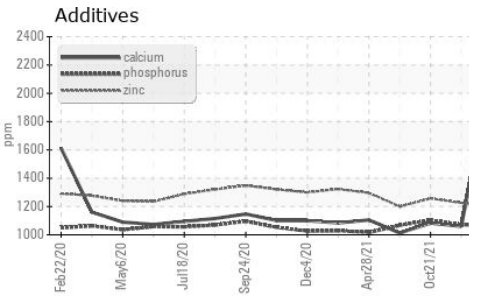
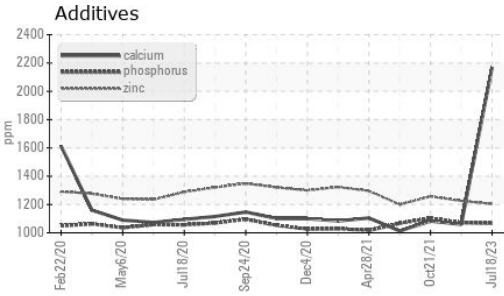
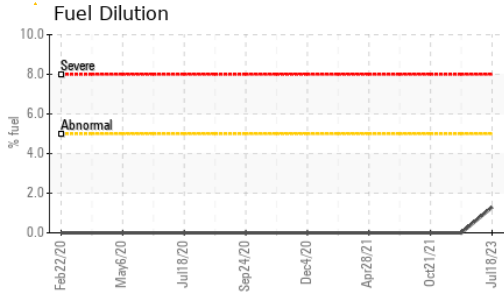
	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844* >3	0.8	0.4	0
Nitration	Abs/cm	ASTM D7624* >20	12.4	7.6	6.3
Sulfation	Abs/.1mm	ASTM D7415* >30	26.9	19.8	19.4

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414* >25	19.6	14.4	14.4



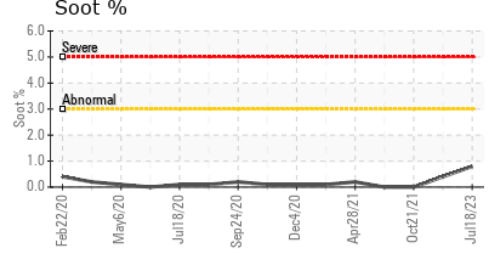
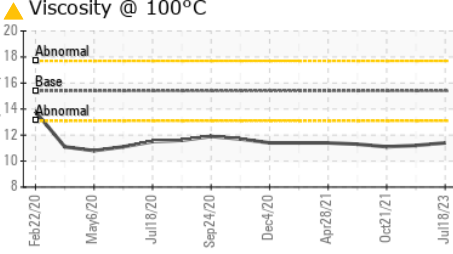
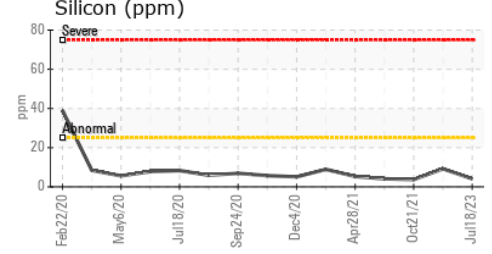
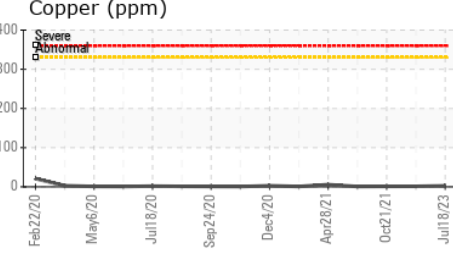
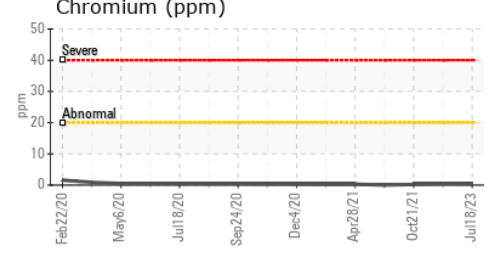
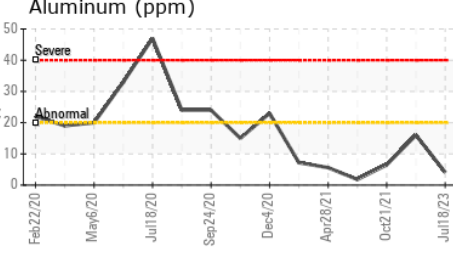
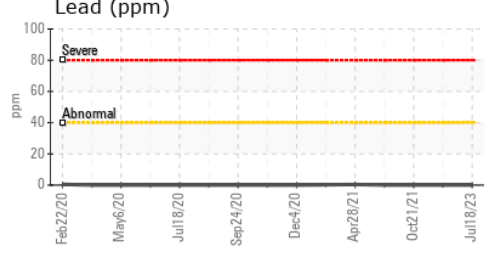
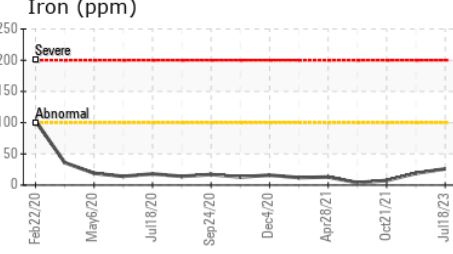
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	VLITE	---
Yellow Metal	scalar	Visual*	NONE	NONE	---
Precipitate	scalar	Visual*	NONE	NONE	---
Silt	scalar	Visual*	NONE	NONE	---
Debris	scalar	Visual*	NONE	VLITE	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---
Appearance	scalar	Visual*	NORML	NORML	---
Odor	scalar	Visual*	NORML	NORML	NORML
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)	▲ 11.4	11.2	11.1

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0466677 **Received** : 16 Aug 2023
Lab Number : 02576120 **Diagnosed** : 18 Aug 2023
Unique Number : 5629180 **Diagnostician** : Kevin Marson
Test Package : MOB 1 (Additional Tests: BottomAnalysis, FILTERPATCH, FuelDilution, PercentFuel, Visual)

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.