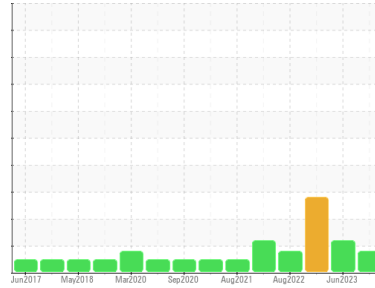




OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Area
4000 Series
 Machine Id
Navistar 4271
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (16 LTR)

DIAGNOSIS

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.

Wear

All component wear rates are normal.

Contamination

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

Fluid Condition

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

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0864512	WC0817346	WC0771298
Sample Date	Client Info		08 Oct 2023	16 Jun 2023	11 Feb 2023
Machine Age	mls	Client Info	210357	200820	191508
Oil Age	mls	Client Info	9537	12326	3050
Oil Changed	Client Info		Changed	Changed	Not Changed
Sample Status			MARGINAL	ABNORMAL	ABNORMAL

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) >130	27	67	12
Chromium	ppm	ASTM D5185(m) >10	<1	3	<1
Nickel	ppm	ASTM D5185(m) >4	0	<1	<1
Titanium	ppm	ASTM D5185(m) >2	0	<1	<1
Silver	ppm	ASTM D5185(m) >2	<1	0	0
Aluminum	ppm	ASTM D5185(m) >20	7	11	4
Lead	ppm	ASTM D5185(m) >20	0	0	0
Copper	ppm	ASTM D5185(m) >125	1	2	<1
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	6	37	▲ 73
Barium	ppm	ASTM D5185(m) 0	<1	0	0
Molybdenum	ppm	ASTM D5185(m) 60	56	10	▲ 9
Manganese	ppm	ASTM D5185(m) 0	0	<1	<1
Magnesium	ppm	ASTM D5185(m) 1010	940	757	732
Calcium	ppm	ASTM D5185(m) 1070	1067	1283	1316
Phosphorus	ppm	ASTM D5185(m) 1150	967	733	▲ 777
Zinc	ppm	ASTM D5185(m) 1270	1164	795	▲ 790
Sulfur	ppm	ASTM D5185(m) 2060	2478	2394	2568
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >25	4	8	6
Sodium	ppm	ASTM D5185(m)	2	4	3
Potassium	ppm	ASTM D5185(m) >20	3	9	4
Fuel	%	ASTM D7593* >3.0	▲ 2.5	▲ 4.2	▲ 3.4

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844* >6	0.5	0.8	0.2
Nitration	Abs/cm	ASTM D7624* >20	9.2	12.7	8.6
Sulfation	Abs/.1mm	ASTM D7415* >30	21.5	25.3	20.5

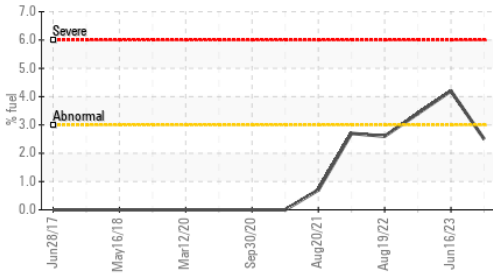
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414* >25	17.9	22.8	14.1

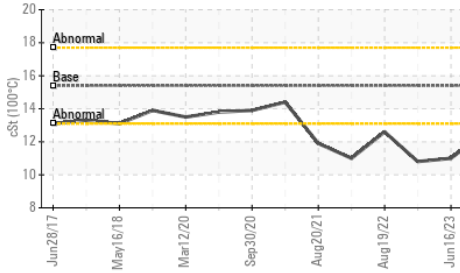


OIL ANALYSIS REPORT

▲ Fuel Dilution



Viscosity @ 100°C

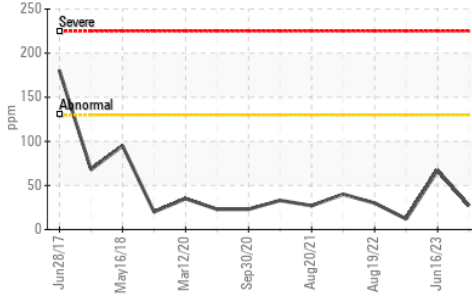


VISUAL	method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG

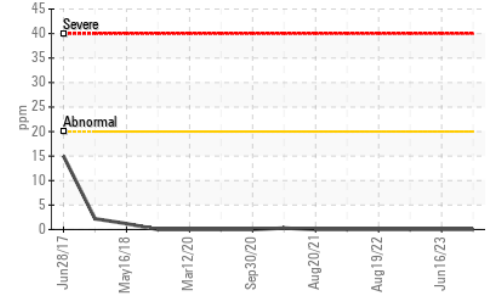
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	12.5	▲ 11.0 ▲ 10.8

GRAPHS

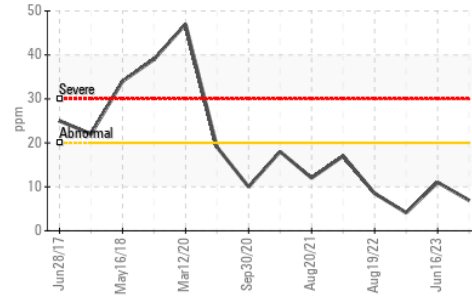
Iron (ppm)



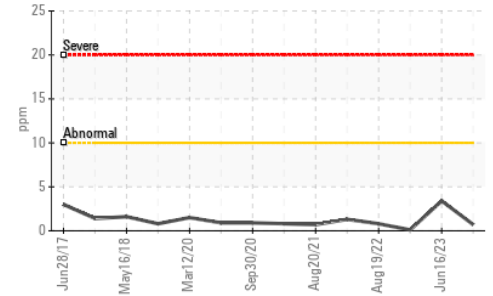
Lead (ppm)



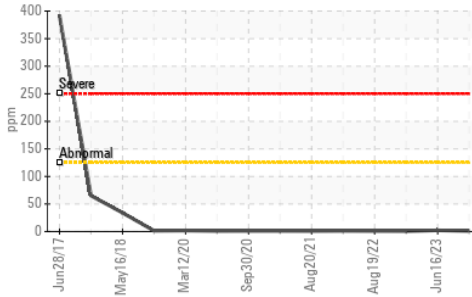
Aluminum (ppm)



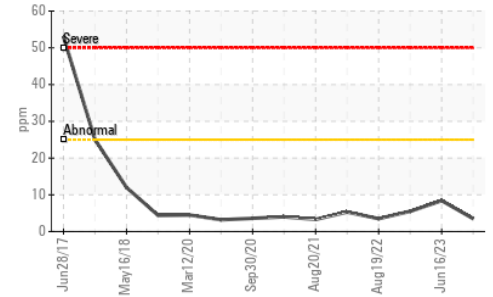
Chromium (ppm)



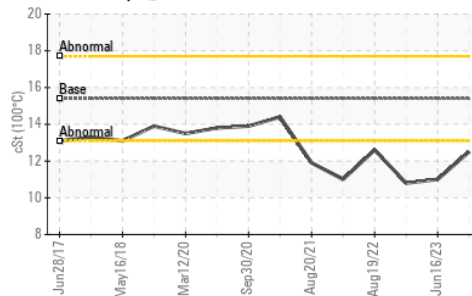
Copper (ppm)



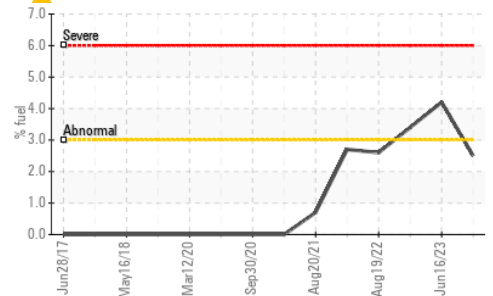
Silicon (ppm)



Viscosity @ 100°C



▲ Fuel Dilution



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **MANITOU LIN TRANSPORT (GARAGE)**
Sample No. : WC0864512 **Received** : 11 Oct 2023 1335 SHAWSON DRIVE
Lab Number : 02588143 **Diagnosed** : 12 Oct 2023 MISSISSAUGA, ON
Unique Number : 5657209 **Diagnostician** : Wes Davis CA L4W 1C4
Test Package : MOB 1 (Additional Tests: PercentFuel) Contact: Travis Spence

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.

tspence@manitoulintransport.com

T:

F: (905)564-6361