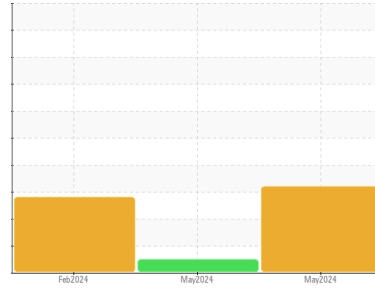


OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION



Machine Id
738600
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 10W30 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. The oil change at the time of sampling has been noted. We recommend you service the filters on this component. Resample at the next service interval to monitor. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

Wear

Cylinder, crank, or cam shaft wear is indicated.

Contamination

There is an abnormal amount of solids and carbon present in the oil.

Fluid Condition

The oil viscosity is higher than normal. The BN level is low.

SAMPLE INFORMATION

method	limit/base	current	history1	history2	
Sample Number	Client Info	PCA0125190	PCA0125244	PCA0119048	
Sample Date	Client Info	24 May 2024	11 May 2024	17 Feb 2024	
Machine Age	mls	Client Info	289651	282999	232864
Oil Age	mls	Client Info	0	282999	232864
Oil Changed	Client Info	Changed	Not Changd	Changed	
Sample Status		ABNORMAL	NORMAL	ABNORMAL	

CONTAMINATION

method	limit/base	current	history1	history2	
Water	WC Method	>0.2	NEG	NEG	NEG
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185m	>100	▲ 205	81	▲ 111
Chromium	ppm	ASTM D5185m	>20	3	2	4
Nickel	ppm	ASTM D5185m	>4	<1	<1	<1
Titanium	ppm	ASTM D5185m		22	21	1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	6	4	10
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	36	5	9
Tin	ppm	ASTM D5185m	>15	2	<1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		0	<1	0

ADDITIVES

method	limit/base	current	history1	history2		
Boron	ppm	ASTM D5185m	2	11	10	2
Barium	ppm	ASTM D5185m	0	<1	1	0
Molybdenum	ppm	ASTM D5185m	50	52	53	67
Manganese	ppm	ASTM D5185m	0	5	<1	2
Magnesium	ppm	ASTM D5185m	950	880	828	1079
Calcium	ppm	ASTM D5185m	1050	1349	1287	1240
Phosphorus	ppm	ASTM D5185m	995	1158	1083	1243
Zinc	ppm	ASTM D5185m	1180	1315	1240	1513
Sulfur	ppm	ASTM D5185m	2600	3150	2705	2649

CONTAMINANTS

method	limit/base	current	history1	history2		
Silicon	ppm	ASTM D5185m	>25	10	8	11
Sodium	ppm	ASTM D5185m		4	<1	3
Potassium	ppm	ASTM D5185m	>20	7	7	13
Fuel	%	ASTM D3524	>5	<1.0	<1.0	<1.0

INFRA-RED

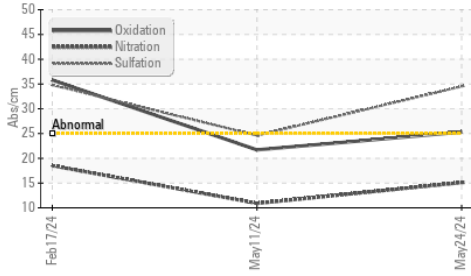
method	limit/base	current	history1	history2		
Soot %	%	*ASTM D7844	>3	▲ 4.5	1.2	▲ 3.5
Nitration	Abs/cm	*ASTM D7624	>20	15.1	10.9	18.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	34.5	24.6	34.8

FLUID DEGRADATION

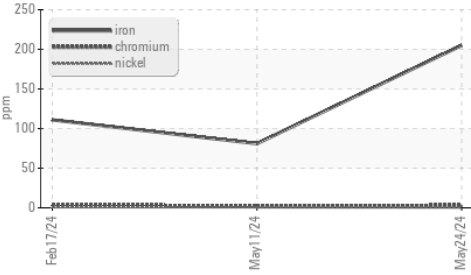
method	limit/base	current	history1	history2		
Oxidation	Abs/.1mm	*ASTM D7414	>25	25.3	21.7	35.8
Base Number (BN)	mg KOH/g	ASTM D2896		▲ 1.3	6.5	▲ 1.5

OIL ANALYSIS REPORT

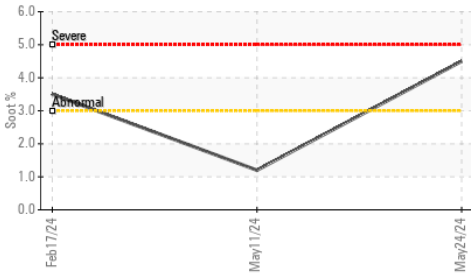
▲ FT-IR (Direct Trend)



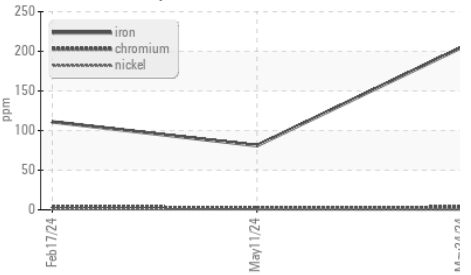
▲ Ferrous Alloys



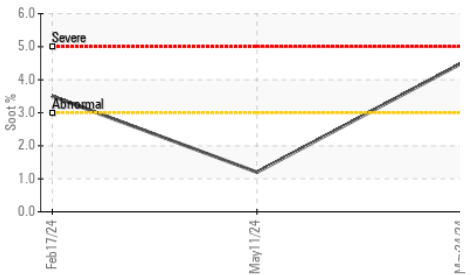
▲ Soot %



▲ Ferrous Alloys



▲ Soot %

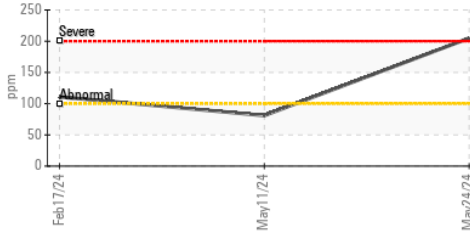


PARAMETER	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

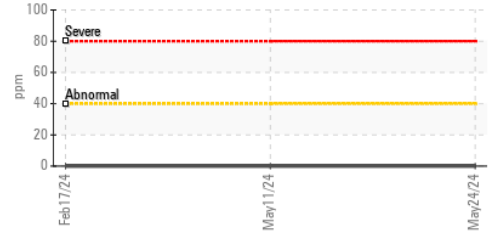
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00 ▲ 13.0	11.6	12.7

GRAPHS

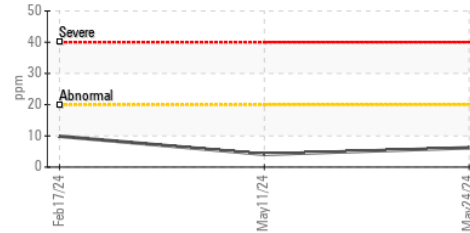
▲ Iron (ppm)



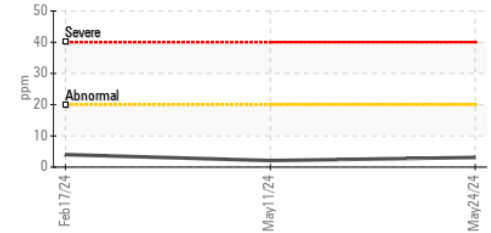
▲ Lead (ppm)



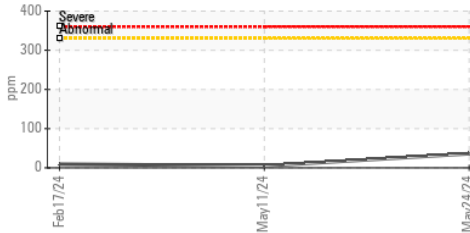
▲ Aluminum (ppm)



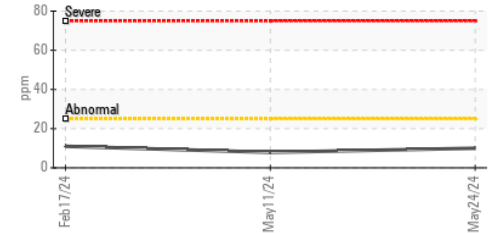
▲ Chromium (ppm)



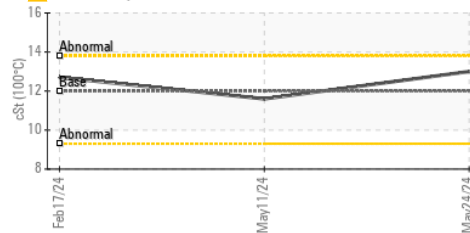
▲ Copper (ppm)



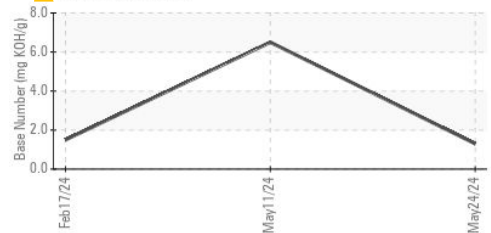
▲ Silicon (ppm)



▲ Viscosity @ 100°C



▲ Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0125190 **Received** : 05 Jun 2024
Lab Number : 06199833 **Tested** : 06 Jun 2024
Unique Number : 11061956 **Diagnosed** : 06 Jun 2024 - Jonathan Hester
Test Package : MOB 1 (Additional Tests: FuelDilution, TBN)

MILLER TRUCK LEASING #118
 2196 BENNETT ROAD
 PHILADELPHIA, PA
 US 19116
 Contact: ROSTY VITER
 rviter@millertransgroup.com
 T: (215)552-9832
 F: (215)552-9892

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)