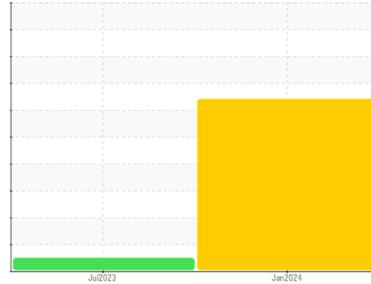




Machine Id
709
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON HP 15W40 (--- GAL)



DIAGNOSIS

Recommendation
 We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
 Cylinder, crank, or cam shaft wear is indicated.

Contamination
 Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition
 The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	PCA0107194	PCA0066407	---
Sample Date	Client Info	24 Jan 2024	11 Jul 2023	---
Machine Age	hrs	6024	5294	---
Oil Age	hrs	5293	741	---
Oil Changed	Client Info	Changed	Changed	---
Sample Status		SEVERE	NORMAL	---

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<1.0	<1.0	---
Water	WC Method >0.2	NEG	NEG	---
Glycol	WC Method	NEG	NEG	---

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	▲ 108	101	---
Chromium	ppm ASTM D5185m >20	6	3	---
Nickel	ppm ASTM D5185m >4	0	<1	---
Titanium	ppm ASTM D5185m	1	<1	---
Silver	ppm ASTM D5185m >3	0	0	---
Aluminum	ppm ASTM D5185m >20	▲ 29	10	---
Lead	ppm ASTM D5185m >40	13	12	---
Copper	ppm ASTM D5185m >330	8	5	---
Tin	ppm ASTM D5185m >15	3	2	---
Vanadium	ppm ASTM D5185m	0	<1	---
Cadmium	ppm ASTM D5185m	0	0	---

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m	2	11	---
Barium	ppm ASTM D5185m	1	0	---
Molybdenum	ppm ASTM D5185m	64	67	---
Manganese	ppm ASTM D5185m	2	1	---
Magnesium	ppm ASTM D5185m	1104	1093	---
Calcium	ppm ASTM D5185m	1374	1379	---
Phosphorus	ppm ASTM D5185m	1141	1116	---
Zinc	ppm ASTM D5185m	1449	1417	---
Sulfur	ppm ASTM D5185m	3127	3553	---

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	● 97	20	---
Sodium	ppm ASTM D5185m	8	4	---
Potassium	ppm ASTM D5185m >20	24	1	---

INFRA-RED

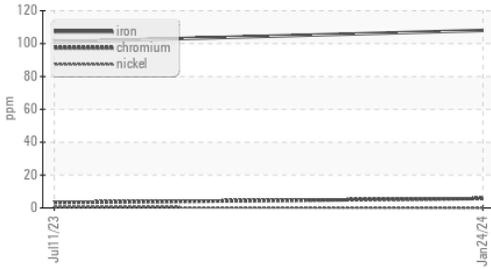
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.5	0.7	---
Nitration	Abs/cm *ASTM D7624 >20	12.5	12.9	---
Sulfation	Abs/.1mm *ASTM D7415 >30	26.9	26.2	---

FLUID DEGRADATION

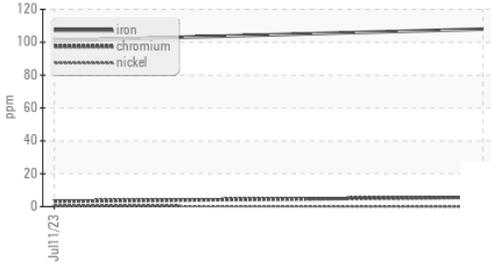
method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	23.7	23.5	---
Base Number (BN)	mg KOH/g ASTM D2896 9.8	5.8	6.3	---

OIL ANALYSIS REPORT

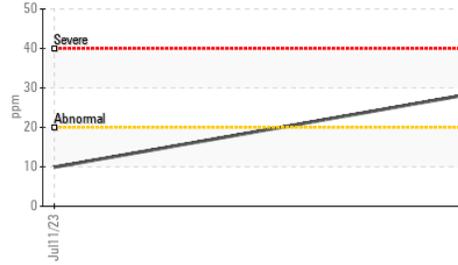
▲ Ferrous Alloys



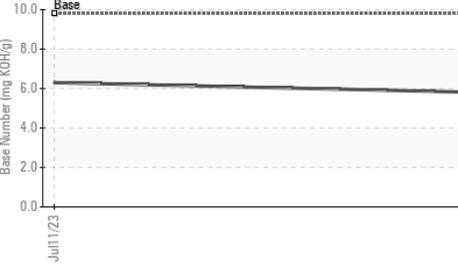
▲ Ferrous Alloys



▲ Aluminum (ppm)



Base Number



Viscosity @ 100°C

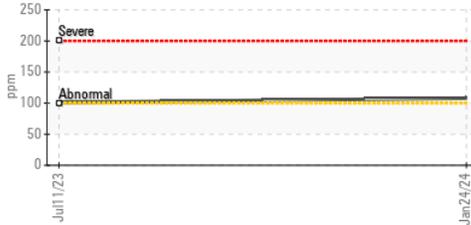


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar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

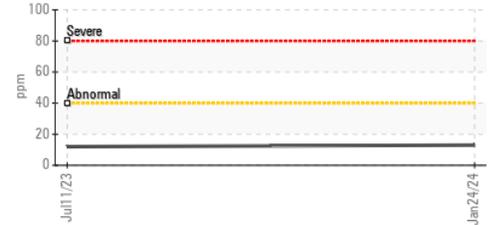
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.6	13.8	13.9

GRAPHS

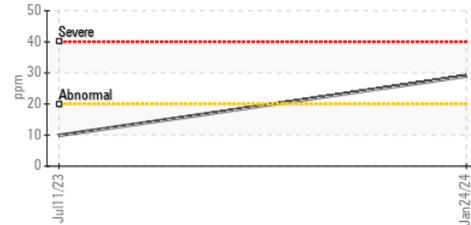
▲ Iron (ppm)



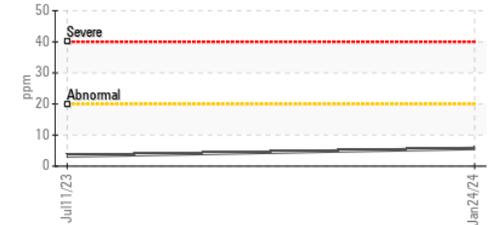
Lead (ppm)



▲ Aluminum (ppm)



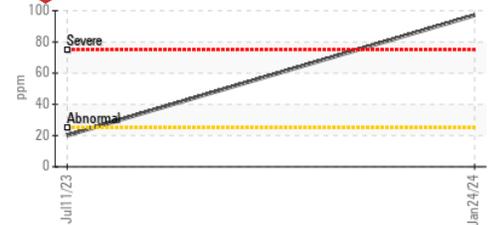
Chromium (ppm)



Copper (ppm)



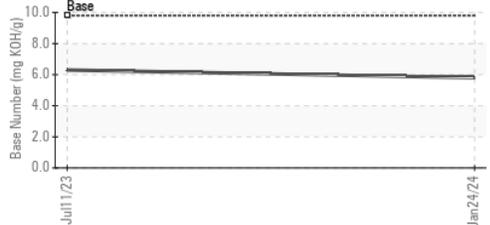
◆ Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0107194 **Recieved** : 26 Jan 2024
Lab Number : 06072082 **Diagnosed** : 30 Jan 2024
Unique Number : 10848759 **Diagnostician** : Jonathan Hester
Test Package : MOB 1 (Additional Tests: TBN)

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)

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