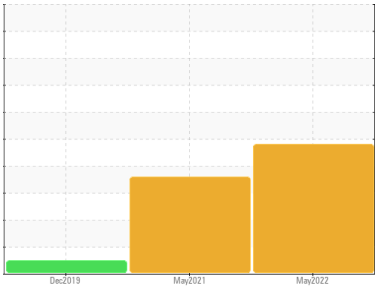
OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Area
KEMP QUARRIES / PRYOR STONE [57093]
Machine Id
3267
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. 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. (Customer Sample Comment: PM performed. Engine oil sample taken, and all filters changed.)

Wear

All component wear rates are normal.

Contamination

There is a very high amount of fuel present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0037905**	PCA0037638	PCA38411015
Sample Date		Client Info		**04 May 2022**	08 May 2021	23 Dec 2019
Machine Age	hrs	Client Info		**2709**	2391	1565
Oil Age	hrs	Client Info		**318**	331	890
Oil Changed		Client Info		**Changed**	Changed	N/A
Sample Status				**SEVERE**	ABNORMAL	NORMAL

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**44**	57	18
Chromium	ppm	ASTM D5185m	>20	**3**	5	1
Nickel	ppm	ASTM D5185m	>4	**2**	3	1
Titanium	ppm	ASTM D5185m		**<1**	<1	0
Silver	ppm	ASTM D5185m	>3	**<1**	<1	0
Aluminum	ppm	ASTM D5185m	>20	▲ **12**	▲ 12	2
Lead	ppm	ASTM D5185m	>40	**10**	9	3
Copper	ppm	ASTM D5185m	>330	**11**	11	1
Tin	ppm	ASTM D5185m	>15	**1**	2	0
Antimony	ppm	ASTM D5185m		**---**	0	---
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**9**	32	40
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	60	**52**	56	44
Manganese	ppm	ASTM D5185m	0	**<1**	<1	0
Magnesium	ppm	ASTM D5185m	1010	**766**	710	479
Calcium	ppm	ASTM D5185m	1070	**991**	1489	1524
Phosphorus	ppm	ASTM D5185m	1150	**830**	899	825
Zinc	ppm	ASTM D5185m	1270	**959**	1048	854
Sulfur	ppm	ASTM D5185m	2060	**2171**	2395	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	▲ **27**	▲ 49	7
Sodium	ppm	ASTM D5185m		**4**	6	3
Potassium	ppm	ASTM D5185m	>20	**<1**	3	1
Fuel	%	ASTM D3524	>5	⬢ **22.5**	▲ 5.8	---

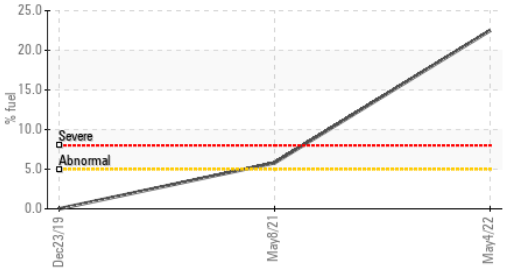
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.1**	0.1	0.38
Nitration	Abs/cm	*ASTM D7624	>20	**9.3**	9.9	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**19.3**	22.4	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**16.4**	21.6	13
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**8.7**	---	---

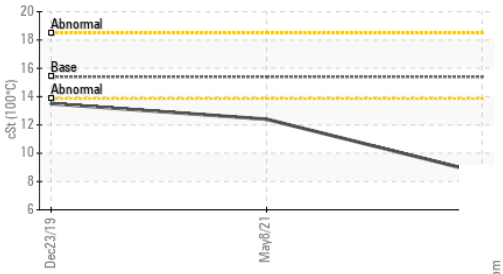
OIL ANALYSIS REPORT

OIL DIAGNOSTICS

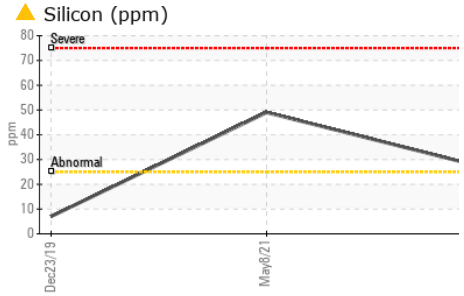
Fuel Dilution



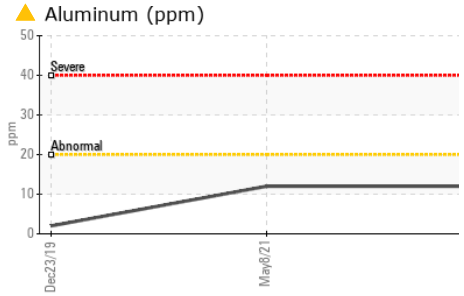
Viscosity @ 100°C



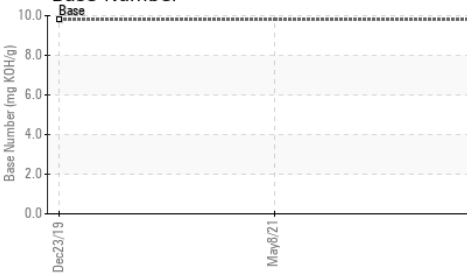
Silicon (ppm)



Aluminum (ppm)



Base Number

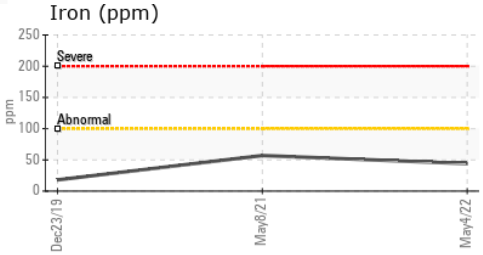


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	---
Silt	scalar	*Visual	NONE	**NONE**	NONE	---
Debris	scalar	*Visual	NONE	**NONE**	NONE	---
Sand/Dirt	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	---

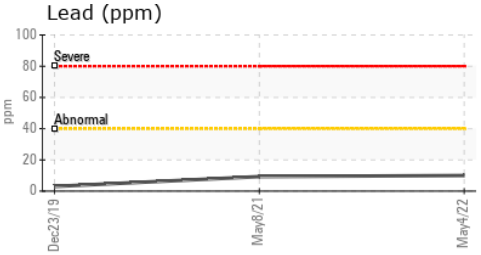
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **8.6**	▲ 12.4	13.5

GRAPHS

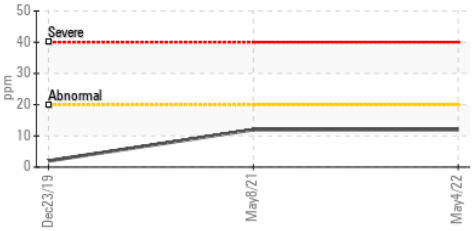
Iron (ppm)



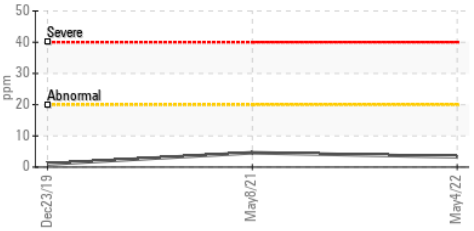
Lead (ppm)



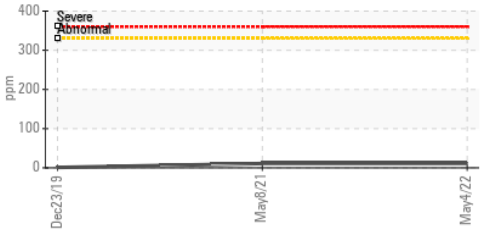
Aluminum (ppm)



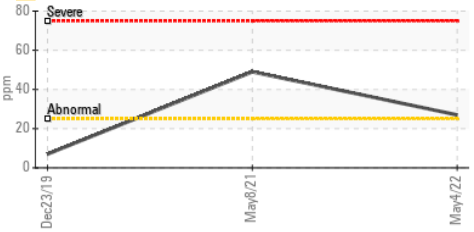
Chromium (ppm)



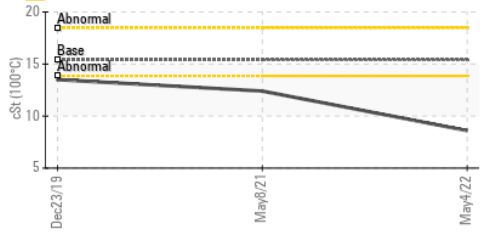
Copper (ppm)



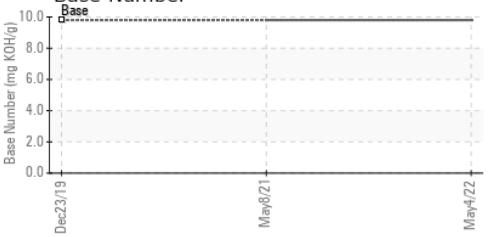
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0037905 **Received** : 13 May 2022
Lab Number : 05544031 **Diagnosed** : 16 May 2022
Unique Number : 9973321 **Diagnostician** : Don Baldridge
Test Package : MOB 1 (Additional Tests: PercentFuel, 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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