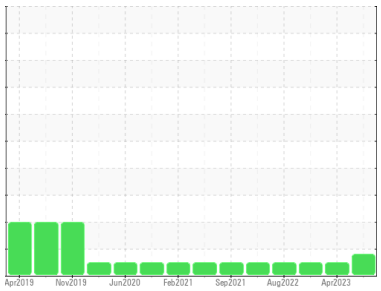
OIL ANALYSIS REPORT

OIL DIAGNOSTICS

Sample Rating Trend



WEAR

Machine Id
498272
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (--- QTS)

DIAGNOSIS

Recommendation
Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear
The aluminum level is abnormal. All other component wear rates are normal.

Contamination
There is no indication of any contamination in the oil.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0101317**	PCA0095920	PCA0088167
Sample Date		Client Info		**03 Jul 2023**	08 Apr 2023	17 Dec 2022
Machine Age	mls	Client Info		**335881**	316027	293166
Oil Age	mls	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	Not Changd	N/A
Sample Status				**ABNORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**50**	35	20
Chromium	ppm	ASTM D5185m	>20	**2**	1	1
Nickel	ppm	ASTM D5185m	>4	**<1**	0	<1
Titanium	ppm	ASTM D5185m		**<1**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	▲ **27**	21	12
Lead	ppm	ASTM D5185m	>40	**0**	0	<1
Copper	ppm	ASTM D5185m	>330	**9**	6	4
Tin	ppm	ASTM D5185m	>15	**2**	<1	<1
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	**4**	4	7
Barium	ppm	ASTM D5185m	0	**0**	1	0
Molybdenum	ppm	ASTM D5185m	50	**71**	66	68
Manganese	ppm	ASTM D5185m	0	**1**	1	<1
Magnesium	ppm	ASTM D5185m	950	**912**	910	928
Calcium	ppm	ASTM D5185m	1050	**1166**	1095	1222
Phosphorus	ppm	ASTM D5185m	995	**1021**	929	989
Zinc	ppm	ASTM D5185m	1180	**1231**	1204	1254
Sulfur	ppm	ASTM D5185m	2600	**2705**	2782	3298

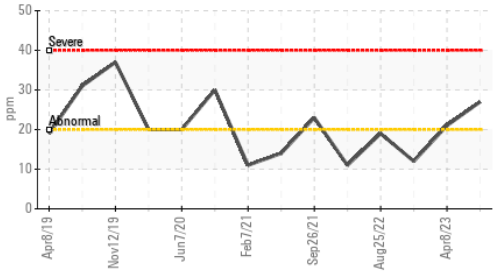
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**10**	7	5
Sodium	ppm	ASTM D5185m		**2**	4	2
Potassium	ppm	ASTM D5185m	>20	**24**	16	12

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**2**	1.3	0.9
Nitration	Abs/cm	*ASTM D7624	>20	**12.3**	9.9	8.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	**26.1**	21.9	19.8

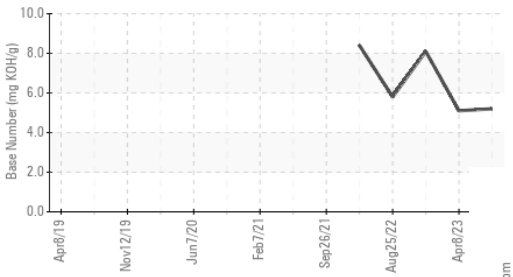
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**21.1**	17.8	15.5
Base Number (BN)	mg KOH/g	ASTM D2896		**5.2**	5.1	8.1

OIL ANALYSIS REPORT

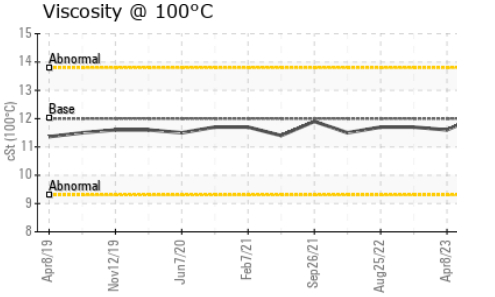
Aluminum (ppm)



Base Number



Viscosity @ 100°C

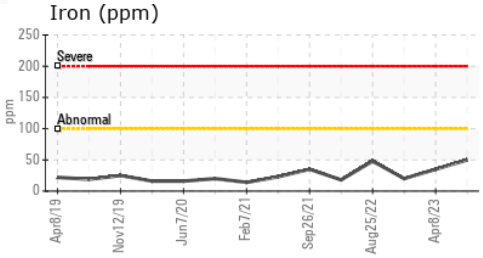


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

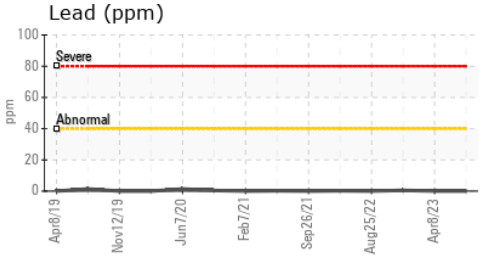
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	**12.1**	11.6	11.7

GRAPHS

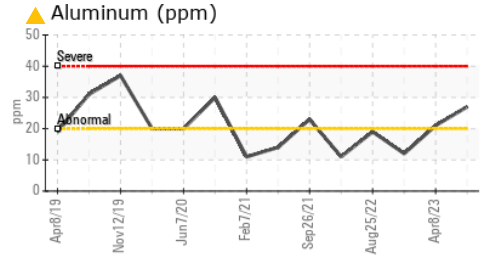
Iron (ppm)



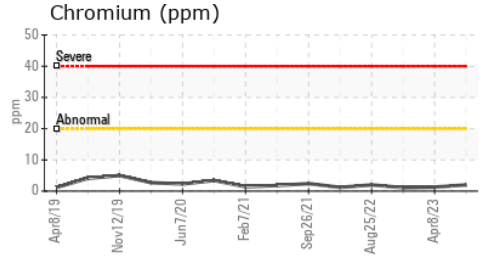
Lead (ppm)



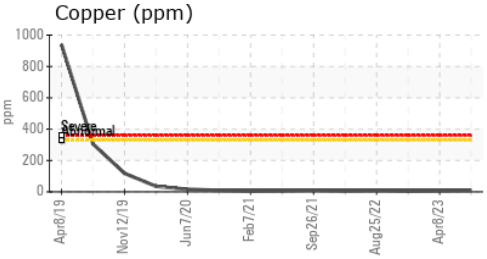
Aluminum (ppm)



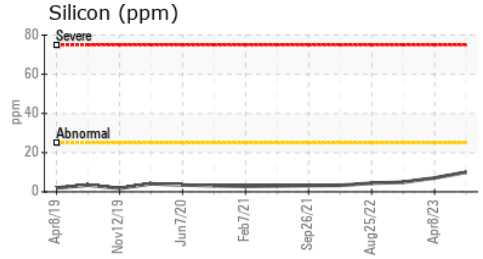
Chromium (ppm)



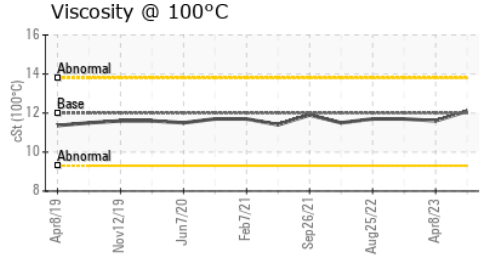
Copper (ppm)



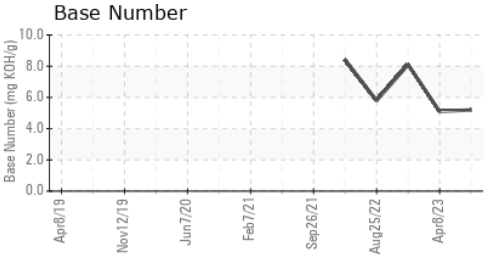
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0101317 **Received** : 17 Jul 2023
Lab Number : 05899678 **Diagnosed** : 19 Jul 2023
Unique Number : 10561034 **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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