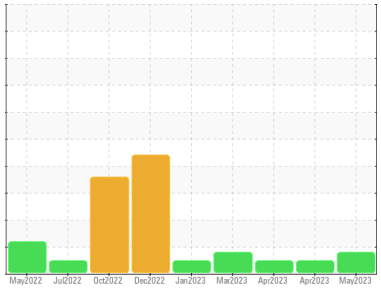
OIL ANALYSIS REPORT

OIL DIAGNOSTICS

Sample Rating Trend



SOOT

Machine Id
SJB621
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
All component wear rates are normal.

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

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

SAMPLE INFORMATION		method	limit/base	current	history 1	history 2
Sample Number		Client Info		**PCA0097813**	PCA0097748	PCA0094467
Sample Date		Client Info		**31 May 2023**	28 Apr 2023	05 Apr 2023
Machine Age	mls	Client Info		**152207**	0	137435
Oil Age	mls	Client Info		**8513**	6259	7305
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	NORMAL	NORMAL

CONTAMINATION	method	limit/base	current	history 1	history 2
Glycol	WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>100	**26**	21	23
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	1
Nickel	ppm	ASTM D5185m	>4	**<1**	0	10
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**2**	2	6
Lead	ppm	ASTM D5185m	>40	**2**	0	<1
Copper	ppm	ASTM D5185m	>330	**1**	2	13
Tin	ppm	ASTM D5185m	>15	**<1**	0	2
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m	2	**6**	13	53
Barium	ppm	ASTM D5185m	0	**2**	0	0
Molybdenum	ppm	ASTM D5185m	50	**63**	62	45
Manganese	ppm	ASTM D5185m	0	**<1**	<1	2
Magnesium	ppm	ASTM D5185m	950	**850**	912	515
Calcium	ppm	ASTM D5185m	1050	**1128**	1132	1634
Phosphorus	ppm	ASTM D5185m	995	**1017**	1044	928
Zinc	ppm	ASTM D5185m	1180	**1186**	1276	1110
Sulfur	ppm	ASTM D5185m	2600	**3005**	3667	3488

CONTAMINANTS		method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185m	>25	**3**	4	14
Sodium	ppm	ASTM D5185m		**0**	<1	2
Potassium	ppm	ASTM D5185m	>20	**1**	1	<1
Fuel	%	ASTM D3524	>5	**<1.0**	<1.0	<1.0

INFRA-RED		method	limit/base	current	history 1	history 2
Soot %	%	*ASTM D7844	>3	**3.6**	2.7	2.5
Nitration	Abs/cm	*ASTM D7624	>20	**12.1**	9.8	10.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	**26.7**	22.9	22.0

FLUID DEGRADATION		method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**18.2**	15.4	15.7
Base Number (BN)	mg KOH/g	ASTM D2896		**8.8**	8.4	8.7

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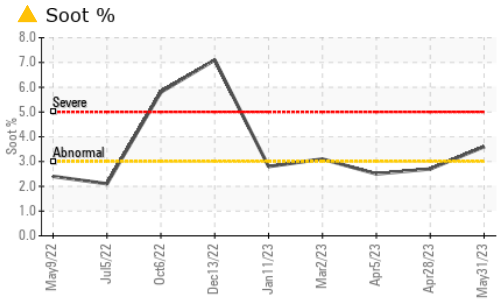
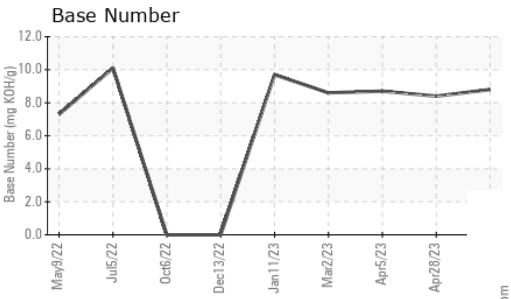
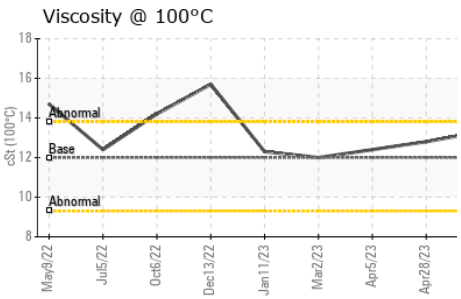




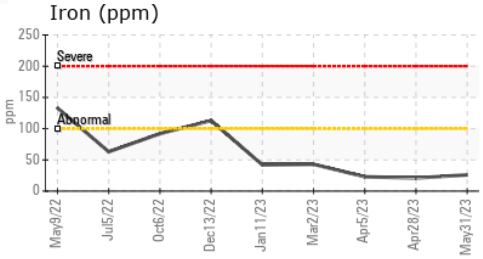


VISUAL		method	limit/base	current	history 1	history 2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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

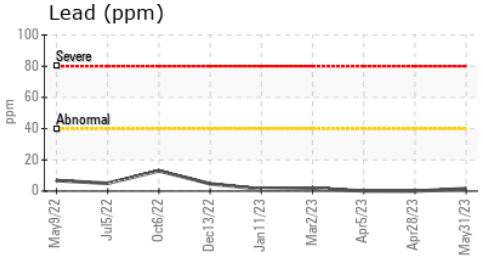
FLUID PROPERTIES		method	limit/base	current	history 1	history 2
Visc @ 100°C	cSt	ASTM D445	12.00	**13.3**	12.8	12.4

GRAPHS

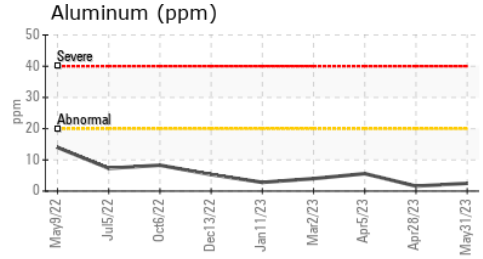
Iron (ppm)



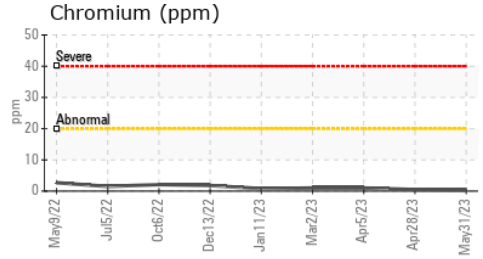
Lead (ppm)



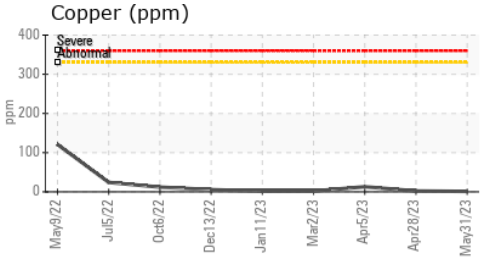
Aluminum (ppm)



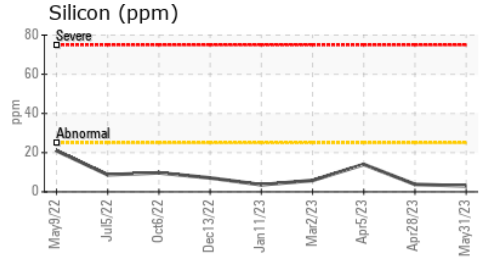
Chromium (ppm)



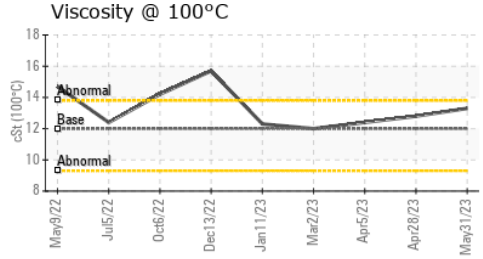
Copper (ppm)



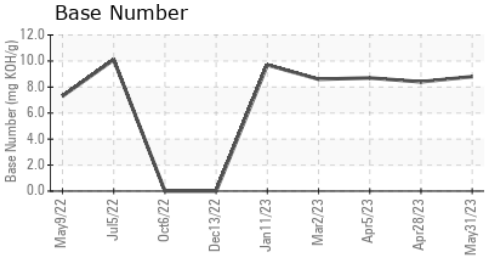
Silicon (ppm)



Viscosity @ 100°C



Base Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0097813 **Received** : 03 Jul 2023
Lab Number : 05888692 **Diagnosed** : 03 Jul 2023
Unique Number : 10539175 **Diagnostician** : Jonathan Hester
Test Package : MOB 1 (Additional Tests: FuelDilution, TBN)

Certificate L2367

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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