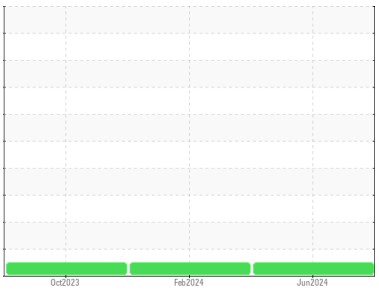
OIL DIAGNOSTICS

OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
649913
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (--- QTS)

DIAGNOSIS

Recommendation
Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. Test for glycol is negative.

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		**PCA0128886**	PCA0116999	PCA0106275
Sample Date		Client Info		**01 Jun 2024**	05 Feb 2024	13 Oct 2023
Machine Age	mls	Client Info		**37942**	27224	16569
Oil Age	mls	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	N/A	Not Changd
Sample Status				**NORMAL**	NORMAL	NORMAL

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**80**	53	33
Chromium	ppm	ASTM D5185m	>20	**4**	4	2
Nickel	ppm	ASTM D5185m	>4	**<1**	<1	0
Titanium	ppm	ASTM D5185m		**<1**	<1	0
Silver	ppm	ASTM D5185m	>3	**<1**	0	<1
Aluminum	ppm	ASTM D5185m	>20	**63**	52	43
Lead	ppm	ASTM D5185m	>40	**<1**	3	0
Copper	ppm	ASTM D5185m	>330	**324**	306	300
Tin	ppm	ASTM D5185m	>15	**4**	4	3
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	**34**	30	33
Barium	ppm	ASTM D5185m	0	**0**	<1	0
Molybdenum	ppm	ASTM D5185m	50	**49**	46	42
Manganese	ppm	ASTM D5185m	0	**5**	4	4
Magnesium	ppm	ASTM D5185m	950	**595**	574	552
Calcium	ppm	ASTM D5185m	1050	**1735**	1792	1587
Phosphorus	ppm	ASTM D5185m	995	**792**	792	783
Zinc	ppm	ASTM D5185m	1180	**974**	953	917
Sulfur	ppm	ASTM D5185m	2600	**2171**	1969	2033

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**9**	7	7
Sodium	ppm	ASTM D5185m		**13**	10	9
Potassium	ppm	ASTM D5185m	>20	**171**	142	116
Glycol	%	*ASTM D2982		**0.0**	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**1**	0.6	0.4
Nitration	Abs/cm	*ASTM D7624	>20	**12.6**	10.5	9.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	**24.1**	22.6	22.2

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**28.9**	24.7	22.1
Base Number (BN)	mg KOH/g	ASTM D2896		**5.9**	7.4	8.5

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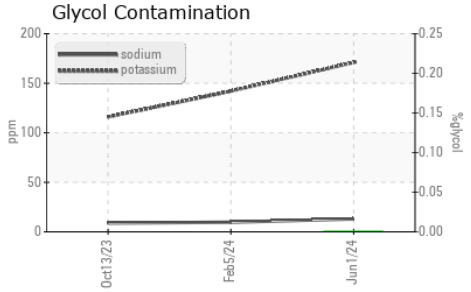
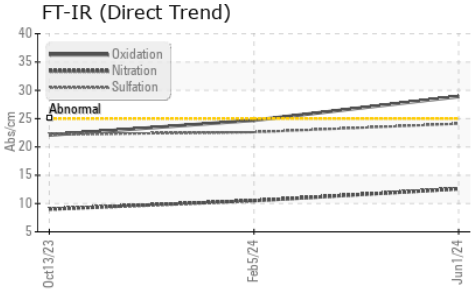
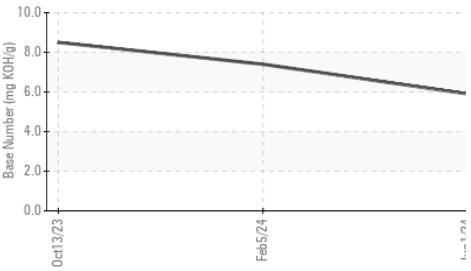
Glycol Contamination



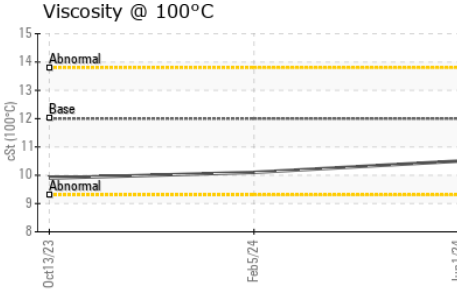
FT-IR (Direct Trend)



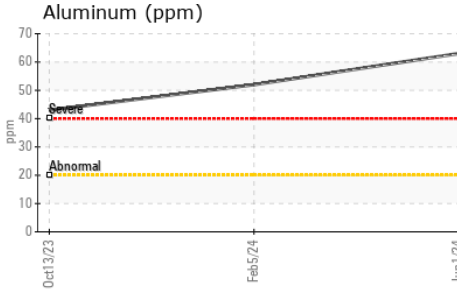
Base Number



Viscosity @ 100°C



Aluminum (ppm)

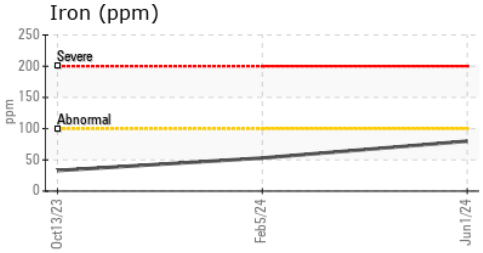


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

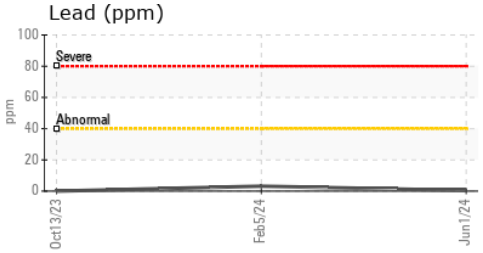
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	**10.5**	10.1	9.9

GRAPHS

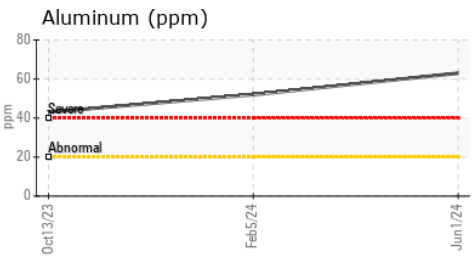
Iron (ppm)



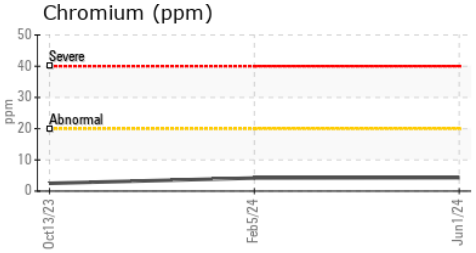
Lead (ppm)



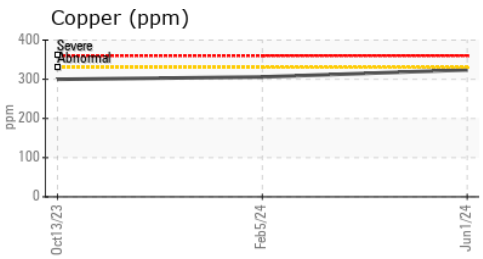
Aluminum (ppm)



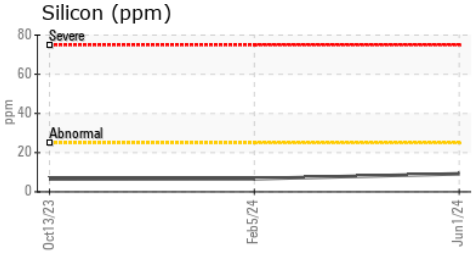
Chromium (ppm)



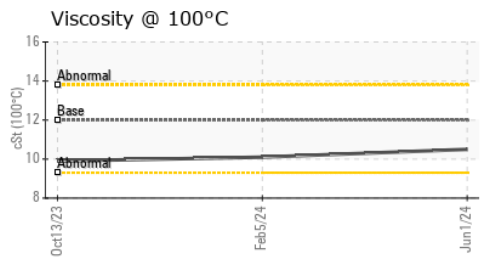
Copper (ppm)



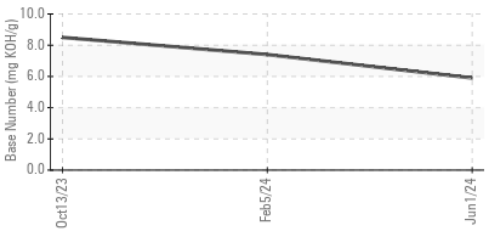
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0128886 **Received** : 14 Jun 2024
Lab Number : 06209795 **Tested** : 17 Jun 2024
Unique Number : 11082659 **Diagnosed** : 17 Jun 2024 - Don Baldridge
Test Package : MOB 1 (Additional Tests: Glycol, 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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