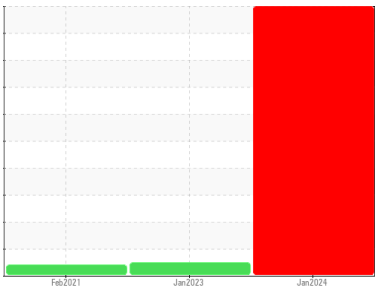
OIL DIAGNOSTICS

PROBLEM SUMMARY

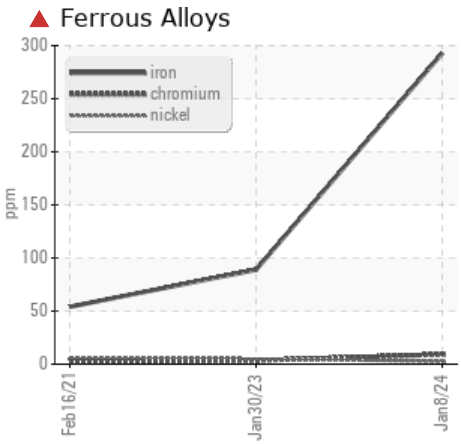
Sample Rating Trend

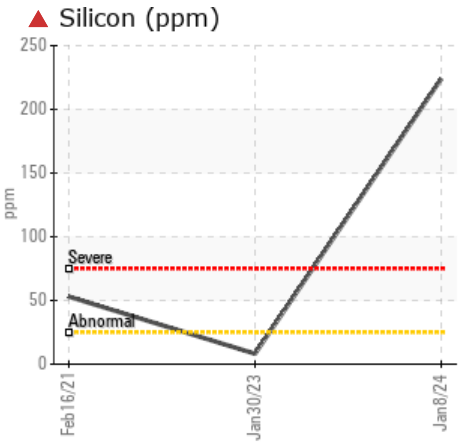


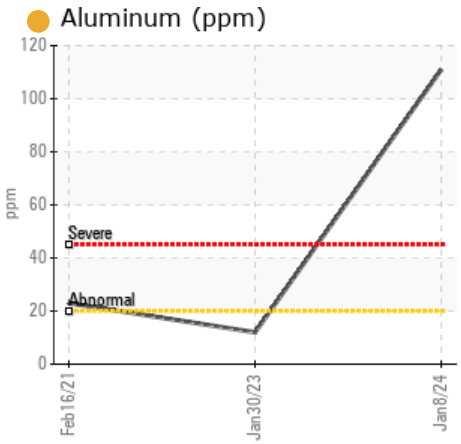
WEAR

Machine Id
DT744
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (--- QTS)

COMPONENT CONDITION SUMMARY







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.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	NORMAL	ATTENTION
Iron	ppm	ASTM D5185m	>120	▲ 293	89	54
Silicon	ppm	ASTM D5185m	>25	▲ 224	8	53

Customer Id: NWWDUN
Sample No.: PCA0089140
Lab Number: 06104811
Test Package: FLEET

To manage this report scan the QR code

To discuss the diagnosis or test data:
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Dirt Access	---	---	?	We advise that you check the air filter, air induction system, and any areas where dirt may enter the component.

HISTORICAL DIAGNOSIS

30 Jan 2023 Diag: Doug Bogart

NORMAL

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. 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.

view report

16 Feb 2021 Diag: Jonathan Hester

VISCOSITY

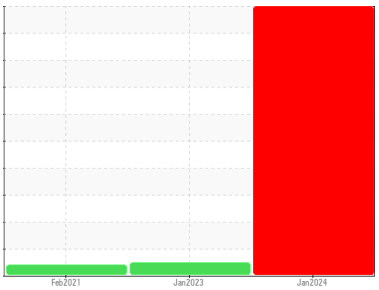
Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.Metal levels are typical for a new component breaking in. Tests indicate that there is no fuel present in the oil. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

view report

OIL DIAGNOSTICS

OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
DT744
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (--- QTS)

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		**PCA0089140**	PCA0089222	PCA0042781
Sample Date		Client Info		**08 Jan 2024**	30 Jan 2023	16 Feb 2021
Machine Age	mls	Client Info		**117199**	117199	25826
Oil Age	mls	Client Info		**156466**	58876	0
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	NORMAL	ATTENTION

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	<1.0	0.5
Water		WC Method	>0.2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	▲ **293**	89	54
Chromium	ppm	ASTM D5185m	>20	**9**	3	2
Nickel	ppm	ASTM D5185m	>5	**2**	5	6
Titanium	ppm	ASTM D5185m	>2	**6**	0	<1
Silver	ppm	ASTM D5185m	>2	**0**	<1	<1
Aluminum	ppm	ASTM D5185m	>20	● **111**	12	23
Lead	ppm	ASTM D5185m	>40	**9**	1	0
Copper	ppm	ASTM D5185m	>330	**17**	11	154
Tin	ppm	ASTM D5185m	>15	**6**	2	1
Antimony	ppm	ASTM D5185m		**---**	---	0
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	**4**	2	17
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	50	**68**	63	53
Manganese	ppm	ASTM D5185m	0	**5**	2	5
Magnesium	ppm	ASTM D5185m	950	**1009**	983	806
Calcium	ppm	ASTM D5185m	1050	**1146**	1134	2080
Phosphorus	ppm	ASTM D5185m	995	**1113**	1009	1117
Zinc	ppm	ASTM D5185m	1180	**1354**	1336	1387
Sulfur	ppm	ASTM D5185m	2600	**3240**	2788	2449

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	▲ **224**	8	53
Sodium	ppm	ASTM D5185m		**20**	13	7
Potassium	ppm	ASTM D5185m	>20	**42**	23	110
Glycol	%	*ASTM D2982		**NEG**	NEG	0.0

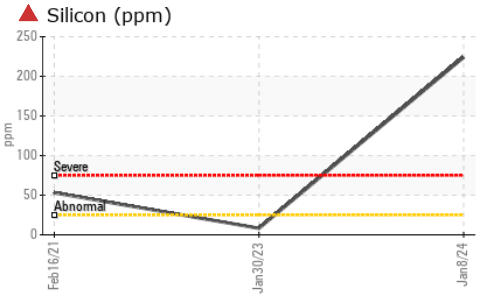
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	**1.7**	1.5	0.6
Nitration	Abs/cm	*ASTM D7624	>20	**16.2**	16.7	10.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	**30.2**	30.0	22.8

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**28.9**	31.2	22.1
Base Number (BN)	mg KOH/g	ASTM D2896		**3.6**	2.9	4.2

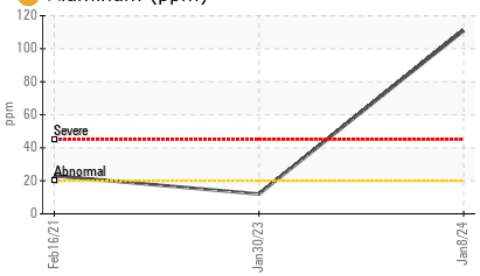
OIL DIAGNOSTICS

OIL ANALYSIS REPORT

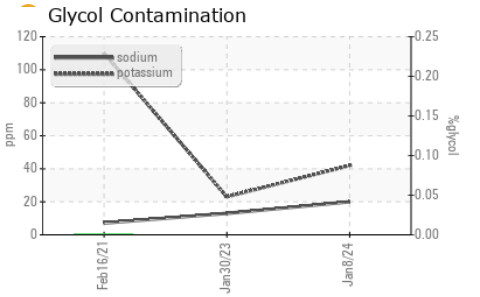
Silicon (ppm)



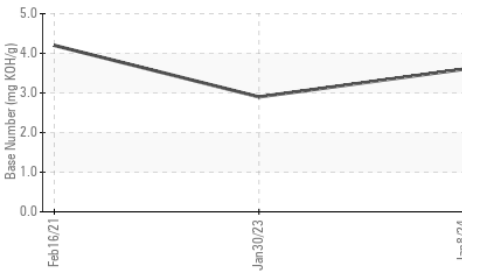
Aluminum (ppm)



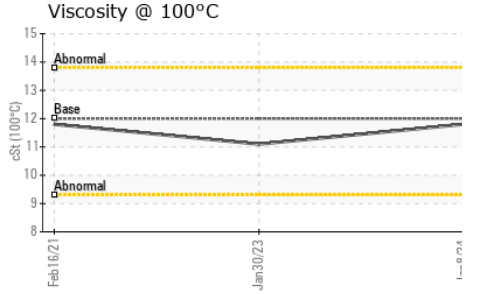
Glycol Contamination



Base Number



Viscosity @ 100°C

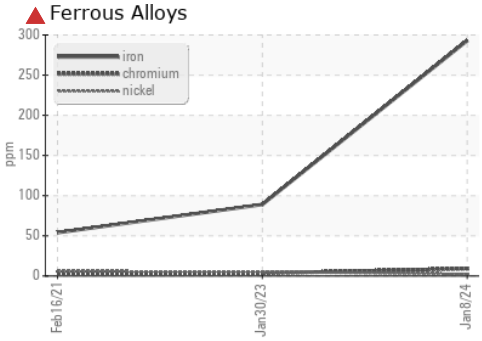


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

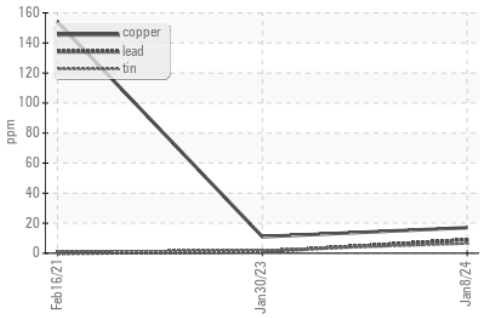
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	**11.8**	11.1	11.8

GRAPHS

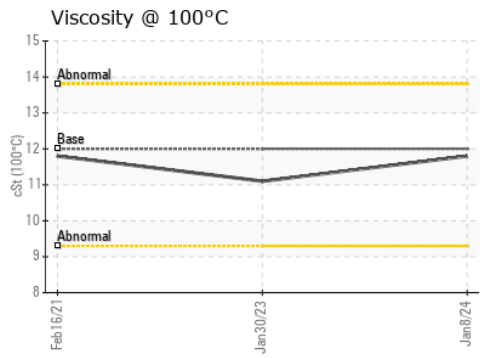
Ferrous Alloys



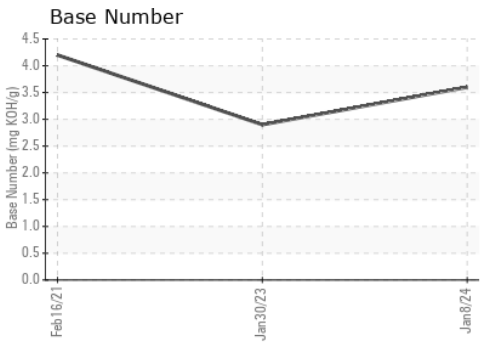
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0089140
Lab Number : 06104811
Unique Number : 10903041
Test Package : FLEET (Additional Tests: Glycol)

Received : 29 Feb 2024
Tested : 05 Mar 2024
Diagnosed : 05 Mar 2024 - Jonathan Hester

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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