

## **OIL ANALYSIS REPORT**

#### Sample Rating Trend

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# Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- GAL)

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

All 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 suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0102857	PCA0099292	PCA0095972
Sample Date		Client Info		14 Sep 2023	18 Jul 2023	11 May 2023
Machine Age	mls	Client Info		375588	355194	333839
Oil Age	mls	Client Info		41749	21355	49027
Oil Changed		Client Info		Changed	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>6.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S .	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	24	16	41
Chromium	ppm	ASTM D5185m	>20	<1	<1	1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>25	0	2	4
Lead	ppm	ASTM D5185m	>40	ء <1	<1	2
Copper	ppm	ASTM D5185m		6	7	9
Tin	ppm	ASTM D5185m	>15	<1	<1	2
Vanadium	ppm	ASTM D5185m	210	0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
	ppin		11 1. 11	-	-	-
ADDITIVES			limit/base	current	history1 4	history2
Boron	ppm	ASTM D5185m	2	<1		<1
Barium	ppm	ASTM D5185m		0	<1	0
Molybdenum	ppm	ASTM D5185m	50	59	64	61
Manganese	ppm	ASTM D5185m		<1	<1	1
Magnesium	ppm	ASTM D5185m	950	974	1026	982
Calcium	ppm		1050			
			1050	1116	1186	1155
Phosphorus	ppm	ASTM D5185m	995	969	1186 1105	1155 977
Zinc	ppm ppm	ASTM D5185m ASTM D5185m	995 1180	969 1255	1186 1105 1352	1155 977 1242
Zinc Sulfur	ppm ppm ppm	ASTM D5185m	995	969	1186 1105	1155 977
Zinc Sulfur CONTAMINAN	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method	995 1180 2600 limit/base	969 1255 3277 current	1186 1105 1352	1155 977 1242
Zinc Sulfur	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	995 1180 2600 limit/base	969 1255 3277	1186 1105 1352 3785	1155 977 1242 2845
Zinc Sulfur CONTAMINAN <sup>T</sup> Silicon Sodium	ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	995 1180 2600 limit/base >25	969 1255 3277 current	1186 1105 1352 3785 history1 4 8	1155 977 1242 2845 history2 6 24
Zinc Sulfur CONTAMINAN <sup>T</sup> Silicon	ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	995 1180 2600 limit/base >25	969 1255 3277 current 4	1186 1105 1352 3785 history1 4	1155 977 1242 2845 history2 6
Zinc Sulfur CONTAMINAN <sup>T</sup> Silicon Sodium	ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	995 1180 2600 limit/base >25	969 1255 3277 current 4 12	1186 1105 1352 3785 history1 4 8	1155 977 1242 2845 history2 6 24
Zinc Sulfur CONTAMINAN <sup>T</sup> Silicon Sodium Potassium	ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	995 1180 2600 limit/base >25 >20 limit/base	969 1255 3277 current 4 12 5	1186 1105 1352 3785 history1 4 8 3	1155 977 1242 2845 history2 6 24 3
Zinc Sulfur CONTAMINAN <sup>T</sup> Silicon Sodium Potassium INFRA-RED	ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	995 1180 2600 limit/base >25 >20 limit/base >3	969 1255 3277 current 4 12 5 current	1186 1105 1352 3785 history1 4 8 3 3 history1	1155 977 1242 2845 history2 6 24 3 history2
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	995 1180 2600 limit/base >25 >20 limit/base >3 >20	969 1255 3277 current 4 12 5 current 0.5	1186 1105 1352 3785 history1 4 8 3 3 history1 0.4	1155 977 1242 2845 history2 6 24 3 history2 0.7
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm pm TS ppm ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7624	995 1180 2600 limit/base >25 >20 limit/base >3 >20	969 1255 3277 current 4 12 5 current 0.5 10.6	1186 1105 1352 3785 history1 4 8 3 3 history1 0.4 9.4	1155 977 1242 2845 history2 6 24 3 <u>history2</u> 0.7 11.6
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm pm TS ppm ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7844	995 1180 2600 <b>limit/base</b> >25 >20 <b>limit/base</b> >3 >20 >30 <b>limit/base</b>	969 1255 3277 current 4 12 5 current 0.5 10.6 23.1	1186 1105 1352 3785 history1 4 8 3 3 history1 0.4 9.4 20.2	1155 977 1242 2845 history2 6 24 3 <u>history2</u> 0.7 11.6 24.6



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Abnorma

Jan 27/20

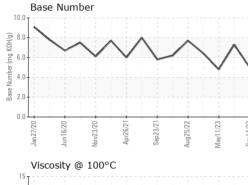
# **OIL ANALYSIS REPORT**

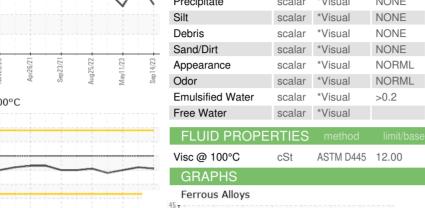
scalar

scalar

\*Visual

\*Visual





VISUAL

White Metal

Yellow Metal



NONE

NONE

NONE

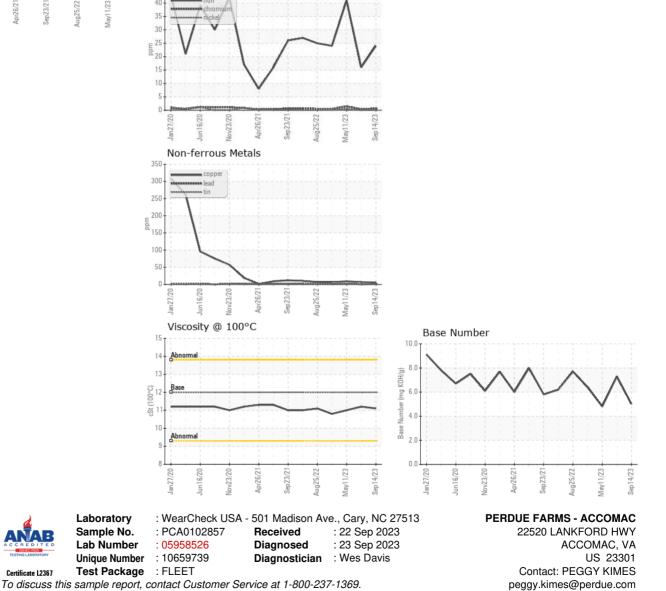
NONE

NONE

NONE

NONE

NONE



\* - 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)

Page 2 of 2

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