

## **OIL ANALYSIS REPORT**

### Sample Rating Trend

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Diesel Engine

PETRO CANADA DURON SHP 10W30 (16 QTS)

## 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.

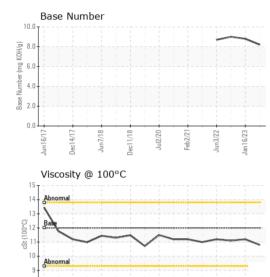
SAMPLE INFORM	1ATION	method		current	history 1	history 2
Sample Number		Client Info		PCA0097800	PCA0090044	PCA0079696
Sample Date		Client Info		04 May 2023	16 Jan 2023	07 Sep 2022
Machine Age	mls	Client Info		0	0	0
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIO	ON	method	limit/base	current	history 1	history 2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	6	method	limit/base	current	history 1	history 2
	ppm	ASTM D5185m	>100	11	21	26
Chromium	ppm	ASTM D5185m		0	<1	<1
Nickel		ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m	~7	0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m		3	7	16
Lead	ppm	ASTM D5185m		3 <1	3	10
	ppm	ASTM D5185m ASTM D5185m		<1	3	1
Copper	ppm				1	
Tin Vanadium	ppm ppm	ASTM D5185m ASTM D5185m	>10	<1	<1	<1 0
		ASTIVI UST85M		0	<	0
						0
Cadmium	ppm	ASTM D5185m		0	0	0
			limit/base		0 history 1	history 2
Cadmium ADDITIVES		ASTM D5185m	limit/base 2	0	0	
Cadmium ADDITIVES Boron	ppm	ASTM D5185m method		0 current	0 history 1	history 2
Cadmium ADDITIVES Boron Barium	ppm ppm	ASTM D5185m method ASTM D5185m	2	0 current 22	0 history 1 15	history 2 9
Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	2 0	0 current 22 2	0 history 1 15 0	history 2 9 0
Cadmium ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	0 current 22 2 69	0 history 1 15 0 67	history 2 9 0 68
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	0 current 22 2 69 <1	0 history 1 15 0 67 <1	history 2 9 0 68 <1
Cadmium	ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	0 current 22 2 69 <1 769	0 history 1 15 0 67 <1 897	history 2 9 0 68 <1 905
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	0 current 22 2 69 <1 769 1151	0 history 1 15 0 67 <1 897 1231	history 2 9 0 68 <1 905 1125
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	0 current 22 2 69 <1 769 1151 966	0 history 1 15 0 67 <1 897 1231 1067	history 2 9 0 68 <1 905 1125 1041
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180	0 current 22 2 69 <1 769 1151 966 1117	0 history 1 15 0 67 <1 897 1231 1067 1331	history 2           9           0           68           <1           905           1125           1041           1220
Cadmium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	0 current 22 2 69 <1 769 1151 966 1117 2952	0 history 1 15 0 67 <1 897 1231 1067 1331 3714	history 2         9         0         68         <1
Cadmium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	0 current 22 2 69 <1 769 1151 966 1117 2952 current	0 history 1 15 0 67 <1 897 1231 1067 1331 3714 history 1	history 2         9         0         68         <1
Cadmium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25	0 current 22 2 69 <1 769 1151 966 1117 2952 current 4	0 history 1 15 0 67 <1 897 1231 1067 1331 3714 history 1 7	history 2         9         0         68         <1         905         1125         1041         1220         3646         history 2         13
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25	0 current 22 2 69 <1 769 1151 966 1117 2952 current 4 0	0 history 1 15 0 67 <1 897 1231 1067 1331 3714 history 1 7 5	history 2         9         0         68         <1
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 >20	0 current 22 2 69 <1 769 1151 966 1117 2952 current 4 0 3	0 history 1 15 0 67 <1 897 1231 1067 1331 3714 history 1 7 5 3	history 2         9         0         68         <1
Cadmium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 >20 <b>imit/base</b>	0 current 22 2 69 <1 769 1151 966 1117 2952 current 4 0 3 current	0 history 1 15 0 67 <1 897 1231 1067 1331 3714 history 1 7 5 3 3 history 1	history 2 9 0 68 <1 905 1125 1041 1220 3646 history 2 13 5 7 7
Cadmium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3 >20	0 current 22 2 69 <1 769 1151 966 1117 2952 current 4 0 3 current 0.4	0 history 1 15 0 67 <1 897 1231 1067 1331 3714 history 1 7 5 3 3 history 1 0.6	history 2         9         0         68         <1
Cadmium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3 >20	0 current 22 2 69 <1 769 1151 966 1117 2952 current 4 0 3 current 0.4 7.8	0 history 1 15 0 67 <1 897 1231 1067 1331 3714 history 1 7 5 3 3 history 1 0.6 9.5	history 2         9         0         68         <1
Cadmium Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM	2 0 50 950 1050 995 1180 2600 2600 225 20 220 imit/base >3 20 30	0 current 22 2 69 <1 769 1151 966 1117 2952 current 4 0 3 current 0.4 7.8 18.9	0 history 1 15 0 67 <1 897 1231 1067 1331 3714 history 1 7 5 3 3 history 1 0.6 9.5 19.1	history 2         9         0         68         <1



Dec14/17

un16/17

# **OIL ANALYSIS REPORT**



lec11/18

Jan 16/23

un3/22

eh2/71





Laboratory

Sample No.

Lab Number

Unique Number

Certificate L2367