

# **OIL ANALYSIS REPORT**

### Sample Rating Trend

# NORMAL



**Diesel Engine** 

Elui PETRO CANADA DURON SHP 10W30 (12 GAL)

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

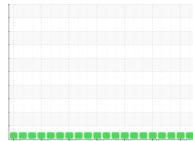
All component wear rates are normal.

#### 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.



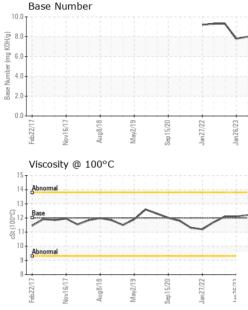


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SAMPLE INFORI	MATION	method	limit/base	current	history 1	history 2
Sample Number		Client Info		PCA0083836	PCA0083869	PCA0071712
Sample Date		Client Info		10 May 2023	26 Jan 2023	06 Oct 2022
Machine Age	mls	Client Info		135669	124901	119521
Oil Age	mls	Client Info		10768	5380	6281
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history 1	history 2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
	0		line it //s s s s			
WEAR METAL		method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>100	17	9	8
Chromium	ppm	ASTM D5185m	>20	0	<1	0
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m		29	72	65
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	<1	2
Lead	ppm	ASTM D5185m	>40	2	<1	0
Copper	ppm	ASTM D5185m	>330	2	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history 1	history 2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 14	history 1 62	history 2 52
	ppm ppm		2			
Boron		ASTM D5185m	2	14	62	52
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0 50	14 2	62 0	52 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	14 2 50	62 0 17	52 0 21
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	14 2 50 <1	62 0 17 <1	52 0 21 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	14 2 50 <1 744	62 0 17 <1 537	52 0 21 <1 558
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	14 2 50 <1 744 1358 1055 1225	62 0 17 <1 537 1672	52 0 21 <1 558 1623
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	14 2 50 <1 744 1358 1055	62 0 17 <1 537 1672 993	52 0 21 <1 558 1623 973
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180	14 2 50 <1 744 1358 1055 1225	62 0 17 <1 537 1672 993 1233	52 0 21 <1 558 1623 973 1152
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base	14 2 50 <1 744 1358 1055 1225 3463	62 0 17 <1 537 1672 993 1233 4053	52 0 21 <1 558 1623 973 1152 4113
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base	14 2 50 <1 744 1358 1055 1225 3463 current	62 0 17 <1 537 1672 993 1233 4053 history 1	52 0 21 <1 558 1623 973 1152 4113 history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b>	2 0 50 950 1050 995 1180 2600 limit/base >25	14 2 50 <1 744 1358 1055 1225 3463 <i>current</i> 3	62 0 17 <1 537 1672 993 1233 4053 history 1 4	52 0 21 <1 558 1623 973 1152 4113 history 2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	14 2 50 <1 744 1358 1055 1225 3463 <u>current</u> 3 0	62 0 17 <1 537 1672 993 1233 4053 history 1 4 4	52 0 21 <1 558 1623 973 1152 4113 history 2 3 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25	14 2 50 <1 744 1358 1055 1225 3463 <i>current</i> 3 0 4	62 0 17 <1 537 1672 993 1233 4053 history 1 4 4 1	52 0 21 <1 558 1623 973 1152 4113 history 2 3 2 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	14 2 50 <1 744 1358 1055 1225 3463 <i>current</i> 3 0 4	62 0 17 <1 537 1672 993 1233 4053 history 1 4 4 1 history 1	52 0 21 <1 558 1623 973 1152 4113 history 2 3 2 0 0 history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	14 2 50 <1 744 1358 1055 1225 3463 <i>current</i> 3 0 4 <i>current</i>	62 0 17 <1 537 1672 993 1233 4053 history 1 4 4 1 history 1 0.7	52 0 21 <1 558 1623 973 1152 4113 history 2 3 2 0 history 2 0.8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 .20 limit/base >3 >20	14 2 50 <1 744 1358 1055 1225 3463 <i>current</i> 3 0 4 <i>current</i> 1.2 11.7	62 0 17 <1 537 1672 993 1233 4053 history 1 4 4 1 4 1 0.7 10.9	52 0 21 <1 558 1623 973 1152 4113 history 2 3 2 0 history 2 0.8 11.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>imit/base</b> >25 <b>imit/base</b> >20 <b>imit/base</b> >3 >20	14 2 50 <1 744 1358 1055 1225 3463 <i>current</i> 3 0 4 <i>current</i> 1.2 11.7 22.8	62 0 17 <1 537 1672 993 1233 4053 history 1 4 4 4 1 1 0.7 10.9 21.2	52 0 21 <1 558 1623 973 1152 4113 <b>history 2</b> 3 2 0 <b>history 2</b> 0.8 11.0 22.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	2 0 50 0 950 1050 995 1180 2600 imit/base >25 	14 2 50 <1 744 1358 1055 1225 3463 <i>current</i> 3 0 4 <i>current</i> 1.2 11.7 22.8 <i>current</i>	62 0 17 <1 537 1672 993 1233 4053 history 1 4 4 4 1 1 0.7 10.9 21.2 history 1	52 0 21 <1 558 1623 973 1152 4113 history 2 3 2 0 history 2 0.8 11.0 22.3 history 2



# **OIL ANALYSIS REPORT**





Certificate L2367

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