

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Component

Diesel Engine

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

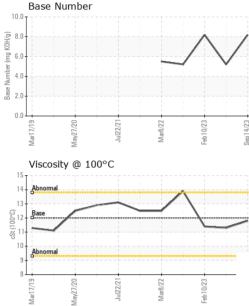
Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

AL)		Mar2019	May2020 Jul2021	Mar2022 Feb2023	Sep2023	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0106243	PCA0098006	PCA0089659
Sample Date		Client Info		14 Sep 2023	08 Jun 2023	10 Feb 2023
Machine Age	mls	Client Info		284160	0	252563
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	N/A	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	20	27	16
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	4	2
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	1	3	<1
Tin	ppm	ASTM D5185m	>15	<1	1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron		ACTM DE10Em	2	25	10	4 5
DOIOII	ppm	ASTM D5185m	2	25	13	15
	ppm ppm	ASTM D5185m		0	0	15 0
Barium				-		
Barium Molybdenum	ppm	ASTM D5185m	0 50	0	0	0
Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m	0 50	0 50	0 68	0 69
Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0	0 50 <1	0 68 1	0 69 <1
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950	0 50 <1 596	0 68 1 1011	0 69 <1 924
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050	0 50 <1 596 1508	0 68 1 1011 1263	0 69 <1 924 1153
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995	0 50 <1 596 1508 808	0 68 1 1011 1263 1100	0 69 <1 924 1153 1007
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	0 50 0 950 1050 995 1180	0 50 <1 596 1508 808 991	0 68 1 1011 1263 1100 1426	0 69 <1 924 1153 1007 1276
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 limit/base	0 50 <1 596 1508 808 991 2494	0 68 1 1011 1263 1100 1426 3667	0 69 <1 924 1153 1007 1276 3644
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 limit/base	0 50 <1 596 1508 808 991 2494 current 6	0 68 1 1011 1263 1100 1426 3667 history1	0 69 <1 924 1153 1007 1276 3644 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 50 0 950 1050 995 1180 2600 limit/base	0 50 <1 596 1508 808 991 2494 current	0 68 1 1011 1263 1100 1426 3667 history1 4	0 69 <1 924 1153 1007 1276 3644 history2 3
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 limit/base >25	0 50 <1 596 1508 808 991 2494 current 6 3	0 68 1 1011 1263 1100 1426 3667 history1 4 2	0 69 <1 924 1153 1007 1276 3644 history2 3 1
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 limit/base >25	0 50 <1 596 1508 808 991 2494 current 6 3 2	0 68 1 1011 1263 1100 1426 3667 history1 4 2 3	0 69 <1 924 1153 1007 1276 3644 history2 3 1 2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	0 50 <1 596 1508 808 991 2494 current 6 3 2 2	0 68 1 1011 1263 1100 1426 3667 history1 4 2 3 3	0 69 <1 924 1153 1007 1276 3644 history2 3 1 2 history2 0.2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	0 50 <1 596 1508 808 991 2494 current 6 3 2 2 current 0.7	0 68 1 1011 1263 1100 1426 3667 history1 4 2 3 history1 0.5	0 69 <1 924 1153 1007 1276 3644 history2 3 1 2 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 50 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3 >20	0 50 <1 596 1508 808 991 2494 <u>current</u> 6 3 2 2 <u>current</u> 0.7 11.3	0 68 1 1011 1263 1100 1426 3667 history1 4 2 3 3 history1 0.5 11.7	0 69 <1 924 1153 1007 1276 3644 history2 3 1 2 history2 0.2 7.9
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	0 50 950 1050 995 1180 2600 imit/base >25 imit/base >20 imit/base >3 >20 >30	0 50 <1 596 1508 808 991 2494 <u>current</u> 6 3 2 2 <u>current</u> 0.7 11.3 23.1	0 68 1 1011 1263 1100 1426 3667 history1 4 2 3 3 history1 0.5 11.7 24.5	0 69 <1 924 1153 1007 1276 3644 history2 3 1 2 history2 0.2 7.9 19.3



OIL ANALYSIS REPORT







Laboratory