

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **507** Component **Diesel Engine** Fluid **PETRO CANADA DURON HP 15W40 (--- 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.

SAMPLE INFORI		method	limit/base	current	history1	history2
			iiiiiii base			
Sample Number		Client Info		PCA0069598	PCA0058449	PCA0033488
Sample Date	la un	Client Info		10 Aug 2023	04 Mar 2022	06 Jul 2021
Machine Age	hrs	Client Info		15190	11905	0
Oil Age	hrs	Client Info		274	11905	0
Oil Changed		Client Info		Not Changd	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	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	9	16	15
Chromium	ppm	ASTM D5185m	>20	<1	1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	<1	<1
Aluminum	ppm	ASTM D5185m	>20	4	8	0
Lead	ppm	ASTM D5185m	>40	0	<1	2
Copper	ppm	ASTM D5185m	>330	5	3	2
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Antimony	ppm	ASTM D5185m				0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 2	history1 47	history2 10
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	2	47	10
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	2 0	47 0	10 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 67	47 0 67	10 0 65
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 67 <1	47 0 67 <1	10 0 65 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 67 <1 1085	47 0 67 <1 915	10 0 65 <1 975
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 67 <1 1085 1192	47 0 67 <1 915 1233	10 0 65 <1 975 1166
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	limit/base	2 0 67 <1 1085 1192 1166	47 0 67 <1 915 1233 1115	10 0 65 <1 975 1166 1085
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	limit/base	2 0 67 <1 1085 1192 1166 1421	47 0 67 <1 915 1233 1115 1340	10 0 65 <1 975 1166 1085 1246
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	limit/base	2 0 67 <1 1085 1192 1166 1421 3988	47 0 67 <1 915 1233 1115 1340 2965	10 0 65 <1 975 1166 1085 1246 2669
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	limit/base	2 0 67 <1 1085 1192 1166 1421 3988 current	47 0 67 <1 915 1233 1115 1340 2965 history1	10 0 65 <1 975 1166 1085 1246 2669 history2
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 ASTM D5185m	limit/base	2 0 67 <1 1085 1192 1166 1421 3988 current 5	47 0 67 <1 915 1233 1115 1340 2965 history1 7	10 0 65 <1 975 1166 1085 1246 2669 history2 9
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 ASTM D5185m ASTM D5185m	limit/base	2 0 67 <1 1085 1192 1166 1421 3988 current 5 3	47 0 67 <1 915 1233 1115 1340 2965 history1 7 0	10 0 65 <1 975 1166 1085 1246 2669 history2 9 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	limit/base >25 >20	2 0 67 <1 1085 1192 1166 1421 3988 current 5 3 2	47 0 67 <1 915 1233 1115 1340 2965 history1 7 0 24	10 0 65 <1 975 1166 1085 1246 2669 history2 9 2 4
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	limit/base >25 >20 limit/base	2 0 67 <1 1085 1192 1166 1421 3988 current 5 3 2 2	47 0 67 <1 915 1233 1115 1340 2965 history1 7 0 24 history1	10 0 65 <1 975 1166 1085 1246 2669 history2 9 2 4 4 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3	2 0 67 <1 1085 1192 1166 1421 3988 current 5 3 2 2 current 0.3	47 0 67 <1 915 1233 1115 1340 2965 history1 7 0 24 history1 0.4	10 0 65 <1 975 1166 1085 1246 2669 history2 9 2 4 4 history2 0.5
Boron 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	limit/base >25 >20 limit/base >3 >20	2 0 67 <1 1085 1192 1166 1421 3988 <u>current</u> 5 3 2 2 <u>current</u> 0.3 7.9	47 0 67 <1 915 1233 1115 1340 2965 history1 7 0 24 24 history1 0.4 8.2	10 0 65 <1 975 1166 1085 1246 2669 history2 9 2 4 4 history2 0.5 10.6
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	Imit/base >25 >20 Imit/base >3 >20 >30	2 0 67 <1 1085 1192 1166 1421 3988 <u>current</u> 5 3 2 2 <u>current</u> 0.3 7.9 20.1	47 0 67 <1 915 1233 1115 1340 2965 history1 7 0 24 history1 0.4 8.2 20.1	10 0 65 <1 975 1166 1085 1246 2669 history2 9 2 4 4 history2 0.5 10.6 23.2
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 *ASTM D7844	limit/base >25 >20 limit/base >3 >20 >30 >30	2 0 67 <1 1085 1192 1166 1421 3988 <i>current</i> 5 3 2 <i>current</i> 0.3 7.9 20.1 <i>current</i>	47 0 67 <1 915 1233 1115 1340 2965 history1 7 0 24 history1 0.4 8.2 20.1 history1	10 0 65 <1 975 1166 1085 1246 2669 history2 9 2 4 4 history2 0.5 10.6 23.2 history2



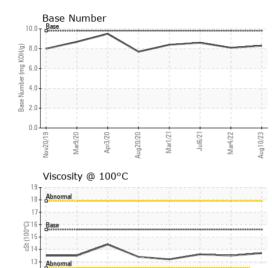
12

11

Nov20/19

Mar9/20

OIL ANALYSIS REPORT



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 PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.6	13.7	13.5	13.6
GRAPHS						
Ferrous Alloys						

