

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id

#### **306716** Component **Diesel Engine** Fluid PETRO CANADA DURON SHP 10W30 (--- QTS)

### 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 INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0120704	PCA0113339	PCA0103044
Sample Date		Client Info		02 Apr 2024	12 Dec 2023	08 Aug 2023
Machine Age	mls	Client Info		132322	120353	108072
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	18	23	21
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	6	3
Lead	ppm	ASTM D5185m	>40	2	2	5
Copper	ppm	ASTM D5185m	>330	<1	<1	2
Tin	ppm	ASTM D5185m	>15	0	<1	1
Vanadium	ppm	ASTM D5185m		<1	0	<1
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Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES	ppm	Method	limit/base	0 current	0 history1	0 history2
	ppm ppm		limit/base	-		-
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	2	current 0	history1 12	history2 3
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	2 0	current 0 0	history1 12 0	history2 3 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	current 0 0 68	history1 12 0 68	history2 3 0 67
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	current           0           0           68           <1	history1 12 0 68 <1	history2 3 0 67 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	current 0 0 68 <1 1082	history1 12 0 68 <1 902	history2 3 0 67 <1 979
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	current           0           0           68           <1           1082           1259	history1 12 0 68 <1 902 1273	history2 3 0 67 <1 979 1200
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	Current 0 0 68 <1 1082 1259 1187	history1 12 0 68 <1 902 1273 1093	history2 3 0 67 <1 979 1200 1028
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180	current           0           0           68           <1           1082           1259           1187           1397	history1 12 0 68 <1 902 1273 1093 1309	history2 3 0 67 <1 979 1200 1028 1305
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	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	Current 0 0 68 <1 1082 1259 1187 1397 3885	history1 12 0 68 <1 902 1273 1093 1309 3099	history2           3           0           67           <1           979           1200           1028           1305           3585
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method 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	Current 0 0 68 <1 1082 1259 1187 1397 3885 Current	history1         12         0         68         <1         902         1273         1093         1309         3099         history1	history2         3         0         67         <1         979         1200         1028         1305         3585         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 950 1050 995 1180 2600	current           0           0           68           <1           1082           1259           1187           1397           3885           current           4	history1         12         0         68         <1         902         1273         1093         1309         3099         history1         4	history2         3         0         67         <1         979         1200         1028         1305         3585         history2         4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25	current           0           0           68           <1           1082           1259           1187           1397           3885           current           4           6	history1         12         0         68         <1         902         1273         1093         1309         3099         history1         4         5	history2         3         0         67         <1         979         1200         1028         1305         3585         history2         4         7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method           ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >25 >20	current           0           0           68           <1           1082           1259           1187           1397           3885           current           4           6           <1	history1         12         0         68         <1         902         1273         1093         1309         3099         history1         4         5         3	history2         3         0         67         <1         979         1200         1028         1305         3585         history2         4         7         3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>Imit/base</b> >25 >20	current           0           0           68           <1           1082           1259           1187           1397           3885           current           4           6           <1           current	history1         12         0         68         <1         902         1273         1093         1309         3099         history1         4         5         3         history1	history2         3         0         67         <1         979         1200         1028         1305         3585         history2         4         7         3         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	method         ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	current           0           0           68           <1           1082           1259           1187           1397           3885           current           4           6           <1           0           0           0.7	history1         12         0         68         <1         902         1273         1093         1309         3099         history1         4         5         3         history1         1.3	history2         3         0         67         <1         979         1200         1028         1305         3585         history2         4         7         3         history2         1
ADDITIVES 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	method         ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i>	current           0           0           68           <1           1082           1259           1187           1397           3885           current           4           6           <1           0.7           9.1	history1         12         0         68         <1         902         1273         1093         1309         3099         history1         4         5         3         history1         1.3         12.6	history2         3         0         67         <1         979         1200         1028         1305         3585         history2         4         7         3         history2         1         1.5
ADDITIVES 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	method           ASTM D5185m           ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>imit/base</i> >25 20 <i>imit/base</i> >3 >20 30	current           0           0           68           <1           1082           1259           1187           1397           3885           current           4           6           <1           current           0.7           9.1           19.5	history1         12         0         68         <1         902         1273         1093         1309         3099         history1         4         5         3         history1         1.3         12.6         23.1	history2         3         0         67         <1         979         1200         1028         1305         3585         history2         4         7         3         history2         1         11.5         21.5



8 Jan30/20

ug25/20

# **OIL ANALYSIS REPORT**

Silt

50

50

40

30

500

400

300 Ed 200

100 Ω

16

St (100°C)

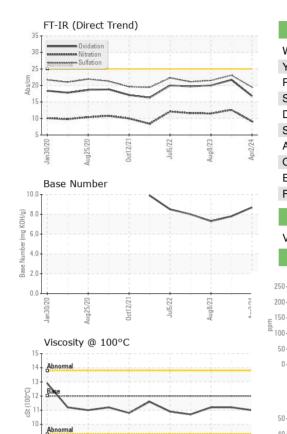
Laboratory

Sample No.

8

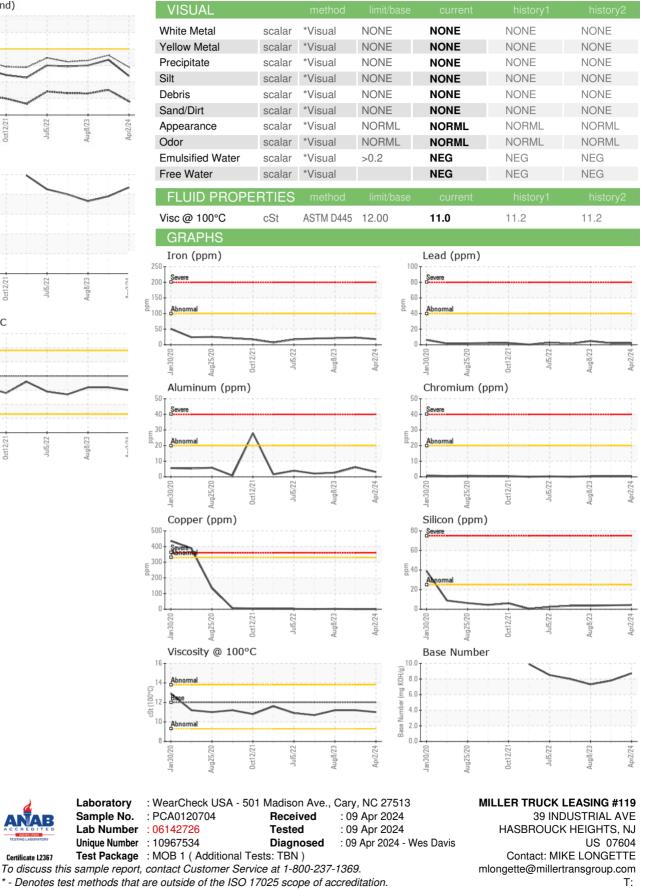
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ul5/22

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Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (201)528-7053

Report Id: MILRUT [WUSCAR] 06142726 (Generated: 04/09/2024 18:34:09) Rev: 1

Certificate 12367

Contact/Location: MIKE LONGETTE - MILRUT