

# **OIL ANALYSIS REPORT**





Area (EIC467) Machine Id 2719 Component

## Diesel Engine

PETRO CANADA DURON HP 15W40 (8 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.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0111545	GFL0083100	GFL0083148
Sample Date		Client Info		06 Mar 2024	01 Aug 2023	05 Jul 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>165	15	7	12
Chromium	ppm	ASTM D5185m		1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	<1	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	<1	<1
Aluminum	ppm	ASTM D5185m		4	5	1
Lead	ppm	ASTM D5185m	>150	4	<1	2
Copper	ppm	ASTM D5185m	>90	<1	<1	2
Tin	ppm	ASTM D5185m	>5	<1	<1	_ <1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 10	history1 15	history2 0
			limit/base			
Boron	ppm ppm ppm	ASTM D5185m	limit/base	10	15	0
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	limit/base	10 0	15 0	0 0
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	10 0 61	15 0 73	0 0 66
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	10 0 61 0	15 0 73 <1	0 0 66 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	10 0 61 0 860	15 0 73 <1 1007	0 0 66 <1 951
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	10 0 61 0 860 1195	15 0 73 <1 1007 1517	0 0 66 <1 951 1168
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	10 0 61 0 860 1195 928	15 0 73 <1 1007 1517 1157	0 0 66 <1 951 1168 1061
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	10 0 61 0 860 1195 928 1160	15 0 73 <1 1007 1517 1157 1388	0 0 66 <1 951 1168 1061 1260
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		10 0 61 0 860 1195 928 1160 2719	15 0 73 <1 1007 1517 1157 1388 3512	0 0 66 <1 951 1168 1061 1260 3167
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	10 0 61 0 860 1195 928 1160 2719 current	15 0 73 <1 1007 1517 1157 1388 3512 history1	0 0 66 <1 951 1168 1061 1260 3167 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 >35	10 0 61 0 860 1195 928 1160 2719 current 7	15 0 73 <1 1007 1517 1157 1388 3512 history1 6	0 0 66 <1 951 1168 1061 1260 3167 history2 7
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 >35	10 0 61 0 860 1195 928 1160 2719 current 7 6	15 0 73 <1 1007 1517 1157 1388 3512 history1 6 6	0 0 66 <1 951 1168 1061 1260 3167 history2 7 0
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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >35 >20	10 0 61 0 860 1195 928 1160 2719 current 7 6 4	15 0 73 <1 1007 1517 1157 1388 3512 history1 6 6 6 3	0 0 66 <1 951 1168 1061 1260 3167 history2 7 0 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	limit/base >35 >20 limit/base >7.5	10 0 61 0 860 1195 928 1160 2719 current 7 6 4	15 0 73 <1 1007 1517 1157 1388 3512 history1 6 6 3 3	0 0 66 <1 951 1168 1061 1260 3167 history2 7 0 5 5 history2
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	ASTM D5185m ASTM D5185m	limit/base >35 >20 limit/base >7.5 >20	10 0 61 0 860 1195 928 1160 2719 current 7 6 4 current 0.3	15 0 73 <1 1007 1517 1157 1388 3512 history1 6 6 6 3 3 <u>history1</u> 0.2	0 0 66 <1 951 1168 1061 1260 3167 history2 7 0 5 history2 0.3
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 >35 >20 limit/base >7.5 >20	10 0 61 0 860 1195 928 1160 2719 current 7 6 4 current 0.3 11.9	15 0 73 <1 1007 1517 1157 1388 3512 history1 6 6 6 3 3 history1 0.2 7.8	0 0 66 <1 951 1168 1061 1260 3167 history2 7 0 5 history2 0.3 10.7
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 >35 >20 Imit/base >7.5 >20 >30	10 0 61 0 860 1195 928 1160 2719 current 7 6 4 current 0.3 11.9 23.5	15 0 73 <1 1007 1517 1157 1388 3512 history1 6 6 6 3 3 history1 0.2 7.8 19.4	0 0 66 <1 951 1168 1061 1260 3167 <b>history2</b> 7 0 5 <b>history2</b> 0.3 10.7 22.0
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 D7844 *ASTM D7844 *ASTM D7844	limit/base >35 >20 limit/base >7.5 >20 >30 limit/base	10 0 61 0 860 1195 928 1160 2719 current 7 6 4 current 0.3 11.9 23.5 current	15 0 73 <1 1007 1517 1157 1388 3512 history1 6 6 6 3 <b>history1</b> 0.2 7.8 19.4 history1	0 0 66 <1 951 1168 1061 1260 3167 history2 7 0 5 history2 0.3 10.7 22.0 history2



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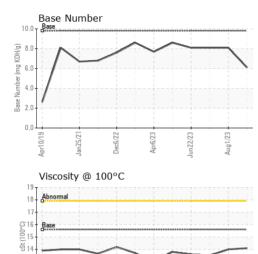
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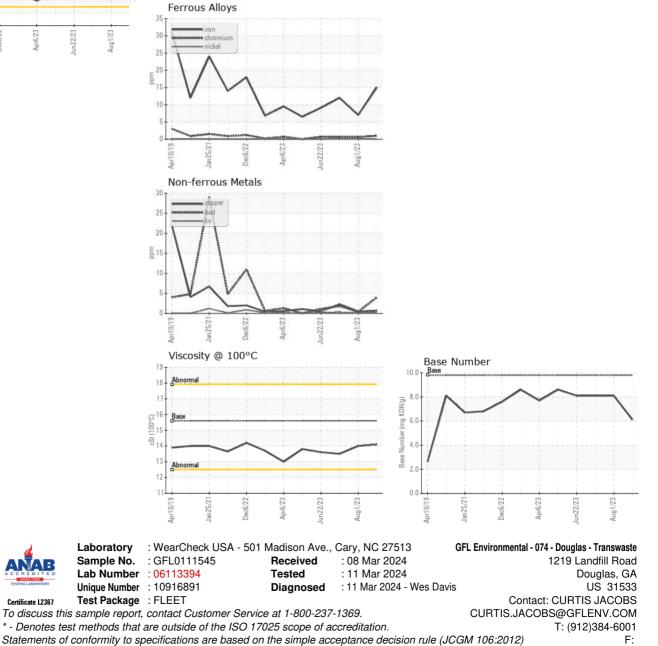
# **OIL ANALYSIS REPORT**



Dec6/77

Apr6/23

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	14.1	14.0	13.5
GRAPHS						



Certificate L2367

Submitted By: CURTIS JACOBS