

# **OIL ANALYSIS REPORT**

### NORMAL

#### Machine Id 10035

Component

**Diesel Engine** Elui

## PETRO CANADA DURON SHP 15W40 (7 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.

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# 12010 Jun2011 Dec2014 Mar2016 Jul2017 Apr2019 Oct2020 Oct2021

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0060103	GFL0098031	GFL0044017
Sample Date		Client Info		03 Nov 2023	16 Oct 2023	16 Feb 2022
Machine Age	hrs	Client Info		116470	116470	116470
Oil Age	hrs	Client Info		116470	116470	25410
Oil Changed		Client Info		N/A	N/A	Changed
Sample Status				NORMAL	MARGINAL	NORMAL
		mothod	limit/baco	ourront	history1	history?
				current	1 O	1 O
Fuel		WC Method	>5	<1.0	<1.0	<1.0
GIYCOI		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	20	75	36
Chromium	ppm	ASTM D5185m	>20	<1	3	2
Nickel	ppm	ASTM D5185m	>4	<1	1	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	<b>1</b> 8	3
Lead	ppm	ASTM D5185m	>40	0	1	1
Copper	ppm	ASTM D5185m	>330	<1	4	2
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Antimony	ppm	ASTM D5185m				<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	maa	ASTM D5185m		0	0	0
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ADDITIVES	le le	method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current	history1 5	history2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base 0 0	current 13 0	history1 5 0	history2 10 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60	current 13 0 66	history1 5 0 63	history2 10 0 63
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0	current 13 0 66 <1	5 0 63 <1	history2 10 0 63 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010	Current 13 0 66 <1 991	5 0 63 <1 932	history2 10 0 63 <1 824
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070	current 13 0 66 <1 991 1105	5 0 63 <1 932 1053	history2 10 0 63 <1 824 1216
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150	Current 13 0 66 <1 991 1105 1099	bistory1           5           0           63           <1           932           1053           949	history2 10 0 63 <1 824 1216 1024
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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 0 60 0 1010 1070 1150 1270	Current 13 0 66 <1 991 1105 1099 1365	history1           5           0           63           <1           932           1053           949           1228	history2           10           0           63           <1           824           1216           1024           1240
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm 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	limit/base 0 0 60 0 1010 1070 1150 1270 2060	current           13           0           66           <1           991           1105           1099           1365           3356	history1           5           0           63           <1           932           1053           949           1228           2852	history2           10           0           63           <1           824           1216           1024           1240           2588
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	limit/base 0 60 0 1010 1070 1150 1270 2060 limit/base	C Current 13 0 66 <1 991 1105 1099 1365 3356 Current	bistory1         5         0         63         <1         932         1053         949         1228         2852         bistory1	history2         10         0         63         <1         824         1216         1024         1240         2588         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm 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 ASTM D5185m	limit/base 0 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current           13           0           66           <1           991           1105           1099           1365           3356           current           5	+history1 5 0 63 <1 932 1053 949 1228 2852 history1 9	history2         10         0         63         <1         824         1216         1024         1240         2588         history2         6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM DS185m           ASTM D5185m	limit/base 0 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current         13         0         66         <1         991         1105         1099         1365         3356         current         5         12	history1         5         0         63         <1         932         1053         949         1228         2852         history1         9         32	history2         10         0         63         <1         824         1216         1024         1240         2588         history2         6         14
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM DS185m           ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	current         13         0         66         <1         991         1105         1099         1365         3356         current         5         12         1	bistory1         5         0         63         <1         932         1053         949         1228         2852         history1         9         32         6	history2         10         0         63         <1         824         1216         1024         1240         2588         history2         6         14         <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm	method           ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	current         13         0         66         <1         991         1105         1099         1365         3356         current         5         12         1         current	history1         5         0         63         <1         932         1053         949         1228         2852         history1         9         32         6         history1	history2         10         0         63         <1         824         1216         1024         1240         2588         history2         6         14         <1         history2
ADDITIVES Boron 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	method           ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3	current         13         0         66         <1         991         1105         1099         1365         3356         current         5         12         1         current         0.2	history1         5         0         63         <1         932         1053         949         1228         2852         history1         9         32         6         history1         0.8	history2         10         0         63         <1         824         1216         1024         1240         2588         history2         6         14         <1         history2         0.7
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	Norm Dolition           method           ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 2060 2060 225 20 20 20 3 20 3 20 3 20	current         13         0         66         <1         991         1105         1099         1365         3356         current         5         12         1         current         0.2         6.4	history1         5         0         63         <1         932         1053         949         1228         2852         history1         9         32         6         history1         0.8         13.1	history2         10         0         63         <1         824         1216         1024         1240         2588         history2         6         14         <1         history2         0.7         13.5
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 TS ppm ppm ppm	method         ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30	current         13         0         66         <1         991         1105         1099         1365         3356         current         5         12         1         current         0.2         6.4         18.5	history1         5         0         63         <1         932         1053         949         1228         2852         history1         9         32         6         history1         0.8         13.1         24.0	history2         10         0         63         <1         824         1216         1024         1240         2588         history2         6         14         <1         history2         0.7         13.5         25.2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method         ASTM D5185m         ASTM D7844         *ASTM D7624         *ASTM D7415	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 limit/base >3 >20 S30	current         13         0         66         <1         991         1105         1099         1365         3356         current         5         12         1         current         0.2         6.4         18.5         current	history1         5         0         63         <1         932         1053         949         1228         2852         history1         9         32         6         history1         0.8         13.1         24.0         history1	history2         10         0         63         <1         824         1216         1024         1240         2588         history2         6         14         <1         history2         0.7         13.5         25.2         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation Cylidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m           ASTM D7844           *ASTM D7415           method           *ASTM D7414	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30 limit/base	current         13         0         66         <1         991         1105         1099         1365         3356         current         5         12         1         current         0.2         6.4         18.5         current	history1         5         0         63         <1         932         1053         949         1228         2852         history1         9         32         6         history1         0.8         13.1         24.0         history1         24.5	history2         10         0         63         <1         824         1216         1024         1240         2588         history2         6         14         <1         history2         0.7         13.5         25.2         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation Base Number (BN)	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	Imethod         ASTM D5185m         ASTM D7844         *ASTM D7414         *ASTM D7414         ASTM D7414	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 20 limit/base >3 >20 >30 limit/base >3 >20	current         13         0         66         <1         991         1105         1099         1365         3356         current         5         12         1         current         0.2         6.4         18.5         current         14.8         9.0	history1         5         0         63         <1         932         1053         949         1228         2852         history1         9         32         6         history1         0.8         13.1         24.0         history1         24.5         5.6	history2         10         0         63         <1         824         1216         1024         1240         2588         history2         6         14         <1         history2         0.7         13.5         25.2         history2         25.4



# **OIL ANALYSIS REPORT**





VISUAL		method				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	15.4	13.9	13.9	12.8
GRAPHS						







 Certificate L2367
 Test Package
 : FLEET

 To discuss this sample report, contact Customer Service at 1-800-237-1369.
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 \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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