

## **OIL ANALYSIS REPORT**

Sample Rating Trend



#### Machine Id

### 423013-408

#### Component Diesel Engine Fluid

PETRO CANADA DURON SHP 15W40 (--- LTR)

### 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.

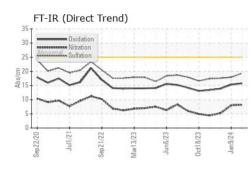
#### Fluid Condition

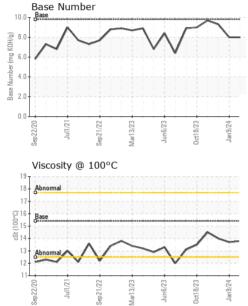
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0112730	GFL0045460	GFL0091737
Sample Date		Client Info		03 Apr 2024	09 Jan 2024	03 Nov 2023
Machine Age	hrs	Client Info		35483	23005	22577
Oil Age	hrs	Client Info		0	0	22577
Oil Changed		Client Info		Not Changd	Changed	Not Changd
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	>120	6	10	6
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	3	5
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	4	2
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m	>330	<1	2	1
Tin	ppm	ASTM D5185m	>15	0	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current <1	history1 3	history2 3
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	<1	3	3
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	<1 0	3 0	3 5
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	<1 0 59	3 0 59	3 5 59
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	<1 0 59 0	3 0 59 <1	3 5 59 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	<1 0 59 0 1036	3 0 59 <1 975	3 5 59 <1 889
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	<1 0 59 0 1036 1155	3 0 59 <1 975 1052	3 5 59 <1 889 1020
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	0 0 60 0 1010 1070 1150	<1 0 59 0 1036 1155 1087	3 0 59 <1 975 1052 1132	3 5 59 <1 889 1020 1007
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	0 0 60 0 1010 1070 1150 1270	<1 0 59 0 1036 1155 1087 1311	3 0 59 <1 975 1052 1132 1324	3 5 59 <1 889 1020 1007 1173
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	0 0 60 0 1010 1070 1150 1270 2060	<1 0 59 0 1036 1155 1087 1311 3756	3 0 59 <1 975 1052 1132 1324 3250	3 5 59 <1 889 1020 1007 1173 2983
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	0 0 60 1010 1070 1150 1270 2060	<1 0 59 0 1036 1155 1087 1311 3756 current	3 0 59 <1 975 1052 1132 1324 3250 history1	3 5 59 <1 889 1020 1007 1173 2983 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	0 0 60 1010 1070 1150 1270 2060	<1 0 59 0 1036 1155 1087 1311 3756 current 4	3 0 59 <1 975 1052 1132 1324 3250 history1 5	3 5 59 <1 889 1020 1007 1173 2983 history2 5
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	0 0 60 1010 1070 1150 1270 2060 <b>limit/base</b>	<1 0 59 0 1036 1155 1087 1311 3756 current 4 2	3 0 59 <1 975 1052 1132 1324 3250 history1 5 7	3 5 59 <1 889 1020 1007 1173 2983 history2 5 4
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	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	<1 0 59 0 1036 1155 1087 1311 3756 current 4 2 0	3 0 59 <1 975 1052 1132 1324 3250 history1 5 7 4	3 5 59 <1 889 1020 1007 1173 2983 history2 5 4 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20 <b>limit/base</b>	<1 0 59 0 1036 1155 1087 1311 3756 current 4 2 0 0	3 0 59 <1 975 1052 1132 1324 3250 history1 5 7 4 history1	3 5 59 <1 889 1020 1007 1173 2983 history2 5 4 6 bistory2
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	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20 <b>limit/base</b>	<1 0 59 0 1036 1155 1087 1311 3756 current 4 2 0 0 current 0.5	3 0 59 <1 975 1052 1132 1324 3250 history1 5 7 4 history1 0.2	3 5 59 <1 889 1020 1007 1173 2983 history2 5 4 6 history2 0.1
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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	<1 0 59 0 1036 1155 1087 1311 3756 <i>current</i> 4 2 0 <i>current</i> 0.5 8.2	3 0 59 <1 975 1052 1132 1324 3250 history1 5 7 4 history1 0.2 8.0	3 5 59 <1 889 1020 1007 1173 2983 history2 5 4 6 history2 0.1 5.2
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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 25 20 20 <b>limit/base</b> >20 <b>limit/base</b> >20	<1 0 59 0 1036 1155 1087 1311 3756 <u>current</u> 4 2 0 <u>current</u> 0.5 8.2 19.3	3 0 59 <1 975 1052 1132 1324 3250 history1 5 7 4 <b>history1</b> 0.2 8.0 17.9	3 5 59 <1 889 1020 1007 1173 2983 <b>history2</b> 5 4 6 <b>history2</b> 0.1 5.2 17.6



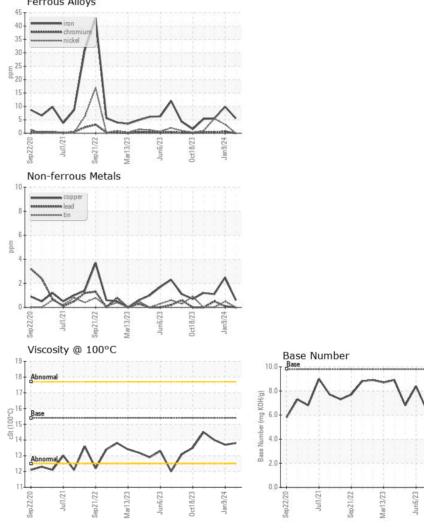
# **OIL ANALYSIS REPORT**





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	15.4	13.8	13.7	14.0
GRAPHS						

Ferrous Alloys



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 654 - Richmond Hauling Sample No. : GFL0112730 Received : 08 Apr 2024 11800 Lewis Road Lab Number : 06141955 Tested : 09 Apr 2024 Chester, VA US 23831 Unique Number : 10966763 Diagnosed : 09 Apr 2024 - Wes Davis Test Package : FLEET Contact: Jimmy Mayes Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. jmayes@gflenv.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: F: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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Submitted By: TECHNICIAN ACCOUNT

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