

## **OIL ANALYSIS REPORT**

Sample Rating Trend



812102 Component Diesel Engine

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

### DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

Machine Id

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

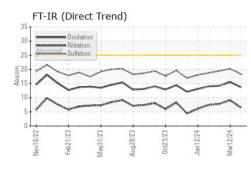
#### Fluid Condition

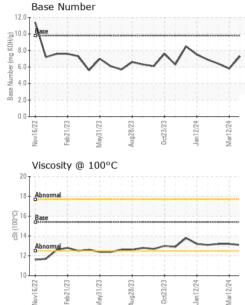
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0115702	GFL0115752	GFL0112300
Sample Date		Client Info		09 Apr 2024	12 Mar 2024	14 Feb 2024
Machine Age	hrs	Client Info		5059	4845	4694
Oil Age	hrs	Client Info		214	583	432
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
		ASTM D5185m	>120		11	8
Iron Chromium	ppm	ASTM D5185m	>120	4 0	<1	8 <1
Nickel	ppm	ASTM D5185m	>20 >5	0	<1	2
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	< 1
Aluminum	ppm ppm	ASTM D5185m	>20	u <1	1	<1
Lead	ppm	ASTM D5185m	>40	0	<1	0
Copper	ppm	ASTM D5185m	>330	0	2	1
Tin	ppm	ASTM D5185m	>15	۰ <1	<1	<1
Vanadium	ppm	ASTM D5185m	210	0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
oddiniani	ppm				0	0
ADDITIVES		method	limit/base	current	historv1	history2
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	11	5	3
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	11 0	5 0	3 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	11 0 61	5 0 58	3 0 55
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	11 0 61 <1	5 0 58 <1	3 0 55 <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	11 0 61 <1 858	5 0 58 <1 849	3 0 55 <1 852
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	11 0 61 <1 858 1042	5 0 58 <1 849 997	3 0 55 <1 852 982
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	11 0 61 <1 858 1042 935	5 0 58 <1 849 997 898	3 0 55 <1 852 982 898
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	11 0 61 <1 858 1042 935 1113	5 0 58 <1 849 997 898 1133	3 0 55 <1 852 982 898 1108
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 1010 1070 1150 1270 2060	11 0 61 <1 858 1042 935 1113 3073	5 0 58 <1 849 997 898 1133 2765	3 0 55 <1 852 982 898 1108 2583
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 limit/base	11 0 61 <1 858 1042 935 1113 3073 current	5 0 58 <1 849 997 898 1133 2765 history1	3 0 55 <1 852 982 898 1108 2583 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 limit/base	11 0 61 <1 858 1042 935 1113 3073 current 3	5 0 58 <1 849 997 898 1133 2765 history1 3	3 0 55 <1 852 982 898 1108 2583 history2 3
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 limit/base >25	11 0 61 <1 858 1042 935 1113 3073 current 3 2	5 0 58 <1 849 997 898 1133 2765 history1 3 3	3 0 55 <1 852 982 898 1108 2583 history2 3 3 3
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 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	11 0 61 <1 858 1042 935 1113 3073 current 3 2 0	5 0 58 <1 849 997 898 1133 2765 history1 3 3 3 <1	3 0 55 <1 852 982 898 1108 2583 history2 3 3 3 <1
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 limit/base >25 	11 0 61 <1 858 1042 935 1113 3073 current 3 2 0 0 current	5 0 58 <1 849 997 898 1133 2765 history1 3 3 <1 history1	3 0 55 <1 852 982 898 1108 2583 history2 3 3 <1 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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4	11 0 61 <1 858 1042 935 1113 3073 current 3 2 0 0 current 0.3	5 0 58 <1 849 997 898 1133 2765 history1 3 3 <1 history1 0.8	3 0 55 <1 852 982 898 1108 2583 history2 3 3 <1 history2 0.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >20 imit/base	11 0 61 <1 858 1042 935 1113 3073 current 3 2 0 current 0.3 6.5	5 0 58 <1 849 997 898 1133 2765 history1 3 3 3 <1 history1 0.8 9.1	3 0 55 <1 852 982 898 1108 2583 history2 3 3 3 <1 history2 0.6 7.8
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4	11 0 61 <1 858 1042 935 1113 3073 current 3 2 0 0 current 0.3	5 0 58 <1 849 997 898 1133 2765 history1 3 3 <1 history1 0.8	3 0 55 <1 852 982 898 1108 2583 history2 3 3 <1 history2 0.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >20 imit/base	11 0 61 <1 858 1042 935 1113 3073 current 3 2 0 current 0.3 6.5	5 0 58 <1 849 997 898 1133 2765 history1 3 3 3 <1 history1 0.8 9.1	3 0 55 <1 852 982 898 1108 2583 history2 3 3 3 <1 history2 0.6 7.8
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 TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 <b>imit/base</b> >20 <b>imit/base</b> >4 >20	11 0 61 <1 858 1042 935 1113 3073 <i>current</i> 3 2 0 <i>current</i> 0.3 6.5 18.3	5 0 58 <1 849 997 898 1133 2765 history1 3 3 <1 0.8 9.1 20.2	3 0 55 <1 852 982 898 1108 2583 history2 3 3 <1 history2 0.6 7.8 19.4



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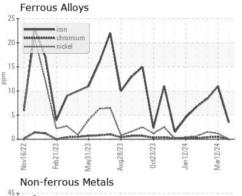


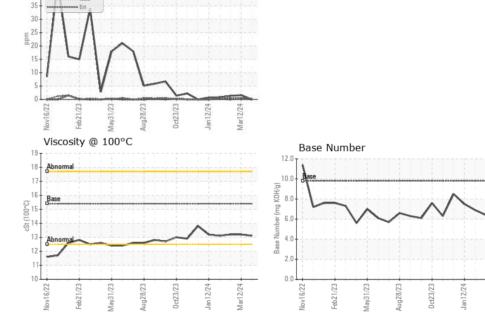


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	13.1	13.2	13.2

GRAPHS

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Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 010 - Stockbridge Sample No. : GFL0115702 Received : 10 Apr 2024 1280 Rum Creek Parkway Lab Number : 06143810 Tested : 11 Apr 2024 Stockbridge, GA Unique Number : 10968618 Diagnosed : 11 Apr 2024 - Wes Davis US 30281 Test Package : FLEET Contact: JOSHUA TINKER Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. joshuatinker@gflenv.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Submitted By: JOSHUA TINKER Page 2 of 2

Mar12/24