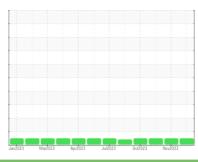


# **OIL ANALYSIS REPORT**

# ALEXANDER CITY 427128

Component **Diesel Engine** 

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



Sample Rating Trend



# DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

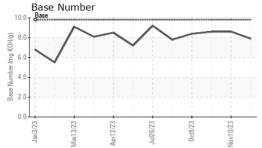
### **Fluid Condition**

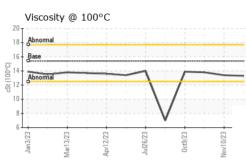
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0092355	GFL0079714	GFL0092423
Sample Date		Client Info		05 Dec 2023	10 Nov 2023	16 Oct 2023
Machine Age	hrs	Client Info		14981	339717	334811
Oil Age	hrs	Client Info		14981	0	0
Oil Changed		Client Info		N/A	N/A	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	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 METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	5	5	2
Chromium	ppm	ASTM D5185m	>20	0	<1	0
Nickel	ppm	ASTM D5185m	>4	0	<1	<1
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	2	2	2
Lead	ppm	ASTM D5185m	>40	0	<1	1
Copper	ppm	ASTM D5185m	>330	<1	2	<1
Tin	ppm		>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 8	history1	history2
	ppm	ASTM D5185m				· ·
Boron		ASTM D5185m	0	8	10	16
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	8 0	10	16 0
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	8 0 60	10 0 63	16 0 60
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	8 0 60 <1	10 0 63 <1	16 0 60 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	8 0 60 <1 922	10 0 63 <1 927	16 0 60 <1 919
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	8 0 60 <1 922 1039	10 0 63 <1 927 1107	16 0 60 <1 919 1038
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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	8 0 60 <1 922 1039 1016	10 0 63 <1 927 1107 1048	16 0 60 <1 919 1038 992
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270	8 0 60 <1 922 1039 1016	10 0 63 <1 927 1107 1048 1239	16 0 60 <1 919 1038 992 1279
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	8 0 60 <1 922 1039 1016 1264 3099	10 0 63 <1 927 1107 1048 1239 3245	16 0 60 <1 919 1038 992 1279 3245
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	8 0 60 <1 922 1039 1016 1264 3099	10 0 63 <1 927 1107 1048 1239 3245 history1	16 0 60 <1 919 1038 992 1279 3245 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	8 0 60 <1 922 1039 1016 1264 3099 current	10 0 63 <1 927 1107 1048 1239 3245 history1	16 0 60 <1 919 1038 992 1279 3245 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	8 0 60 <1 922 1039 1016 1264 3099 current 5	10 0 63 <1 927 1107 1048 1239 3245 history1 5 0	16 0 60 <1 919 1038 992 1279 3245 history2 4 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	8 0 60 <1 922 1039 1016 1264 3099 current 5 1	10 0 63 <1 927 1107 1048 1239 3245 history1 5 0 3	16 0 60 <1 919 1038 992 1279 3245 history2 4 <1
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	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	8 0 60 <1 922 1039 1016 1264 3099 current 5 1 2 current	10 0 63 <1 927 1107 1048 1239 3245 history1 5 0 3	16 0 60 <1 919 1038 992 1279 3245 history2 4 <1 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m  Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	8 0 60 <1 922 1039 1016 1264 3099 current 5 1 2	10 0 63 <1 927 1107 1048 1239 3245 history1 5 0 3 history1 0.3	16 0 60 <1 919 1038 992 1279 3245 history2 4 <1 2 history2 0.2
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  Method  ASTM D5185m  Method  *ASTM D7844  *ASTM D7624  *ASTM D76145	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 limit/base	8 0 60 <1 922 1039 1016 1264 3099 current 5 1 2 current 0.4 8.2	10 0 63 <1 927 1107 1048 1239 3245 history1 5 0 3 history1 0.3 6.8	16 0 60 <1 919 1038 992 1279 3245 history2 4 <1 2 history2 0.2 5.9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m  METHOD  *ASTM D5185m ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  METHOD  *ASTM D7844  *ASTM D7624  *ASTM D7415  METHOD	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >3 limit/base	8 0 60 <1 922 1039 1016 1264 3099 current 5 1 2 current 0.4 8.2 18.4 current	10 0 63 <1 927 1107 1048 1239 3245 history1 5 0 3 history1 0.3 6.8 18.4 history1	16 0 60 <1 919 1038 992 1279 3245 history2 4 <1 2 history2 0.2 5.9 18.0 history2
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  Method  ASTM D5185m  Method  *ASTM D7844  *ASTM D7624  *ASTM D76145	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30	8 0 60 <1 922 1039 1016 1264 3099 current 5 1 2 current 0.4 8.2 18.4	10 0 63 <1 927 1107 1048 1239 3245 history1 5 0 3 history1 0.3 6.8 18.4	16 0 60 <1 919 1038 992 1279 3245 history2 4 <1 2 history2 0.2 5.9 18.0



# **OIL ANALYSIS REPORT**

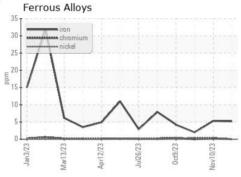


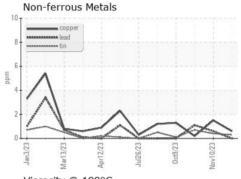


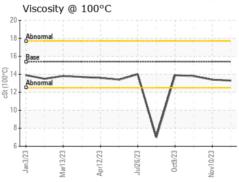
VISUAL		method				history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

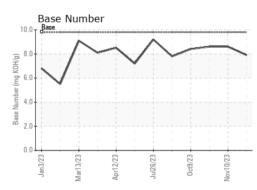
FLUID PROPERTIES		method				history2	
Visc @ 100°C	cSt	ASTM D445	15.4	13.3	13.4	13.8	

## **GRAPHS**













Certificate L2367

Laboratory Sample No. Lab Number

: GFL0092355 : 06034092 Unique Number : 10789321 Test Package : FLEET

To discuss this sample report, contact Customer Service at 1-800-237-1369.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 13 Dec 2023 Diagnosed : 14 Dec 2023 Diagnostician : Wes Davis

GFL Environmental - 172 - Montgomery-Alexander City-Tallahassee

Multiple Sites Montgomery, AL US 36108

Contact: RICHARD HATFIELD

rhatfield@gflenv.com T:

\* - 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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