

OIL ANALYSIS REPORT

NORMAL

Machine Id **10193** Component **Diesel Engine** Fluid **PETRO CANADA DURON SHP 15W40 (21 QTS)**

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.

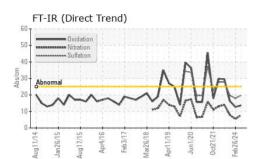
Fluid Condition

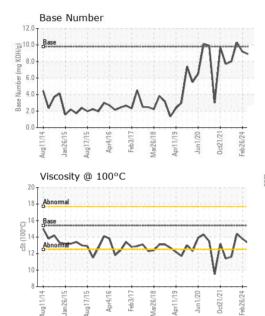
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0104071	GFL0104082	GFL0068123
Sample Date		Client Info		11 Apr 2024	26 Feb 2024	02 Nov 2023
Machine Age	hrs	Client Info		21381	21368	20772
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	1.7
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	>90	7	15	<u> </u>
Chromium	ppm	ASTM D5185m	>20	0	1	1
Nickel	ppm	ASTM D5185m	>2	0	<1	1
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	<mark>▲</mark> 38
Lead	ppm	ASTM D5185m	>40	0	<1	1
Copper	ppm	ASTM D5185m	>330	0	1	33
Tin	ppm	ASTM D5185m	>15	0	<1	1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	0
oaamam	ррпп			0		0
ADDITIVES	ppin	method	limit/base	current	history1	history2
	ppm		limit/base			-
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 5	history1 8	history2 5
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0	current 5 0	history1 8 2	history2 5 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 5 0 54	history1 8 2 54 <1 789	history2 5 0 57
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 5 0 54 0	history1 8 2 54 <1	history2 5 0 57 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	Current 5 0 54 0 846	history1 8 2 54 <1 789	history2 5 0 57 2 830
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	0 0 60 0 1010 1070	Current 5 0 54 0 846 1050	history1 8 2 54 <1 789 961	history2 5 0 57 2 830 1334
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	Current 5 0 54 0 846 1050 987	history1 8 2 54 <1 789 961 911	history2 5 0 57 2 830 1334 1076
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	Current 5 0 54 0 846 1050 987 1118	history1 8 2 54 <1 789 961 911 1089	history2 5 0 57 2 830 1334 1076 1301
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	0 0 60 1010 1070 1150 1270 2060	Current 5 0 54 0 846 1050 987 1118 3104	history1 8 2 54 <1 789 961 911 1089 3137	history2 5 0 57 2 830 1334 1076 1301 3422
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	0 0 60 1010 1070 1150 1270 2060	Current 5 0 54 0 846 1050 987 1118 3104 Current	history1 8 2 54 <1 789 961 911 1089 3137 history1	history2 5 0 57 2 830 1334 1076 1301 3422 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm 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	0 0 60 1010 1070 1150 1270 2060 kimit/base >25	current 5 0 54 0 846 1050 987 1118 3104 current 2	history1 8 2 54 <1 789 961 911 1089 3137 history1 7	history2 5 0 57 2 830 1334 1076 1301 3422 history2 9
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base >25	current 5 0 54 0 846 1050 987 1118 3104 current 2 36	history1 8 2 54 <1 789 961 911 1089 3137 history1 7 27	history2 5 0 57 2 830 1334 1076 1301 3422 history2 9 9 ▲ 270
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	Current 5 0 54 0 846 1050 987 1118 3104 current 2 36 33	history1 8 2 54 <1 789 961 911 1089 3137 history1 7 27 5	history2 5 0 57 2 830 1334 1076 1301 3422 history2 9 270 12
ADDITIVES 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	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >26	Current 5 0 54 0 846 1050 987 1118 3104 Current 2 36 33 Current	history1 8 2 54 <1 789 961 911 1089 3137 history1 7 27 5 history1	history2 5 0 57 2 830 1334 1076 1301 3422 history2 9 270 12 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	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >26	Current 5 0 54 0 846 1050 987 1118 3104 current 2 36 33 current 1.1	history1 8 2 54 <1 789 961 911 1089 3137 history1 7 27 5 history1 0.4	history2 5 0 57 2 830 1334 1076 1301 3422 history2 9 270 12 history2 0.3
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 t ppm ppm	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 2060 225 20 20 20 1imit/base >20	current 5 0 54 0 846 1050 987 1118 3104 current 2 36 33 current 1.1 7.8	history1 8 2 54 <1 789 961 911 1089 3137 history1 7 27 5 history1 0.4 5.4	history2 5 0 57 2 830 1334 1076 1301 3422 history2 9 ▲ 270 12 history2 0.3 7.9
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 t ppm ppm	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 limit/base >20 limit/base >20 30	Current 5 0 54 0 846 1050 987 1118 3104 current 2 36 33 current 1.1 7.8 19.7	history1 8 2 54 <1 789 961 911 1089 3137 history1 7 27 5 history1 0.4 5.4 17.9	history2 5 0 57 2 830 1334 1076 1301 3422 history2 9 270 12 history2 0.3 7.9 19.7



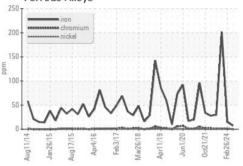
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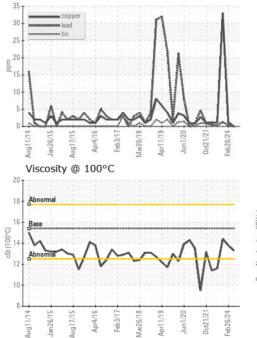


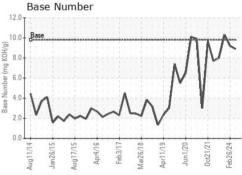
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	13.3	13.8	14.4
GRAPHS						

Ferrous Alloys



Non-ferrous Metals





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 028 - Weldon Sample No. : GFL0104071 Received : 15 Apr 2024 2211 US Highway 301 Lab Number : 06148290 Tested : 15 Apr 2024 Halifax, NC Unique Number : 10978368 Diagnosed : 15 Apr 2024 - Wes Davis US 27839 Test Package : FLEET Contact: TRAVIS PORCH Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. tporch@gflenv.com T: (252)532-3344

Mar26/1

* - 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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Submitted By: TRAVIS PORCH Page 2 of 2

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