

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Area (YA156369) 910029

Diesel Engine

Fluid

PETRO CANADA DURON GEO LD 15W40 (8 GAL)

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.

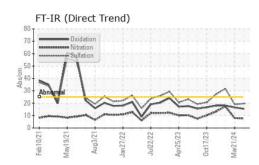
Fluid Condition

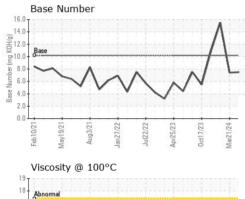
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

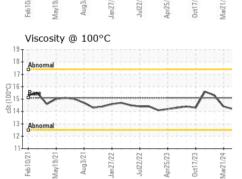
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0115990	GFL0090035	GFL0090007
Sample Date		Client Info		02 Jul 2024	21 Mar 2024	08 Mar 2024
Machine Age	hrs	Client Info		41069	9862	41069
Oil Age	hrs	Client Info		0	100	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	SEVERE
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	▲ 0.20
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>165	8	6	43
Chromium	ppm	ASTM D5185m		ہ <1	1	↓ 10
Nickel	ppm	ASTM D5185m		0	<1	2
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m		0	<1	0
Aluminum	ppm	ASTM D5185m	>20	2	2	4
Lead		ASTM D5185m		0	1	14
	ppm	ASTM D5185m		۰ <1	1	8
Copper Tin	ppm	ASTM D5185m	>5	0	1	<1
Vanadium	ppm	ASTM D5185m	20	0	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	0
	ppm	ASTIVI DSTOSIII		0		0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	50	current 17	history1 28	history2 15
Boron Barium	ppm ppm					
Boron		ASTM D5185m	50 5 50	17	28	15
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5	17 0	28 1	15 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	17 0 54	28 1 51	15 0 94
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	17 0 54 0	28 1 51 1	15 0 94 1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780	17 0 54 0 749	28 1 51 1 582 1518 789	15 0 94 1 571 1567 833
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510	17 0 54 0 749 1326	28 1 51 1 582 1518	15 0 94 1 571 1567 833 1013
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	50 5 50 0 560 1510 780	17 0 54 0 749 1326 962	28 1 51 1 582 1518 789	15 0 94 1 571 1567 833
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	50 50 0 560 1510 780 870 2040	17 0 54 0 749 1326 962 1107 2641 current	28 1 51 1 582 1518 789 972 2632 history1	15 0 94 1 571 1567 833 1013 2940 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	50 5 50 0 560 1510 780 870 2040	17 0 54 0 749 1326 962 1107 2641 current 5	28 1 51 1 582 1518 789 972 2632 history1 7	15 0 94 1 571 1567 833 1013 2940 history2 17
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >35	17 0 54 0 749 1326 962 1107 2641 <u>current</u> 5 3	28 1 51 1 582 1518 789 972 2632 history1 7 3	15 0 94 1 571 1567 833 1013 2940 history2 17 ▲ 414
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	50 50 00 560 1510 780 870 2040 limit/base >35	17 0 54 0 749 1326 962 1107 2641 <i>current</i> 5 3 3	28 1 51 1 582 1518 789 972 2632 history1 7 3 4	15 0 94 1 571 1567 833 1013 2940 history2 17 ▲ 414 ▲ 6687
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	50 5 50 0 560 1510 780 870 2040 limit/base >35	17 0 54 0 749 1326 962 1107 2641 <u>current</u> 5 3	28 1 51 1 582 1518 789 972 2632 history1 7 3	15 0 94 1 571 1567 833 1013 2940 history2 17 ▲ 414 ▲ 6687
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	50 50 00 560 1510 780 870 2040 limit/base >35	17 0 54 0 749 1326 962 1107 2641 <i>current</i> 5 3 3 3 <i>current</i> 0	28 1 51 1 582 1518 789 972 2632 history1 7 3 4 4 history1 0	15 0 94 1 571 1567 833 1013 2940 history2 17 ▲ 414 ▲ 6687 history2 0.1
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 ppm	ASTM D5185m ASTM D5185m	50 50 0 560 1510 780 870 2040 Imit/base >35 -20 Imit/base	17 0 54 0 749 1326 962 1107 2641 <i>current</i> 5 3 3 3 <i>current</i>	28 1 51 1 582 1518 789 972 2632 history1 7 3 4 4	15 0 94 1 571 1567 833 1013 2940 history2 17 ▲ 414 ▲ 6687
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	50 50 0 560 1510 780 870 2040 limit/base >35 >20 limit/base >7.5	17 0 54 0 749 1326 962 1107 2641 <i>current</i> 5 3 3 3 <i>current</i> 0	28 1 51 1 582 1518 789 972 2632 history1 7 3 4 4 history1 0	15 0 94 1 571 1567 833 1013 2940 history2 17 ▲ 414 ▲ 6687 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	50 50 560 1510 780 870 2040 imit/base >35 20 imit/base >20	17 0 54 0 749 1326 962 1107 2641 <i>current</i> 5 3 3 <i>current</i> 0 7.6	28 1 51 1 582 1518 789 972 2632 history1 7 3 4 history1 0 8.0	15 0 94 1 571 1567 833 1013 2940 history2 17 ▲ 414 ▲ 6687 history2 0.1 17.4
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	50 50 560 1510 780 870 2040 Imit/base >35 20 Imit/base >7.5 >20 >30	17 0 54 0 749 1326 962 1107 2641 <i>current</i> 5 3 3 3 <i>current</i> 0 7.6 19.7	28 1 51 1 582 1518 789 972 2632 history1 7 3 4 history1 0 8.0 19.0	15 0 94 1 571 1567 833 1013 2940 history2 17 ▲ 414 ▲ 6687 history2 0.1 17.4 31.8
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 ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	50 50 560 1510 780 870 2040 imit/base >35 20 >20 imit/base >7.5 >20 >30	17 0 54 0 749 1326 962 1107 2641 <i>current</i> 5 3 3 3 <i>current</i> 0 7.6 19.7	28 1 51 1 582 1518 789 972 2632 history1 7 3 4 history1 0 8.0 19.0 history1	15 0 94 1 571 1567 833 1013 2940 history2 17 ▲ 414 ▲ 6687 history2 0.1 17.4 31.8



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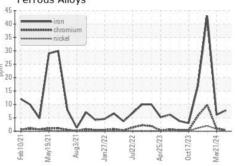


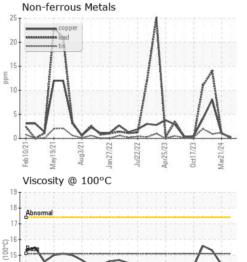


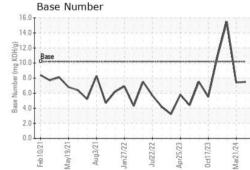


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	LIGHT	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	LIGHT
Sand/Dirt	scalar	*Visual	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
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Visc @ 100°C	cSt	ASTM D445	15.1	14.2	14.4	15.3
CRADHC						

Ferrous Alloys







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 018 - Fayetteville Sample No. : GFL0115990 Received : 03 Jul 2024 4621 Marracco Drive Lab Number : 06227109 Tested : 05 Jul 2024 Hope Mills, NC Unique Number : 11110602 Diagnosed : 05 Jul 2024 - Wes Davis US 28348 Test Package : FLEET Contact: Robert Carter Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. robert.carter@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (910)596-1170 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Jan 27/22

Jul22/22

Apr25/23

Mar21/24

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Submitted By: CHRIS HALL

Page 2 of 2