

OIL ANALYSIS REPORT

SAMPLE INFORMATION method

Sample Rating Trend



Machine Id

913083

Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (38 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.

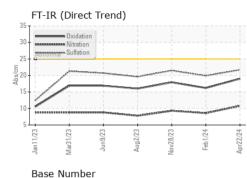
Fluid Condition

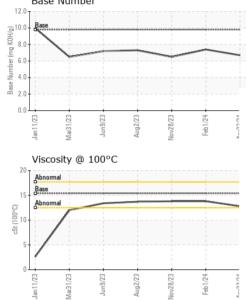
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI		method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0116894	GFL0107734	GFL0096614
Sample Date		Client Info		22 Apr 2024	01 Feb 2024	28 Nov 2023
Machine Age	hrs	Client Info		3475	2875	2339
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
			11 1. 11			
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	40	17	17
Chromium	ppm	ASTM D5185m	>20	2	1	<1
Nickel	ppm	ASTM D5185m	>5	0	6	<u> </u>
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	6	<1	<1
Lead	ppm	ASTM D5185m	>40	0	<1	0
Copper	ppm	ASTM D5185m	>330	2	6	22
Tin	ppm	ASTM D5185m	>15	0	1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method				history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 3	history1 1	history2 <1
	ppm ppm					
Boron		ASTM D5185m	0	3	1	<1
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	3 0	1 0	<1 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	3 0 60	1 0 64	<1 0 59
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 0 60 <1	1 0 64 <1	<1 0 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	3 0 60 <1 960	1 0 64 <1 1029	<1 0 59 <1 1007
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	3 0 60 <1 960 1115	1 0 64 <1 1029 1170	<1 0 59 <1 1007 1124
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	3 0 60 <1 960 1115 1018	1 0 64 <1 1029 1170 1062	<1 0 59 <1 1007 1124 848
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	3 0 60 <1 960 1115 1018 1259	1 0 64 <1 1029 1170 1062 1304	<1 0 59 <1 1007 1124 848 1270
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 0 1010 1070 1150 1270 2060	3 0 60 <1 960 1115 1018 1259 3057	1 0 64 <1 1029 1170 1062 1304 3040	<1 0 59 <1 1007 1124 848 1270 2372
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	3 0 60 <1 960 1115 1018 1259 3057 current	1 0 64 <1 1029 1170 1062 1304 3040 history1	<1 0 59 <1 1007 1124 848 1270 2372 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 method	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	3 0 60 <1 960 1115 1018 1259 3057 current 11	1 0 64 <1 1029 1170 1062 1304 3040 history1 5	<1 0 59 <1 1007 1124 848 1270 2372 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 0 1010 1070 1150 1270 2060 limit/base >25	3 0 60 <1 960 1115 1018 1259 3057 current 11 5	1 0 64 <1 1029 1170 1062 1304 3040 history1 5 0	<1 0 59 <1 1007 1124 848 1270 2372 bistory2 3 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 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	3 0 60 <1 960 1115 1018 1259 3057 current 11 5 1	1 0 64 <1 1029 1170 1062 1304 3040 history1 5 0 2	<1 0 59 <1 1007 1124 848 1270 2372 history2 3 4 0
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 2060 225 >25 >20 limit/base >20	3 0 60 <1 960 1115 1018 1259 3057 current 11 5 1 1 current	1 0 64 <1 1029 1170 1062 1304 3040 history1 5 0 2 history1	<1 0 59 <1 1007 1124 848 1270 2372 history2 3 4 0 0 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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 limit/base >20	3 0 60 <1 960 1115 1018 1259 3057 <i>current</i> 11 5 1 <i>current</i> 0.8	1 0 64 <1 1029 1170 1062 1304 3040 history1 5 0 2 history1 0.7	<1 0 59 <1 1007 1124 848 1270 2372 history2 3 4 0 bistory2 0.9
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 2060 225 220 220 220 20 20 20 20 20 20 20 20 20	3 0 60 <1 960 1115 1018 1259 3057 <i>current</i> 11 5 1 <i>current</i> 0.8 10.8	1 0 64 <1 1029 1170 1062 1304 3040 history1 5 0 2 history1 0.7 8.6	<1 0 59 <1 1007 1124 848 1270 2372 history2 3 4 0 0 history2 0.9 9.3
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	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 220 220 220 220 230 20 20 20 20 20 20 20 20 20 20 20 20 20	3 0 60 <1 960 1115 1018 1259 3057 <i>current</i> 11 5 1 <i>current</i> 0.8 10.8 21.7 <i>current</i>	1 0 64 <1 1029 1170 1062 1304 3040 history1 5 0 2 <u>history1</u> 0.7 8.6 19.9	<1 0 59 <1 1007 1124 848 1270 2372 history2 3 4 0 history2 0.9 9.3 21.5 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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 1000 220 20 20 20 20 20 20 20 20 20 20 20	3 0 60 <1 960 1115 1018 1259 3057 <i>current</i> 11 5 1 <i>current</i> 0.8 10.8 21.7	1 0 64 <1 1029 1170 1062 1304 3040 history1 5 0 2 history1 0.7 8.6 19.9 history1	<1 0 59 <1 1007 1124 848 1270 2372 history2 3 4 0 bistory2 0.9 9.3 21.5



OIL ANALYSIS REPORT





Aug2/23

Mar31/23

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	12.8	13.8	13.8
CRADHC						

GRAPHS Ferrous Alloys 40 35 30 25 E 20-15 10 5 Π. Jan 11/23 Aug2/23 /lar31/23 lov28/23 Feb1/24 : C/6um Non-ferrous Metals 140 120 lead 100 80 60 40 20 0 Aug2/23 Jun9/23 Feb1/24 an 1 Viscosity @ 100°C Base Number 20 12.0 Abnorma 18 16 10. Ba Base Number (mg KOH/g) 14 Ab 8.0 cSt (100°C) 01 00°C) 8 6.0 4.0 ß 2 (0.0 0 Jan11/23 -Apr22/24 . Jan11/23 -Jun9/23 Aug2/23 Nov28/23 Feb1/24 Jun9/23 Aug2/23 Feb1/24 pr22/24 Mar31/23 w28/23 Mar31/23 : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 465 - Pontiac Sample No. : GFL0116894 Received : 24 Apr 2024 888 Baldwin Lab Number : 06158874 Tested : 25 Apr 2024 Pontiac, MI US 48340 Unique Number : 10994297 Diagnosed : 25 Apr 2024 - Wes Davis Test Package : FLEET Contact: Ricky Matthews

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

* - 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)

Report Id: GFL465 [WUSCAR] 06158874 (Generated: 04/25/2024 10:47:15) Rev: 1

Certificate 12367

Laboratory

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