

OIL ANALYSIS REPORT

Sample Rating Trend WEAR

	1	82 Com
		Die
OXO		PE1

826039-101268 Component Diesel Engine Fluid

TRO CANADA DURON SHP 15W40 (10 GAL)

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0102247	GFL0056951	GFL0051476
Sample Date		Client Info		07 Apr 2024	27 Feb 2023	09 Aug 2022
Machine Age	hrs	Client Info		0	14041	12991
Oil Age	hrs	Client Info		600	490	600
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	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
Iron	ppm	ASTM D5185m	>120	18	24	12
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	<u> </u>	<1	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	4	3	3
Lead	ppm	ASTM D5185m	>40	1	<1	2
Copper	ppm	ASTM D5185m	>330	3	<1	2
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	4	2
Barium			0			
	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	60	0 60	0 61	0 63
			60	-		
Molybdenum	ppm	ASTM D5185m	60	60	61	63
Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m	60 0	60 <1	61 <1	63 <1
Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010	60 <1 997	61 <1 913 1136 954	63 <1 898 1107 980
Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070	60 <1 997 1090	61 <1 913 1136	63 <1 898 1107
Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150	60 <1 997 1090 1030	61 <1 913 1136 954	63 <1 898 1107 980
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	60 0 1010 1070 1150 1270	60 <1 997 1090 1030 1257	61 <1 913 1136 954 1251	63 <1 898 1107 980 1226
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	60 0 1010 1070 1150 1270 2060 limit/base	60 <1 997 1090 1030 1257 2841	61 <1 913 1136 954 1251 3177	63 <1 898 1107 980 1226 2740
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 method	60 0 1010 1070 1150 1270 2060 limit/base	60 <1 997 1090 1030 1257 2841 current	61 <1 913 1136 954 1251 3177 history1	63 <1 898 1107 980 1226 2740 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >25	60 <1 997 1090 1030 1257 2841 current 11	61 <1 913 1136 954 1251 3177 history1 4	63 <1 898 1107 980 1226 2740 history2 4
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >25	60 <1 997 1090 1030 1257 2841 <u>current</u> 11 16	61 <1 913 1136 954 1251 3177 history1 4 15	63 <1 898 1107 980 1226 2740 history2 4 14
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	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	60 0 1010 1070 1150 1270 2060 limit/base >25 >20	60 <1 997 1090 1030 1257 2841 <u>current</u> 11 16 16	61 <1 913 1136 954 1251 3177 history1 4 15 13	63 <1 898 1107 980 1226 2740 history2 4 14 8
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 Iimit/base >25 >20 Iimit/base >4	60 <1 997 1090 1030 1257 2841 current 11 16 16 16 current	61 <1 913 1136 954 1251 3177 history1 4 15 13 history1	63 <1 898 1107 980 1226 2740 history2 4 14 8 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	60 <1 997 1090 1030 1257 2841 current 11 16 16 16 16 current 0.5	61 <1 913 1136 954 1251 3177 history1 4 15 13 history1 1.1	63 <1 898 1107 980 1226 2740 history2 4 14 8 history2 0.9
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 D51854 *ASTM D7844 *ASTM D7624	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	60 <1 997 1090 1030 1257 2841 current 11 16 16 16 current 0.5 10.2	61 <1 913 1136 954 1251 3177 history1 4 15 13 history1 1.1 8.8	63 <1 898 1107 980 1226 2740 history2 4 14 8 history2 0.9 10.7
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 D51854 *ASTM D7844 *ASTM D7624	60 0 1010 1070 1150 1270 2060 imit/base >25 >20 imit/base >4 >20 >4 >20	60 <1 997 1090 1030 1257 2841 <u>current</u> 11 16 16 16 <u>current</u> 0.5 10.2 22.7	61 <1 913 1136 954 1251 3177 history1 4 15 13 history1 1.1 8.8 21.1	63 <1 898 1107 980 1226 2740 history2 4 14 8 history2 0.9 10.7 23.8
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm ppm ppm ppm ppm ppm ppm TS ppm 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 ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7415	60 0 1010 1070 1150 2060 2060 225 20 225 20 1imit/base >20 24 >20 23 1imit/base >20	60 <1 997 1090 1030 1257 2841 current 11 16 16 16 current 0.5 10.2 22.7 current	61 <1 913 1136 954 1251 3177 history1 4 15 13 history1 1.1 8.8 21.1 history1	63 <1 898 1107 980 1226 2740 history2 4 14 8 history2 0.9 10.7 23.8 history2

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Machine Id

🔺 Wear

Exhaust valve wear is indicated.

Contamination

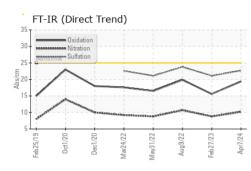
There is no indication of any contamination in the oil.

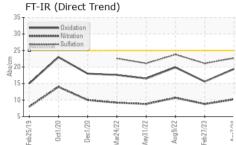
Fluid Condition

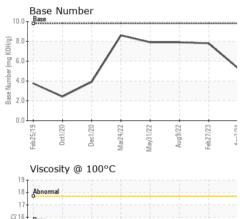
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

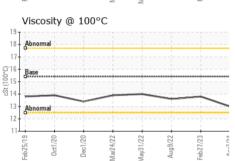


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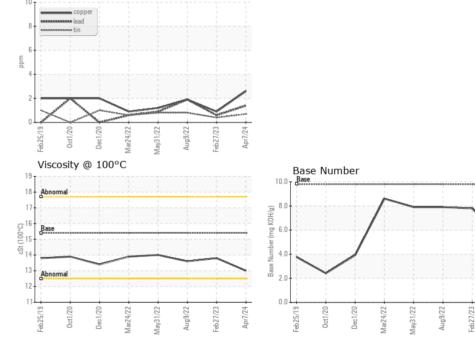








VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	13.0	13.8	13.6
GRAPHS						
Ferrous Alloys		\int	\sim			
eb.25/19 0 0ct1/20	Mar24/22	Aug9/22	Apr7/24			



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 859 - Bay City Sample No. : GFL0102247 Received : 08 Apr 2024 700 Avenue F Lab Number : 06140853 Tested : 08 Apr 2024 Bay City, TX Unique Number : 10965661 Diagnosed : 10 Apr 2024 - Sean Felton US 77414 Test Package : FLEET Contact: JONATHON BROWN Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. jonathon.brown@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:

Non-ferrous Metals

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