

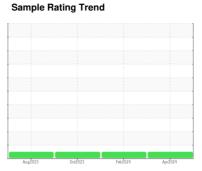
OIL ANALYSIS REPORT



(TB7370) 912100 Component

Diesel Engine

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





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

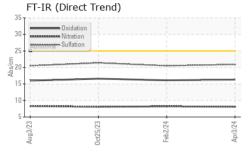
Fluid Condition

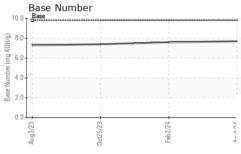
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

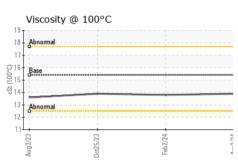
Sample Number Client Info GFL0106241 GFL0067037 GFL0066989 Sample Date Client Info O3 Apr 2024 02 Feb 2024 25 Oct 2023 Adachine Age hrs Client Info O	SAMPLE INFORM	ATI <u>ON</u>	method	limit/base	current	history1	history2
Client Info					GFL0106241	GFL0067037	
Machine Age hrs Client Info 4563 4149 3439 Oil Age hrs Client Info 0 0 0 0 Oil Changed hrs Client Info 0 0 0 0 Sample Status Client Info Changed Neg Neg Neg 11 13 15 1.0							
Oil Age hrs Client Info 0	·	hrs			•		
Client Info Changed Changed NORMAL NORMAL NORMAL NORMAL							
CONTAMINATION					•	Changed	Changed
Fuel	Sample Status					Ü	_
Water Glycol WC Method WC Method >0.2 NEG NEG NEG NEG NEG NEG WEAR METALS method limit/base current listory1 history2 Iron ppm ASTM D5185m >120 13 15 13 Chromium ppm ASTM D5185m >20 <1 1 <1 Nickel ppm ASTM D5185m >5 0 2 2 2 Silver ppm ASTM D5185m >2 0 0 0 0 Silver ppm ASTM D5185m >20 1 <1	CONTAMINATIO	NC	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Irron	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	13	15	13
Description	Chromium	ppm	ASTM D5185m	>20	<1	1	<1
Silver	Nickel	ppm	ASTM D5185m	>5	0	2	2
Aluminum ppm ASTM D5185m >20 1 <1 2 Lead ppm ASTM D5185m >40 0 <1	Titanium	ppm	ASTM D5185m	>2	0	<1	0
Lead	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >330 2 4 4 Tin ppm ASTM D5185m >15 0 1 <1	Aluminum	ppm	ASTM D5185m	>20	1	<1	2
Tin	Lead	ppm	ASTM D5185m	>40	0	<1	0
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1 10 3 Barium ppm ASTM D5185m 0 <1 0 0 Molybdenum ppm ASTM D5185m 0 <1 0 0 Molybdenum ppm ASTM D5185m 0 <1 0 0 Manganese ppm ASTM D5185m 0 <1 1 0 Magnesium ppm ASTM D5185m 1070 950 1018 922 Calcium ppm ASTM D5185m 1070 1100 1171 1076 Phosphorus ppm ASTM D5185m 1270 1269 1290 1223 Sulfur ppm ASTM D5185m 2060 3117 2806	Copper	ppm	ASTM D5185m	>330	2	4	4
Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1	Tin	ppm	ASTM D5185m	>15	0	1	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	0	0
Boron	Cadmium	ppm	ASTM D5185m		0	<1	0
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 62 68 61 Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 950 1018 922 Calcium ppm ASTM D5185m 1070 1100 1171 1076 Phosphorus ppm ASTM D5185m 1150 977 1006 871 Zinc ppm ASTM D5185m 1270 1269 1290 1223 Sulfur ppm ASTM D5185m 2060 3117 2806 2746 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 3 Sodium ppm ASTM D5185m >20 <1 2 3 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >4	Boron	ppm	ASTM D5185m	0	<1	10	3
Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 950 1018 922 Calcium ppm ASTM D5185m 1070 1100 1171 1076 Phosphorus ppm ASTM D5185m 1150 977 1006 871 Zinc ppm ASTM D5185m 1270 1269 1290 1223 Sulfur ppm ASTM D5185m 2060 3117 2806 2746 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 3 Sodium ppm ASTM D5185m >20 <1	Barium	ppm	ASTM D5185m	0	<1	0	0
Magnesium ppm ASTM D5185m 1010 950 1018 922 Calcium ppm ASTM D5185m 1070 1100 1171 1076 Phosphorus ppm ASTM D5185m 1150 977 1006 871 Zinc ppm ASTM D5185m 1270 1269 1290 1223 Sulfur ppm ASTM D5185m 2060 3117 2806 2746 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 3 Sodium ppm ASTM D5185m >20 <1	Molybdenum	ppm	ASTM D5185m	60	62	68	61
Calcium ppm ASTM D5185m 1070 1100 1171 1076 Phosphorus ppm ASTM D5185m 1150 977 1006 871 Zinc ppm ASTM D5185m 1270 1269 1290 1223 Sulfur ppm ASTM D5185m 2060 3117 2806 2746 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 3 Sodium ppm ASTM D5185m >20 <1	Manganese	ppm	ASTM D5185m	0	<1	<1	0
Phosphorus ppm ASTM D5185m 1150 977 1006 871 Zinc ppm ASTM D5185m 1270 1269 1290 1223 Sulfur ppm ASTM D5185m 2060 3117 2806 2746 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 3 Sodium ppm ASTM D5185m >20 <1	Magnesium	ppm	ASTM D5185m	1010	950	1018	922
Zinc ppm ASTM D5185m 1270 1269 1290 1223 Sulfur ppm ASTM D5185m 2060 3117 2806 2746 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 3 Sodium ppm ASTM D5185m 4 0 0 0 Potassium ppm ASTM D5185m >20 <1	Calcium	ppm	ASTM D5185m	1070	1100	1171	1076
Sulfur ppm ASTM D5185m 2060 3117 2806 2746 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 3 Sodium ppm ASTM D5185m 4 0 0 Potassium ppm ASTM D5185m >20 <1	Phosphorus	ppm	ASTM D5185m	1150	977	1006	871
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 3 Sodium ppm ASTM D5185m 4 0 0 Potassium ppm ASTM D5185m >20 <1	Zinc	ppm	ASTM D5185m	1270	1269	1290	1223
Silicon ppm ASTM D5185m >25 3 5 3 Sodium ppm ASTM D5185m 4 0 0 Potassium ppm ASTM D5185m >20 <1 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.9 0.8 0.8 Nitration Abs/cm *ASTM D7624 >20 8.1 8.2 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 20.9 20.5 21.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 16.1 16.6	Sulfur	ppm	ASTM D5185m	2060	3117	2806	2746
Sodium ppm ASTM D5185m 4 0 0 Potassium ppm ASTM D5185m >20 <1 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.9 0.8 0.8 Nitration Abs/cm *ASTM D7624 >20 8.1 8.2 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 20.9 20.5 21.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 16.1 16.6	CONTAMINANT	S	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 <1 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.9 0.8 0.8 Nitration Abs/cm *ASTM D7624 >20 8.1 8.2 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 20.9 20.5 21.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 16.1 16.6	Silicon	ppm	ASTM D5185m	>25	3	5	3
INFRA-RED	Sodium	ppm	ASTM D5185m		4	0	0
Soot % % *ASTM D7844 >4 0.9 0.8 0.8 Nitration Abs/cm *ASTM D7624 >20 8.1 8.2 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 20.9 20.5 21.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 16.1 16.6	Potassium	ppm	ASTM D5185m	>20	<1	2	3
Nitration Abs/cm *ASTM D7624 >20 8.1 8.2 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 20.9 20.5 21.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 16.1 16.6	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 20.9 20.5 21.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 16.1 16.6	Soot %	%	*ASTM D7844	>4	0.9	0.8	0.8
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 16.1 16.6	Nitration	Abs/cm	*ASTM D7624	>20	8.1	8.2	8.1
Oxidation Abs/.1mm *ASTM D7414 >25 16.3 16.1 16.6	Sulfation	Abs/.1mm	*ASTM D7415	>30	20.9	20.5	21.4
	FLUID DEGRADA	ATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.3	16.1	16.6
					7.7		



OIL ANALYSIS REPORT





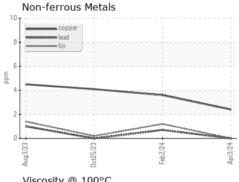


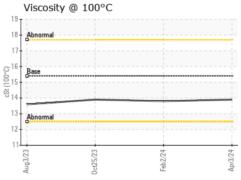
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

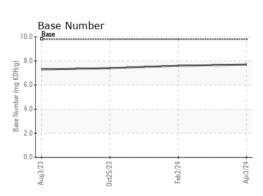
FLUID PROPE	:RHES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.9	13.8	13.9

GRAPHS

Ferrous Alloys











Certificate 12367

Laboratory Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0106241 Lab Number : 06157494

Unique Number : 10992917 Test Package : FLEET

Received **Tested** Diagnosed

: 23 Apr 2024 : 24 Apr 2024

: 24 Apr 2024 - Wes Davis

GFL Environmental - 916 - Greenbay HC

1799 County Trunk PP DePere, WI US 54115

Contact: Travis Runge travis.runge@gflenv.com T: (920)351-2341

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: GFL916 [WUSCAR] 06157494 (Generated: 04/24/2024 11:36:53) Rev: 1

Contact/Location: Travis Runge - GFL916