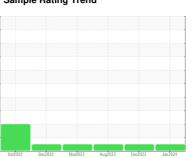


OIL ANALYSIS REPORT

Sample Rating Trend









Machine Id 913065 Component Diesel Engine Fluid

PETRO CANADA DURON SHP 15W40 (--- 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

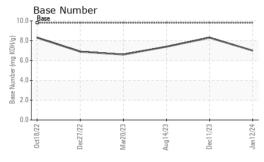
Fluid Condition

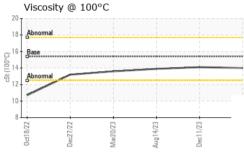
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Client Info GFL0107684 GFL0107020 GFL009148 Sample Date Client Info 12 Jan 2024 11 Dec 2023 14 Aug 2023 Machine Age hrs Client Info 600	CAMPLE INFOR	MATION	and a three de	line it the		la ta ta mare	المستعددة
Sample Date		MATION	method	limit/base	current	history1	history2
Machine Age	'		Client Info				GFL0091485
Oil Age hrs Client Info 600 2022 ASTM DELEG NEG	Sample Date		Client Info		12 Jan 2024	11 Dec 2023	14 Aug 2023
Oil Changed Sample Status Client Info Changed NORMAL N/A Changed NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0	Machine Age	hrs	Client Info		4156	3860	2075
NORMAL NORMAL NORMAL CONTAMINATION method fimit/base current history1 history2 history2	Oil Age	hrs	Client Info		600	600	600
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0	Oil Changed		Client Info		Changed	N/A	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method Imitivase Current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 11 8 16 Chromium ppm ASTM D5185m >20 <1	Water		WC Method	>0.2	NEG	NEG	NEG
Irron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1 0 <1 Nickel ppm ASTM D5185m >5 4 4 3 Titanium ppm ASTM D5185m >2 0 0 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Chromium	Iron	mag	ASTM D5185m	>120	11	8	16
Nickel	Chromium		ASTM D5185m	>20			<1
Titanium							
Silver		• • • • • • • • • • • • • • • • • • • •			0		
Aluminum ppm ASTM D5185m >20 1 3 1 Lead ppm ASTM D5185m >40 0 <1							
Lead		• • • • • • • • • • • • • • • • • • • •					
Copper ppm ASTM D5185m >330 2 2 2 Tin ppm ASTM D5185m >15 <1							
Tin ppm ASTM D5185m >15 <1 0 <1 Vanadium ppm ASTM D5185m >15 <1 0 <1 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 0 0 Molybdenum ppm ASTM D5185m 60 61 56 59 Manganese ppm ASTM D5185m 0 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 1016 1036 994 Calcium ppm ASTM D5185m 1150 1064 1093 1023 Zinc ppm ASTM D5185m 1270 1289 1242 1299 Sulfur ppm ASTM D5185m 2060 2960 3110 3424 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 10 4 Sodium ppm ASTM D5185m >20 3 1 4 INFRA-RED method limit/base current history1 history2 Sulfation Abs/.tmm 'ASTM D7844 >4 0.6 0.4 0.7 Nitration Abs/.tmm 'ASTM D7845 >30 19.5 18.6 19.2 FLUID DEGRADATION method limit/base current history1 history2 Coxidation Abs/.tmm 'ASTM D7415 >30 19.5 18.6 19.2 FLUID DEGRADATION method limit/base current history1 history2 Discording Current history1 history2 Solidation Abs/.tmm 'ASTM D7414 >25 15.8 14.2 15.1		• • • • • • • • • • • • • • • • • • • •					
Vanadium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1 <1 2 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 60 61 56 59 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 1016 1036 994 Calcium ppm ASTM D5185m 1070 1084 1183 1177 Phosphorus ppm ASTM D5185m 1270 1289 1242 1299 Sulfur ppm ASTM D5185m 2060 2960 3110 3424 CONTAMINANTS method limit/base cu	• •				_		_
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1		• • • • • • • • • • • • • • • • • • • •		>10			
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1							
Boron		ррпп		Para ta da a a a a			
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 61 56 59 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 1016 1036 994 Calcium ppm ASTM D5185m 1070 1084 1183 1177 Phosphorus ppm ASTM D5185m 1150 1064 1093 1023 Zinc ppm ASTM D5185m 1270 1289 1242 1299 Sulfur ppm ASTM D5185m 2060 2960 3110 3424 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 10 4 Sodium ppm ASTM D5185m >20 3 1 4 INFRA-RED method limit/ba	ADDITIVES		metnoa	ilmit/base	current		
Molybdenum ppm ASTM D5185m 60 61 56 59 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 1016 1036 994 Calcium ppm ASTM D5185m 1070 1084 1183 1177 Phosphorus ppm ASTM D5185m 1150 1064 1093 1023 Zinc ppm ASTM D5185m 1270 1289 1242 1299 Sulfur ppm ASTM D5185m 2060 2960 3110 3424 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 10 4 Sodium ppm ASTM D5185m >20 3 1 4 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >4							
Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 1016 1036 994 Calcium ppm ASTM D5185m 1070 1084 1183 1177 Phosphorus ppm ASTM D5185m 1150 1064 1093 1023 Zinc ppm ASTM D5185m 1270 1289 1242 1299 Sulfur ppm ASTM D5185m 2060 2960 3110 3424 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 10 4 Sodium ppm ASTM D5185m >20 3 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.7 Nitration Abs/cm *ASTM D7624		ppm	ASTM D5185m	0			
Magnesium ppm ASTM D5185m 1010 1016 1036 994 Calcium ppm ASTM D5185m 1070 1084 1183 1177 Phosphorus ppm ASTM D5185m 1150 1064 1093 1023 Zinc ppm ASTM D5185m 1270 1289 1242 1299 Sulfur ppm ASTM D5185m 2060 2960 3110 3424 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 10 4 Sodium ppm ASTM D5185m >20 3 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.7 Nitration Abs/cm *ASTM D7415 >30 19.5 18.6 19.2 FLUID DEGRADATION *ASTM D74	Molybdenum	ppm			61		
Calcium ppm ASTM D5185m 1070 1084 1183 1177 Phosphorus ppm ASTM D5185m 1150 1064 1093 1023 Zinc ppm ASTM D5185m 1270 1289 1242 1299 Sulfur ppm ASTM D5185m 2060 2960 3110 3424 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 10 4 Sodium ppm ASTM D5185m >20 3 1 4 Potassium ppm ASTM D5185m >20 3 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.7 Nitration Abs/cm *ASTM D7415 >30 19.5 18.6 19.2 FLUID DEGRADATION *ASTM	Manganese	ppm	ASTM D5185m	0	<1	0	<1
Phosphorus ppm ASTM D5185m 1150 1064 1093 1023 Zinc ppm ASTM D5185m 1270 1289 1242 1299 Sulfur ppm ASTM D5185m 2060 2960 3110 3424 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 10 4 Sodium ppm ASTM D5185m >20 3 1 4 Potassium ppm ASTM D5185m >20 3 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.7 Nitration Abs/cm *ASTM D7624 >20 8.7 6.7 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 18.6 19.2 FLUID DEGRADATION *AS	Magnesium	ppm	ASTM D5185m	1010	1016	1036	994
Zinc ppm ASTM D5185m 1270 1289 1242 1299 Sulfur ppm ASTM D5185m 2060 2960 3110 3424 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 10 4 Sodium ppm ASTM D5185m 20 3 1 4 Potassium ppm ASTM D5185m >20 3 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.7 Nitration Abs/cm *ASTM D7624 >20 8.7 6.7 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 18.6 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm	Calcium	ppm	ASTM D5185m	1070	1084	1183	1177
Sulfur ppm ASTM D5185m 2060 2960 3110 3424 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 10 4 Sodium ppm ASTM D5185m >20 3 1 4 Potassium ppm ASTM D5185m >20 3 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.7 Nitration Abs/cm *ASTM D7624 >20 8.7 6.7 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 18.6 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 14.2 15.1	Phosphorus	ppm	ASTM D5185m	1150	1064	1093	1023
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 10 4 Sodium ppm ASTM D5185m 4 1 5 Potassium ppm ASTM D5185m >20 3 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.7 Nitration Abs/cm *ASTM D7624 >20 8.7 6.7 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 18.6 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 14.2 15.1	Zinc	ppm	ASTM D5185m	1270	1289	1242	1299
Silicon ppm ASTM D5185m >25 4 10 4 Sodium ppm ASTM D5185m 4 1 5 Potassium ppm ASTM D5185m >20 3 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.7 Nitration Abs/cm *ASTM D7624 >20 8.7 6.7 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 18.6 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 14.2 15.1	Sulfur	ppm	ASTM D5185m	2060	2960	3110	3424
Sodium ppm ASTM D5185m 4 1 5 Potassium ppm ASTM D5185m >20 3 1 4 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >4 0.6 0.4 0.7 Nitration Abs/cm *ASTM D7624 >20 8.7 6.7 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 18.6 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 14.2 15.1	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 3 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.7 Nitration Abs/cm *ASTM D7624 >20 8.7 6.7 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 18.6 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 14.2 15.1	Silicon	ppm	ASTM D5185m	>25	4	10	4
INFRA-RED	Sodium	ppm	ASTM D5185m		4	1	5
Soot % % *ASTM D7844 >4 0.6 0.4 0.7 Nitration Abs/cm *ASTM D7624 >20 8.7 6.7 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 18.6 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 14.2 15.1	Potassium	ppm	ASTM D5185m	>20	3	1	4
Nitration Abs/cm *ASTM D7624 >20 8.7 6.7 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 18.6 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 14.2 15.1	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.5 18.6 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 14.2 15.1	Soot %	%	*ASTM D7844	>4	0.6	0.4	0.7
Sulfation Abs/.1mm *ASTM D7415 >30 19.5 18.6 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.8 14.2 15.1	Nitration	Abs/cm	*ASTM D7624	>20	8.7	6.7	7.9
Oxidation Abs/.1mm *ASTM D7414 >25 15.8 14.2 15.1							
	FLUID DEGRAD	OATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	15.8	14.2	15.1
		mg KOH/g			7.0	8.3	7.4



OIL ANALYSIS REPORT

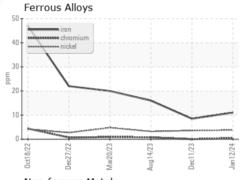


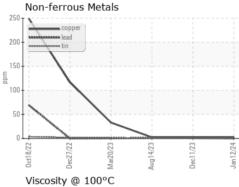


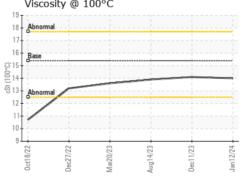
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

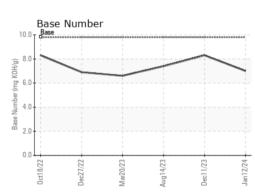
FLUID PROP	ERITES	method	ilmit/base		nistory i	nistoryz
Visc @ 100°C	cSt	ASTM D445	15.4	14.0	14.1	13.9

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0107684 : 06064876 : 10836258

Recieved Diagnosed Diagnostician : Wes Davis

: 18 Jan 2024 : 19 Jan 2024 GFL Environmental - 465 - Pontiac

888 Baldwin Pontiac, MI US 48340

Contact: Ricky Matthews rickymathews@gflenv.com T: (586)825-9514

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)