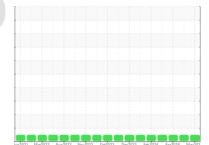


OIL ANALYSIS REPORT

Sample Rating Trend









Machine Id **426051-402441** Component

Diesel Engine

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

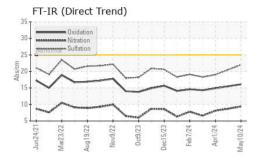
Fluid Condition

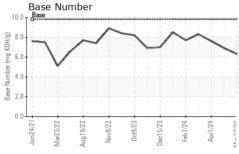
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

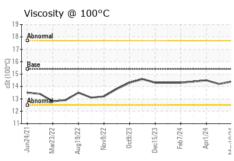
Sample Number Client Info GFL0093435 GFL0109422 GFL0109245 Sample Date Client Info 10 May 2024 18 Apr 2024 01 Apr 2024 02 Apr 2024 0	SAMPLE INFORM	ATION	method	limit/base	current	history1	history2	
Machine Age hrs Client Info 22278 22135 21994 Oil Age hrs Client Info 571 428 573 Oil Changed Client Info Changed Not Changd Not Changd Sample Status method limit/base worent history1 history2 Fuel WC Method >3.0 <1.0	Sample Number		Client Info		GFL0093435	GFL0109422	GFL0109245	
Oil Age hrs Client Info 571 428 573 Oil Changed Sample Status Client Info Changed Not Changed Not Changed Not Changed Not Changed Nor Change	Sample Date		Client Info		10 May 2024	18 Apr 2024	01 Apr 2024	
Oil Age hrs Client Info 571 428 573 Oil Changed Sample Status Client Info Changed Not Changed Not Changed Not Changed Not Changed Nor Change	Machine Age	hrs	Client Info		22278	22135	21994	
Client Info NoRMAL NORMAL NORMAL NORMAL		hrs	Client Info		571	428	573	
NORMAL NORMAL NORMAL NORMAL			Client Info		Changed	Not Changd	Not Changd	
Fuel						_		
Water WC Method >0.2 NEG NEG NEG Glycol WC Method Imit/base current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 18 19 9 Chromium ppm ASTM D5185m >20 <1 1 0 Nickel ppm ASTM D5185m >5 0 1 0 0 1 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0	CONTAMINATIO	N	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 18 19 9 Chromium ppm ASTM D5185m >20 <1	Water		WC Method	>0.2	NEG	NEG	NEG	
Iron	Glycol		WC Method		NEG	NEG	NEG	
Chromium ppm ASTM D5185m >20 <1	WEAR METALS		method	limit/base	current	history1	history2	
Nickel	Iron	ppm	ASTM D5185m	>120	18	19	9	
Titanium	Chromium	ppm	ASTM D5185m	>20	<1	1	0	
Silver			ASTM D5185m	>5	0	1	0	
Silver ppm ASTM D5185m >2 0 <1 0 Aluminum ppm ASTM D5185m >20 5 8 4 Lead ppm ASTM D5185m >40 1 1 0 Copper ppm ASTM D5185m >330 1 2 <1 Tin ppm ASTM D5185m >15 <1 2 0 Vanadium ppm ASTM D5185m 0 <1 <1 0 Cadmium ppm ASTM D5185m 0 <1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 3 7 6 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 4 <1 0 0 Magnesium ppm ASTM D5185m 1010	Titanium	ppm	ASTM D5185m	>2	8	12	8	
Aluminum			ASTM D5185m	>2	0	<1	0	
Lead			ASTM D5185m	>20	5	8	4	
Copper ppm ASTM D5185m >330 1 2 <1 Tin ppm ASTM D5185m >15 <1			ASTM D5185m	>40	1	1	0	
Tin				>330		2	<1	
Vanadium ppm ASTM D5185m 0 <1 <1 Cadmium ppm ASTM D5185m <1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 3 7 6 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1 <1 0 Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 934 1230 963 Calcium ppm ASTM D5185m 1070 1181 1485 1191 Phosphorus ppm ASTM D5185m 1270 1259 1697 1322 Sulfur ppm ASTM D5185m 2060 3260 4431 3761 CONTAMINANTS method limit/base current history1					<1	2		
Cadmium ppm ASTM D5185m <1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 3 7 6 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1						<1	<1	
Boron								
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 55 76 56 Manganese ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2	
Molybdenum ppm ASTM D5185m 60 55 76 56 Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 934 1230 963 Calcium ppm ASTM D5185m 1070 1181 1485 1191 Phosphorus ppm ASTM D5185m 1150 1021 1458 1044 Zinc ppm ASTM D5185m 1270 1259 1697 1322 Sulfur ppm ASTM D5185m 2060 3260 4431 3761 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 11 8 Sodium ppm ASTM D5185m >20 1 4 <1 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >4	Boron	ppm	ASTM D5185m	0	3	7	6	
Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 934 1230 963 Calcium ppm ASTM D5185m 1070 1181 1485 1191 Phosphorus ppm ASTM D5185m 1150 1021 1458 1044 Zinc ppm ASTM D5185m 1270 1259 1697 1322 Sulfur ppm ASTM D5185m 2060 3260 4431 3761 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 11 8 Sodium ppm ASTM D5185m >20 1 4 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 9.4 8.7 8.1 Sulfation Abs/cmm *AS	Barium	ppm	ASTM D5185m	0	0	0	0	
Magnesium ppm ASTM D5185m 1010 934 1230 963 Calcium ppm ASTM D5185m 1070 1181 1485 1191 Phosphorus ppm ASTM D5185m 1150 1021 1458 1044 Zinc ppm ASTM D5185m 1270 1259 1697 1322 Sulfur ppm ASTM D5185m 2060 3260 4431 3761 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 11 8 Sodium ppm ASTM D5185m 5 5 3 3 Potassium ppm ASTM D5185m >20 1 4 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 9.4 8.7 8.1 Sulfation Abs/amm *ASTM D7415	Molybdenum	ppm	ASTM D5185m	60	55	76	56	
Calcium ppm ASTM D5185m 1070 1181 1485 1191 Phosphorus ppm ASTM D5185m 1150 1021 1458 1044 Zinc ppm ASTM D5185m 1270 1259 1697 1322 Sulfur ppm ASTM D5185m 2060 3260 4431 3761 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 11 8 Sodium ppm ASTM D5185m 5 5 3 Potassium ppm ASTM D5185m >20 1 4 <1	Manganese	ppm	ASTM D5185m	0	<1	<1	0	
Calcium ppm ASTM D5185m 1070 1181 1485 1191 Phosphorus ppm ASTM D5185m 1150 1021 1458 1044 Zinc ppm ASTM D5185m 1270 1259 1697 1322 Sulfur ppm ASTM D5185m 2060 3260 4431 3761 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 11 8 Sodium ppm ASTM D5185m 5 5 3 Potassium ppm ASTM D5185m >20 1 4 <1	Magnesium	ppm	ASTM D5185m	1010	934	1230	963	
Phosphorus ppm ASTM D5185m 1150 1021 1458 1044 Zinc ppm ASTM D5185m 1270 1259 1697 1322 Sulfur ppm ASTM D5185m 2060 3260 4431 3761 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 11 8 Sodium ppm ASTM D5185m 5 5 3 Potassium ppm ASTM D5185m >20 1 4 <1	Calcium	ppm	ASTM D5185m	1070	1181	1485	1191	
Zinc ppm ASTM D5185m 1270 1259 1697 1322 Sulfur ppm ASTM D5185m 2060 3260 4431 3761 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 11 8 Sodium ppm ASTM D5185m 5 5 3 Potassium ppm ASTM D5185m >20 1 4 <1			ASTM D5185m	1150	1021	1458	1044	
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 11 8 Sodium ppm ASTM D5185m 5 5 3 Potassium ppm ASTM D5185m >20 1 4 <1			ASTM D5185m	1270	1259	1697	1322	
Silicon ppm ASTM D5185m >25 8 11 8 Sodium ppm ASTM D5185m 5 5 3 Potassium ppm ASTM D5185m >20 1 4 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 1.3 0.9 0.7 Nitration Abs/cm *ASTM D7624 >20 9.4 8.7 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.0 20.5 19.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 15.5 14.9	Sulfur	ppm	ASTM D5185m	2060	3260	4431	3761	
Sodium ppm ASTM D5185m 5 5 3 Potassium ppm ASTM D5185m >20 1 4 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 1.3 0.9 0.7 Nitration Abs/cm *ASTM D7624 >20 9.4 8.7 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.0 20.5 19.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 15.5 14.9	CONTAMINANT	S	method	limit/base	current	history1	history2	
Potassium ppm ASTM D5185m >20 1 4 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 1.3 0.9 0.7 Nitration Abs/cm *ASTM D7624 >20 9.4 8.7 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.0 20.5 19.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 15.5 14.9	Silicon	ppm	ASTM D5185m	>25	8	11	8	
Potassium ppm ASTM D5185m >20 1 4 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 1.3 0.9 0.7 Nitration Abs/cm *ASTM D7624 >20 9.4 8.7 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.0 20.5 19.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 15.5 14.9			ASTM D5185m		5	5	3	
Soot % % *ASTM D7844 >4 1.3 0.9 0.7 Nitration Abs/cm *ASTM D7624 >20 9.4 8.7 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.0 20.5 19.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 15.5 14.9	Potassium	ppm	ASTM D5185m	>20	1	4	<1	
Nitration Abs/cm *ASTM D7624 >20 9.4 8.7 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.0 20.5 19.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 15.5 14.9	INFRA-RED		method	limit/base	current	history1	history2	
Nitration Abs/cm *ASTM D7624 >20 9.4 8.7 8.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.0 20.5 19.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 15.5 14.9	Soot %	%	*ASTM D7844	>4	1.3	0.9	0.7	
Sulfation Abs/.1mm *ASTM D7415 >30 22.0 20.5 19.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 15.5 14.9	Nitration	Abs/cm	*ASTM D7624	>20				
Oxidation Abs/.1mm *ASTM D7414 >25 16.1 15.5 14.9								
	FLUID DEGRADATION method limit/base current history1 history2							
	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.1	15.5	14.9	
					6.3	6.9	7.6	



OIL ANALYSIS REPORT



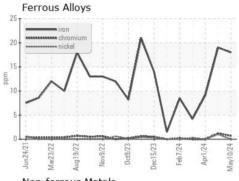


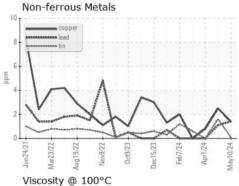


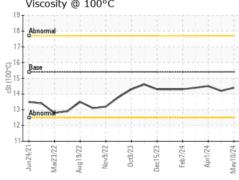
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

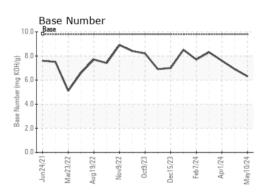
FLUID PROP	EHILES	method			riistory i	HISTORYZ
Visc @ 100°C	cSt	ASTM D445	15.4	14.4	14.2	14.5

GRAPHS













Certificate 12367

Laboratory Sample No. Lab Number : 06176961 Unique Number : 11023014 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0093435

Received **Tested** Diagnosed

: 13 May 2024 : 14 May 2024 : 14 May 2024 - Wes Davis

1001 South Rockwell

GFL Environmental - 891 - Oklahoma City Hauling

Oklahoma City, OK US 73128 Contact: Andy Smith

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. andrew.smith@gflenv.com T: (405)306-1651

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) Report Id: GFL891 [WUSCAR] 06176961 (Generated: 05/14/2024 10:43:56) Rev: 1