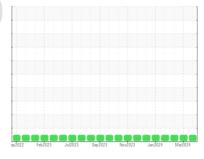


OIL ANALYSIS REPORT

Area (94J1VL) 912065-912065

Diesel Engine

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



Sample Rating Trend



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

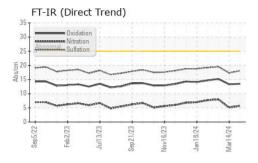
Fluid Condition

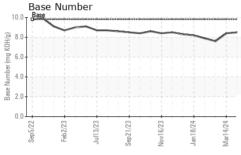
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

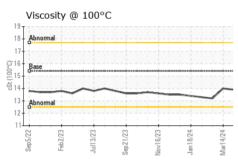
Sample Date Client Info 04 Apr 2024 14 Mar 2024 21 Feb 2024 Machine Age hrs Client Info 6232 6080 5931 Oil Age hrs Client Info 152 5645 5645 Oil Changed Client Info N/A Changed N/A Sample Status Client Info N/A Changed N/A CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0	iAL)		вр2022 Fi	sb2023 Jul2023 Se	p2023 Nov2023 Jan2024	Mar2024	
Sample Date	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 6232 6080 5931 Oil Age hrs Client Info 152 5645 5645 Oil Changed Client Info N/A Changed N/A Sample Status NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 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 NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM 05185m >90 6 5 15 Chromium ppm ASTM 05185m >20 1 <1 <1 <1 Nickel ppm ASTM 05185m >2 <1 <1 <1 <1 <1 <1 <1 <1 <1 <	Sample Number		Client Info		GFL0104841	GFL0104793	GFL0104952
Oil Age hrs Client Info 152 5645 5645 Oil Changed Client Info N/A Changed N/A Sample Status NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit base current history1 history2 Fuel WC Method >3.0 <1.0	Sample Date		Client Info		04 Apr 2024	14 Mar 2024	21 Feb 2024
Oil Changed Sample Status Client Info N/A Changed NORMAL N/A NORMAL NORMAL <t< td=""><td>Machine Age</td><td>hrs</td><td>Client Info</td><td></td><th>6232</th><td>6080</td><td>5931</td></t<>	Machine Age	hrs	Client Info		6232	6080	5931
NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2	Oil Age	hrs	Client Info		152	5645	5645
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0	Oil Changed		Client Info		N/A	Changed	N/A
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method Imitibase current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >90 6 5 15 Chromium ppm ASTM D5185m >20 1 <1 <1 Nickel ppm ASTM D5185m >2 <1 <1 <1 <1 Silver ppm ASTM D5185m >2 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <th>CONTAMINAT</th> <th>ΓΙΟΝ</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	CONTAMINAT	ΓΙΟΝ	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history2	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 1 <1 1 Nickel ppm ASTM D5185m >2 <1	WEAR METAL	_S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>90	6	5	15
Titanium	Chromium	ppm	ASTM D5185m	>20	1	<1	1
Silver ppm ASTM D5185m >2 0 <1 0 Aluminum ppm ASTM D5185m >20 2 4 4 Lead ppm ASTM D5185m >40 <1 3 0 Copper ppm ASTM D5185m >330 <1 <1 <1 <1 Vanadium ppm ASTM D5185m >15 <1 2 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <t< td=""><td>Nickel</td><td>ppm</td><td>ASTM D5185m</td><td>>2</td><th><1</th><td><1</td><td><1</td></t<>	Nickel	ppm	ASTM D5185m	>2	<1	<1	<1
Aluminum	Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Lead ppm ASTM D5185m >40 <1 3 0 Copper ppm ASTM D5185m >330 <1 <1 <1 <1 Tin ppm ASTM D5185m >15 <1 2 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Silver	ppm	ASTM D5185m	>2	0	<1	0
Copper ppm ASTM D5185m >330 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Aluminum	ppm	ASTM D5185m	>20	2	4	4
Tin	Lead	ppm	ASTM D5185m	>40	<1	3	0
Vanadium ppm ASTM D5185m <1 <1 <1 <1 <1 Cadmium ppm ASTM D5185m <1 <1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 <1	Copper	ppm	ASTM D5185m	>330	<1	<1	<1
Cadmium ppm ASTM D5185m <1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 <1	Tin	ppm	ASTM D5185m	>15	<1	2	<1
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 <1	Vanadium	ppm	ASTM D5185m		<1	<1	<1
Boron	Cadmium	ppm	ASTM D5185m		<1	<1	0
Barium ppm ASTM D5185m 0 0 <1 0 Molybdenum ppm ASTM D5185m 60 59 58 58 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 989 923 885 Calcium ppm ASTM D5185m 1070 1116 1086 947 Phosphorus ppm ASTM D5185m 1150 1077 1239 984 Zinc ppm ASTM D5185m 1270 1293 1212 1190 Sulfur ppm ASTM D5185m 2060 3525 3517 2887 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m >20 3 4 7 INFRA-RED method limit/base<	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 59 58 58 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 989 923 885 Calcium ppm ASTM D5185m 1070 1116 1086 947 Phosphorus ppm ASTM D5185m 1150 1077 1239 984 Zinc ppm ASTM D5185m 1270 1293 1212 1190 Sulfur ppm ASTM D5185m 2060 3525 3517 2887 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m 3 0 5 Potassium ppm ASTM D5185m 20 3 4 7 INFRA-RED method limit/base current	Boron	ppm	ASTM D5185m	0	0	0	<1
Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 989 923 885 Calcium ppm ASTM D5185m 1070 1116 1086 947 Phosphorus ppm ASTM D5185m 1150 1077 1239 984 Zinc ppm ASTM D5185m 1270 1293 1212 1190 Sulfur ppm ASTM D5185m 2060 3525 3517 2887 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m >20 3 4 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.7 Nitration Abs/cm *ASTM D78	Barium	ppm	ASTM D5185m	0	0	<1	0
Magnesium ppm ASTM D5185m 1010 989 923 885 Calcium ppm ASTM D5185m 1070 1116 1086 947 Phosphorus ppm ASTM D5185m 1150 1077 1239 984 Zinc ppm ASTM D5185m 1270 1293 1212 1190 Sulfur ppm ASTM D5185m 2060 3525 3517 2887 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m >20 3 4 7 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7624 >20 5.7 5.1 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.3 19.5 FLUID DEGRADATION *ASTM D7414	Molybdenum	ppm	ASTM D5185m	60	59	58	58
Calcium ppm ASTM D5185m 1070 1116 1086 947 Phosphorus ppm ASTM D5185m 1150 1077 1239 984 Zinc ppm ASTM D5185m 1270 1293 1212 1190 Sulfur ppm ASTM D5185m 2060 3525 3517 2887 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m 3 0 5 Potassium ppm ASTM D5185m >20 3 4 7 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7844 >6 0.2 0.2 0.7 Nitration Abs/cm "ASTM D7415 >30 18.1 17.3 19.5 FLUID DEGRADATION "ASTM D7414 >25 <td< td=""><td>-</td><td>ppm</td><td>ASTM D5185m</td><td></td><th><1</th><td><1</td><td><1</td></td<>	-	ppm	ASTM D5185m		<1	<1	<1
Phosphorus ppm ASTM D5185m 1150 1077 1239 984 Zinc ppm ASTM D5185m 1270 1293 1212 1190 Sulfur ppm ASTM D5185m 2060 3525 3517 2887 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m >20 3 4 7 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7844 >6 0.2 0.2 0.7 Nitration Abs/cm "ASTM D7624 >20 5.7 5.1 8.0 Sulfation Abs/.1mm "ASTM D7415 >30 18.1 17.3 19.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm <	Magnesium	ppm	ASTM D5185m	1010	989	923	885
Zinc ppm ASTM D5185m 1270 1293 1212 1190 Sulfur ppm ASTM D5185m 2060 3525 3517 2887 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m >20 3 0 5 Potassium ppm ASTM D5185m >20 3 4 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.7 Nitration Abs/cm *ASTM D7624 >20 5.7 5.1 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.3 19.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm	Calcium	ppm	ASTM D5185m	1070	1116	1086	947
Sulfur ppm ASTM D5185m 2060 3525 3517 2887 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m 3 0 5 Potassium ppm ASTM D5185m >20 3 4 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.7 Nitration Abs/cm *ASTM D7624 >20 5.7 5.1 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.3 19.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.3 15.2	Phosphorus	ppm	ASTM D5185m	1150	1077	1239	984
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m 3 0 5 Potassium ppm ASTM D5185m >20 3 4 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.7 Nitration Abs/cm *ASTM D7624 >20 5.7 5.1 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.3 19.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.3 15.2	Zinc	ppm	ASTM D5185m	1270	1293		1190
Silicon ppm ASTM D5185m >25 4 8 4 Sodium ppm ASTM D5185m 3 0 5 Potassium ppm ASTM D5185m >20 3 4 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.7 Nitration Abs/cm *ASTM D7624 >20 5.7 5.1 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.3 19.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.3 15.2			ASTM D5185m	2060	3525	3517	2887
Sodium ppm ASTM D5185m 3 0 5 Potassium ppm ASTM D5185m >20 3 4 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.7 Nitration Abs/cm *ASTM D7624 >20 5.7 5.1 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.3 19.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.3 15.2	CONTAMINAN	NTS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 3 4 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.7 Nitration Abs/cm *ASTM D7624 >20 5.7 5.1 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.3 19.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.3 15.2	Silicon	ppm	ASTM D5185m	>25	4	8	4
INFRA-RED	Sodium	ppm	ASTM D5185m		3	0	5
Soot % % *ASTM D7844 >6 0.2 0.2 0.7 Nitration Abs/cm *ASTM D7624 >20 5.7 5.1 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.3 19.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.3 15.2	Potassium	ppm	ASTM D5185m	>20	3	4	7
Nitration Abs/cm *ASTM D7624 >20 5.7 5.1 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.3 19.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.3 15.2	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.3 19.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.3 15.2	Soot %	%	*ASTM D7844	>6	0.2	0.2	0.7
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.3 15.2	Nitration	Abs/cm	*ASTM D7624	>20	5.7	5.1	8.0
Oxidation Abs/.1mm *ASTM D7414 >25 13.5 13.3 15.2	Sulfation	Abs/.1mm	*ASTM D7415	>30	18.1	17.3	19.5
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.5 8.4 7.6	Oxidation	Abs/.1mm	*ASTM D7414	>25	13.5	13.3	15.2
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.5	8.4	7.6



OIL ANALYSIS REPORT



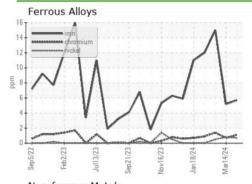


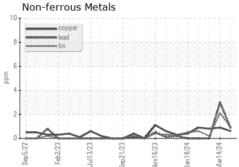


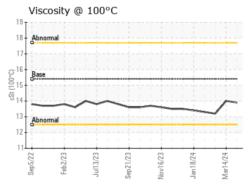
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

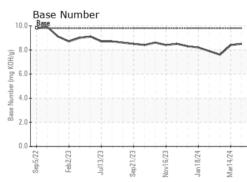
FLUID PROF	PERILES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.9	14.0	13.2

GRAPHS













Certificate 12367

Laboratory Sample No. Lab Number : 06143653 Unique Number : 10968461

: GFL0104841 Test Package : FLEET

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

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 09 Apr 2024

Tested : 10 Apr 2024 Diagnosed : 10 Apr 2024 - Wes Davis

GFL Environmental - 820 - Joplin Hauling

3700 West 7th Street Joplin, MO US 64801

Contact: James Jarrett jjarrett@gflenv.com T: (417)310-2802

Submitted By: James Jarrett

* - 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)