

OIL ANALYSIS REPORT

Sample Rating Trend









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

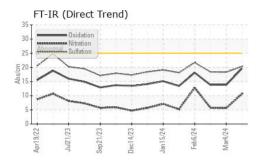
Fluid Condition

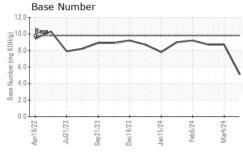
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

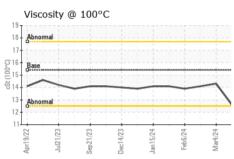
Sample Number Client Info CFL0104402 GFL0104269 GFL01101 Sample Date Client Info 03 Apr 2024 04 Mar 2024 15 Feb 203 Machine Age hrs Client Info 300 600 600 600 600 600 Gli Age hrs Client Info 300 600 600 600 Gli Changed Client Info Changed Changed Changed Changed Changed Changed NORMAL NORM		•					
Sample Date Client Info 16377 0 16132	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 16377 0 16132 Oil Age hrs Client Info 300 600 600 Oil Changed Client Info Changed Neg	Sample Number		Client Info		GFL0104402	GFL0104269	GFL0110146
Oil Age hrs Client Info 300 600 600 Oil Changed Sample Status Client Info Changed NoRMAL Changed Changed Changed Changed Changed Changed NoRMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history1 Fruel WC Method >5 <1.0	Sample Date		Client Info		03 Apr 2024	04 Mar 2024	15 Feb 2024
Oil Changed Sample Status Client Info MORMAL Changed NORMAL Changed NEG Change NEG Change NEG <t< td=""><td>Machine Age</td><td>hrs</td><td>Client Info</td><td></td><th>16377</th><td>0</td><td>16132</td></t<>	Machine Age	hrs	Client Info		16377	0	16132
NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history1 history1 water WC Method NEG	Oil Age	hrs	Client Info		300	600	600
CONTAMINATION method limit/base current history1 history1 Fuel WC Method >5 <1.0	Oil Changed		Client Info		Changed	Changed	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG Neg <t< td=""><td>CONTAMINAT</td><td>ION</td><td>method</td><td>limit/base</td><th>current</th><td>history1</td><td>history2</td></t<>	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<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 >5 <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	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>80	18	10	8
Description	Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
Silver	Nickel	ppm	ASTM D5185m	>2	0	0	0
Aluminum	Titanium	ppm	ASTM D5185m		0	0	<1
Lead	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper ppm ASTM D5185m >150 1 8 10 Tin ppm ASTM D5185m >5 0 <1	Aluminum	ppm	ASTM D5185m	>30	2	2	2
Tin	Lead	ppm	ASTM D5185m	>30	0	0	<1
Vanadium ppm ASTM D5185m 0 0 <1 Cadmium ppm ASTM D5185m 0 0 0 <1 ADDITIVES method limit/base current history1 history Boron ppm ASTM D5185m 0 3 <1 1 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 882 1020 904 Calcium ppm ASTM D5185m 1070 960 1104 982 Phosphorus ppm ASTM D5185m 1270 1170 1281 1161 Sulfur ppm ASTM D5185m 2060 3089 3162 2813 CONTAMINANTS method limit/base current histo	Copper	ppm	ASTM D5185m	>150	1	8	10
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 3 <1	Tin	ppm	ASTM D5185m	>5	0	<1	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	0	<1
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 55 57 56 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 882 1020 904 Calcium ppm ASTM D5185m 1070 960 1104 982 Phosphorus ppm ASTM D5185m 1150 980 1105 934 Zinc ppm ASTM D5185m 1270 1170 1281 1161 Sulfur ppm ASTM D5185m 2060 3089 3162 2813 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >20 4 6 6 Sodium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 55 57 56 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 882 1020 904 Calcium ppm ASTM D5185m 1070 960 1104 982 Phosphorus ppm ASTM D5185m 1150 980 1105 934 Zinc ppm ASTM D5185m 1270 1170 1281 1161 Sulfur ppm ASTM D5185m 2060 3089 3162 2813 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >20 4 6 6 Sodium ppm ASTM D5185m >20 4 4 4 Potassium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/bas	Boron	ppm	ASTM D5185m	0	3	<1	1
Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 882 1020 904 Calcium ppm ASTM D5185m 1070 960 1104 982 Phosphorus ppm ASTM D5185m 1150 980 1105 934 Zinc ppm ASTM D5185m 1270 1170 1281 1161 Sulfur ppm ASTM D5185m 2060 3089 3162 2813 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >20 4 6 6 Sodium ppm ASTM D5185m 5 4 4 Potassium ppm ASTM D5185m >20 0 0 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >3 0.5	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 882 1020 904 Calcium ppm ASTM D5185m 1070 960 1104 982 Phosphorus ppm ASTM D5185m 1150 980 1105 934 Zinc ppm ASTM D5185m 1270 1170 1281 1161 Sulfur ppm ASTM D5185m 2060 3089 3162 2813 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >20 4 6 6 Sodium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >3 0.5 0.2 0.2 Soot % % *ASTM D7624 >20 10.6 5.6 5.7 Sulfation Abs/.1mm *ASTM D7415	Molybdenum	ppm	ASTM D5185m	60	55	57	56
Calcium ppm ASTM D5185m 1070 960 1104 982 Phosphorus ppm ASTM D5185m 1150 980 1105 934 Zinc ppm ASTM D5185m 1270 1170 1281 1161 Sulfur ppm ASTM D5185m 2060 3089 3162 2813 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >20 4 6 6 Sodium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >3 0.5 0.2 0.2 Nitration Abs/.mm *ASTM D7624 >20 10.6 5.6 5.7 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.3 18.4 FLUID DEGRADATION method <td< td=""><td>Manganese</td><td>ppm</td><td>ASTM D5185m</td><td>0</td><th><1</th><td>0</td><td><1</td></td<>	Manganese	ppm	ASTM D5185m	0	<1	0	<1
Phosphorus ppm ASTM D5185m 1150 980 1105 934 Zinc ppm ASTM D5185m 1270 1170 1281 1161 Sulfur ppm ASTM D5185m 2060 3089 3162 2813 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >20 4 6 6 Sodium ppm ASTM D5185m 5 4 4 Potassium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >3 0.5 0.2 0.2 Nitration Abs/cm *ASTM D7624 >20 10.6 5.6 5.7 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.3 18.4 FLUID DEGRADATION method limi	Magnesium	ppm	ASTM D5185m	1010	882	1020	904
Zinc ppm ASTM D5185m 1270 1170 1281 1161 Sulfur ppm ASTM D5185m 2060 3089 3162 2813 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >20 4 6 6 Sodium ppm ASTM D5185m 5 4 4 Potassium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >3 0.5 0.2 0.2 Nitration Abs/cm *ASTM D7624 >20 10.6 5.6 5.7 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.3 18.4 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414	Calcium	ppm	ASTM D5185m	1070	960	1104	982
Sulfur ppm ASTM D5185m 2060 3089 3162 2813 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >20 4 6 6 Sodium ppm ASTM D5185m 5 4 4 Potassium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >3 0.5 0.2 0.2 Nitration Abs/cm *ASTM D7624 >20 10.6 5.6 5.7 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.3 18.4 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 19.6 13.8 13.8	Phosphorus	ppm	ASTM D5185m	1150	980	1105	934
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 6 6 Sodium ppm ASTM D5185m 5 4 4 Potassium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >3 0.5 0.2 0.2 Nitration Abs/cm *ASTM D7624 >20 10.6 5.6 5.7 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.3 18.4 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 19.6 13.8 13.8	Zinc	ppm	ASTM D5185m	1270	1170	1281	1161
Silicon ppm ASTM D5185m >20 4 6 6 Sodium ppm ASTM D5185m 5 4 4 Potassium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >3 0.5 0.2 0.2 Nitration Abs/cm *ASTM D7624 >20 10.6 5.6 5.7 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.3 18.4 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 19.6 13.8 13.8	Sulfur	ppm	ASTM D5185m	2060	3089	3162	2813
Sodium ppm ASTM D5185m 5 4 4 Potassium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.2 0.2 Nitration Abs/cm *ASTM D7624 >20 10.6 5.6 5.7 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.3 18.4 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 19.6 13.8 13.8	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 0 0 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >3 0.5 0.2 0.2 Nitration Abs/cm *ASTM D7624 >20 10.6 5.6 5.7 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.3 18.4 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 19.6 13.8 13.8	Silicon	ppm	ASTM D5185m	>20	4	6	6
INFRA-RED	Sodium	ppm	ASTM D5185m		5	4	4
Soot % % *ASTM D7844 >3 0.5 0.2 0.2 Nitration Abs/cm *ASTM D7624 >20 10.6 5.6 5.7 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.3 18.4 FLUID DEGRADATION method limit/base current history1 history1 history Oxidation Abs/.1mm *ASTM D7414 >25 19.6 13.8 13.8	Potassium	ppm	ASTM D5185m	>20	0	0	0
Nitration Abs/cm *ASTM D7624 >20 10.6 5.6 5.7 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.3 18.4 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 19.6 13.8 13.8	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.3 18.4 FLUID DEGRADATION method limit/base current history1 history1 history1 history Oxidation Abs/.1mm *ASTM D7414 >25 19.6 13.8 13.8	Soot %	%	*ASTM D7844	>3	0.5	0.2	0.2
FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 19.6 13.8 13.8	Nitration	Abs/cm	*ASTM D7624	>20	10.6	5.6	5.7
Oxidation Abs/.1mm *ASTM D7414 >25 19.6 13.8 13.8	Sulfation	Abs/.1mm	*ASTM D7415	>30	20.3	18.3	18.4
	FLUID DEGRA	OATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	19.6	13.8	13.8
Base Number (BN) mg KOH/g AS1M D2896 9.8 5.1 8.7 8.7	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	5.1	8.7	8.7



OIL ANALYSIS REPORT



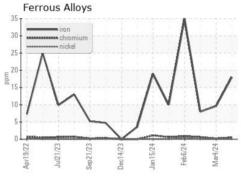


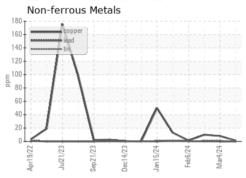


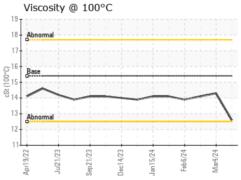
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

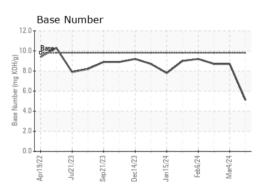
FLUID PROPI	=RIIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.6	14.3	14.1

GRAPHS













Certificate 12367

Laboratory Sample No.

: GFL0104402 Lab Number : 06140962 Unique Number : 10965770 Test Package : FLEET

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

Received : 08 Apr 2024 **Tested** : 09 Apr 2024 Diagnosed

39000 Van Born Rd Wayne, MI US 48184

GFL Environmental - 410 - Michigan West

: 09 Apr 2024 - Wes Davis

Contact: Belal Dgheish bdgheish@gflenv.com T: (734)714-2340

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)