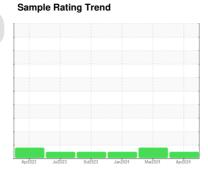


OIL ANALYSIS REPORT



Machine Id
912096
Component
Diesel Engine
Fluid

PETRO CANADA DURON SHP 15W40 (40 QTS)





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

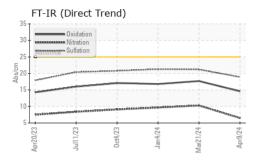
Fluid Condition

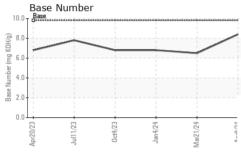
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

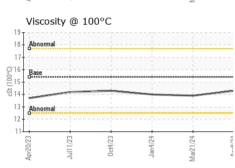
Sample Date	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 1143 4019 3436 Oil Age hrs Client Info 124 583 519 Oil Changed MORMAL NORMAL NORMAL Fuel	Sample Number		Client Info		GFL0110791	GFL0110745	GFL0092873
Oil Age hrs Client Info 124 583 519 Oil Changed Sample Status Client Info Changed C	Sample Date		Client Info		09 Apr 2024	21 Mar 2024	04 Jan 2024
Oil Changed Sample Status Client Info Changed NORMAL Changed ABNORMAL Changed ABNORMAL Changed ABNORMAL Changed NORMAL Changed ABNORMAL Changed NORMAL Changed ABNORMAL Changed ABNORMAL NORMAL	Machine Age	hrs	Client Info		4143	4019	3436
Oil Changed Sample Status Client Info Changed NORMAL Changed ABNORMAL Changed ABNORMAL Changed ABNORMAL Changed NORMAL Changed ABNORMAL Changed NORMAL Changed ABNORMAL Changed ABNORMAL NORMAL		hrs	Client Info		124	583	519
NORMAL ABNORMAL NORMAL CONTAMINATION method limit/base current history1 history2	•						
Fuel	Sample Status				_	_	
Water WC Method >0.2 NEG NEG NEG NEG Glycol WC Method Imitibase Current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 4 17 15 Chromium ppm ASTM D5185m >20 0 2 <1 0 Nickel ppm ASTM D5185m >5 <1 &8 4 Silver ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >20 1 2 2 2 Silver ppm ASTM D5185m >20 1 2 2 2 Lead ppm ASTM D5185m >20 1 2 2 1 Copper ppm ASTM D5185m >15 <1 2 <1 1 <1 Calead <td>CONTAMINA</td> <td>TION</td> <td>method</td> <td>limit/base</td> <th>current</th> <td>history1</td> <td>history2</td>	CONTAMINA	TION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 4 17 15 Chromium ppm ASTM D5185m >20 0 2 <1 Nickel ppm ASTM D5185m >5 <1 ▲ 8 4 Titanium ppm ASTM D5185m >2 0 <1 0 Siliver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 1 2 2 2 Lead ppm ASTM D5185m >30 <1 2 4 1 0 Copper ppm ASTM D5185m >330 <1 2 4 1 0 Calcadium ppm ASTM D5185m 0 <1 2 1 1 0 ADDITIVES	Water		WC Method	>0.2	NEG	NEG	NEG
Irron	Glycol				NEG	NEG	
Chromium ppm ASTM D5185m >20 0 2 <1 ASTM D5185m >5 <1 ASTM D5185m >5 <1 ASTM D5185m >5 <1 ASTM D5185m >2 0 <1 0 0 O C L Q C L Q C 1 D D ASTM D5185m ASTM D5185m O ASTM D5185m O <t< td=""><td>WEAR META</td><td>LS</td><td>method</td><td>limit/base</td><th>current</th><td>history1</td><td>history2</td></t<>	WEAR META	LS	method	limit/base	current	history1	history2
Chromium ppm ASTM D5185m >20 0 2 <1 ASTM D5185m >5 <1 ASTM D5185m >5 <1 ASTM D5185m >5 <1 ASTM D5185m >2 0 <1 0 0 O C L Q C L Q C 1 D D ASTM D5185m ASTM D5185m O ASTM D5185m O <t< td=""><td></td><td></td><td>ASTM D5185m</td><td>>120</td><th>4</th><td>17</td><td>15</td></t<>			ASTM D5185m	>120	4	17	15
Nickel							
Titanium					_		
Silver							
Aluminum					-		
Lead							
Copper ppm ASTM D5185m >330 <1 2 4 Tin ppm ASTM D5185m >15 <1							
Tin							
Vanadium ppm ASTM D5185m 0 <1 <1 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 12 16 9 Barium ppm ASTM D5185m 0 0 <1 0 Molybdenum ppm ASTM D5185m 0 0 <1 0 Manganese ppm ASTM D5185m 0 <1 1 <1 Magnesium ppm ASTM D5185m 1070 1060 1138 1137 Phosphorus ppm ASTM D5185m 1070 1060 1138 1137 Phosphorus ppm ASTM D5185m 1270 1224 1246 1274 Sulfur ppm ASTM D5185m 2060 3611 2856 2880 CONTAMINANTS method limit/base current history1 <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>330</td> <th><1</th> <td></td> <td>4</td>	Copper	ppm	ASTM D5185m	>330	<1		4
Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 12 16 9 Barium ppm ASTM D5185m 0 0 <1	Tin	ppm	ASTM D5185m	>15	<1	2	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	<1	<1
Boron	Cadmium	ppm	ASTM D5185m		0	<1	0
Barium ppm ASTM D5185m 0 0 <1 0 Molybdenum ppm ASTM D5185m 60 58 59 61 Manganese ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 58 59 61 Manganese ppm ASTM D5185m 0 <1 1 <1 Magnesium ppm ASTM D5185m 1010 949 916 961 Calcium ppm ASTM D5185m 1070 1060 1138 1137 Phosphorus ppm ASTM D5185m 1150 1076 950 1024 Zinc ppm ASTM D5185m 1270 1224 1246 1274 Sulfur ppm ASTM D5185m 2060 3611 2856 2880 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 25 3 5 4 Sodium ppm ASTM D5185m 20 3 3 1 INFRA-RED method limit/base current history1 history2 Soot % *6 **ASTM D7844 >4	Boron	ppm	ASTM D5185m	0		16	9
Manganese ppm ASTM D5185m 0 <1 1 <1 Magnesium ppm ASTM D5185m 1010 949 916 961 Calcium ppm ASTM D5185m 1070 1060 1138 1137 Phosphorus ppm ASTM D5185m 1150 1076 950 1024 Zinc ppm ASTM D5185m 1270 1224 1246 1274 Sulfur ppm ASTM D5185m 2060 3611 2856 2880 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 4 Sodium ppm ASTM D5185m >20 3 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.8 0.7 Nitration Abs/cm *ASTM D78	Barium	ppm	ASTM D5185m	0	0	<1	0
Magnesium ppm ASTM D5185m 1010 949 916 961 Calcium ppm ASTM D5185m 1070 1060 1138 1137 Phosphorus ppm ASTM D5185m 1150 1076 950 1024 Zinc ppm ASTM D5185m 1270 1224 1246 1274 Sulfur ppm ASTM D5185m 2060 3611 2856 2880 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 4 Sodium ppm ASTM D5185m >20 3 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.8 0.7 Nitration Abs/cm *ASTM D7624 >20 6.5 10.3 9.7 Sulfation Abs/.1mm *ASTM D74	Molybdenum	ppm	ASTM D5185m	60	58	59	61
Calcium ppm ASTM D5185m 1070 1060 1138 1137 Phosphorus ppm ASTM D5185m 1150 1076 950 1024 Zinc ppm ASTM D5185m 1270 1224 1246 1274 Sulfur ppm ASTM D5185m 2060 3611 2856 2880 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 4 Sodium ppm ASTM D5185m >20 3 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.8 0.7 Nitration Abs/cm *ASTM D7624 >20 6.5 10.3 9.7 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 21.3 FLUID DEGRADATION	Manganese	ppm	ASTM D5185m	0	<1	1	<1
Phosphorus ppm ASTM D5185m 1150 1076 950 1024 Zinc ppm ASTM D5185m 1270 1224 1246 1274 Sulfur ppm ASTM D5185m 2060 3611 2856 2880 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 4 Sodium ppm ASTM D5185m >20 3 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.8 0.7 Nitration Abs/cm *ASTM D7624 >20 6.5 10.3 9.7 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 21.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs	Magnesium	ppm	ASTM D5185m	1010	949	916	961
Phosphorus ppm ASTM D5185m 1150 1076 950 1024 Zinc ppm ASTM D5185m 1270 1224 1246 1274 Sulfur ppm ASTM D5185m 2060 3611 2856 2880 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 4 Sodium ppm ASTM D5185m >20 3 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.8 0.7 Nitration Abs/cm *ASTM D7624 >20 6.5 10.3 9.7 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 21.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs	Calcium	ppm	ASTM D5185m	1070	1060	1138	1137
Zinc ppm ASTM D5185m 1270 1224 1246 1274 Sulfur ppm ASTM D5185m 2060 3611 2856 2880 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 4 Sodium ppm ASTM D5185m 20 3 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.8 0.7 Nitration Abs/cm *ASTM D7624 >20 6.5 10.3 9.7 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 21.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 17.7 16.8	Phosphorus		ASTM D5185m	1150	1076	950	1024
Sulfur ppm ASTM D5185m 2060 3611 2856 2880 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 5 4 Sodium ppm ASTM D5185m 2 4 2 4 Potassium ppm ASTM D5185m >20 3 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.8 0.7 Nitration Abs/cm *ASTM D7624 >20 6.5 10.3 9.7 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 21.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 17.7 16.8					1224		
Silicon ppm ASTM D5185m >25 3 5 4 Sodium ppm ASTM D5185m 4 2 4 Potassium ppm ASTM D5185m >20 3 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.8 0.7 Nitration Abs/cm *ASTM D7624 >20 6.5 10.3 9.7 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 21.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 17.7 16.8	Sulfur						
Sodium ppm ASTM D5185m 4 2 4 Potassium ppm ASTM D5185m >20 3 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.8 0.7 Nitration Abs/cm *ASTM D7624 >20 6.5 10.3 9.7 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 21.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 17.7 16.8	CONTAMINA	NTS	method	limit/base	current	history1	history2
Sodium ppm ASTM D5185m 4 2 4 Potassium ppm ASTM D5185m >20 3 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.8 0.7 Nitration Abs/cm *ASTM D7624 >20 6.5 10.3 9.7 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 21.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 17.7 16.8	Silicon	ppm	ASTM D5185m	>25	3	5	4
Potassium ppm ASTM D5185m >20 3 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.8 0.7 Nitration Abs/cm *ASTM D7624 >20 6.5 10.3 9.7 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 21.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 17.7 16.8	Sodium						4
Soot % % *ASTM D7844 >4 0.3 0.8 0.7 Nitration Abs/cm *ASTM D7624 >20 6.5 10.3 9.7 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 21.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 17.7 16.8	Potassium			>20			1
Nitration Abs/cm *ASTM D7624 >20 6.5 10.3 9.7 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 21.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 17.7 16.8	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm *ASTM D7624 >20 6.5 10.3 9.7 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 21.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 17.7 16.8	Soot %	%	*ASTM D7844	>4	0.3	0.8	0.7
Sulfation Abs/.1mm *ASTM D7415 >30 18.9 21.2 21.3 FLUID DEGRADATION method limit/base current bistory1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 17.7 16.8							
Oxidation Abs/.1mm *ASTM D7414 >25 14.6 17.7 16.8	Sulfation						
	FLUID DEGRA	ADATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.6	17.7	16.8
	Base Number (BN)				8.4	6.5	6.8



OIL ANALYSIS REPORT



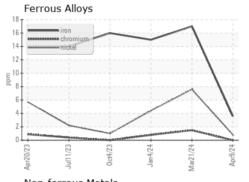




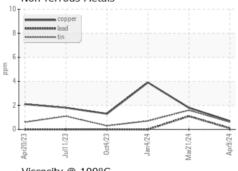
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

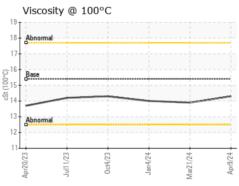
FLUID PROPE	RHES	method	ilmit/base	current	nistory i	nistory2
Visc @ 100°C	cSt	ASTM D445	15.4	14.3	13.9	14.0

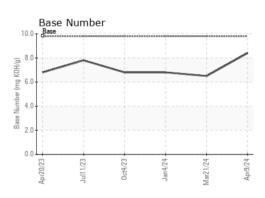
GRAPHS















Certificate 12367

Laboratory

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. Lab Number : 06153714 Unique Number : 10983792

: GFL0110791 Test Package : FLEET

Received : 18 Apr 2024 **Tested** Diagnosed

: 19 Apr 2024 : 19 Apr 2024 - Wes Davis

GFL Environmental - 411 - Kingsford HC

1001 E Blvd Kingsford, MI US 49802

Contact: Service Manager

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: GFL411 [WUSCAR] 06153714 (Generated: 04/19/2024 19:41:26) Rev: 1

Submitted By: TECHNICIAN ACCOUNT

T:

F: