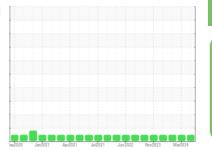


OIL ANALYSIS REPORT

Sample Rating Trend









Machine Id
825022-145
Component
Diesel Engine

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

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

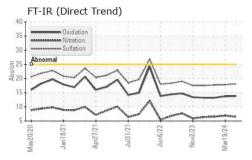
Fluid Condition

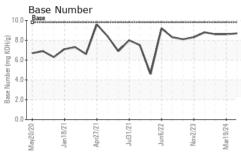
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

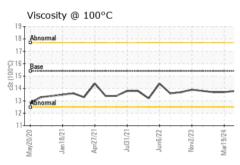
Sample Number Client Info GFL0111877 GFL0111903 GFL0108275 Sample Date Client Info 16 Apr 2024 19 Mar 2024 19 Fab 2024 10 Fab 2024 1	SAMPLE INFORM	ΙΔΤΙΩΝ	method	limit/base	current	history1	history2
Sample Date		IATION		IIIIII/Dase		•	
Machine Age							
Dil Age		la ua			•		
Oil Changed Client Info Not Changd Not Changd NORMAL N							
NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 history2 NEG NEG	•	IIIS					
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0	-		Client Info				Ü
Fuel		211					
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 11 15 16 Chromium ppm ASTM D5185m >20 1 <1 <1 Nickel ppm ASTM D5185m >5 1 1 0 Silver ppm ASTM D5185m >2 <1 <1 0 Silver ppm ASTM D5185m >2 <1 <1 0 Aluminum ppm ASTM D5185m >20 4 8 5 Lead ppm ASTM D5185m >40 1 3 0 Copper ppm ASTM D5185m >15 1 2 <1 Vanadium ppm ASTM D5185m >15 1 2 <td></td> <td>NC</td> <td></td> <td></td> <th></th> <td></td> <td></td>		NC					
WEAR METALS							
WEAR METALS				>0.2	-		
Irron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 1 <1 <1 Nickel ppm ASTM D5185m >5 1 1 0 Titanium ppm ASTM D5185m >2 <1	WEAR METALS	;	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120			
Titanium	Chromium	ppm	ASTM D5185m	>20	1	<1	<1
Silver	Nickel	ppm			1	1	
Aluminum	Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Lead	Silver	ppm			<1		0
Copper ppm ASTM D5185m >330 2 2 1 Tin ppm ASTM D5185m >15 1 2 <1	Aluminum	ppm	ASTM D5185m	>20	4	8	5
Tin	Lead	ppm	ASTM D5185m	>40	1	3	0
Vanadium ppm ASTM D5185m <1 <1 0 Cadmium ppm ASTM D5185m 1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 16 13 11 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 1083 1181 1102 Phosphorus ppm ASTM D5185m 1270 1138 1257 1321 Sulfur ppm ASTM D5185m 2060 3195 3606 3267 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 9	Copper	ppm	ASTM D5185m	>330	2	2	1
Cadmium ppm ASTM D5185m 1 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 16 13 11 Barium ppm ASTM D5185m 0 0 <1	Tin	ppm	ASTM D5185m	>15	1	2	<1
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 16 13 11 Barium ppm ASTM D5185m 0 0 <1	Vanadium	ppm	ASTM D5185m		<1	<1	0
Boron ppm ASTM D5185m 0 16 13 11	Cadmium	ppm	ASTM D5185m		1	<1	0
Barium ppm ASTM D5185m 0 0 <1 0 Molybdenum ppm ASTM D5185m 60 58 59 60 Manganese ppm ASTM D5185m 0 1 <1 <1 Magnesium ppm ASTM D5185m 1010 829 922 963 Calcium ppm ASTM D5185m 1070 1083 1181 1102 Phosphorus ppm ASTM D5185m 1150 1016 1200 1061 Zinc ppm ASTM D5185m 1270 1138 1257 1321 Sulfur ppm ASTM D5185m 2060 3195 3606 3267 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 9 6 Sodium ppm ASTM D5185m >20 3 4 14 INFRA-RED method limit/base	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 58 59 60 Manganese ppm ASTM D5185m 0 1 <1 <1 Magnesium ppm ASTM D5185m 1010 829 922 963 Calcium ppm ASTM D5185m 1070 1083 1181 1102 Phosphorus ppm ASTM D5185m 1150 1016 1200 1061 Zinc ppm ASTM D5185m 1270 1138 1257 1321 Sulfur ppm ASTM D5185m 2060 3195 3606 3267 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 9 6 Sodium ppm ASTM D5185m >20 3 4 14 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >4	Boron	ppm	ASTM D5185m	0	16	13	11
Manganese ppm ASTM D5185m 0 1 <1 <1 Magnesium ppm ASTM D5185m 1010 829 922 963 Calcium ppm ASTM D5185m 1070 1083 1181 1102 Phosphorus ppm ASTM D5185m 1150 1016 1200 1061 Zinc ppm ASTM D5185m 1270 1138 1257 1321 Sulfur ppm ASTM D5185m 2060 3195 3606 3267 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 9 6 Sodium ppm ASTM D5185m >20 3 4 14 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.3 0.3 Nitration Abs/cm *ASTM D7845	Barium	ppm	ASTM D5185m	0	0	<1	0
Magnesium ppm ASTM D5185m 1010 829 922 963 Calcium ppm ASTM D5185m 1070 1083 1181 1102 Phosphorus ppm ASTM D5185m 1150 1016 1200 1061 Zinc ppm ASTM D5185m 1270 1138 1257 1321 Sulfur ppm ASTM D5185m 2060 3195 3606 3267 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 9 6 Sodium ppm ASTM D5185m >20 3 4 14 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.3 0.3 Soot % % *ASTM D7624 >20 6.5 6.9 6.5 Sulfation Abs/.1mm *ASTM D7415	Molybdenum	ppm	ASTM D5185m	60	58	59	60
Calcium ppm ASTM D5185m 1070 1083 1181 1102 Phosphorus ppm ASTM D5185m 1150 1016 1200 1061 Zinc ppm ASTM D5185m 1270 1138 1257 1321 Sulfur ppm ASTM D5185m 2060 3195 3606 3267 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 9 6 Sodium ppm ASTM D5185m >20 3 4 14 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 6.5 6.9 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.8 17.7 FLUID DEGRADATION method	Manganese	ppm	ASTM D5185m	0	1	<1	<1
Phosphorus ppm ASTM D5185m 1150 1016 1200 1061 Zinc ppm ASTM D5185m 1270 1138 1257 1321 Sulfur ppm ASTM D5185m 2060 3195 3606 3267 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 9 6 Sodium ppm ASTM D5185m >20 3 4 14 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 6.5 6.9 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.8 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Ab	Magnesium	ppm	ASTM D5185m	1010	829	922	963
Zinc ppm ASTM D5185m 1270 1138 1257 1321 Sulfur ppm ASTM D5185m 2060 3195 3606 3267 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 9 6 Sodium ppm ASTM D5185m >20 3 4 14 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 6.5 6.9 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.8 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.8 13.7 13.2	Calcium	ppm	ASTM D5185m	1070	1083	1181	1102
Sulfur ppm ASTM D5185m 2060 3195 3606 3267 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 9 6 Sodium ppm ASTM D5185m >20 3 4 14 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 6.5 6.9 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.8 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.8 13.7 13.2	Phosphorus	ppm	ASTM D5185m	1150	1016	1200	1061
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 9 6 Sodium ppm ASTM D5185m <1	Zinc	ppm	ASTM D5185m	1270	1138	1257	1321
Silicon ppm ASTM D5185m >25 6 9 6 Sodium ppm ASTM D5185m <1 0 2 Potassium ppm ASTM D5185m >20 3 4 14 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 6.5 6.9 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.8 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.8 13.7 13.2	Sulfur	ppm	ASTM D5185m	2060	3195	3606	3267
Sodium ppm ASTM D5185m <1 0 2 Potassium ppm ASTM D5185m >20 3 4 14 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 6.5 6.9 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.8 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.8 13.7 13.2	CONTAMINANT	S	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 3 4 14 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 6.5 6.9 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.8 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.8 13.7 13.2	Silicon	ppm	ASTM D5185m	>25	6	9	6
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 6.5 6.9 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.8 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.8 13.7 13.2	Sodium	ppm	ASTM D5185m		<1	0	2
Soot % % *ASTM D7844 >4 0.3 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 6.5 6.9 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.8 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.8 13.7 13.2	Potassium	ppm	ASTM D5185m	>20	3	4	14
Nitration Abs/cm *ASTM D7624 >20 6.5 6.9 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.8 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.8 13.7 13.2	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 18.1 17.8 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.8 13.7 13.2	Soot %	%	*ASTM D7844	>4	0.3	0.3	0.3
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.8 13.7 13.2	Nitration	Abs/cm	*ASTM D7624	>20	6.5	6.9	6.5
Oxidation Abs/.1mm *ASTM D7414 >25 13.8 13.7 13.2	Sulfation	Abs/.1mm	*ASTM D7415	>30	18.1	17.8	17.7
	FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	13.8	13.7	13.2
		mg KOH/g	ASTM D2896	9.8	8.7	8.6	8.6



OIL ANALYSIS REPORT



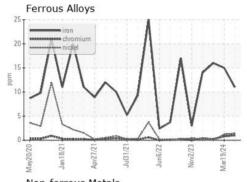


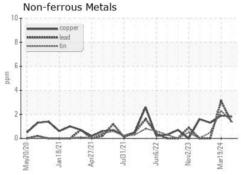


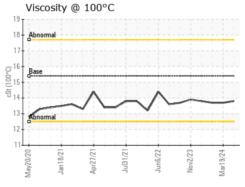
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

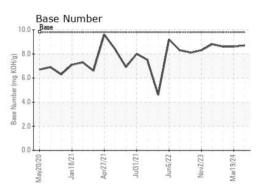
FLUID PROPE	RHES	method			history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.7	13.7

GRAPHS













Certificate 12367

Laboratory Sample No.

Lab Number : 06152843 Unique Number : 10982921 Test Package : FLEET

: GFL0111877

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 18 Apr 2024 **Tested** : 19 Apr 2024 Diagnosed

: 19 Apr 2024 - Wes Davis

GFL Environmental - 652 - Fredericksburg Hauling

10954 Houser Drive Fredericksburg, VA US 22408

Contact: WILLIAM MILO wmilo@gflenv.com T:

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)

F: