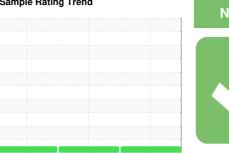


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id **4521 M** Component **Diesel Engine**

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

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

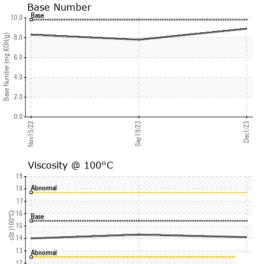
Fluid Condition

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

Sample Number	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 23057 22582 20678 Oil Age hrs Client Info 23057 22582 20678 Oil Changed Client Info Changed N/A N/A Sample Status NORMAL NORMAL NORMAL ORMAL NORMAL NORMAL ORMAL NORMAL NORMAL OWAMATE WC Method So.2 NEG NEG NEG Olicy NEG NEG NEG NEG NEG NEG Olicy NEG NEG NEG NEG NEG NEG NEG Olicy NEG NEG	Sample Number		Client Info		GFL0104386	GFL0085011	GFL0059218
Oil Age hrs Client Info 23057 22582 20678 Oil Changed Sample Status Client Info Changed N/A N/A N/A CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0	Sample Date		Client Info		01 Dec 2023	19 Sep 2023	15 Nov 2022
Client Info Changed N/A N/A NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL	Machine Age	hrs	Client Info		23057	22582	20678
Client Info NORMAL NORMAL NORMAL	Oil Age	hrs	Client Info		23057	22582	20678
NORMAL NORMAL NORMAL NORMAL			Client Info		Changed	N/A	N/A
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG NEG Glycol WC Method Imitibase current history1 history2 Iron ppm ASTM D5185m >90 10 53 40 Chromium ppm ASTM D5185m >20 <1 2 2 Nickel ppm ASTM D5185m >2 0 <1 <1 0 Silver ppm ASTM D5185m >2 0 0 <1 <1 0 0 <1 <1 0 0 <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	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method Ilimit/base current history1 history2 WEAR METALS method Ilimit/base current history1 history2 Iron ppm ASTM D5185m >90 10 53 40 Chromium ppm ASTM D5185m >20 <1 2 2 Nickel ppm ASTM D5185m >2 0 <1 <1 0 Silver ppm ASTM D5185m >2 0 <1 <1 <0 <1 Aluminum ppm ASTM D5185m >20 3 4 6 6 <1 <1 0 0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Iron	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Chromium ppm ASTM D5185m >20 <1	Iron	nnm	ASTM D5185m	>90	10	53	40
Nickel							
Titanium ppm ASTM D5185m >2 0 <1							
Silver ppm ASTM D5185m >2 0 0 <1							
Aluminum ppm ASTM D5185m >20 3 4 6 Lead ppm ASTM D5185m >40 <1 0 0 Copper ppm ASTM D5185m >330 2 2 1 Tin ppm ASTM D5185m >15 <1 <1 <1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 3 3 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 1 <1 Magnesium ppm ASTM D5185m 0 0 1 <1 Calcium ppm ASTM D5185m 1070 1431 1184							
Lead ppm ASTM D5185m >40 <1							
Copper ppm ASTM D5185m >330 2 2 1 Tin ppm ASTM D5185m >15 <1 <1 <1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m <1 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 3 3 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 1 <1 Magnesium ppm ASTM D5185m 0 0 1 <1 Magnesium ppm ASTM D5185m 1070 1431 1184 1168 Phosphorus ppm ASTM D5185m 1150 1464 1097 1019 Zinc ppm ASTM D5185m 2060 4669					-		
Tin ppm ASTM D5185m >15 <1							
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m <1					_	_	
Cadmium ppm ASTM D5185m <1				>10			
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 3 3 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 85 65 62 Manganese ppm ASTM D5185m 0 0 1 <1 Magnesium ppm ASTM D5185m 1010 1374 1007 891 Calcium ppm ASTM D5185m 1070 1431 1184 1168 Phosphorus ppm ASTM D5185m 1270 1780 1352 1225 Sulfur ppm ASTM D5185m 2060 4669 3506 3355 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 8 Sodium ppm ASTM D5185m					-		
Boron		ppm		11 11 11			
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 85 65 62 Manganese ppm ASTM D5185m 0 0 1 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 85 65 62 Manganese ppm ASTM D5185m 0 0 1 <1	Boron	ppm	ASTM D5185m	0			
Manganese ppm ASTM D5185m 0 0 1 <1	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 1374 1007 891 Calcium ppm ASTM D5185m 1070 1431 1184 1168 Phosphorus ppm ASTM D5185m 1150 1464 1097 1019 Zinc ppm ASTM D5185m 1270 1780 1352 1225 Sulfur ppm ASTM D5185m 2060 4669 3506 3355 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 8 Sodium ppm ASTM D5185m >20 7 3 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.1 1.3 0.1 Nitration Abs/cm *ASTM D7415 >30 17.9 22.9 21.8 FLUID DEGRADATION *ASTM D741	Molybdenum	ppm	ASTM D5185m	60	85	65	62
Calcium ppm ASTM D5185m 1070 1431 1184 1168 Phosphorus ppm ASTM D5185m 1150 1464 1097 1019 Zinc ppm ASTM D5185m 1270 1780 1352 1225 Sulfur ppm ASTM D5185m 2060 4669 3506 3355 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 8 Sodium ppm ASTM D5185m >20 7 3 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.1 1.3 0.1 Nitration Abs/cm *ASTM D7415 >30 17.9 22.9 21.8 FLUID DEGRADATION *ASTM D7414 >25 13.7 20.3 17.7	•	ppm	ASTM D5185m	0	0	1	<1
Phosphorus ppm ASTM D5185m 1150 1464 1097 1019 Zinc ppm ASTM D5185m 1270 1780 1352 1225 Sulfur ppm ASTM D5185m 2060 4669 3506 3355 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 8 Sodium ppm ASTM D5185m >20 7 3 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.1 1.3 0.1 Nitration Abs/cm *ASTM D7624 >20 5.9 11.2 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 22.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm	Magnesium	ppm	ASTM D5185m	1010	1374	1007	891
Zinc ppm ASTM D5185m 1270 1780 1352 1225 Sulfur ppm ASTM D5185m 2060 4669 3506 3355 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 8 Sodium ppm ASTM D5185m 0 13 10 Potassium ppm ASTM D5185m >20 7 3 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.1 1.3 0.1 Nitration Abs/cm *ASTM D7624 >20 5.9 11.2 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 22.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414	Calcium	ppm	ASTM D5185m	1070	1431	1184	1168
Sulfur ppm ASTM D5185m 2060 4669 3506 3355 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 8 Sodium ppm ASTM D5185m >20 7 3 4 Potassium ppm ASTM D5185m >20 7 3 4 INFRA-RED method limit/base current history1 history2 Soot % % "ASTM D7844 >6 0.1 1.3 0.1 Nitration Abs/cm "ASTM D7624 >20 5.9 11.2 10.6 Sulfation Abs/.1mm "ASTM D7415 >30 17.9 22.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm "ASTM D7414 >25 13.7 20.3 17.7	Phosphorus	ppm	ASTM D5185m	1150	1464	1097	1019
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 9 8 Sodium ppm ASTM D5185m 0 13 10 Potassium ppm ASTM D5185m >20 7 3 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.1 1.3 0.1 Nitration Abs/cm *ASTM D7624 >20 5.9 11.2 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 22.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 20.3 17.7	Zinc	ppm	ASTM D5185m	1270	1780	1352	1225
Silicon ppm ASTM D5185m >25 4 9 8 Sodium ppm ASTM D5185m 0 13 10 Potassium ppm ASTM D5185m >20 7 3 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.1 1.3 0.1 Nitration Abs/cm *ASTM D7624 >20 5.9 11.2 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 22.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 20.3 17.7			ASTM D5185m	2060	4669	3506	3355
Sodium ppm ASTM D5185m 0 13 10 Potassium ppm ASTM D5185m >20 7 3 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.1 1.3 0.1 Nitration Abs/cm *ASTM D7624 >20 5.9 11.2 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 22.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 20.3 17.7	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 7 3 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.1 1.3 0.1 Nitration Abs/cm *ASTM D7624 >20 5.9 11.2 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 22.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 20.3 17.7		ppm		>25	4		
INFRA-RED	Sodium	ppm	ASTM D5185m		0	13	10
Soot % % *ASTM D7844 >6 0.1 1.3 0.1 Nitration Abs/cm *ASTM D7624 >20 5.9 11.2 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 22.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 20.3 17.7	Potassium	ppm	ASTM D5185m	>20	7	3	4
Nitration Abs/cm *ASTM D7624 >20 5.9 11.2 10.6 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 22.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 20.3 17.7	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 17.9 22.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 20.3 17.7	Soot %	%	*ASTM D7844	>6	0.1	1.3	0.1
Sulfation Abs/.1mm *ASTM D7415 >30 17.9 22.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 20.3 17.7	Nitration	Abs/cm	*ASTM D7624	>20	5.9	11.2	10.6
Oxidation Abs/.1mm *ASTM D7414 >25 13.7 20.3 17.7	Sulfation		*ASTM D7415	>30		22.9	21.8
	FLUID DEGRAD	NOITAC	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	13.7	20.3	17.7



OIL ANALYSIS REPORT

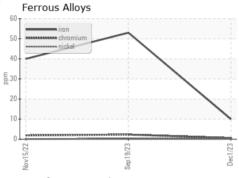


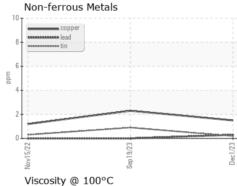
Sep 19/23

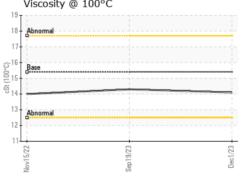
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

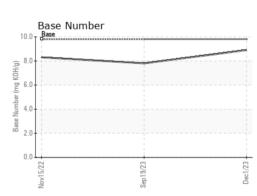
L LOID PROPI	EHILO	method			riistory i	HISTORYZ
Visc @ 100°C	cSt	ASTM D445	15.4	14.1	14.3	14.0

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10777154 Test Package : FLEET

: 06027363

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0104386 Received : 07 Dec 2023 Diagnosed

: 11 Dec 2023 Diagnostician : Jonathan Hester GFL Environmental - 410 - Michigan West

39000 Van Born Rd Wayne, MI US 48184

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)

Report Id: GFL410 [WUSCAR] 06027363 (Generated: 12/11/2023 08:26:41) Rev: 1