

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 414059 Component **Diesel Engine**

PETRO CANADA DURO

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

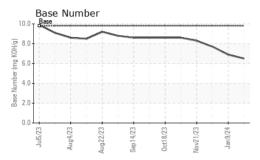
Fluid Condition

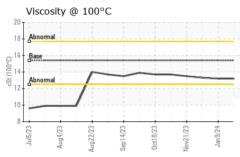
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Client Info GFL0110615 GFL0100223 GFL010018 GFL0100223 GFL010018 GFL0100223 GFL010018 GFL0100223 GFL010018 AB Dec 202 Machine Age hrs Client Info 1197 1316 1174 1176 1	ON SHP 15W40 (LTR)						
Sample Date Client Info 01 Feb 2024 09 Jan 2024 18 Dec 202 Machine Age hrs Client Info 1497 1316 1174 Oil Age hrs Client Info 400 150 Not Changd	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 1497 1316 1174 Oil Age hrs Client Info 400 150 150 150 Oil Changed Client Info 400 150 150 150 Sample Status Client Info NORMAL ABNORMAL NOR Changd Not Changd ABNORMAL Not Changd Not Changd<	Sample Number		Client Info		GFL0110615	GFL0100223	GFL0100190
Oil Age hrs Client Info 400 150 150 Not Changd Normal 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	Sample Date		Client Info		01 Feb 2024	09 Jan 2024	18 Dec 2023
Oil Changed Cilient Info Not Changd Not Changd Not Changed Normal ABNORMAL ABNORMAL Normal Not Changed Normal Norm	Machine Age	hrs	Client Info		1497	1316	1174
NORMAL ABNORMAL NORMAL CONTAMINATION method limit/base current history1 water WC Method >0.2 NEG	Oil Age	hrs	Client Info		400	150	150
Fuel	Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Fuel WC Method Sa.0 Cat.0 Cat.0 Cat.0 Cat.0 Water WC Method Cat.0 NEG Ne	Sample Status				NORMAL	ABNORMAL	NORMAL
Water Glycol WC Method PC Method >0.2 NEG NEG NEG NEG NEG NEG WEAR METALS method limit/base current listory1 history1 history1 Iron ppm ASTM D5185m >120 24 19 14 Chromium ppm ASTM D5185m >20 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >120 24 19 14 Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >20 <1 <1 <1 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 <1 0 0 Aluminum ppm ASTM D5185m >2 <1 0 0 Aluminum ppm ASTM D5185m >2 <1 0 0 Lead ppm ASTM D5185m >40 0 3 0 Copper ppm ASTM D5185m >15 1 <1 <1 0 Vanadium ppm ASTM D5185m 0 0 0 0	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Part	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >5 2 2 <1	WEAR METAL	.S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120		19	14
Titanium ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 <1	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Silver	Nickel	ppm	ASTM D5185m	>5			
Aluminum		ppm	ASTM D5185m	>2	0		
Lead ppm ASTM D5185m >40 0 3 0 Copper ppm ASTM D5185m >330 173 ▲ 257 36 Tin ppm ASTM D5185m >15 1 <1 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 4 1 <1 Boron ppm ASTM D5185m 0 4 1 <1 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 4 1 <1 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 0 <1 <1 <1 Calcium ppm ASTM D5185m 1070 948 1010 1041 938 Zinc ppm ASTM D5185m 1270 1248<							
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Tin							
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Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 62 63 54 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 959 986 921 Calcium ppm ASTM D5185m 1070 948 1010 1005 Phosphorus ppm ASTM D5185m 1150 1010 1041 938 Zinc ppm ASTM D5185m 1270 1248 1264 1163 Sulfur ppm ASTM D5185m 2060 2386 2695 2761 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 8 8 7 Sodium ppm ASTM D5185m >20 17 13 8 INFRA-RED method limit/base<	ADDITIVES						·
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Sodium ppm ASTM D5185m 4 4 3 Potassium ppm ASTM D5185m >20 17 13 8 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.4 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 9.1 8.3 7.6 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 19.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 16.3 15.6							
Potassium ppm ASTM D5185m >20 17 13 8 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >4 0.4 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 9.1 8.3 7.6 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 19.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 16.3 15.6				<i>></i> 20			
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Nitration Abs/cm *ASTM D7624 >20 9.1 8.3 7.6 Sulfation Abs/.1mm *ASTM D7615 >30 20.3 19.5 19.2 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 17.1 16.3 15.6	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm *ASTM D7624 >20 9.1 8.3 7.6 Sulfation Abs/.1mm *ASTM D7615 >30 20.3 19.5 19.2 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 17.1 16.3 15.6	Soot %	%	*ASTM D7844	>4	0.4	0.3	0.3
Sulfation Abs/.1mm *ASTM D7415 >30 20.3 19.5 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 16.3 15.6	Nitration	Abs/cm	*ASTM D7624	>20	9.1	8.3	7.6
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	20.3		
	FLUID DEGRAI	NOITAC	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	17.1	16.3	15.6
Dasc Indition (DIV) highory Activides 5.5	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	6.5	6.9	7.7



OIL ANALYSIS REPORT

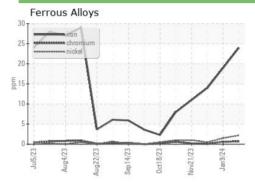


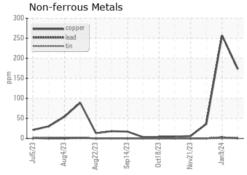


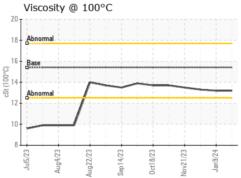
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

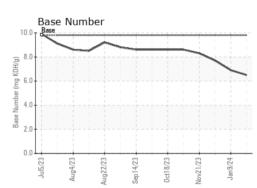
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.2	13.2	13.3

GRAPHS













Certificate L2367

Laboratory Sample No.

: GFL0110615 Lab Number : 06082308 Unique Number: 10869753 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 07 Feb 2024 **Tested** : 08 Feb 2024

Diagnosed : 08 Feb 2024 - Wes Davis

GFL Environmental - 166 - Phenix City

18 Old Brickyard Rd Phenix City, AL US 36869

Contact: DEAN PEACE JR dean.peace@gflenv.com

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)

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