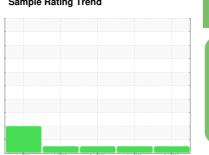


OIL ANALYSIS REPORT

Sample Rating Trend









Machine Id **413066** Component **Diesel Engine**

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Engine)

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

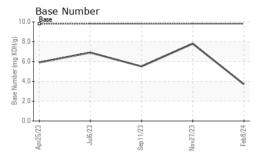
Fluid Condition

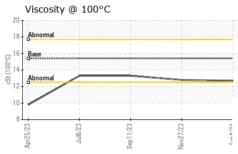
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION method limit/base current history1 GFL0089401 Sample Number Client Info 08 Feb 2024 27 Nov 2023 11 Sep 2023 Asset 32771 Coll Age mls Client Info 53259 43661 32771 Coll Age mls Client Info 53259 43661 32771 Coll Changed Client Info 53259 43661 32771 Coll Changed Client Info N/A N/A Changed Collent Info Contamination Contamina	N SHP 15W40 (-	GAL)	Apr2023	Jul2023	Sep 2023 Nov 2023	Feb 2024	
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age mls Client Info 53259 43661 32771 Oil Age mls Client Info 53259 43661 32771 Oil Changed Client Info N/A N/A N/A Changed Sample Status method Imilibase current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 Water WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >12.0 6 <1 10 Chromium ppm ASTM D5185m >2.0 <1 0 1 Nickel ppm ASTM D5185m >2.0 <1 1 <1 2 Aluminum ppm ASTM D5185m >2.0 2 <1 1 <1 2 <2 <1 1 <1 2 <2 <1	Sample Number		Client Info		GFL0105464	GFL0094151	GFL0089401
Oil Age mls Client Info 53259 43661 32771 Oil Changed Client Info N/A N/A N/A Changed Sample Status Client Info N/A N/A N/A Changed Eval WC Method >3.0 <1.0	Sample Date		Client Info		08 Feb 2024	27 Nov 2023	11 Sep 2023
Oil Changed Sample Status Client Info N/A N/A N/A Changed NORMAL NORMAL NORMAL 1.0 4.1 0 4.1 0 4.1 0 4.1 0 1 1 0 1 1 1 0 1 1 1 2 2 1 1 1 2 2 1 1 1 2 <	Machine Age	mls	Client Info		53259	43661	32771
NORMAL NORMAL NORMAL NORMAL	Oil Age	mls	Client Info		53259	43661	32771
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	Oil Changed		Client Info		N/A	N/A	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol WC Method WC Method >0.2 NEG NEG NEG NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 6 <1 10 Chromium ppm ASTM D5185m >20 <1 0 1 Nickel ppm ASTM D5185m >2 0 0 <1 Silver ppm ASTM D5185m >2 0 0 <1 Aluminum ppm ASTM D5185m >20 2 <1 1 <1 2 Copper ppm ASTM D5185m >40 1 <1 2 2 <1 1 <1 2 2 <1 0 <2 <1 0 2 <1 0 2 <1 0 <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
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 6 <1 10 Chromium ppm ASTM D5185m >20 <1 0 1 Nickel ppm ASTM D5185m >20 0 0 <1 Titanium ppm ASTM D5185m >2 0 0 <1 Aluminum ppm ASTM D5185m >2 <1 0 <1 Aluminum ppm ASTM D5185m >20 2 <1 1 Lead ppm ASTM D5185m >20 2 <1 1 Lead ppm ASTM D5185m >20 2 <1 1 Copper ppm ASTM D5185m >15 <1 0 2 Copper ppm ASTM D5185m 0 0 0 0 Cadium ppm ASTM D5185m 0 0 0	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
Nickel ppm ASTM D5185m >5 <1	Iron	ppm	ASTM D5185m	>120	6	<1	10
Titanium ppm ASTM D5185m >2 0 0 <1	Chromium	ppm	ASTM D5185m	>20	<1	0	1
Silver ppm ASTM D5185m >2 <1	Nickel	ppm	ASTM D5185m	>5	<1	0	<1
Aluminum	Titanium	ppm	ASTM D5185m	>2	0	0	<1
Lead ppm ASTM D5185m >40 1 <1	Silver	ppm	ASTM D5185m	>2	<1	0	<1
Copper ppm ASTM D5185m >330 5 <1	Aluminum	ppm	ASTM D5185m	>20	2	<1	1
Tin	Lead	ppm	ASTM D5185m	>40	1	<1	2
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 <1	Copper	ppm	ASTM D5185m	>330	5	<1	37
Cadmium ppm ASTM D5185m 0 0 <1	Tin	ppm		>15	<1	0	2
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 0 0 Barium ppm ASTM D5185m 0 0 0 44 Molybdenum ppm ASTM D5185m 60 55 54 38 Manganese ppm ASTM D5185m 0 <1 0 2 Magnesium ppm ASTM D5185m 1010 9 8 39 Calcium ppm ASTM D5185m 1070 2437 2668 2088 Phosphorus ppm ASTM D5185m 1150 1018 1242 913 Zinc ppm ASTM D5185m 1270 1276 1539 1122 Sulfur ppm ASTM D5185m 2060 2975 3807 2966 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 22 <th>Vanadium</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>0</th> <th>0</th> <th>0</th>	Vanadium	ppm	ASTM D5185m		0	0	0
Boron	Cadmium	ppm	ASTM D5185m		0	0	<1
Barium ppm ASTM D5185m 0 0 44 Molybdenum ppm ASTM D5185m 60 55 54 38 Manganese ppm ASTM D5185m 0 <1 0 2 Magnesium ppm ASTM D5185m 1010 9 8 39 Calcium ppm ASTM D5185m 1070 2437 2668 2088 Phosphorus ppm ASTM D5185m 1150 1018 1242 913 Zinc ppm ASTM D5185m 1270 1276 1539 1122 Sulfur ppm ASTM D5185m 2060 2975 3807 2966 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 10 Sodium ppm ASTM D5185m 20 6 <1 7 INFRA-RED method limit/base current	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 55 54 38 Manganese ppm ASTM D5185m 0 <1	Boron	ppm	ASTM D5185m	0		0	0
Manganese ppm ASTM D5185m 0 <1	Barium	ppm	ASTM D5185m	0	0	0	44
Magnesium ppm ASTM D5185m 1010 9 8 39 Calcium ppm ASTM D5185m 1070 2437 2668 2088 Phosphorus ppm ASTM D5185m 1150 1018 1242 913 Zinc ppm ASTM D5185m 1270 1276 1539 1122 Sulfur ppm ASTM D5185m 2060 2975 3807 2966 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 10 Sodium ppm ASTM D5185m 20 6 <1	Molybdenum	ppm				54	
Calcium ppm ASTM D5185m 1070 2437 2668 2088 Phosphorus ppm ASTM D5185m 1150 1018 1242 913 Zinc ppm ASTM D5185m 1270 1276 1539 1122 Sulfur ppm ASTM D5185m 2060 2975 3807 2966 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 10 Sodium ppm ASTM D5185m >20 6 <1 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0 0.2 Nitration Abs/cm *ASTM D7624 >20 8.3 4.4 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 14.2 20.6 FLUID DEGRADATION <	Manganese	ppm	ASTM D5185m		<1	0	
Phosphorus ppm ASTM D5185m 1150 1018 1242 913 Zinc ppm ASTM D5185m 1270 1276 1539 1122 Sulfur ppm ASTM D5185m 2060 2975 3807 2966 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 10 Sodium ppm ASTM D5185m >20 6 <1 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0 0.2 Nitration Abs/cm *ASTM D7624 >20 8.3 4.4 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 14.2 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm	-	ppm					
Zinc ppm ASTM D5185m 1270 1276 1539 1122 Sulfur ppm ASTM D5185m 2060 2975 3807 2966 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 10 Sodium ppm ASTM D5185m 2 <1 3 Potassium ppm ASTM D5185m >20 6 <1 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0 0.2 Nitration Abs/cm *ASTM D7624 >20 8.3 4.4 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 14.2 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7		ppm	ASTM D5185m	1070		2668	
Sulfur ppm ASTM D5185m 2060 2975 3807 2966 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 10 Sodium ppm ASTM D5185m 2 <1 3 Potassium ppm ASTM D5185m >20 6 <1 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0 0.2 Nitration Abs/cm *ASTM D7624 >20 8.3 4.4 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 14.2 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.0 7.9 13.0							
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 6 10 Sodium ppm ASTM D5185m 2 <1 3 Potassium ppm ASTM D5185m >20 6 <1 7 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0 0.2 Nitration Abs/cm *ASTM D7624 >20 8.3 4.4 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 14.2 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.0 7.9 13.0		ppm					
Silicon ppm ASTM D5185m >25 6 6 10 Sodium ppm ASTM D5185m 2 <1			ASTM D5185m	2060	2975	3807	2966
Sodium ppm ASTM D5185m 2 <1	CONTAMINAN	ITS	method	limit/base	current	history1	
Potassium ppm ASTM D5185m >20 6 <1				>25			
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0 0.2 Nitration Abs/cm *ASTM D7624 >20 8.3 4.4 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 14.2 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.0 7.9 13.0		ppm					
Soot % % *ASTM D7844 >4 0.2 0 0.2 Nitration Abs/cm *ASTM D7624 >20 8.3 4.4 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 14.2 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.0 7.9 13.0		ppm	ASTM D5185m	>20	6	<1	7
Nitration Abs/cm *ASTM D7624 >20 8.3 4.4 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 14.2 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.0 7.9 13.0	INFRA-RED		method	limit/base		history1	
Sulfation Abs/.1mm *ASTM D7415 >30 19.9 14.2 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.0 7.9 13.0							
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.0 7.9 13.0				>20			
Oxidation Abs/.1mm *ASTM D7414 >25 12.0 7.9 13.0	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.9	14.2	20.6
	FLUID DEGRAI	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 3.7 7.8 5.5	Oxidation	Abs/.1mm	*ASTM D7414	>25	12.0	7.9	13.0
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	3.7	7.8	5.5



OIL ANALYSIS REPORT

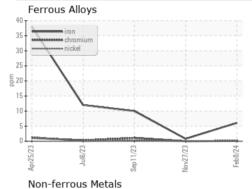


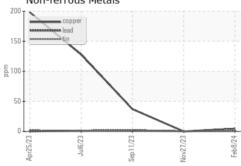


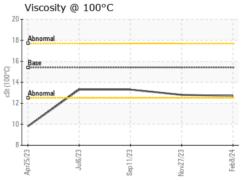
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

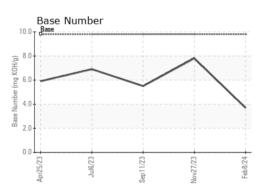
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.7	12.8	13.3

GRAPHS













Laboratory Sample No. Lab Number : 06091509

: GFL0105464

Unique Number : 10884362 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 16 Feb 2024 **Tested** : 17 Feb 2024

Diagnosed : 19 Feb 2024 - Angela Borella

GFL Environmental - 983 - Sugar Land Hauling

16011 West Belfort Street Sugar Land, TX US 77498

Contact: TECHNICIAN ACCOUNT wcgfldemo@gmail.com

Certificate L2367 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)

T:

F: