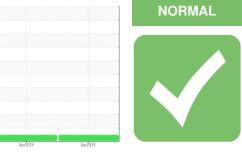


OIL ANALYSIS REPORT

Sample Rating Trend



814046 Component Diesel Engine Fluid

Area TALLASSEE Machine Id

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the oil.

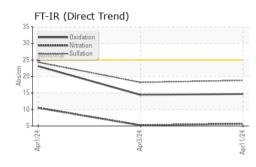
Fluid Condition

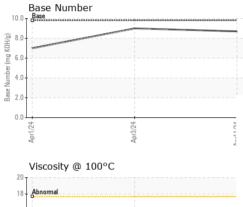
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

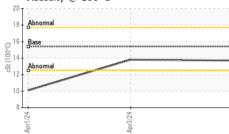
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0080698	GFL0092440	GFL0081850
Sample Date		Client Info		11 Apr 2024	03 Apr 2024	01 Apr 2024
Machine Age	hrs	Client Info		733	664	640
Oil Age	hrs	Client Info		733	664	640
Oil Changed		Client Info		N/A	Not Changd	N/A
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	0.4
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	7	5	45
Chromium	ppm	ASTM D5185m	>20	، <1	0	<1
Nickel	ppm	ASTM D5185m	>5	2	<1	12
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>2	۰ <1	0	<1
Aluminum	ppm	ASTM D5185m	>20	1	<1	7
Lead	ppm	ASTM D5185m	>40	1	0	0
Copper	ppm	ASTM D5185m	>330	65	51	▲ 349
Tin	ppm	ASTM D5185m	>15	<1	0	3
Vanadium	ppm	ASTM D5185m	210	<1	0	0
Cadmillim	nnm	ASTM D5185m		0	0	0
	ppm	ASTM D5185m	l'act de com	0	0	0
ADDITIVES	ppm	ASTM D5185m method	limit/base	current	history1	history2
ADDITIVES Boron	ppm ppm	method ASTM D5185m	0	current 23	history1 26	history2 180
ADDITIVES Boron Barium		method ASTM D5185m	0	current 23 0	history1 26 0	history2 180 0
ADDITIVES Boron	ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 23	history1 26	history2 180 0 123
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 23 0	history1 26 0	history2 180 0 123 5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 23 0 64 <1 910	history1 26 0 66 <1 1033	history2 180 0 123 5 720
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 23 0 64 <1 910 11111	history1 26 0 66 <1	history2 180 0 123 5 720 1462
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 23 0 64 <1 910 1111 962	history1 26 0 66 <1 1033	history2 180 0 123 5 720 1462 682
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current 23 0 64 <1 910 1111 962 1182	history1 26 0 66 <1 1033 1203 1101 1317	history2 180 0 123 5 720 1462 682 803
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current 23 0 64 <1 910 1111 962	history1 26 0 66 <1 1033 1203 1101 1317 4170	history2 180 0 123 5 720 1462 682 803 2295
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	23 0 64 <1 910 1111 962 1182 3512 current	history1 26 0 66 <1 1033 1203 1101 1317 4170 history1	history2 180 0 123 5 720 1462 682 803 2295 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current 23 0 64 <1 910 1111 962 1182 3512 current 11	history1 26 0 66 <1 1033 1203 1101 1317 4170 history1 10	history2 180 0 123 5 720 1462 682 803 2295 history2 ▲ 81
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current 23 0 64 <1 910 1111 962 1182 3512 current 11 4	history1 26 0 66 <1 1033 1203 1101 1317 4170 history1 10 2	history2 180 0 123 5 720 1462 682 803 2295 history2 81 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	23 0 64 <1 910 1111 962 1182 3512 current 11 4 17	history1 26 0 66 <1 1033 1203 1101 1317 4170 history1 10 2 2	history2 180 0 123 5 720 1462 682 803 2295 history2 ▲ 81 2 12
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	current 23 0 64 <1 910 1111 962 1182 3512 current 11 4 17 current	history1 26 0 66 <1 1033 1203 1101 1317 4170 history1 10 2 2 history1	history2 180 0 123 5 720 1462 682 803 2295 history2 ▲ 81 2 123 12 12 12
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	current 23 0 64 <1 910 1111 962 1182 3512 current 11 4 17 current 0.2	history1 26 0 66 <1 1033 1203 1101 1317 4170 history1 10 2 2 history1 0.1	history2 180 0 123 5 720 1462 682 803 2295 history2 ▲ 81 2 123 12 120 0.5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	current 23 0 64 <1 910 1111 962 1182 3512 current 11 4 17 current 0.2 5.7	history1 26 0 66 <1 1033 1203 1101 1317 4170 history1 10 2 history1 0.1 5.2	history2 180 0 123 5 720 1462 682 803 2295 history2 ▲ 81 2 123 123 ● 81 2 12 12 12 12 12 12 12 12
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	current 23 0 64 <1 910 1111 962 1182 3512 current 11 4 17 current 0.2	history1 26 0 66 <1 1033 1203 1101 1317 4170 history1 10 2 2 history1 0.1	history2 180 0 123 5 720 1462 682 803 2295 history2 ▲ 81 2 123 12 120 0.5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415 method	0 0 0 1010 1070 1150 1270 2060 2060 225 225 220 220 1imit/base >22 20	current 23 0 64 <1 910 1111 962 1182 3512 current 11 4 17 current 0.2 5.7	history1 26 0 66 <1 1033 1203 1101 1317 4170 history1 10 2 history1 0.1 5.2	history2 180 0 123 5 720 1462 682 803 2295 history2 ▲ 81 2 123 123 ● 81 2 12 12 12 12 12 12 12 12
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 20 20 20 20 20 20 20 20 20 20 20 20	current 23 0 64 <1 910 1111 962 1182 3512 current 11 4 17 current 0.2 5.7 18.8	history1 26 0 66 <1 1033 1203 1101 1317 4170 history1 10 2 2 history1 0.1 5.2 18.2	history2 180 0 123 5 720 1462 682 803 2295 history2 ▲ 81 2 12 0.5 10.5 24.3



OIL ANALYSIS REPORT







				11 1. 0			
1	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	ERTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	13.7	13.8	0.1
	GRAPHS						
	Ferrous Alloys						
	45 40						
	35 - neessaan on ickel						
	30						
	E 25						
	15						
	10						
	5-						
		4		4			
	Apr1/24	Apr3/24		Apr11/24			
				A			
	Non-ferrous Meta	115					
	300 - copper						
	250 -						
	200						
	الم ²⁰⁰						
	100 -						
	50						
	74 10	/24		/24			
	Apr1/24	Apr3/24		Apr11/2			
	Viscosity @ 100°	С		-	Dees Normal	_	
	¹⁹ T	1		10.0	Base Number		
	18 - Abnormal						
				(B) 8.0			
	16 Base			Q			
	Dase			P 6.0)		
	0 15 0 14			per (mg			
	0 15 14 3 13 Abnormal	_		Bu 6.0			
	0 15 0 14			u Jaquar 4.0)-		
	© 15 - 0 © 14 - 0 12 - 0 Abnormal	_		الله 6.0 په ۲۰۰۹ هو ۱۹۹۳ ۹.0 ۱۹۹۳ ۹.2 ۱۹۹۳ ۹.2 ۱۹۹۳ ۹.2 ۱۹۹۳ ۹.2)-		
	G 15 G 15 G 1014 Abnomal 12 11 10 9	4		0.0)	5	
	G 15 G 15 G 1014 Abnomal 12 11 10 9	4pr3/24		0.0)	4pr3/24	
	Abnormal	Apr3/24		2.0)-	Apr3/24	
,	G 15 G 15 G 1014 Abnomal 12 11 10 9		n Ave., Cary	0.0	Apr1/24	HZ Edd mental - 172 - Montgomer	y-Alexander City-Tallaha
) .	: WearCheck USA - 50 : GFL0080698	01 Madiso Recei	ved : 16	, NC 27513 6 Apr 2024	Apr1/24	mental - 172 - Montgomer	Multiple Si
	: WearCheck USA - 50	01 Madiso	ved : 16 d : 17	47, NC 27513	GFL Environ	mental - 172 - Montgomer	y-Alexander City-Tallaha Multiple Si Montgomery, US 361



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) Report Id: GFL172 [WUSCAR] 06150987 (Generated: 04/17/2024 16:46:38) Rev: 1

Certificate L2367

Test Package : FLEET

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.

Submitted By: Lisa Reeves Page 2 of 2

brandonhurst@gflenv.com

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