

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 413001

Component Diesel Engine

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

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.

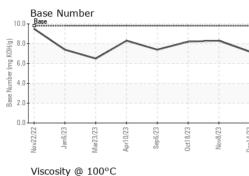
Fluid Condition

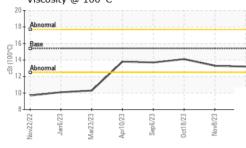
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0093595	GFL0093530	GFL0093614
Sample Date		Client Info		14 Dec 2023	08 Nov 2023	18 Oct 2023
Machine Age	hrs	Client Info		3034	2825	2694
Oil Age	hrs	Client Info		595	418	287
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	10	7	3
Chromium	ppm	ASTM D5185m	>20	<1	0	0
Nickel	ppm	ASTM D5185m	>4	2	0	0
Titanium	ppm	ASTM D5185m		<1	0	1
Silver	ppm	ASTM D5185m	>3	<1	0	<1
Aluminum	ppm	ASTM D5185m	>20	4	2	2
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	6	4	2
Tin	ppm	ASTM D5185m	>15	1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
oddinidini	ррпп	ASTIN DSTOSIII		U	0	0
ADDITIVES	ррп	method	limit/base	current	0 history1	history2
	ppm		limit/base	-	-	-
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 2	history1 0	history2 3
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0	current 2 0	history1 0 0	history2 3 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 2 0 55 <1 919	history1 0 0 58	history2 3 0 58
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 2 0 55 <1	history1 0 0 58 0	history2 3 0 58 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	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	current 2 0 55 <1 919	history1 0 0 58 0 1053 1156 1133	history2 3 0 58 <1 976
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current 2 0 55 <1 919 981	history1 0 0 58 0 1053 1156 1133 1362	history2 3 0 58 <1 976 1040
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	Current 2 0 55 <1 919 981 958	history1 0 0 58 0 1053 1156 1133	history2 3 0 58 <1 976 1040 1068
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	0 0 60 0 1010 1070 1150 1270	current 2 0 55 <1 919 981 958 1201	history1 0 0 58 0 1053 1156 1133 1362	history2 3 0 58 <1 976 1040 1068 1274
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon	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	0 0 60 0 1010 1070 1150 1270 2060	Current 2 0 55 <1 919 981 958 1201 2743	history1 0 0 58 0 1053 1156 1133 1362 3274	history2 3 0 58 <1 976 1040 1068 1274 3096
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	0 0 60 1010 1070 1150 1270 2060	current 2 0 555 <1 919 981 958 1201 2743 current	history1 0 0 58 0 1053 1156 1133 1362 3274 history1	history2 3 0 58 <1 976 1040 1068 1274 3096 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	current 2 0 555 <1 919 981 958 1201 2743 current 6	history1 0 0 58 0 1053 1156 1133 1362 3274 history1 4	history2 3 0 58 <1 976 1040 1068 1274 3096 history2 4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium	ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 Limit/base >25	current 2 0 555 <1 919 981 958 1201 2743 current 6 4	history1 0 0 58 0 1053 1156 1133 1362 3274 history1 4 3 7 history1	history2 3 0 58 <1 976 1040 1068 1274 3096 history2 4 2 3 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	current 2 0 555 <1 919 981 958 1201 2743 current 6 4 10	history1 0 0 58 0 1053 1156 1133 1362 3274 history1 4 3 7	history2 3 0 58 <1 976 1040 1068 1274 3096 history2 4 2 3 history2 0 0.2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	current 2 0 55 <1 919 981 958 1201 2743 current 6 4 10 current	history1 0 0 58 0 1053 1156 1133 1362 3274 history1 4 3 7 history1	history2 3 0 58 <1 976 1040 1068 1274 3096 history2 4 2 3 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Solfur Solicon Sodium Potassium INFRA-RED Soot %	ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3	current 2 0 55 <1 919 981 958 1201 2743 current 6 4 10 current 0.4	history1 0 0 58 0 1053 1156 1133 1362 3274 history1 4 3 7 history1 0.3	history2 3 0 58 <1 976 1040 1068 1274 3096 history2 4 2 3 history2 0 0.2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 >20 imit/base >3 >20	current 2 0 55 <1 919 981 958 1201 2743 current 6 4 10 current 0.4 8.2	history1 0 0 58 0 1053 1156 1133 1362 3274 history1 4 3 7 history1 0.3 7.0	history2 3 0 58 <1 976 1040 1068 1274 3096 history2 4 2 3 history2 0 2 3 bistory2 0.2 5.9
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 3 20 3 20 3 20 20 20 20 20 20 20 20 20 20 20 20 20	current 2 0 55 <1 919 981 958 1201 2743 current 6 4 10 current 0.4 8.2 19.5	history1 0 0 58 0 1053 1156 1133 1362 3274 history1 4 3 7 history1 0.3 7.0 19.0	history2 3 0 58 <1 976 1040 1068 1274 3096 history2 4 2 3 history2 0.2 5.9 18.0



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	ERTIES	method	limit/base	current	history1	history2
/isc @ 100°C	cSt	ASTM D445	15.4	13.2	13.3	14.1
GRAPHS						
Ferrous Alloys						
I and the second s						
iron						
- chromium						
name nickel						
him						
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$ \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot$						
	\checkmark		/			
	\sim	\checkmark				
			2			
	r10/23	t18/23	14/23			
Nov2222	Apr10/23	Oct18/23	Deci4/23			
EZIZIZZANON Non-ferrous Meta	4	Oct18/23 Nov8/23	Dec14/23			
ECCECTER Non-ferrous Meta	4	0ct18/23	Dec14/23			
ECCECTER Non-ferrous Meta	4	0et18/23 Nov8/23	Dec14/23			
E2/guer Ron-ferrous Meta	4	0ct18/23	Dec14/23			
EZEZZEW Non-ferrous Meta	4	Oct18/23	Dec14/23			
EZEZZEW Non-ferrous Meta	4	Oct18/23	Dec14/23			
EZIEZZANN Non-ferrous Meta	4	Oct18/23	Dec14/23			
Ron-ferrous Meta	4	Oct18/23	Dec14/23			
EZZZZZNON Non-ferrous Meta	ls					
Ron-ferrous Meta	4	0ct18/23 0ct18/23 0ct18/23 0ct18/23	Dec14/23 B Dec14/23			
EZUZZRON Non-ferrous Meta	Apr10/23			Base Number		
EZUZZRON Non-ferrous Meta	Apr10/23		Dec14/23	Base Number		
EZZZZNON Non-ferrous Meta CZZZZNON Non-ferrous Meta EZZZZNON Viscosity @ 100°C	Apr10/23		62/4 jua	Base Number		
EZICZDON Non-ferrous Meta	Apr10/23		62/4 jua	Base Number		
EZZZZAWA Non-ferrous Meta CZZZZWW Non-ferrous Meta EZZZZWW Viscosity @ 100°C	Apr10/23		62/4 jua	Base Number		
CZZCZOW Non-ferrous Meta CZZCZOW Non-ferrous Meta EZICZE W Viscosity @ 100°C	Apr10/23		62/4 jua	Base Number		
EZICZYNON Non-ferrous Meta CZCZYNON Non-ferrous Meta EZICZYNON Viscosity @ 100°C	Apr10/23		0.0 Dec14/23	Base Number		

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0ct18/23 -

Diagnostician : Wes Davis

Nov8/23 -

Dec14/23 -

: 18 Dec 2023

: 18 Dec 2023

0.0

Nov22/22

Jan6/23

Mar23/23

Apr10/23

Sep6/23

GFL Environmental - 891 - Oklahoma City Hauling



 Certificate 12367
 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.

 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Mar23/23

Apr10/23

Sep6/23

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Recieved

Diagnosed

10

Laboratory Sample No.

Lab Number

Unique Number : 10792502

Vov22/22

Jan 6/23

: GFL0093595

: 06037273

andrew.smith@gflenv.com

Oct18/23 -

1001 South Rockwell

Oklahoma City, OK

Contact: Andy Smith

T: (405)306-1651

US 73128

Dec14/23.

F:

Nov8/23