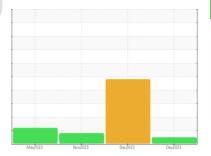


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id

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.

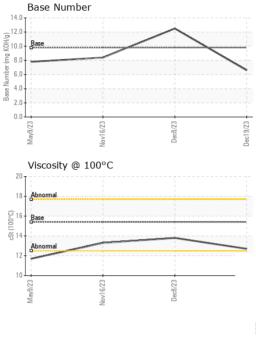
Fluid Condition

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

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0105740	GFL0105579	GFL0101574
Sample Date		Client Info		19 Dec 2023	08 Dec 2023	16 Nov 2023
Machine Age	hrs	Client Info		18804	18724	18593
Oil Age	hrs	Client Info		0	18724	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	ABNORMAL	MARGINAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	2 .3
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	>100	54	47	11
Chromium	ppm	ASTM D5185m	>20	2	2	<1
Nickel	ppm	ASTM D5185m	>4	- <1	_ <1	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	6	▲ 11	1
Lead	ppm	ASTM D5185m	>40	0	1	0
Copper	ppm	ASTM D5185m	>330	2	3	1
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
oddiniani	ppin	AO INI DO IODIII		<1	0	0
ADDITIVES	ppin	method	limit/base	current	history1	history2
	ppm		limit/base		-	-
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 0	history1 52	history2 0
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0	current 0 0	history1 52 0	history2 0 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 0 0 57	history1 52 0 120	history2 0 0 58
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	Current 0 0 57 <1	history1 52 0 120 1	history2 0 0 58 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	Current 0 0 57 <1 892	history1 52 0 120 1 941	history2 0 0 58 0 874
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	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	Current 0 0 57 <1 892 1016	history1 52 0 120 1 941 1058	history2 0 0 58 0 874 1020
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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 0 57 <1 892 1016 950	history1 52 0 120 1 941 1058 1065	history2 0 0 58 0 874 1020 979
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	0 0 60 0 1010 1070 1150 1270	Current 0 0 57 <1 892 1016 950 1181	history1 52 0 120 1 941 1058 1065 1317	history2 0 0 58 0 874 1020 979 1149
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 ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	Current 0 57 <1 892 1016 950 1181 2908	history1 52 0 120 1 941 1058 1065 1317 3301	history2 0 0 58 0 874 1020 979 1149 2970
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	Current 0 57 <1 892 1016 950 1181 2908 Current	history1 52 0 120 1 941 1058 1065 1317 3301 history1	history2 0 0 58 0 874 1020 979 1149 2970 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 0 1010 1070 1150 1270 2060 limit/base	Current 0 57 <1 892 1016 950 1181 2908 Current 5	history1 52 0 120 1 941 1058 1065 1317 3301 history1	history2 0 0 58 0 874 1020 979 1149 2970 history2 4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	Current 0 0 57 <1 892 1016 950 1181 2908 Current 5 7	history1 52 0 120 1 941 1058 1065 1317 3301 history1 ▲ 39 ▲ 1730	history2 0 0 58 0 874 1020 979 1149 2970 history2 4 6
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 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	Current 0 0 57 <1 892 1016 950 1181 2908 Current 5 7 8	history1 52 0 120 1 941 1058 1065 1317 3301 history1 ▲ 39 ▲ 1730 ▲ 22	history2 0 0 58 0 874 1020 979 1149 2970 history2 4 6 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN 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 >20 20	Current 0 0 57 <1 892 1016 950 1181 2908 Current 5 7 8 8	history1 52 0 120 1 941 1058 1065 1317 3301 history1 ▲ 39 ▲ 1730 ▲ 22 history1	history2 0 0 58 0 874 1020 979 1149 2970 history2 4 6 2 history2
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	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	Current 0 0 57 <1 892 1016 950 1181 2908 current 5 7 8 current 1.1	history1 52 0 120 1 941 1058 1065 1317 3301 history1 339 1730 22 history1 1	history2 0 0 58 0 874 1020 979 1149 2970 history2 4 6 2 history2 0 0.4
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 D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 20 20 20 20 20 20 20 20 20	Current 0 0 57 <1 892 1016 950 1181 2908 current 5 7 8 current 1.1 11.6	history1 52 0 120 1 941 1058 1065 1317 3301 history1 ▲ 39 ▲ 1730 ▲ 22 history1 1 15.0	history2 0 0 58 0 874 1020 979 1149 2970 history2 4 6 2 history2 0.4 8.2
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 imit/base >3 >20 >30	Current 0 0 57 <1 892 1016 950 1181 2908 Current 5 7 8 Current 1.1 1.1 11.6 21.5	history1 52 0 120 1 941 1058 1065 1317 3301 history1 339 1730 22 history1 1 15.0 22.5	history2 0 0 58 0 874 1020 979 1149 2970 history2 4 6 2 history2 0.4 8.2 18.9



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	
6	Dec19/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML	
6	Deci	Odor	scalar	*Visual	NORML	NORML	NORML	NORML	
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG	
		Free Water	scalar	*Visual		NEG	NEG	NEG	
		FLUID PROP	ERTIES	method	limit/base	current	history1	history2	
		Visc @ 100°C	cSt	ASTM D445	15.4	12.7	13.8	13.3	
		GRAPHS							
		Ferrous Alloys							
		50 - iron							
6	Dec6/23	nickel		1					
		40	/						
		₫ 30							
		20	/						
		10	,						
		23 10 23							
		May9/23 Nov16/23		Dec8/23	Dec19/23				
		Non-ferrous Met	als						
		10 T							
		copper							
		tin							
		6							
		E d							
			_						
		2							
		0	NTO STREET, ST	And the second s	and a state of the				
		May9/23 lov16/23		Dec8/23	19/23				
		2	~	De	Dec				
		Viscosity @ 100°	•ر !		14.0	Base Number			
		18 - Abnormal			12.0				
		16			(0,10.0) HOX BU back Market (0,0) Back Market (0	Base			
					ž 8.0		/		
		0 15 0 15 14			a 6.0				
		13 Abnormal							
		12			2.0	1			
		11			2.0				
		May9/23		Dec8/23 -		May9/23	ov16/23 -	2	
		May9/23 Nov16/23		Dec	Dec19/23	May	Nov16/23		
	Laboratory	: WearCheck USA -	501 Madi	son Ave Ca	rv. NC 27513	513 GFL Environmental - 415 - Michigan Ea			
	Lannanna		Recieved		Dec 2023	6200 Elmridg			
NAR	Laboratory Sample No.	: GFL0105740	Recieved			: 22 Dec 2023			
	Sample No. Lab Number	: 06041866	Diagnos	ed : 22 l	Dec 2023		Ster	ling Heights, N	
	Sample No. Lab Number Unique Number	: <mark>06041866</mark> : 10802474		ed : 22 l				ling Heights, NUS 4831	
rtificate L2367	Sample No. Lab Number Unique Number Test Package	: <mark>06041866</mark> : 10802474	Diagnos Diagnos	ed : 22 l tician : We	Dec 2023 s Davis		Contac	ling Heights, N	

Report Id: GFL415 [WUSCAR] 06041866 (Generated: 12/22/2023 10:19:18) Rev: 1

Submitted By: Frank Wolak

Page 2 of 2