

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

833117C

Component Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (29 QTS)

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 NumberClient InfoGFL0125693GFL0117973Sample DateClient Info03 Jul 202409 May 2024Machine AgehrsClient Info16591187Oil AgehrsClient Info600600Oil ChangedClient InfoChangedChangedSample StatusClient InfoChangedChangedSample StatusImit/basecurrenthistory1history2FuelWC Method>3.0<1.0WaterWC Method>0.2NEGNEGGlycolWC Method>0.2NEGNEGWEAR METALSmethodlimit/basecurrenthistory1history2IronppmASTM D5185m>903749NickelppmASTM D5185m>212NickelppmASTM D5185m>212TitaniumppmASTM D5185m>2<1<1	te hr je hr d d MINATION	mple Date achine Age Age Changed mple Status CONTAMINAT el ater ycol
Machine AgehrsClient Info16591187Oil AgehrsClient Info600600Oil ChangedClient InfoChangedChangedSample StatusImatherNORMALABNORMALCONTAMINATIONmethodlimit/basecurrenthistory1history2FuelWC Method>3.0<1.0<1.0WaterImatherWC Method>0.2NEGNEGGlycolWC MethodNEGNEGWEAR METALSmethodlimit/basecurrenthistory1history2IronppmASTM D5185m>903749NickelppmASTM D5185m>2022NickelppmASTM D5185m>212	ge hr hr d MINATION	Age Changed mple Status CONTAMINAT el ater ycol
Oil AgehrsClient Info600600Oil ChangedClient InfoChangedChangedSample StatusClient InfoNORMALABNORMALCONTAMINATIONmethodlimit/basecurrenthistory1history2FuelWC Method>3.0<1.0<1.0WaterWC Method>0.2NEGNEGGlycolWC Method>0.2NEGNEGWEAR METALSmethodlimit/basecurrenthistory1history2IronppmASTM D5185m>903749NickelppmASTM D5185m>212	hr d MINATION	Age Changed mple Status CONTAMINAT el ater ycol
Oil Changed Sample StatusClient InfoChanged NORMALChanged ABNORMALCONTAMINATIONmethodlimit/basecurrenthistory1history2FuelWC Method>3.0<1.0	d ttus MINATION METALS	Changed mple Status CONTAMINAT el ater ycol
Sample StatusImage: StatusNORMALABNORMALCONTAMINATIONmethodlimit/basecurrenthistory1history2FuelWC Method>3.0<1.0<1.0WaterWC Method>0.2NEGNEGGlycolWC Method>0.2NEGNEGWEAR METALSmethodlimit/basecurrenthistory1history2IronppmASTM D5185m>903749ChromiumppmASTM D5185m>2022NickelppmASTM D5185m>212	Itus MINATION METALS	mple Status CONTAMINAT el ater ycol
CONTAMINATIONmethodlimit/basecurrenthistory1history2FuelWC Method >3.0<1.0<WaterWC Method >0.2NEGGlycolWC Method>0.2NEGWEAR METALSmethodlimit/basecurrenthistory1history2IronppmASTM D5185m>903749ChromiumppmASTM D5185m>2022NickelppmASTM D5185m>212	MINATION	CONTAMINAT el ater ycol
Fuel WC Method >3.0 <1.0	METALS	el ater ycol
Water WC Method >0.2 NEG NEG Glycol WC Method NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >90 37 49 Chromium ppm ASTM D5185m >20 2 2 Nickel ppm ASTM D5185m >2 1 2		ater ycol
Glycol WC Method NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >90 37 49 Chromium ppm ASTM D5185m >20 2 2 Nickel ppm ASTM D5185m >2 1 2		ycol
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >90 37 49 Chromium ppm ASTM D5185m >20 2 2 Nickel ppm ASTM D5185m >2 1 2		
Iron ppm ASTM D5185m >90 37 49 Chromium ppm ASTM D5185m >20 2 2 Nickel ppm ASTM D5185m >2 1 2		VEAR METAL
Chromium ppm ASTM D5185m >20 2 2 Nickel ppm ASTM D5185m >2 1 2	pr	
Chromium ppm ASTM D5185m >20 2 2 Nickel ppm ASTM D5185m >2 1 2		n
bb s s s	pp	romium
Titanium ppm ASTM D5185m >2 <1 <1	pp	ckel
		anium
Silver ppm ASTM D5185m >2 <1		ver
Aluminum ppm ASTM D5185m >20 4 5	pp	uminum
Lead ppm ASTM D5185m >40 2 3	pp	ad
Copper ppm ASTM D5185m >330 12 20	pp	pper
Tin ppm ASTM D5185m >15 2 3	pp	1
Vanadium ppm ASTM D5185m <1	pp	nadium
Cadmium ppm ASTM D5185m 0 <1	pp	dmium
ADDITIVES method limit/base current history1 history2	VES	DDITIVES
Boron ppm ASTM D5185m 0 7 9	pp	ron
Barium ppm ASTM D5185m 0 <1 5	pp	rium
Molybdenum ppm ASTM D5185m 60 66 88	m pp	
Manganese ppm ASTM D5185m 0 10 18		lybdenum
	e pp	•
Magnesium ppm ASTM D5185m 1010 709 999		anganese
Magnesium ppm ASTM D5185m 1010 709 999 Calcium ppm ASTM D5185m 1070 1515 1903	pp	anganese agnesium
5 11	pp	anganese agnesium Ilcium
Calcium ppm ASTM D5185m 1070 1515 1903	e bt bt bt	anganese agnesium Ilcium osphorus
Calcium ppm ASTM D5185m 1070 1515 1903 Phosphorus ppm ASTM D5185m 1150 789 1038 Zinc ppm ASTM D5185m 1270 992 1269 Sulfur ppm ASTM D5185m 2060 2201 3590	pt bt bt bt bt bt	anganese agnesium Ilcium osphorus Inc Ifur
Calcium ppm ASTM D5185m 1070 1515 1903 Phosphorus ppm ASTM D5185m 1150 789 1038 Zinc ppm ASTM D5185m 1270 992 1269 Sulfur ppm ASTM D5185m 2060 2201 3590 CONTAMINANTS method limit/base current history1 history2	pt bt bt bt bt bt	anganese agnesium Icium osphorus Ic Ifur CONTAMINAN
Calcium ppm ASTM D5185m 1070 1515 1903 Phosphorus ppm ASTM D5185m 1150 789 1038 Zinc ppm ASTM D5185m 1270 992 1269 Sulfur ppm ASTM D5185m 2060 2201 3590	pr pr pr pr MINANTS	anganese agnesium Icium osphorus Ic Ifur CONTAMINAN
Calcium ppm ASTM D5185m 1070 1515 1903 Phosphorus ppm ASTM D5185m 1150 789 1038 Zinc ppm ASTM D5185m 1270 992 1269 Sulfur ppm ASTM D5185m 2060 2201 3590 CONTAMINANTS method limit/base current history1 history2	pr pr pr pr MINANTS	agnesium agnesium osphorus nc Ifur CONTAMINAN
Calcium ppm ASTM D5185m 1070 1515 1903 Phosphorus ppm ASTM D5185m 1150 789 1038 Zinc ppm ASTM D5185m 1270 992 1269 Sulfur ppm ASTM D5185m 2060 2201 3590 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 15 30	pr pr pr MINANTS pr pr	agnesium agnesium osphorus nc Ifur CONTAMINAN icon dium
Calcium ppm ASTM D5185m 1070 1515 1903 Phosphorus ppm ASTM D5185m 1150 789 1038 Zinc ppm ASTM D5185m 1270 992 1269 Sulfur ppm ASTM D5185m 2060 2201 3590 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 15 30 Sodium ppm ASTM D5185m >20 2 4 INFRA-RED method limit/base current history1 history2	MINANTS	agnesium agnesium osphorus nc lfur CONTAMINAN dium tassium NFRA-RED
Calcium ppm ASTM D5185m 1070 1515 1903 Phosphorus ppm ASTM D5185m 1150 789 1038 Zinc ppm ASTM D5185m 1270 992 1269 Sulfur ppm ASTM D5185m 2060 2201 3590 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 15 30 Sodium ppm ASTM D5185m >20 2 4 Potassium ppm ASTM D5185m >20 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0 0	MINANTS PF PF MINANTS PF PF RED	agnesium agnesium osphorus nc lifur CONTAMINAN icon dium tassium NFRA-RED ot %
Calcium ppm ASTM D5185m 1070 1515 1903 Phosphorus ppm ASTM D5185m 1150 789 1038 Zinc ppm ASTM D5185m 1270 992 1269 Sulfur ppm ASTM D5185m 2060 2201 3590 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 15 ▲ 30 Sodium ppm ASTM D5185m >20 2 4 Potassium ppm ASTM D5185m >20 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0 0 Nitration Abs/cm *ASTM D7624 >20 12.7 12.3	MINANTS PF MINANTS PF PF PF PF PF	agnesium agnesium osphorus nc lifur CONTAMINAN icon dium tassium NFRA-RED ot % ration
Calcium ppm ASTM D5185m 1070 1515 1903 Phosphorus ppm ASTM D5185m 1150 789 1038 Zinc ppm ASTM D5185m 1270 992 1269 Sulfur ppm ASTM D5185m 2060 2201 3590 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 15 30 Sodium ppm ASTM D5185m >20 2 4 Potassium ppm ASTM D5185m >20 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0 0	MINANTS PF MINANTS PF PF PF PF PF	agnesium agnesium osphorus nc lifur CONTAMINAN icon dium tassium NFRA-RED ot % ration
Calcium ppm ASTM D5185m 1070 1515 1903 Phosphorus ppm ASTM D5185m 1150 789 1038 Zinc ppm ASTM D5185m 1270 992 1269 Sulfur ppm ASTM D5185m 2060 2201 3590 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 15 ▲ 30 Sodium ppm ASTM D5185m >20 2 4 Potassium ppm ASTM D5185m >20 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0 0 Nitration Abs/cm *ASTM D7624 >20 12.7 12.3	MINANTS PF MINANTS PF PF PF PF PF PF Ab	aggnesium aggnesium licium osphorus nc lfur CONTAMINAN icon dium tassium NFRA-RED ot % ration lfation
Calcium ppm ASTM D5185m 1070 1515 1903 Phosphorus ppm ASTM D5185m 1150 789 1038 Zinc ppm ASTM D5185m 1270 992 1269 Sulfur ppm ASTM D5185m 2060 2201 3590 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 15 30 Sodium ppm ASTM D5185m >25 15 5 5 Potassium ppm ASTM D5185m >20 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0 0 Nitration Abs/cm *ASTM D7415 >30 26.9 25.6	MINANTS MINANTS PF	agnesium agnesium licium osphorus nc lfur CONTAMINAN icon dium tassium NFRA-RED ot % ration lfation FLUID DEGRAE



OIL ANALYSIS REPORT

FT-IR (Direct Trend)		VISUAL		method	limit/base	current	history1	history2
35 - Oxidation		White Metal	scalar	*Visual	NONE	NONE	NONE	
30 +		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
B 25 - Abnormal	**************************************	Precipitate	scalar	*Visual	NONE	NONE	NONE	
P 20+		Silt	scalar	*Visual	NONE	NONE	NONE	
15 -		Debris	scalar	*Visual	NONE	NONE	NONE	
	**********************	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
	Jul3/24 -	Appearance	scalar	*Visual	NORML	NORML	NORML	
May9/24	Jul	Odor	scalar	*Visual	NORML	NORML	NORML	
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Base Number		Free Water	scalar	*Visual		NEG	NEG	
		FLUID PROPE		method	limit/base	current	history1	history2
- 0.8 (0) KOH (0) - 0.0 (0)		Visc @ 100°C	cSt	ASTM D445	15.4	14.3	13.9	
and 4.0-		GRAPHS						
²⁰ 2.0 -		Ferrous Alloys						
0.0		50 iron						
May9/24	C CI1	40 - nickel						
		30-						
Viscosity @ 100°C		E						
18 - Abnormal		20						
17-		10-						
© 16 0 15 0 15								
		9/24			Jul3/24 -			
13 - Abnormal		May9/24			Juč			
12		Non-ferrous Meta	ls					
May9/24	V Cr Cl	20						
May	2	copper_						
		15 tin						
	,	E						
		<u>۾</u> 10-						
		E.						
		5						
		0						
		May9/24			Jul3/24			
		May			ηr			
		Viscosity @ 100°	2			Base Number	-	
		18 - Abnormal			10.0	Base		
		17-			- 8.0			
	-				(B)HOX (B			
		Base 15			E 6.0			
	10	14			4.0			
		13 Abnormal			ase N			
		12 Abnormal			° 2.0			
		11			0.0			
		May9/24			Jul3/24	May9/24		Jul3/24
		Ma			-	Ma		- -
	Laboratory :	WearCheck USA - 50	1 Madico		(NC 27512	GEL Envi	ironmental - 030 - Co	nway Myrtle Reach
	•	GFL0125693	Rece		3 Jul 2024	GEL EIIV		3010 HWY 378
	Lab Number :	06229961	Teste	d : 09	9 Jul 2024			Conway, SC
	Unique Number :		Diagr	iosed : 09) Jul 2024 - We	es Davis	-	US 29527
Certificate L2367	Test Package :		dee at the		0			
		contact Customer Service of the ISO					aru	iz@gflenv.com T:
		cifications are based				rule (JCGM 10	6.2012)	F:
				.ριο αυσορία				

Submitted By: TECHNICIAN ACCOUNT