

OIL ANALYSIS REPORT

Sample Rating Trend





Component Diesel Engine Fluid

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

DIAGNOSIS Recommendation

Resample at the next service interval to monitor.

Wear

Metal levels are typical for a components first oil change.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

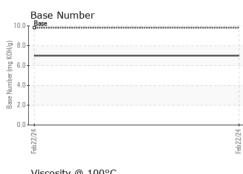
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

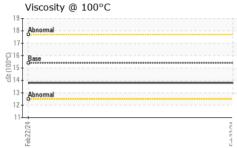
Sample Date Client Info 122 Feb 2024 Machine Age hrs Client Info 16344 Oil Age hrs Client Info 16344 Sample Status Client Info Nor Changd CONTAMINATION method imil/base current history1 history2 Fuel WC Method >3.0 <1.0 Water WC Method >0.2 NEG WEAR METALS method imil/base current history2 WEAR METALS method imil/base current history2 Nickel ppm ASTM 05165m >120 8 Silver ppm ASTM 05165m >20 <1 Nores ppm ASTM 05165m >20 3 Silver ppm AST	N SHP 15W40 (-	GAL)			Feb2024		
Sample Date Client Info 22 Feb 2024 Machine Age hrs Client Info 16344 Oil Age hrs Client Info 16344 Sample Status Client Info NoRMAL CONTAMINATION method Imit/base current history1 history2 Fuel WC Method >3.0 <1.0 Water WC Method >0.2 NEG WEAR METALS method imit/base current history2 Nickel ppm ASTM D5165n >5 1 Sliver ppm ASTM D5165n >20 <1 Aluminum ppm ASTM D5165n >20 3 Sliver ppm ASTM D5165n >20 3 Aluminum ppm	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 16344 Oil Age hrs Client Info 16344 Oil Changed Client Info Not Changd Sample Status Imit/base current history1 Water WC Method >3.0 <1.0	Sample Number		Client Info		GFL0110128		
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Oil Changed Client Info Not Changd Sample Status Image of the status Image of the status Not Changd CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 Water WC Method >3.0 <1.0 Glycol WC Method >0.2 NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASIM D5185m >20 <1 Noted ppm ASIM D5185m >20 3 Silver ppm ASIM D5185m >20 3 Auminum ppm ASIM D5185m >20 3 Copper ppm ASIM D5185m >330 2		hrs	Client Info		16344		
Sample Status NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0	Oil Age	hrs	Client Info		16344		
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Fuel WC Method >3.0 <1.0 Water WC Method >0.2 NEG Glycol WC Method >0.2 NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1	Sample Status				NORMAL		
Water WC Method >0.2 NEG Glycol WC Method NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 8 Chromium ppm ASTM D5185m >20 <1 Nickel ppm ASTM D5185m >2 0 Aluminum ppm ASTM D5185m >2 0 Silver ppm ASTM D5185m >20 3 Aluminum ppm ASTM D5185m >40 2 Audinum ppm ASTM D5185m >41 Addinum ppm ASTM D5185m 0 1 Addinum ppm ASTM D5185m 0 1 <	CONTAMINAT	ION	method	limit/base	current	history1	history2
Glycol WC Method NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1	Fuel		WC Method	>3.0	<1.0		
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 8 Chromium ppm ASTM D5185m >20 <1	Water		WC Method	>0.2	NEG		
Iron ppm ASTM D5185m >120 8 Chromium ppm ASTM D5185m >20 <1	Glycol		WC Method		NEG		
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Titanium ppm ASTM D5185m >2 <1 Silver ppm ASTM D5185m >2 0 Aluminum ppm ASTM D5185m >20 3 Lead ppm ASTM D5185m >40 2 Copper ppm ASTM D5185m >15 <1	Chromium	ppm	ASTM D5185m	>20	<1		
Silver ppm ASTM D5185m >2 0 Aluminum ppm ASTM D5185m >20 3 Lead ppm ASTM D5185m >40 2 Copper ppm ASTM D5185m >330 2 Vanadium ppm ASTM D5185m >15 <1 Vanadium ppm ASTM D5185m >15 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 1 Molybdenum ppm ASTM D5185m 0 34 Maganese ppm ASTM D5185m 0 31 Magnesium ppm ASTM D5185m 1010 853 Sulfur ppm ASTM D5185m 1070	Nickel	ppm		>5	1		
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Copper ppm ASTM D5185m >330 2 Tin ppm ASTM D5185m >15 <1	Aluminum	ppm	ASTM D5185m	>20	3		
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Vanadium ppm ASTM D5185m <1 Cadmium ppm ASTM D5185m <1	Copper	ppm	ASTM D5185m	>330	2		
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SulfurppmASTM D5185m20602955CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>254SodiumppmASTM D5185m>202PotassiumppmASTM D5185m>202INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>40.3NitrationAbs/cm*ASTM D7624>208.1SulfationAbs/lm*ASTM D7624>3019.6FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/lmm*ASTM D7414>2516.4		ppm					
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PotassiumppmASTM D5185m>202INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>40.3NitrationAbs/cm*ASTM D7624>208.1SulfationAbs/.1mm*ASTM D7415>3019.6FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2516.4				>25			
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Nitration Abs/cm *ASTM D7624 >20 8.1 Sulfation Abs/.1mm *ASTM D7615 >30 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.4						history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.4							
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.4							
Oxidation Abs/.1mm *ASTM D7414 >25 16.4	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.6		
	FLUID DEGRAI	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 7.0							
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.0		



OIL ANALYSIS REPORT

VISUAL





	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal	scalar	*Visual	NONE	NONE		
	Precipitate	scalar	*Visual	NONE	NONE		
	Silt	scalar	*Visual	NONE	NONE		
	Debris	scalar	*Visual	NONE	NONE		
	Sand/Dirt	scalar	*Visual	NONE	NONE		
2/24 -	Appearance	scalar	*Visual	NORML	NORML		
Feb 22/24	Odor	scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG		
	Free Water	scalar	*Visual		NEG		
				line it /le e e e		late to must	la i at a mu O
	FLUID PROPE		method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	13.8		
1	GRAPHS						
	Ferrous Alloys						
× C.	iron						
6 C T - 3 - 6	8 - nickel						
-	6						
	Edd						
	4						
	2						
	04			4			
	-eb 22/24			Feb 22/24			
				a)			
	Non-ferrous Metal	S					
	copper						
	8 - management lead						
	6						
	Шdd						
	4						
	2						
	0 L			4			
	-eb22/2			Feb22/24			
	and a second			끈			
	Viscosity @ 100°C				Base Number		
	18 - <u>A</u> bnormal			10.0	D Base		
	17-			- 8.0	D		
				KOH/(
	Base 15 15 14			B 6.0	D -		
	73 14			Jag La La La La La La La La La La La La La	D		
	12			ase N			
	13 Abnormal			<u>2.</u>	D +		
	11						
	Feb 22/24			Feb22/24	Feb 22/24		
	Feb2			Feb2	Febź		
Laboratory Sample No. Lab Number Unique Number		Recei Teste	ived : 26 d : 27	7, NC 27513 6 Feb 2024 7 Feb 2024 7 Feb 2024 - W		ironmental - 410 3900 Contact	0 Van Born F Wayne, M US 4818

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Submitted By: seel also GFL468 - Laura Wilson