

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id **714048** Component **Diesel Engine** Fluid

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

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.

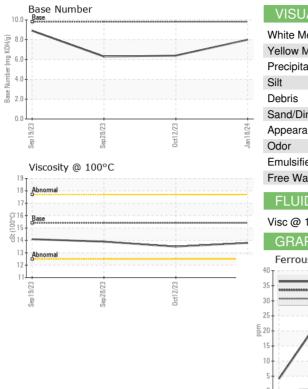
Fluid Condition

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

Sample DateClient Info18 Jan 202412 Oct 202328 Sep 2023Machine AgehrsClient Info1100603585Oil AgehrsClient Info600600600Oil ChangedClient InfoChangedChangedChangedSample StatusImatherNORMALNORMALNORMALCONTAMINATIONmethodlimit/basecurrenthistory1history2	N SHP 15W40 (- GAL)	Sep202	3 Sep2023	Oct2023 Ja	m2024	
Sample Date Client Info 18 Jan 2024 12 Oct 2023 28 Sep 2023 Machine Age hrs Client Info 1100 603 585 Oil Age hrs Client Info 600 600 600 Sample Status Client Info Changed Changed Changed Changed CONTAMINATION method imit/base current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG WEAR METALS method imit/base current history1 history2 fon ppm ASTM 05165 >90 23 39 37 Chromium ppm ASTM 05165 >20 <1 <1 <1 Nickel ppm ASTM 05165 >20 <1 0 <1 Silver ppm ASTM 05165 >20 <1 0 <1 Ciopper<	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
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Oil Age hrs Client Info 600 600 600 600 Sample Status Client Info Changed NoRMAL NoRMAL NoRMAL CONTAMINATION method imit/base current history1 history2 Fuel WC Method 3.0 <1.0	Sample Date		Client Info		18 Jan 2024	12 Oct 2023	28 Sep 2023
Oil Changed Sample Status Client Info Changed NORMAL NORMAL NORMAL NORMAL Evel WC Method 53.0 <1.0 <1.0 <1.0 <1.0 <1.0 Water WC Method 50.2 NEG NEG NEG NEG Toon ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >20 <1 <1 <1 Silver ppm ASTM D5185m >20 3 6 2 2 Lead ppm ASTM D5185m >20 3 6 2 16 15 Tin ppm ASTM D5185m >20 3 6 2 1 Vanadium ppm ASTM D5185m >21 1 <1 <1 Vanadium ppm A	Machine Age	hrs	Client Info		1100	603	585
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Fuel WC Method >3.0 <1.0	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG NEG Glycol WC Method Imit/base current history1 history2 Iron ppm ASTM D5185m >90 23 39 37 Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >2 0 <1 <1 Silver ppm ASTM D5185m >2 0 <1 <1 Silver ppm ASTM D5185m >2 0 <1 <1 Copper ppm ASTM D5185m >40 <1 <1 <1 Cadmium ppm ASTM D5185m >15 <1 <1 <1 Vanadium ppm ASTM D5185m 0 <1 6 0 ADDITVES method Imit/base current History1 history2 Barium ppm ASTM D5185m 0 9 69 </th <th>CONTAMINAT</th> <th>ION</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	CONTAMINAT	ION	method	limit/base	current	history1	history2
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WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >90 23 39 37 Chromium ppm ASTM D5185m >20 <1	Water		WC Method	>0.2	NEG	NEG	NEG
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Titanium ppm ASTM D5185m >2 0 <1	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
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Lead ppm ASTM D5185m >40 <1 <1 <1 Copper ppm ASTM D5185m >330 2 16 15 Tin ppm ASTM D5185m >15 <1	Silver	ppm	ASTM D5185m	>2	0	<1	0
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Tin ppm ASTM D5185m >15 <1 <1 <1 Vanadium ppm ASTM D5185m 0 <1	_ead	ppm	ASTM D5185m	>40	<1	<1	<1
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Manganese ppm ASTM D5185m 0 2 6 4 Magnesium ppm ASTM D5185m 1010 909 681 784 Calcium ppm ASTM D5185m 1070 1074 1296 1285 Phosphorus ppm ASTM D5185m 1150 1016 740 784 Zinc ppm ASTM D5185m 1270 1220 906 954 Sulfur ppm ASTM D5185m 2060 2878 2982 2866 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 14 13 Sodium ppm ASTM D5185m >20 2 6 5 Potassium ppm ASTM D5185m >20 2 6 9 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6<	Barium	ppm	ASTM D5185m	0	<1	6	0
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SulfurppmASTM D5185m2060287829822866CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>2541413SodiumppmASTM D5185m>20565PotassiumppmASTM D5185m>20269INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>60.40.40.5NitrationAbs/cm*ASTM D7624>209.010.411.0SulfationAbs/1mm*ASTM D7415>3019.520.921.5FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/1mm*ASTM D7414>2516.119.720.5	•	ppm					
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Sodium ppm ASTM D5185m 5 6 5 Potassium ppm ASTM D5185m >20 2 6 9 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.4 0.4 0.5 Nitration Abs/cm *ASTM D7624 >20 9.0 10.4 11.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 20.9 21.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 19.7 20.5	CONTAMINAN	TS	method	limit/base	current		
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Soot % % *ASTM D7844 >6 0.4 0.4 0.5 Nitration Abs/cm *ASTM D7624 >20 9.0 10.4 11.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 20.9 21.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 19.7 20.5	Potassium	ppm	ASTM D5185m	>20	2	6	9
Nitration Abs/cm *ASTM D7624 >20 9.0 10.4 11.0 Sulfation Abs/.1mm *ASTM D7615 >30 19.5 20.9 21.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 19.7 20.5	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.5 20.9 21.5 FLUID DEGRADATION method limit/base current history1 history2 Dxidation Abs/.1mm *ASTM D7414 >25 16.1 19.7 20.5							
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 19.7 20.5				>20			
Dxidation Abs/.1mm *ASTM D7414 >25 16.1 19.7 20.5	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.5	20.9	21.5
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.0 6.4 6.3	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.1	19.7	20.5
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.0	6.4	6.3



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
0et12/23	Jan 18/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
d O	Jan	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	13.8	13.5	13.9
		GRAPHS						
		Ferrous Alloys						
123	2	35 - iron						
0et12/23		30 - nickel						
		25- E ao			1			
		톱20						
		15						
		5						
		Sep19/23 -		0ct12/23 -	8/24 -			
		Sep19/23 Sep28/23		0ct1	Jan 18/24			
		Non-ferrous Meta	als					
		¹⁶		7				
		14- copper lead		λ				
		12						
		10 E						
		Md 8						
		6						
		2						
				2/23 -	8/24			
		Sep 19/23 Sep 28/23		0ct12/23	Jan 18/24			
		Viscosity @ 100°	С			Base Number		
		19 18 Abnormal			10.0	Base		
		18 - Abnormal		1	- 8.0			
					0.8 6.0 8 Base Number 4.0			
		Base 15 15 14			E 6.0			
		ts 14						
		13			Se Nr			
		12 Abnormal			⁶⁶ 2.0	-		
		11						
		9/23		2/23	8/24 .	9/23	8/23	C7/7
		Sep 19/23 Sep 28/23		0ct12/23	Jan 18/24	Sep 19/23	Sep28/23	
	1		F04 14		NO 677 -			405 E -
4	Laboratory Sample No.	: WearCheck USA - : GFL0107686	501 Madia Recieved		ry, NC 27513 Feb 2024	GFL E	Environmental	 - 465 - Pontia 888 Baldw
REDITED	Lab Number	: 06076594	Diagnos		Feb 2024 Feb 2024			Pontiac, I
ISO/ICC (7025	Unique Number		ician : We			US 4834		
ING LABORATORY				-				
ificate L2367	Test Package	: FLEET						Ricky Matthev ws@gflenv.co



Submitted By: Ricky Matthews

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