

OIL ANALYSIS REPORT



Machine Id

834041 Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

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 INFORM	<i>I</i> ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0123399		
Sample Date		Client Info		18 Jun 2024		
Machine Age	hrs	Client Info		612		
Oil Age	hrs	Client Info		150		
Oil Changed		Client Info		Not Changd		
Sample Status				NORMAL		
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0		
Water		WC Method	>0.2	NEG		
Glycol		WC Method		NEG		
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	46		
Chromium	ppm	ASTM D5185m	>20	2		
Nickel	ppm	ASTM D5185m	>4	1		
Titanium	ppm	ASTM D5185m		<1		
Silver	ppm	ASTM D5185m	>3	<1		
Aluminum	ppm	ASTM D5185m	>20	5		
Lead	ppm	ASTM D5185m	>40	3		
Copper	ppm	ASTM D5185m	>330	9		
Tin	ppm	ASTM D5185m	>15	<1		
Vanadium	ppm	ASTM D5185m		<1		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 15	history1	history2
	ppm ppm					
Boron		ASTM D5185m	0	15		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	15 2		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	15 2 59		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	15 2 59 9		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	15 2 59 9 780		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	15 2 59 9 780 1713	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	15 2 59 9 780 1713 869	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	15 2 59 9 780 1713 869 1140	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	15 2 59 9 780 1713 869 1140 3015		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	15 2 59 9 780 1713 869 1140 3015 current	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	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	15 2 59 9 780 1713 869 1140 3015 current 18	 history1 	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m 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 limit/base	15 2 59 9 780 1713 869 1140 3015 <u>current</u> 18 5	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20	15 2 59 9 780 1713 869 1140 3015 current 18 5 10	 history1 	 history2
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20	15 2 59 9 780 1713 869 1140 3015 current 18 5 10 current	 history1 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3	15 2 59 9 780 1713 869 1140 3015 <i>current</i> 18 5 10 <i>current</i> 0	 history1 history1 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Solicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	15 2 59 9 780 1713 869 1140 3015 <i>current</i> 18 5 10 <i>current</i> 0 11.2	 history1 history1 	 history2 history2
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 t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >3 >20	15 2 59 9 780 1713 869 1140 3015 current 18 5 10 current 0 11.2 24.1	 history1 history1 history1	 history2 history2 history2



OIL ANALYSIS REPORT

FT-IR (Direct Trend)	VISUAL		method	limit/base	current	history1	history2
Oxidation 30 - Nitration	White Metal	scalar	*Visual	NONE	NONE		
Sulfation	Yellow Metal	scalar	*Visual	NONE	NONE		
Abnoma	Precipitate	scalar	*Visual	NONE	NONE		
20 -	Silt	scalar	*Visual	NONE	NONE		
5-	Debris	scalar	*Visual	NONE	NONE		
	Sand/Dirt	scalar	*Visual	NONE	NONE		
	Appearance	scalar	*Visual	NORML	NORML		
Jun18/24	Odor	scalar	*Visual	NORML	NORML		
De en Nuestra	Emulsified Water	scalar	*Visual	>0.2	NEG		
Base Number	Free Water	scalar	*Visual		NEG		
.0	FLUID PROP	ERTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	14.6		
	GRAPHS						
]-	Ferrous Alloys						
	50 iron						
Jun18/24	40 - chromium						
nu l							
Viscosity @ 100°C	30 - E						
9	20						
Abnormal							
7 6 Base	10-						
5	0			****			
4	Jun18/24			Jun18/24			
- Abnormal	lun1			Jun1			
1	Non-ferrous Met	als					
Jun18/24	10 copper						
un C	8						
	tin tin						
	6-						
	u dd						
	2 -						
	8/24			8/24			
	Jun18			Jun18			
	Viscosity @ 100	°C		-,	De la Nuella		
	¹⁹			10.0	Base Number		
	18 - Abnormal						
	17			([®] ^{8.0}	+		
	Base			0.8 6.0 8 8 8 8 8 8 8 9 0.0 1 9 0 1 9 0 1 9 0 1 9 0 1 9 0 1 9 0 1 9 0 1 9 0 1 9 0 1 9 1 9	-		
	(2)16 Base 15 73 14			jer (j			
	° ³ 14			4.0 M	+		
	13 - Abnormal			2.0			
	12			2.0			
	11				5		
	Jun 18/2 [,]			Jun 18/24	Jun 18/2		
	'nſ			ηn	ηſ		
Certificate L2367 Test Package		Rece Teste Diagr	ived : 20 ed : 2 ⁻ nosed : 21) Jun 2024 1 Jun 2024 1 Jun 2024 - W		Contact: DON	Galloway Ro Bolivia, US 284 IALD CRAV
To discuss this sample report • Denotes test methods that						dcrave	en@gflenv.c

Contact/Location: DONALD CRAVEN - GFL007