

OIL ANALYSIS REPORT

Sample Rating Trend





Component Diesel Engine Fluid

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

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.

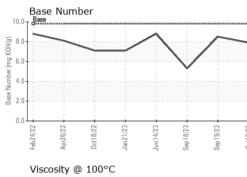
Fluid Condition

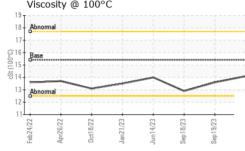
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Sample Date // // // // // // // // // // // // //	Client Info Client Info Client Info Client Info Client Info Client Info WC Method WC Method WC Method ASTM D5185m ASTM D5185m	limit/base >3.0 limit/base >120	GFL0081111 12 Oct 2023 21236 600 Changed NORMAL Current <1.0 NEG current	GFL0092554 19 Sep 2023 21148 600 Changed NORMAL history1 <1.0 NEG	GFL0081116 18 Sep 2023 21127 600 Changed NORMAL history2 <1.0 NEG
Machine AgehrsOil AgehrsOil ChangedSample StatusCONTAMINATIONFuelGlycolWEAR METALSIronppmChromiumppmNickelppmTitaniumppm	Client Info Client Info Client Info Method WC Method WC Method ASTM D5185m ASTM D5185m	>3.0 limit/base >120	21236 600 Changed NORMAL current <1.0 NEG	21148 600 Changed NORMAL history1 <1.0	21127 600 Changed NORMAL history2 <1.0
Oil AgehrsOil ChangedSample StatusCONTAMINATIONFuelGlycolWEAR METALSIronppmChromiumppmNickelppmTitaniumppmSilverppm	Client Info Client Info Method WC Method WC Method ASTM D5185m ASTM D5185m	>3.0 limit/base >120	600 Changed NORMAL current <1.0 NEG	600 Changed NORMAL history1 <1.0	600 Changed NORMAL history2 <1.0
Oil Changed Sample Status CONTAMINATION Fuel Glycol WEAR METALS Iron ppm Chromium ppm Nickel ppm Titanium ppm Silver ppm	Client Info method WC Method WC Method MC Method ASTM D5185m ASTM D5185m	>3.0 limit/base >120	Changed NORMAL current <1.0 NEG	Changed NORMAL history1 <1.0	Changed NORMAL history2 <1.0
Sample Status CONTAMINATION Fuel Glycol WEAR METALS Iron ppm Chromium ppm Nickel ppm Titanium ppm Silver ppm	Method WC Method WC Method Method ASTM D5185m ASTM D5185m	>3.0 limit/base >120	NORMAL current <1.0 NEG	NORMAL history1 <1.0	NORMAL history2 <1.0
CONTAMINATION Fuel Glycol ////////////////////////////////////	WC Method WC Method method ASTM D5185m ASTM D5185m	>3.0 limit/base >120	current <1.0 NEG	history1 <1.0	history2 <1.0
Fuel Glycol ////////////////////////////////////	WC Method WC Method method ASTM D5185m ASTM D5185m	>3.0 limit/base >120	<1.0 NEG	<1.0	<1.0
GlycolWEAR METALSIronppmChromiumppmNickelppmTitaniumppmSilverppm	WC Method method ASTM D5185m ASTM D5185m	limit/base	NEG		
WEAR METALSIronppmChromiumppmNickelppmTitaniumppmSilverppm	method ASTM D5185m ASTM D5185m	>120		NEG	NEG
Iron ppm Chromium ppm Nickel ppm Titanium ppm Silver ppm	ASTM D5185m ASTM D5185m	>120	current		
Chromium ppm Nickel ppm Titanium ppm Silver ppm	ASTM D5185m			history1	history2
Nickel ppm Titanium ppm Silver ppm			4	12	14
Nickel ppm Titanium ppm Silver ppm	ASTM D5185m	>20	<1	<1	<1
Titanium ppm Silver ppm		>5	0	0	<1
Silver ppm	ASTM D5185m	>2	<1	0	0
	ASTM D5185m	>2	0	0	0
	ASTM D5185m	>20	2	0	9
Lead ppm	ASTM D5185m	>40	0	3	<1
Copper ppm	ASTM D5185m	>330	<1	<1	3
Tin ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium ppm	ASTM D5185m		<1	0	0
Cadmium ppm	ASTM D5185m		0	0	0
ADDITIVES	method	limit/base	current	history1	history2
Boron ppm	ASTM D5185m	0	26	3	0
Barium ppm	ASTM D5185m	0	12	0	0
Molybdenum ppm	ASTM D5185m	60	47	63	64
Manganese ppm	ASTM D5185m	0	<1	<1	<1
Magnesium ppm	ASTM D5185m	1010	525	958	843
Calcium ppm	ASTM D5185m	1070	1465	1197	1142
Phosphorus ppm	ASTM D5185m	1150	745	1075	889
Zinc ppm	ASTM D5185m	1270	917	1312	1186
Sulfur ppm	ASTM D5185m	2060	2409	3725	3501
CONTAMINANTS	method	limit/base	current	history1	history2
Silicon ppm	ASTM D5185m	>25	3	4	4
Sodium ppm	ASTM D5185m		4	5	5
Potassium ppm	ASTM D5185m	>20	4	7	6
INFRA-RED	method	limit/base	current	history1	history2
Soot % %	*ASTM D7844	>4	0.2	0.5	0
Nitration Abs/cr	m *ASTM D7624	>20	7.3	9.4	11.3
Sulfation Abs/.1m			18.7	20.2	25.3
FLUID DEGRADATIC	N method	limit/base	current	history1	history2
Oxidation Abs/.1m	m *ASTM D7414	>25	16.0	15.6	19.5
Base Number (BN) mg KOH		9.8	7.9	8.5	5.3



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	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
Sep19/23	Appearance Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Sep	0001	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
1	Free Water	scalar	*Visual		NEG	NEG	NEG
	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	14.1	13.6	12.9
	GRAPHS						
	Ferrous Alloys						
23	iron		\wedge				
Sep 19/23	12 - nickel		\setminus				
	b			1			
	4 -						
	2						
		C. C.	ci ci	57			
	Feb24/22 Apr26/22 0ct18/22	Jan 21/23 . Jun 14/23 .	Sep18/23 Sep19/23	0ct12/23			
			Se	õ			
	Non-ferrous Meta	ls					
	copper						
	8 - management lead						
	6-						
	m dd						
	- 4	1					
	2	\sim					
	0			7			
	0	-ii	19/23	12/23			
	Feb24/22 Apr26/22 Oct18/22	Jan21/23 +	Sep 18/23	Oct12/23			
	Viscosity @ 100°C	Jan21/23 +	Sep 19/23		Base Number		
	0 Viscosity @ 100°C 19	Jan21/23 +	Sep19/23		Base Number		
	0 22/92/04 Viscosity @ 100°C	Jan21/23 +	Sep18/23	10.0	Base Number		
	0 27/72/94 Viscosity @ 100°C	Jan21/23 +	Sep 19/23	10.0	Base Number		
	0 27/72/94 Viscosity @ 100°C	Jan21/23 +	Sep 19/23	10.0	Base		
	0 27/72/94 Viscosity @ 100°C	Jan21/23 +	Sep 19/23	10.0	Base		
	Uiscosity @ 100°C	Jan21/23 +	Sep 19/23	10.0	Base		
	0 7 7 7 7 7 7 7 7 7 7 7 7 7	Jan21/23 +	Sep 19/23	0.0 8.0 9.0 9.0 9.0 9.0 9.0	Base		
	Viscosity @ 100°C	Jan21/23 +	Sep 19/23	10.0 (6)HOX BOUL Page 4.0 2.0	Base		
	Viscosity @ 100°C	Jan21/23		10.0 8.0 but up to 10,00 but up to 10,00 base Number 4.0 2.0 0.0	Base	23	
	Viscosity @ 100°C	Jan21/23 +	Sep18/23 - Sep18/23 Sep19/23 Sep19/23 Sep19/23	10.0 (6)HOX BOUL Page 4.0 2.0	Base	Jan 21/23	Sep1 B/23 Sep1 9/23 Sep1 9/23



* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

: GFL0081111

: 05978667

To discuss this sample report, contact Customer Service at 1-800-237-1369.

Received

Diagnosed

Diagnostician : Wes Davis

: 13 Oct 2023

: 16 Oct 2023

Orlando, FL

US 32824

T:

1263 W Landstreet Rd

Contact: DAWN WALLACE

Certificate L2367

Sample No.

Lab Number

Unique Number : 10695962

Test Package : FLEET