

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **736796** Component **Diesel Engine** Fluid **PETRO CANADA DURON SHP 10W30 (--- QTS)**

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. 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 components first oil change.

Contamination

There is no indication of any contamination in the oil.

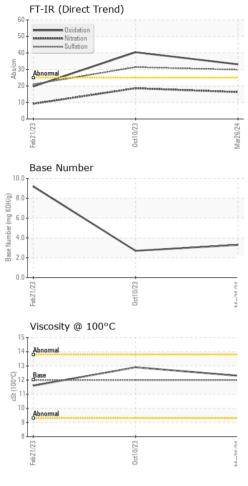
Fluid Condition

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

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0121481	PCA0108331	PCA0093277
Sample Date		Client Info		26 Mar 2024	10 Oct 2023	21 Feb 2023
Machine Age	mls	Client Info		380469	281903	185688
Oil Age	mls	Client Info		380469	101988	185688
Oil Changed		Client Info		Changed	Changed	Not Changd
Sample Status				NORMAL	ABNORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	104	137	35
Chromium	ppm	ASTM D5185m	>20	3	5	1
Nickel	ppm	ASTM D5185m	>4	0	2	0
Titanium	ppm	ASTM D5185m		4	9	7
Silver	ppm	ASTM D5185m	>3	<1	0	<1
Aluminum	ppm	ASTM D5185m	>20	15	30	13
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	18	64	48
Tin	ppm	ASTM D5185m	>15	2	4	3
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
oddinidini	ppin	AGTIVI DOTODITI		U	0	0
ADDITIVES	ppm	method	limit/base	current	0 history1	history2
	ppm		limit/base	-	-	-
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	2	current 7	history1 4	history2 13
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	2 0 50	current 7 0	history1 4 0	history2 13 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	current 7 0 64	history1 4 0 59	history2 13 0 50
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	current 7 0 64 1	history1 4 0 59 2	history2 13 0 50 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	current 7 0 64 1 955	history1 4 0 59 2 885	history2 13 0 50 1 896
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	current 7 0 64 1 955 1309	history1 4 0 59 2 885 1391	history2 13 0 50 1 896 1502
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	current 7 0 64 1 955 1309 1067	history1 4 0 59 2 885 1391 993	history2 13 0 50 1 896 1502 1069
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180	current 7 0 64 1 955 1309 1067 1310	history1 4 0 59 2 885 1391 993 1287	history2 13 0 50 1 896 1502 1069 1299
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	Current 7 0 64 1 955 1309 1067 1310 2645	history1 4 0 59 2 885 1391 993 1287 2579	history2 13 0 50 1 896 1502 1069 1299 3318
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	current 7 0 64 1 955 1309 1067 1310 2645 current	history1 4 0 59 2 885 1391 993 1287 2579 history1	history2 13 0 50 1 896 1502 1069 1299 3318 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	current 7 0 64 1 955 1309 1067 1310 2645 current 12	history1 4 0 59 2 885 1391 993 1287 2579 history1 19	history2 13 0 50 1 896 1502 1069 1299 3318 history2 6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 950 1050 995 1180 2600 Limit/base >25	current 7 0 64 1 955 1309 1067 1310 2645 current 12 2	history1 4 0 59 2 885 1391 993 1287 2579 history1 19 3	history2 13 0 50 1 896 1502 1069 1299 3318 history2 6 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20	current 7 0 64 1 955 1309 1067 1310 2645 current 12 2 25	history1 4 0 59 2 885 1391 993 1287 2579 history1 19 3 68	history2 13 0 50 1 896 1502 1069 1299 3318 history2 6 1 33
ADDITIVES 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	method ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >25 -20 imit/base	current 7 0 64 1 955 1309 1067 1310 2645 current 12 25 current	history1 4 0 59 2 885 1391 993 1287 2579 history1 19 3 68 history1	history2 13 0 50 1 896 1502 1069 1299 3318 history2 6 1 33 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm T S	method ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base	current 7 0 64 1 955 1309 1067 1310 2645 current 12 25 current 1.9	history1 4 0 59 2 885 1391 993 1287 2579 history1 19 3 68 history1 1.9	history2 13 0 50 1 896 1502 1069 1299 3318 history2 6 1 33 history2 0.6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	current 7 0 64 1 955 1309 1067 1310 2645 current 12 25 current 1.9 16.3	history1 4 0 59 2 885 1391 993 1287 2579 history1 19 3 68 history1 1.9 1.86	history2 13 0 50 1 896 1502 1069 1299 3318 history2 6 1 33 history2 0.6 9.2
ADDITIVES 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 ppm ppm	method ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >25 imit/base >3 >20 >3 >20	current 7 0 64 1 955 1309 1067 1310 2645 current 12 25 current 1.9 16.3 29.8	history1 4 0 59 2 885 1391 993 1287 2579 history1 19 3 68 history1 1.9 3.68 1.9 3.68 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.1.4	history2 13 0 50 1 896 1502 1069 1299 3318 history2 6 1 333 history2 0.6 9.2 20.9



OIL ANALYSIS REPORT



VISUAL		method	limit/ba	.se	current	history1	history
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
Appearance	scalar	*Visual	NORML		NORML	NORML	NORML
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	RTIES	method	limit/ba	.se	current	history1	history
Visc @ 100°C	cSt	ASTM D445	12.00		12.3	12.9	11.6
GRAPHS							
Iron (ppm)					Lead (ppm)		
Severe					Severe		
200	1				000000		
150 - Abnormal	-			E. 60-	Abnormal		
100 - 0				40	- Q		
50				20			
0 2 2	23 -		24	0	23	23	
eb 21/	0ct10/		1ar26/		eb21/	Oct10/	
—	0		2				
50 _T				50 T		, mq	
40 - Severe				40	Severe		
_ 30 -	-			_ 30-			
Abnormal				d 20-	Abnormal		
0				0			
1/23	0/23		6/24		1/23	0/23	
Feb 2	0ct1		Mar2		Feb 2	Oct1	
Copper (ppm)					Silicon (ppm)		
400				⁸⁰ T	Severe		
300				60			
5 200				E 40			
					Abnormal		
100-				20-			
0			4	0	m		
b21/2	ct10/2		ar26/2		b21/2	ct10/2	
	_		W		_		
Viscosity @ 100°C				10.0 -	Dase Number	Г 	
14 Abnormal	-		- TODA	8.0-			
				Ē 6.0-			
				10 -			
10 Abnormal				2.0 -			
_				0.0			
eb21/23	0ct10/23		Mar26/24		Feb 2 1/2 3	0ct10/23	
	Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Iron (ppm) Copper (p	Precipitate scalar Silt scalar Debris scalar Sand/Dirt scalar Appearance scalar Odor scalar Emulsified Water scalar Free Water scalar FLUID PROPERTIES Visc @ 100°C cSt GRAPHS Iron (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Copper (ppm)	Precipitate scalar *Visual Silt scalar *Visual Debris scalar *Visual Appearance scalar *Visual Odor scalar *Visual Emulsified Water scalar *Visual Free Water scalar *Visual Free Water scalar *Visual FLUID PROPERTIES method Visc @ 100°C cSt ASTM D445 GRAPHS Iron (ppm) Copper (ppm) Aluminum (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Copper (ppm)	Precipitate scalar *Visual NONE Silt scalar *Visual NONE Debris scalar *Visual NONE Sand/Dirt scalar *Visual NONE Appearance scalar *Visual NORML Odor scalar *Visual NORML Emulsified Water scalar *Visual >0.2 Free Water scalar *Visual >0.2 Auminum (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Viscosity @ 100°C	Precipitate scalar *Visual NONE Silt scalar *Visual NONE Sand/Dirt scalar *Visual NONE Sand/Dirt scalar *Visual NORML Odor scalar *Visual NORML Emulsified Water scalar *Visual >0.2 Free Water scalar *Visual >0.2 Aluminum (ppm) Aluminum (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Copper (ppm) State scalar *Uisual *0.2 State scalar *Uisual *0.2 State scalar *Uisual *0.2 State scalar *Uisual *0.2 Copper (ppm) Copper (ppm) Coppe	Precipitate scalar *Visual NONE NONE Silt scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual >0.2 NEG Free Water scalar *Visual >0.2 NEG FLUID PROPERTIES method limit/base current Visc @ 100°C cSt ASTM D445 12.00 12.3 CRAPHS Iron (ppm) Aluminum (ppm) Copper (ppm	Precipitate scalar *Visual NONE NONE NONE Sitt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML N

To discuss this sample repor * - 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)

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Certificate L2367

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