

## **OIL ANALYSIS REPORT**



5096 Component Diesel Engine Fluid PETRO CANADA DURON SHP 10W30 (--- GAL)

### DIAGNOSIS

Machine Id

#### Recommendation

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

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

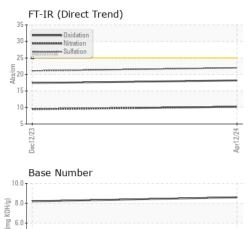
#### Fluid Condition

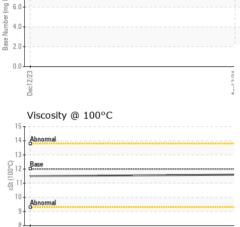
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0123921	PCA0113412	
Sample Date		Client Info		12 Apr 2024	12 Dec 2023	
Machine Age	mls	Client Info		0	0	
Oil Age	mls	Client Info		0	0	
Oil Changed		Client Info		N/A	N/A	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	41	39	
Chromium	ppm	ASTM D5185m	>20	1	<1	
Nickel	ppm	ASTM D5185m	>4	<1	0	
Titanium	ppm	ASTM D5185m		<1	0	
Silver	ppm	ASTM D5185m	>3	<1	0	
Aluminum	ppm	ASTM D5185m	>20	4	4	
Lead	ppm	ASTM D5185m	>40	1	0	
Copper	ppm	ASTM D5185m	>330	64	47	
Tin	ppm	ASTM D5185m	>15	2	1	
Vanadium	ppm	ASTM D5185m		<1	0	
Cadmium	ppm	ASTM D5185m		<1	0	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 2	history1 7	history2
	ppm ppm					-
Boron		ASTM D5185m	2	2	7	
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m	2 0	2 0	7 0	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	2 0 70	7 0 66	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	2 0 70 1	7 0 66 <1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	2 0 70 1 952	7 0 66 <1 990	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180	2 0 70 1 952 1103 939 1260	7 0 66 <1 990 1164 1146 1370	   
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	2 0 50 0 950 1050 995	2 0 70 1 952 1103 939	7 0 66 <1 990 1164 1146	
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	2 0 50 950 1050 995 1180	2 0 70 1 952 1103 939 1260	7 0 66 <1 990 1164 1146 1370	
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	2 0 50 0 950 1050 995 1180 2600	2 0 70 1 952 1103 939 1260 2914	7 0 66 <1 990 1164 1146 1370 3040	
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	2 0 50 950 1050 995 1180 2600	2 0 70 1 952 1103 939 1260 2914 current	7 0 66 <1 990 1164 1146 1370 3040 history1	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25	2 0 70 1 952 1103 939 1260 2914 current 6	7 0 66 <1 990 1164 1146 1370 3040 history1 7	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25	2 0 70 1 952 1103 939 1260 2914 current 6 0	7 0 66 <1 990 1164 1146 1370 3040 history1 7 <1	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >25 >20	2 0 70 1 952 1103 939 1260 2914 current 6 0 2	7 0 66 <1 990 1164 1146 1370 3040 history1 7 <1 0	     history2  
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>Imit/base</b> >25 -20 <b>Imit/base</b>	2 0 70 1 952 1103 939 1260 2914 <i>current</i> 6 0 2	7 0 66 <1 990 1164 1146 1370 3040 history1 7 <1 0 history1	     history2   history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	2 0 70 1 952 1103 939 1260 2914 <i>current</i> 6 0 2 2 <i>current</i> 1.2	7 0 66 <1 990 1164 1146 1370 3040 history1 7 <1 0 history1 0.7	     history2   history2
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	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	2 0 70 1 952 1103 939 1260 2914 <i>current</i> 6 0 2 2 <i>current</i> 1.2 10.2	7 0 66 <1 990 1164 1146 1370 3040 history1 7 <1 0 history1 0.7 9.5	      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 ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>imit/base</b> >25 <b>imit/base</b> >3 >20	2 0 70 1 952 1103 939 1260 2914 <i>current</i> 6 0 2 2 <i>current</i> 1.2 10.2 22.0	7 0 66 <1 990 1164 1146 1370 3040 history1 7 <1 0 history1 0.7 9.5 21.1	     history2   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 ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	2 0 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 20 >20 >30 >30 <b>imit/base</b>	2 0 70 1 952 1103 939 1260 2914 <i>current</i> 6 0 2 2 <i>current</i> 1.2 10.2 22.0	7 0 66 <1 990 1164 1146 1370 3040 history1 7 <1 0 history1 0.7 9.5 21.1 history1	     history2  history2  history2  history2



# **OIL ANALYSIS REPORT**





Dec12/23

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML	NORML	NORML	
Odor	scalar	*Visual	NORML	NORML	NORML	
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Free Water	scalar	*Visual		NEG	NEG	
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	11.6	11.5	
GRAPHS						
Iron (ppm)			10	Lead (ppm)		
200 - Severe				Severe		
				50		
150 - Abnormal			<u> </u>	Abnormal		
50 -				20		
0				0		
Dec12/23			Apr12/24	Dec12/23		Apr12/24
Dec			Apr	Dec		Apr
Aluminum (ppm)			,	Chromium (p	opm)	
50 40 Severe				50 40		
20 - Abnormal			mdd	Abnormal		
10 -				10		
0				0		
Dec12/23			Apr12/24	Dec12/23		Apr12/24
Dec			Apr	Dec		Apr
Copper (ppm)				Silicon (ppm)	1	
400 Severe				Severe		
300 -				50		
Ē 200 -			ud d	40 - Abnormal		
100-				20 -		
0				0		
Dec12/23			Apr12/24	Dec12/23		Apr12/24
⊸ Viscosity @ 100°C			Aı	് Base Numbe	r	Aı
16			10 	.o <sub>T</sub>		
214 Abnormal			Base Number (mg KOH(g) 9 9 8			
G-0012 55			per (i	.0		
<sup>4</sup> <sup>10</sup> Abnormal			Env a	.0		
8						
Dec12/23			Apr12/24 -	Dec12/23		Apr12/24 -
Dect			Apri	Dec)		Apr1
: WearCheck USA - 501 : PCA0123921 : 06157252 : 10992675	Madiso Recei Teste Diagn	ved : 23 d : 24	, NC 27513 3 Apr 2024 4 Apr 2024 4 Apr 2024 - V			LEASING #119 DUSTRIAL AVE CHEIGHTS, NJ US 07604

- Unique Number : 10992675 Diagno Test Package : MOB 1 (Additional Tests: TBN)
- To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - 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) F: (201)528-7053

Certificate 12367

Laboratory Sample No. Lab Number

Contact/Location: MIKE LONGETTE - MILRUT

Т:

Contact: MIKE LONGETTE

mlongette@millertransgroup.com