

# **OIL ANALYSIS REPORT**

Sample Rating Trend



#### Machine Id **226763** Component **Diesel Engine** Fluid **PETRO CANADA DURON SHP 10W30 (--- QTS)**

## 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.

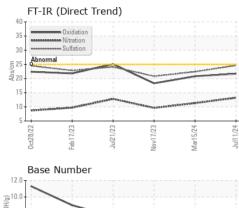
#### Fluid Condition

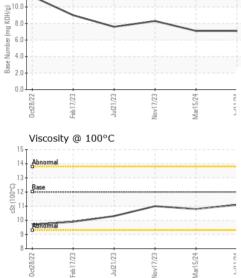
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0131497	PCA0120632	PCA0113361
Sample Date		Client Info		11 Jul 2024	15 Mar 2024	17 Nov 2023
Machine Age	mls	Client Info		54831	49046	39210
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	N/A	N/A
Sample Status				NORMAL	NORMAL	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	80	65	52
Chromium	ppm	ASTM D5185m		2	2	1
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	24	18	15
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	16	14	13
Tin	ppm	ASTM D5185m	>15	2	2	2
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 12	history1 14	history2 20
	ppm ppm					
Boron		ASTM D5185m	2	12	14	20
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	12 0	14 0	20 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	12 0 58	14 0 58	20 0 55
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	12 0 58 4	14 0 58 4	20 0 55 4
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	12 0 58 4 762	14 0 58 4 780	20 0 55 4 793
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	12 0 58 4 762 1498	14 0 58 4 780 1511	20 0 55 4 793 1402
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	12 0 58 4 762 1498 890	14 0 58 4 780 1511 870	20 0 55 4 793 1402 951
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	12 0 58 4 762 1498 890 1067	14 0 58 4 780 1511 870 1091	20 0 55 4 793 1402 951 1197
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 50 950 1050 995 1180 2600	12 0 58 4 762 1498 890 1067 3017 current 7	14 0 58 4 780 1511 870 1091 3268 history1 7	20 0 55 4 793 1402 951 1197 2973 history2 13
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	12 0 58 4 762 1498 890 1067 3017 current	14 0 58 4 780 1511 870 1091 3268 history1	20 0 55 4 793 1402 951 1197 2973 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>	12 0 58 4 762 1498 890 1067 3017 current 7	14 0 58 4 780 1511 870 1091 3268 history1 7	20 0 55 4 793 1402 951 1197 2973 history2 13
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>	12 0 58 4 762 1498 890 1067 3017 current 7 5	14 0 58 4 780 1511 870 1091 3268 history1 7 4	20 0 55 4 793 1402 951 1197 2973 <b>history2</b> 13 4
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	12 0 58 4 762 1498 890 1067 3017 <i>current</i> 7 5 36	14 0 58 4 780 1511 870 1091 3268 history1 7 4 26	20 0 55 4 793 1402 951 1197 2973 history2 13 4 22
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>limit/base</b> >25 -20 <b>limit/base</b>	12 0 58 4 762 1498 890 1067 3017 <i>current</i> 7 5 36 <i>current</i>	14 0 58 4 780 1511 870 1091 3268 history1 7 4 26 history1	20 0 55 4 793 1402 951 1197 2973 history2 13 4 22 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	12 0 58 4 762 1498 890 1067 3017 <i>current</i> 7 5 36 <i>current</i> 0.8	14 0 58 4 780 1511 870 1091 3268 history1 7 4 26 history1 0.6	20 0 55 4 793 1402 951 1197 2973 history2 13 4 22 history2 0.5
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>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	12 0 58 4 762 1498 890 1067 3017 <i>current</i> 7 5 36 <i>current</i> 0.8 13.2	14 0 58 4 780 1511 870 1091 3268 history1 7 4 26 history1 0.6 11.3	20 0 55 4 793 1402 951 1197 2973 history2 13 4 22 history2 0.5 9.6
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 0 950 1050 995 1180 2600 <b>imit/base</b> >25 <b>imit/base</b> >3 >20	12 0 58 4 762 1498 890 1067 3017 <i>current</i> 7 5 36 <i>current</i> 0.8 13.2 24.6	14 0 58 4 780 1511 870 1091 3268 history1 7 4 26 history1 0.6 11.3 22.4	20 0 55 4 793 1402 951 1197 2973 <b>history2</b> 13 4 22 <b>history2</b> 0.5 9.6 20.8
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 *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>	12 0 58 4 762 1498 890 1067 3017 <i>current</i> 7 5 36 <i>current</i> 0.8 13.2 24.6	14 0 58 4 780 1511 870 1091 3268 history1 7 4 26 history1 0.6 11.3 22.4 history1	20 0 55 4 793 1402 951 1197 2973 history2 13 4 22 history2 0.5 9.6 20.8 history2



# **OIL ANALYSIS REPORT**





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 Silt scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Free Water scalar *Visual NORML NORML NORML NORML NORML MOR Precipitate scalar *Visual NORML NORML MOR Precipitate scalar *Visual NORML NORML Precipitate scalar *Visual NORML NORML Sand/Dirt scalar *Visual NORML NORML Appearance scalar *Visual NORML NORML Free Water scalar *Visual >0.2 NEG NEG Free Water scalar *Visual NORML NO	NONE NONE NONE
Precipitate scalar *Visual NONE NONE NONE NONE Silt scalar *Visual NONE 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 Sol.2 NEG NEG Free Water scalar *Visual NEG NEG August State Sta	NONE
Silt scalar *Visual NONE 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 NORML NORML Visc @ 100°C cSt ASTM D445 12.00 11.1 10.8 GRAPHS Iron (ppm) Aluminum (ppm) Chromium (ppm)	
Debris scalar *Visual NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE 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 NORML NORML NORML NORML NORML NORML NORML NORML NORML NO	NONE
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Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG Free Water scalar *Visual NORML NORML NORML Visc @ 100°C cSt ASTM D445 12.00 11.1 10.8 GRAPHS Iron (ppm)	NONE
Emulsified Water scalar *Visual >0.2 NEG NEG Free Water scalar *Visual NEG NEG FLUID PROPERTIES method limit/base current history Visc @ 100°C cSt ASTM D445 12.00 11.1 10.8 GRAPHS Iron (ppm) Lead (ppm) Graphic for the state of the s	NONE
Emulsified Water scalar *Visual >0.2 NEG NEG Free Water scalar *Visual NEG NEG FLUID PROPERTIES method limit/base current history Visc @ 100°C cSt ASTM D445 12.00 11.1 10.8 GRAPHS Iron (ppm) Lead (ppm) Graphic for the state of the s	NORML
Free Water scalar *Visual NEG NEG FLUID PROPERTIES method limit/base current history Visc @ 100°C cSt ASTM D445 12.00 11.1 10.8 GRAPHS Iron (ppm) Graphic for the state of the state o	NORML
FLUID PROPERTIES method limit/base current history Visc @ 100°C cSt ASTM D445 12.00 11.1 10.8 GRAPHS Iron (ppm)	NEG
Visc @ 100°C cSt ASTM D445 12.00 <b>11.1</b> 10.8 GRAPHS Iron (ppm)	NEG
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Unique Number : 11127742 Test Package : MOB 1 (Additional Tests: TBN) Certificate 12367 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)

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