

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id 422687 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.

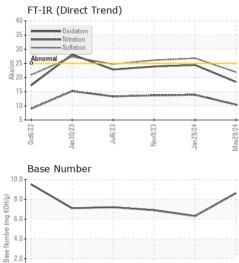
#### Fluid Condition

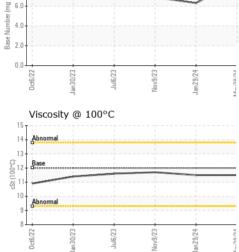
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0127003	PCA0117049	PCA0110489
Sample Date		Client Info		29 May 2024	29 Jan 2024	09 Nov 2023
Machine Age	mls	Client Info		71928	65323	59984
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Changed	Not Changd
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	50	90	76
Chromium	ppm	ASTM D5185m	>20	<1	3	3
Nickel	ppm	ASTM D5185m	>4	0	<1	<1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	15	21	19
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	8	16	15
Tin	ppm	ASTM D5185m	>15	1	2	2
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current	history1 7	history2 10
	ppm ppm					
Boron		ASTM D5185m	2	5	7	10
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	5 0	7 2	10 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	5 0 66	7 2 67	10 0 61
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	5 0 66 2	7 2 67 4	10 0 61 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	5 0 66 2 916	7 2 67 4 912	10 0 61 4 887
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	5 0 66 2 916 1230	7 2 67 4 912 1426	10 0 61 4 887 1417
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	5 0 66 2 916 1230 1026	7 2 67 4 912 1426 1098	10 0 61 4 887 1417 911
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	5 0 66 2 916 1230 1026 1243	7 2 67 4 912 1426 1098 1252	10 0 61 4 887 1417 911 1236
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	5 0 66 2 916 1230 1026 1243 3239	7 2 67 4 912 1426 1098 1252 3100	10 0 61 4 887 1417 911 1236 2510
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	5 0 66 2 916 1230 1026 1243 3239 current	7 2 67 4 912 1426 1098 1252 3100 history1	10 0 61 4 887 1417 911 1236 2510 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 50 950 1050 995 1180 2600 <b>limit/base</b> >25	5 0 66 2 916 1230 1026 1243 3239 current 7	7 2 67 4 912 1426 1098 1252 3100 history1 8	10 0 61 4 887 1417 911 1236 2510 history2 8
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 50 950 1050 995 1180 2600 <b>limit/base</b> >25	5 0 66 2 916 1230 1026 1243 3239 current 7 4	7 2 67 4 912 1426 1098 1252 3100 history1 8 0	10 0 61 4 887 1417 911 1236 2510 history2 8 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 >20	5 0 66 2 916 1230 1026 1243 3239 current 7 4 14	7 2 67 4 912 1426 1098 1252 3100 history1 8 0 29	10 0 61 4 887 1417 911 1236 2510 history2 8 4 21
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>	5 0 66 2 916 1230 1026 1243 3239 current 7 4 14 14 current	7 2 67 4 912 1426 1098 1252 3100 history1 8 0 29 history1	10 0 61 4 887 1417 911 1236 2510 history2 8 4 21 21 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 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	5 0 66 2 916 1230 1026 1243 3239 current 7 4 14 14 current	7 2 67 4 912 1426 1098 1252 3100 history1 8 0 29 history1 1.3	10 0 61 4 887 1417 911 1236 2510 history2 8 4 21 history2 1.2
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 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	5 0 66 2 916 1230 1026 1243 3239 current 7 4 14 14 0.8 10.4	7 2 67 4 912 1426 1098 1252 3100 history1 8 0 29 history1 1.3 13.9	10 0 61 4 887 1417 911 1236 2510 history2 8 4 21 kistory2 1.2 1.2 13.7
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 >20 <b>imit/base</b> >3 >20 >30	5 0 66 2 916 1230 1026 1243 3239 <u>current</u> 7 4 14 14 0.8 10.4 21.9	7 2 67 4 912 1426 1098 1252 3100 history1 8 0 29 history1 1.3 13.9 26.8	10 0 61 4 887 1417 911 1236 2510 <b>history2</b> 8 4 21 <b>history2</b> 1.2 1.2 1.2 13.7 26.1
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 TS ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 >20 <b>imit/base</b> >3 >20 >30	5 0 66 2 916 1230 1026 1243 3239 current 7 4 14 14 0.8 10.4 21.9 current	7 2 67 4 912 1426 1098 1252 3100 history1 8 0 29 history1 1.3 13.9 26.8 history1	10 0 61 4 887 1417 911 1236 2510 history2 8 4 21 history2 1.2 13.7 26.1 history2

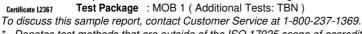


# **OIL ANALYSIS REPORT**





scalar	*) /				
	*Visual	NONE	NONE	NONE	NONE
scalar	*Visual	NONE	NONE	NONE	NONE
scalar	*Visual	NONE	NONE	NONE	NONE
scalar	*Visual	NONE	NONE	NONE	NONE
	*Visual	NONE	NONE	NONE	NONE
		NONE	NONE	NONE	NONE
			NORML		NORML
			-		NORML
			-		NEG
scalar	*Visual	20.2	NEG	NEG	NEG
TIES	method	limit/base	current	history1	history2
cSt	ASTM D445	12.00	11.5	11.5	11.7
			Lead (ppm)		
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		80	- 0		
		<u>E</u> 60	Abnormal		
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Not	Jan	May	Jan	Jr	Jan
			Base Number	-	
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		E 6.0			
		4.0	1		
	l I	82.0			
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0.09.	Jan 29/24	May29/24	0ct6/22 Jan30/23	Jul6/23 Nov9/23	Jan 29/24 Mav 29/24
	scalar scalar scalar scalar scalar scalar scalar scalar scalar scalar scalar	scalar *Visual scalar *Visual *Visual scalar *Visual	scalar *Visual NONE scalar *Visual NORML scalar *Visual NORML scalar *Visual >0.2 scalar *Visual *Visual >0.2 scalar *Visual *Visual *0.2 scalar *Visual *Visual *0.2 scalar *0.2 scal	scalar *Visual NONE NONE scalar *Visual NORML NORML scalar *Visual NORML NORML scalar *Visual >0.2 NEG scalar *Visual >0.2 NEG triles method limit/base current cSt ASTM D445 12.00 11.5 Crower fclorony fclorent	scalar *Visual NONE NONE NONE NONE scalar *Visual NORML NORML NORML NORML scalar *Visual >0.2 NEG NEG scalar *Visual >0.2 NEG NEG scalar *Visual >0.2 NEG NEG scalar *Visual >0.2 NEG NEG TIES method limit/base current history1 cSt ASTM D445 12.00 11.5 11.5 Lead (ppm) Chromium (ppm) Chromium (ppm) Silicon (ppm) Silicon (ppm) Silicon (ppm) Base Number Yugun Hugun Silicon (ppm) Base Number



\* - 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

Laboratory Sample No. Lab Number Unique Number

Contact/Location: MIKE LONGETTE - MILRUT

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