

OIL ANALYSIS REPORT



Machine Id T284

Component Diesel Engine

Fluid PETRO CANADA DURON SHP 10W30 (--- QTS)

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

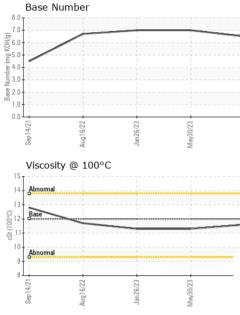
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0110870	PCA0098205	PCA0090293
Sample Date		Client Info		24 Oct 2023	30 May 2023	26 Jan 2023
Machine Age	mls	Client Info		172816	146468	122860
Oil Age	mls	Client Info		0	0	96574
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	27	28	39
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	12	11	19
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	2	2	3
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
		and the set	12			histow.0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	current 2	history1 4	nistory∠ 4
	ppm ppm					
Boron		ASTM D5185m	2	2	4	4
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	2 0	4	4
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	2 0 61	4 0 67	4 0 63
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	2 0 61 <1	4 0 67 <1	4 0 63 <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 61 <1 901	4 0 67 <1 998	4 0 63 <1 878
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	2 0 61 <1 901 1110	4 0 67 <1 998 1159	4 0 63 <1 878 1116
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 61 <1 901 1110 1115	4 0 67 <1 998 1159 1043	4 0 63 <1 878 1116 950
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 61 <1 901 1110 1115 1200	4 0 67 <1 998 1159 1043 1329	4 0 63 <1 878 1116 950 1171
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	2 0 61 <1 901 1110 1115 1200 2544	4 0 67 <1 998 1159 1043 1329 3342	4 0 63 <1 878 1116 950 1171 2769
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 ASTM D5185m	2 0 50 950 1050 995 1180 2600	2 0 61 <1 901 1110 1115 1200 2544 current	4 0 67 <1 998 1159 1043 1329 3342 history1	4 0 63 <1 878 1116 950 1171 2769 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 method	2 0 50 950 1050 995 1180 2600	2 0 61 <1 901 1110 1115 1200 2544 <i>current</i> 8	4 0 67 <1 998 1159 1043 1329 3342 history1 9	4 0 63 <1 878 1116 950 1171 2769 history2 10
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	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 Limit/base >25	2 0 61 <1 901 1110 1115 1200 2544 <i>current</i> 8 3 25	4 0 67 <1 998 1159 1043 1329 3342 history1 9 2	4 0 63 <1 878 1116 950 1171 2769 history2 10 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	2 0 61 <1 901 1110 1115 1200 2544 <i>current</i> 8 3 25	4 0 67 <1 998 1159 1043 1329 3342 history1 9 2 22	4 0 63 <1 878 1116 950 1171 2769 history2 10 0 42
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 Imit/base >25 >20 Imit/base >3	2 0 61 <1 901 1110 1115 1200 2544 <i>current</i> 8 3 25 <i>current</i>	4 0 67 <1 998 1159 1043 1329 3342 history1 9 2 22 22 history1	4 0 63 <1 878 1116 950 1171 2769 history2 10 0 42 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	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 Imit/base >25 >20 Imit/base >3	2 0 61 <1 901 1110 1115 1200 2544 <i>current</i> 8 3 25 <i>current</i> 0.7	4 0 67 <1 998 1159 1043 1329 3342 history1 9 2 22 22 history1 0.6	4 0 63 <1 878 1116 950 1171 2769 history2 10 0 42 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>	2 0 61 <1 901 1110 1115 1200 2544 <i>current</i> 8 3 25 <i>current</i> 0.7 9.2	4 0 67 <1 998 1159 1043 1329 3342 history1 9 2 22 22 history1 0.6 9.0	4 0 63 <1 878 1116 950 1171 2769 history2 10 0 42 history2 0.5 9.1
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 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 >30	2 0 61 <1 901 1110 1115 1200 2544 <i>current</i> 8 3 25 <i>current</i> 0.7 9.2 21.4	4 0 67 <1 998 1159 1043 1329 3342 history1 9 2 22 history1 0.6 9.0 21.4	4 0 63 <1 878 1116 950 1171 2769 history2 10 0 42 history2 0.5 9.1 20.2
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 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20 >30	2 0 61 <1 901 1110 1115 1200 2544 <i>current</i> 8 3 25 <i>current</i> 0.7 9.2 21.4 <i>current</i>	4 0 67 <1 998 1159 1043 1329 3342 history1 9 2 22 history1 0.6 9.0 21.4 history1	4 0 63 <1 878 1116 950 1171 2769 history2 10 0 42 history2 0.5 9.1 20.2 history2



OIL ANALYSIS REPORT

VISUAL



Laboratory Sample No Lab Numb Unique Num Certificate L2367 Test Packa		: WearCheck USA - : PCA0110870 : 05994109 : 10722469 : FLEET	501 Madison Ave., Cary, NC 27513Received: 31 Oct 2023Diagnosed: 31 Oct 2023Diagnostician: Wes Davisvice at 1-800-237-1369.				NW WHITE & CO - COLUMBIA DIVISION 100 INDEPENDENCE BLVE COLUMBIA, SC US 29210 Contact: GEORGE EDWARDS gedwards@nwwhite.com			
		13 12 12 12 10 10 10 10 10 10 10 10 10 10	Jan26/23 -	62/06/eW	0.0400 0.0400	Sep 14/21 Aug 16/22	Jan26/23 -	Mar/30/23		
		0 127910mg @ 1000	Jan26/23	May30/23	8.0	Base Number				
		12 10 E E B B C C C C C C C C C C C C C C C C	<u> </u>							
		Non-ferrous Met	Jan 26/23	May30/23	0ei24/23					
Ja		60 40 20								
Jan 26/23 4	May30/23	GRAPHS Ferrous Alloys								
		FLUID PROP Visc @ 100°C	CSt	method ASTM D445	limit/base	current 11.6	history1 11.3	history2 11.3		
		Emulsified Water Free Water	scalar scalar	*Visual *Visual	>0.2	NEG NEG	NEG NEG	NEG NEG		
Jan 26/23	May30/23 0ct24/23	Appearance Odor		*Visual *Visual	NORML	NORML	NORML	NORML		
		Debris Sand/Dirt	scalar scalar	*Visual *Visual	NONE	NONE	NONE	NONE		
		Silt	scalar	*Visual	NONE	NONE	NONE	NONE		
		Yellow Metal Precipitate	scalar scalar	*Visual *Visual	NONE NONE	NONE NONE	NONE NONE	NONE		

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