

OIL ANALYSIS REPORT

Sample Rating Trend





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.

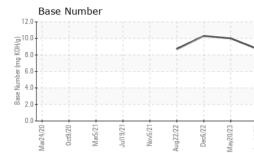
Fluid Condition

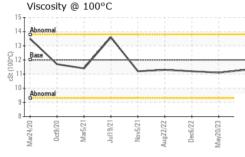
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0101947	PCA0093171	PCA0082238
Sample Date		Client Info		11 Sep 2023	20 May 2023	06 Dec 2022
Machine Age	mls	Client Info		86455	80916	77462
Oil Age	mls	Client Info		0	0	6182
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
	0		11 11 11			
WEAR METAL		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m		13	22	11
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	0	2	<1
Aluminum	ppm	ASTM D5185m	>20	4	6	4
Lead	ppm	ASTM D5185m	>40	<1	2	<1
Copper	ppm	ASTM D5185m	>330	5	32	2
Tin	ppm		>15	<1	1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 4	history1 14	history2 9
	ppm ppm					
Boron		ASTM D5185m	2	4	14	9
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	4 0	14 0	9 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	4 0 66	14 0 69	9 0 64
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	4 0 66 <1	14 0 69 1	9 0 64 <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	4 0 66 <1 1043	14 0 69 1 963	9 0 64 <1 882
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	4 0 66 <1 1043 1254	14 0 69 1 963 1215	9 0 64 <1 882 1119
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	4 0 66 <1 1043 1254 1113	14 0 69 1 963 1215 1067	9 0 64 <1 882 1119 986
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	4 0 66 <1 1043 1254 1113 1392	14 0 69 1 963 1215 1067 1286	9 0 64 <1 882 1119 986 1188
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	4 0 66 <1 1043 1254 1113 1392 3983	14 0 69 1 963 1215 1067 1286 3575	9 0 64 <1 882 1119 986 1188 3504
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	4 0 66 <1 1043 1254 1113 1392 3983 current	14 0 69 1 963 1215 1067 1286 3575 history1	9 0 64 <1 882 1119 986 1188 3504 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 method	2 0 50 950 1050 995 1180 2600 limit/base >25	4 0 66 <1 1043 1254 1113 1392 3983 current 3	14 0 69 1 963 1215 1067 1286 3575 history1 4	9 0 64 <1 882 1119 986 1188 3504 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm 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 method ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	4 0 66 <1 1043 1254 1113 1392 3983 current 3 4	14 0 69 1 963 1215 1067 1286 3575 history1 4 4	9 0 64 <1 882 1119 986 1188 3504 history2 3 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base	4 0 66 <1 1043 1254 1113 1392 3983 current 3 4 5	14 0 69 1 963 1215 1067 1286 3575 history1 4 4 4 13	9 0 64 <1 882 1119 986 1188 3504 history2 3 4 4
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	4 0 66 <1 1043 1254 1113 1392 3983 current 3 4 5 5	14 0 69 1 963 1215 1067 1286 3575 history1 4 4 13 history1	9 0 64 <1 882 1119 986 1188 3504 history2 3 4 4 4
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 Imit/base >25 >20 Imit/base >3	4 0 66 <1 1043 1254 1113 1392 3983 current 3 4 5 current 0.8	14 0 69 1 963 1215 1067 1286 3575 history1 4 4 13 history1 0.6	9 0 64 <1 882 1119 986 1188 3504 history2 3 4 4 4 history2 0.9
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	4 0 66 <1 1043 1254 1113 1392 3983 current 3 4 5 current 0.8 9.9 19.2	14 0 69 1 963 1215 1067 1286 3575 history1 4 4 13 history1 0.6 9.2	9 0 64 <1 882 1119 986 1188 3504 history2 3 4 4 4 history2 0.9 11.0
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 0 50 0 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3 >20 >30	4 0 66 <1 1043 1254 1113 1392 3983 current 3 3 4 5 current 0.8 9.9 19.2	14 0 69 1 963 1215 1067 1286 3575 history1 4 4 4 13 history1 0.6 9.2 19.2	9 0 64 <1 882 1119 986 1188 3504 history2 3 4 4 4 history2 0.9 11.0 21.2
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 *ASTM D7844	2 0 0 50 0 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3 >20 >30	4 0 66 <1 1043 1254 1113 1392 3983 <i>current</i> 3 4 5 <i>current</i> 0.8 9.9 19.2 <i>current</i>	14 0 69 1 963 1215 1067 1286 3575 history1 4 4 4 13 history1 0.6 9.2 19.2 19.2 history1	9 0 64 <1 882 1119 986 1188 3504 history2 3 4 4 4 history2 0.9 11.0 21.2 history2



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Certificate L2367