

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 121582

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.

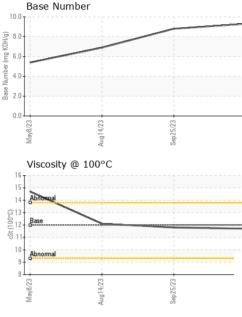
Fluid Condition

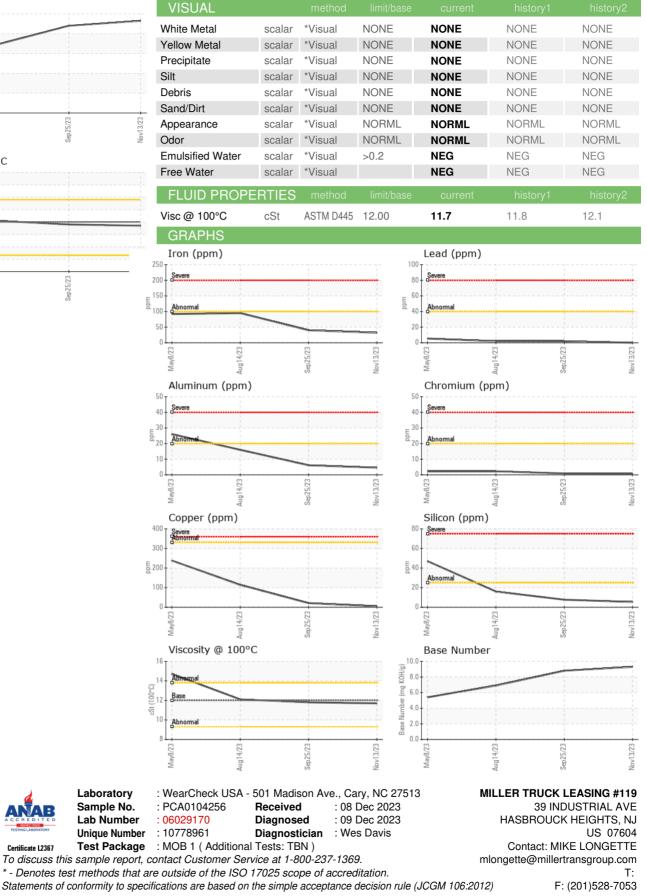
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

TS)		May202	3 Aug2023	Sep 2023 No	v2023	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0104256	PCA0106284	PCA0104322
Sample Date		Client Info		13 Nov 2023	25 Sep 2023	14 Aug 2023
Machine Age	mls	Client Info		50776	41807	33592
Oil Age	mls	Client Info		0	0	0
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
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
ron	ppm	ASTM D5185m	>100	32	40	95
Chromium	ppm	ASTM D5185m	>20	<1	<1	2
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	5	6	16
_ead	ppm	ASTM D5185m	>40	0	2	2
Copper	ppm	ASTM D5185m	>330	6	21	114
Гin	ppm		>15	<1	2	5
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
	ppm	ASTM D5185m	2	6	12	11
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	2 0	6 0	12 0	11 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	6 0 62	12 0 70	11 0 59
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	6 0 62 <1	12 0 70 1	11 0 59 2
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	6 0 62 <1 961	12 0 70 1 1000	11 0 59 2 828
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	6 0 62 <1 961 1143	12 0 70 1 1000 1391	11 0 59 2 828 1245
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 ASTM D5185m	2 0 50 0 950 1050 995	6 0 62 <1 961 1143 1079	12 0 70 1 1000 1391 1206	11 0 59 2 828 1245 994
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 ASTM D5185m	2 0 50 950 1050 995 1180	6 0 62 <1 961 1143 1079 1354	12 0 70 1 1000 1391 1206 1535	11 0 59 2 828 1245 994 1375
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	6 0 62 <1 961 1143 1079 1354 3162	12 0 70 1 1000 1391 1206 1535 3520	11 0 59 2 828 1245 994 1375 3085
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	6 0 62 <1 961 1143 1079 1354 3162 current	12 0 70 1 1000 1391 1206 1535 3520 history1	11 0 59 2 828 1245 994 1375 3085 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	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	6 0 62 <1 961 1143 1079 1354 3162 current 5	12 0 70 1 1000 1391 1206 1535 3520 history1 8	11 0 59 2 828 1245 994 1375 3085 history2 16
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 method ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 Limit/base	6 0 62 <1 961 1143 1079 1354 3162 current 5 2	12 0 70 1 1000 1391 1206 1535 3520 history1 8 0	11 0 59 2 828 1245 994 1375 3085 history2 16 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	6 0 62 <1 961 1143 1079 1354 3162 current 5 2 4	12 0 70 1 1000 1391 1206 1535 3520 history1 8 0 4	11 0 59 2 828 1245 994 1375 3085 history2 16 3 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ypm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 -20	6 0 62 <1 961 1143 1079 1354 3162 current 5 2 4 4	12 0 70 1 1000 1391 1206 1535 3520 history1 8 0 4 4 history1	11 0 59 2 828 1245 994 1375 3085 history2 16 3 6 <i>history2</i>
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ypm ypm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3	6 0 62 <1 961 1143 1079 1354 3162 <i>current</i> 5 2 4 <i>current</i> 1.1	12 0 70 1 1000 1391 1206 1535 3520 history1 8 0 4 history1 1	11 0 59 2 828 1245 994 1375 3085 history2 16 3 6 history2 1.8
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 ypm ypm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 20 limit/base >3 >20	6 0 62 <1 961 1143 1079 1354 3162 <i>current</i> 5 2 4 <i>current</i> 1.1 9.2	12 0 70 1 1000 1391 1206 1535 3520 history1 8 0 4 history1 1 9.2	11 0 59 2 828 1245 994 1375 3085 history2 16 3 6 history2 1.8 1.8 14.1
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 ypm ypm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3	6 0 62 <1 961 1143 1079 1354 3162 <i>current</i> 5 2 4 <i>current</i> 1.1	12 0 70 1 1000 1391 1206 1535 3520 history1 8 0 4 history1 1	11 0 59 2 828 1245 994 1375 3085 history2 16 3 6 history2 1.8
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 ypm ypm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 20 limit/base >3 >20	6 0 62 <1 961 1143 1079 1354 3162 <i>current</i> 5 2 4 <i>current</i> 1.1 9.2	12 0 70 1 1000 1391 1206 1535 3520 history1 8 0 4 history1 1 9.2	11 0 59 2 828 1245 994 1375 3085 history2 16 3 6 history2 1.8 1.8 14.1
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 ypm ypm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 imit/base >25 imit/base >3 >20	6 0 62 <1 961 1143 1079 1354 3162 <u>current</u> 5 2 4 <u>current</u> 1.1 9.2 21.0	12 0 70 1 1000 1391 1206 1535 3520 history1 8 0 4 history1 1 9.2 20.8	11 0 59 2 828 1245 994 1375 3085 history2 16 3 6 history2 1.8 14.1 26.0



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Certificate L2367

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