

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 502634

Component Diesel Engine

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

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

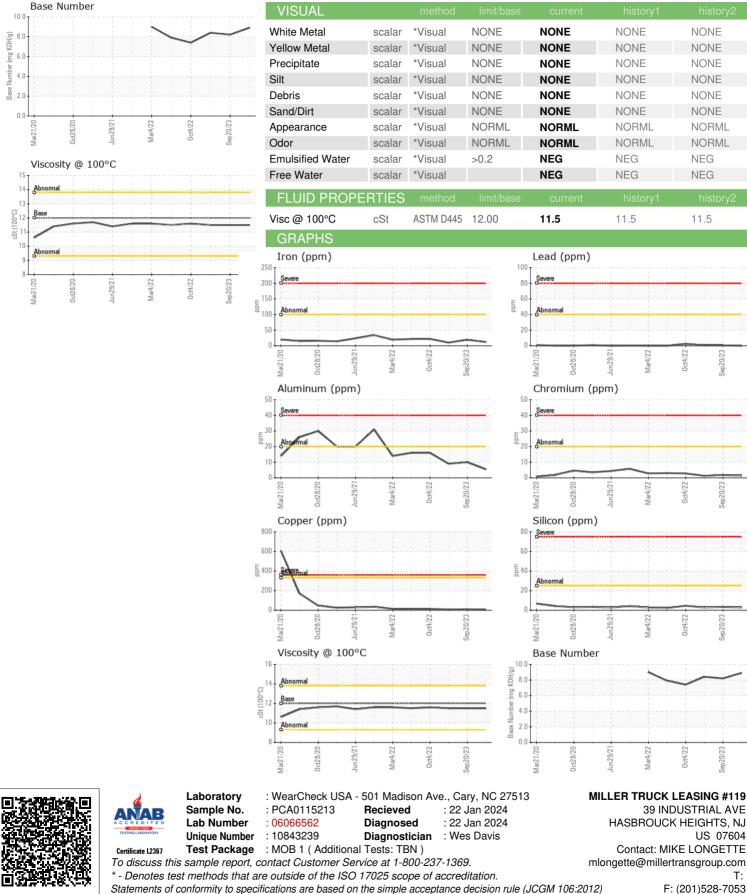
Fluid Condition

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

··· - /		Mar2020	Oct2020 Jun2021	Mar2022 Oct2022 Se	p2023	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0115213	PCA0106263	PCA0098012
Sample Date		Client Info		12 Jan 2024	20 Sep 2023	09 Jun 2023
Machine Age	mls	Client Info		138724	128563	122285
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		N/A	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	12	19	10
Chromium	ppm	ASTM D5185m	>20	1	2	1
Nickel	ppm	ASTM D5185m	>4	0	<1	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	5	10	9
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m	>330	4	10	8
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
	ppm			Ū	0	0
ADDITIVES		method	limit/base		history1	history2
	ppm		limit/base			-
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	2	current 4	history1 9	history2 17
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	2 0	current 4 0	history1 9 0	history2 17 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	current 4 0 57	history1 9 0 70	history2 17 0 56
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	current 4 0 57 0	history1 9 0 70 1	history2 17 0 56 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	current 4 0 57 0 922	history1 9 0 70 1 1076	history2 17 0 56 1 889
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	Current 4 0 57 0 922 1055	history1 9 0 70 1 1076 1282	history2 17 0 56 1 889 1096
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	Current 4 0 57 0 922 1055 1049	history1 9 0 70 1 1076 1282 1217	history2 17 0 56 1 889 1096 970
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180	Current 4 0 57 0 922 1055 1049 1214 3014	history1 9 0 70 1 1076 1282 1217 1559	history2 17 0 56 1 889 1096 970 1226
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	Current 4 0 57 0 922 1055 1049 1214 3014	history1 9 0 70 1 1076 1282 1217 1559 3745	history2 17 0 56 1 889 1096 970 1226 3622
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method 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	Current 4 0 57 0 922 1055 1049 1214 3014 Current	history1 9 0 70 1 1076 1282 1217 1259 3745 history1	history2 17 0 56 1 889 1096 970 1226 3622 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 950 1050 995 1180 2600	Current 4 0 57 0 922 1055 1049 1214 3014 Current 3	history1 9 0 70 1 1076 1282 1217 1559 3745 history1 3	history2 17 0 56 1 889 1096 970 1226 3622 history2 3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base	Current 4 0 57 0 922 1055 1049 1214 3014 Current 3 1 8	history1 9 0 70 1 1076 1282 1217 1559 3745 history1 3 0	history2 17 0 56 1 889 1096 970 1226 3622 history2 3 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20	Current 4 0 57 0 922 1055 1049 1214 3014 Current 3 1 8	history1 9 0 70 1 1076 1282 1217 1559 3745 history1 3 0 18	history2 17 0 56 1 889 1096 970 1226 3622 history2 3 <1 14
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25	Current 4 0 57 0 922 1055 1049 1214 3014 Current 3 1 8 X	history1 9 0 70 1 1076 1282 1217 1559 3745 history1 3 0 18 history1	history2 17 0 56 1 889 1096 970 1226 3622 history2 3 <1 14 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	Current 4 0 57 0 922 1055 1049 1214 3014 current 3 1 8 current 0.4	history1 9 0 70 1 1076 1282 1217 1559 3745 history1 3 0 18 history1 0.4	history2 17 0 56 1 889 1096 970 1226 3622 history2 3 <1 14 history2 0.3
ADDITIVES 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	method ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3 >20	4 0 57 0 922 1055 1049 1214 3014 current 3 1 8 current 0.4 6.7 18.4	history1 9 0 70 1 1076 1282 1217 1559 3745 history1 3 0 18 history1 0.4 7.1	history2 17 0 56 1 889 1096 970 1226 3622 history2 3 <1 14 history2 0.3 6.2
ADDITIVES 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	method ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >25 imit/base >3 >20	Current 4 0 57 0 922 1055 1049 1214 3014 current 3 1 8 current 0.4 6.7 18.4	history1 9 0 70 1 1076 1282 1217 1559 3745 history1 3 0 18 0.4 7.1 18.1	history2 17 0 56 1 889 1096 970 1226 3622 history2 3 <1 14 history2 0.3 6.2 18.8
ADDITIVES 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	method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	2 0 0 50 0 950 1050 995 1180 2600 imit/base >25 20 20 imit/base >3 20 30	Current 4 0 57 0 922 1055 1049 1214 3014 current 3 1 8 current 0.4 6.7 18.4 current	history1 9 0 70 1 1076 1282 1217 1559 3745 history1 3 0 18 history1 0.4 7.1 18.1	history2 17 0 56 1 889 1096 970 1226 3622 history2 3 <1 14 history2 0.3 6.2 18.8 history2



OIL ANALYSIS REPORT



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Contact/Location: MIKE LONGETTE - MILRUT

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en20/23

en20/23

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US 07604

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