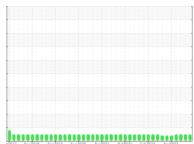


OIL ANALYSIS REPORT

Sample Rating Trend







(H904541) Machine Id 2588

Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (10 GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

Metal levels are typical for a new component breaking in.

Contamination

Fuel content negligible. There is no indication of any contamination in the oil.

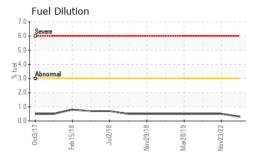
Fluid Condition

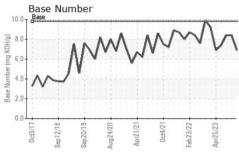
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

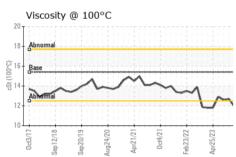
2017 Sep.2018 Sep.2019 Aug.0220 Apr.0221 Oct.021 Feb.2022 Apr.0223						
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0099747	GFL0073288	GFL0073278
Sample Date		Client Info		27 Feb 2024	08 Nov 2023	04 Oct 2023
Machine Age	hrs	Client Info		600	600	600
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
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	>165	17	3	2
Chromium	ppm	ASTM D5185m	>5	1	0	0
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	1	1
Lead	ppm	ASTM D5185m	>150	<1	0	0
Copper	ppm	ASTM D5185m	>90	<1	0	1
Tin	ppm	ASTM D5185m	>5	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES			::\./ c = c = c		المراجعة والمراجعة	history2
ADDITIVES		method	limit/base	current	history1	HISTOLYZ
Boron	ppm	ASTM D5185m		22	30	24
	ppm		0			
Boron		ASTM D5185m	0	22	30	24
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	22 0	30 0	24
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	22 0 109	30 0 89	24 0 95
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	22 0 109 <1	30 0 89 0	24 0 95
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	22 0 109 <1 1151	30 0 89 0 906	24 0 95 0 916
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	22 0 109 <1 1151 1348	30 0 89 0 906 1080	24 0 95 0 916 1113
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	22 0 109 <1 1151 1348 1313	30 0 89 0 906 1080 1001	24 0 95 0 916 1113 1022
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	0 0 60 0 1010 1070 1150 1270	22 0 109 <1 1151 1348 1313 1627	30 0 89 0 906 1080 1001 1217	24 0 95 0 916 1113 1022 1244
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	22 0 109 <1 1151 1348 1313 1627 4436	30 0 89 0 906 1080 1001 1217 3087	24 0 95 0 916 1113 1022 1244 3162
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	22 0 109 <1 1151 1348 1313 1627 4436 current	30 0 89 0 906 1080 1001 1217 3087 history1	24 0 95 0 916 1113 1022 1244 3162 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	22 0 109 <1 1151 1348 1313 1627 4436 current	30 0 89 0 906 1080 1001 1217 3087 history1	24 0 95 0 916 1113 1022 1244 3162 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	22 0 109 <1 1151 1348 1313 1627 4436 current 18 12	30 0 89 0 906 1080 1001 1217 3087 history1 8	24 0 95 0 916 1113 1022 1244 3162 history2 5 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >35	22 0 109 <1 1151 1348 1313 1627 4436 current 18 12 1	30 0 89 0 906 1080 1001 1217 3087 history1 8 0 <1	24 0 95 0 916 1113 1022 1244 3162 history2 5 7 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >35 >20 >3.0	22 0 109 <1 1151 1348 1313 1627 4436 current 18 12 1 0.3	30 0 89 0 906 1080 1001 1217 3087 history1 8 0 <1 <1.0	24 0 95 0 916 1113 1022 1244 3162 history2 5 7 2 <1.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm	ASTM D5185m	0 0 60 0 1010 1150 1270 2060 limit/base >35 >20 >3.0	22 0 109 <1 1151 1348 1313 1627 4436 current 18 12 1 0.3	30 0 89 0 906 1080 1001 1217 3087 history1 8 0 <1 <1.0 history1	24 0 95 0 916 1113 1022 1244 3162 history2 5 7 2 <1.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >35 >20 >3.0 limit/base	22 0 109 <1 1151 1348 1313 1627 4436 current 18 12 1 0.3 current 0.4	30 0 89 0 906 1080 1001 1217 3087 history1 8 0 <1 <1.0 history1 0.1	24 0 95 0 916 1113 1022 1244 3162 history2 5 7 2 <1.0 history2 0.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D7624	0 0 60 0 1010 1070 1150 1270 2060 limit/base >35 >20 >3.0 limit/base	22 0 109 <1 1151 1348 1313 1627 4436 current 18 12 1 0.3 current 0.4 7.4	30 0 89 0 906 1080 1001 1217 3087 history1 8 0 <1 <1.0 history1 0.1 5.2	24 0 95 0 916 1113 1022 1244 3162 history2 5 7 2 <1.0 history2 0.2 5.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 limit/base >35 >20 >3.0 limit/base >7.5 >20 >30	22 0 109 <1 1151 1348 1313 1627 4436 current 18 12 1 0.3 current 0.4 7.4 17.9	30 0 89 0 906 1080 1001 1217 3087 history1 8 0 <1 <1.0 history1 0.1 5.2 16.8	24 0 95 0 916 1113 1022 1244 3162 history2 5 7 2 <1.0 history2 0.2 5.3 16.9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m ASTM D7624 *ASTM D7624 *ASTM D76185m TM D76185m *ASTM D76185m ASTM D76185m	0 0 0 1010 1070 1150 1270 2060 limit/base >35 >20 >3.0 limit/base >7.5 >20 >30 limit/base	22 0 109 <1 1151 1348 1313 1627 4436 current 18 12 1 0.3 current 0.4 7.4 17.9 current	30 0 89 0 906 1080 1001 1217 3087 history1 8 0 <1 <1.0 history1 0.1 5.2 16.8 history1	24 0 95 0 916 1113 1022 1244 3162 history2 5 7 2 <1.0 history2 0.2 5.3 16.9 history2



OIL ANALYSIS REPORT



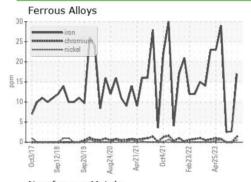


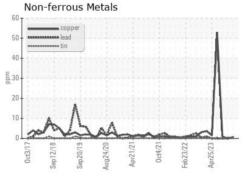


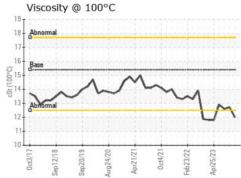
VISUAL		method				history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

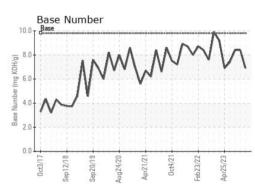
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.0	12.7	12.6

GRAPHS













Laboratory Sample No.

Lab Number : 06104032 Unique Number : 10902262

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0099747 Received

: 29 Feb 2024 **Tested** : 04 Mar 2024 Diagnosed

: 04 Mar 2024 - Wes Davis Test Package: FLEET (Additional Tests: FuelDilution, PercentFuel)

415 Ryder Lane, PO Box 1894 Morristown, TN US 37813

GFL Environmental - 102 - Morristown TN

Contact: Ricky Dunlap ricky.dunlap@gflenv.com T: (800)207-6618

To discuss this sample report, contact Customer Service at 1-800-237-1369. * - 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)