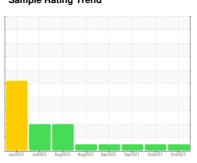


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id 413051 Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- GAL)

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.

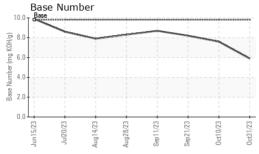
Fluid Condition

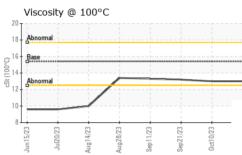
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

GAL)		Jun2023 .	lul2023 Aug2023 Aug20	23 Sep2023 Sep2023 Oct2023	0ct2023	
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0088084	GFL0088237	GFL0088157
Sample Date		Client Info		31 Oct 2023	10 Oct 2023	21 Sep 2023
Machine Age	hrs	Client Info		1182	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	N/A	N/A
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	14	11	9
Chromium	ppm	ASTM D5185m	>20	0	<1	0
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	<1	2	<1
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	20	15	14
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	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 6	history2 8
	ppm					
Boron		ASTM D5185m	0	4	6	8
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	4 0	6	8
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 59	6 0 56	8 0 60
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 59 <1	6 0 56 <1	8 0 60 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	4 0 59 <1 897 995 937	6 0 56 <1 839 981 910	8 0 60 <1 945
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	4 0 59 <1 897 995	6 0 56 <1 839 981	8 0 60 <1 945 1073
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	4 0 59 <1 897 995 937	6 0 56 <1 839 981 910	8 0 60 <1 945 1073 980
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	4 0 59 <1 897 995 937 1176	6 0 56 <1 839 981 910 1099	8 0 60 <1 945 1073 980 1222
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	4 0 59 <1 897 995 937 1176 2615	6 0 56 <1 839 981 910 1099 2451	8 0 60 <1 945 1073 980 1222 3029
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	4 0 59 <1 897 995 937 1176 2615	6 0 56 <1 839 981 910 1099 2451 history1	8 0 60 <1 945 1073 980 1222 3029 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	4 0 59 <1 897 995 937 1176 2615 current	6 0 56 <1 839 981 910 1099 2451 history1	8 0 60 <1 945 1073 980 1222 3029 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	4 0 59 <1 897 995 937 1176 2615 current 9 3	6 0 56 <1 839 981 910 1099 2451 history1 10 3	8 0 60 <1 945 1073 980 1222 3029 history2
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 >25	4 0 59 <1 897 995 937 1176 2615 current 9 3	6 0 56 <1 839 981 910 1099 2451 history1 10 3 4	8 0 60 <1 945 1073 980 1222 3029 history2 9 2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	4 0 59 <1 897 995 937 1176 2615 current 9 3 3	6 0 56 <1 839 981 910 1099 2451 history1 10 3 4	8 0 60 <1 945 1073 980 1222 3029 history2 9 2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m Method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 limit/base	4 0 59 <1 897 995 937 1176 2615 current 9 3 3	6 0 56 <1 839 981 910 1099 2451 history1 10 3 4 history1 0.3	8 0 60 <1 945 1073 980 1222 3029 history2 9 2 3 history2 0.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m Method *ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 limit/base	4 0 59 <1 897 995 937 1176 2615 current 9 3 3 7.4	6 0 56 <1 839 981 910 1099 2451 history1 10 3 4 history1 0.3 6.9	8 0 60 <1 945 1073 980 1222 3029 history2 9 2 3 history2 0.2 6.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m Method *ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30	4 0 59 <1 897 995 937 1176 2615 current 9 3 3 current 0.3 7.4 19.1	6 0 56 <1 839 981 910 1099 2451 history1 10 3 4 history1 0.3 6.9 18.9	8 0 60 <1 945 1073 980 1222 3029 history2 9 2 3 history2 0.2 6.3 19.0



OIL ANALYSIS REPORT

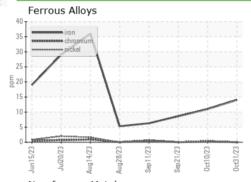


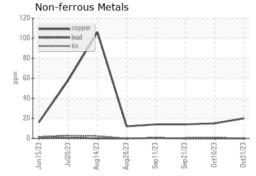


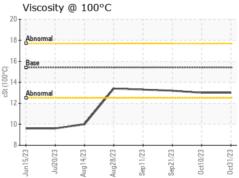
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

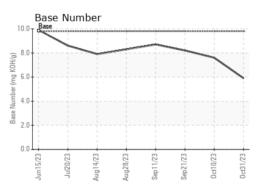
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.0	13.0	13.2

GRAPHS













Certificate L2367

Laboratory Sample No.

Lab Number Unique Number : 10727020 Test Package : FLEET

: GFL0088084 : 05998660

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 06 Nov 2023 Diagnosed

: 06 Nov 2023 Diagnostician : Wes Davis

GFL Environmental - 820 - Joplin Hauling

3700 West 7th Street Joplin, MO US 64801

Contact: James Jarrett jjarrett@gflenv.com

T: (417)310-2802

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)