

OIL ANALYSIS REPORT

(62A0X10) ALEXANDER CITY 711006

Component

Diesel Engine

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

tv6022 Jan5023 Feb/023 Mar6023 Apr6023 Jun5023 Aug8023 Oct6023 Feb/024

Sample Rating Trend



DIAGNOSIS

Recommendation

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

Wear

All component wear rates are normal.

Contamination

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

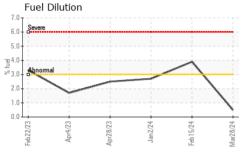
Fluid Condition

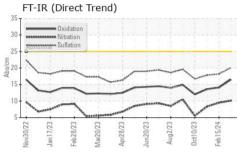
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

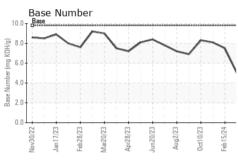
āAL)						
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0089930	GFL0080713	GFL0080723
Sample Date		Client Info		28 Mar 2024	15 Feb 2024	02 Jan 2024
Machine Age	hrs	Client Info		6197	5937	5853
Oil Age	hrs	Client Info		1755	1495	1411
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	ABNORMAL	ABNORMAL
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	>90	10	44	25
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>2	1	<1	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	8	4
Lead	ppm	ASTM D5185m	>40	0	1	<1
Copper	ppm	ASTM D5185m	>330	7	2	<1
Tin	ppm	ASTM D5185m	>15	0	1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		mathad	limit/base	OLLKKO D‡	history1	history2
ADDITIVES		method	IIIIII/Dase	current	HISTORY	HISTOLYZ
Boron	ppm	ASTM D5185m	0	2	13	13
Boron Barium	ppm		0		•	
Boron		ASTM D5185m	0	2	13	13
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	2	13 0	13
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 0 63	13 0 69	13 0 60
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 0 63 0	13 0 69 <1	13 0 60 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	2 0 63 0 944	13 0 69 <1 997	13 0 60 <1 888
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	2 0 63 0 944 1158	13 0 69 <1 997 1138	13 0 60 <1 888 1041
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	2 0 63 0 944 1158 965	13 0 69 <1 997 1138 1096	13 0 60 <1 888 1041 1016
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	2 0 63 0 944 1158 965 1239	13 0 69 <1 997 1138 1096	13 0 60 <1 888 1041 1016 1198
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	2 0 63 0 944 1158 965 1239 3613	13 0 69 <1 997 1138 1096 1371 3387	13 0 60 <1 888 1041 1016 1198 3107
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	2 0 63 0 944 1158 965 1239 3613	13 0 69 <1 997 1138 1096 1371 3387 history1	13 0 60 <1 888 1041 1016 1198 3107 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	2 0 63 0 944 1158 965 1239 3613 current	13 0 69 <1 997 1138 1096 1371 3387 history1	13 0 60 <1 888 1041 1016 1198 3107 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	2 0 63 0 944 1158 965 1239 3613 current 6	13 0 69 <1 997 1138 1096 1371 3387 history1 9	13 0 60 <1 888 1041 1016 1198 3107 history2 7 24
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	2 0 63 0 944 1158 965 1239 3613 current 6 3	13 0 69 <1 997 1138 1096 1371 3387 history1 9 37 13	13 0 60 <1 888 1041 1016 1198 3107 history2 7 24 10
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 >25 >20 >3.0	2 0 63 0 944 1158 965 1239 3613 current 6 3 2	13 0 69 <1 997 1138 1096 1371 3387 history1 9 37 13 3.9	13 0 60 <1 888 1041 1016 1198 3107 history2 7 24 10
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0	2 0 63 0 944 1158 965 1239 3613 current 6 3 2 0.5	13 0 69 <1 997 1138 1096 1371 3387 history1 9 37 13 ▲ 3.9 history1	13 0 60 <1 888 1041 1016 1198 3107 history2 7 24 10 2.7
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 >25 >20 >3.0 limit/base >6 >20	2 0 63 0 944 1158 965 1239 3613 current 6 3 2 0.5	13 0 69 <1 997 1138 1096 1371 3387 history1 9 37 13 ▲ 3.9 history1 0.6	13 0 60 <1 888 1041 1016 1198 3107 history2 7 24 10 2.7 history2 0.4
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 >25 >20 >3.0 limit/base >6 >20	2 0 63 0 944 1158 965 1239 3613 current 6 3 2 0.5 current 0.5	13 0 69 <1 997 1138 1096 1371 3387 history1 9 37 13 ▲ 3.9 history1 0.6 9.5	13 0 60 <1 888 1041 1016 1198 3107 history2 7 24 10 2.7 history2 0.4 8.3
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 D76145	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >6 >20 >30	2 0 63 0 944 1158 965 1239 3613 current 6 3 2 0.5 current 0.5	13 0 69 <1 997 1138 1096 1371 3387 history1 9 37 13 ▲ 3.9 history1 0.6 9.5 18.2	13 0 60 <1 888 1041 1016 1198 3107 history2 7 24 10 2.7 history2 0.4 8.3 17.8

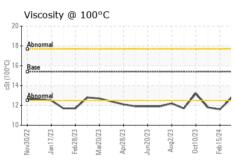


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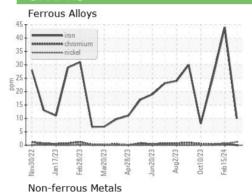


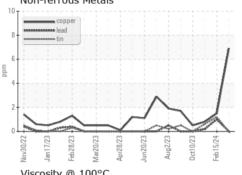


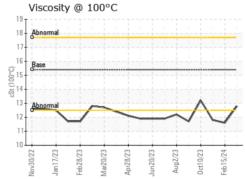
VISUAL		method				history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	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

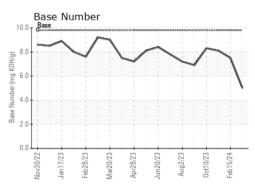
L LOID LUCLI		memou			HISTORY	HISTORYZ
Visc @ 100°C	cSt	ASTM D445	15.4	12.8	<u> </u>	▲ 11.8

GRAPHS













Certificate 12367

Laboratory

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : GFL0089930 Lab Number : 06139734 Unique Number : 10964542

Received **Tested** Diagnosed

: 05 Apr 2024 : 09 Apr 2024

: 09 Apr 2024 - Wes Davis

GFL Environmental - 172 - Montgomery-Alexander City-Tallahassee Multiple Sites Montgomery, AL US 36108 Contact: Lisa Reeves lisa.reeves@gflenv.com

Test Package : FLEET (Additional Tests: PercentFuel) 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) T: (334)946-9566