

OIL ANALYSIS REPORT

GLYCOL

Machine Id 3729 Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (10 GAL)

DIAGNOSIS

Recommendation

Check for low coolant level. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high. Test for glycol is negative.

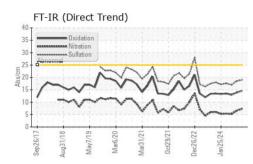
Fluid Condition

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

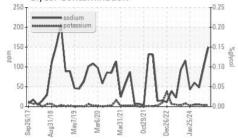
GAL)	p.2017 Aug.2018 May.2019 Mar2020 Mar2021 Oct2021 Dec2022 Jan.2024							
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2		
Sample Number		Client Info		GFL0125894	GFL0125840	GFL0118658		
Sample Date		Client Info		08 Jul 2024	01 Jul 2024	07 May 2024		
Machine Age	hrs	Client Info		18318	18318	18320		
Oil Age	hrs	Client Info		600	39	200		
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd		
Sample Status				ATTENTION	ATTENTION	NORMAL		
CONTAMINAT	ION	method	limit/base	current	history1	history2		
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0		
Water		WC Method	>0.2	NEG	NEG	NEG		
WEAR METAL	S	method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185m	>75	6	6	8		
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1		
Nickel	ppm	ASTM D5185m	>4	0	0	0		
Titanium	ppm	ASTM D5185m	>2	<1	0	0		
Silver	ppm	ASTM D5185m	>2	0	<1	<1		
Aluminum	ppm	ASTM D5185m	>15	4	3	4		
Lead	ppm	ASTM D5185m	>25	0	<1	0		
Copper	ppm	ASTM D5185m	>100	2	2	6		
Tin	ppm	ASTM D5185m	>4	0	0	<1		
Vanadium	ppm	ASTM D5185m		<1	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	history1 0	history2 2		
	ppm ppm							
Boron		ASTM D5185m	0	<1	0	2		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	<1 0	0	2 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	<1 0 65	0 0 64	2 0 59		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	<1 0 65 0	0 0 64 <1	2 0 59 1		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	<1 0 65 0 969	0 0 64 <1 985	2 0 59 1 947		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	<1 0 65 0 969 1108	0 0 64 <1 985 1089	2 0 59 1 947 1026		
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	0 0 60 0 1010 1070 1150	<1 0 65 0 969 1108 1056	0 0 64 <1 985 1089 1153	2 0 59 1 947 1026 1043		
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	0 0 60 0 1010 1070 1150 1270	<1 0 65 0 969 1108 1056 1248	0 0 64 <1 985 1089 1153 1316	2 0 59 1 947 1026 1043 1236		
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	0 0 60 0 1010 1070 1150 1270 2060	<1 0 65 0 969 1108 1056 1248 2923	0 0 64 <1 985 1089 1153 1316 3955 history1 8	2 0 59 1 947 1026 1043 1236 3595		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 1010 1070 1150 1270 2060	<1 0 65 0 969 1108 1056 1248 2923 current	0 0 64 <1 985 1089 1153 1316 3955 history1	2 0 59 1 947 1026 1043 1236 3595 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	0 0 60 1010 1070 1150 1270 2060	<1 0 65 0 969 1108 1056 1248 2923 current 8	0 0 64 <1 985 1089 1153 1316 3955 history1 8 100 3	2 0 59 1 947 1026 1043 1236 3595 history2 5		
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 ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 imit/base >25	<1 0 65 0 969 1108 1056 1248 2923 current 8 150	0 0 64 <1 985 1089 1153 1316 3955 history1 8 100	2 0 59 1 947 1026 1043 1236 3595 history2 5 48		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 imit/base >25	<1 0 65 0 969 1108 1056 1248 2923 current 8 150 4	0 0 64 <1 985 1089 1153 1316 3955 history1 8 100 3	2 0 59 1 947 1026 1043 1236 3595 history2 5 48 5		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D2982	0 0 60 0 1010 1070 1150 1270 2060 imit/base >25 >20	<1 0 65 0 969 1108 1056 1248 2923 current 8 150 4 NEG	0 0 64 <1 985 1089 1153 1316 3955 history1 8 100 3 NEG	2 0 59 1 947 1026 1043 1236 3595 history2 5 48 5 48 5 NEG		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >25 >20	<1 0 65 0 969 1108 1056 1248 2923 current 8 150 4 NEG current	0 0 64 <1 985 1089 1153 1316 3955 history1 8 100 3 NEG history1	2 0 59 1 947 1026 1043 1236 3595 history2 5 48 5 48 5 NEG NEG history2		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm %	ASTM D5185m ASTM D5185m *ASTM D2982 method	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20	<1 0 65 0 969 1108 1056 1248 2923 current 8 150 4 NEG current 0.3	0 0 64 <1 985 1089 1153 1316 3955 history1 8 100 3 NEG history1 0.3	2 0 59 1 947 1026 1043 1236 3595 history2 5 48 5 8 48 5 NEG NEG history2 0.2		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D2982 method *ASTM D7844 *ASTM D7824	0 0 0 1010 1070 1150 1270 2060 2060 225 >220 imit/base >20	<1 0 65 0 969 1108 1056 1248 2923 current 8 150 4 NEG 0.3 7.3	0 0 64 <1 985 1089 1153 1316 3955 history1 8 100 3 NEG NEG history1 0.3 6.6	2 0 59 1 947 1026 1043 1236 3595 history2 5 48 5 NEG NEG history2 0.2 5.2		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D2982 method *ASTM D7844 *ASTM D7824	0 0 0 1010 1070 1150 1270 2060 Imit/base >25 >20 Imit/base >20 S	<1 0 65 0 969 1108 1056 1248 2923 current 8 150 4 NEG current 0.3 7.3 19.0	0 0 64 <1 985 1089 1153 1316 3955 history1 8 100 3 NEG history1 0.3 6.6 18.5	2 0 59 1 947 1026 1043 1236 3595 history2 5 48 5 NEG history2 0.2 5.2 17.0		

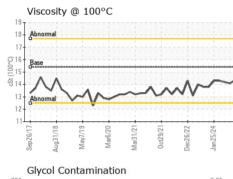


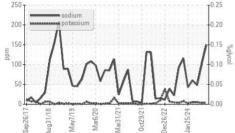
OIL ANALYSIS REPORT



Glycol Contamination

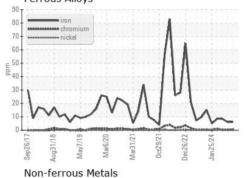


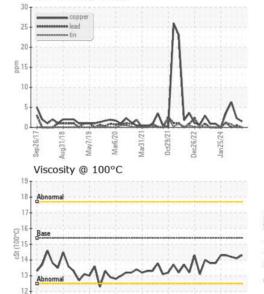


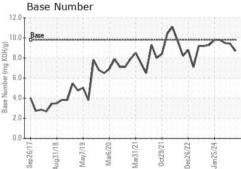


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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 PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.3	14.1	14.2
GRAPHS						

Ferrous Alloys







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 166 - Phenix City Sample No. : GFL0125894 Received : 12 Jul 2024 18 Old Brickyard Rd Lab Number : 06234533 Tested : 16 Jul 2024 Phenix City, AL Unique Number : 11123367 Diagnosed : 16 Jul 2024 - Sean Felton US 36869 Test Package : FLEET (Additional Tests: Glycol) Contact: DEAN PEACE JR Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. dean.peace@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Т: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

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Anch 70

Dec26/72

Jan 25/24

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Sep26/17

Submitted By: DEAN PEACE JR Page 2 of 2

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