

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



ALEXANDER CITY Machine Id 10610

PETRO CANADA DURON SHP 15W40 (7 GAL)





SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0081918	GFL0057630	GFL0042671
Sample Date		Client Info		18 Aug 2023	16 Feb 2023	04 Feb 2022
Machine Age	hrs	Client Info		22565	76238	19746
Oil Age	hrs	Client Info		22565	21970	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	ATTENTION	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	2 .9
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	mag	ASTM D5185m	>75	19	22	47
Chromium	ppm	ASTM D5185m	>5	2	2	2
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	6	2	<1
Lead	ppm	ASTM D5185m	>25	0	<1	2
Copper	ppm	ASTM D5185m	>100	2	1	1
Tin	ppm	ASTM D5185m	>4	<1	0	<1
Antimony	ppm	ASTM D5185m				0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	19	20	13
Barium		ASTM D5185m	0	0	0	0
	ppm	AOTIVI DOTODITI	0	0	0	0
Molybdenum	ppm ppm	ASTM D5185m	60	73	72	153
Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m	60 0	73 <1	72 <1	153 <1
Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010	73 <1 947	72 <1 795	153 <1 862
Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070	73 <1 947 1184	72 <1 795 1091	153 <1 862 1290
Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150	73 <1 947 1184 1093	0 72 <1 795 1091 1001	0 153 <1 862 1290 973
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270	73 <1 947 1184 1093 1311	0 72 <1 795 1091 1001 1151	0 153 <1 862 1290 973 1187
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	60 0 1010 1070 1150 1270 2060	73 <1 947 1184 1093 1311 3700	0 72 <1 795 1091 1001 1151 2708	0 153 <1 862 1290 973 1187 2400
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base	0 73 <1 947 1184 1093 1311 3700 current	0 72 <1 795 1091 1001 1151 2708 history1	0 153 <1 862 1290 973 1187 2400 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25	0 73 <1 947 1184 1093 1311 3700 current 20	0 72 <1 795 1091 1001 1151 2708 history1 8	0 153 <1 862 1290 973 1187 2400 history2 24
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >25	0 73 <1 947 1184 1093 1311 3700 current 20 54	0 72 <1 795 1091 1001 1151 2708 history1 8 & 155	0 153 <1 862 1290 973 1187 2400 history2 24 ▲ 1319
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20	0 73 <1 947 1184 1093 1311 3700 current 20 54 2	0 72 <1 795 1091 1001 1151 2708 history1 8 ▲ 155 5	0 153 <1 862 1290 973 1187 2400 history2 24 ▲ 1319 4
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	0 73 <1 947 1184 1093 1311 3700 current 20 54 2 current	0 72 <1 795 1091 1001 1151 2708 history1 8 ▲ 155 5 history1	0 153 <1 862 1290 973 1187 2400 history2 24 ▲ 1319 4 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6	0 73 <1 947 1184 1093 1311 3700 current 20 54 2 current 0.5	0 72 <1 795 1091 1001 1151 2708 history1 8 8 155 5 5 history1 0.5	0 153 <1 862 1290 973 1187 2400 history2 24 ▲ 1319 4 history2 1.5
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	AGTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	0 73 <1 947 1184 1093 1311 3700 current 20 54 2 current 0.5 7.9	0 72 <1 795 1091 1001 1151 2708 history1 8 ▲ 155 5 history1 0.5 7.7	0 153 <1 862 1290 973 1187 2400 history2 24 ▲ 1319 4 history2 1.5 14.3
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM DS185m ASTM D5185m ASTM D7624 *ASTM D7624	60 0 1010 1070 1150 1270 2060 limit/base >20 limit/base >20 >20 >30	0 73 <1 947 1184 1093 1311 3700 current 20 54 2 current 0.5 7.9 19.1	0 72 <1 795 1091 1001 1151 2708 history1 8 ▲ 155 5 5 history1 0.5 7.7 19.0	0 153 <1 862 1290 973 1187 2400 history2 24 ▲ 1319 4 history2 1.5 14.3 26.7
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm % Abs/cm Abs/1mm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415 method	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6 >20 >30	c 73 <1 947 1184 1093 1311 3700 current 20 54 2 current 0.5 7.9 19.1 current	0 72 <1 795 1091 1001 1151 2708 history1 8 ▲ 155 5 history1 0.5 7.7 19.0 history1	0 153 <1 862 1290 973 1187 2400 187 2400 1319 4 1319 4 history2 1.5 14.3 26.7 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	ASTM DS185m ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7414	60 0 1010 1070 1150 1270 2060 limit/base >25 20 limit/base >6 >20 >30 limit/base >25	0 73 <1 947 1184 1093 1311 3700 current 20 54 2 current 0.5 7.9 19.1 current 13.9	0 72 <1 795 1091 1001 1151 2708 history1 8 ▲ 155 5 5 history1 0.5 7.7 19.0 history1 13.8	0 153 <1 862 1290 973 1187 2400 history2 24 ▲ 1319 4 history2 1.5 14.3 26.7 history2 21.0

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.



OIL ANALYSIS REPORT





White Metal Yellow Metal					-	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	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	NORM
Odor	scalar	*Visual	NORML	NORML	NORML	NORM
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	histor
Visc @ 100°C	cSt	ASTM D445	15.4	13.4	13.3	12.8
GRAPHS						
Ferrous Alloys						
iron			1			
0 - nickel		Λ	A			
		MAD	N			
0 -		11114	11			
The second second		NIVI	11			
0						
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16/18 11/18 24/19	02/62	ct5/20 -				
May16/17	Apr29/20	Oct5/20				
Bull Brite B	Apr29/20	Oct5/20 A Apr5/21 &				
Non-ferrous Metal	Apr29/20	Oct5/20 Apr5/21 Dec6/21				
Copper States St	Apr29/20	0ct5/20 B Apr5/21 B				
0 0 0 0 0 0 0 0 0 0 0 0 0 0	Apr29/20	0ct5/20 Apr5/21 Apr5/2				
0 0 0 0 0 0 0 0 0 0 0 0 0 0	90230200 S	0ct5/20 B Apr6/21 A Dec6/21 B				
0 0 0 0 0 0 0 0 0 0 0 0 0 0	ozieział s	Oct5/20 Apr6/21 Apr6/2				
Non-ferrous Metal	oziczioły s	Oct5/20 Apr6/21 Apr6/2				
0 0 0 0 0 0 0 0 0 0 0 0 0 0	OZIEZUNY S	0ct5/20 Apr5/21				
Non-ferrous Metal	ociezade S	Apris/2014				
Non-ferrous Metal	50 Horizano	20 0 0ct5/20 0 221 Ap6/21 4 001 0 0ct6/21 4				
entitions abilition	Apri29/20	0d5/20 0 0d5				
Non-ferrous Metal Regi (PU) Regi (PU) Reg	Api23/20	0d5/20 0 Apr5/21 Apr5/21 Apr5/				
Viscosity @ 100°C	Apr23/20	0ct5/20 + 0ct5/20 = 0ct5/20 = 4pt5/21 + Apt5/21 + Apt5/2		Base Number		
Non-ferrous Metal	Apr29/20	0et5/20 0 Apr5/21 Apr5/21 Apr5		Base Number		
Club Club Club Club Club Club Club Club	Apr29/20	0et5/20 0 Apr5/21 Apr5/21 Apr5		Base Number		
Club Club Club Club Club Club Club Club	Apr29/20	Apr5/20 - Oct5/20 - Oct5/2	14.0 12.0 ਉਹ 10.0	Base Number		
CUVBURE Non-ferrous Metal Superior Super- Su	Apr29/20	0d5/20 0 Apr5/21 Apr5/21 Apr5/	14.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12	Base Number	~~~~~	~~~~)

2.0

0.0

May16/17

Dec11/18

Sep24/19

Feb 16/18



Test Package : FLEET Certificate L2367 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)

0ct5/20 .

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

Received

Diagnosed

Apr5/21

Diagnostician : Wes Davis

Dec6/21

: 24 Aug 2023

: 25 Aug 2023

12 11

Laboratory Sample No.

Lab Number

Unique Number : 10619461

May16/17

Feb16/18

: GFL0081918

: 05934190

Dec11/18 Sep 24/19 pr29/20

Contact: BRANDON HURST

brandonhurst@gflenv.com

0ct5/20 -Apr5/21.

GFL Environmental - 172 - Montgomery-Alexander City-Tallahassee

Dec6/21

Multiple Sites

T:

F:

Montgomery, AL US 36108

Apr29/20