

# **OIL ANALYSIS REPORT**

Sample Rating Trend

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## NORMAL

## Machine Id 2607C Component Natural Gas Engine Fluid

PETRO CANADA DURON GEO LD 15W40 (40 GAL)

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

#### Wear

Area

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.

Sample NumberClient InfoGFL0199666GFL0192704GFL00220127 Jun 2023Machine AgehrsClient Info01808518085Oil AgehrsClient Info01808518085Oil AgehrsClient InfoN/AN/AChangedSample StatusIClient InfoN/AN/AN/AN/ACONTAMINATIONmethodinit/basecurrenthistory1history2WaterWC Methols/A123ContromiumppmASTM 05155s/A412IronppmASTM 05155s/A001SilverppmASTM 05155s/A000AluminumppmASTM 05155s/A000AluminumppmASTM 05155s/A11-1LeadppmASTM 05155s/A000AdminumppmASTM 05155s/A30-1SilverppmASTM 05155s/A30-1CopperppmASTM 05155s/A30-1ASTM 051555/A18221-1LeadppmASTM 05155s/A30-1ASTM 05155s/A30-1-1-1LeadppmASTM 05155s/A30-1ASTM 05155s/A30	SAMPLE INFORM	<b>/</b> ATION	method	limit/base	current	history1	history2
Machine Age     hrs     Client Info     0     18085     18085       Oil Age     irrs     Client Info     0     652     606       Oil Changed     Client Info     N/A     N/A     N/A     Changed       Sample Status     Imit/base     current     History1     History2       Water     WC Method     >0.1     NEG     NEG     NEG       Wetar     method     Imit/base     current     History1     History2       Iron     ppm     ASTM D5185m     >50     18     37     25       Chromium     ppm     ASTM D5185m     >4     <1     0     <1       Titanium     ppm     ASTM D5185m     >3     0     0     <1       Silver     ppm     ASTM D5185m     >3     0     <1     <1     <1       Lead     ppm     ASTM D5185m     >3     0     <10     <10     <10       Copper     ppm     ASTM D5185m     >50     18     2     2     11<	Sample Number		Client Info		GFL0109666	GFL0092704	GFL0072401
Oil Age     Inrs     Client Info     N/A     K/A     K/A     K/A     K/A     Changed       Sample Status     Image     Client Info     N/A     NORMAL     NORMAL     NORMAL       CONTAMINATION     method     imil/base     current     history1     history2       Water     WC Method     >0.1     NEG     NEG     NEG       WEAR METALS     method     imil/base     current     history1     history2       Iron     ppm     ASTM D5185m     >4     <1     2     3       Nickel     ppm     ASTM D5185m     >2     0     1     <1     1       Itanium     ppm     ASTM D5185m     >2     0     1     <1     1     <1       Lead     ppm     ASTM D5185m     >3     0     0     <1     <1     <1       Lead     ppm     ASTM D5185m     >30     0     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1     <1 </th <th>Sample Date</th> <th></th> <th>Client Info</th> <th></th> <th>09 Apr 2024</th> <th>26 Oct 2023</th> <th>27 Jun 2023</th>	Sample Date		Client Info		09 Apr 2024	26 Oct 2023	27 Jun 2023
Oil Changed Sample Status     Client Info     N/A     N/A     N/A     Changed NORMAL     NORMAL     NORMAL       CONTAMINATION     method     imit/base     current     history1     history2       Water     WC Method     >0.1     NEG     NEG     NEG       WEAR METALS     method     imit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >50     18     37     25       Chromium     ppm     ASTM D5185m     >2     0     1     1       Titanium     ppm     ASTM D5185m     >2     0     0     0       Silver     ppm     ASTM D5185m     >3     0     <1     1     <1       Lead     ppm     ASTM D5185m     >3     18     2     2     1       Lead     ppm     ASTM D5185m     >4     3     0     <1     1       Vanadium     ppm     ASTM D5185m     >50     10     32     14       Barinum	Machine Age	hrs	Client Info		0	18085	18085
Sample Status     Image     NORMAL     NORMAL     NORMAL       CONTAMINATION     method     imit/base     current     history1     history2       Water     WC Method     >0.1     NEG     NEG     NEG       Wetar     wC Method     >0.1     NEG     NEG     NeG       Iron     ppm     ASTM D5185m     >50     18     37     25       Chromium     ppm     ASTM D5185m     >2     0     1     <1       Nickel     ppm     ASTM D5185m     >2     0     0     0       Aluminum     ppm     ASTM D5185m     >3     0     0     1     <1       Lead     ppm     ASTM D5185m     >30     0     <1     <1       Lead     ppm     ASTM D5185m     >30     0     <1     <1       Lead     ppm     ASTM D5185m     >30     0     <1     <1       Lead     ppm     ASTM D5185m     >4     3     0     <1       Van	Oil Age	hrs	Client Info		0	652	606
Sample Status     Image     NORMAL     NORMAL     NORMAL       CONTAMINATION     method     imit/base     current     history1     history2       Water     WC Method     >0.1     NEG     NEG     NEG       Wetar     wC Method     >0.1     NEG     NEG     NeG       Iron     ppm     ASTM D5185m     >50     18     37     25       Chromium     ppm     ASTM D5185m     >2     0     1     <1       Nickel     ppm     ASTM D5185m     >2     0     0     0       Aluminum     ppm     ASTM D5185m     >3     0     0     1     <1       Lead     ppm     ASTM D5185m     >30     0     <1     <1       Lead     ppm     ASTM D5185m     >30     0     <1     <1       Lead     ppm     ASTM D5185m     >30     0     <1     <1       Lead     ppm     ASTM D5185m     >4     3     0     <1       Van	Oil Changed		Client Info		N/A	N/A	Changed
Water   WC Method   >0.1   NEG   NEG   NEG     WEAR METALS   ppm   ASTM 05185m   >50   18   37   25     Iron   ppm   ASTM 05185m   >50   18   37   25     Ohromium   ppm   ASTM 05185m   >2   0   1   <1     Nickel   ppm   ASTM 05185m   >2   0   1   <1     Silver   ppm   ASTM 05185m   >3   0   0   0     Aluminum   ppm   ASTM 05185m   >3   0   <1   1   1     Lead   ppm   ASTM 05185m   >30   0   <1   0   0     Vanadium   ppm   ASTM 05185m   >4   3   0   <1   0     Vanadium   ppm   ASTM 05185m   >4   3   0   <1   0     Vanadium   ppm   ASTM 05185m   50   10   32   14     Barium   ppm   ASTM 05185m   50   53   53   51   14     Barium   ppm   <	Sample Status				NORMAL	NORMAL	NORMAL
WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >50     18     37     25       Chromium     ppm     ASTM D5185m     >4     <1     2     3       Nickel     ppm     ASTM D5185m     >2     0     1     <1       Titanium     ppm     ASTM D5185m     >3     0     0     <1       Silver     ppm     ASTM D5185m     >3     0     <1     <1       Lead     ppm     ASTM D5185m     >9     1     1     <1     <1       Lead     ppm     ASTM D5185m     >9     18     2     2        Tin     ppm     ASTM D5185m     >3     0     <1     <1        Vanadium     ppm     ASTM D5185m     0     0     <1     0        Vanadium     ppm     ASTM D5185m     50     10     32     14       Barium     ppm     ASTM D5185m<	CONTAMINATI	ON	method	limit/base	current	history1	history2
Iron     ppm     ASTM D5185m     >50     18     37     25       Chromium     ppm     ASTM D5185m     >4     <1     2     3       Nickel     ppm     ASTM D5185m     >2     0     1     <1       Titanium     ppm     ASTM D5185m     >3     0     0     <1       Silver     ppm     ASTM D5185m     >3     0     <1     <1       Lead     ppm     ASTM D5185m     >30     0     <1     <1       Copper     ppm     ASTM D5185m     >30     0     <1     <1       Cadmium     ppm     ASTM D5185m     >30     0     <1     <1       Cadmium     ppm     ASTM D5185m     >4     3     0     <1     0       Cadmium     ppm     ASTM D5185m     50     10     32     14       Baron     ppm     ASTM D5185m     50     53     53     51       Mangaese     ppm     ASTM D5185m     50     34	Water		WC Method	>0.1	NEG	NEG	NEG
Chromium     ppm     ASTM D5185m     >4     <1	WEAR METALS	S	method	limit/base	current	history1	history2
Nickel     ppm     ASTM D5185m     >2     0     1     <1	Iron	ppm	ASTM D5185m	>50	18	37	25
Titanium     ppm     ASTM D5185m     <1	Chromium	ppm	ASTM D5185m	>4	<1	2	3
Silver     ppm     ASTM D5185m     >3     0     0     0       Aluminum     ppm     ASTM D5185m     >9     1     1     <1       Lead     ppm     ASTM D5185m     >30     0     <1     <1       Copper     ppm     ASTM D5185m     >35     18     2     2       Tin     ppm     ASTM D5185m     >4     3     0     <1       Vanadium     ppm     ASTM D5185m     >4     3     0     <1       Cadmium     ppm     ASTM D5185m     0     0     <10     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     50     53     53     51       Manganese     ppm     ASTM D5185m     50     53     550     50       Calcium     ppm     ASTM D5185m     780     1004     778     749       Zinc     ppm     ASTM D5185m     2040     3524     2742<	Nickel	ppm	ASTM D5185m	>2	0	1	<1
Aluminum     ppm     ASTM D5185m     >9     1     1     <1	Titanium	ppm	ASTM D5185m		<1	0	<1
Lead     ppm     ASTM D5185m     >30     0     <1	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper     ppm     ASTM D5185m     >43     18     2     2       Tin     ppm     ASTM D5185m     >4     3     0     <1       Vanadium     ppm     ASTM D5185m     >4     3     0     <1       Vanadium     ppm     ASTM D5185m     0     0     0     0       Cadmium     ppm     ASTM D5185m     0     10     32     14       Barium     ppm     ASTM D5185m     50     53     53     51       Barium     ppm     ASTM D5185m     50     53     53     55       Magnesium     ppm     ASTM D5185m     50     846     555     550       Calcium     ppm     ASTM D5185m     780     1004     778     749       Zinc     ppm     ASTM D5185m     780     1004     778     749       Sulfur     ppm     ASTM D5185m     740     3524     2742     2697       CONTAMINANTS     method     imit/base     current	Aluminum	ppm	ASTM D5185m	>9	1	1	<1
Tin     ppm     ASTM D5185m     >4     3     0     <1	Lead	ppm	ASTM D5185m	>30	0	<1	<1
Vanadium     ppm     ASTM D5185m     0     0     0       Cadmium     ppm     ASTM D5185m     0     <1     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     50     10     32     14       Barium     ppm     ASTM D5185m     50     53     53     51       Magnaese     ppm     ASTM D5185m     50     53     55     550       Calcium     ppm     ASTM D5185m     560     846     555     550       Calcium     ppm     ASTM D5185m     780     1004     778     749       Zinc     ppm     ASTM D5185m     780     1004     778     749       Sulfur     ppm     ASTM D5185m     2040     3524     2742     2697       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >20     2     1     <	Copper	ppm	ASTM D5185m	>35	18	2	2
Cadmium     ppm     ASTM D5185m     0     <1	Tin	ppm	ASTM D5185m	>4	3	0	<1
ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     50     10     32     14       Barium     ppm     ASTM D5185m     50     2     0     0       Molybdenum     ppm     ASTM D5185m     50     53     53     51       Manganese     ppm     ASTM D5185m     60     846     555     550       Calcium     ppm     ASTM D5185m     780     1004     778     749       Zinc     ppm     ASTM D5185m     780     1004     778     749       Sulfur     ppm     ASTM D5185m     780     1004     778     749       Sulfur     ppm     ASTM D5185m     740     3524     2742     2697       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >+100     36     17     7       Sodium     ppm     ASTM D5185m     >20	Vanadium	ppm	ASTM D5185m		0	0	0
Boron     ppm     ASTM D5185m     50     10     32     14       Barium     ppm     ASTM D5185m     5     2     0     0       Molybdenum     ppm     ASTM D5185m     50     53     53     51       Manganese     ppm     ASTM D5185m     0     3     0     <1       Magnesium     ppm     ASTM D5185m     560     846     555     550       Calcium     ppm     ASTM D5185m     1510     1161     1445     1436       Phosphorus     ppm     ASTM D5185m     780     1004     778     749       Zinc     ppm     ASTM D5185m     780     1004     778     749       Sulfur     ppm     ASTM D5185m     2040     3524     2742     2697       CONTAMINANTS     method     imit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >+100     36     17     7       Sodium     ppm     ASTM D5185m     >20<	Cadmium	ppm	ASTM D5185m		0	<1	0
Barium     ppm     ASTM D5185m     5     2     0     0       Molybdenum     ppm     ASTM D5185m     50     53     53     51       Manganese     ppm     ASTM D5185m     0     3     0     <1       Magnesium     ppm     ASTM D5185m     560     846     555     550       Calcium     ppm     ASTM D5185m     560     846     555     550       Calcium     ppm     ASTM D5185m     560     846     555     550       Calcium     ppm     ASTM D5185m     780     1004     778     749       Zinc     ppm     ASTM D5185m     780     1107     911     947       Sulfur     ppm     ASTM D5185m     2040     3524     2742     2697       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >+100     36     17     7       Sodium     ppm     ASTM D5185m     >20<							
Molybdenum     ppm     ASTM D5185m     50     53     53     51       Manganese     ppm     ASTM D5185m     0     3     0     <1       Magnesium     ppm     ASTM D5185m     560     846     555     550       Calcium     ppm     ASTM D5185m     1510     1161     1445     1436       Phosphorus     ppm     ASTM D5185m     780     1004     778     749       Zinc     ppm     ASTM D5185m     870     1177     911     947       Sulfur     ppm     ASTM D5185m     2040     3524     2742     2697       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >+100     36     17     7       Sodium     ppm     ASTM D5185m     >20     2     2     1       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     'ASTM D7844	ADDITIVES		method	limit/base	current	history1	history2
Manganese     ppm     ASTM D5185m     0     3     0     <1		ppm				· · · · · ·	
Magnesium     ppm     ASTM D5185m     560     846     555     550       Calcium     ppm     ASTM D5185m     1510     1161     1445     1436       Phosphorus     ppm     ASTM D5185m     780     1004     778     749       Zinc     ppm     ASTM D5185m     870     1177     911     947       Sulfur     ppm     ASTM D5185m     2040     3524     2742     2697       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >+100     36     17     7       Sodium     ppm     ASTM D5185m     >20     2     2     1       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     0     0.1     0.1       Nitration     Abs/.mm     *ASTM D7624     >20     5.5     9.5     9.5       Sulfation     Abs/.lmm     *ASTM D7415     >30<	Boron		ASTM D5185m	50	10	32	14
Calcum     ppm     ASTM D5185m     1510     1161     1445     1436       Phosphorus     ppm     ASTM D5185m     780     1004     778     749       Zinc     ppm     ASTM D5185m     870     1177     911     947       Sulfur     ppm     ASTM D5185m     870     1177     911     947       Sulfur     ppm     ASTM D5185m     2040     3524     2742     2697       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >+100     36     17     7       Sodium     ppm     ASTM D5185m     >20     2     2     1       NFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7624     >20     5.5     9.5     9.5       Sulfation     Abs/.1m     *ASTM D7624     >20     5.5     9.5     9.5       Sulfation     Abs/.1m     *ASTM D7415 <th>Boron Barium</th> <th>ppm</th> <th>ASTM D5185m ASTM D5185m</th> <th>50 5</th> <th>10 2</th> <th>32 0</th> <th>14 0</th>	Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5	10 2	32 0	14 0
Phosphorus     ppm     ASTM D5185m     780     1004     778     749       Zinc     ppm     ASTM D5185m     870     1177     911     947       Sulfur     ppm     ASTM D5185m     2040     3524     2742     2697       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >+100     36     17     7       Sodium     ppm     ASTM D5185m     >+100     36     17     7       Sodium     ppm     ASTM D5185m     >20     2     2     1       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7624     >20     5.5     9.5     9.5       Sulfation     Abs/.m     *ASTM D7624     >20     5.5     9.5     9.5       Sulfation     Abs/.1m     *ASTM D7624     >20     5.5     9.5     9.5       Sulfation     Abs/.1m     *ASTM D7415 <th>Boron Barium Molybdenum</th> <th>ppm ppm</th> <th>ASTM D5185m ASTM D5185m ASTM D5185m</th> <th>50 5 50</th> <th>10 2 53</th> <th>32 0 53</th> <th>14 0 51</th>	Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	10 2 53	32 0 53	14 0 51
Zinc     ppm     ASTM D5185m     870     1177     911     947       Sulfur     ppm     ASTM D5185m     2040     3524     2742     2697       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >+100     36     17     7       Sodium     ppm     ASTM D5185m     >+100     36     17     7       Sodium     ppm     ASTM D5185m     >20     2     1     5       Potassium     ppm     ASTM D5185m     >20     2     1     1       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7624     >20     5.5     9.5     9.5       Sulfation     Abs/cm     *ASTM D7624     >20     5.5     9.5     9.5       Sulfation     Abs/.1mm     *ASTM D7415     >30     17.8     17.9     21.5       FLUID DEGRADATION     method     limit/base </th <th>Boron Barium Molybdenum Manganese</th> <th>ppm ppm ppm</th> <th>ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m</th> <th>50 5 50 0</th> <th>10 2 53 3</th> <th>32 0 53 0</th> <th>14 0 51 &lt;1</th>	Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	10 2 53 3	32 0 53 0	14 0 51 <1
Sulfur     ppm     ASTM D5185m     2040     3524     2742     2697       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >+100     36     17     7       Sodium     ppm     ASTM D5185m     >+100     36     17     7       Sodium     ppm     ASTM D5185m     >20     2     1     5       Potassium     ppm     ASTM D5185m     >20     2     1     1       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7624     >20     5.5     9.5     9.5       Sulfation     Abs/cm     *ASTM D7624     >20     5.5     9.5     9.5       Sulfation     Abs/.1mm     *ASTM D7415     >30     17.8     17.9     21.5       Cxidation     Abs/.1mm     *ASTM D7741     >25     13.6     16.1     17.5	Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	10 2 53 3 846	32 0 53 0 555	14 0 51 <1 550
CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >+100     36     17     7       Sodium     ppm     ASTM D5185m     >+100     36     17     7       Sodium     ppm     ASTM D5185m     >20     2     2     1       Potassium     ppm     ASTM D5185m     >20     2     2     1       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7644     0     0.1     0.1       Nitration     Abs/cm     *ASTM D7624     >20     5.5     9.5     9.5       Sulfation     Abs/.tmm     *ASTM D7615     >30     17.8     17.9     21.5       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.tmm     *ASTM D7614     >25     13.6     16.1     17.5	Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510	10 2 53 3 846 1161	32 0 53 0 555 1445	14 0 51 <1 550 1436
Silicon     ppm     ASTM D5185m     >+100     36     17     7       Sodium     ppm     ASTM D5185m     5     <1	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	50 5 50 0 560 1510 780	10 2 53 3 846 1161 1004	32 0 53 0 555 1445 778	14 0 51 <1 550 1436 749
Sodium     ppm     ASTM D5185m     5     <1	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870	10 2 53 3 846 1161 1004 1177	32 0 53 0 555 1445 778 911	14 0 51 <1 550 1436 749 947
Potassium     ppm     ASTM D5185m     >20     2     2     1       INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     0     0.1     0.1       Nitration     Abs/cm     *ASTM D7624     >20     5.5     9.5     9.5       Sulfation     Abs/.1mm     *ASTM D7415     >30     17.8     17.9     21.5       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     13.6     16.1     17.5	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040	10 2 53 3 846 1161 1004 1177 3524	32 0 53 0 555 1445 778 911 2742	14 0 51 <1 550 1436 749 947 2697
INFRA-RED     method     limit/base     current     history1     history2       Soot %     %     *ASTM D7844     0     0.1     0.1       Nitration     Abs/cm     *ASTM D7624     >20     5.5     9.5     9.5       Sulfation     Abs/.tmm     *ASTM D7415     >30     17.8     17.9     21.5       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.tmm     *ASTM D7414     >25     13.6     16.1     17.5	Boron Barium 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	50 5 50 0 560 1510 780 870 2040 <b>limit/base</b>	10 2 53 3 846 1161 1004 1177 3524 current	32 0 53 0 555 1445 778 911 2742 history1	14 0 51 <1 550 1436 749 947 2697 history2
Soot %     %     *ASTM D7844     0     0.1     0.1       Nitration     Abs/cm     *ASTM D7624     >20     5.5     9.5     9.5       Sulfation     Abs/.1mm     *ASTM D7415     >30     17.8     17.9     21.5       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     13.6     16.1     17.5	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 50 50 560 1510 780 870 2040 >+100	10 2 53 3 846 1161 1004 1177 3524 current 36	32 0 53 0 555 1445 778 911 2742 history1 17	14 0 51 <1 550 1436 749 947 2697 history2 7
Nitration     Abs/cm     *ASTM D7624     >20     5.5     9.5     9.5       Sulfation     Abs/.1mm     *ASTM D7415     >30     17.8     17.9     21.5       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     13.6     16.1     17.5	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 2040 2040 2040	10 2 53 3 846 1161 1004 1177 3524 current 36 5	32 0 53 0 555 1445 778 911 2742 history1 17 <1	14 0 51 <1 550 1436 749 947 2697 <b>history2</b> 7 5
Sulfation     Abs/.1mm     *ASTM D7415     >30     17.8     17.9     21.5       FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     13.6     16.1     17.5	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 <b>limit/base</b> >+100	10 2 53 3 846 1161 1004 1177 3524 <i>current</i> 36 5 2	32 0 53 0 555 1445 778 911 2742 history1 17 17 <1 2	14 0 51 <1 550 1436 749 947 2697 history2 7 5 1
FLUID DEGRADATION method limit/base current history1 history2   Oxidation Abs/.1mm *ASTM D7414 >25 13.6 16.1 17.5	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 <b>limit/base</b> >+100	10 2 53 3 846 1161 1004 1177 3524 current 36 5 2 2 current	32 0 53 0 555 1445 778 911 2742 history1 17 <1 2 2 history1	14 0 51 <1 550 1436 749 947 2697 history2 7 5 1 1 history2
Oxidation Abs/.1mm *ASTM D7414 >25 13.6 16.1 17.5	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 <b>Imit/base</b> >2040 >-+100	10 2 53 3 846 1161 1004 1177 3524 <i>current</i> 36 5 2 2 <i>current</i> 0	32 0 53 0 555 1445 778 911 2742 history1 17 <1 2 2 history1 0.1	14 0 51 <1 550 1436 749 947 2697 history2 7 5 1 1 history2 0.1
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 <b>limit/base</b> >+100 >20 <b>limit/base</b>	10 2 53 3 846 1161 1004 1177 3524 current 36 5 2 current 0 5.5	32 0 53 0 555 1445 778 911 2742 history1 17 <17 2 history1 0.1 9.5	14 0 51 <1 550 1436 749 947 2697 history2 7 5 1 5 1 history2 0.1 9.5
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm rS ppm ppm ppm ppm spm ppm ppm spm	ASTM D5185m ASTM D5185m	50 50 50 150 1510 780 870 2040 <b>imit/base</b> >20 <b>imit/base</b> >20 <b>imit/base</b>	10 2 53 3 846 1161 1004 1177 3524 <u>current</u> 36 5 2 <u>current</u> 0 5.5 17.8	32 0 53 0 555 1445 778 911 2742 history1 17 <1 2 2 history1 0.1 9.5 17.9	14 0 51 <1 550 1436 749 947 2697 history2 7 5 1 1 history2 0.1 9.5 21.5
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	50 50 560 1510 780 870 2040 imit/base >+100 220 imit/base >20 30	10 2 53 3 846 1161 1004 1177 3524 <i>current</i> 36 5 2 <i>current</i> 0 5.5 17.8 <i>current</i>	32 0 53 0 555 1445 778 911 2742 history1 17 <17 2 history1 0.1 9.5 17.9 history1	14 0 51 <1 550 1436 749 947 2697 history2 7 5 1 5 1 history2 0.1 9.5 21.5 history2



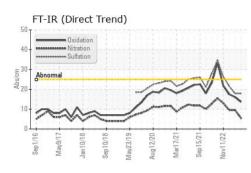
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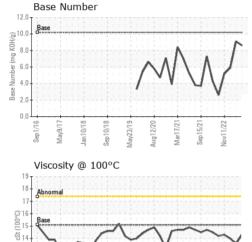
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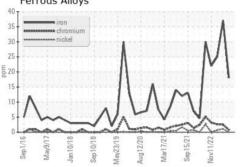
# **OIL ANALYSIS REPORT**

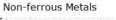




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	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	15.1	14.3	13.57	14.0
GRAPHS						

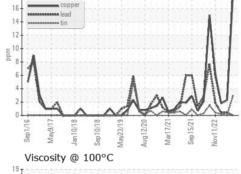
Ferrous Alloys

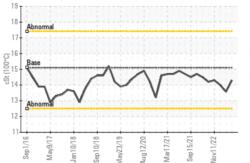


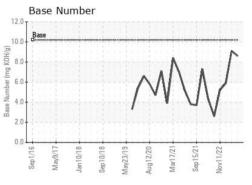


Nov11/22

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Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 005 - Wilson/Tri-East(CNG) Sample No. : GFL0109666 Received : 22 Apr 2024 2810 Contentnea Road S Lab Number : 06155627 Tested : 23 Apr 2024 Wilson, NC Unique Number : 10991050 Diagnosed : 24 Apr 2024 - Don Baldridge US 27893-8501 Test Package : FLEET Contact: SPENCER LIGGON Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. spencer.liggon@gflenv.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (800)207-6618 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Report Id: GFL005 [WUSCAR] 06155627 (Generated: 04/24/2024 11:54:52) Rev: 1

Submitted By: WALTER SKOKOWSKI