

# **OIL ANALYSIS REPORT**

#### Sample Rating Trend

NORMAL

# Machine Id 10628

Component

Diesel Engine

## PETRO CANADA DURON SHP 15W40 (28 QTS)

## 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.

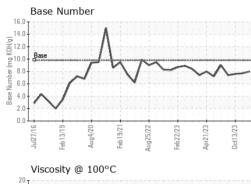
### Fluid Condition

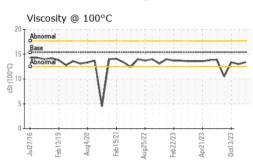
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Date         Client Info         03 Nov 2023         27 Oct 2023         13 Oct 2023           Machine Age         hrs         Client Info         20191         20070         20000           Oil Age         hrs         Client Info         0         0         0         0           Oil Changed         Client Info         Not Changd         Changed         Not Changd         Not Changd           Sample Status         NORMAL         NORMAL         NORMAL         NORMAL         NORMAL           Fuel         WC Method         >3.0         <1.0         <1.0         0.8           Glycol         WC Method         Imit/base         current         history1         history1           Fuel         WC Method         Imit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >5         <1         <1         <1           Nickel         ppm         ASTM D5185m         >2         0         0         <1           Silver         ppm         ASTM D5185m         >2         0         0         <1           Copper         ppm         ASTM D5185m         >2         0         0         <1	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Date         Client Info         03 Nov 2023         27 Oct 2023         13 Oct 2023           Machine Age         hrs         Client Info         20191         20070         20000           Oil Age         hrs         Client Info         0         0         0         0           Oil Changed         Client Info         Not Changd         Not Changd         Not Changd         Not Changd           Sample Status         Client Info         Not Changd         Not Changd         Not Changd         Not Changd           Glycol         WC Method         >3.0         <1.0         <1.0         0.8           Glycol         WC Method         >3.0         <1.0         <1.0         0.8           WEAR METALS         method         imit/base         current         history1         history2           Iron         ppm         ASTM 05185m         >5         12         10         <1           Nickel         ppm         ASTM 05185m         >2         0         0         <1           Nickel         ppm         ASTM 05185m         >2         1         0         <1           Norewidt         ppm         ASTM 05185m         >2         0         0         <1 <th>Sample Number</th> <th></th> <th>Client Info</th> <th></th> <th>GFL0097210</th> <th>GFL0097220</th> <th>GFL0097197</th>	Sample Number		Client Info		GFL0097210	GFL0097220	GFL0097197
Machine Age         hrs         Client Info         20191         20070         20000           Oil Age         hrs         Client Info         0         0         0         0           Oil Changed         Client Info         NOT Changd         NORMAL         NORMAL         NORMAL           Sample Status         method         Imit/base         current         history1         history2           Fuel         WC Method         >3.0         <1.0         0.8         0         0           Glycol         WC Method         >3.0         <1.0         0.8         0         0           VEAR METALS         method         imit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >5         <1         <1         <1           Nickel         ppm         ASTM D5185m         >2         0         0         <1           Silver         ppm         ASTM D5185m         >15         2         5         4           Lead         ppm         ASTM D5185m         >15         2         5         4           Lead         ppm         ASTM D5185m         <1         0         <1 <t< th=""><th></th><th></th><th>Client Info</th><th></th><th>03 Nov 2023</th><th>27 Oct 2023</th><th>13 Oct 2023</th></t<>			Client Info		03 Nov 2023	27 Oct 2023	13 Oct 2023
Oil Changed Sample Status         Client Info         Not Changed NORMAL         Not Changed NORMAL         Not Changed NORMAL         Not Changed NORMAL           CONTAMINATION         method         imit/base         current         history1         history2           Fuel         WC Method         >3.0         <1.0	•	hrs	Client Info		20191	20070	20000
Oil Changed Sample Status     Client Info     Not Changd NORMAL     Nor Changed NORMAL     Nor Changed NORMAL     Nor Changed NORMAL       CONTAMINATION     method     limit/base     current     history1     history2       Fuel     WC Method     >3.0     <1.0     <1.0     0.8       Glycol     WC Method     >3.0     <1.0     <1.0     0.8       WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >75     5     12     10       Chromium     ppm     ASTM D5185m     >2     <1     <1     1       Nickel     ppm     ASTM D5185m     >2     <1     0     <1       Nickel     ppm     ASTM D5185m     >2     0     0     <1       Copper     ppm     ASTM D5185m     >100     <1     <1     <1       Cadmium     ppm     ASTM D5185m     >4     0     0     <1       Cadmium     ppm     ASTM D5185m     >100     <1     <1     <1       Cadmium     ppm     ASTM D5185m     0     5     0     10       Monduin     ppm     ASTM D5185m     0     5     0     0       ADD	Oil Age	hrs	Client Info		0	0	0
Sample Status         NORMAL         NORMAL         NORMAL         NORMAL         NORMAL           CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >3.0         <1.0	-		Client Info		Not Changd	Changed	Not Changd
CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >3.0         <1.0         <1.0         0.8           Glycol         WC Method         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >5         12         10           Chromium         ppm         ASTM D5185m         >2         <1         0         <1           Nickel         ppm         ASTM D5185m         >2         <1         0         <1           Silver         ppm         ASTM D5185m         >2         <1         0         <1           Copper         ppm         ASTM D5185m         >100         <1         <1         <1           Vanadium         ppm         ASTM D5185m         <4         0         <1         <1           Vanadium         ppm         ASTM D5185m         0         <1         <1         <1           Vanadium         ppm         ASTM D5185m         0         <5         0         10           Addmium	-				-		-
Fuel         WC Method         >3.0         <1.0	-	ION	method	limit/base		history1	
Glycol         WC Method         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >75         5         12         10           Chromium         ppm         ASTM D5185m         >5         <1         <1         <1           Nickel         ppm         ASTM D5185m         >2         <1         0         <1           Silver         ppm         ASTM D5185m         >2         <1         0         <1           Copper         ppm         ASTM D5185m         >15         2         5         4           Lead         ppm         ASTM D5185m         >100         <1         <1         <1           Cadmium         ppm         ASTM D5185m         >4         0         0         <1           Cadmium         ppm         ASTM D5185m         >4         0         <1         0           Cadmium         ppm         ASTM D5185m         0         4         6         5           Boron         ppm         ASTM D5185m         0         10         0         0							
Iron         ppm         ASTM D5185m         >75         5         12         10           Chromium         ppm         ASTM D5185m         >5         <1         <1         <1         <1           Nickel         ppm         ASTM D5185m         >4         <1         0         <1           Titanium         ppm         ASTM D5185m         >2         <1         0         <1           Silver         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >15         2         5         4           Lead         ppm         ASTM D5185m         >100         <1         <1         <1         1           Copper         ppm         ASTM D5185m         >44         0         0         <1         <1           Cadmium         ppm         ASTM D5185m         >44         0         0         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         1         1         1				1 010			
Iron         ppm         ASTM D5185m         >75         5         12         10           Chromium         ppm         ASTM D5185m         >5         <1         <1         <1         <1           Nickel         ppm         ASTM D5185m         >4         <1         0         <1           Titanium         ppm         ASTM D5185m         >2         <1         0         <1           Silver         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >15         2         5         4           Lead         ppm         ASTM D5185m         >100         <1         <1         <1           Copper         ppm         ASTM D5185m         >44         0         0         <1         <1           Cadmium         ppm         ASTM D5185m         0         4         6         5            Boron         ppm         ASTM D5185m         0         4         6         5         <1           Magnesium         ppm         ASTM D5185m         0         5         0         10         <1           Molydenum         pm <th>-</th> <th>S</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	-	S	method	limit/base	current	history1	history2
Chromium         ppm         ASTM D5185m         >5         <1							
Nickel         ppm         ASTM D5185m         >4         <1	-						
Titanium         ppm         ASTM D5185m         >2         <1							
Silver         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >15         2         5         4           Lead         ppm         ASTM D5185m         >25         <1         0         <1           Copper         ppm         ASTM D5185m         >20         <1         <1         <1           Tin         ppm         ASTM D5185m         >4         0         0         <1         <1           Vanadium         ppm         ASTM D5185m         >4         0         0         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         1>1         1							
Aluminum         ppm         ASTM D5185m         >15         2         5         4           Lead         ppm         ASTM D5185m         >25         <1         0         <1           Copper         ppm         ASTM D5185m         >100         <1         <1         <1           Tin         ppm         ASTM D5185m         >4         0         0         <1           Cadmium         ppm         ASTM D5185m         >4         0         0         <1           Cadmium         ppm         ASTM D5185m         >4         0         0         <1           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         4         6         5           Barium         ppm         ASTM D5185m         0         5         0         10           Molybdenum         ppm         ASTM D5185m         0         <1         0         0           Magnesium         ppm         ASTM D5185m         0         <1         0         0           Sulfur         ppm         ASTM D5185m         1270         1091         1078							
Lead         ppm         ASTM D5185m         >25         <1							
Copper         ppm         ASTM D5185m         >100         <1							
Tin         ppm         ASTM D5185m         >4         0         0         <1							
Vanadium         ppm         ASTM D5185m         0         0         <1							
Cadmium         ppm         ASTM D5185m         <1				27	-		
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         4         6         5           Barium         ppm         ASTM D5185m         0         5         0         10           Molybdenum         ppm         ASTM D5185m         60         54         52         52           Manganese         ppm         ASTM D5185m         0         <1         0         0           Magnesium         ppm         ASTM D5185m         1010         807         815         789           Calcium         ppm         ASTM D5185m         1070         927         922         886           Phosphorus         ppm         ASTM D5185m         1070         927         922         886           Phosphorus         ppm         ASTM D5185m         1270         1091         1078         1032           Sulfur         ppm         ASTM D5185m         2060         2898         2753         2732           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m <td< th=""><th></th><th></th><th></th><th></th><th>-</th><th></th><th></th></td<>					-		
Boron         ppm         ASTM D5185m         0         4         6         5           Barium         ppm         ASTM D5185m         0         5         0         10           Molybdenum         ppm         ASTM D5185m         60         54         52         52           Manganese         ppm         ASTM D5185m         0         <1         0         0           Magnesium         ppm         ASTM D5185m         0         <1         0         0           Magnesium         ppm         ASTM D5185m         1010         807         815         789           Calcium         ppm         ASTM D5185m         1010         807         815         789           Calcium         ppm         ASTM D5185m         1070         927         922         886           Phosphorus         ppm         ASTM D5185m         1270         1091         1078         1032           Sulfur         ppm         ASTM D5185m         2060         2898         2753         2732           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20<		pp		limit/base		-	
Barium         ppm         ASTM D5185m         0         5         0         10           Molybdenum         ppm         ASTM D5185m         60         54         52         52           Manganese         ppm         ASTM D5185m         0         <1         0         0           Magnesium         ppm         ASTM D5185m         1010         807         815         789           Calcium         ppm         ASTM D5185m         1070         927         922         886           Phosphorus         ppm         ASTM D5185m         1070         997         1026         920           Zinc         ppm         ASTM D5185m         1270         1091         1078         1032           Sulfur         ppm         ASTM D5185m         2060         2898         2753         2732           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         2         2         2           Potassium         ppm         ASTM D5185m         >20         2         2         2           INFRA-RED         method         limit/base         <	ADDITIVES		method	mmbase	current	matory	mstoryz
Molybdenum         ppm         ASTM D5185m         60         54         52         52           Manganese         ppm         ASTM D5185m         0         <1         0         0           Magnesium         ppm         ASTM D5185m         1010         807         815         789           Calcium         ppm         ASTM D5185m         1070         927         922         886           Phosphorus         ppm         ASTM D5185m         1070         997         1026         920           Zinc         ppm         ASTM D5185m         1270         1091         1078         1032           Sulfur         ppm         ASTM D5185m         2060         2898         2753         2732           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         6         4           Sodium         ppm         ASTM D5185m         >20         2         2         2           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6	Boron	nnm	ASTM D5185m	0	4	6	5
Manganese         ppm         ASTM D5185m         0         <1							
Magnesium         ppm         ASTM D5185m         1010         807         815         789           Calcium         ppm         ASTM D5185m         1070         927         922         886           Phosphorus         ppm         ASTM D5185m         1150         997         1026         920           Zinc         ppm         ASTM D5185m         1270         1091         1078         1032           Sulfur         ppm         ASTM D5185m         2060         2898         2753         2732           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         6         4           Sodium         ppm         ASTM D5185m         >20         2         2         2           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.1         0.2         0.1           Nitration         Abs/cm         *ASTM D7624         >20         5.1         7.0         5.9           Sulfation         Abs/.1m         *ASTM D7415 <th>Barium</th> <th>ppm</th> <th>ASTM D5185m</th> <th>0</th> <th>5</th> <th>0</th> <th>10</th>	Barium	ppm	ASTM D5185m	0	5	0	10
Calcium         ppm         ASTM D5185m         1070         927         922         886           Phosphorus         ppm         ASTM D5185m         1150         997         1026         920           Zinc         ppm         ASTM D5185m         1270         1091         1078         1032           Sulfur         ppm         ASTM D5185m         2060         2898         2753         2732           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         6         4           Sodium         ppm         ASTM D5185m         >20         2         2         2           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.1         0.2         0.1           Nitration         Abs/cm         *ASTM D7624         >20         5.1         7.0         5.9           Sulfation         Abs/.1m         *ASTM D7415         >30         17.4         18.8         17.4	Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0 60	5 54	0 52	10 52
Phosphorus         ppm         ASTM D5185m         1150         997         1026         920           Zinc         ppm         ASTM D5185m         1270         1091         1078         1032           Sulfur         ppm         ASTM D5185m         2060         2898         2753         2732           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         6         4           Sodium         ppm         ASTM D5185m         >25         4         6         4           Sodium         ppm         ASTM D5185m         >20         2         4         <1	Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0	5 54 <1	0 52 0	10 52 0
Zinc         ppm         ASTM D5185m         1270         1091         1078         1032           Sulfur         ppm         ASTM D5185m         2060         2898         2753         2732           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         6         4           Sodium         ppm         ASTM D5185m         >25         4         6         4           Sodium         ppm         ASTM D5185m         >20         2         4         <1           Potassium         ppm         ASTM D5185m         >20         2         2         2           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.1         0.2         0.1           Nitration         Abs/cm         *ASTM D7624         >20         5.1         7.0         5.9           Sulfation         Abs/.imm         *ASTM D7415         >30         17.4         18.8         17.4           FLUID DEGRADATION         method         limit/base	Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010	5 54 <1 807	0 52 0 815	10 52 0 789
SulfurppmASTM D5185m2060289827532732CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25464SodiumppmASTM D5185m24<1PotassiumppmASTM D5185m>20222INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>60.10.20.1NitrationAbs/cm*ASTM D7624>205.17.05.9SulfationAbs/.imm*ASTM D7415>3017.418.817.4FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2	Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070	5 54 <1 807 927	0 52 0 815 922	10 52 0 789 886
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m<>25464SodiumppmASTM D5185m24<1PotassiumppmASTM D5185m>20222INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>60.10.20.1NitrationAbs/cm*ASTM D7624>205.17.05.9SulfationAbs/.imm*ASTM D7415>3017.418.817.4FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2	Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150	5 54 <1 807 927 997	0 52 0 815 922 1026	10 52 0 789 886 920
Silicon         ppm         ASTM D5185m         >25         4         6         4           Sodium         ppm         ASTM D5185m         2         4         <1	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	0 60 0 1010 1070 1150 1270	5 54 <1 807 927 997 1091	0 52 0 815 922 1026 1078	10 52 0 789 886 920 1032
Sodium         ppm         ASTM D5185m         2         4         <1	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 60 0 1010 1070 1150 1270 2060	5 54 <1 807 927 997 1091 2898	0 52 0 815 922 1026 1078 2753	10 52 0 789 886 920 1032 2732
Potassium         ppm         ASTM D5185m         >20         2         2         2           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.1         0.2         0.1           Nitration         Abs/cm         *ASTM D7824         >20         5.1         7.0         5.9           Sulfation         Abs/.imm         *ASTM D7415         >30         17.4         18.8         17.4           FLUID DEGRADATION         method         limit/base         current         history1         history2	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	0 60 0 1010 1070 1150 1270 2060	5 54 <1 807 927 997 1091 2898 current	0 52 0 815 922 1026 1078 2753 history1	10 52 0 789 886 920 1032 2732 history2
INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>60.10.20.1NitrationAbs/cm*ASTM D7624>205.17.05.9SulfationAbs/.1mm*ASTM D7415>3017.418.817.4FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2	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	0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b>	5 54 <1 807 927 997 1091 2898 current 4	0 52 0 815 922 1026 1078 2753 history1 6	10 52 0 789 886 920 1032 2732 history2 4
Soot %         %         *ASTM D7844         >6         0.1         0.2         0.1           Nitration         Abs/cm         *ASTM D7624         >20         5.1         7.0         5.9           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.4         18.8         17.4           FLUID DEGRADATION         method         limit/base         current         history1         history2	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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	0 60 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25	5 54 <1 807 927 997 1091 2898 current 4 2	0 52 0 815 922 1026 1078 2753 history1 6 4	10 52 0 789 886 920 1032 2732 history2 4 <1
Nitration         Abs/cm         *ASTM D7624         >20         5.1         7.0         5.9           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.4         18.8         17.4           FLUID DEGRADATION         method         limit/base         current         history1         history2	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25 >20	5 54 <1 807 927 997 1091 2898 <u>current</u> 4 2 2	0 52 0 815 922 1026 1078 2753 history1 6 4 2	10 52 0 789 886 920 1032 2732 history2 4 <1 2
SulfationAbs/.1mm*ASTM D7415>3017.418.817.4FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2	Barium 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	0 60 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20	5 54 <1 807 927 997 1091 2898 current 4 2 2 2	0 52 0 815 922 1026 1078 2753 history1 6 4 2 2	10 52 0 789 886 920 1032 2732 history2 4 <1 2 2 history2
FLUID DEGRADATION method limit/base current history1 history2	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >6	5 54 <1 807 927 997 1091 2898 <u>current</u> 4 2 2 2 <u>current</u> 0.1	0 52 0 815 922 1026 1078 2753 history1 6 4 2 2 history1 0.2	10 52 0 789 886 920 1032 2732 history2 4 <1 2 2 history2 0.1
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 60 0 1010 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >20	5 54 <1 807 927 997 1091 2898 <u>current</u> 4 2 2 2 <u>current</u> 0.1 5.1	0 52 0 815 922 1026 1078 2753 history1 6 4 2 2 history1 0.2 7.0	10 52 0 789 886 920 1032 2732 history2 4 <1 2 2 history2 0.1 5.9
	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 D5185m	0 60 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >6 >20 >30	5 54 <1 807 927 997 1091 2898 <u>current</u> 4 2 2 2 <u>current</u> 0.1 5.1	0 52 0 815 922 1026 1078 2753 history1 6 4 2 2 history1 0.2 7.0 18.8	10 52 0 789 886 920 1032 2732 history2 4 <1 2 2 history2 0.1 5.9 17.4
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 60 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >6 >20 >30	5 54 <1 807 927 997 1091 2898 <u>current</u> 4 2 2 2 <u>current</u> 0.1 5.1 17.4	0 52 0 815 922 1026 1078 2753 history1 6 4 2 2 history1 0.2 7.0 18.8	10 52 0 789 886 920 1032 2732 history2 4 <1 2 2 history2 0.1 5.9 17.4 history2
Base Number (BN)         mg KOH/g         ASTM D2896         9.8         8.0         7.7         7.6	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 D5185m	0 60 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >6 >20 >30	5 54 <1 807 927 997 1091 2898 <u>current</u> 4 2 2 2 <u>current</u> 0.1 5.1 17.4	0 52 0 815 922 1026 1078 2753 history1 6 4 2 2 history1 0.2 7.0 18.8	10 52 0 789 886 920 1032 2732 history2 4 <1 2 2 history2 0.1 5.9 17.4

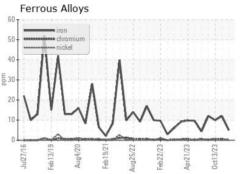


# **OIL ANALYSIS REPORT**



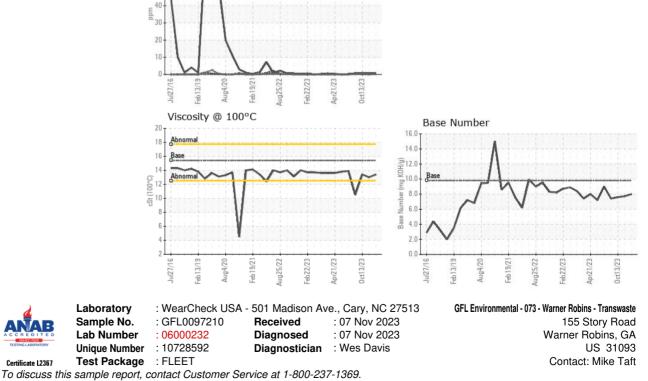


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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 PROPE	ERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.4	13.0	13.4
GRAPHS						
Ferrous Allovs						



Non-ferrous Metals

70 60 50



\* - 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)

Certificate L2367

Submitted By: JOSH MALONEY

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