

# **OIL ANALYSIS REPORT**

Sample Rating Trend

**NORMAL** 



91116-1116 Component

**Diesel Engine** 

{not provided} (--- GAL)

## DIAGNOSIS

#### Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

### Wear

Metal levels are typical for a new component breaking in.

#### Contamination

Fuel content negligible. Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components.

### **Fluid Condition**

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

SAMPLE INFORMATION   method   limit/base   current   history1   history2					Nov2023		
Sample Number         Client Info         SBP0004867             Sample Date         Client Info         02 Nov 2023             Machine Age         mls         Client Info         20000             Oil Age         mls         Client Info         20000             Oil Changed         Client Info         Changed             CONTAMINATION         method         Ilmibbase         current         history1         history2           Water         WC Method         >0.2         NEG             Glycol         WC Method         NEG             WEAR METALS         method         limibbase         current         history1         history2           Iron         ppm         ASTM D5185m         >5         4             WEAR METALS         method         limibbase         current         history1         history2           Iron         ppm         ASTM D5185m         >80         47             Trin         ppm         ASTM D5185m         >3         0 <th>SAMPLE INFORM</th> <th>MATION</th> <th>method</th> <th>limit/hase</th> <th>current</th> <th>history1</th> <th>history2</th>	SAMPLE INFORM	MATION	method	limit/hase	current	history1	history2
Sample Date   Client Info   02 Nov 2023		717 (11014		mmoasc			•
Machine Age         mls         Client Info         20000            Oil Changed         Client Info         20000            Sample Status         Image: Client Info         Changed            CONTAMINATION         method         Imitibase         current         history1         history2           Water         WC Method         >0.2         NEG             Iron         ppm         ASTM D5185m         >80         47             Chromium         ppm         ASTM D5185m         >5         4              Nickel         ppm         ASTM D5185m         >5         4               Nickel         ppm         ASTM D5185m         >2         1							
Oil Age         mls         Client Info         20000             Oil Changed         Client Info         Changed             Sample Status         NORMAL             CONTAMINATION         method         limit/base         current         history1         history2           Water         WC Method         NEG             WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM DS185m         >80         47             Chromium         ppm         ASTM DS185m         >5         4             Nickel         ppm         ASTM DS185m         >2         1             Silver         ppm         ASTM DS185m         >30         185             Lead         ppm         ASTM DS185m         >30         185             Copper         ppm         ASTM DS185m         >30         3             Vanadium         ppm         ASTM DS185m		mle					
Oil Changed Sample Status         Client Info         Changed NORMAL             CONTAMINATION         method         limit/base         current         history1         history2           Water         WC Method         >0.2         NEG             Glycol         WC Method         Imit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >80         47             Chromium         ppm         ASTM D5185m         >5         4             Nickel         ppm         ASTM D5185m         >2         1             Silver         ppm         ASTM D5185m         >3         0             Silver         ppm         ASTM D5185m         >30         185             Aluminum         ppm         ASTM D5185m         >30         185             Lead         ppm         ASTM D5185m         >30         185             Copper         ppm         ASTM D5185m         0							
Sample Status	-	11115					
CONTAMINATION         method         limit/base         current         history1         history2           Water         WC Method         0-2         NEG             Glycol         WC Method         NEG             WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >80         47             Chromium         ppm         ASTM D5185m         >5         4             Nickel         ppm         ASTM D5185m         >2         1             Silver         ppm         ASTM D5185m         >30         185             Silver         ppm         ASTM D5185m         >30         185             Silver         ppm         ASTM D5185m         >150         176             Silver         ppm         ASTM D5185m         >150         176             Silver         ppm         ASTM D5185m         >15			Client iiilo		_		
Water         WC Method         >0.2         NEG             Glycol         WC Method         NEG             WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >80         47             Chromium         ppm         ASTM D5185m         >5         4             Nickel         ppm         ASTM D5185m         >2         1             Silver         ppm         ASTM D5185m         >3         0             Silver         ppm         ASTM D5185m         >30         185             Silver         ppm         ASTM D5185m         >30         3             Aluminum         ppm         ASTM D5185m         >30         3             Lead         ppm         ASTM D5185m         >5         5             Copper         ppm         ASTM D5185m         0             Calciu							
WEAR METALS	CONTAMINATION	١	method	limit/base	current	history1	history2
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >80         47             Chromium         ppm         ASTM D5185m         >5         4             Nickel         ppm         ASTM D5185m         >2         1             Titanium         ppm         ASTM D5185m         >3         0             Aluminum         ppm         ASTM D5185m         >30         185             Lead         ppm         ASTM D5185m         >30         3             Lead         ppm         ASTM D5185m         >150         176             Lead         ppm         ASTM D5185m         >5         5             Copper         ppm         ASTM D5185m         >5         5             Codadium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1 <th>Water</th> <th></th> <th>WC Method</th> <th>&gt;0.2</th> <th>NEG</th> <th></th> <th></th>	Water		WC Method	>0.2	NEG		
Iron	Glycol		WC Method		NEG		
Chromium         ppm         ASTM D5185m         >5         4             Nickel         ppm         ASTM D5185m         >2         1             Titanium         ppm         ASTM D5185m         >3         0             Silver         ppm         ASTM D5185m         >3         0             Aluminum         ppm         ASTM D5185m         >30         185             Lead         ppm         ASTM D5185m         >30         3             Copper         ppm         ASTM D5185m         >150         176             Tin         ppm         ASTM D5185m         0              Vanadium         ppm         ASTM D5185m         0              Vanadium         ppm         ASTM D5185m         0              Cadmium         ppm         ASTM D5185m         37              Barium         ppm         ASTM D5185m         41	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>80	47		
Titanium	Chromium		ASTM D5185m	>5	4		
Silver	Nickel	ppm	ASTM D5185m	>2	1		
Aluminum         ppm         ASTM D5185m         >30         185             Lead         ppm         ASTM D5185m         >30         3             Copper         ppm         ASTM D5185m         >150         176             Tin         ppm         ASTM D5185m         5         5             Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             Boron         ppm         ASTM D5185m         37             Barium         ppm         ASTM D5185m         0             Molybdenum         ppm         ASTM D5185m         5             Magnesium         ppm         ASTM D5185m         5             Magnesium         ppm         ASTM D5185m         504             Calcium         ppm         ASTM D5185m         682             Phosphorus         ppm         ASTM D5185m	Titanium	ppm	ASTM D5185m		<1		
Lead	Silver	ppm	ASTM D5185m	>3	0		
Copper	Aluminum	ppm	ASTM D5185m	>30	185		
Tin         ppm         ASTM D5185m         >5         5             Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         37             Barium         ppm         ASTM D5185m         0             Molybdenum         ppm         ASTM D5185m         41             Manganese         ppm         ASTM D5185m         504             Magnesium         ppm         ASTM D5185m         1669             Calcium         ppm         ASTM D5185m         682             Phosphorus         ppm         ASTM D5185m         1976             Sulfur         ppm         ASTM D5185m         20         9             CONTAMINANTS         method         limit/base         curre	Lead	ppm	ASTM D5185m	>30	3		
Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         37             Barium         ppm         ASTM D5185m         0             Molybdenum         ppm         ASTM D5185m         5             Manganese         ppm         ASTM D5185m         504             Magnesium         ppm         ASTM D5185m         1669             Calcium         ppm         ASTM D5185m         682             Phosphorus         ppm         ASTM D5185m         912             Sulfur         ppm         ASTM D5185m         912             Sulfur         ppm         ASTM D5185m         912             Sodium         ppm         ASTM D5185m         8	Copper	ppm	ASTM D5185m	>150	176		
Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         37             Barium         ppm         ASTM D5185m         0             Molybdenum         ppm         ASTM D5185m         41             Manganese         ppm         ASTM D5185m         5             Magnesium         ppm         ASTM D5185m         504             Calcium         ppm         ASTM D5185m         1669             Phosphorus         ppm         ASTM D5185m         682             Zinc         ppm         ASTM D5185m         912             Sulfur         ppm         ASTM D5185m         1976             CONTAMINANTS         method         limit/base         current         history1         history2           Solium         ppm         ASTM D5185m         8	Tin	ppm	ASTM D5185m	>5	5		
ADDITIVES	Vanadium	ppm	ASTM D5185m		0		
Barium	Cadmium	ppm	ASTM D5185m		0		
Barium	ADDITIVES		and the section	1::			hiotomyO
Molybdenum         ppm         ASTM D5185m         41             Manganese         ppm         ASTM D5185m         5             Magnesium         ppm         ASTM D5185m         504             Calcium         ppm         ASTM D5185m         1669             Phosphorus         ppm         ASTM D5185m         682             Zinc         ppm         ASTM D5185m         912             Sulfur         ppm         ASTM D5185m         1976             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         9             Sodium         ppm         ASTM D5185m         8             Potassium         ppm         ASTM D5185m         8             Fuel         %         ASTM D324         >5         0.2             INFRA-RED         method         limit/base         curre	ADDITIVES		metnoa	ilmit/base	current	history1	riistoryz
Manganese         ppm         ASTM D5185m         5             Magnesium         ppm         ASTM D5185m         504             Calcium         ppm         ASTM D5185m         1669             Phosphorus         ppm         ASTM D5185m         682             Zinc         ppm         ASTM D5185m         912             Sulfur         ppm         ASTM D5185m         1976             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         9             Sodium         ppm         ASTM D5185m         >20         412             Fuel         %         ASTM D5185m         >20         412             Fuel         %         ASTM D5185m         >0.2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *AS		ppm		imit/base		•	,
Magnesium         ppm         ASTM D5185m         504             Calcium         ppm         ASTM D5185m         1669             Phosphorus         ppm         ASTM D5185m         682             Zinc         ppm         ASTM D5185m         912             Sulfur         ppm         ASTM D5185m         1976             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         9             Sodium         ppm         ASTM D5185m         8             Potassium         ppm         ASTM D5185m         >20         412             Fuel         %         ASTM D3524         >5         0.2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         8.5             Sulfation <td< th=""><th>Boron</th><th>• • • • • • • • • • • • • • • • • • • •</th><th>ASTM D5185m</th><th>IIMIVbase</th><th>37</th><th></th><th></th></td<>	Boron	• • • • • • • • • • • • • • • • • • • •	ASTM D5185m	IIMIVbase	37		
Calcium         ppm         ASTM D5185m         1669             Phosphorus         ppm         ASTM D5185m         682             Zinc         ppm         ASTM D5185m         912             Sulfur         ppm         ASTM D5185m         1976             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         9             Sodium         ppm         ASTM D5185m         >20         9             Potassium         ppm         ASTM D5185m         >20         412             Fuel         %         ASTM D3524         >5         0.2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         8.5             Nitration         Abs/.1mm         *ASTM D7415         >30         23.4	Boron Barium	ppm	ASTM D5185m ASTM D5185m	iimii/base	37 0		
Phosphorus         ppm         ASTM D5185m         682             Zinc         ppm         ASTM D5185m         912             Sulfur         ppm         ASTM D5185m         1976             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         9             Sodium         ppm         ASTM D5185m         8             Potassium         ppm         ASTM D5185m         >20         412             Fuel         %         ASTM D3524         >5         0.2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.4             Nitration         Abs/.1mm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2 </th <th>Boron Barium Molybdenum</th> <th>ppm ppm</th> <th>ASTM D5185m ASTM D5185m ASTM D5185m</th> <th>IIMIVoase</th> <th>37 0 41</th> <th></th> <th></th>	Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	IIMIVoase	37 0 41		
Zinc         ppm         ASTM D5185m         912             Sulfur         ppm         ASTM D5185m         1976             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         9             Sodium         ppm         ASTM D5185m         >20         412             Potassium         ppm         ASTM D5185m         >20         412             Fuel         %         ASTM D3524         >5         0.2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.4             Nitration         Abs/.1mm         *ASTM D7624         >20         8.5             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         23.7	Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	iimii/base	37 0 41 5		
Sulfur         ppm         ASTM D5185m         1976             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         9             Sodium         ppm         ASTM D5185m         8             Potassium         ppm         ASTM D5185m         >20         412             Fuel         %         ASTM D3524         >5         0.2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.4             Nitration         Abs/.1mm         *ASTM D7624         >20         8.5             Sulfation         Abs/.1mm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         2	Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	iimii/base	37 0 41 5 504		
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         9             Sodium         ppm         ASTM D5185m         8             Potassium         ppm         ASTM D5185m         >20         412             Fuel         %         ASTM D3524         >5         0.2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.4             Nitration         Abs/cm         *ASTM D7624         >20         8.5             Sulfation         Abs/.1mm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         23.7	Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	Imivoase	37 0 41 5 504 1669		
Silicon         ppm         ASTM D5185m         >20         9             Sodium         ppm         ASTM D5185m         8              Potassium         ppm         ASTM D5185m         >20         412             Fuel         %         ASTM D3524         >5         0.2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.4             Nitration         Abs/cm         *ASTM D7624         >20         8.5             Sulfation         Abs/.1mm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         23.7	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 ASTM D5185m	Ilmivoase	37 0 41 5 504 1669 682		
Sodium         ppm         ASTM D5185m         8             Potassium         ppm         ASTM D5185m         >20         412             Fuel         %         ASTM D3524         >5         0.2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.4             Nitration         Abs/cm         *ASTM D7624         >20         8.5             Sulfation         Abs/.1mm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         23.7	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 ASTM D5185m	Imiroase	37 0 41 5 504 1669 682 912		
Potassium         ppm         ASTM D5185m         >20         412             Fuel         %         ASTM D3524         >5         0.2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.4             Nitration         Abs/cm         *ASTM D7624         >20         8.5             Sulfation         Abs/.1mm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         23.7	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 ASTM D5185m		37 0 41 5 504 1669 682 912 1976		
Fuel         %         ASTM D3524         >5         0.2             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.4             Nitration         Abs/cm         *ASTM D7624         >20         8.5             Sulfation         Abs/.1mm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         23.7	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base	37 0 41 5 504 1669 682 912 1976		     history2
INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.4             Nitration         Abs/cm         *ASTM D7624         >20         8.5             Sulfation         Abs/.1mm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         23.7	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base	37 0 41 5 504 1669 682 912 1976 current		history2
Soot %         %         *ASTM D7844         >3         0.4             Nitration         Abs/cm         *ASTM D7624         >20         8.5             Sulfation         Abs/.1mm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         23.7	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >20	37 0 41 5 504 1669 682 912 1976 current 9		history2
Nitration         Abs/cm         *ASTM D7624         >20         8.5             Sulfation         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         23.7	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >20 >20	37 0 41 5 504 1669 682 912 1976 current 9 8 412		history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         23.4             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         23.7	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >20 >20 >5	37 0 41 5 504 1669 682 912 1976 current 9 8 412 0.2		history2
FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     23.7	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >20 >20 >5 limit/base	37 0 41 5 504 1669 682 912 1976 current 9 8 412 0.2		history2
Oxidation	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >20 >20 >55 limit/base >3	37 0 41 5 504 1669 682 912 1976 current 9 8 412 0.2 current 0.4		history2 history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	limit/base >20 >20 >5 limit/base >3 >20	37 0 41 5 504 1669 682 912 1976 current 9 8 412 0.2 current 0.4 8.5		history2 history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	limit/base >20 >20 >5 limit/base >3 >20 >3 >30	37 0 41 5 504 1669 682 912 1976 current 9 8 412 0.2 current 0.4 8.5 23.4		history2 history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D78185m ASTM D78144 *ASTM D7624 *ASTM D7624 *ASTM D7415 method	limit/base >20 >20 >5 limit/base >3 >20 >3 limit/base	37 0 41 5 504 1669 682 912 1976 current 9 8 412 0.2 current 0.4 8.5 23.4 current	history1 history1 history1	history2 history2



## **OIL ANALYSIS REPORT**



\* - 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)

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