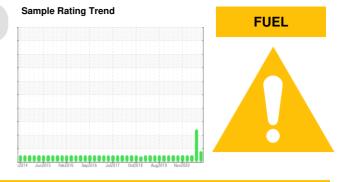


## **PROBLEM SUMMARY**

TENNESSEE MERCHANT (S/N 85201420)

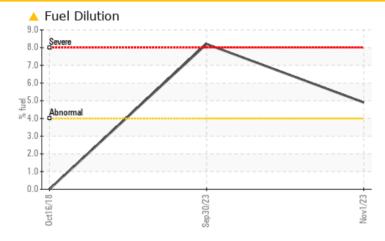
CHEVRON DELO 400 MULTIGRADE 15W40 (7 GAL)



### COMPONENT CONDITION SUMMARY

Component Port Genset

Inic



### RECOMMENDATION

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS							
Sample Status				ABNORMAL	SEVERE	NORMAL	
Fuel	%	ASTM D3524	>4.0	<u> </u>	8.2	<1.0	

Customer Id: AMELOU Sample No.: MWM731207 Lab Number: 05998710 Test Package: MAR 2



To manage this report scan the QR code

To discuss the diagnosis or test data: Wes Davis +1 905-569-8600 x223 wesd@wearcheck.ca

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

RECOMMENDED ACTIONS						
Action	Status	Date	Done By	Description		
Resample			?	We recommend an early resample to monitor this condition.		

### **HISTORICAL DIAGNOSIS**

### FUEL



We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.All component wear rates are normal. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

### 05 Aug 2023 Diag: Sean Felton

30 Sep 2023 Diag: Wes Davis



Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

23 Mar 2021 Diag: Wes Davis

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.



view report

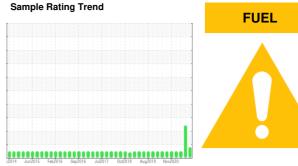
view report







## **OIL ANALYSIS REPORT**



# **K**

Machine Id **TENNESSEE MERCHANT (S/N 85201420)** Component **Port Genset** 

CHEVRON DELO 400 MULTIGRADE 15W40 (7 GAL)

SAMPLE INFORMATION         method         limitbase         current         history1         history2           Sample Number         Client Info         01 Nov233         08 Sep 2023         05 Aug 2023           Machine Age         hrs         Client Info         2809         2566         1851           Oil Age         hrs         Client Info         2809         2566         1851           Oil Age         hrs         Client Info         2809         2566         1851           Oil Age         hrs         Client Info         Changed         Not Changed         Not Changed           Sample Status          Client Info         ABNORMAL         SEVERE         NORMAL           Glycol         WC Method         Imit/base         current         history1         history2           Glycol         WC Method         NEG         NEG         NEG         NEG           Tran         ppm         ASTM 05185m         >4         0         -1         -1           Silver         ppm         ASTM 05185m         >12         c1         0         2           Tran         ppm         ASTM 05185m         >12         c1         0         2           Sil			s2014 Jun20		Jul2017 Oct2018 Aug2019 P		
Sample Date         Client Info         01 Nov 2023         30 Sep 2033         05 Aug 2023           Machine Age         hrs         Client Info         2809         2566         1851           Oil Age         hrs         Client Info         162         434         325           Oil Changed         Client Info         162         434         325           Oil Changed         Client Info         162         434         325           Oil Changed         Client Info         NEG         Not Changed         Not Changed           Glycol         WC Method         Imitbase         current         history1         history2           Rinco         ppm         ASTM 05185n         >50         4         10         13           Chromium         ppm         ASTM 05185n         >20         <1         0           Nickel         ppm         ASTM 05185n         >12         <1         0         2           Silver         ppm         ASTM 05185n         >17         0         <1         1         2           Aumium         ppm         ASTM 05185n         >17         0         <1         0         0         0         0         0         0	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age         hrs         Client Info         2809         2566         1851           Oil Age         hrs         Client Info         162         434         325           Oil Changed         Client Info         Changed         Changed         Not Changed           Sample Status         Client Info         ABNORMAL         SEVERE         NORMAL           CONTAMINATION         method         Imit/base         current         history1         history2           Glycol         WC Method         Imit/base         current         history1         history2           Glycol         WC Method         Imit/base         current         history1         history2           Iron         ppm         ASTM 0518m         >2         0         <1	Sample Number		Client Info		MWM731207	MW0044752	MW0044735
Oli Age     Ins     Client Info     162     434     325       Oil Changed     Client Info     Changed     Changed     Not Changed       Sample Status     Imitbase     current     history1     history2       Glycol     WC Method     Imitbase     current     history1     history2       Glycol     WC Method     Imitbase     current     history1     history2       Iron     ppm     ASTM D5185m     >50     4     10     13       Chromium     ppm     ASTM D5185m     >4     0     -1     -1       Nickel     ppm     ASTM D5185m     >5     0     0     0       Aluminum     ppm     ASTM D5185m     >17     0     -1     -1       Aluminum     ppm     ASTM D5185m     >17     0     -1     0       Aluminum     ppm     ASTM D5185m     >17     0     -1     0       Antimony     ppm     ASTM D5185m     >17     0     -1     0       Antimony     ppm     ASTM D5185m     >16     0     0     0       Antimony     ppm     ASTM D5185m     >15     0     -1     0       Astm M5185m     >15     0     -1     0 <td>Sample Date</td> <td></td> <td>Client Info</td> <td></td> <td>01 Nov 2023</td> <td>30 Sep 2023</td> <td>05 Aug 2023</td>	Sample Date		Client Info		01 Nov 2023	30 Sep 2023	05 Aug 2023
Oil Changed Sample Status     Client Ind ABNORMAL     Changed ABNORMAL     Not Changed SEVERE     Not Changed NORMAL       CONTAMINATION     method     Imit/base     current     history1     history2       Glycol     WC Method     NEG     NEG     NEG     NEG       WEAR METALS     method     Imit/base     current     history1     history2       Iron     ppm     ASTM D5185n     >50     4     10     13       Chromium     ppm     ASTM D5185n     >52     0     -1     0       Nickel     ppm     ASTM D5185n     >52     0     0     0       Tatanium     ppm     ASTM D5185n     >55     0     0     0       Itanium     ppm     ASTM D5185n     >70     0     1     2       Itanium     ppm     ASTM D5185n     >70     0     1     2       Itanium     ppm     ASTM D5185n     >70     0     0     0       Cadmium     ppm     ASTM D5185n     >70     0     1     2       Itanium     ppm     ASTM D5185n     151     159     116     61       Baron     ppm     ASTM D5185n     0     645     653     622       Cadmium	Machine Age	hrs	Client Info		2809	2566	1851
Sample StatusImage: statusABNORMALSEVERENORMALCONTAMINATIONmethodlimit/basecurrenthistory1history2GlycolWC MethodNEGNEGNEGWEAR METALSmethodlimit/basecurrenthistory1history2IronppmASTM D518m>5041013ChromiumppmASTM D518m>440<1	Oil Age	hrs	Client Info		162	434	325
CONTAMINATION       method       limit/base       current       history1       history2         Glycol       WC Method       NEG       NEG       NEG         WEAR METALS       method       limit/base       current       history1       history2         Iron       ppm       ASTM D5185m       >50       4       10       13         Chromium       ppm       ASTM D5185m       >22       0       <1	Oil Changed		Client Info		Changed	Changed	Not Changd
Glycol         WC Method         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >50         4         10         13           Chromium         ppm         ASTM D5185m         >2         0         <1	Sample Status				ABNORMAL	SEVERE	NORMAL
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >50         4         10         13           Chromium         ppm         ASTM D5185m         >4         0         <1	CONTAMINATION	N	method	limit/base	current	history1	history2
Iron         ppm         ASTM D5185m         >50         4         10         13           Chromium         ppm         ASTM D5185m         >4         0         <1	Glycol		WC Method		NEG	NEG	NEG
Chromium         ppm         ASTM D5185m         >4         0         <1         <1           Nickel         ppm         ASTM D5185m         >2         0         <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel         ppm         ASTM D5185m         >2         0         <1         0           Titanium         ppm         ASTM D5185m         5         0         0         0           Silver         ppm         ASTM D5185m         >5         0         0         2           Aluminum         ppm         ASTM D5185m         >12         <1	Iron	ppm	ASTM D5185m	>50	4	10	13
Titanium         ppm         ASTM D5185m         5         0         0         0           Silver         ppm         ASTM D5185m<>5         0         0         0           Aluminum         ppm         ASTM D5185m         >12         <1	Chromium	ppm	ASTM D5185m	>4	0	<1	<1
Silver         ppm         ASTM D5185m         >5         0         0         0           Aluminum         ppm         ASTM D5185m         >12         <1         0         2           Lead         ppm         ASTM D5185m         >17         0         <1         2           Copper         ppm         ASTM D5185m         >70         0         1         2           Tin         ppm         ASTM D5185m         >15         0         <1         0           Antimony         ppm         ASTM D5185m         >15         0         <1         0           Vanadium         ppm         ASTM D5185m         >15         0         <1         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         151         159         116         61           Barium         ppm         ASTM D5185m         20         82         77         27           Maganese         ppm         ASTM D5185m         0         645         653         622           Calcium         ppm         ASTM D5185m         204         1367<	Nickel		ASTM D5185m	>2	0	<1	0
Silver         ppm         ASTM D5185m         >5         0         0         0           Aluminum         ppm         ASTM D5185m         >12         <1         0         2           Lead         ppm         ASTM D5185m         >17         0         <1         2           Copper         ppm         ASTM D5185m         >70         0         1         2           Tin         ppm         ASTM D5185m         >70         0         1         2           Vanadium         ppm         ASTM D5185m         >15         0         <1         0           Addium         ppm         ASTM D5185m         0         <1         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         151         159         116         61           Barium         ppm         ASTM D5185m         0         645         653         622           Molybdenum         ppm         ASTM D5185m         0         645         653         622           Calcium         ppm         ASTM D5185m         0.43         810 </td <td>Titanium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <td>5</td> <td>7</td> <td>14</td>	Titanium	ppm	ASTM D5185m		5	7	14
Aluminum         ppm         ASTM D5185m         >12         <1         0         2           Lead         ppm         ASTM D5185m         >17         0         <1	Silver		ASTM D5185m	>5	0	0	0
Lead         ppm         ASTM D5185m         >17         0         <1         <1           Copper         ppm         ASTM D5185m         >70         0         1         2           Tin         ppm         ASTM D5185m         >15         0         <1	Aluminum		ASTM D5185m	>12	<1	0	2
Copper         ppm         ASTM D5185m         >70         0         1         2           Tin         ppm         ASTM D5185m         >15         0         <1	Lead		ASTM D5185m	>17	0	<1	<1
Tin         ppm         ASTM D5185m         >15         0         <1         0           Antimony         ppm         ASTM D5185m               Vanadium         ppm         ASTM D5185m         0         0         0         0           Cadmium         ppm         ASTM D5185m         0         <1	Copper		ASTM D5185m	>70	0	1	2
Antimony         ppm         ASTM D5185m              Vanadium         ppm         ASTM D5185m         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         1.51         159         116         61           Barium         ppm         ASTM D5185m         0.4         0         0         0           Molybdenum         ppm         ASTM D5185m         2.50         82         7.77         2.7           Marganese         ppm         ASTM D5185m         0         645         653         622           Calcium         ppm         ASTM D5185m         0.46         1367         1351         1423           Phosphorus         ppm         ASTM D5185m         0.46         669         680         666           Zinc         ppm         ASTM D5185m         5012         2831         2897         2760           CONTAMINANTS         method         limit/base         current         history1         his			ASTM D5185m	>15	0	<1	0
VanadiumppmASTM D5185m000CadmiumppmASTM D5185mI0 $< 1$ 0ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m15115911661BariumppmASTM D5185m0.4000MolybdenumppmASTM D5185m0.4000MaganeseppmASTM D5185m250827727ManganesumppmASTM D5185m0645653622CalciumppmASTM D5185m043669680666ZincppmASTM D5185m1043669680666SulfurppmASTM D5185m943810843786SulfurppmASTM D5185m5012283128972760CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25444SodiumppmASTM D5185m>20045Fuel%ASTM D5185m>20045SiliconppmASTM D5185m>20045Fuel%ASTM D5185m>200499SodiumppmASTM D5185m>200499SodiumppmASTM D5185m>20049 </td <td>Antimony</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Antimony						
Cadmium         ppm         ASTM D5185m         0         <1         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         151         159         116         61           Barium         ppm         ASTM D5185m         0.4         0         0         0           Molybdenum         ppm         ASTM D5185m         0.4         0         0         0         0           Manganese         ppm         ASTM D5185m         0.4         0         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11         <11	•				0	0	0
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         151         159         116         61           Barium         ppm         ASTM D5185m         0.4         0         0         0           Molybdenum         ppm         ASTM D5185m         250         82         77         27           Manganese         ppm         ASTM D5185m         250         82         77         27           Magnesium         ppm         ASTM D5185m         0         645         653         622           Calcium         ppm         ASTM D5185m         2046         1367         1351         1423           Phosphorus         ppm         ASTM D5185m         943         810         843         786           Sulfur         ppm         ASTM D5185m         5012         2831         2897         2760           CONTAMINANTS         method         limit/base         current         history1         history2           Solium         ppm         ASTM D5185m         >225         4         4         4           Sodium         ppm         ASTM D5185m							
Boron         ppm         ASTM D5185m         151         159         116         61           Barium         ppm         ASTM D5185m         0.4         0         0         0           Molybdenum         ppm         ASTM D5185m         250         82         77         27           Manganese         ppm         ASTM D5185m         250         82         77         27           Magnesium         ppm         ASTM D5185m         0         645         653         622           Calcium         ppm         ASTM D5185m         2046         1367         1351         1423           Phosphorus         ppm         ASTM D5185m         1043         669         680         666           Zinc         ppm         ASTM D5185m         943         810         843         786           Sulfur         ppm         ASTM D5185m         5012         2831         2897         2760           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         0         4         4           Sodium         ppm         ASTM D5185m <td< th=""><th></th><th></th><th>method</th><th>limit/base</th><th>current</th><th>history1</th><th>history?</th></td<>			method	limit/base	current	history1	history?
Barium         ppm         ASTM D5185m         0.4         0         0         0           Molybdenum         ppm         ASTM D5185m         250         82         77         27           Manganese         ppm         ASTM D5185m         0         645         653         622           Calcium         ppm         ASTM D5185m         0         645         653         622           Calcium         ppm         ASTM D5185m         2046         1367         1351         1423           Phosphorus         ppm         ASTM D5185m         1043         669         680         666           Zinc         ppm         ASTM D5185m         1043         810         843         786           Sulfur         ppm         ASTM D5185m         5012         2831         2897         2760           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >22         4         4         4           Sodium         ppm         ASTM D5185m         >20         0         4         5           Fuel         %         ASTM D5185m         >20 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Molybdenum         ppm         ASTM D5185m         250         82         77         27           Manganese         ppm         ASTM D5185m         0         <1							
Manganese       ppm       ASTM D5185m       0       <1       <1         Magnesium       ppm       ASTM D5185m       0       645       653       622         Calcium       ppm       ASTM D5185m       2046       1367       1351       1423         Phosphorus       ppm       ASTM D5185m       1043       669       680       666         Zinc       ppm       ASTM D5185m       943       810       843       786         Sulfur       ppm       ASTM D5185m       5012       2831       2897       2760         CONTAMINANTS       method       limit/base       current       history1       history2         Silicon       ppm       ASTM D5185m       >25       4       4       4         Sodium       ppm       ASTM D5185m       >20       0       4       5         Fuel       %       ASTM D5185m       >20       0       4       9       8.2       <1.0         INFRA-RED       method       limit/base       current       history1       history2       0.2         Soot %       %       *ASTM D7844       0.1       0.2       0.2       0.2       0.2         Nitratio	Barium	ppm	ASTIVIUSIASM	0.4	U	0	0
Magnesium         ppm         ASTM D5185m         0         645         653         622           Calcium         ppm         ASTM D5185m         2046         1367         1351         1423           Phosphorus         ppm         ASTM D5185m         1043         669         680         666           Zinc         ppm         ASTM D5185m         943         810         843         786           Sulfur         ppm         ASTM D5185m         5012         2831         2897         2760           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         4         4           Sodium         ppm         ASTM D5185m         >20         0         4         5           Fuel         %         ASTM D5185m         >20         0         4         5           Fuel         %         ASTM D5185m         >20         0         4.9         8.2         <1.0				050	00	77	07
Calcium         ppm         ASTM D5185m         2046         1367         1351         1423           Phosphorus         ppm         ASTM D5185m         1043         669         680         666           Zinc         ppm         ASTM D5185m         943         810         843         786           Sulfur         ppm         ASTM D5185m         5012         2831         2897         2760           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         4         4           Sodium         ppm         ASTM D5185m         >20         0         4         5           Fuel         %         ASTM D3524         >4.0         4.9         8.2         <1.0	Molybdenum	ppm	ASTM D5185m	250	-		
Phosphorus         ppm         ASTM D5185m         1043         669         680         666           Zinc         ppm         ASTM D5185m         943         810         843         786           Sulfur         ppm         ASTM D5185m         943         810         843         786           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         4         4           Sodium         ppm         ASTM D5185m         >20         0         4         5           Fuel         Mastr D5185m         >20         0         4         5           Fuel         %         ASTM D5185m         >20         0         4         5           Sodium         ppm         ASTM D5185m         >20         0         4         9         8.2         <1.0           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         8.8         10.9         10.7           Sulfation         Abs/.1mm         *ASTM D7415         >30<	Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m		0	<1	<1
Zinc         ppm         ASTM D5185m         943         810         843         786           Sulfur         ppm         ASTM D5185m         5012         2831         2897         2760           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         4         4           Sodium         ppm         ASTM D5185m         >25         4         4         4           Sodium         ppm         ASTM D5185m         >20         0         4         5           Fuel         %         ASTM D3524         >4.0         4.9         8.2         <1.0	Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	0 645	<1 653	<1 622
SulfurppmASTM D5185m5012283128972760CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25444SodiumppmASTM D5185m>20045PotassiumppmASTM D5185m>20045Fuel%ASTM D5185m>20045INFRA-RED%ASTM D524>4.04.98.2<1.0	Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 2046	0 645 1367	<1 653 1351	<1 622 1423
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m<>25444SodiumppmASTM D5185m302PotassiumppmASTM D5185m>20045Fuel%ASTM D5185m>20045SodiumppmASTM D5185m>20045Fuel%ASTM D524>4.04.98.2<1.0	Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 2046 1043	0 645 1367 669	<1 653 1351 680	<1 622 1423 666
Silicon         ppm         ASTM D5185m         >25         4         4         4           Sodium         ppm         ASTM D5185m         >20         0         4         5           Potassium         ppm         ASTM D5185m         >20         0         4         5           Fuel         %         ASTM D3524         >4.0         4.9         8.2         <1.0           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         8.8         10.9         10.7           Sulfation         Abs/.mm         *ASTM D7624         >20         8.8         10.9         10.7           Sulfation         Abs/.lmm         *ASTM D7415         >30         19.1         20.4         19.1           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.5         19.1         16.9	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 2046 1043 943	0 645 1367 669 810	<1 653 1351 680 843	<1 622 1423 666 786
Sodium         ppm         ASTM D5185m         3         0         2           Potassium         ppm         ASTM D5185m         >20         0         4         5           Fuel         %         ASTM D3524         >4.0         ▲ 4.9         ● 8.2         <1.0	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 2046 1043 943	0 645 1367 669 810	<1 653 1351 680 843	<1 622 1423 666 786
Potassium         ppm         ASTM D5185m         >20         0         4         5           Fuel         %         ASTM D3524         >4.0         4.9         8.2         <1.0           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0.1         0.2         0.2           Nitration         Abs/cm         *ASTM D7624         >20         8.8         10.9         10.7           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.1         20.4         19.1           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.5         19.1         16.9	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	0 2046 1043 943 5012 limit/base	0 645 1367 669 810 2831	<1 653 1351 680 843 2897	<1 622 1423 666 786 2760
Fuel         %         ASTM D3524         >4.0         4.9         8.2         <1.0           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0.1         0.2         0.2           Nitration         Abs/cm         *ASTM D7624         >20         8.8         10.9         10.7           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.1         20.4         19.1           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.5         19.1         16.9	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 2046 1043 943 5012 limit/base	0 645 1367 669 810 2831 current	<1 653 1351 680 843 2897 history1	<1 622 1423 666 786 2760 history2
INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         0.1         0.2         0.2           Nitration         Abs/cm         *ASTM D7624         >20         8.8         10.9         10.7           Sulfation         Abs/.tmm         *ASTM D7415         >30         19.1         20.4         19.1           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.tmm         *ASTM D7414         >25         15.5         19.1         16.9	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	0 2046 1043 943 5012 limit/base	0 645 1367 669 810 2831 current 4	<1 653 1351 680 843 2897 history1 4	<1 622 1423 666 786 2760 history2 4
Soot %         %         *ASTM D7844         0.1         0.2         0.2           Nitration         Abs/cm         *ASTM D7624         >20         8.8         10.9         10.7           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.1         20.4         19.1           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.5         19.1         16.9	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	0 2046 1043 943 5012 limit/base >25	0 645 1367 669 810 2831 current 4 3	<1 653 1351 680 843 2897 history1 4 0	<1 622 1423 666 786 2760 history2 4 2
Nitration         Abs/cm         *ASTM D7624         >20         8.8         10.9         10.7           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.1         20.4         19.1           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.5         19.1         16.9	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 2046 1043 943 5012 limit/base >25	0 645 1367 669 810 2831 <u>current</u> 4 3 0	<1 653 1351 680 843 2897 history1 4 0 4	<1 622 1423 666 786 2760 history2 4 2 5
Sulfation         Abs/.1mm         *ASTM D7415         >30         19.1         20.4         19.1           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.5         19.1         16.9	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 2046 1043 943 5012 limit/base >25 >20 >20	0 645 1367 669 810 2831 current 4 3 0 0 ▲ 4.9	<1 653 1351 680 843 2897 history1 4 0 4 8.2	<1 622 1423 666 786 2760 history2 4 2 5 5 <1.0
FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.5         19.1         16.9	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm %	ASTM D5185m ASTM D5185m	0 2046 1043 943 5012 limit/base >25 >20 >20	0 645 1367 669 810 2831 current 4 3 0 4.9 ▲ 4.9	<1 653 1351 680 843 2897 history1 4 0 4 0 4 8.2 history1	<1 622 1423 666 786 2760 history2 4 2 5 <1.0 history2
Oxidation Abs/.1mm *ASTM D7414 >25 15.5 19.1 16.9	Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm %	ASTM D5185m ASTM D3524	0 2046 1043 943 5012 limit/base >25 >20 >4.0	0 645 1367 669 810 2831 current 4 3 0 ▲ 4.9 current 0.1	<1 653 1351 680 843 2897 history1 4 0 4 0 4 8.2 history1 0.2	<1 622 1423 666 786 2760 history2 4 2 5 <1.0 history2 0.2
	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 D3524 <b>method</b> *ASTM D7844	0 2046 1043 943 5012 limit/base >25 >20 >4.0 limit/base	0 645 1367 669 810 2831 current 4 3 0 4.9 € current 0.1 8.8	<1 653 1351 680 843 2897 history1 4 0 4 0 4 8.2 history1 0.2 10.9	<1 622 1423 666 2760 history2 4 2 5 <1.0 history2 0.2 10.7
	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 %	ASTM D5185m ASTM D3524 *ASTM D7844 *ASTM D7624	0 2046 1043 943 5012 <b>limit/base</b> >25 >20 >4.0 <b>limit/base</b> >20 >30	0 645 1367 669 810 2831 current 4 3 0 ▲ 4.9 current 0.1 8.8 19.1	<1 653 1351 680 843 2897 history1 4 0 4 0 4 0 4 0 4 0 2 10.9 20.4	<1 622 1423 666 786 2760 history2 4 2 5 <1.0 history2 0.2 10.7 19.1
	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 D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D3524 <b>method</b> *ASTM D7844 *ASTM D7624 *ASTM D7415	0 2046 1043 943 5012 imit/base >25 >20 >4.0 imit/base >20 >30 imit/base	0 645 1367 669 810 2831 current 4 3 0 ▲ 4.9 current 0.1 8.8 19.1 current	<1 <ul> <li>&lt;1</li> <li>653</li> <li>1351</li> <li>680</li> <li>843</li> <li>2897</li> </ul> <ul> <li>history1</li> <li>4</li> <li>0</li> <li>4</li> <li>8.2</li> </ul> <ul> <li>history1</li> <li>0.2</li> <li>10.9</li> <li>20.4</li> <li>history1</li> </ul>	<1 622 1423 666 2760 history2 4 2 5 <1.0 history2 0.2 10.7 19.1 history2

### DIAGNOSIS

### Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Fluid

### Wear

All component wear rates are normal.

### Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

### **Fluid Condition**

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.



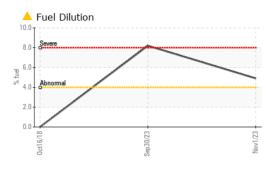
cSt (100°C) Ba

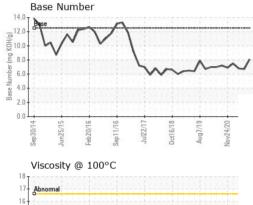
> 12 11

10.

Sep 30/14

## **OIL ANALYSIS REPORT**





Sep11/16.

eb20/1

Oct16/18

Aug7/19

Vov24/20

16

(100°C) (100°C) (100°C)

12

10

Laboratory

Sample No.

Lab Number

Unique Number

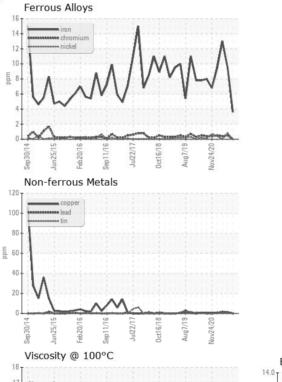
Sen30/

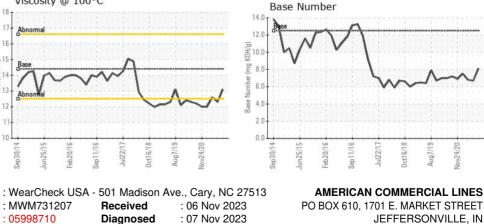
: MWM731207

: 05998710

: 10727070

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 PROPER	TIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	13.1	<b>1</b> 2.3	12.6
GRAPHS						





JEFFERSONVILLE, IN US 47130 Contact: RONALD SCHNEIDER ronald.schneider@bargeacbl.com T: F: (812)288-1644



Test Package : MAR 2 (Additional Tests: PercentFuel) Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Sen11/16

Aug7/19 Nov24/20

Diagnostician : Wes Davis

Oct16/18

Received

Diagnosed

Feb20/16

Report Id: AMELOU [WUSCAR] 05998710 (Generated: 11/09/2023 12:02:53) Rev: 1

Contact/Location: RONALD SCHNEIDER - AMELOU