

OIL ANALYSIS REPORT

Sample Rating Trend





SAVM03BE (S/N GZJ00168) Component

Biogas Engine

CHEVRON HDAX 6500 LFG GAS ENGINE OIL (141 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Moor

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil

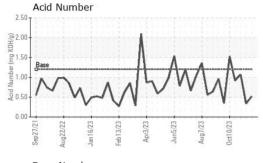
Fluid Condition

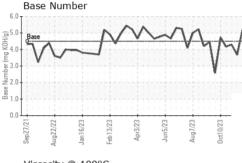
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

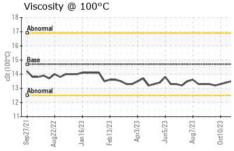
SAMPLE INFORMATION method mile mile	CAMPLE INCOR		proc. Mageo	1::-	rogeoto	history d	la la la como	
Sample Date	SAMPLE INFORM	IA HON	method	limit/base	current	history1	history2	
Machine Age hrs Client Info 172693 172411 172317 Oil Age hrs Client Info 353 70 911 Oil Changed Client Info Not Changd Not Changd Changed Sample Status Immitted See ourrent history1 history2 Fuel WC Method >4.0 <1.0 <1.0 <1.0 Water WC Method >0.1 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM 05185m >4 0 <1 0 Chromium ppm ASTM 05185m >2 0 <1 0 Nickel ppm ASTM 05185m >2 0 <1 0 Silver ppm ASTM 05185m >6 <1 2 2 Lead ppm ASTM 05185m >6 <th>Sample Number</th> <th></th> <th>Client Info</th> <th></th> <th>WC0788883</th> <th>WC0788929</th> <th>WC0788926</th>	Sample Number		Client Info		WC0788883	WC0788929	WC0788926	
Oil Age hrs Client Info 353 70 911 Oil Changed Sample Status Client Info Not Changd Not Changed Changed Sample Status NorMMAL Not Changed	•		Client Info		20 Nov 2023	30 Oct 2023	23 Oct 2023	
Oil Changed Sample Status Client Info Not Changd NORMAL Not Changed NORMAL Changed SEVERE CONTAMINATION method limit/base current history1 history2 Fuel WC Method >4.0 <1.0	Machine Age	hrs	Client Info		172693	172411	172317	
Sample Status	Oil Age	hrs	Client Info		353	70	911	
Fuel	Oil Changed		Client Info		Not Changd	Not Changd	Changed	
Fuel WC Method S4.0 S1.0 S	Sample Status				NORMAL	NORMAL	SEVERE	
Water Glycol WC Method WC Method >0.1 NEG NEG NEG NEG NEG NEG WEAR METALS method limil/base current history1 history2 Iron ppm ASTM D5185m >15 0 2 4 Chromium ppm ASTM D5185m >4 0 <1 0 Nickel ppm ASTM D5185m >2 0 <1 0 Silver ppm ASTM D5185m >2 0 <1 0 Silver ppm ASTM D5185m >5 0 0 0 Aluminum ppm ASTM D5185m >6 <1 2 2 Lead ppm ASTM D5185m >6 1 2 2 4 Tin ppm ASTM D5185m >6 1 2 4	CONTAMINATION	١	method	limit/base	current	history1	history2	
WEAR METALS	Fuel		WC Method	>4.0	<1.0	<1.0	<1.0	
WEAR METALS	Water		WC Method	>0.1	NEG	NEG	NEG	
Iron	Glycol		WC Method		NEG	NEG	NEG	
Iron			method	limit/base	current	history1	history2	
Chromium ppm ASTM D5185m >4 0 <1	Iron	nnm	ΔSTM D5185m	\15	0		1	
Nickel ppm ASTM D5185m >2 0 <1								
Titanium ppm ASTM D5185m 0 <1								
Silver ppm ASTM D5185m >5 0 0 0 Aluminum ppm ASTM D5185m >6 <1				/L				
Aluminum ppm ASTM D5185m >6 <1				>5				
Lead ppm ASTM D5185m >9 0 0 1 Copper ppm ASTM D5185m >6 1 2 4 Tin ppm ASTM D5185m >4 1 <1					-			
Copper ppm ASTM D5185m >6 1 2 4 Tin ppm ASTM D5185m >4 1 <1 4 Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 9 10 3 Barium ppm ASTM D5185m 0 <1 0 Molybdenum ppm ASTM D5185m 14 17 7 Manganese ppm ASTM D5185m <1 0 0 Magnesium ppm ASTM D5185m 8 12 10 Calcium ppm ASTM D5185m 252 269 281 Zinc ppm ASTM D5185m 315 327 321 Sulfur ppm ASTM D5185m 1611 1833 1649								
Tin ppm ASTM D5185m >4 1 <1								
Vanadium ppm ASTM D5185m 0 <1								
Cadmium ppm ASTM D5185m 0 <1				74				
ADDITIVES								
Boron ppm ASTM D5185m 9 10 3 Barium ppm ASTM D5185m 0 <1		ррііі		11 1.0				
Barium ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base		history1		
Molybdenum ppm ASTM D5185m 14 17 7 Manganese ppm ASTM D5185m <1	Boron	ppm	ASTM D5185m		9	10	3	
Manganese ppm ASTM D5185m <1	<th>Barium</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>0</th> <th><1</th> <th>0</th>	Barium	ppm	ASTM D5185m		0	<1	0
Magnesium ppm ASTM D5185m 8 12 10 Calcium ppm ASTM D5185m 1721 1715 1788 Phosphorus ppm ASTM D5185m 252 269 281 Zinc ppm ASTM D5185m 315 327 321 Sulfur ppm ASTM D5185m 1611 1833 1649 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >181 165 53 365 Sodium ppm ASTM D5185m 0 <1 0 Potassium ppm ASTM D5185m >20 4 7 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0 0 Nitration Abs/.1mm *ASTM D7624 >20 5.9 5.3 6.3 Sulfation Abs/.1	Molybdenum	ppm	ASTM D5185m		14		7	
Calcium ppm ASTM D5185m 1721 1715 1788 Phosphorus ppm ASTM D5185m 252 269 281 Zinc ppm ASTM D5185m 315 327 321 Sulfur ppm ASTM D5185m 1611 1833 1649 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >181 165 53 365 Sodium ppm ASTM D5185m >20 4 7 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0 0 Nitration Abs/cm *ASTM D7624 >20 5.9 5.3 6.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.0 15.3 18.7 FLUID DEGRADATION method limit/base current history1 histor	•	ppm	ASTM D5185m		<1			
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Sulfur ppm ASTM D5185m 1611 1833 1649 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >181 165 53 365 Sodium ppm ASTM D5185m 0 <1 0 Potassium ppm ASTM D5185m >20 4 7 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0 0 Nitration Abs/cm *ASTM D7624 >20 5.9 5.3 6.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.0 15.3 18.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 10.4 8.6 12.3 Acid Number (AN) mg KOH/g ASTM D8045 1.2 0.52		ppm			_			
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >181 165 53 365 Sodium ppm ASTM D5185m 0 <1 0 Potassium ppm ASTM D5185m >20 4 7 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0 0 Nitration Abs/cm *ASTM D7624 >20 5.9 5.3 6.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.0 15.3 18.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 10.4 8.6 12.3 Acid Number (AN) mg KOH/g ASTM D8045 1.2 0.52 0.34 1.07	-	ppm						
Silicon ppm ASTM D5185m >181 165 53 365 Sodium ppm ASTM D5185m 0 <1	Sulfur	ppm	ASTM D5185m		1611	1833	1649	
Sodium ppm ASTM D5185m 0 <1	CONTAMINANTS		method	limit/base	current	history1	history2	
Potassium ppm ASTM D5185m >20 4 7 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0 0 Nitration Abs/cm *ASTM D7624 >20 5.9 5.3 6.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.0 15.3 18.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 10.4 8.6 12.3 Acid Number (AN) mg KOH/g ASTM D8045 1.2 0.52 0.34 1.07	Silicon	ppm	ASTM D5185m	>181	165	53	365	
INFRA-RED	Sodium	ppm	ASTM D5185m		0	<1	0	
Soot % % *ASTM D7844 0 0 0 Nitration Abs/cm *ASTM D7624 >20 5.9 5.3 6.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.0 15.3 18.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 10.4 8.6 12.3 Acid Number (AN) mg KOH/g ASTM D8045 1.2 0.52 0.34 1.07	Potassium	ppm	ASTM D5185m	>20	4	7	0	
Nitration Abs/cm *ASTM D7624 >20 5.9 5.3 6.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.0 15.3 18.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 10.4 8.6 12.3 Acid Number (AN) mg KOHlg ASTM D8045 1.2 0.52 0.34 1.07	INFRA-RED		method	limit/base	current	history1	history2	
Sulfation Abs/.1mm *ASTM D7415 >30 17.0 15.3 18.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 10.4 8.6 12.3 Acid Number (AN) mg KOH/g ASTM D8045 1.2 0.52 0.34 1.07	Soot %	%	*ASTM D7844		0	0	0	
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 10.4 8.6 12.3 Acid Number (AN) mg KOH/g ASTM D8045 1.2 0.52 0.34 1.07	Nitration	Abs/cm	*ASTM D7624	>20	5.9	5.3	6.3	
Oxidation Abs/.1mm *ASTM D7414 >25 10.4 8.6 12.3 Acid Number (AN) mg KOH/g ASTM D8045 1.2 0.52 0.34 1.07				0.0		4 = 0		
Acid Number (AN) mg KOH/g ASTM D8045 1.2 0.52 0.34 1.07	Sulfation	Abs/.1mm	*ASTM D7415	>30	17.0	15.3	18.7	
Base Number (BN) mg KOH/g ASTM D2896 4.5 5.22 3.68 4.29	FLUID DEGRADA	TION	method	limit/base	current	history1	history2	
	FLUID DEGRADA Oxidation	Abs/.1mm	method *ASTM D7414	limit/base	current	history1	history2 12.3	



OIL ANALYSIS REPORT



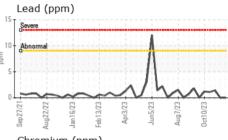


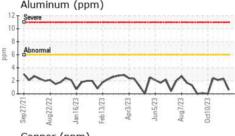


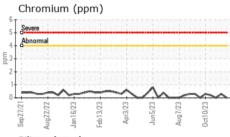
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

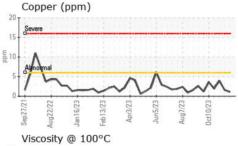
FLUID PHOPENTIES		method	od iinii/base current		riistory i	riistoryz	
Visc @ 100°C	cSt	ASTM D445	14.7	13.4	13.1	13.5	

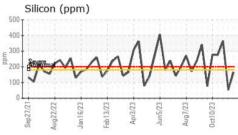
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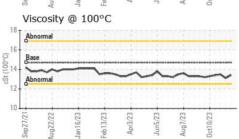


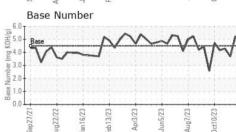
















Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : MOB 2

: WC0788883 : 06015279 : 10754423

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

: 22 Nov 2023 : 26 Nov 2023 : Don Baldridge

EDL NA Recips-Sand Valley SAND VALLEY POWER STATION, 3345 COUNTY ROAD 209

COLLINSVILLE, AL

US 35961 Contact: BRANDON PEYTON

brandon.peyton@energydi.com T:

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)

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