

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Recommendation

Contamination

Fluid Condition

suitable for further service.

Wear

oil.

Resample at the next service interval to monitor.

There is no indication of any contamination in the

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

All component wear rates are normal.

Machine Id **PECM02BE** Component

Biogas Engine

CHEVRON HDAX 6500 LFG GAS ENGINE OIL (150 GAL)

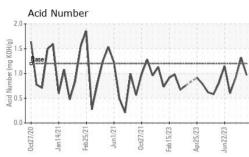


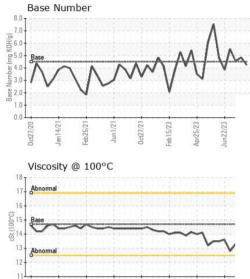
SAMPLE INFORMATION method imit/base current history1 history2 Sample Number Client Info WC0788304 WC078037 WC078040 <
Sample Date Client Info 18 Aug 2023 04 Aug 2023 24 Jul 2023 Machine Age hrs Client Info 64583 64258 64044 Oil Age hrs Client Info 133 427 305 Oil Changed Client Info Not Changd Not Changd Not Changd Not Changd Sample Status Client Info Imit/base current Inistory1 Fustory2 Fuel WC Method >4.0 <1.0
Machine Age hrs Client Info 64583 64258 64044 Oil Age hrs Client Info 133 427 305 Oil Changed Client Info Not Changd Not Changd Not Changd Not Changd Nort Changd
Oil Age hrs Client Info 133 427 805 Oil Changed Client Info Not Changd NORMAL
Oil Changed Sample Status Client Info Not Changd NORMAL Not Changd NORMAL Not Changd NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >4.0 <1.0
Sample Status NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >4.0 <1.0
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >4.0 <1.0
Fuel WC Method >4.0 <1.0 <1.0 <1.0 Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >1 3 1 Ohromium ppm ASTM D5185m >2 <1 0 0 Nickel ppm ASTM D5185m >5 0 0 <11 2 Silver ppm ASTM D5185m >6 <1 2 2 2 Lead ppm ASTM D5185m >6 <1 2 2 2 Cadmium ppm ASTM D5185m >6 <1 2 2 2 Cadmium ppm ASTM D5185m >6 <1 2 2 2 Cadmium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 2 <1
Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m<>15 1 3 1 Chromium ppm ASTM D5185m<>2 <1 0 0 Nickel ppm ASTM D5185m >2 <1 0 0 Silver ppm ASTM D5185m >6 2 <1 2 2 Copper ppm ASTM D5185m<>6 <1 2 2 2 Copper ppm ASTM D5185m >6 <1 2 2 Tin ppm ASTM D5185m >6 <1 2 2 Cadmium ppm ASTM D5185m >6 <1 2 2 Barium ppm ASTM D5185m 0 0 0 0 Magnese ppm ASTM D5185m 1 3 2 1 Barium <
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >15 1 3 1 Chromium ppm ASTM D5185m >4 0 <1
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Nickel ppm ASTM D5185m >2 <1 0 0 Titanium ppm ASTM D5185m >5 0 0 <1
Titanium ppm ASTM D5185m O O <1 Silver ppm ASTM D5185m >5 0 0 0 Aluminum ppm ASTM D5185m >6 2 <1
Silver ppm ASTM D5185m >5 0 0 0 Aluminum ppm ASTM D5185m >6 2 <1 2 Lead ppm ASTM D5185m >9 <1 0 <1 2 Copper ppm ASTM D5185m >6 <1 2 2 Tin ppm ASTM D5185m >6 <1 2 2 Vanadium ppm ASTM D5185m >4 1 2 2 Vanadium ppm ASTM D5185m >4 1 2 2 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 4 3 2 Barium ppm ASTM D5185m 2 <1 1 Manganese ppm ASTM D5185m 2 <1 1 Magnesium pm ASTM D5185m 276 317 293 Zinc p
Aluminum ppm ASTM D5185m >6 2 <1 2 Lead ppm ASTM D5185m >9 <1
Lead ppm ASTM D5185m >9 <1 0 <1 Copper ppm ASTM D5185m >6 <1
Copper ppm ASTM D5185m >6 <1 2 2 Tin ppm ASTM D5185m >4 1 2 2 Vanadium ppm ASTM D5185m 0 0 <1
TinppmASTM D5185m>4122VanadiumppmASTM D5185m00<1
Vanadium ppm ASTM D5185m 0 0 <1 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 4 3 2 Barium ppm ASTM D5185m 4 3 2 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 2 <1
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Molybdenum ppm ASTM D5185m 2 <1 1 Manganese ppm ASTM D5185m <1
Manganese ppm ASTM D5185m <1 <1 <1 Magnesium ppm ASTM D5185m 19 24 19 Calcium ppm ASTM D5185m 1782 2017 1933 Phosphorus ppm ASTM D5185m 276 317 293 Zinc ppm ASTM D5185m 2634 3403 2961 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 20 1 1 0 VINTAMINANTS method limit/base current history1 history2 Solium ppm ASTM D5185m >181 73 169 124 Sodium ppm ASTM D5185m >20 1 1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0.1 0.1 Nitration Abs/c
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Calcium ppm ASTM D5185m 1782 2017 1933 Phosphorus ppm ASTM D5185m 276 317 293 Zinc ppm ASTM D5185m 351 387 343 Sulfur ppm ASTM D5185m 2634 3403 2961 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >181 73 169 124 Sodium ppm ASTM D5185m >20 1 1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 5.6 6.3 6.0
Phosphorus ppm ASTM D5185m 276 317 293 Zinc ppm ASTM D5185m 351 387 343 Sulfur ppm ASTM D5185m 2634 3403 2961 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >181 73 169 124 Sodium ppm ASTM D5185m >20 1 1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 5.6 6.3 6.0
Zinc ppm ASTM D5185m 351 387 343 Sulfur ppm ASTM D5185m 2634 3403 2961 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >181 73 169 124 Sodium ppm ASTM D5185m >181 73 169 124 Sodium ppm ASTM D5185m >20 1 1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 5.6 6.3 6.0
Sulfur ppm ASTM D5185m 2634 3403 2961 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >181 73 169 124 Sodium ppm ASTM D5185m >181 73 169 124 Potassium ppm ASTM D5185m >20 1 1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 5.6 6.3 6.0
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >181 73 169 124 Sodium ppm ASTM D5185m >181 73 169 124 Sodium ppm ASTM D5185m >20 1 1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 5.6 6.3 6.0
Silicon ppm ASTM D5185m >181 73 169 124 Sodium ppm ASTM D5185m 0 <1
Sodium ppm ASTM D5185m 0 <1 1 Potassium ppm ASTM D5185m >20 1 1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 5.6 6.3 6.0
Potassium ppm ASTM D5185m >20 1 1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0.1 0.1 Nitration Abs/cm *ASTM D7624 >20 5.6 6.3 6.0
INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D784400.10.1NitrationAbs/cm*ASTM D7624>205.66.36.0
Soot % * ASTM D7844 0 0.1 0.1 Nitration Abs/cm * ASTM D7624 > 20 5.6 6.3 6.0
Nitration Abs/cm *ASTM D7624 >20 5.6 6.3 6.0
Sulfation Abs/.1mm *ASTM D7415 >30 17.9 20.9 19.4
FLUID DEGRADATION method limit/base current history1 history2
Oxidation Abs/.1mm *ASTM D7414 >25 9.9 12.7 11.6
Acid Number (AN) mg KOH/g ASTM D8445 1.2 0.966 1.32 0.91

Report Id: ENEVAL [WUSCAR] 05929855 (Generated: 08/22/2023 15:34:32) Rev: 1



OIL ANALYSIS REPORT





Jan 14/21

0ct27/20

Feb25/21.

	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
NIN	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
23 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Feb 15/23 Apr25/23 Jun 22/23	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
	Free Water	scalar	*Visual	>0.1	NEG	NEG	NEG
٨				line it /le e e e			
MA	FLUID PROPER		method	limit/base	current	history1	history2
MM A.	Visc @ 100°C	cSt	ASTM D445	14.7	13.3	13.5	13.3
V	GRAPHS						
	Iron (ppm)			15	Lead (ppm)		
	20 - Severe				Severe		
Feb 15/23 Apr25/23 Jun22/23	Absensel		den den e	10	Abnormal	ngaaana	notonin.
A Ju				Шd	ι Λ		
	MA AA			5		$\Lambda \Lambda$	
	VWV	n	~~~	<u> </u>		"Lul	
	Oct27/20	0ct27/21	5/23		Oct27/20	Jun1/21	5/23
	Oct2 Jan1 Jun	0ct2	Feb15/23 Apr25/23		Oct2 Jan1 Feb2	Jun1/21 Oct27/21 Feb15/23	Apr25/23 Jun22/23
~~~	Aluminum (ppm)				Chromium (p		-
L	12 Severe			6	T 3 3 3 3 3 5 5 5 5 7 5 7 7		
	10-		1	5	Abnormal		
	8 6 6 6 6			4 84.3	- 0		
Feb 15/23 Apr25/23 Jun 22/23	H 0			분3 2			
Apr Jun	2 MAA	AA		1			
				<b></b> 0			
	0ct27/20 Jan14/21 Feb25/21 Jun1/21	0ct27/21	Feb15/23 Apr25/23	1 1 1	0ct27/20 Jan 14/21 Feb 25/21	Jun1/21 0ct27/21 Feb15/23	Apr25/23 Jun22/23
		0	Ap	2		Fet 0, J	Ap
	Copper (ppm)			250	Silicon (ppm)		
	20 Severe			250	Sauara		
	15 -			200	Appropriat		A
	툞 10-			E 150	$\Lambda \Lambda$	ANJ	1 AM
	Abnormal			100	1/h/L		M/V/V
	1 mart	V.A.	m	50	VVV	V V	VV V V
	212 2010	21	23 23	<b>V</b> 0	20 21- 21-	/21+ /21+ /23+	23
	0ct27/20 Jan14/21 Feb25/21	0ct27/21	Feb 15/23 Apr25/23	7	0ct27/20 Jan14/21 Feb25/21	Jun1/21 0ct27/21 Feb15/23	Apr25/23 Jun22/23
	_ , _		L 4 -	5		- E	A JL
	Viscosity @ 100°	U 0000055555	110000000000	.0.5	Base Number		000000123330
	Abnormal			(B/H0			٨
	Abnormal			¥6.0	Base		MILA
	€14 Ø Abnormal			v 10 4.0	$\Lambda \Lambda \Lambda$	M	VV
	경 12 - Abnormal			(0)HOX 6.0 WWW Jack MWW 2.0 BWW 2.0	V	~ V	
	10			[#]			
		0ct27/21	5/23		Oct27/20 - Jan14/21 - Feb25/21 -	Jun1/21- 0ct27/21- eb15/23 -	5/23
	5/1 5/4 2/2	ct3	Feb15/23 Apr25/23		0ct27/20 Jan14/21 Feb25/21	Jun1/21 Oct27/21 Feb15/23	Apr25/23 Jun22/23
	Oct27/20 Jan 14,21 Feb 25,21	0					
							_
Laboratory	: WearCheck USA -	501 Madis				EDL NA Reci	
Laboratory Sample No.	: WearCheck USA - : WC0788304	501 Madia Received	d : 21.	Aug 2023		V POWER STATION, 299	5 WHETHERINGTON
Laboratory Sample No. Lab Number	: WearCheck USA - : WC0788304 : 05929855	501 Madis Received Diagnose	d : 21. ed : 22.	Aug 2023 Aug 2023		V POWER STATION, 299	5 WHETHERINGTON ALDOSTA, C
Laboratory Sample No. Lab Number Unique Number	: WearCheck USA - : WC0788304 : <mark>05929855</mark> : 10615126	501 Madia Received	d : 21. ed : 22.	Aug 2023		V POWER STATION, 299 V	5 WHETHERINGTON ALDOSTA, C US 316
Laboratory Sample No. Lab Number Unique Number Test Package	: WearCheck USA - : WC0788304 : <mark>05929855</mark> : 10615126	501 Madis Received Diagnose Diagnost	d : 21 . ed : 22 . tician : Sea	Aug 2023 Aug 2023 an Felton		V POWER STATION, 299 V Contact: 、	5 WHETHERINGTON ALDOSTA, C