

Component

Biogas Engine

LORM03BE (S/N 220-7240)

OIL ANALYSIS REPORT

Sample Rating Trend DIRT \mathbf{X}

CHEVRON HDAX 6500 LFG GAS ENGINE	dozo Nevčozo Andozi Menjozi Nevčozi Feičozz Menčoz						
DIAGNOSIS	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Recommendation We recommend that you drain the oil from the component if this has not already been done. We	Sample Number Sample Date	hue	Client Info Client Info		WC0679196 22 Sep 2022	WC0679269 11 May 2022	WC0666996 29 Apr 2022
recommend an early resample to monitor this condition.	Oil Age	hrs	Client Info		0	133902 131607	133902 131607
Wear All component wear rates are normal.	Sample Status		Client Info		N/A SEVERE	SEVERE	N/A SEVERE
Contamination		N	method	limit/base	current	history1	history2
Fluid Condition	Glycol		WC Method	27.0	NEG	NEG	NEG
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is	WEAR METALS		method	limit/base	current	history1	history2
acceptable for this fluid.	Iron	ppm	ASTM D5185m	>15	8	11	8
	Nickel	ppm	ASTM D5185m		<1 <1	<1	< 1
	Titanium	mag	ASTM D5185m		0	0	0
	Silver	ppm	ASTM D5185m		0	2	0
	Aluminum	ppm	ASTM D5185m	>5	3	6	5
	Lead	ppm	ASTM D5185m		4	2	1
	Copper	ppm	ASTM D5185m		2	21	6
	Tin	ppm	ASTM D5185m	>20	6	8	7
	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		3	5	2
	Barium	ppm	ASTM D5185m		0	0	0
	Molybdenum	ppm	ASTM D5185m		2	4	4
	Manganese	ppm	ASTM D5185m		<1	<1	<1
	Magnesium	ppm	ASTM D5185m		16	21	24
	Calcium	ppm	ASTM D5185m		1755	1806	1909
	Phosphorus	ppm	ASTM D5185m		307	330	352
	Zinc	ppm	ASTM D5185m		365	406	425
	Sultur	ppm	ASTM D5185m		3150	2347	2523
	CONTAMINANTS	5	method	limit/base	current	history1	history2
	Silicon	ppm	ASTM D5185m	>181	228	234	233
	Potassium	mqq mqq	ASTM D5185m ASTM D5185m	>20	<1 0	270 0	345 1
	INFRA-RED	I- I-	method	limit/base	current	historv1	historv2
	Soot %	%	*ASTM D7844		0.1	0.1	0.1
	Nitration	Abs/cm	*ASTM D7624	>20	6.2	4.7	5
	Sulfation	Abs/.1mm	*ASTM D7415	>30	22.0	18.9	19.4
	FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	15.2	9.2	9.9
	Acid Number (AN)	mg KOH/g	ASTM D8045	1.2	1.47	0.52	0.67

Base Number (BN) mg KOH/g ASTM D2896 4.5

5.46

5.16

3.07



OIL ANALYSIS REPORT









				2.2.2.5	VISUAL		method	limit/base	current	history1	history2
				1	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
		V .	1	-1	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
11	11	M	N/I	T	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
V	V			V	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Y				1000	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
	000130		1000000000000		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
9/21	2/21	2/21-	3/22		Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
May1	Aug1	Nov2	Feb1(Mar3(Odor	scalar	*Visual	NORML	NORML	NORML	NORML
					Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
					Free Water	scalar	*Visual		NEG	NEG	NEG
				1				Proc D. As a sec		Internet and	la la la mu
	1 1		- A	1	FLUID PROPE	RHES	method	limit/base	current	nistory i	nistory2
11	V	V	$\Lambda \Lambda$	1	Visc @ 100°C	cSt	ASTM D445	14.7	14.4	14.4	14.4
V	V			V	GRAPHS						
1					Iron (ppm)				Lead (ppm)		
51-	11-	-17	2		Severe			1111	0		Ν
ay19/2	ug12//	ov22/1	eb 1 8/2 ar3 0/2		Abnormal		10000000		6-		1
N	A	Z	e N	mqq	10 M		1.1	A wad	4 - Severe		
					st V h	Alla	N	V	2-	. 1 ~	IN
					0		N.		ol m	~~ ~ `	Nm-
5	M	~~	$A \mathcal{N}$	<u>.</u>	:t13/2(v18/2(Apr1/2	sy19/2 g12/2	b18/2	ar 3 U/ Zi	сt13/2(v18/2(Apr1/2	ay 19/2 g 12/2	b18/22
V `			<u> </u>		No 00	Au	Ne Fei	EMI	No Oc	Au Au	Na Ma
				. 3	Aluminum (ppr	n)			Chromium (p	pm)	
				1	10-				4 Severe		
				- Е	8		nA	E	3		
/19/21	12/21	122/21	30/22	dd	4 Abnormal		$\mathcal{A}\mathcal{W}$	<u>~</u>	2		
Mar	Aug	Nov	Feb		2	$-\sqrt{\mathbf{v}}$			~~~		Am
C						21	22+	+	20+02		
)ct13/ lov18/ Apr1/	lay 19, wg 12,	eb18/	1ar.su/	Det13/ lov18/ Apr1/	lay19, ug12,	eb 18/
		0.11			Copper (ppm)	2 4	2 4 3	2	Silicon (nnm)	2 4 7	2 11 2
				1		100000000000		30		122700000000000000000000000000000000000	
~	~		~_~	1	20			25	0 - Severe		1 r
			(ninin bia dininin bia	E	15 -			20 ق 15		Λ.	INT
				Ξ.	10			10	5	Th	NV V
9/21-	2/21-	2/21-	8/22 - 1/22 -	-	5		~ /	5		v	
May1	Augl	Nov2	Feb18 Mar30		20 10	221			20 20 20	121-	122 - 122 -
					Oct13 Vov18, Apr1	May19 Aug12	Nov22 Feb18	viarsu	Oct13 Vov18 Apr1	May 19 Aug 12	Novzz Feb 18 Mar30
					Viscosity @ 100	D°C		En.	Base Number		
					18 Abnormal			(B)	0T		
				-	16- A			HOX 4	Base	2000	AM
				(100-1	14		~	<u>الم</u>	0-	V -	- 1
				55	Abnormal			MN 2	0		
					10			80 1. 	0		*
					3/20 - 3/20 - 1/21 -	19/21	8/22	77/0	3/20 - 8/20 -	19/21	8/22 .
					Oct1 Nov1 Api	May Aug1	Nov. Feb1	Mar	Oct1 Nov1 Api	May	Feb1 Mar3
			I ohovete		WoorChastello	EOI Marth			0		A Dooine Lausia
	4	•	Sample N	у О.	: WC0679196	Received	son ave., Ca 23	Sep 2022	LORAIN P	DWER STATION, 4355	n necips-Lorain) OBERLIN-ELYRIA ROAD
Lab Number				ber	: 05649846 Diagnosed : 27 Sep 2022					,	OBERLIN, OH
TEST	ING LABORATORY	Y	Unique Nur	nber	: 10149398	Diagnost	ician : Ang	gela Borella		0	US 44074
Cert	ificate L236	67 e thic	I est Pack	age	: MOB 2	arvica at 1 0	00-237-126	a		Conta Kent Bridgett	act: Kent Bridgett
* - L	Denote	s uns es tes	t methods t	hat are	outside of the IS	0 17025 sco	pe of accred	o. ditation.		ivenii. Bhuyell	T:
Stai	tement	s of c	onformity to	specific	cations are based c	on the simple	acceptance	decision rule	(JCGM 106:2012	2)	F:

Page 2 of 2