

OIL ANALYSIS REPORT



NORMAL

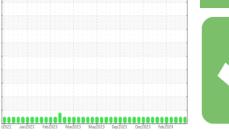


Machine Id Pinconning CAT 1 PINM01BE Biogas Engine

Fluid

CHEVRON HDAX 9500 GAS ENGINE OIL 40 (--- GAL)

SAMPLE INFORMATION





WC0840774

0

WC0840772

DIAGNOSIS	SAMPLE INFORM	VIATION	method	limit/base	
Recommendation	Sample Number		Client Info		WC0840755
Resample at the next service interval to monitor.	Sample Date		Client Info		04 Apr 2024
Wear	Machine Age	hrs	Client Info		66019
All component wear rates are normal.	Oil Age	hrs	Client Info		786
Contamination	Oil Changed		Client Info		Not Changd
There is no indication of any contamination in the	Sample Status				NORMAL
oil.	CONTAMINATIO	N	method	limit/base	current
Fluid Condition	Fuel		WC Method	>4.0	<1.0
The BN result indicates that there is suitable	Water		WC Method	>4.0	<1.0 NEG
alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is	Glycol		WC Method		NEG
suitable for further service.			WC Welliou		NEG
	WEAR METALS		method	limit/base	current
	Iron	ppm	ASTM D5185m	>14	3
	Chromium	ppm	ASTM D5185m	>3	0
	Nickel	ppm	ASTM D5185m		0
	Titanium	ppm	ASTM D5185m		0
	Silver	ppm	ASTM D5185m		0
	Aluminum	ppm	ASTM D5185m	>5	2
	Lead	ppm	ASTM D5185m	>8	2
	Copper	ppm	ASTM D5185m	>5	2
	Tin	ppm	ASTM D5185m	>3	2
	Vanadium	ppm	ASTM D5185m		0
	Cadmium	ppm	ASTM D5185m		0
	ADDITIVES		method	limit/base	current
	Boron	ppm	ASTM D5185m		4
	Barium	ppm	ASTM D5185m		0
	Molybdenum	ppm	ASTM D5185m		3
	Manganese	ppm	ASTM D5185m		0
	Magnesium	ppm	ASTM D5185m		17
	Calcium	ppm	ASTM D5185m		1757
	Phosphorus	ppm	ASTM D5185m		283
	Zinc	ppm	ASTM D5185m		352
	Sulfur	ppm	ASTM D5185m		2638
	CONTAMINANTS	8	method	limit/base	current

Acid Number (AN) mg KOH/g ASTM D8045 1.0

		1100010100	1100010772	1100010111
Client Info		04 Apr 2024	26 Mar 2024	18 Mar 2024
Client Info		66019	65808	65630
Client Info		786	575	397
Client Info		Not Changd	Not Changd	Not Changd
		NORMAL	NORMAL	NORMAL
method	limit/base	current	history1	history2
WC Method	>4.0	<1.0	<1.0	<1.0
WC Method		NEG	NEG	NEG
WC Method		NEG	NEG	NEG
method	limit/base	current	history1	history2
ASTM D5185m	>14	3	2	2
ASTM D5185m	>3	0	0	<1
ASTM D5185m		0	<1	0
ASTM D5185m		0	0	<1
ASTM D5185m		0	0	0
ASTM D5185m	>5	2	2	3
ASTM D5185m	>8	2	<1	1
ASTM D5185m	>5	2	2	2
ASTM D5185m	>3	2	1	2
ASTM D5185m		0	0	<1

0

DDITIVES		method				history2
on	ppm	ASTM D5185m		4	2	1
um	ppm	ASTM D5185m		0	0	2
ybdenum	ppm	ASTM D5185m		3	1	2
nganese	ppm	ASTM D5185m		0	0	0
gnesium	ppm	ASTM D5185m		17	9	11
cium	ppm	ASTM D5185m		1757	1539	1626
sphorus	ppm	ASTM D5185m		283	251	268
;	ppm	ASTM D5185m		352	311	348
ur	ppm	ASTM D5185m		2638	2320	2487
ONTAMINANTS	;	method	limit/base	current	history1	history2
on	maa	ASTM D5185m	>180	128	108	95

Silicon	ppm	ASTM D5185m	>180	128	108	95
Sodium	ppm	ASTM D5185m	>20	1	2	0
Potassium	ppm	ASTM D5185m	>20	0	0	3
INFRA-RED		method				history2
Soot %	%	*ASTM D7844		0	0	0
Nitration	Abs/cm	*ASTM D7624		5.2	5.0	4.6
Sulfation	Abs/.1mm	*ASTM D7415		18.1	17.6	16.5
FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414		11.5	10.7	9.2

0.91

3.27

Base Number (BN) mg KOH/g ASTM D2896 5.4 Report Id: EDLPIN [WUSCAR] 06141524 (Generated: 04/10/2024 13:32:52) Rev: 1

Submitted By: Kevin Ackerman

0.88

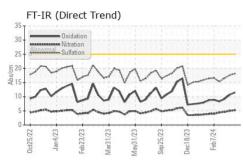
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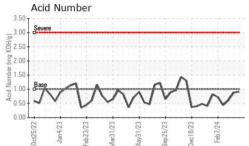
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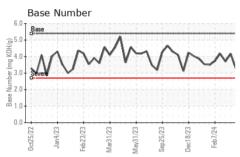
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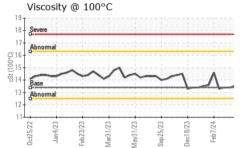


OIL ANALYSIS REPORT









VISUAL						
		method				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		NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPER			line it //s e e e			
Visc @ 100°C	cSt	method ASTM D445	limit/base	current	history1 13.4	history2 13.4
	COL	A31W D443	13.4	13.5	13.4	13.4
GRAPHS						
Iron (ppm)			15	Lead (ppm)		
Severe				Severe		
Abnormal			10	Abnormal		
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0ct25/22 Jan4/23 Feb23/23	May31/23	Sep25/23 Dec18/23		0ct25/22 Jan4/23 Feb23/23	Mar31/23 May31/23 Sen25/23	Dec18/23 Feb7/24
Aluminum (ppm)		Se		Chromium (pr		De
			5	T 12222222222222		
Severe			4	Severe		
				Abnormal		
			E ³			
Abnormal			<u>الم</u>			
		\sim	∧ 1	-		
Abnormal					/23	23 >
	May31/23	Sep25/23 Dec18/23			Mar31/23	Dec18/23
Abnormal 2015200 2015000 2015000 2015000 2015000 2015000 2015000 20150000000000	May31/23	Sep25/23		Janif22222 Janif223 Silicon (ppm)	Mar31/23	Dec18/23
Abnormal Copper (ppm) Copper (ppm)	czi ream	Bep25/23		Cit25/22 Jan 4/23 Silicon (ppm)	Mar31/23	Bec18/23
Abnomal 2015 20	C2/16/mW	Sep25/23	250 200	oct25/22 Jan4/23 Silicon (ppm)	Mar21/23 May21/23 May21/23	Pact 8/23 + Feb 7/24 +
Abnormal	c2) (C/A)	Sep 25/2/3		Silicon (ppm)	Mar31/23	Dec18/23
Abnomal 2015 20	c2/1 CPM	Sep 25/2/3	250 200 150	Silicon (ppm)	Mar31/23	Decl 8/23
Abnomal Copper (ppm) Severe				Silicon (ppm)	W	
Abnomal 2 2 2 2 2 2 2 2 2 2 2 2 2				Silicon (ppm)	W	
Aproxima Jan4123 Feb2312 Feb23123 Feb2312 Feb23123 Feb23123 Feb23123 Feb23123	May31/23	Sep25/23 5 Sep25/23 6 Dec18/23 6 Port 25/23		Silicon (ppm)	Mar31/23 Mar	
Abnormal Abnormal Copper (ppm) Copper (pp	May31/23		250 200 <u>4</u> 200 <u>50</u> 50 0	CettSh22 Det	W	
Abnormal Abnormal Copper (ppm) Severe Copper (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Copper (ppm)	May31/23		250 200 100 200 200 100 50 0	CZ25223 Silicon (ppm) E2040 Base Number	W	
Abnormal Copper (ppm) Copper (ppm) Severe CISCIP CISCIP COPPER (ppm) Copper (ppm) Copper (ppm) Copper (ppm) CISCIP	May31/23		250 200 100 200 200 100 50 0	CZ25223 Silicon (ppm) E2040 Base Number	W	
Abnormal Copper (ppm) Copper (ppm) Severe Abnormal CICCIPAL CICCIPAL COLORAN COLORAN CICCIPAL CI	May31/23		250 200 100 200 200 100 50 0	CZ25223 Silicon (ppm) E2040 Base Number	W	
Abnormal Abnormal Copper (ppm) Copper (ppm) Severe Abnormal Copper (ppm) Copper	May31/23		250 200 100 200 200 100 50 0	CZ25223 Silicon (ppm) E2040 Base Number	W	
Abnormal Copper (ppm) Copper (ppm) Severe Abnormal EZ/52HPuer Viscosity @ 100° Severe Abnormal EZ/52HPuer EZ/52HPUER	May31/23		250 200 200 200 200 200 200 200 200 200	CZ25223 Silicon (ppm) E2040 Base Number	W	
Abnormal Abnormal Copper (ppm) Copper (ppm) Severe Abnormal Copper (ppm) Copper	C C C C C C C C C C C C C C C C C C C		250 200 200 200 200 200 200 200 200 200	CZ25223 Silicon (ppm) E2040 Base Number	W	Dec18/23 Pec18/23 Feb7/24

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 **EDL NA Recips-Pinconning** Sample No. : WC0840755 Pinconning Powerstation, 2403 E. Whitefeather Road Received : 08 Apr 2024 Lab Number : 06141524 Tested : 09 Apr 2024 Pinconning, MI US 48650 Unique Number : 10966332 Diagnosed : 10 Apr 2024 - Sean Felton Test Package : MOB 2 Contact: DOUG HINE Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. doug.hine@edlenergy.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: F:

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Submitted By: Kevin Ackerman Page 2 of 2