

# **OIL ANALYSIS REPORT**

### Sample Rating Trend

# **NORMAL**



Machine Id SJNM01BE Component **Biogas Engine** 

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

## DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

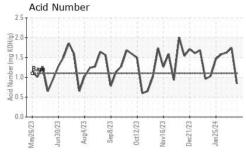
#### **Fluid Condition**

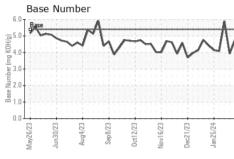
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

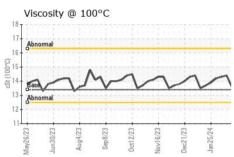
S ENGINE OIL 40 (-	une,	y2023 Jun20	23 Aug2023 Sep2023	002023 1002023 0002023	PSUSTIBLE	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0865845	WC0865844	WC0865701
Sample Date		Client Info		22 Feb 2024	15 Feb 2024	08 Feb 2024
Machine Age	hrs	Client Info		70531	70362	70196
Oil Age	hrs	Client Info		169	996	830
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				NORMAL	ABNORMAL	ABNORMAL
CONTAMINATION	V	method	limit/base	current	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 D5185m	>15	<1	3	2
Chromium	ppm	ASTM D5185m	>4	0	<1	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>6	2	2	<1
Lead	ppm	ASTM D5185m	>9	2	4	3
Copper	ppm	ASTM D5185m	>6	<1	1	<1
Tin	ppm	ASTM D5185m	>4	2	3	2
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		4	3	2
Barium	ppm	ASTM D5185m		0	10	0
Molybdenum	ppm	ASTM D5185m		4	8	9
Manganese	ppm	ASTM D5185m		<1	0	0
Magnesium	ppm	ASTM D5185m		25	27	28
Calcium	ppm	ASTM D5185m		1903	2147	2136
Phosphorus	ppm	ASTM D5185m		289	396	325
7!						
	ppm	ASTM D5185m		362	399	418
	ppm	ASTM D5185m ASTM D5185m				418 2403
	ppm		limit/base	362	399	2403
Sulfur CONTAMINANTS	ppm	ASTM D5185m	limit/base >181	362 1961	399 2744	2403
Sulfur CONTAMINANTS Silicon	ppm	ASTM D5185m method		362 1961 current	399 2744 history1	2403 history2
Sulfur CONTAMINANTS Silicon Sodium	ppm	ASTM D5185m  method  ASTM D5185m		362 1961 current 77	399 2744 history1 ▲ 184	2403 history2 ▲ 188
Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm	Method ASTM D5185m ASTM D5185m ASTM D5185m	>181	362 1961 current 77	399 2744 history1 184	2403 history2  188 <1 0
Sulfur  CONTAMINANTS Silicon Sodium Potassium  INFRA-RED	ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	>181	362 1961 current 77 1 1 current 0.1	399 2744 history1 ▲ 184 0 2 history1 0.1	2403 history2 188 <1 0 history2 0.1
Sulfur  CONTAMINANTS Silicon Sodium Potassium  INFRA-RED Soot %	ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m method	>181	362 1961 current 77 1 1 current	399 2744 history1  ▲ 184 0 2 history1	2403 history2  188 <1 0 history2
Sulfur  CONTAMINANTS Silicon Sodium Potassium  INFRA-RED Soot % Nitration	ppm ppm ppm ppm	ASTM D5185m  method  ASTM D5185m  ASTM D5185m  ASTM D5185m  method  *ASTM D7844	>181 >20 limit/base	362 1961 current 77 1 1 current 0.1	399 2744 history1 ▲ 184 0 2 history1 0.1	2403 history2 188 <1 0 history2 0.1
Sulfur  CONTAMINANTS Silicon Sodium Potassium  INFRA-RED Soot % Nitration	ppm ppm ppm ppm Abs/.1mm	ASTM D5185m  method  ASTM D5185m  ASTM D5185m  ASTM D5185m  method  *ASTM D7844  *ASTM D7624	>181 >20 limit/base >20	362 1961 current 77 1 1 current 0.1 6.8	399 2744 history1 ▲ 184 0 2 history1 0.1 8.2	2403 history2 188 <1 0 history2 0.1 8.1 23.3
Sulfur  CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm Abs/.1mm	ASTM D5185m  method  ASTM D5185m  ASTM D5185m  ASTM D5185m  method  *ASTM D7844  *ASTM D7624  *ASTM D7415	>181 >20 limit/base >20 >30	362 1961 current 77 1 1 current 0.1 6.8 18.5	399 2744 history1  ▲ 184 0 2 history1 0.1 8.2 23.6	2403 history2 188 <1 0 history2 0.1 8.1 23.3
Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm Abs/cm Abs/.1mm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7624 *ASTM D7415 method	>181 >20 limit/base >20 >30 limit/base	362 1961 current 77 1 1 current 0.1 6.8 18.5	399 2744 history1  ▲ 184 0 2 history1  0.1 8.2 23.6 history1	2403 history2 188 <1 0 history2 0.1 8.1 23.3 history2



# **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
<b>Emulsified Water</b>	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

FLUID PROPER	RTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	13.4	13.6	14.4	14.3

visc @ 100°C	CSI	ASTIVI D4	45 13.4	13.0 14.4 14.3
GRAPHS				
Iron (ppm)				Lead (ppm)
Severe				20
Abnormal				15 - Severe
Automa	11111111			E 10 - Abnormal
	Μ			5
1-	ノル	$\sim$	~~	VV
23 23 23	3 23	23 23	24	3 3 3 3 3 3
May26/23 Jun30/23 Aug4/23	sepo/23	Nov16/23 Dec21/23	Jan25/24	May26/23 Jun30/23 Aug4/23 Sep8/23 Oct12/23 Dec21/23
Aluminum (ppm)		2 0	7	Chromium (ppm)
Severe			7.7.7.7.7.7.7	el annocede estatananced best and annocede esta
				5 - Severe 4 - Abnormal
Abnormal				4+ 0
. [				2
$\Lambda M \Lambda$	^	no	~/	1
2 2 2 3	3 8	23 -	24	
May26/23 - Jun30/23 - Aug4/23 -	oepo/23	Nov16/23 Dec21/23	Jan25/24	May26/23 Jun30/23 Aug4/23 Sep8/23 Oct12/23 Dec21/23
Copper (ppm)		2 0	7	Silicon (ppm)
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	7		7777777	250 7
Severe				200 - Severe Appromal
				E 150
Abnormal				V V V
1-1-	1	_ ^		50
2 2 2 3	3 8	23 23	**************************************	3 3 3 3 3 3 3
May26/23 - Jun30/23 - Aug4/23 -	oepo/23	Nov16/23 Dec21/23	Jan25/24	May26/23 Jun30/23 Aug4/23 Sep8/23 Oct12/23 Dec21/23
Viscosity @ 100°		2 0	7	Base Number
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	energes.		11711111	6.0-
Abnormal				₹5.0 × × × × ×
M	~			E 4.0
Abnormal	<u> </u>			2.0
			11 1111	ROBERT (mg KOH/0)
g g g s	3 8	2 23	4	0.0





Certificate L2367

Laboratory Sample No.

Lab Number : 06100286 Unique Number: 10898516 Test Package : MOB 2

: WC0865845

**Tested** Diagnosed

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 26 Feb 2024

: 27 Feb 2024 : 28 Feb 2024 - Jonathan Hester **EDL NA Recips-South Jordan** 

South Jordan Powerstation, 10473 S. Bacchus Hwy. South Jordan, UT

US 84095

Contact: Aaron Klein aaron.klein@edlenergy.com

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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