

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id SJNM03BE

Biogas Engine

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

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 INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0865717	WC0865734	WC0865727
Sample Date		Client Info		07 Jun 2024	30 May 2024	12 May 2024
Machine Age	hrs	Client Info		117236	117116	0
Oil Age	hrs	Client Info		120	1007	0
Oil Changed		Client Info		Not Changd	Changed	N/A
Sample Status				NORMAL	SEVERE	ABNORMAL
CONTAMINATION	J	method	limit/base	current	history1	history2
Fuel		WC Method	>4 0	<10	<10	<10
Water		WC Method		NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	historv1	historv2
Iron			. 14	-	0	0
Chromium	ppm	ASTM DE105m	>14	- 4	0	2
Chromium	ppm	ACTM DE105m	>3	<1	0	<
NICKEI	ppm	ACTM DE105m		0	0	<
Litanium	ppm	ASTM D5185M		<1	0	< 1
Silver	ppm	ASTM D5185m	<i>_</i>	0	0	0
Aluminum	ppm	ASTM D5185m	>5	2	2	2
Lead	ppm	ASTM D5185m	>8	1	▲ 10 0	3
Copper	ppm	ASTM D5185m	>5	1	3	4
l in	ppm	ASTM D5185m	>3	2	<u> </u>	4
vanadium	ppm	ASTM D5185m		U	0	<
Cadmium	ppm	ASTM D5185m		<1	0	<1
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	history1 0	history2 <1
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base	current 0 0	history1 0 0	history2 <1 2
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 0 0 2	history1 0 0 4	history2 <1 2 5
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 0 0 2 <1	history1 0 0 4 <1	history2 <1 2 5 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 0 2 <1 11	history1 0 4 <1 21	history2 <1 2 5 <1 19
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current 0 2 <1 11 1778	history1 0 4 <1 21 1965	history2 <1 2 5 <1 19 1964
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 0 2 <1 11 1778 268	history1 0 4 <1 21 1965 286	history2 <1 2 5 <1 19 1964 351
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 0 2 <1 11 1778 268 337	history1 0 4 <1 21 1965 286 367	history2 <1 2 5 <1 19 1964 351 385
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current 0 2 <1 11 1778 268 337 1931	history1 0 4 <1 21 1965 286 367 2337	history2 <1 2 5 <1 19 1964 351 385 2612
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	ourrent 0 2 <1 11 1778 268 337 1931	history1 0 4 <1 21 1965 286 367 2337 history1	history2 <1 2 5 <1 19 1964 351 385 2612 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base limit/base >180	current 0 2 <1 11 1778 268 337 1931 current 55	history1 0 4 <1 21 1965 286 367 2337 history1 ▲ 238	history2 <1 2 5 <1 19 1964 351 385 2612 history2 179
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm 1 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 2 ppm 3 ppm 3 ppm 3 ppm 4	method ASTM D5185m	limit/base limit/base >180 >20	current 0 2 <1 11 1778 268 337 1931 current 55 0	history1 0 4 <1 21 1965 286 367 2337 history1 ▲ 238 <1	history2 <1 2 5 <1 19 1964 351 385 2612 history2 179 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base limit/base >180 >20 >20	ourrent 0 2 <1 11 1778 268 337 1931 current 555 0 2	history1 0 4 <1 21 1965 286 367 2337 history1 ▲ 238 <1 0	history2 <1 2 5 <1 19 1964 351 385 2612 history2 179 0 3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base limit/base >180 >20 >20 limit/base	current 0 2 <1 11 1778 268 337 1931 current 55 0 2 current	history1 0 4 <1 21 1965 286 367 2337 bistory1 ▲ 238 <1 0 bistory1	history2 <1 2 5 <1 19 1964 351 385 2612 history2 179 0 3 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm i ppm i	method ASTM D5185m	limit/base limit/base >180 >20 >20 limit/base	ourrent 0 2 <1 1778 268 337 1931 current 555 0 2 current 55 0 2 current 0	history1 0 4 <1 21 1965 286 367 2337 history1 ▲ 238 <1 0 history1 0	<1 2 5 <1 19 1964 351 385 2612 history2 179 0 3 history2 0 3 0 0 0 0 0 0 0 0 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ррт (ррт ()))))))))))))))))))))))))))))))))))	method ASTM D5185m	limit/base limit/base >180 >20 limit/base limit/base	ourrent 0 2 <1 1778 268 337 1931 current 55 0 2 current 0 5.5 0 2 current 0 5.3	history1 0 4 <1 21 1965 286 367 2337 history1 ▲ 238 <1 0 history1 0 6.7	history2 <1 2 5 <1 19 1964 351 385 2612 history2 179 0 3 history2 0 6.0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base limit/base >180 >20 >20 limit/base	ourrent 0 2 <1 11 1778 268 337 1931 current 55 0 2 current 55 0 2 current 0 5.3 15.2	history1 0 4 <1 21 1965 286 367 2337 history1 ▲ 238 <1 0 history1 0 6.7 19.9	history2 <1 2 5 <1 19 1964 351 385 2612 history2 179 0 3 history2 0 0 6.0 17.5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ррт ррт ррт ррт ррт ррт ррт ррт	method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415 method	limit/base limit/base >180 >20 limit/base limit/base	ourrent 0 2 <1 1778 268 337 1931 ourrent 55 0 22 current 0 5.3 15.2 current	history1 0 4 <1 21 1965 286 367 2337 history1 ▲ 238 <1 0 history1 0 history1 0 history1 0 history1 0 history1 0 history1 0 history1 0 history1 0 history1 0 history1 0 history1 0 history1 0 history1 0 history1 0 history1 0 history1 0 history1 0 history1 history1 0 history1 history1 0 history1 history1 0 history1 history1 history1 history1 history1 0 history1 history1 0 history1 history1 0 history1 0 history1 0 history1 history1 0 history1	<1 2 5 <1 19 1964 351 385 2612 history2 179 0 3 history2 0 6.0 17.5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7415 method *ASTM D7414	limit/base >180 >20 >20 limit/base limit/base	ourrent 0 2 <1 1778 268 337 1931 current 55 0 2 current 0 5.3 15.2 current 8.4	history1 0 0 4 <1 21 1965 286 367 2337 history1 ▲ 238 <1 0 history1 0 6.7 19.9 history1 14.3	history2 <1 2 5 <1 19 1964 351 385 2612 history2 179 0 3 history2 0 6.0 17.5 history2 10.5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation Acid Number (AN)	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7414 *ASTM D7414 ASTM D7414 ASTM D8045	limit/base >180 >20 >20 limit/base limit/base 1.0	ourrent 0 2 <1 1778 268 337 1931 current 55 0 2 current 0 5.5 0 2 current 0 5.3 15.2 current 8.4 0.61	history1 0 0 4 <1 21 1965 286 367 2337 history1 ▲ 238 <1 0 history1 0 6.7 19.9 history1 14.3 1.36	kistory2 <1 2 5 <1 19 1964 351 385 2612 history2 179 0 3 history2 0 6.0 17.5 history2 10.5 0.59
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation Acid Number (AN) Base Number (BN)	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7624 *ASTM D7624 *ASTM D7414 ASTM D7414 ASTM D8045 ASTM D2896	limit/base >180 >20 >20 limit/base limit/base limit/base 1.0 5.4	ourrent 0 2 <1 11778 268 337 1931 current 55 0 2 current 0 5.3 15.2 current 8.4 0.61 5.07	history1 0 0 4 <1 21 1965 286 367 2337 history1 ▲ 238 <1 0 history1 0 6.7 19.9 history1 14.3 1.36 4.31	history2 <1 2 5 <1 19 1964 351 385 2612 history2 179 0 3 history2 0 6.0 17.5 history2 10.5 0.59 4.45



OIL ANALYSIS REPORT

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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
ebris	scalar	*Visual	NONE	NONE	NONE	NONE
and/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
ppearance	scalar	*Visual	NORML	NORML	NORML	NORM
dor	scalar	*Visual	NORML	NORML	NORML	NORN
Emulsified Water	scalar	*Visual		NEG	NEG	NEG
ree Water	scalar	*Visual		NEG	NEG	NEG
	RTIES	method	limit/base	current	history1	histo
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Abnormal				2		
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11/23	20/23	b1/24 21/24	26/24	11/23	20/23	21/24
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Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 EDL NA Recips-South Jordan Sample No. : WC0865717 Received : 11 Jun 2024 South Jordan Powerstation, 10473 S. Bacchus Hwy. Lab Number : 06206742 Tested : 13 Jun 2024 South Jordan, UT US 84095 Unique Number : 11074203 Diagnosed : 13 Jun 2024 - Sean Felton Test Package : MOB 2 Contact: Aaron Klein Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. aaron.klein@edlenergy.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T:

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

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Submitted By: Aaron Klein

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