



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id  
**MRC-319**  
 Component  
**Natural Gas Engine**  
 Fluid  
**TULCO LUBSOIL GEO XL LOW ASH 40 (--- GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>TO60002950</b>	TO60002731	TO60002320
Sample Date		Client Info		<b>10 Jul 2024</b>	31 May 2024	01 Apr 2024
Machine Age	hrs	Client Info		<b>6789</b>	6003	5296
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	N/A	N/A
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	<b>4</b>	4	4
Chromium	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	0
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>9	<b>2</b>	2	<1
Lead	ppm	ASTM D5185m	>30	<b>9</b>	9	8
Copper	ppm	ASTM D5185m	>35	<b>7</b>	2	2
Tin	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

There is no indication of any contamination in the oil.

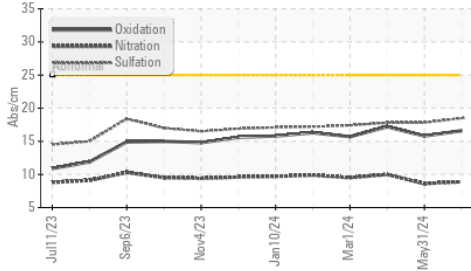
Silicon	ppm	ASTM D5185m	>+100	<b>3</b>	2	2
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	2	0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0</b>	0	0
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.9</b>	8.6	10.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>18.5</b>	17.8	17.8
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

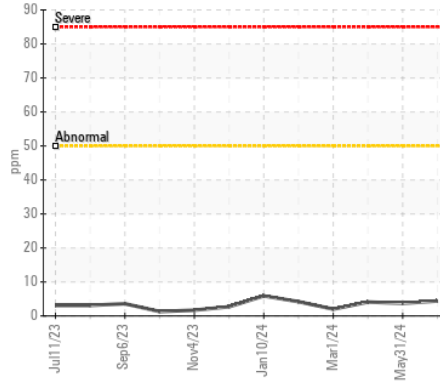
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>7</b>	4	3
Boron	ppm	ASTM D5185m	100	<b>55</b>	74	88
Barium	ppm	ASTM D5185m		<b>0</b>	0	<1
Molybdenum	ppm	ASTM D5185m	1	<b>&lt;1</b>	1	2
Manganese	ppm	ASTM D5185m		<b>1</b>	0	0
Magnesium	ppm	ASTM D5185m	10	<b>13</b>	11	12
Calcium	ppm	ASTM D5185m	1150	<b>1346</b>	1298	1379
Phosphorus	ppm	ASTM D5185m	290	<b>289</b>	283	271
Zinc	ppm	ASTM D5185m	272	<b>339</b>	318	287
Sulfur	ppm	ASTM D5185m	1900	<b>2964</b>	2297	2392
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.6</b>	15.8	17.2
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.95</b>	0.81	1.49
Base Number (BN)	mg KOH/g	ASTM D2896	4.2	<b>3.70</b>	3.68	3.62
Visc @ 40°C	cSt	ASTM D445	122	<b>143</b>	144	146
Visc @ 100°C	cSt	ASTM D445	13	<b>14.1</b>	14.1	14.1
Viscosity Index (VI)	Scale	ASTM D2270	103	<b>95</b>	94	92

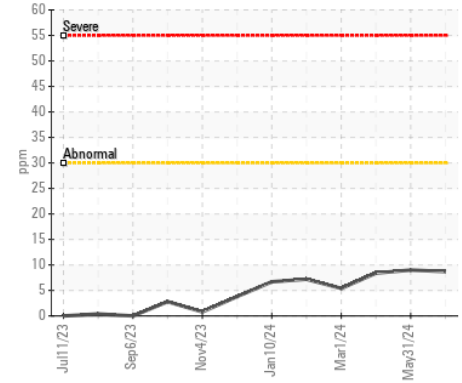
**FT-IR (Direct Trend)**



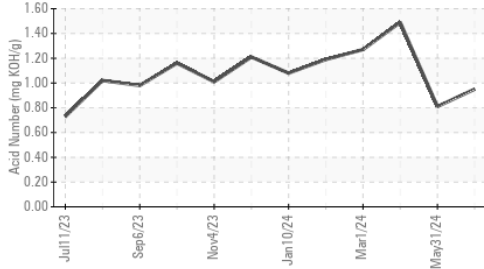
**Iron (ppm)**



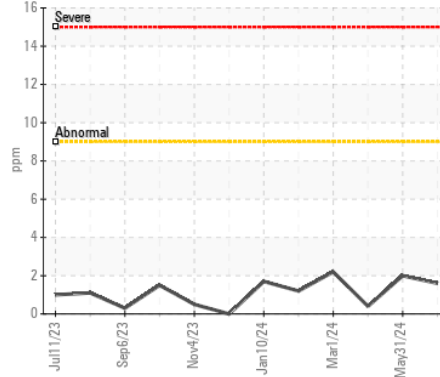
**Lead (ppm)**



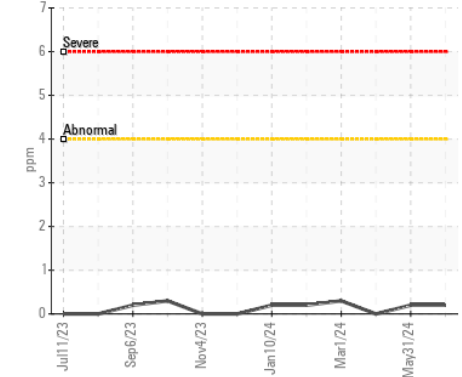
**Acid Number**



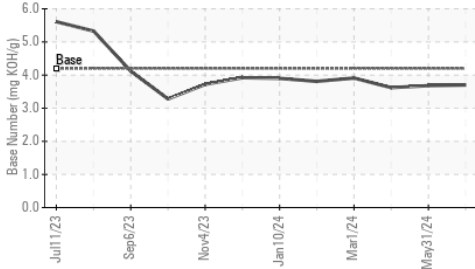
**Aluminum (ppm)**



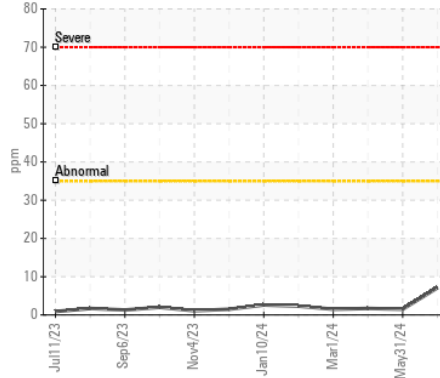
**Chromium (ppm)**



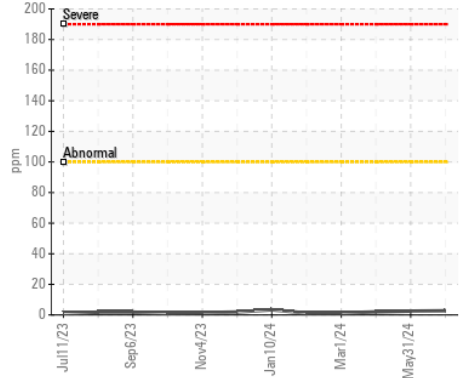
**Base Number**



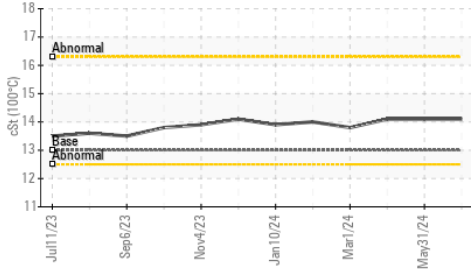
**Copper (ppm)**



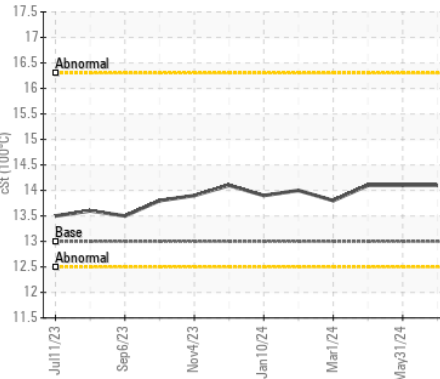
**Silicon (ppm)**



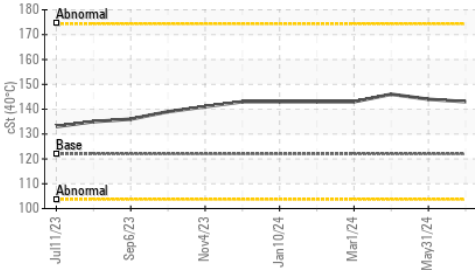
**Viscosity @ 100°C**



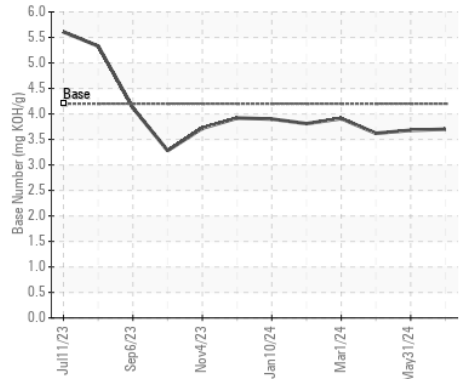
**Viscosity @ 100°C**



**Viscosity @ 40°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513

**Sample No.** : TO60002950

**Lab Number** : 06238542

**Unique Number** : 11127376

**Test Package** : MOB 2 ( Additional Tests: KV40, VI )

**Received** : 16 Jul 2024

**Tested** : 17 Jul 2024

**Diagnosed** : 17 Jul 2024 - Wes Davis

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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