

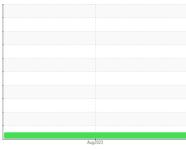
Chem-Ecol

A2308152

OIL ANALYSIS REPORT

Sample Rating Trend







Component Hydraulic System Fluid CHEM-ECOL WAYLUBE 220 (--- GAL)

DIAGNOSIS

Recommendation

This is a baseline read-out on the submitted sample.

Wear

{not applicable}

Contamination {not applicable}

Fluid Condition {not applicable}

SAMPLE INFORM	NATION	method	limit/base	current	history1	history2
Sample Number		Client Info		E30000168		
Sample Date		Client Info		25 Aug 2023		
Machine Age	hrs	Client Info		0		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				NORMAL		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	<1		
Chromium	ppm	ASTM D5185(m)	>20	0		
Nickel	ppm	ASTM D5185(m)	>20	<1		
Titanium	ppm	ASTM D5185(m)		0		
Silver	ppm	ASTM D5185(m)		0		
Aluminum	ppm	ASTM D5185(m)	>20	0		
Lead	ppm	ASTM D5185(m)	>20	0		
Copper	ppm	ASTM D5185(m)	>20	<1		
Tin	ppm	ASTM D5185(m)	>20	0		
Antimony	ppm	ASTM D5185(m)		0		
Vanadium	ppm	ASTM D5185(m)		0		
Beryllium	ppm	ASTM D5185(m)		0		
Cadmium	ppm	ASTM D5185(m)		0		
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		0		
Barium	ppm	ASTM D5185(m)		0		
Molybdenum	ppm	ASTM D5185(m)		0		
Manganese	ppm	ASTM D5185(m)		0		
0						
Magnesium	ppm	ASTM D5185(m)		1		
•		ASTM D5185(m) ASTM D5185(m)		1 9		
Magnesium	ppm	. /				
Magnesium Calcium	ppm ppm	ASTM D5185(m)		9		
Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)		9 199		
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)		9 199 9		
Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	9 199 9 1961		
Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)		9 199 9 1961 <1	 	
Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) method		9 199 9 1961 <1 current	 	 history2
Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) method ASTM D5185(m)		9 199 9 1961 <1 current 1	 	 history2
Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	>15	9 199 9 1961 <1 <u>current</u> 1 1	 history1 	 history2
Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	>15 >20	9 199 9 1961 <1 <u>current</u> 1 1 0	 history1 	 history2
Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Water	ppm ppm ppm ppm ppm ppm ppm ppm ppm %	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D6304*	>15 >20 >0.05	9 199 9 1961 <1 <u>current</u> 1 1 0 0 0.002	 history1 	 history2
Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Water ppm Water	ppm ppm ppm ppm ppm ppm ppm ppm ppm %	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5304* ASTM D6304*	>15 >20 >0.05 >500	9 199 9 1961 <1 current 1 1 0 0.002 23.4	 history1 	 history2
Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN	ppm ppm ppm ppm ppm ppm ppm ppm ppm %	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D6304* ASTM D6304*	>15 >20 >0.05 >500 limit/base	9 199 9 1961 <1 <i>current</i> 1 1 0 0.002 23.4 <i>current</i>	 history1 history1	 history2 history2
Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm %	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D6304* ASTM D6304* ASTM D6304*	>15 >20 >0.05 >500 limit/base >5000	9 199 9 1961 <1 <i>current</i> 1 1 0 0.002 23.4 <i>current</i> 406	 history1 history1 history1	 history2 history2
Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm %	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D6304* ASTM D6304* ASTM D6304* ASTM D7647 ASTM D7647	>15 >20 >0.05 >500 limit/base >5000 >1300	9 199 9 1961 <1 <u>current</u> 1 1 0 0.002 23.4 <u>current</u> 406 136	 history1 history1 history1	 history2 history2 history2
Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm %	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D6304* ASTM D6304* ASTM D6304* ASTM D7647 ASTM D7647 ASTM D7647	>15 >20 >0.05 >500 limit/base >5000 >1300 >160	9 199 9 1961 <1 <u>current</u> 1 1 0 0.002 23.4 <u>current</u> 406 136 23	 history1 history1 history1	 history2 history2
Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4μm Particles >14μm Particles >21μm	ppm ppm ppm ppm ppm ppm ppm ppm ppm %	ASTM D5185(m) ASTM D5047 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	>15 >20 >0.05 >500 limit/base >5000 >1300 >160 >40	9 199 9 1961 <1 current 1 1 0 0.002 23.4 current 406 136 23 11	 history1 history1 history1	 history2 history2 history2



OIL ANALYSIS REPORT

	ATION	method				history2
Acid Number (AN)	mg KOH/g	ASTM D974*		0.78		
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE		
Debris		Visual*	NONE			
Sand/Dirt	scalar	Visual*	NONE	NONE		
Appearance	scalar	Visual*	NORML	NORML		
Odor	scalar	Visual*	NORML	NORML		
Emulsified Water	scalar	Visual*	>0.05	NEG		
Free Water	scalar	Visual*		NEG		
FLUID PROPERT	FIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	220	213		
Nisc @ 100°C	cSt	ASTM D7279(m)		18.7		
Viscosity Index (VI)	Scale	ASTM D2270*		97		
	S	method	limit/base	current	historv1	history2
						,
Color					no image	no image
Bottom					no image	no image
					-	
¹⁰ T			491,520			T ²
iron			122,880	+		+2
a. 5+ management nickel			30,720	Severe		-2
				Abnormal		
0			2 -			+2
g25.			1 920 Jack 1 920	[····		12
Aug25/23	1-		Aug25/23 ides (per 1 m]			-1
Non-ferrous Metal	ls		480 geographical de la construcción de la construcc			-1
Non-ferrous Metal	ls		5 120			-1 -1 -1
Non-ferrous Metal	ls					-1
Non-ferrous Metal	ls		30 120 20 20 20 20 20 20 20 20 20 20 20 20 2			-1
Non-ferrous Metal	ls		30 120 20 20 20 20 20 20 20 20 20 20 20 20 2			-1 -1 -1
Non-ferrous Metal	ls		120 30 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	6µ 1	4μ 21μ	-1
Non-ferrous Metal	ls		120 30 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Acid Number	4 _μ 21 _μ	-1 -1 -1 -1 -1 -1 -1
Non-ferrous Metal	ls		120 30 8 8 8 6 2252 22 9 4 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Acid Number	4μ 21μ	-1 -1 -1 -1 -1 -1 -1
Non-ferrous Metal	ls		120 30 8 8 8 6 2252 22 9 4 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Acid Number	4μ 21μ	+2 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
Non-ferrous Metal	ls		120 30 30 4 7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Acid Number	4μ 21μ	-1 -1 -1 -1 -1 -1 -1
Non-ferrous Metal	ls		120 30 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Acid Number	4μ 21μ	-1 -1 -1 -1 -1 -1 -1 -1 -1
	Appearance Odor Emulsified Water Free Water Free Water Visc @ 40°C Visc @ 100°C Viscosity Index (VI) SAMPLE IMAGES Color Bottom GRAPHS Ferrous Alloys	Precipitate scalar Silt scalar Debris scalar Sand/Dirt scalar Appearance scalar Odor scalar Emulsified Water scalar Free Water scalar Free Water scalar Free Water cst Visc @ 40°C cSt Visc @ 100°C cSt Viscosity Index (VI) Scale SAMPLE IMAGES Color GRAPHS Ferrous Alloys	Precipitate scalar Visual* Silt scalar Visual* Debris scalar Visual* Sand/Dirt scalar Visual* Appearance scalar Visual* Odor scalar Visual* Odor scalar Visual* Emulsified Water scalar Visual* Free Water scalar Visual* FLUID PROPERTIES method Visc @ 40°C cSt ASTM D7279(m) Visc @ 100°C cSt ASTM D7279(m) Viscosity Index (VI) Scale ASTM D7279(m) Viscosity Index (VI) Scale ASTM D2270* SAMPLE IMAGES method Color GRAPHS Ferrous Alloys	Precipitate scalar Visual* NONE Silt scalar Visual* NONE Debris scalar Visual* NONE Sand/Dirt scalar Visual* NONE Appearance scalar Visual* NORML Odor scalar Visual* NORML Odor scalar Visual* NORML Emulsified Water scalar Visual* NORML Emulsified Water scalar Visual* >0.05 Free Water scalar Visual* >0.05 Free Water scalar Visual* >0.05 Visc @ 40°C cSt ASTM D7279(m) 220 Visc @ 100°C cSt ASTM D7279(m) 220 Viscosity Index (VI) Scale ASTM D2270* E Color SAMPLE IMAGES method limit/base GRAPHS Errous Alloys 491,520 122,880 Mage image 122,880 122,880	Precipitate scalar Visual* NONE NONE Silt scalar Visual* NONE NONE NONE Debris scalar Visual* NONE NONE NONE Sand/Dirt scalar Visual* NONE NONE NONE Appearance scalar Visual* NORML NORML Odor scalar Visual* NORML NORML Odor scalar Visual* NORML NORML Odor scalar Visual* NORML NORML Emulsified Water scalar Visual* >0.05 NEG Free Water scalar Visual* NORML NORML Visc @ 40°C cSt ASTM D7279(m) 220 213 Visc @ 100°C cSt ASTM D7279(m) 18.7 Viscosity Index (VI) Scale ASTM D7279(m) 18.7 Viscosity Index (VI) Scale ASTM D7279(m) 18.7 Viscosity Scale Scale Bottom	Precipitate scalar Visual* NONE NONE Silt scalar Visual* NONE NONE Silt scalar Visual* NONE NONE Sand/Dirt scalar Visual* NONE NONE Appearance scalar Visual* NORML NORML Odor scalar Visual* NORML NORML Emulsified Water scalar Visual* NORM NEG Emulsified Water scalar Visual* >0.05 NEG Free Water scalar Visual* NORM NEG Emulsified Water scalar Visual* NORM NEG