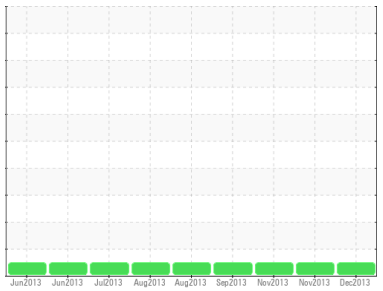
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Area
RIG 8
Machine Id
DRILLING RIG R8-L-01
Component
Diesel Engine
Fluid
MOBIL 15W40 (10 GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**KLM2310672**	KLM2310530	KLM2301754
Sample Date		Client Info		**19 Dec 2013**	26 Nov 2013	05 Nov 2013
Machine Age	days	Client Info		**41627**	41604	41583
Oil Age	days	Client Info		**195**	172	151
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**NORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<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	>100	**36**	38	28
Chromium	ppm	ASTM D5185m	>6	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>4	**<1**	<1	<1
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>30	**1**	1	2
Lead	ppm	ASTM D5185m	>10	**<1**	<1	<1
Copper	ppm	ASTM D5185m	>150	**5**	5	4
Tin	ppm	ASTM D5185m	>4	**<1**	<1	<1
Antimony	ppm	ASTM D5185m		**0**	0	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

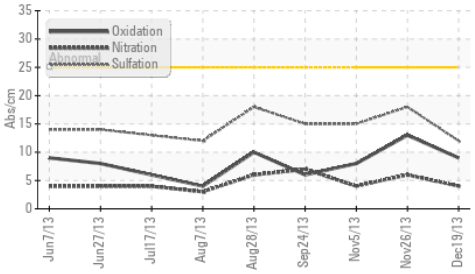
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**46**	59	76
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**30**	33	35
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m		**358**	399	427
Calcium	ppm	ASTM D5185m		**1785**	1653	1563
Phosphorus	ppm	ASTM D5185m		**937**	950	942
Zinc	ppm	ASTM D5185m		**1005**	1016	946
Sulfur	ppm	ASTM D5185m		**4973**	5000	5341

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	**1**	2	2
Sodium	ppm	ASTM D5185m		**1**	2	2
Potassium	ppm	ASTM D5185m	>20	**1**	1	1

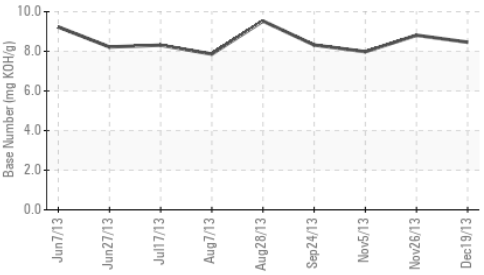
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.8**	1.2	0.4
Nitration	Abs/cm	*ASTM D7624		**4.**	6.	4.
Sulfation	Abs/.1mm	*ASTM D7415		**12.**	18.	15.

OIL ANALYSIS REPORT

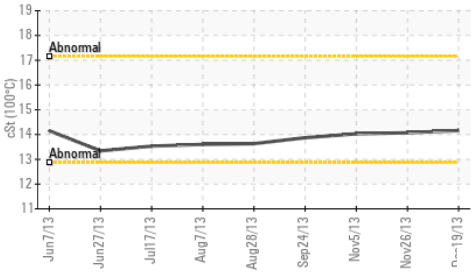
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**256**	384	282
Particles >6µm		ASTM D7647	>5000	**139**	209	153
Particles >14µm		ASTM D7647	>640	**23**	35	26
Particles >21µm		ASTM D7647	>160	**8**	12	8
Particles >38µm		ASTM D7647	>40	**1**	1	1
Particles >71µm		ASTM D7647	>10	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>19/16	**14/12**	15/12	14/12

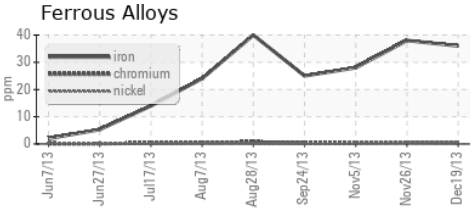
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414		**9.**	13.	8.
Base Number (BN)	mg KOH/g	ASTM D2896		**8.46**	8.81	7.98

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
Emulsified Water	scalar	*Visual	>0.1	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

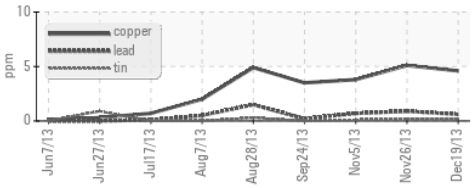
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		**14.16**	14.07	14.03

GRAPHS

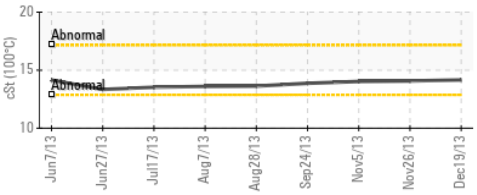
Ferrous Alloys



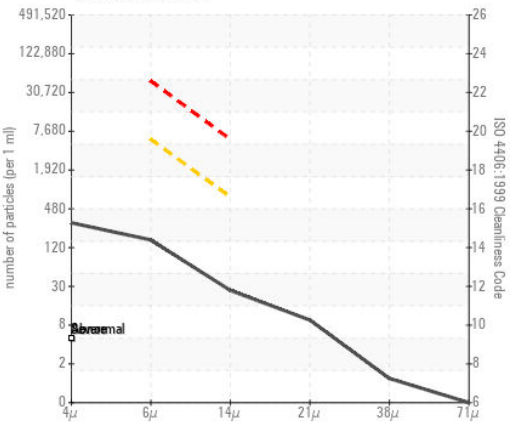
Non-ferrous Metals



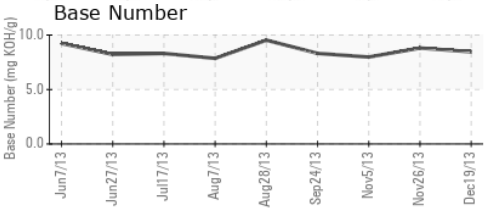
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KLM2310672
Lab Number : 03420172
Unique Number : 6482968
Test Package : MOB 2 (Additional Tests: PrtCount)

Received : 24 Dec 2013
Tested : 27 Dec 2013
Diagnosed : 27 Dec 2013 - 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)

MCVAY DRILLING
401 E BENDER BLVD
HOBBS, NM
US 88241
Contact: DOMINIK MENDOZA
dominik4819@yahoo.com
T: (575)393-8969
F: (575)393-7455

Report Id: MCVHOBKL [WUSCAR] 03420172 (Generated: 07/17/2024 14:32:56) Rev: 1
Contact/Location: DOMINIK MENDOZA - MCVHOBKL