











# OIL ANALYSIS REPORTS

TO: GALEN NAGEL  
GALEN NAGEL [GALBLU]  
8924 425TH AVE  
BLUE EARTH, MN, 56013  
USA

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NAGELINC@BEVCOMM.NET

FROM: Tim Vann  
WearCheck USA  
501 Madison Ave.  
Cary, NC  
27513 USA  
(919)379-4102  
FAX (919)379-4066

## Report Summary

Sample N°	Unit	WEAR	CONTAM'N	FLUID
 KL-M082344	9 Diesel Engine	ABNORMAL	NORMAL	NORMAL
 KL-M085306	9 Diesel Engine	ABNORMAL	NORMAL	NORMAL
 KL-M087805	9 Diesel Engine	NORMAL	NORMAL	NORMAL
 KL-M087827	9 Diesel Engine	NORMAL	NORMAL	MARGINAL
 KL-M2204179	9 Diesel Engine	NORMAL	NORMAL	NORMAL
 KL-M2200805	9 Diesel Engine	NORMAL	NORMAL	NORMAL
 KL-M2200807	9 Diesel Engine	NORMAL	NORMAL	NORMAL
 KL-M2200758	9 Diesel Engine	NORMAL	NORMAL	NORMAL

Total: 8 Sample Report(s)

## Verify Your Contact Information

**Fax Back To (919)379-4066**

**First Name** GALEN

**Last Name** NAGEL

**Title**

**Phone** (507)526-2804

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**Mobile Phone**

**E-Mail** NAGELINC@BEVCOMM.NET

**Company Name** GALEN NAGEL

**Address** 8924 425TH AVE

**Address (con't)**

**City** BLUE EARTH

**State/Prov** MN

**Zip/Postal Code** 56013

**Country** USA

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MOBILE OIL ANALYSIS REPORT

CONTAMINATION  
OIL CONDITION  
WEAR

<b>NORMAL</b>
<b>NORMAL</b>
<b>ABNORMAL</b>

9 - Diesel Engine

Unit Make : KENWORTH

Unit Model : W900L

Comp Make : CATERPILLAR

Comp Model : 3406

Serial No : {n/a}

Cust. Ref No. : {n/a}

Stub No. : KL-M082344

Date Rec'd : Aug 31, 2005

Sample Date : Aug 23, 2005

Diagnostician : Doug Bogart

**RECOMMENDATION**

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Sample Date	03/20/05	05/15/05	07/19/05	Current	UOM
Time on Unit	0	0	16000	15000	mls
Time on Oil	10000	22000	0	30000	mls
Time on Fltr	10000	12000	16000	15000	mls
Oil Maint.	not chg	not chg	not chg	not chg	---
Filter Maint.	changed	changed	changed	changed	---

**CONTAMINATION**

There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable.

Sample Date	03/20/05	05/15/05	07/19/05	Current	Abn
Silicon	17	4.1	4.3	5.9	
Fuel (%)	<2.0	<2.0	<2.0	<2.0	
Glycol	---	---	---	---	
Water (%)	<0.1	<0.1	<0.1	<0.1	
Soot (%)	0.2	0.4	0.5	0.7	
>4µm(c)	935	1365	8523	657	
>6µm(c)	346	505	3152	243	
>14µm(c)	37	54	337	26	
>21µm(c)	8	12	80	6	
>38µm(c)	0	1	7	0	
>70µm(c)	0	0	0	0	
ISO 4406(c)	16/12	16/13	19/16	15/12	

**OIL CONDITION**

Oil Type: 10 GAL of (GENERIC) SAE 15W40

The condition of oil is suitable for further service.

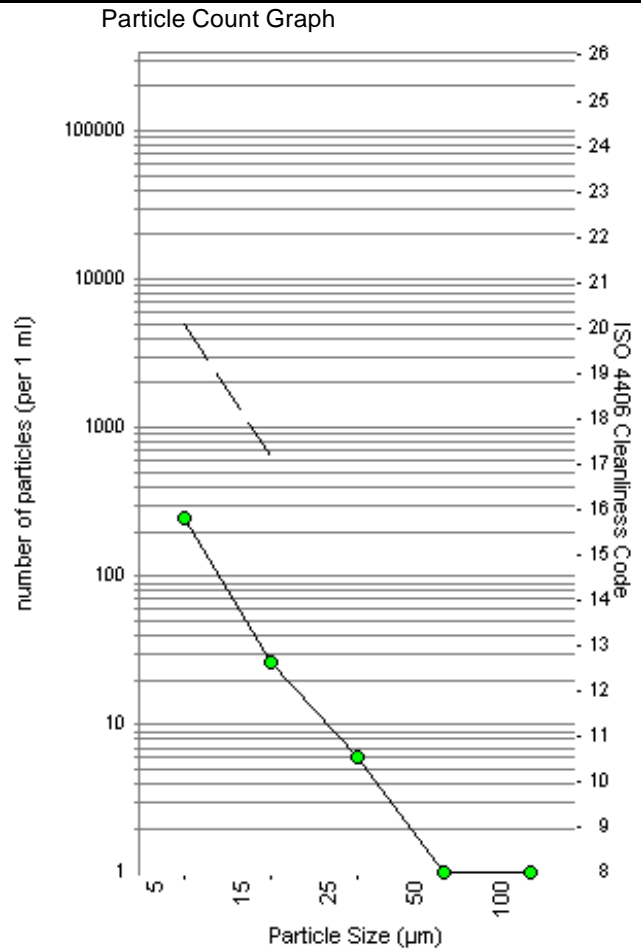
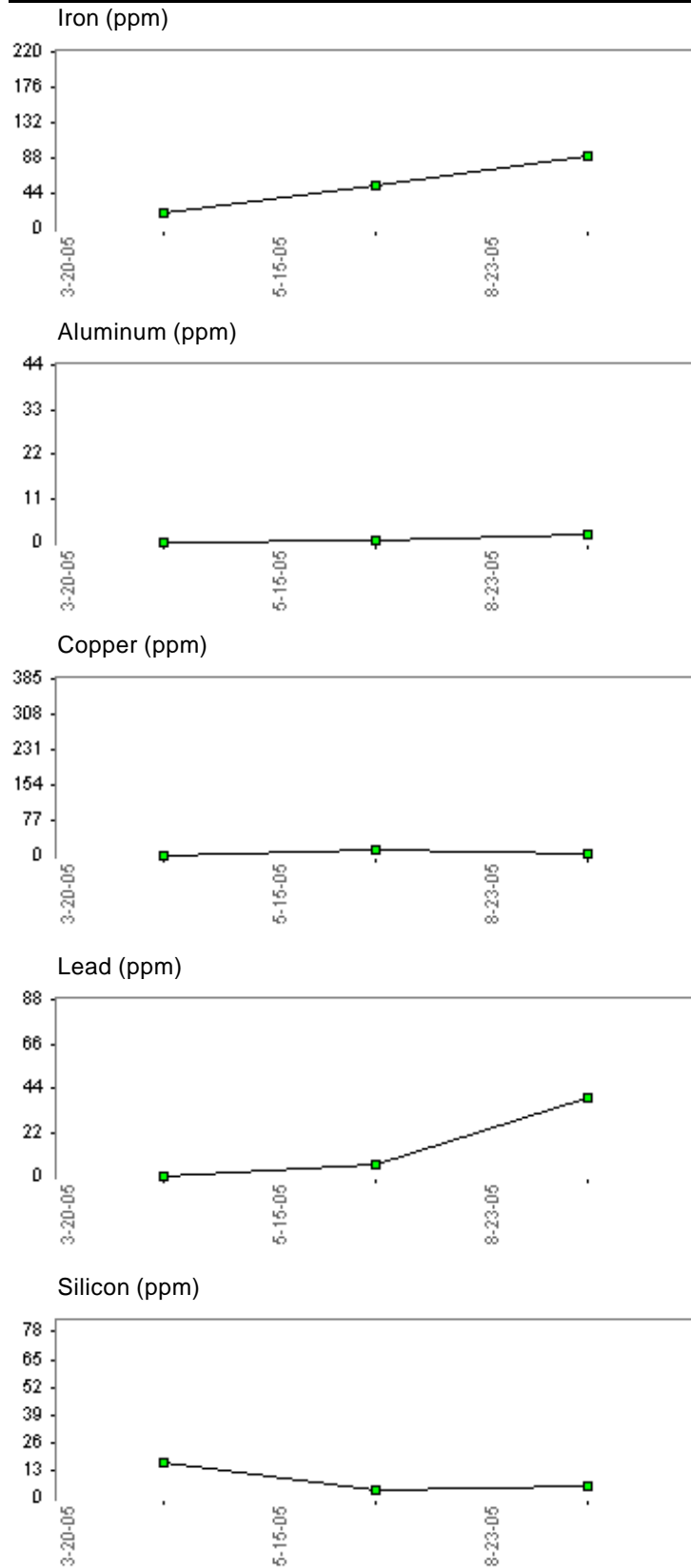
Sample Date	03/20/05	05/15/05	07/19/05	Current	Base
Potassium	1.4	2.1	0.0	0.0	
Boron	2.2	1.6	4.2	3.4	
Barium	0.3	0.0	0.0	0.0	
Calcium	2276	2216	1998	2394	
Magnesium	286	271	232	280	
Molybdenum	2.3	0.5	7.4	6.7	
Sodium	0.0	2.0	1.8	3.3	
Phosphorus	1030	978	880	982	
Sulfur	3048	3378	3230	3280	
Zinc	1170	1173	1049	1315	
Visc@100°C	14.4	15.49	16.51	15.73	14.5
TBN	8.50	7.74	7.71	7.58	

**WEAR**

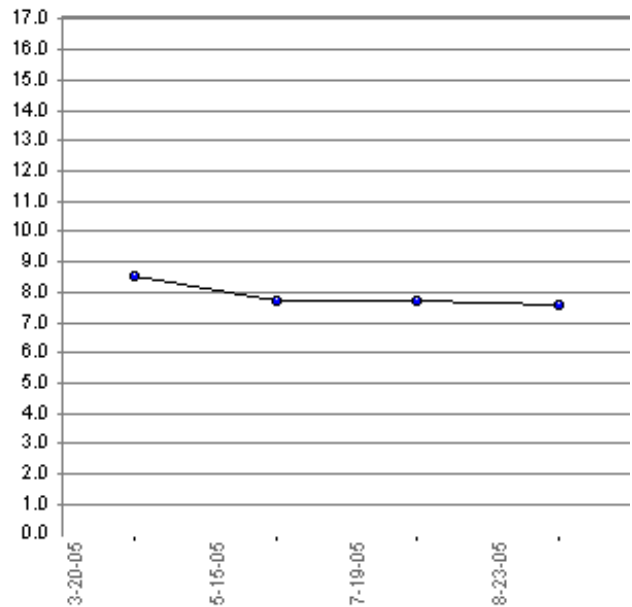
The lead level is abnormal. All other component wear rates are normal.

Sample Date	03/20/05	05/15/05	07/19/05	Current	Abn
Iron	21	56	42	92	---
Nickel	0.5	1.3	0.9	1.5	---
Chromium	0.8	0.7	0.5	0.8	---
Titanium	0.0	0.2	0.2	0.2	---
Copper	2.1	15	3.7	6.4	---
Aluminum	0.0	0.8	1.1	2.0	---
Tin	0.0	0.0	0.0	0.0	---
Lead	0.0	6.0	55	40	---
Silver	0.0	0.0	0.0	0.0	---

# Graphs



TAN ■ TBN ●



If you have any questions concerning this sample report (work order no 01368666 ) please call 1-800-237-1369.

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# MOBILE OIL ANALYSIS REPORT

CONTAMINATION  
OIL CONDITION  
WEAR

<b>NORMAL</b>
<b>NORMAL</b>
<b>ABNORMAL</b>

9 - Diesel Engine

Unit Make : KENWORTH  
 Unit Model : W900L Serial No : {n/a} Date Rec'd : Apr 18, 2006  
 Comp Make : CATERPILLAR Cust. Ref No. : {n/a} Sample Date : Apr 9, 2006  
 Comp Model : 3406 Stub No. : KL-M085306 Diagnostician : Keith Scott

## RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Sample Date	10/01/05	11/26/05	02/08/06	Current	UOM
Time on Unit	0	280000	294000	309600	mls
Time on Oil	45000	15000	31500	47500	mls
Time on Fltr	15000	15000	17000	16000	mls
Oil Maint.	changed	not chg	not chg	not chg	---
Filter Maint.	changed	changed	changed	changed	---

## CONTAMINATION

There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable.

Sample Date	10/01/05	11/26/05	02/08/06	Current	Abn
Silicon	5.3	5.1	3.6	5.2	
Fuel (%)	<2.0	<2.0	<2.0	<2.0	
Glycol	---	---	---	---	
Water (%)	<0.1	<0.1	<0.1	<0.1	
Soot (%)	0.7	0.4	0.4	0.7	
>4µm(c)	556	505	202	480	
>6µm(c)	205	187	74	177	
>14µm(c)	21	20	8	19	
>21µm(c)	5	4	1	4	
>38µm(c)	0	0	0	0	
>70µm(c)	0	0	0	0	
ISO 4406(c)	15/12	15/11	13/10	15/11	

## OIL CONDITION

Oil Type: 10 GAL of (GENERIC) SAE 15W40

The condition of oil is suitable for further service.

Sample Date	10/01/05	11/26/05	02/08/06	Current	Base
Potassium	0.0	0.0	4.3	17	
Boron	2.1	1.9	1.9	1.6	
Barium	0.8	0.0	0.0	0.0	
Calcium	2240	2386	2158	2669	
Magnesium	264	286	272	288	
Molybdenum	3.5	1.0	1.2	3.2	
Sodium	2.1	1.1	1.6	2.9	
Phosphorus	1027	1153	976	1139	
Sulfur	3025	3378	2950	3920	
Zinc	1172	1262	1158	1336	
Visc@100°C	15.54	14.1	14.3	14.8	14.5
TBN	8.05	8.59	8.60	8.11	

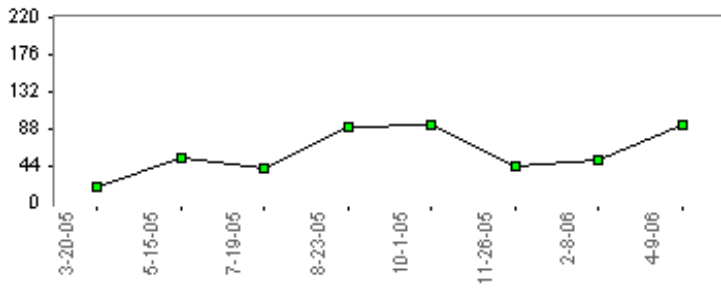
## WEAR

In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core)

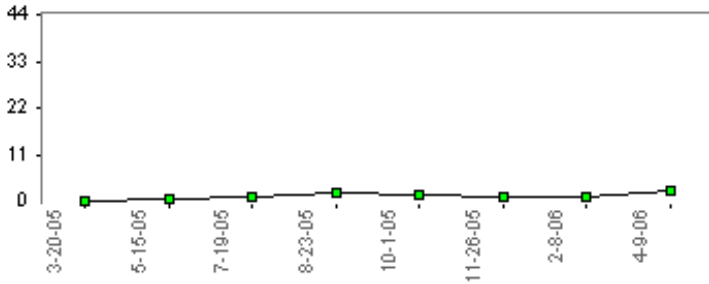
Sample Date	10/01/05	11/26/05	02/08/06	Current	Abn
Iron	93	45	52	94	---
Nickel	1.0	0.9	0.6	1.2	---
Chromium	0.9	0.6	0.7	1.3	---
Titanium	0.2	0.2	0.1	0.1	---
Copper	6.8	3.5	3.9	354	---
Aluminum	1.5	1.2	1.2	2.7	---
Tin	0.0	0.0	0.0	0.0	---
Lead	22	5.0	2.6	3.5	---
Silver	0.0	0.0	0.0	0.0	---

# Graphs

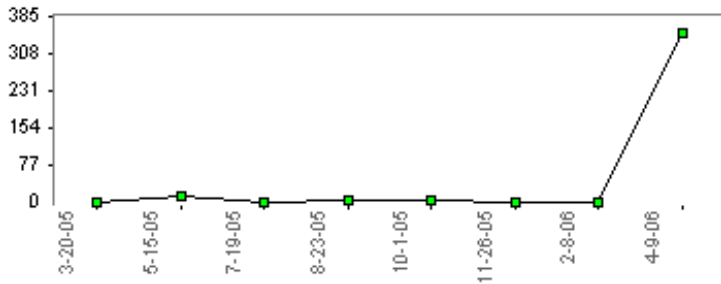
Iron (ppm)



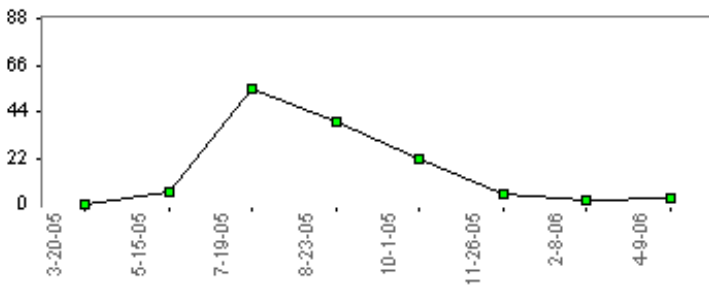
Aluminum (ppm)



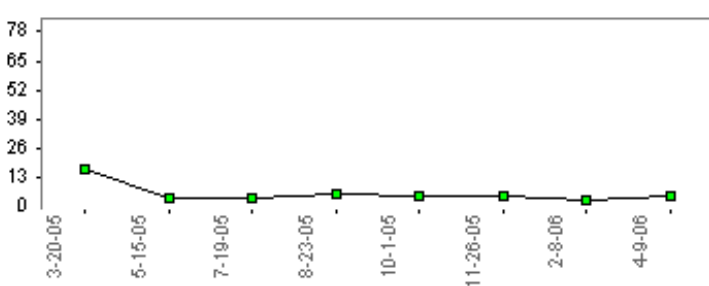
Copper (ppm)



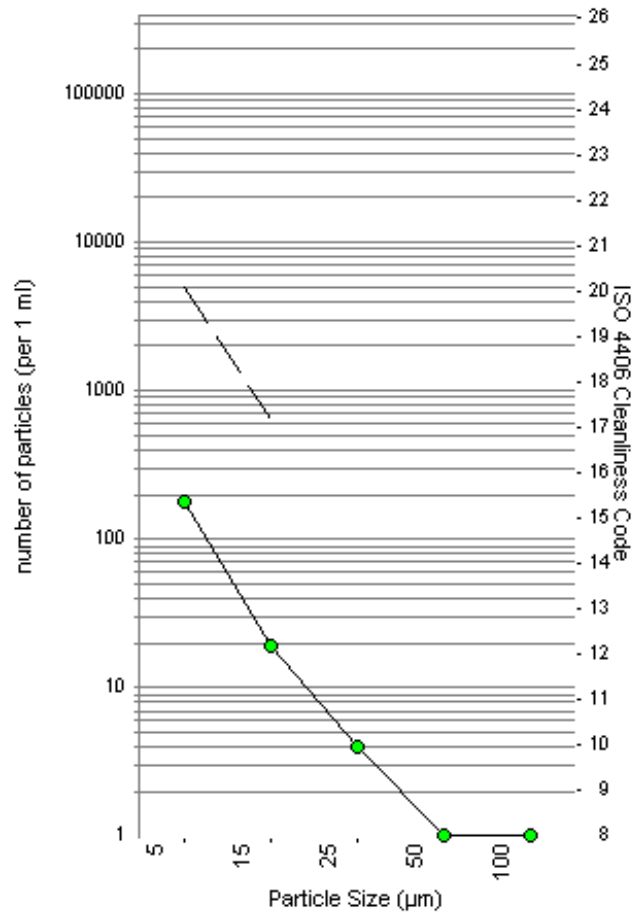
Lead (ppm)



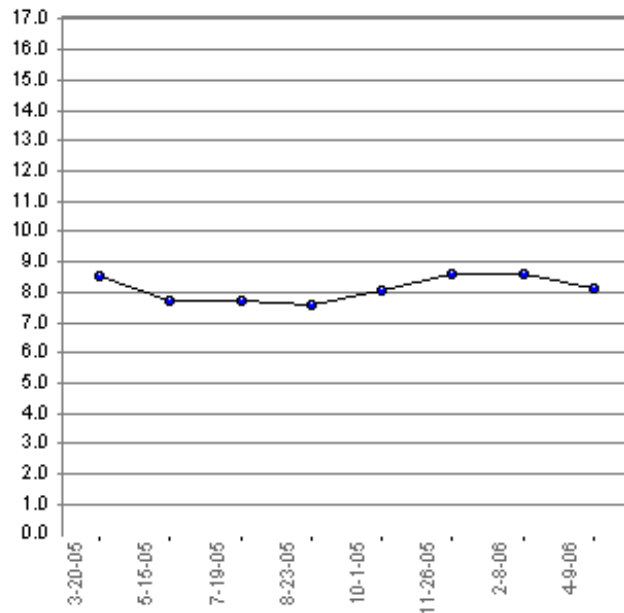
Silicon (ppm)



Particle Count Graph



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If you have any questions concerning this sample report (work order no 01659145 ) please call 1-800-237-1369.



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# MOBILE OIL ANALYSIS REPORT

CONTAMINATION  
OIL CONDITION  
WEAR

**NORMAL**  
**NORMAL**  
**NORMAL**

9 - Diesel Engine

Unit Make : KENWORTH

Unit Model : W900L

Comp Make : CATERPILLAR

Comp Model : 3406

Serial No : {n/a}

Cust. Ref No. : {n/a}

Stub No. : KL-M087805

Date Rec'd : Nov 16, 2006

Sample Date : Nov 2, 2006

Diagnostician : Keith Scott

## RECOMMENDATION

Resample at the next service interval to monitor.

Sample Date	06/24/06	08/20/06	09/23/06	Current	UOM
Time on Unit	324600	14400	354500	369100	mls
Time on Oil	62500	14400	92400	14600	mls
Time on Fltr	15000	14400	15600	14600	mls
Oil Maint.	not chg	not chg	changed	not chg	---
Filter Maint.	changed	changed	changed	changed	---

## CONTAMINATION

There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable.

Sample Date	06/24/06	08/20/06	09/23/06	Current	Abn
Silicon	3.7	5.3	6.4	2.8	
Fuel (%)	<2.0	<2.0	<2.0	<2.0	
Glycol	---	---	---	---	
Water (%)	<0.1	<0.1	<0.1	<0.1	
Soot (%)	0.6	0.6	0.6	0.3	
>4µm(c)	1467	5488	531	885	
>6µm(c)	542	2030	196	327	
>14µm(c)	58	216	21	35	
>21µm(c)	13	52	5	8	
>38µm(c)	1	5	0	0	
>70µm(c)	0	0	0	0	
ISO 4406(c)	16/13	18/15	15/12	16/12	

## OIL CONDITION

Oil Type: 10 GAL of (GENERIC) SAE 15W40

The condition of oil is suitable for further service.

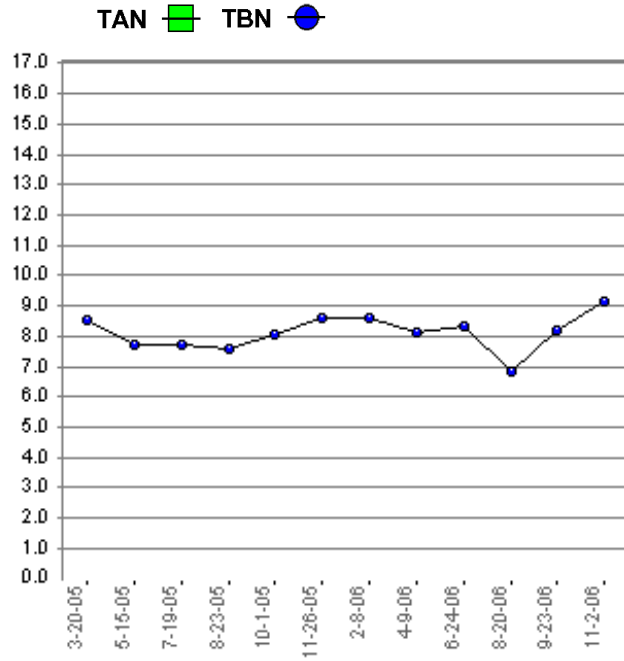
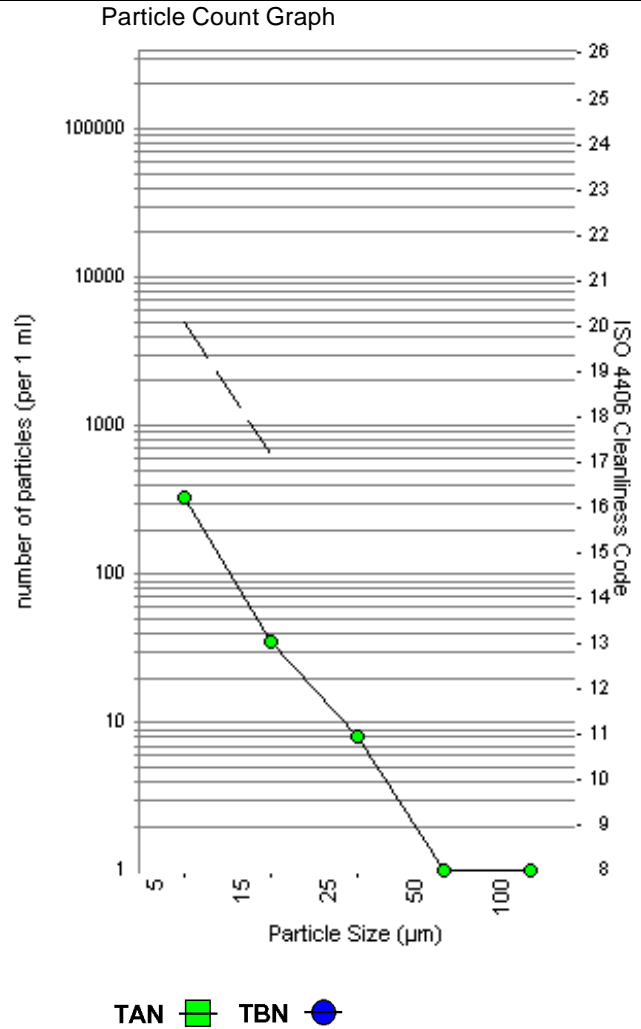
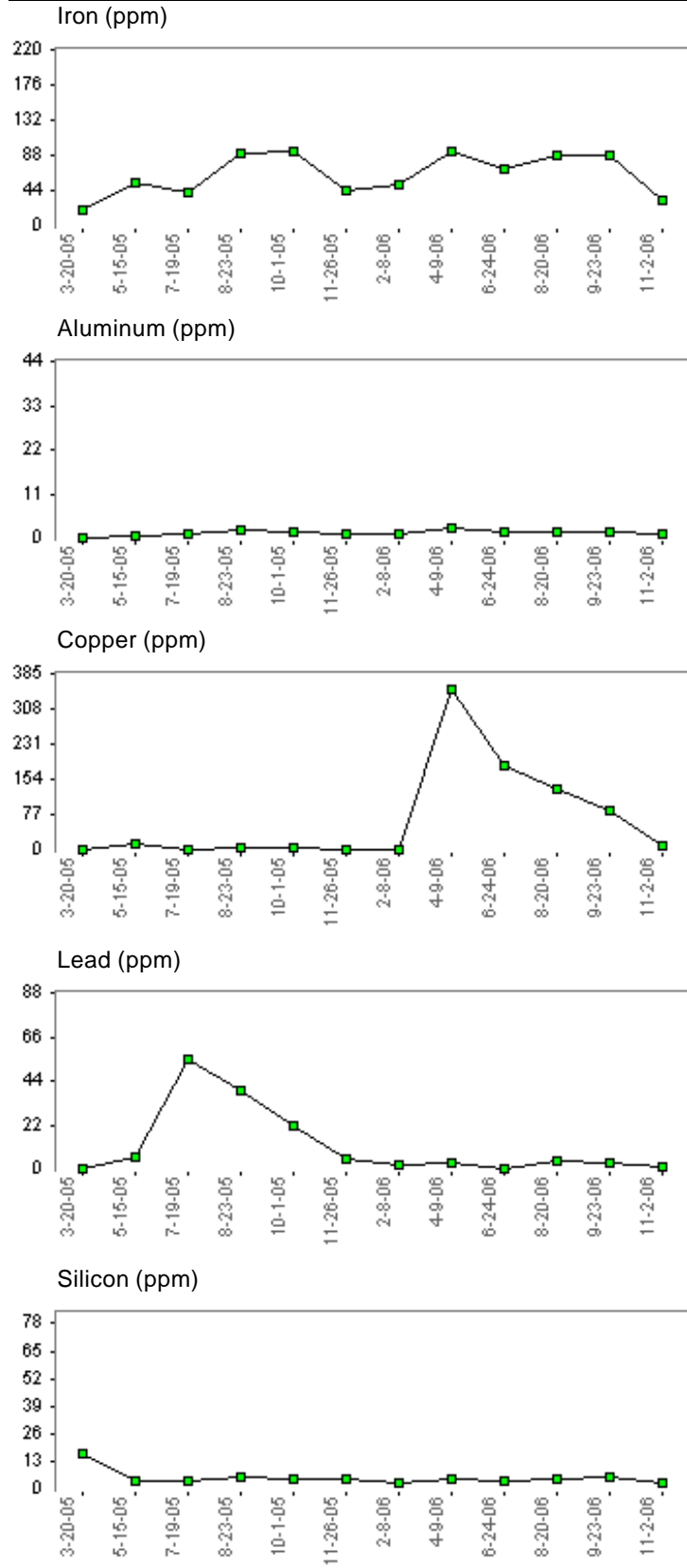
Sample Date	06/24/06	08/20/06	09/23/06	Current	Base
Potassium	0.0	0.0	0.0	0.0	
Boron	3.2	0.5	4.0	2.4	
Barium	0.0	0.0	0.0	0.0	
Calcium	2025	2288	2398	2379	
Magnesium	241	274	270	294	
Molybdenum	0.0	1.4	1.2	0.2	
Sodium	4.2	3.9	1.7	1.7	
Phosphorus	986	1073	1000	1220	
Sulfur	2822	3091	3118	3220	
Zinc	1094	1220	1254	1278	
Visc@100°C	14.9	15.64	15.59	14.7	14.5
TBN	8.30	6.85	8.19	9.13	

## WEAR

All component wear rates are normal.

Sample Date	06/24/06	08/20/06	09/23/06	Current	Abn
Iron	72	89	88	33	---
Nickel	1.0	1.4	1.1	0.7	---
Chromium	1.0	1.2	1.1	0.5	---
Titanium	0.0	0.1	0.2	0.1	---
Copper	184	135	86	12	---
Aluminum	1.6	1.9	1.8	1.2	---
Tin	0.4	0.1	1.5	1.2	---
Lead	0.7	4.6	3.3	1.1	---
Silver	0.0	0.0	0.0	0.0	---

# Graphs



If you have any questions concerning this sample report (work order no 01866049 ) please call 1-800-237-1369.



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MOBILE OIL ANALYSIS REPORT

CONTAMINATION  
OIL CONDITION  
WEAR

<b>NORMAL</b>
<b>MARGINAL</b>
<b>NORMAL</b>

9 - Diesel Engine

Unit Make : KENWORTH  
 Unit Model : W900L Serial No : {n/a} Date Rec'd : Jun 20, 2007  
 Comp Make : CATERPILLAR Cust. Ref No. : {n/a} Sample Date : Jun 2, 2007  
 Comp Model : 3406 Stub No. : KL-M087827 Diagnostician : Doug Bogart

**RECOMMENDATION**

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Sample Date	12/27/06	02/10/07	03/21/07	Current	UOM
Time on Unit	0	392500	402900	418900	mls
Time on Oil	0	38000	48400	64400	mls
Time on Fltr	0	12800	10400	16000	mls
Oil Maint.	n/a	not chg	not chg	not chg	---
Filter Maint.	n/a	changed	changed	changed	---

**CONTAMINATION**

There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable.

Sample Date	12/27/06	02/10/07	03/21/07	Current	Abn
Silicon	5.3	4.6	2.8	3.8	
Fuel (%)	<2.0	<2.0	<2.0	<2.0	
Glycol	---	---	---	---	
Water (%)	<0.1	<0.1	<0.1	<0.1	
Soot (%)	0.3	0.5	0.5	0.7	
>4µm(c)	---	885	2858	358	
>6µm(c)	---	327	1057	195	
>14µm(c)	---	35	113	33	
>21µm(c)	---	8	27	11	
>38µm(c)	---	0	2	1	
>70µm(c)	---	0	0	0	
ISO 4406(c)	---	16/12	17/14	15/12	

**OIL CONDITION**

Oil Type: 10 GAL of (GENERIC) SAE 15W40

The oil viscosity is higher than normal. The condition of oil is suitable for further service.

Sample Date	12/27/06	02/10/07	03/21/07	Current	Base
Potassium	0.0	0.0	0.0	0.0	
Boron	2.3	0.9	4.5	2.4	
Barium	0.0	0.0	0.0	0.0	
Calcium	2480	2267	2416	2085	
Magnesium	280	288	408	404	
Molybdenum	1.1	1.2	0.0	2.0	
Sodium	0.6	3.4	7.5	3.0	
Phosphorus	1199	1124	1280	1014	
Sulfur	3244	3443	3674	3400	
Zinc	1360	1248	1376	1191	
Visc@100°C	14.6	14.68	14.89	18.51	14.5
TBN	9.06	8.62	9.34	7.98	

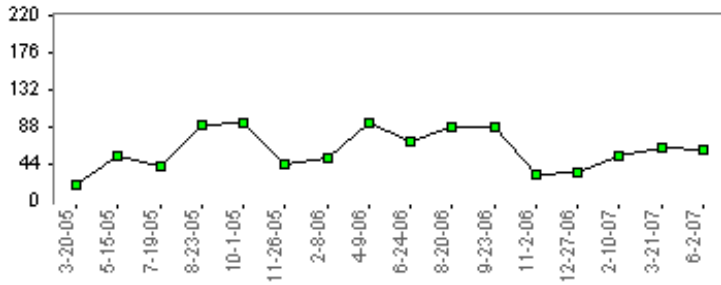
**WEAR**

All component wear rates are normal.

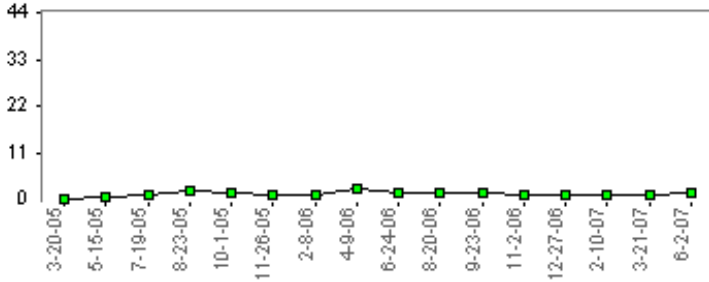
Sample Date	12/27/06	02/10/07	03/21/07	Current	Abn
Iron	36	55	64	63	---
Nickel	0.3	1.6	1.4	1.4	---
Chromium	0.5	0.5	0.8	0.8	---
Titanium	0.1	0.1	0.1	0.1	---
Copper	8.1	8.2	7.3	5.6	---
Aluminum	1.3	1.3	1.3	1.7	---
Tin	0.0	0.0	0.0	0.0	---
Lead	0.8	1.4	4.3	1.5	---
Silver	0.0	0.0	0.0	0.0	---

# Graphs

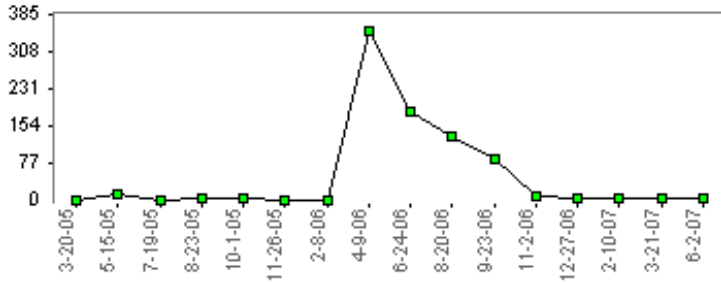
Iron (ppm)



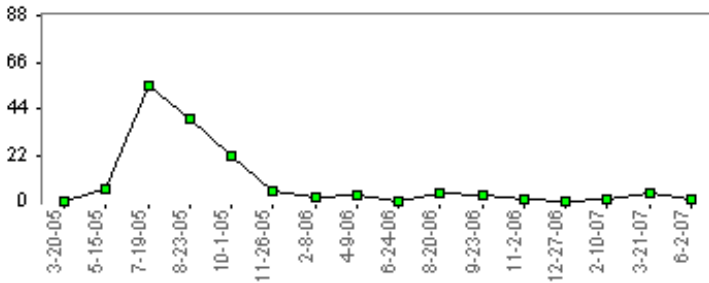
Aluminum (ppm)



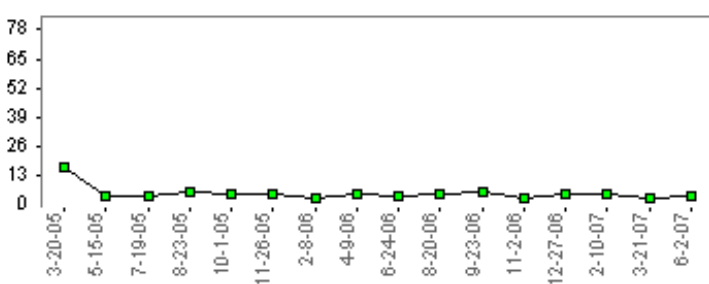
Copper (ppm)



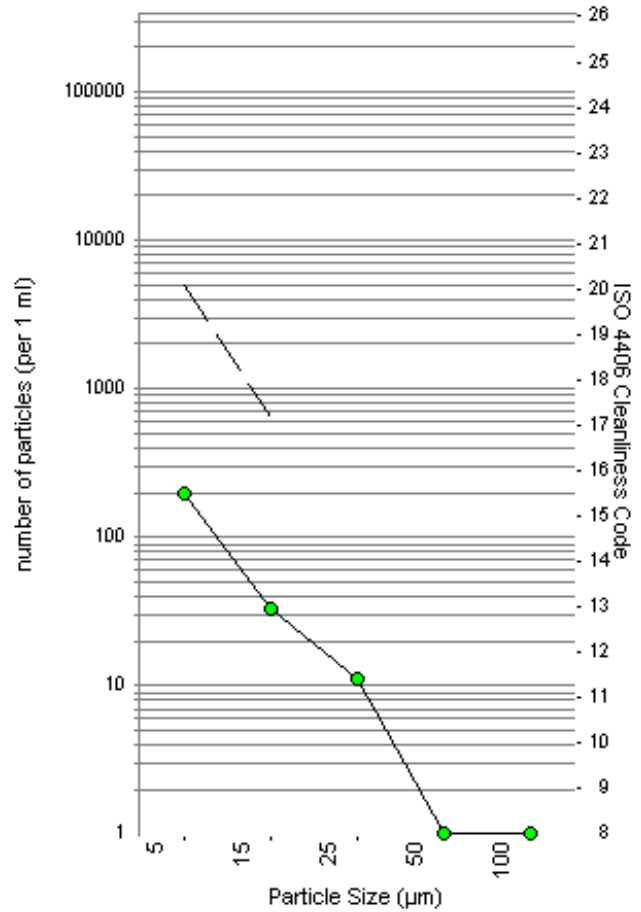
Lead (ppm)



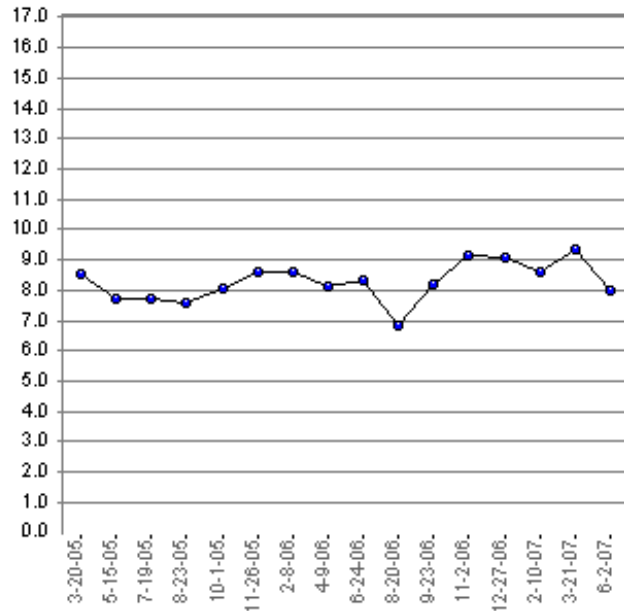
Silicon (ppm)



Particle Count Graph



TAN ■ TBN ●



If you have any questions concerning this sample report (work order no 01979423 ) please call 1-800-237-1369.



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# MOBILE OIL ANALYSIS REPORT

CONTAMINATION  
OIL CONDITION  
WEAR

**NORMAL**  
**NORMAL**  
**NORMAL**

9 - Diesel Engine

Unit Make : KENWORTH

Unit Model : W900L

Comp Make : CATERPILLAR

Comp Model : 3406

Serial No : {n/a}

Cust. Ref No. : {n/a}

Stub No. : KL-M2204179

Date Rec'd : Jan 18, 2008

Sample Date : Jan 1, 2008

Diagnostician : Doug Bogart

## RECOMMENDATION

Resample at the next service interval to monitor.

Sample Date	07/19/07	09/23/07	11/18/07	Current	UOM
Time on Unit	432700	444400	462600	474200	mls
Time on Oil	78200	89900	108100	119700	mls
Time on Fltr	13800	11700	18200	11600	mls
Oil Maint.	not chg	not chg	not chg	not chg	---
Filter Maint.	changed	changed	changed	changed	---

## CONTAMINATION

There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable.

Sample Date	07/19/07	09/23/07	11/18/07	Current	Abn
Silicon	4.3	4.3	3.6	3.4	
Fuel (%)	<2.0	<2.0	<2.0	<2.0	
Glycol	---	---	---	---	
Water (%)	<0.1	<0.1	<0.1	<0.1	
Soot (%)	0.6	0.6	0.5	0.6	
>4µm(c)	807	525	641	256	
>6µm(c)	440	286	349	139	
>14µm(c)	74	48	59	23	
>21µm(c)	25	16	20	8	
>38µm(c)	3	2	3	1	
>70µm(c)	0	0	0	0	
ISO 4406(c)	16/13	15/13	16/13	14/12	

## OIL CONDITION

Oil Type: 10 GAL of (GENERIC) SAE 15W40

The condition of oil is suitable for further service.

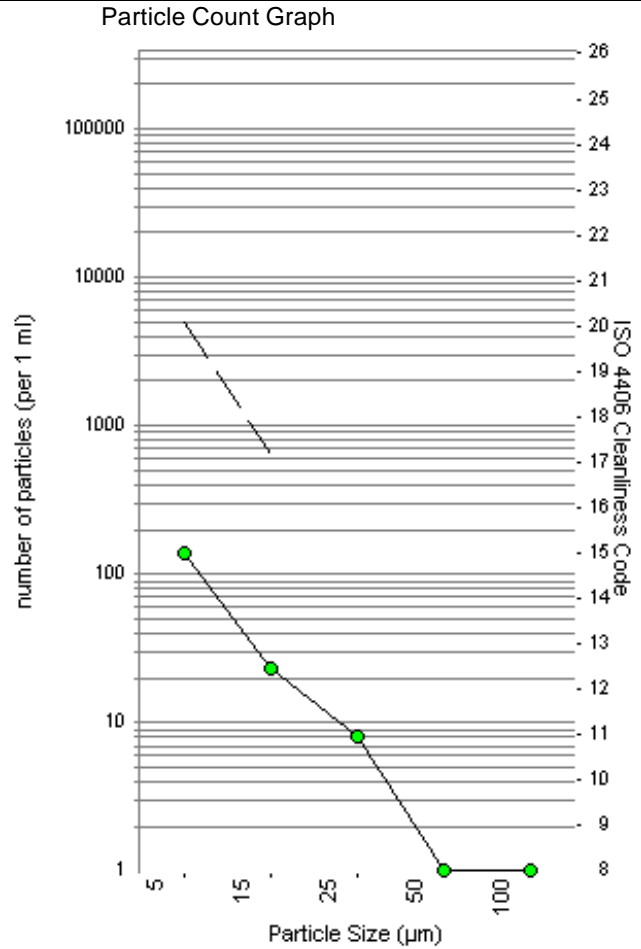
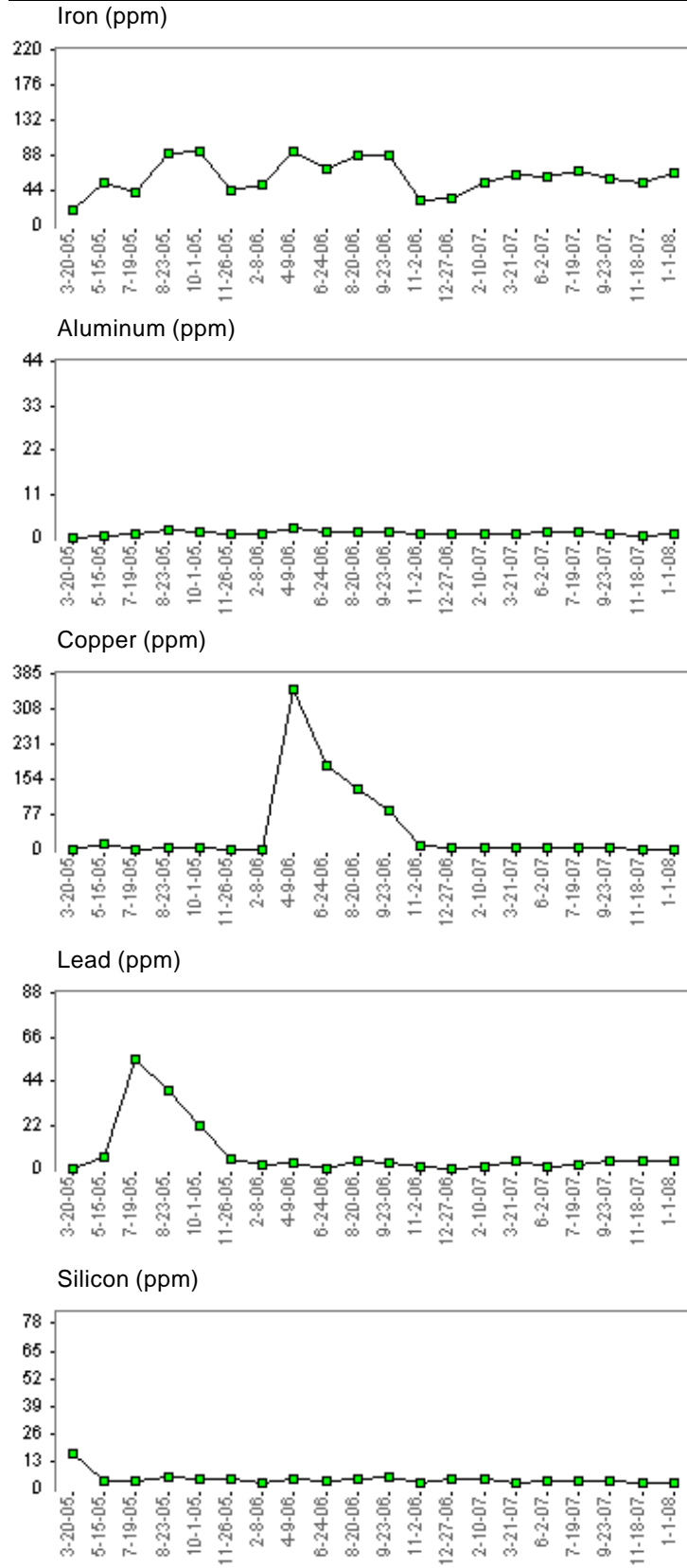
Sample Date	07/19/07	09/23/07	11/18/07	Current	Base
Potassium	14	0.0	0.8	0.0	
Boron	1.3	1.3	0.1	1.5	
Barium	0.0	0.0	0.0	0.0	
Calcium	2197	1773	1583	1728	
Magnesium	445	471	488	607	
Molybdenum	2.0	0.3	0.9	0.0	
Sodium	4.2	3.3	3.1	2.8	
Phosphorus	1108	952	1031	1012	
Sulfur	3392	2857	3031	3823	
Zinc	1321	1153	1039	1171	
Visc@100°C	16.06	15.33	15.5	15.49	14.5
TBN	7.30	8.14	7.59	6.72	

## WEAR

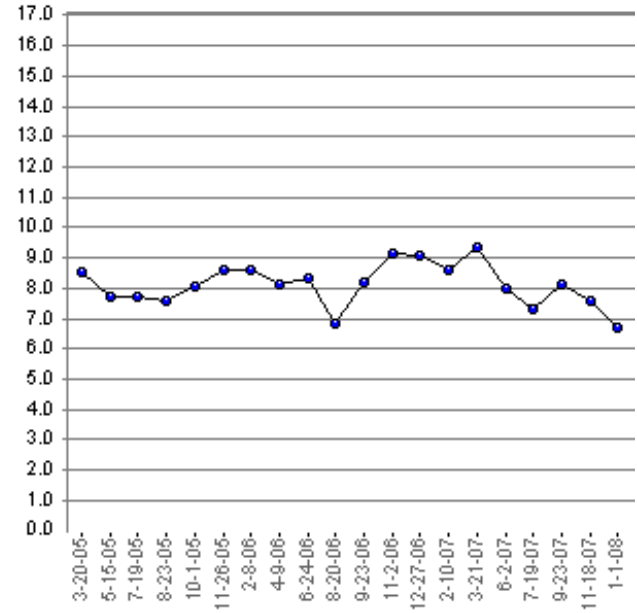
All component wear rates are normal.

Sample Date	07/19/07	09/23/07	11/18/07	Current	Abn
Iron	69	59	55	67	---
Nickel	1.0	1.5	1.5	1.1	---
Chromium	0.9	0.6	0.5	0.5	---
Titanium	0.1	0.1	0.1	0.0	---
Copper	5.6	4.6	3.7	4.1	---
Aluminum	1.7	1.1	0.8	1.3	---
Tin	0.0	0.0	1.7	0.0	---
Lead	2.9	4.1	4.5	4.8	---
Silver	0.0	0.0	0.0	0.0	---

# Graphs



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If you have any questions concerning this sample report (work order no 02099626 ) please call 1-800-237-1369.

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# MOBILE OIL ANALYSIS REPORT

CONTAMINATION  
OIL CONDITION  
WEAR

**NORMAL**  
**NORMAL**  
**NORMAL**

9 - Diesel Engine

Unit Make : KENWORTH

Unit Model : W900L

Comp Make : CATERPILLAR

Comp Model : 3406

Serial No : {n/a}

Cust. Ref No. : {n/a}

Stub No. : KL-M2200805

Date Rec'd : Sep 11, 2008

Sample Date : Aug 29, 2008

Diagnostician : Doug Bogart

## RECOMMENDATION

Resample at the next service interval to monitor.

Sample Date	02/17/08	04/19/08	06/20/08	Current	UOM
Time on Unit	484600	494600	506100	517100	mls
Time on Oil	130000	140000	151600	162600	mls
Time on Fltr	10400	10000	11500	21500	mls
Oil Maint.	not chg	not chg	n/a	not chg	---
Filter Maint.	changed	changed	not chg	changed	---

## CONTAMINATION

There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable.

Sample Date	02/17/08	04/19/08	06/20/08	Current	Abn
Silicon	3.2	3.4	3.7	3.4	
Fuel (%)	<2.0	<2.0	<2.0	<2.0	
Glycol	---	---	---	---	
Water (%)	<0.1	<0.1	<0.1	<0.1	
Soot (%)	0.6	0.5	0.6	0.8	
>4µm(c)	538	461	217	384	
>6µm(c)	293	251	118	209	
>14µm(c)	49	42	20	35	
>21µm(c)	16	14	6	12	
>38µm(c)	2	2	1	1	
>70µm(c)	0	0	0	0	
ISO 4406(c)	15/13	15/13	14/11	15/12	

## OIL CONDITION

Oil Type: 10 GAL of (GENERIC) SAE 15W40

The condition of oil is suitable for further service.

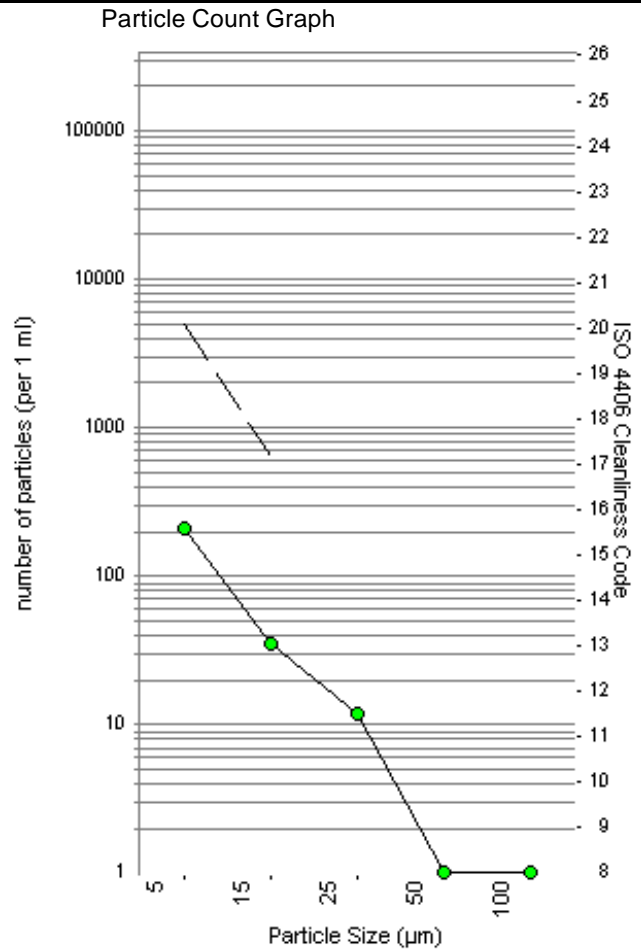
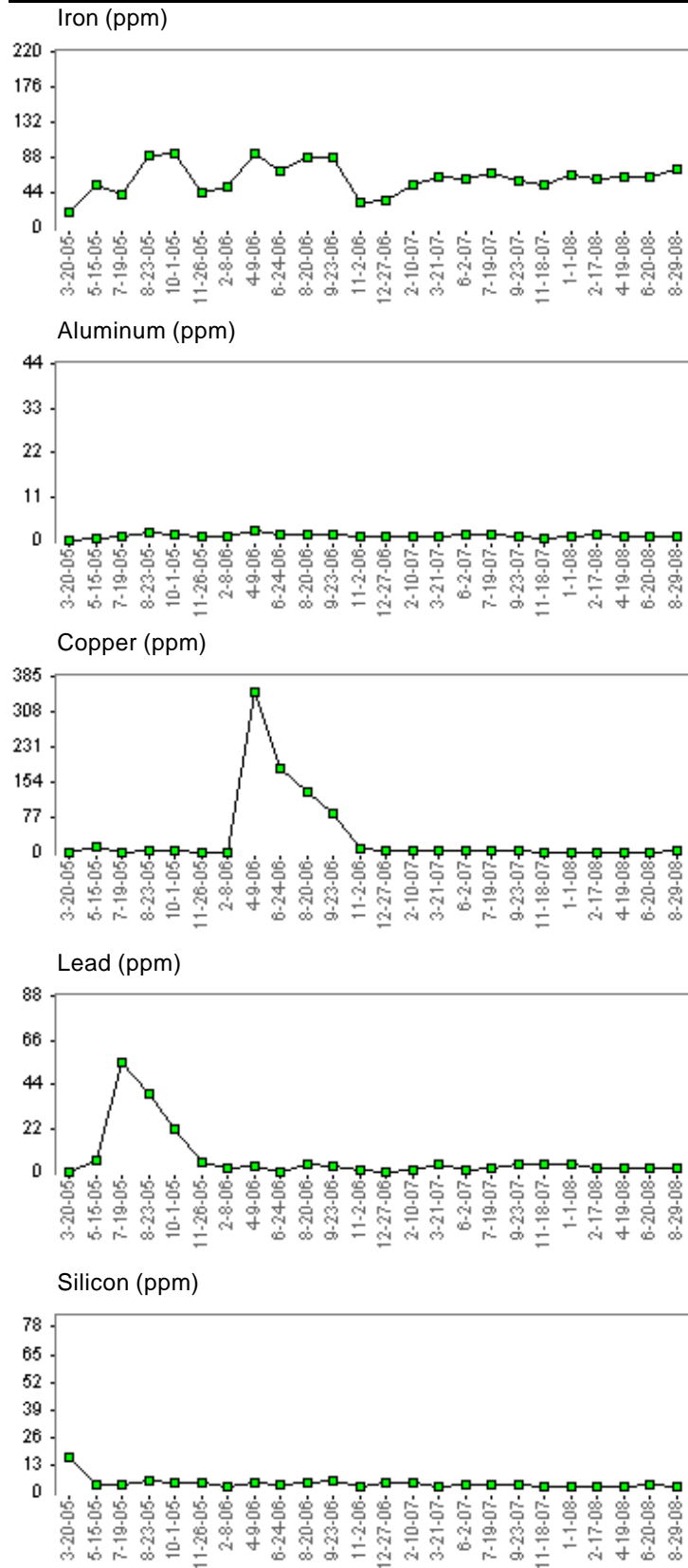
Sample Date	02/17/08	04/19/08	06/20/08	Current	Base
Potassium	0.0	2.4	0.0	3.7	
Boron	3.1	2.7	1.7	0.9	
Barium	0.0	0.1	0.0	0.0	
Calcium	1537	1531	1648	1623	
Magnesium	621	640	793	793	
Molybdenum	0.9	1.6	1.3	1.0	
Sodium	3.2	1.6	4.3	2.7	
Phosphorus	1120	1044	1086	1123	
Sulfur	3612	3456	4369	3934	
Zinc	1084	1110	1270	1224	
Visc@100°C	15.23	14.96	15.27	15.3	14.5
TBN	8.20	7.46	7.34	6.66	

## WEAR

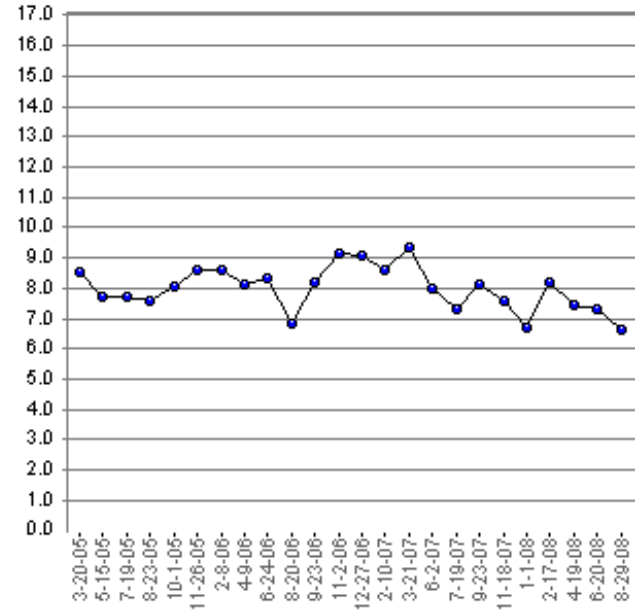
All component wear rates are normal.

Sample Date	02/17/08	04/19/08	06/20/08	Current	Abn
Iron	62	65	65	75	---
Nickel	1.0	0.9	0.9	1.1	---
Chromium	0.7	0.6	0.6	0.6	---
Titanium	0.1	0.0	0.0	0.0	---
Copper	3.9	4.1	4.0	4.6	---
Aluminum	1.5	1.1	1.2	1.3	---
Tin	0.0	0.8	0.0	0.0	---
Lead	2.3	2.7	2.2	2.3	---
Silver	0.0	0.0	0.0	0.0	---

# Graphs



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If you have any questions concerning this sample report (work order no 02246042 ) please call 1-800-237-1369.



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MOBILE OIL ANALYSIS REPORT

CONTAMINATION  
OIL CONDITION  
WEAR

<b>NORMAL</b>
<b>NORMAL</b>
<b>NORMAL</b>

9 - Diesel Engine

Unit Make : KENWORTH

Unit Model : W900L

Comp Make : CATERPILLAR

Comp Model : 3406

Serial No : {n/a}

Cust. Ref No. : {n/a}

Stub No. : KL-M2200807

Date Rec'd : Mar 31, 2009

Sample Date : Mar 22, 2009

Diagnostician : Doug Bogart

**RECOMMENDATION**

Resample at the next service interval to monitor.

Sample Date	11/08/08	12/20/08	01/25/09	Current	UOM
Time on Unit	531400	543400	552800	562800	mls
Time on Oil	176900	188900	198300	208300	mls
Time on Fltr	14300	12000	9400	10000	mls
Oil Maint.	n/a	not chg	not chg	n/a	---
Filter Maint.	changed	changed	changed	not chg	---

**CONTAMINATION**

There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable.

Sample Date	11/08/08	12/20/08	01/25/09	Current	Abn
Silicon	5.3	3.5	4.8	6.4	
Fuel (%)	<2.0	<2.0	<2.0	<2.0	
Glycol	---	---	---	---	
Water (%)	<0.1	<0.1	<0.1	<0.1	
Soot (%)	0.6	0.6	0.6	0.5	
>4µm(c)	294	448	307	192	
>6µm(c)	160	244	167	104	
>14µm(c)	27	41	28	17	
>21µm(c)	9	14	9	6	
>38µm(c)	1	2	1	0	
>70µm(c)	0	0	0	0	
ISO 4406(c)	14/12	15/13	15/12	14/11	

**OIL CONDITION**

Oil Type: 10 GAL of (GENERIC) SAE 15W40

The condition of oil is suitable for further service.

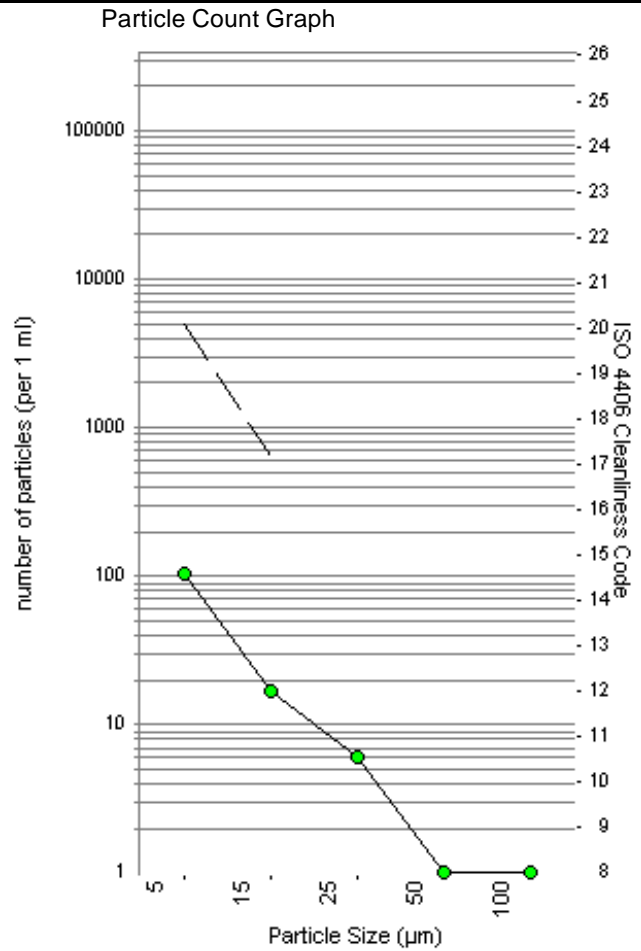
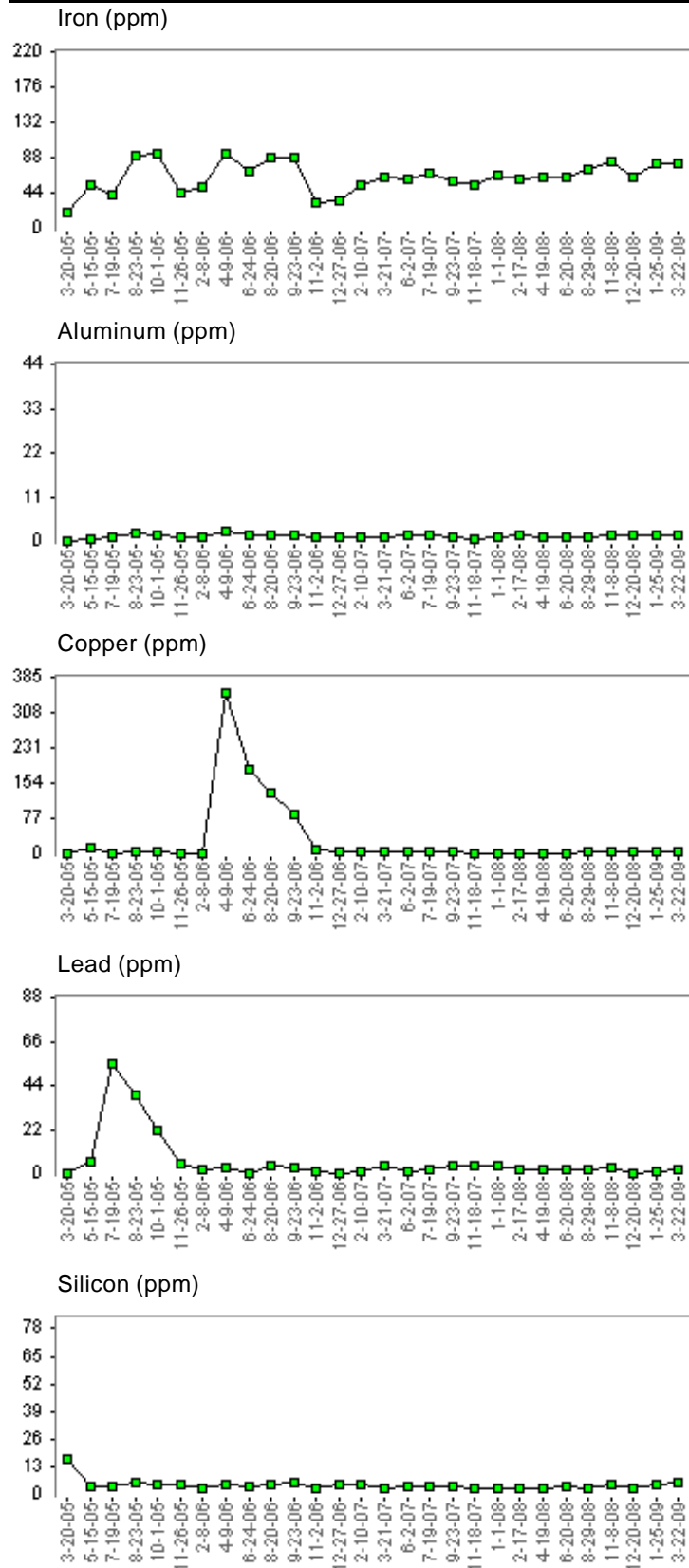
Sample Date	11/08/08	12/20/08	01/25/09	Current	Base
Potassium	2.3	3.6	0.0	0.0	
Boron	1.4	0.7	0.6	2.0	
Barium	0.0	0.0	0.0	0.0	
Calcium	1549	1237	1587	1470	
Magnesium	797	624	820	825	
Molybdenum	2.9	2.1	2.3	3.5	
Sodium	5.3	4.6	5.1	3.9	
Phosphorus	1092	939	1149	1075	
Sulfur	4116	3216	4361	3960	
Zinc	1232	1109	1315	1260	
Visc@100°C	15.25	14.98	14.77	14.85	14.5
TBN	6.93	7.10	7.40	6.45	

**WEAR**

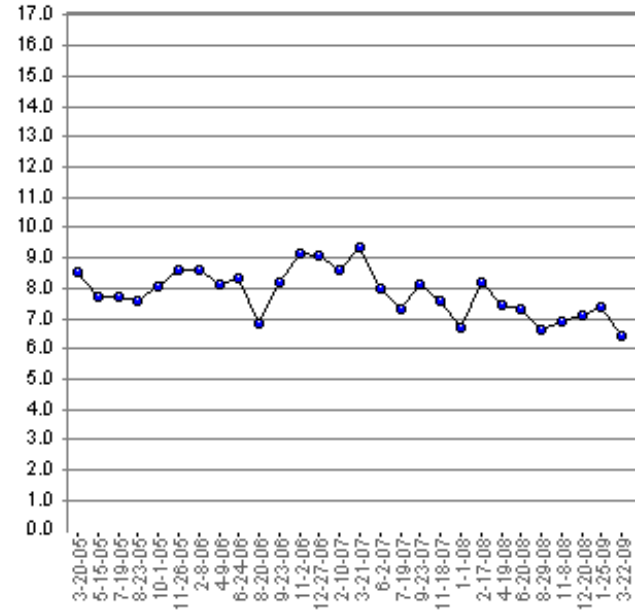
All component wear rates are normal.

Sample Date	11/08/08	12/20/08	01/25/09	Current	Abn
Iron	84	65	83	81	---
Nickel	1.2	1.4	0.2	1.2	---
Chromium	1.0	0.7	1.7	1.4	---
Titanium	0.2	0.1	0.4	0.5	---
Copper	5.9	6.1	7.9	7.7	---
Aluminum	1.8	1.5	1.9	1.9	---
Tin	0.0	0.0	0.0	1.1	---
Lead	3.4	0.6	1.3	2.2	---
Silver	0.0	0.0	0.0	0.0	---

# Graphs



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If you have any questions concerning this sample report (work order no 02375050 ) please call 1-800-237-1369.

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MOBILE OIL ANALYSIS REPORT

CONTAMINATION  
OIL CONDITION  
WEAR

**NORMAL**  
**NORMAL**  
**NORMAL**

9 - Diesel Engine

Unit Make : KENWORTH

Unit Model : W900L

Comp Make : CATERPILLAR

Comp Model : 3406

Serial No : {n/a}

Cust. Ref No. : {n/a}

Stub No. : KL-M2200758

Date Rec'd : Oct 2, 2009

Sample Date : Oct 1, 2009

Diagnostician : Doug Bogart

**RECOMMENDATION**

Resample at the next service interval to monitor.

Sample Date	01/25/09	03/22/09	06/07/09	Current	UOM
Time on Unit	552800	562800	571900	582300	mls
Time on Oil	198300	208300	217400	227800	mls
Time on Fltr	9400	10000	9100	10400	mls
Oil Maint.	not chg	n/a	n/a	not chg	---
Filter Maint.	changed	not chg	changed	changed	---

**CONTAMINATION**

There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable.

Sample Date	01/25/09	03/22/09	06/07/09	Current	Abn
Silicon	4.8	6.4	7.4	5.3	
Fuel (%)	<2.0	<2.0	<2.0	<2.0	
Glycol	---	---	---	---	
Water (%)	<0.1	<0.1	<0.1	<0.1	
Soot (%)	0.6	0.5	0.7	0.6	
>4µm(c)	307	192	294	333	
>6µm(c)	167	104	160	181	
>14µm(c)	28	17	27	30	
>21µm(c)	9	6	9	10	
>38µm(c)	1	0	1	1	
>70µm(c)	0	0	0	0	
ISO 4406(c)	15/12	14/11	14/12	15/12	

**OIL CONDITION**

Oil Type: 10 GAL of (GENERIC) SAE 15W40

The condition of oil is suitable for further service.

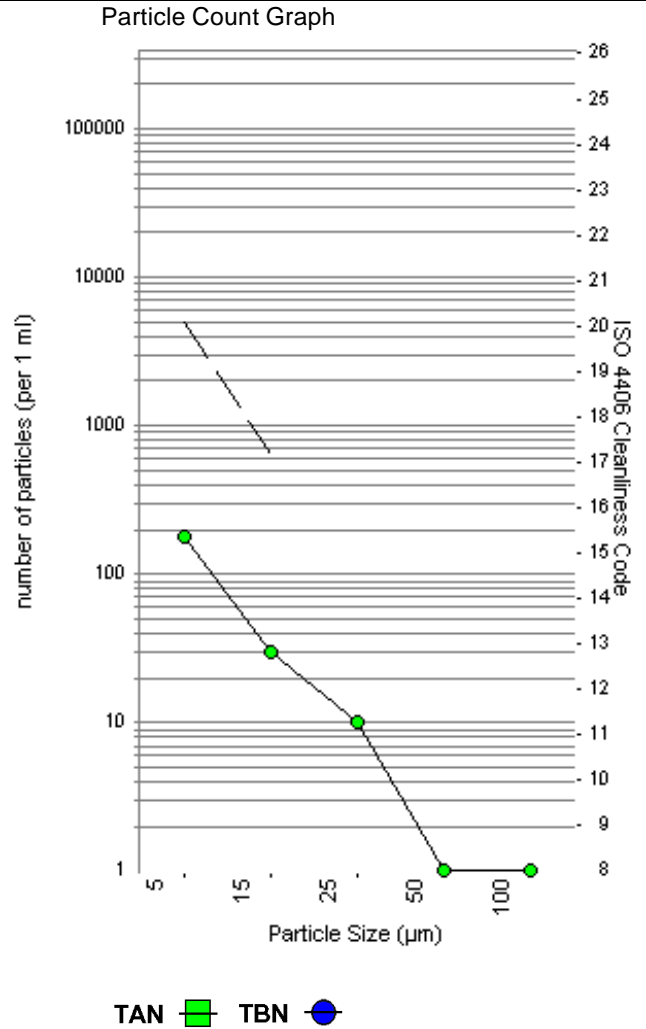
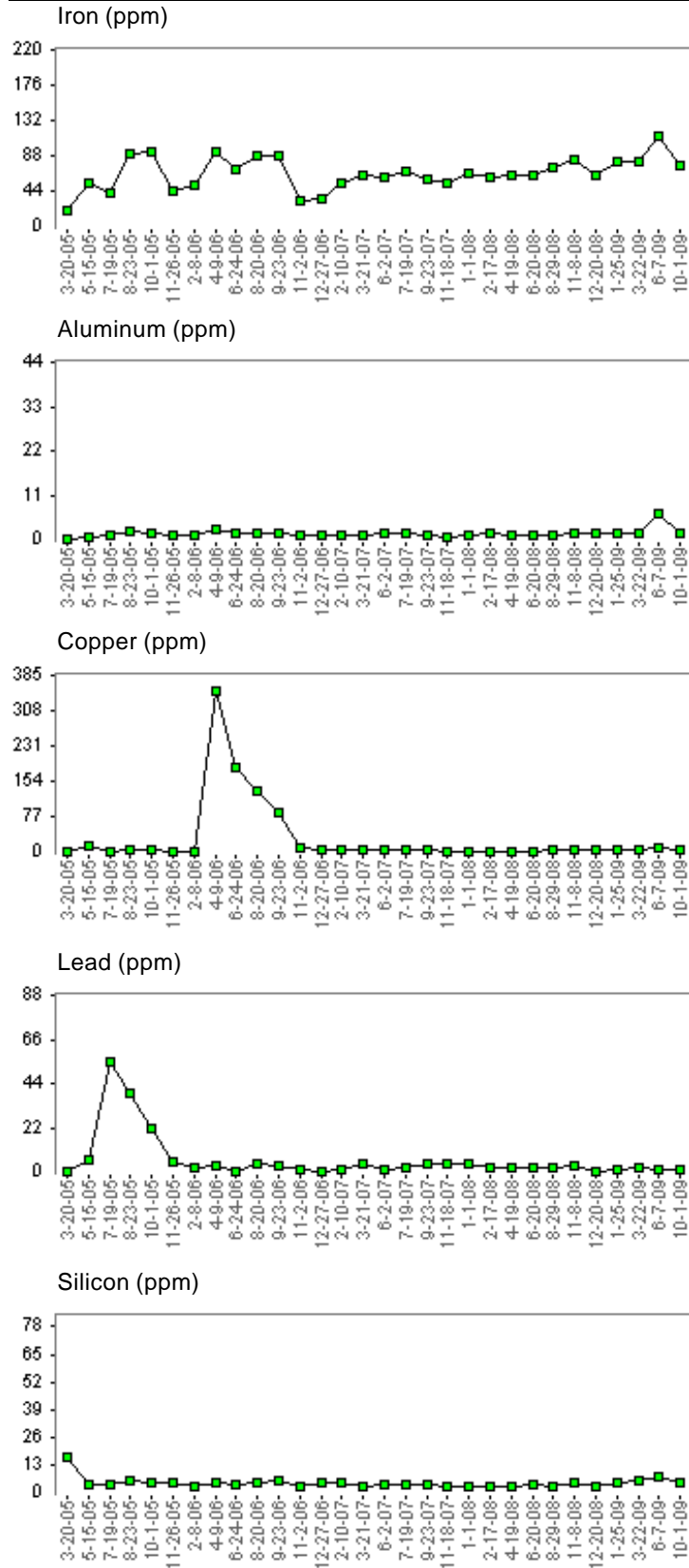
Sample Date	01/25/09	03/22/09	06/07/09	Current	Base
Potassium	0.0	0.0	0.0	0.0	
Boron	0.6	2.0	1.6	0.0	
Barium	0.0	0.0	0.0	0.0	
Calcium	1587	1470	1672	1496	
Magnesium	820	825	863	861	
Molybdenum	2.3	3.5	3.2	2.2	
Sodium	5.1	3.9	6.3	3.4	
Phosphorus	1149	1075	1113	1109	
Sulfur	4361	3960	3576	3810	
Zinc	1315	1260	1373	1280	
Visc@100°C	14.77	14.85	14.9	14.6	14.5
TBN	7.40	6.45	6.55	9.99	

**WEAR**

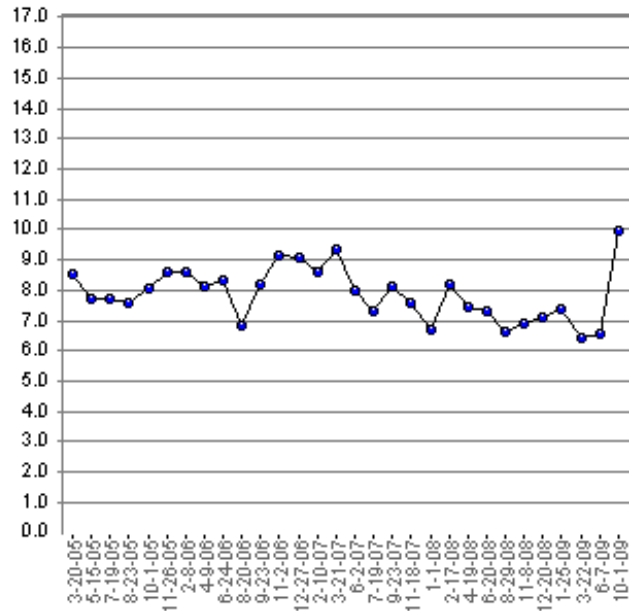
All component wear rates are normal.

Sample Date	01/25/09	03/22/09	06/07/09	Current	Abn
Iron	83	81	113	76	---
Nickel	0.2	1.2	2.2	0.9	---
Chromium	1.7	1.4	2.5	1.0	---
Titanium	0.4	0.5	0.0	0.0	---
Copper	7.9	7.7	11	7.5	---
Aluminum	1.9	1.9	6.6	1.6	---
Tin	0.0	1.1	0.0	0.0	---
Lead	1.3	2.2	1.3	1.1	---
Silver	0.0	0.0	0.0	0.0	---

# Graphs



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If you have any questions concerning this sample report (work order no 02491268 ) please call 1-800-237-1369.



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