

ENGINE

EQUIP NUM: 12501

SERIAL NUMBER: 1XKDD40XBCJ958901

KENWORTH T800 - CUMMINS ISX15

COMP SERIAL NUM: 79537867

No Action Required

Interp By: Gregory Scribner

Interpreted On: 13-Jun-22

N030-52161-0363

LABEL#: 200686499

SAMPLE SHIP TIME (days) : 28

WHEATLAND COUNTY

RECEIVED DATE: 10-Jun-22

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

SAMPLE INFORMATION

	13-May-22	29-Jan-21	25-Nov-19
Sample Id	N030-52161-0363	N030-51070-0554	N030-49336-0194
Lab Date	10-Jun-22	11-Mar-21	02-Dec-19
Meter [Hr]	10104	9862	9628
Comp Meter [Hr]	10104	9862	9628
Meter On Fluid	250	250	250
Fluid Brand	CHEVRON	CHEVRON	CHEVRON
Fluid Weight	5W-40	5W-40	5W-40
Fluid Type	DELO SYN	DELO SYN	
Fluid Change	Y	Y	Y
Filter Change	U	Y	Y
Make Up Fluid [L]	43	38	43
Kidney Loop	U	U	U

PREVIOUS SAMPLE

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

CONDITION / CONTAMINATION

	13-May-22	29-Jan-21	25-Nov-19
VISCOSITY (Centistokes)			
V100 Viscosity at 100 C	14.20	14.7	15.5

VISCOSITY (Centistokes)			
V40 Viscosity at 40 C	89.30	94.5	99.5

VISCOSITY INDEX

VI Viscosity Index	164	162	165
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INFRARED (UFM)

ST Soot	30	37	49
OXI Oxidation	17	17	18
SUL Sulfur Products	23	23	24
NIT Nitration	10	11	11

ANTIFREEZE

A Antifreeze	N	N	N
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FUEL

F Fuel	N	N	N
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WATER

W Water	N	N	N
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WEAR LEVELS / ADDITIVES

13-May-22 29-Jan-21 25-Nov-19

ELEMENTAL ANALYSIS (ppm)

Na Sodium	2	5	6
K Potassium	1	6	5
Si Silicon	6	9	8
Al Aluminum	0	2	1
Fe Iron	26	19	23
Cr Chromium	0	1	1
Pb Lead	0	0	3
Cu Copper	0	1	1
Sn Tin	0	0	0
Ni Nickel	0	0	0
Ag Silver	0	0	0
Ti Titanium	0	0	1
V Vanadium	0	0	0
Zn Zinc	862	832	1028
Ca Calcium	1429	1335	1436
Mg Magnesium	858	722	944
Ba Barium	0	0	0
B Boron	35	48	32
Mo Molybdenum	2	16	69
P Phosphorus	790	749	930

ENGINE

N030-51070-0554

LABEL#: 200550236

SHOP JOB NUM : PW SHOP R

1745

SAMPLE SHIP TIME (days) : 41

WHEATLAND COUNTY

EQUIP NUM: 12501

KENWORTH T800 - CUMMINS ISX15

No Action Required

SERIAL NUMBER: 1XKDD40XBCJ958901

COMP SERIAL NUM: 79537667

Interp By: Peter Leggo

Interpreted On: 12-Mar-21

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

SAMPLE INFORMATION

Sampled Date	29-Jan-21	25-Nov-19
Sample Id	N030-51070-0554	N030-49336-0194
Lab Date	11-Mar-21	02-Dec-19
Meter [Hr]	9862	9628
Comp Meter [Hr]	9862	9628
Meter On Fluid	250	250
Fluid Brand	CHEVRON	CHEVRON
Fluid Weight	5W-40	5W-40
Fluid Type	DELO SYN	
Fluid Change	Y	Y
Filter Change	Y	Y
Make Up Fluid [L]	38	43
Kidney Loop	U	U

PREVIOUS SAMPLE

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

CONDITION / CONTAMINATION

	29-Jan-21	25-Nov-19
VISCOSITY (Centistokes)		
V100 Viscosity at 100 C	14.7	15.5

WATER

W	Water	N	N
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VISCOSITY (Centistokes)

V40	Viscosity at 40 C	94.6	99.5
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VISCOSITY INDEX

VI	Viscosity Index	162	165
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INFRARED (UFM)

ST	Soot	37	49
OXI	Oxidation	17	18
SUL	Sulfur Products	23	24
NIT	Nitration	11	11

FUEL

F	Fuel	N	N
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ANTIFREEZE

A	Antifreeze	N	N
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WEAR LEVELS / ADDITIVES

	29-Jan-21	25-Nov-19
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ELEMENTAL ANALYSIS (ppm)

Na	Sodium	5	6
K	Potassium	6	5
Si	Silicon	9	8
Al	Aluminum	2	1
Fe	Iron	19	23
Cr	Chromium	1	1
Pb	Lead	0	3
Cu	Copper	1	1
Sn	Tin	0	0
Ni	Nickel	0	0
Ag	Silver	0	0
Ti	Titanium	0	1
V	Vanadium	0	0
Zn	Zinc	832	1028
Ca	Calcium	1335	1436
Mg	Magnesium	722	944
Ba	Barium	0	0
B	Boron	48	32
Mo	Molybdenum	16	69
P	Phosphorus	749	930



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PHONE: 1-888 FINNING (346-6464)

Email: oilsupport@finning.com Web: www.finning.com

CONTACT INFORMATION

DARWIN ARMITAGE
WHEATLAND COUNTY
HWY 1 RR 1
STRATHMORE, AB
CAN T1P 1J6
PHONE: 403-333-6887
FAX:
Email: DARWIN.

EQUIPMENT

CUSTOMER EQUIP NUM : 12501
SERIAL NUMBER : 1XKDD40XBCJ958901
MODEL : T800
MANUFACTURER : KENWORTH
COMPANY NAME : WHEATLAND COUNTY
JOB SITE :
AREA :
REGION :

SAMPLE INFORMATION

COMPARTMENT NAME : ENGINE
COMP SERIAL NUM : 79537867
COMPARTMENT MODEL : ISX15 CUMMINS
LABEL# : 200202196
SHOP JOB NUM :
SAMPLE TYPE: OIL
SAMPLE SHIP TIME (days) : 7
SAMPLE LOCATION :

Interp By: Gregory Scribner

DIRT AND WEAR METALS APPEAR TO BE AT ACCEPTABLE LEVELS. OTHER READINGS APPEAR TO BE NORMAL. RESAMPLE AT THE NEXT SERVICE INTERVAL.

LAB

ND30-49336-0194

PROCESS 02-Dec-19

DATE

WEAR/CONTAMINATION - ADDITIVES/FORMULATION																										
SAMPLE DATE	SAMPLE ID	METER (HR)	METER ON FLUID	FLUID CHANGE	FILTER CHANGE	Na	K	Si	Al	Fe	Cr	Pb	Cu	Sn	Ni	Ag	Ti	V	Zn	Ca	Mg	Ba	B	Mo	P	
25-Nov-19	ND30-49336-0194	9628	250	Y	Y	6	5	8	1	23	1	3	1	0	0	0	1	0	1028	1436	944	0	32	69	930	

OIL FORMULATION - OIL CONDITION - OIL CONTAMINATION																	
SAMPLE DATE	SAMPLE ID	METER (HR)	METER ON FLUID	FLUID BRAND	FLUID TYPE	FLUID WEIGHT	FLUID CHANGE	FILTER CHANGE	V100	V40	VI	ST	OXI	SUL	NIT	A	F
25-Nov-19	ND30-49336-0194	9628	250	CHEVRON		5W-40	Y	Y	15.5	99.5	165	49	18	24	11	N	N

OIL CLEANLINESS				
SAMPLE DATE	SAMPLE ID	FLUID CHANGE	FILTER CHANGE	W
25-Nov-19	ND30-49336-0194	Y	Y	N

A = Antifreeze, Ag = Silver, Al = Aluminum, B = Boron, Ba = Barium, Ca = Calcium, Cr = Chromium, Cu = Copper, F = Fuel, Fe = Iron, K = Potassium, Mg = Magnesium, Mo = Molybdenum, NIT = Nitration, Na = Sodium, Ni = Nickel, OXI = Oxidation, P = Phosphorus, Pb = Lead, ST = Soot, SUL = Sulfation, SI = Silicon, Sn = Tin, Ti = Titanium, V = Vanadium, V100 = Viscosity@100C, V40 = Viscosity@40C, VI = Viscosity Index, W = Water, Zn = Zinc

Notice: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof.



UIN 03FCB70

Diesel Engine

Unit No. 12501

Unit:

Make

Model

Serial No.

Site

Compartment:

Name

Engine

Make

Model

Serial No.

Capacity: Ltrs

Customer:

WHEATLAND COUNTY
Public works shop highway 1 RR1
Strathmore AB T1P1J6
Canada

DIAGNOSIS

ANALYST: Pat.Libutt

All engine wear rates normal. Silicon appears to be from source other than dirt, and not creating abrasive wear within system. Water content acceptable. Viscosity within specified operating range. Action: Resample next recommended service interval to further monitor.

DATE SAMPLED	05-Mar-19	04-Jul-18	13-Feb-18	20-Nov-17	21-Sep-17	24-Jul-17
DATE RECEIVED	05-Mar-19	17-Jul-18	28-Feb-18	11-Dec-17	12-Oct-17	02-Aug-17
DATE REPORTED	06-Mar-19	20-Jul-18	02-Mar-18	13-Dec-17	16-Oct-17	04-Aug-17

LAB NO.	40210402458	40210368314	40210347519	40210336397	40210327449	40210316037
SIF NO.	34172062	31310097	31310066	30474373	30474317	30474334
TIME ON UNIT	Hrs	Hrs	8440	8157	7901	7651
TIME ON OIL	Hrs	404	541	256	250	1128
OIL BRAND	Certified Labs Spectra Xtreme C-J4	Certified Labs Spectra Xtreme C-J4	Certified Labs Spectra Xtreme C-J4	Certified Labs Spectra Xtreme C-J4	Certified Labs Spectra Xtreme C-J4	Certified Labs Spectra Xtreme C-J4
OIL TYPE	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40
OIL GRADE						
OIL ADDED	309	404	541	256	250	250
FILTER						
OIL CHANGED	Not Changed	Not Changed	Changed	Not Changed	Changed	Changed
WO NUMBER						

Metals (ppm)

Iron (Fe)	53	32	39	26	34	104
Chromium (Cr)	2	1	2	1	1	2
Lead (Pb)	8	7	6	4	5	18
Copper (Cu)	3	2	1	1	2	3
Tin (Sn)	1	<1	<1	<1	1	2
Aluminium (Al)	3	2	2	2	2	7
Nickel (Ni)	<1	<1	<1	<1	<1	<1
Silver (Ag)	<1	<1	<1	<1	<1	<1
Titanium (Ti)	<1	<1	<1	<1	<1	<1
Vanadium (V)	<1	<1	<1	<1	<1	<1

Contaminants (ppm)

Silicon (Si)	25	22	8	9	8	12
Sodium (Na)	9	8	7	5	8	29
Potassium (K)	2	3	4	2	1	6
Water (%)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Coolant	No	No	No	No	No	No

Additives (ppm)

Magnesium (Mg)	1336	1295	1169	1321	1193	1198
Calcium (Ca)	1534	1340	1308	1396	1298	1556
Barium (Ba)	<1	<1	<1	<1	<1	<1
Phosphorus (P)	1482	1487	1398	1533	1364	1557
Zinc (Zn)	1411	1544	1459	1574	1429	1634
Molybdenum (Mo)	353	421	397	442	411	471
Boron (B)	17	<5	<5	<5	<5	<5

Physical Tests

Viscosity (cSt 100C)	14.4	14.6	14.7	14.4	14.5	16.2
Fuel (%)	<1	<1	<1	<1	<1	<1
Soot (%) Infrared	1.0	0.2	1.9	0.5	1.2	1.0

Physical / Chemical

Alkalinity Reserve(mgKOH/g)	7.2	9.0	7.1	9.9	7.3	8.2
Oxidation (Abs/0.1mm)	22	19	20	16	17	N/A
E2412/D7414						
Nitration (Abs/0.1mm)	12	11	12	9	10	N/A
E2412/D7624						
Sulphation (Abs/0.1mm)	28	25	26	22	23	N/A
E2412/D7415						

LEGEND



Normal



Severe



Abnormal



Caution



Normal



UIN 03FCB70

Diesel Engine

Unit No. 12501

Unit:

Make

Model

Serial No.

Site

Compartment:

Name

Engine

Make

Model

Serial No.

Capacity:

Ltrs

Customer:

WHEATLAND COUNTY

Public works shop highway 1 RR1

Strathmore AB T1P1J6

Canada

DIAGNOSIS

ANALYST: Ed Ecker

All engine wear rates normal. Silicon appears to be from source other than dirt, and not creating abrasive wear within system. Water content acceptable. Fuel dilution satisfactory. Viscosity within specified operating range. Action: As filter(s) already changed, resample next service interval to further monitor.

DATE SAMPLED	04-Jul-18	13-Feb-18	20-Nov-17	21-Sep-17	24-Jul-17	24-May-17
DATE RECEIVED	17-Jul-18	28-Feb-18	11-Dec-17	12-Oct-17	02-Aug-17	02-Jun-17
DATE REPORTED	20-Jul-18	02-Mar-18	13-Dec-17	16-Oct-17	04-Aug-17	06-Jun-17

LAB NO.	40210368314	40210347519	40210336397	40210327449	40210316037	40210306566
SIF NO.	31310097	31310066	30474373	30474334	30474334	30700673
TIME ON UNIT	Hrs	Hrs	8157	7901	7651	7376
TIME ON OIL	Hrs	8844	8440	256	1128	600
OIL BRAND	Certified Labs	Certified Labs	Certified Labs	Certified Labs	Certified Labs	Certified Labs
OIL TYPE	Spectra Xtreme	Spectra Xtreme	Spectra Xtreme	Spectra Xtreme	Spectra Xtreme	Spectra Xtreme
OIL GRADE	CJ-4	CJ-4	CJ-4	CJ-4	CJ-4	CJ-4
OIL ADDED	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40
FILTER	404	541	256	250	250	314
OIL CHANGED	Not Changed	Changed	Not Changed	Changed	Changed	Not Changed
W/O NUMBER						

Metals (ppm)

Iron (Fe)	32	39	26	34	104	87
Chromium (Cr)	1	2	1	1	2	3
Lead (Pb)	7	6	4	5	18	16
Copper (Cu)	2	1	1	2	3	3
Tin (Sn)	<1	<1	<1	1	2	3
Aluminum (Al)	2	2	2	2	7	8
Nickel (Ni)	<1	<1	<1	<1	<1	<1
Silver (Ag)	<1	<1	<1	<1	<1	<1
Titanium (Ti)	<1	<1	<1	<1	<1	<1
Vanadium (V)	<1	<1	<1	<1	<1	<1

Contaminants (ppm)

Silicon (Si)	22	8	9	8	12	11
Sodium (Na)	8	7	5	8	29	37
Potassium (K)	3	4	2	1	6	5
Water (%)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Coolant	No	No	No	No	No	No

Additives (ppm)

Magnesium (Mg)	1295	1169	1321	1193	1198	1136
Calcium (Ca)	1340	1308	1396	1298	1556	1518
Barium (Ba)	<1	<1	<1	<1	<1	<1
Phosphorus (P)	1487	1398	1533	1364	1557	1443
Zinc (Zn)	1544	1459	1574	1429	1634	1584
Molybdenum (Mo)	421	397	442	411	471	446
Boron (B)	<5	<5	<5	<5	<5	<5

Physical Tests

Viscosity (cSt 100C)	14.6	14.7	14.4	14.5	16.2	15.9
Fuel (%)	<1	<1	<1	<1	<1	<1
Soot (%) Infrared	0.2	1.9	0.5	1.2	1.0	0.2

Physical / Chemical

Alkalinity Reserve(mgKOH/g)	9.0	7.1	9.9	7.3	8.2	7.8
Oxidation (Abs/0.1mm)	19	20	16	17	N/A	17
E2412/D7414						
Nitration (Abs/0.1mm)	11	12	9	10	N/A	22
E2412/D7624						
Sulphation (Abs/0.1mm)	25	26	22	23	N/A	6
E2412/D7415						





UN 03FCB70
Diesel Engine

Unit No. 12501

Unit:

Make

Model

Serial No.

Site

Compartment:

Name Engine

Make

Model

Serial No.

Capacity: Ltrs

Customer:

WHEATLAND COUNTY
Public works shop highway 1 RR1
Strathmore AB T1P1J6
Canada

DIAGNOSIS

ANALYST: charles.dilliar

All wear rates normal. Abrasive and other contaminant levels are acceptable. Viscosity within specified operating range. Action: As oil and filter(s) already changed, resample next recommended service interval to further monitor.

DATE RECEIVED	13-Feb-18	28-Feb-18	02-Mar-18	24-Nov-17	11-Dec-17	13-Dec-17	21-Nov-17	12-Oct-17	16-Oct-17	02-Aug-17	04-Aug-17	24-Jun-17	02-Jun-17	06-Jun-17	22-May-17	05-Apr-17	07-Apr-17
DATE REPORTED																	
LAB NO.	40210347519	40210336397	40210327449	40210316037	40210305666	40210297886											
SIF NO.	31310066	30474373	30474317	30474334	30700673	30700676											
TIME ON UNIT	8440	8157	7901	7651	7376	7062											
TIME ON OIL	541	256	250	1128	600	286											
OIL BRAND	Certified Labs Spectra Xtreme Cj-4	Certified Labs Spectra Xtreme Cj-4	Certified Labs Spectra Xtreme Cj-4	Certified Labs Spectra Xtreme Cj-4	Certified Labs Spectra Xtreme Cj-4	Certified Labs Spectra Xtreme Cj-4											
OIL TYPE	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40											
OIL GRADE	541	256	250	250	314	286											
OIL ADDED	541	256	250	250	314	286											
FILTER	Changed	Not Changed	Changed	Changed	Not Changed	Not Changed											
OIL CHANGED	Changed	Not Changed	Changed	Changed	Not Changed	Not Changed											
WO NUMBER																	

Metals (ppm)	39	26	34	104	87	70
Iron (Fe)	2	1	1	2	3	2
Chromium (Cr)	6	4	5	18	16	8
Lead (Pb)	1	1	2	3	3	2
Copper (Cu)	<1	<1	1	2	3	1
Tin (Sn)	2	2	2	7	8	5
Aluminium (Al)	<1	<1	<1	<1	<1	<1
Nickel (Ni)	<1	<1	<1	<1	<1	<1
Silver (Ag)	<1	<1	<1	<1	<1	<1
Titanium (Ti)	<1	<1	<1	<1	<1	<1
Vanadium (V)	<1	<1	<1	<1	<1	<1

Contaminants (ppm)	8	9	8	12	11	10
Silicon (Si)	7	5	8	29	37	35
Sodium (Na)	4	2	1	6	5	5
Potassium (K)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Water (%)	No	No	No	No	No	No
Coolant	No	No	No	No	No	No

Additives (ppm)	1169	1321	1193	1198	1136	995
Magnesium (Mg)	1308	1396	1298	1556	1518	1357
Calcium (Ca)	<1	<1	<1	<1	<1	<1
Barium (Ba)	1398	1533	1364	1557	1443	1390
Phosphorus (P)	1459	1574	1429	1634	1584	1400
Zinc (Zn)	397	442	411	471	446	376
Molybdenum (Mo)	<5	<5	<5	<5	<5	<5
Boron (B)						

Physical Tests	14.7	14.4	14.5	16.2	15.9	15.4
Viscosity (cSt 100C)	<1	<1	<1	<1	<1	<1
Fuel (%)	1.9	0.5	1.2	1.0	0.2	0.8
Soot (%) Infrared						

Physical / Chemical	7.1	9.9	7.3	8.2	7.8	7.8
Alkalinity Reserve(mgKOH/g)	20	16	17	N/A	17	13
E2412/D7414						
Oxidation (Abs/0.1mm)	12	9	10	N/A	22	14
Nitration (Abs/0.1mm)						
E2412/D7624	26	22	23	N/A	6	17
Sulphation (Abs/0.1mm)						
E2412/D7415						

Normal

Severe

Abnormal

Caution

Normal

LEGEND



UIN 03FCB70
Diesel Engine

Unit No. 12501

Unit:

Make

Model

Serial No.

Site

Compartment:

Name Engine

Make

Model

Serial No.

Capacity: Ltrs

Customer:

WHEATLAND COUNTY
Public works shop highway 1 RR1
Strathmore AB T1P1J6
Canada

DIAGNOSIS

ANALYST: charles.dillarc

All wear rates normal. Silicon level (dirt/sealant material) satisfactory. Water content acceptable. Viscosity within specified operating range. Action: As filter(s) already changed, resample next recommended service interval to further monitor.

Normal

Severe

Abnormal

Caution

Normal

LEGEND

DATE RECEIVED	20-NOV-17	21-SEP-17	24-JUN-17	24-MAY-17	22-MAR-17	29-NOV-16
DATE REPORTED	11-Dec-17	12-Oct-17	02-Aug-17	02-Jun-17	05-Apr-17	16-Dec-16
DATE REPORTED	13-Dec-17	16-Oct-17	04-Aug-17	06-Jun-17	07-Apr-17	21-Dec-16

LAB NO.	40210336397	40210327449	40210316037	40210306566	40210297866	40210280478
SIF NO.	30474373	30474317	30474334	30700673	30700676	30700664
TIME ON UNIT	8157	7901	7651	7376	7062	6776
TIME ON OIL	256	250	1128	600	286	253
OIL BRAND	Certified Labs Spectra Xtreme C-J4	Certified Labs Spectra Xtreme C-J4	Certified Labs Spectra Xtreme C-J4	Certified Labs Spectra Xtreme C-J4	Certified Labs Spectra Xtreme C-J4	Certified Labs Spectra Xtreme C-J4
OIL TYPE	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40
OIL GRADE	256	250	250	314	286	253
OIL ADDED	Not Changed	Changed	Changed	Not Changed	Not Changed	Not Changed
FILTER	Not Changed	Changed	Changed	Not Changed	Not Changed	Not Changed
OIL CHANGED	Not Changed	Changed	Changed	Not Changed	Not Changed	Not Changed
WO NUMBER	Not Changed	Changed	Changed	Not Changed	Not Changed	Not Changed

Metals (ppm)						
Iron (Fe)	26	34	104	87	70	25
Chromium (Cr)	1	1	2	3	2	1
Lead (Pb)	4	5	18	16	8	5
Copper (Cu)	1	2	3	3	2	1
Tin (Sn)	<1	1	2	3	1	<1
Aluminium (Al)	2	2	7	8	5	2
Nickel (Ni)	<1	<1	<1	<1	<1	<1
Silver (Ag)	<1	<1	<1	<1	<1	<1
Titanium (Ti)	<1	<1	<1	<1	<1	<1
Vanadium (V)	<1	<1	<1	<1	<1	<1

Contaminants (ppm)						
Silicon (Si)	9	8	12	11	10	12
Sodium (Na)	5	8	29	37	35	14
Potassium (K)	2	1	6	5	5	2
Water (%)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Coolant	No	No	No	No	No	No

Additives (ppm)						
Magnesium (Mg)	1321	1193	1198	1136	995	1003
Calcium (Ca)	1396	1298	1556	1518	1357	1464
Barium (Ba)	<1	<1	<1	<1	<1	<1
Phosphorus (P)	1533	1364	1557	1443	1390	1481
Zinc (Zn)	1574	1429	1634	1584	1400	1511
Molybdenum (Mo)	442	411	471	446	376	393
Boron (B)	<5	<5	<5	<5	<5	<5

Physical Tests						
Viscosity (cSt 100C)	14.4	14.5	16.2	15.9	15.4	14.9
Fuel (%)	<1	<1	<1	<1	<1	<1
Soot (%) Infrared	0.5	1.2	1.0	0.2	0.8	0.3

Physical / Chemical						
Alkalinity Reserve(mgKOH/g)	9.9	7.3	8.2	7.8	7.8	9.5
Oxidation (Abs/0.1mm)	16	17	N/A	17	13	7
E2412/D7414						
Nitration (Abs/0.1mm)	9	10	N/A	22	14	11
E2412/D7624						
Sulphation (Abs/0.1mm)	22	23	N/A	6	17	8
E2412/D7415						



UIN 03FCB70

Diesel Engine

Unit No. 12501

Unit:

Make

Model

Serial No.

Site

Compartment:

Name Engine

Make

Model

Serial No.

Capacity: Ltrs

Customer:

WHEATLAND COUNTY

Public works shop highway 1 RR1

Strathmore AB T1P1J6

Canada

DIAGNOSIS

ANALYST: Ed Matthews

All wear rates normal. Abrasive and other contaminant levels are acceptable. Note: Increased IR Test results due to improved detection technique and does not represent a problem. Future samples will develop data trend of IR test results. Viscosity within specified operating range. Action: As oil and filter(s) already changed, resample next recommended service interval to further monitor.



DATE SAMPLED	41-Sep-17	24-Jun-17	24-May-17	05-Apr-17	21-Dec-16
DATE RECEIVED	12-Oct-17	02-Aug-17	02-Jun-17	07-Apr-17	
DATE REPORTED	16-Oct-17	04-Aug-17	06-Jun-17		

LAB NO.	40210327449	40210316037	40210306566	40210297886	40210280478	40210257610
SIF NO.	30474317	30474334	30700673	30700676	30700664	30684205
TIME ON UNIT	Hrs	Hrs	7376	7062	6776	6523
TIME ON OIL	Hrs	250	600	286	253	883
OIL BRAND	Certified Labs	Certified Labs	Certified Labs	Certified Labs	Certified Labs	Certified Labs
OIL TYPE	Spectra Xtreme	Spectra Xtreme	Spectra Xtreme	Spectra Xtreme	Spectra Xtreme	Spectra Xtreme
	CJ-4	CJ-4	CJ-4	CJ-4	CJ-4	CJ-4
OIL GRADE	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40
OIL ADDED	250	250	314	286	253	
FILTER	250	250	314	286	253	
OIL CHANGED	Changed	Changed	Not Changed	Not Changed	Not Changed	Changed
WO NUMBER						

Metals (ppm)	34	104	87	70	25	56
Iron (Fe)	1	2	3	2	1	2
Chromium (Cr)	5	18	16	8	5	22
Lead (Pb)	2	3	3	2	1	3
Copper (Cu)	1	2	3	1	<1	2
Tin (Sn)	2	7	8	5	2	3
Aluminium (Al)	<1	<1	<1	<1	<1	<1
Nickel (Ni)	<1	<1	<1	<1	<1	<1
Silver (Ag)	<1	<1	<1	<1	<1	<1
Titanium (Ti)	<1	<1	<1	<1	<1	<1
Vanadium (V)	<1	<1	<1	<1	<1	<1

Contaminants (ppm)	8	12	11	10	12	9
Silicon (Si)	8	29	37	35	14	34
Sodium (Na)	1	6	5	5	2	5
Potassium (K)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Water (%)	No	No	No	No	No	No
Coolant	No	No	No	No	No	No

Additives (ppm)	1193	1198	1136	995	1003	1031
Magnesium (Mg)	1298	1556	1518	1357	1464	1478
Calcium (Ca)	<1	<1	<1	<1	<1	<1
Barium (Ba)	1364	1557	1443	1390	1481	1520
Phosphorus (P)	1429	1634	1584	1400	1511	1637
Zinc (Zn)	411	471	446	376	393	403
Molybdenum (Mo)	<5	<5	<5	<5	<5	<5
Boron (B)						

Physical Tests	14.5	16.2	15.9	15.4	14.9	16.0
Viscosity (cSt 100C)	<1	<1	<1	<1	<1	<1
Fuel (%)	1.2	1.0	0.2	0.8	0.3	1.0
Soot (%) Infrared						

Physical / Chemical	7.3	8.2	7.8	7.8	9.5	8.0
Alkalinity Reserve(mgKOH/g)	17	N/A	17	13	7	N/A
Oxidation (Abs/0.1mm)	10	N/A	22	14	11	N/A
E2412/D7414						
Nitration (Abs/0.1mm)	23	N/A	6	17	8	N/A
E2412/D7624						
Sulphation (Abs/0.1mm)						
E2412/D7415						





UIN 03FCB70
Diesel Engine

Unit No. 12501

Unit:

Make

Model

Serial No.

Site

Compartment:

Name Engine

Make

Model

Serial No.

Capacity: Ltrs

Customer:

WHEATLAND COUNTY
Public works shop highway 1 RR1
Strathmore AB T1P1J6
Canada

DIAGNOSIS

ANALYST: Ed.Matthewe

All wear rates normal. Abrasive and other contaminant levels are acceptable. Note: Increased IR Test results due to improved detection technique and does not represent a problem. Future samples will develop data trend of IR test results. Viscosity within specified operating range. Action: As oil and filter(s) already changed, resample next recommended service interval to further monitor.

Normal

Severe

Abnormal

Caution

Normal

LEGEND

DATE SAMPLED	21-Sep-17	24-Jul-17	24-May-17	22-Mar-17	29-Nov-16	00-Jun-16
DATE RECEIVED	12-Oct-17	02-Aug-17	02-Jun-17	05-Apr-17	16-Dec-16	15-Jul-16
DATE REPORTED	16-Oct-17	04-Aug-17	06-Jun-17	07-Apr-17	21-Dec-16	19-Jul-16

LAB NO.	40210327449	40210316037	40210306566	40210297886	40210280478	40210257610
SIF NO.	30474317	30474334	30700673	30700676	30700664	30684205
TIME ON UNIT	His	7901	7376	7062	6776	6523
TIME ON OIL	His	1128	600	286	253	883
OIL BRAND	Certified Labs Spectra Xtreme CJ-4	Certified Labs Spectra Xtreme CJ-4	Certified Labs Spectra Xtreme CJ-4	Certified Labs Spectra Xtreme CJ-4	Certified Labs Spectra Xtreme CJ-4	Certified Labs Spectra Xtreme CJ-4
OIL TYPE	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40
OIL GRADE	250	250	314	286	253	253
OIL ADDED	250	250	314	286	253	253
FILTER	250	250	314	286	253	253
OIL CHANGED	Changed	Changed	Not Changed	Not Changed	Not Changed	Changed
WO NUMBER						

Metals (ppm)		104				
Iron (Fe)	34	2	87	70	25	56
Chromium (Cr)	1	18	3	2	1	2
Lead (Pb)	5	3	16	8	5	22
Copper (Cu)	2	2	3	2	1	3
Tin (Sn)	1	2	3	1	<1	2
Aluminum (Al)	2	7	8	5	2	3
Nickel (Ni)	<1	<1	<1	<1	<1	<1
Silver (Ag)	<1	<1	<1	<1	<1	<1
Titanium (Ti)	<1	<1	<1	<1	<1	<1
Vanadium (V)	<1	<1	<1	<1	<1	<1

Contaminants (ppm)						
Silicon (Si)	8	12	11	10	12	9
Sodium (Na)	8	29	37	35	14	34
Potassium (K)	1	6	5	5	2	5
Water (%)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Coolant	No	No	No	No	No	No

Additives (ppm)						
Magnesium (Mg)	1193	1198	1136	995	1003	1031
Calcium (Ca)	1298	1556	1518	1357	1464	1478
Barium (Ba)	<1	<1	<1	<1	<1	<1
Phosphorus (P)	1364	1557	1443	1390	1481	1520
Zinc (Zn)	1429	1634	1584	1400	1511	1637
Molybdenum (Mo)	411	471	446	376	393	403
Boron (B)	<5	<5	<5	<5	<5	<5

Physical Tests						
Viscosity (cSt 100C)	14.5	16.2	15.9	15.4	14.9	16.0
Fuel (%)	<1	<1	<1	<1	<1	<1
Soot (%) Infrared	1.2	1.0	0.2	0.8	0.3	1.0

Physical / Chemical						
Alkalinity Reserve(mgKOH/g)	7.3	8.2	7.8	7.8	9.5	8.0
Oxidation (Abs/0.1mm)	17	N/A	17	13	7	N/A
E2412/D7414						
Nitration (Abs/0.1mm)	10	N/A	22	14	11	N/A
E2412/D7624						
Sulphation (Abs/0.1mm)	23	N/A	6	17	8	N/A
E2412/D7415						



UIN 03FCB70

Diesel Engine

Unit No. 12501

Unit:

Make

Model

Serial No.

Site

Compartment:

Name Engine

Make

Model

Serial No.

Capacity: Ltrs

Customer:

WHEATLAND COUNTY
Public works shop highway 1 RR1
Strathmore AB T1P1J6
Canada

DIAGNOSIS

ANALYST: charles.dillarc

Iron wear rate elevated. All other engine wear rates normal. Silicon level (dirt/sealant material) satisfactory. Water content acceptable. Viscosity within specified operating range.

Action: As oil and filter(s) already changed, Resample next recommended service interval to further monitor.

DATE SAMPLED	24-Jul-17	24-May-17	22-Mar-17	29-Nov-16	06-Jul-16	21-Apr-16
DATE RECEIVED	02-Aug-17	02-Jun-17	05-Apr-17	16-Dec-16	15-Jul-16	04-May-16
DATE REPORTED	04-Aug-17	06-Jun-17	07-Apr-17	21-Dec-16	19-Jul-16	06-May-16

LAB NO.	40210316037	40210306566	40210297866	40210280478	40210257610	40210249223
SIF NO.	30474334	30700673	30700676	30700664	30684205	20019490
TIME ON UNIT	Hrs	Hrs	7376	7062	6776	6270
TIME ON OIL	1128	600	286	253	883	630
OIL BRAND	Certified Labs	Certified Labs	Certified Labs	Certified Labs	Certified Labs	Certified Labs
OIL TYPE	Spectra Xtreme	Spectra Xtreme	Spectra Xtreme	Spectra Xtreme	Spectra Xtreme	Spectra Xtreme
OIL GRADE	CJ-4	CJ-4	CJ-4	CJ-4	CJ-4	CJ-4
OIL ADDED	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40
FILTER	250	314	286	253	261	261
OIL CHANGED	Changed	Not Changed	Not Changed	Not Changed	Changed	Not Changed
WO NUMBER						

Metals (ppm)						
Iron (Fe)	104	87	70	25	56	49
Chromium (Cr)	2	3	2	1	2	2
Lead (Pb)	18	16	8	5	22	20
Copper (Cu)	3	3	2	1	3	3
Tin (Sn)	2	3	1	<1	2	2
Aluminium (Al)	7	8	5	2	3	4
Nickel (Ni)	<1	<1	<1	<1	<1	<1
Silver (Ag)	<1	<1	<1	<1	<1	<1
Titanium (Ti)	<1	<1	<1	<1	<1	<1
Vanadium (V)	<1	<1	<1	<1	<1	<1

Contaminants (ppm)						
Silicon (Si)	12	11	10	12	9	9
Sodium (Na)	29	37	35	14	34	40
Potassium (K)	6	5	5	2	5	5
Water (%)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Coolant	No	No	No	No	No	No

Additives (ppm)						
Magnesium (Mg)	1198	1136	995	1003	1031	1032
Calcium (Ca)	1556	1518	1357	1464	1478	1496
Barium (Ba)	<1	<1	<1	<1	<1	<1
Phosphorus (P)	1557	1443	1390	1481	1520	1544
Zinc (Zn)	1634	1584	1400	1511	1637	1668
Molybdenum (Mo)	471	446	376	393	403	414
Boron (B)	<5	<5	<5	<5	<5	<5

Physical Tests						
Viscosity (cSt 100C)	16.2	15.9	15.4	14.9	16.0	15.9
Fuel (%)	<1	<1	<1	<1	<1	<1
Soot (%) Infrared	1.0	0.2	0.8	0.3	1.0	1.1

Physical / Chemical						
Alkalinity Reserve(mgKOH/g)	8.2	7.8	7.8	9.5	8.0	9.1
Oxidation (Abs) E2412/D7414	N/A	17	13	7	N/A	21
Nitration (Abs) E2412/D7624	N/A	22	14	11	N/A	20
Sulphation (Abs) E2412/D7415	N/A	6	17	8	N/A	28



LEGEND

Severe

Abnormal

Caution

Normal



UIN 03FCB70
Diesel Engine

Unit No. 12501

Unit:

Make

Model

Serial No.

Site

Compartment:

Name Engine

Make

Model

Serial No.

Capacity: Ltrs

Customer:

WHEATLAND COUNTY
Public works shop highway 1 RR1
Strathmore AB T1P1J6
Canada

DIAGNOSIS

ANALYST: labraun,kennedy

All wear rates normal. Abrasive and other contaminant levels are acceptable. Moderate level of oxidation products detected. Viscosity within specified operating range.

Action: Resample next recommended service interval to further monitor.

DATE SAMPLED	24-Mar-17	22-Mar-17	29-Nov-16	06-Jul-16	21-Apr-16	01-Mar-16
DATE RECEIVED	02-Jun-17	05-Apr-17	16-Dec-16	15-Jul-16	04-May-16	06-Apr-16
DATE REPORTED	06-Jun-17	07-Apr-17	21-Dec-16	19-Jul-16	06-May-16	08-Apr-16
LAB NO.	40210306566	40210297886	40210280478	40210257610	40210249223	40210245667
SIF NO.	30700673	30700676	30700664	30684205	20019490	18243637
TIME ON UNIT	Hrs 7376	Hrs 7062	6776	6523	6270	6009
TIME ON OIL	Hrs 600	286	253	883	630	369
OIL BRAND	Certified Labs Spectra Xtreme CJ-4	Certified Labs Spectra Xtreme CJ-4	Certified Labs Spectra Xtreme CJ-4	Certified Labs Spectra Xtreme CJ-4	Certified Labs Spectra Xtreme CJ-4	Certified Labs Spectra Xtreme CJ-4
OIL TYPE	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40
OIL GRADE	314	286	253	261	369	
OIL ADDED	Not Changed	Not Changed	Not Changed	Changed	Not Changed	Not Changed
FILTER						
OIL CHANGED						
WO NUMBER						

Metals (ppm)						
Iron (Fe)	87	70	25	56	49	31
Chromium (Cr)	3	2	1	2	2	2
Lead (Pb)	16	8	5	22	20	12
Copper (Cu)	3	2	1	3	3	2
Tin (Sn)	3	1	<1	2	2	1
Aluminium (Al)	8	5	2	3	4	4
Nickel (Ni)	<1	<1	<1	<1	<1	<1
Silver (Ag)	<1	<1	<1	<1	<1	<1
Titanium (Ti)	<1	<1	<1	<1	<1	<1
Vanadium (V)	<1	<1	<1	<1	<1	<1

Contaminants (ppm)						
Silicon (Si)	11	10	12	9	9	9
Sodium (Na)	37	35	14	34	40	43
Potassium (K)	5	5	2	5	5	5
Water (%)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Coolant	No	No	No	No	No	No

Additives (ppm)						
Magnesium (Mg)	1136	995	1003	1031	1032	908
Calcium (Ca)	1518	1357	1464	1478	1496	1258
Barium (Ba)	<1	<1	<1	<1	<1	<1
Phosphorus (P)	1443	1390	1481	1520	1544	1284
Zinc (Zn)	1584	1400	1511	1637	1668	1346
Molybdenum (Mo)	446	376	393	403	414	358
Boron (B)	<5	<5	<5	<5	<5	<5

Physical Tests						
Viscosity (cSt 100C)	15.9	15.4	14.9	16.0	15.9	14.8
Fuel (%)	<1	<1	<1	<1	<1	<1
Soot (%) Infrared	0.2	0.8	0.3	1.0	1.1	0.5

Physical / Chemical						
Alkalinity Reserve(mgKOH/g)	7.8	7.8	9.5	8.0	9.1	8.0
Oxidation (Abs) E2412/D7414	17	13	7	N/A	21	15
Nitration (Abs) E2412/D7624	22	14	11	N/A	20	17
Suphation (Abs) E2412/D7415	6	17	8	N/A	28	19



LEGEND

Caution

Severe

Abnormal

Caution

Normal

Client: 3721110
WHEATLAND COUNTY
HI-WAY #1 RR #1
STRATHMORE, AB T1P1J6
ATTN: ED SMITH

Unit #: 12501
Unit Location:
Component: ENGINE

Location:

Serial #: 79537667

Make: CUMMINS

Model: ISX15

OAS #:



OIL PREVENTIVE MAINTENANCE
3650 21st Street N.E., Calgary, AB, T2E6V6
Phone:(403)299-2000 Fax:(403)299-2105



Date analyzed: 07/11/14
Work order: 14C96928
Oil brand & grade: PETRO-CANADA DURON E 15W40

Client Ref #:

LEGEND - LC-Lower Critical LR-Lower Reportable UR-Upper Reportable UC-Upper Critical * Ital -Custom Limit

UNIT DATA

Sample#	Date Sampled	Component Service	Oil Service	Oil Changed	Al	Cr	Cu	Fe	Sn	Pb	Si	Mo	Ni	Ag	K	Na	B	Ba	Ca	Mg	Mn	P	Zn
New Oil	07/03/14	3444 hrs	251 hrs	Y	0	0	0	0	0	0	5	10	0	0	0	10	0	0	2330	0	0	1030	1291
A446309	05/14/14	3193 hrs	419 hrs	Y	6	1	1	15	1	1	3	7	0	0	9	23	5	0	2170	7	0	942	1080
A446303	01/28/14	2724 hrs	288 hrs	Y	10	1	2	24	1	2	5	6	0	0	16	20	5	0	2330	8	0	1040	1200
A446299	10/24/13	2462 hrs	312 hrs	Y	6	1	1	15	1	1	3	2	0	0	8	10	2	0	2480	7	0	1010	1210
A446261	08/22/13	2150 hrs	327 hrs	Y	9	1	2	20	1	2	5	2	0	0	15	10	3	1	2800	8	0	1200	1468
A446275	06/12/13	1823 hrs	351 hrs	Y	8	2	3	23	1	2	5	3	0	0	25	4	5	0	2530	9	1	1170	1391
A446268					9	2	2	21	1	2	5	3	0	0	25	4	5	0	2500	11	1	1090	1400

SPECTROGRAPHIC ANALYSIS (PPM)

PHYSICAL PROPERTIES

ISO CLEANLINESS

OIL DEGRADATION

Sample#	Glycol	H2O	% Fuel	Viscosity 40°C	Viscosity 100°C	% Solids	KF	Flash Point °C	Micron size 4	Micron size 6	Micron size 14	ISO Code	% SOOT	OXD	NOX	abs/cm-1 COX	SO4	ZDDP	TAN	TBN	Min. RPVOT
New Oil				114.0	15.0																
A446309	N	N		103.4	14.1								0.4	3	8	0	7	0	2.37	8.5	
A446303	N	N		103.0	14.6								0.5	6	11	0	0	0			
A446299	N	N		101.9	14.1								0.3	4	7	0	0	0			
A446261	N	N		106.8	14.3								0.4	5	8	0	0	0			
A446275	N	N		104.5	13.5								0.5	5	9	9	0	0			
A446268	N	N		100.4	14.0								0.7	6	11	11	0	0			

WEAR CONTROL CHART

COMMENTS

Sample#	0	30	60	90	120	150	Comments:
A446309		28.2					
A446303			44.1				
A446299		28.1					
A446261			40.2				
A446275			43.6				
A446268			41.5				

Should you wish to provide feedback to AGAT Laboratories, please access our Customer review form at www.agatlabs.com/review.htm. This input is extremely important to us because your well being and satisfaction is our number one priority.

* COMPONENT SERIAL NUMBER MUST BE GIVEN TO GENERATE HISTORY. Bold faced elements are included in Wear Control Chart.
AGAT Laboratories Liability Shall Not Exceed The Cost Of Analysis. *Results relate only to the items tested

ED SMITH

OAS #:

Phone:(403)299-2000 Fax:(403)299-2105

721110

AND COUNTY

#1 RR #1

MORE, AB T1P1J6

ED SMITH

Unit #: 12501

Unit Location:

Component: ENGINE

Location:

Serial #: E660DC737C758Q7471

Make: CUMMINS

Model: ISX15 525

OAS #:

Date analyzed: 01/17/13

Work order: 13C79695

Oil brand & grade: PETRO-CANADA DURON E 15W40

Client Ref #:

LEGEND - LC -Lower Critical LR -Lower Reportable UR -Upper Reportable UC -Upper Critical * /ai/ -Custom Limit

UNIT DATA

SPECTROGRAPHIC ANALYSIS (PPM)

Date Sampled	Component Service	Oil Service	Oil Changed	Al	Cr	Cu	Fe	Sn	Pb	Si	Mo	Ni	Ag	K	Na	B	Ba	Ca	Mg	Mn	P	Zn
01/09/13	1180 hrs	273 hrs	Y	0	0	0	0	0	0	5	10	0	0	0	10	0	0	2330	0	0	1030	1291
10/18/12	907 hrs	300 hrs	Y	13	1	2	15	1	1	5	1	0	0	24	3	4	0	2460	11	1	1040	1303
				13	2	4	22	2	1	8	4	0	0	34 UR	3	9	0	2400	19	1	1040	1302

PHYSICAL PROPERTIES

ISO CLEANLINESS

OIL DEGRADATION

Glycol	H ₂ O	% Fuel	40°C	Viscosity 100°C	% Solids	KF	Flash Point °C	Micron size	ISO Code	% Soot	OXD	NOX	COX	SO ₄	ZDDP	TAN	TBN	Mln, RPVOT
N	N		114.0	15.0				4	6	14								
N	N		101.1	13.4							0.2	8	9	10	0	0	2.37	8.5
N	N		105.1	13.9							0.6	6	7	0	0	0		

WEAR CONTROL CHART

COMMENTS

0	30	60	90	120	150
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Comments:

38.1

51.8

Should you wish to provide feedback to AGAT Laboratories, please access our Customer review form at www.agatlabs.com/review.htm. This input is extremely important to us because your well being and satisfaction is our number one priority.



REPAIR ORDER

CUSTOMER INVOICE

 * GREATWEST KENWORTH LTD *
 * 5909 - 6 STREET S.E. *
 * CALGARY, ALBERTA T2H 1L8 *
 * (403)253-7555 *

**
 INVOICE DATE 05-10-12

REPAIR ORDER NUMBER
 >>>> VC14998 <<<<

CUSTOMER NAME
 WHEATLAND COUNTY
 HIGHWAY #1 R.R. #1
 STRATHMORE, AB T1P 1J6

NUMBER 7269
 PHONE 403 934-3284
 P.O. NO. PW96782
 COMPLETE 05-07-12

OPEN 05-07-12
 SVC WTR KP *MW

SERIAL NO. 1XKDD40X8CJ958901 UNIT NO. 12501
 YEAR/MAKE/MODEL - 2012 KW T800B
 ENGINE/MODEL/SERL ISX15 79537667
 TRNS/MODEL/SERL - RTLO18918B S0927318
 RXLS MODEL/SERL - D46-170HP HN03863847 HN03863848
 SELL DLR DEL DATE 03-12-12
 MEMO NEED FOR ASAP

MILEAGE 150
 LICENSE
 CPL/ARRG
 R RATIO 4.10
 TAG #
 DEL MILE

1 SET PARAMTERS TON UNIT 115 FOOT AND CRUISE
 CAUSE:
 PERAMTERS REQUIRE CHANGING AS REQUESTED
 CORRECTION:
 WENT INTO CUMMINS PERAMTERS, CHANGED PETAMTERS FOR FOOT TO 115KM/H AND
 CRUISE AS REQUESTED
 TOTAL LABOR \$87.00

2 ENGINE LIGHT HAS COME ON
 CAUSE:
 ENGINE LIGHT ON DASH
 ENGINE LIGHT ILLUMINATED ON DASH
 CORRECTION:
 ONLY ONE EVENT AND CURRENTLY INACTIVE
 CHECKED FAULTS IN SYSTEM, SEE ATTACHED SHEET, ONLY ONE EVENT AND INACT
 INACTIVE FAULT FOR DOSER IRRATIC. PERFORMED REGEN NO FAULTS
 >> NO CHARGE <<

SHOP SUPPLIES \$6.09

G.S.T. - REG. NO. R139766661 5 % OF \$93.09 = \$4.65

CUST MECH LAB-CAL \$87.00
 SHOP SUPPLIES-SHOP A \$6.09
 G.S.T. R139766661 \$4.65
 PLEASE PAY THIS TOTAL \$97.74

The factory warranty constitutes all of the warranties with respect to the
 sale of this item/items. The Seller hereby expressly disclaims all warranties,
 either expressed or implied, including any implied warranty of merchantability

REPAIR ORDER

CUSTOMER INVOICE

PAGE 2

* GREATWEST KENWORTH LTD *
* 5909 - 6 STREET S.E. *
* CALGARY, ALBERTA T2H 1L8 *
* (403)253-7555 *

**

INVOICE DATE 05-10-12

REPAIR ORDER NUMBER

CUSTOMER NAME
WHEATLAND COUNTY

NUMBER 7269
PHONE 403 934-3284

>>>> VC14998 <<<<

or fitness for a particular purpose. Seller neither assumes nor authorizes any other person to assume for it any liability in connection with the sale of this item/items

Great West Kenworth Ltd. makes the limited warranty covering any defect in workmanship or material furnished in connection with this repair order for a period of thirty (30) days from the date of delivery of said motor vehicle to the customer/owner, or 16,000 kilometers whichever occurs first.

It is understood that a lien may be placed thereon for the amount due in case the vehicle repairs are not paid in full

Signature _____ Date ____/____/____
MM DD YYYY

Print Name _____

721110
AND COUNTY
#1 RR #1
MORE, AB T1P1J6
ED SMITH

Unit #: 12501
Unit Location:
Component: ENGINE
Location:

Serial #: 1XKDD40X8CJ958901

Make:

Model:

OAS #:

Date analyzed: 06/19/12

Work order: 12C72968

Oil brand & grade: CHEVRON DELO 15W40

Client Ref #:

AGAT Laboratories
OIL PREVENTIVE MAINTENANCE
3650 21st Street N.E., Calgary, AB, T2E6V6
Phone:(403)299-2000 Fax:(403)299-2105



LEGEND - LC -Lower Critical LR -Lower Reportable UR -Upper Reportable UC -Upper Critical * Ital -Custom Limit

UNIT DATA

Date Sampled	Component Service	Oil Service	Oil Changed	Aluminum	Cr Chromium	Cu Copper	Fe Iron	Sn Tin	Pb Lead	Si Silicon	Mo Molybdenum	Ni Nickel	Ag Silver	K Potassium	Na Sodium	B Boron	Ba Barium	Ca Calcium	Mg Magnesium	Mn Manganese	P Phosphorus	Zn Zinc
06/05/12	315 hrs	315 hrs	Y	0	0	0	0	0	0	5	82	0	0	0	0	500	0	1435	364	0	1102	1275
				7	3	13	44	3	4	37 UC	83	1	1	22 UR	8	362	4	1550	448	6	1080	1304

SPECTROGRAPHIC ANALYSIS (PPM)

PHYSICAL PROPERTIES

ISO CLEANLINESS

OIL DEGRADATION

Glycol	H2O	% Fuel	Viscosity		% Solids	KF	°C Flash Point	Micron size			ISO Code	%		abs/cm-1				ZDDP	TAN	TBN	Min. RPVOT
			40°C	100°C				4	6	14		SOOT	OXD	NOX	COX	SO4					
			128.6	15.5	0.0							SOOT	OXD	NOX	COX	SO4					
N	N		106.3 LR	13.7								0.7	12	11	16	6	0		3.68	8.8	

WEAR CONTROL CHART

COMMENTS

0	30	60	90	120	150	Comments:
						REFER TO REVERSE FOR QUALITY CONTROL REPORT, EXPLANATION OF VARIANCE AND POSSIBLE CAUSES.

Should you wish to provide feedback to AGAT Laboratories, please access our Customer review form at www.agatlabs.com/review.htm. This input is extremely important to us because your well being and satisfaction is our number one priority.