

# **OIL ANALYSIS REPORT**

## GM Renton Dump Truck Shop [GM Renton Dump Truck Shop] S12-506 Component

**Diesel Engine** 

CHEVRON DELO 400 XLE 10W30 (--- GAL)

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

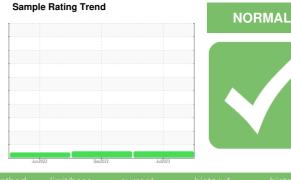
All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

### 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 INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PE0001228	PE0000312	PE12230623
Sample Date		Client Info		24 Jul 2023	05 Dec 2022	02 Jun 2022
Machine Age	hrs	Client Info		2691	1795	934
Oil Age	hrs	Client Info		896	1795	934
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				NORMAL	NORMAL	MARGINAL
CONTAMINATION	J	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	25	69	49
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	<1	<1	<1
Aluminum	ppm	ASTM D5185m	>20	5	16	13
Lead	ppm	ASTM D5185m	>40	<1	2	4
Copper	ppm	ASTM D5185m	>330	3	11	13
Tin	ppm	ASTM D5185m	>15	1	2	1
Antimony	ppm	ASTM D5185m				0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium		ASTM D5185m		•	0	
Gaumum	ppm	ASTIVI DOTODITI		0	0	
ADDITIVES	ррш	method	limit/base	current	history1	history2
			limit/base			
ADDITIVES	ppm	method	limit/base	current	history1	history2
ADDITIVES Boron	ppm ppm	method ASTM D5185m	limit/base	current 37	history1 20	history2 24
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m	limit/base	current 37 0	history1 20 0	history2 24 1
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 37 0 8	history1 20 0 30	history2 24 1 30
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 37 0 8 <1	history1 20 0 30 1	history2 24 1 30 
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		current 37 0 8 <1 160	history1 20 0 30 1 845	history2 24 1 30  952
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2900	current      37      0      8      <1      160      2051	history1 20 0 30 1 845 1518	history2 24 1 30  952 1344
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2900 1100	current      37      0      8      <1      160      2051      959	history1 20 0 30 1 845 1518 937	history2 24 1 30  952 1344 895
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2900 1100 1200	current      37      0      8      <1      160      2051      959      1205	history1 20 0 30 1 845 1518 937 1203	history2 24 1 30  952 1344 895 1093
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2900 1100 1200 4000	Current 37 0 8 <1 160 2051 959 1205 3936	history1 20 0 30 1 845 1518 937 1203 3788	history2 24 1 30  952 1344 895 1093 
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2900 1100 1200 4000 limit/base	current      37      0      8      <1      160      2051      959      1205      3936      current	history1 20 0 30 1 845 1518 937 1203 3788 history1	history2 24 1 30  952 1344 895 1093  History2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method      ASTM D5185m	2900 1100 1200 4000 limit/base	current      37      0      8      <1      160      2051      959      1205      3936      current      6	history1      20      0      30      1      845      1518      937      1203      3788      history1      9	history2    24    1    30       952    1344    895    1093       history2    8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method      ASTM D5185m	2900 1100 1200 4000 limit/base >25	current      37      0      8      <1      160      2051      959      1205      3936      current      6      3	history1      20      0      30      1      845      1518      937      1203      3788      history1      9      2	history2    24    1    30       952    1344    895    1093       history2    8    2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method      ASTM D5185m	2900 1100 1200 4000 limit/base >25 >20	current      37      0      8      <1      160      2051      959      1205      3936      current      6      3      11	history1      20      0      30      1      845      1518      937      1203      3788      history1      9      2      33	history2    24    1    30       952    1344    895    1093       history2    8    2    37
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method      ASTM D5185m	2900 1100 1200 4000 limit/base >25 >20 limit/base	current      37      0      8      <1      160      2051      959      1205      3936      current      6      3      11      current	history1    20    0    30    1    845    1518    937    1203    3788    history1    9    2    33    history1	history2    24    1    30       952    1344    895    1093       history2    8    2    37    history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	method      ASTM D5185m	2900 1100 1200 4000 limit/base >25 >20 limit/base >3	current    37    0    8    <1    160    2051    959    1205    3936    current    6    3    11    current    0.8	history1    20    0    30    1    845    1518    937    1203    3788    history1    9    2    33    history1    1.2	history2    24    1    30       952    1344    895    1093       history2    8    2    37    history2    0.6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method      ASTM D5185m	29900 1100 1200 4000 imit/base >25 >20 imit/base >3 >20	current    37    0    8    <1    160    2051    959    1205    3936    current    6    3    11    current    0.8    10.5	history1    20    0    30    1    845    1518    937    1203    3788    history1    9    2    33    history1    1.2    13.8	history2    24    1    30       952    1344    895    1093       history2    8    2    37    history2    0.6    12
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method      ASTM D5185m      ASTM D5185m	2900 1100 1200 4000 <b>1imit/base</b> >25 >20 <b>1imit/base</b> >3 >20 >30	current      37      0      8      <1      160      2051      959      1205      3936      current      6      3      11      current      0.8      10.5      25.2	history1    20    0    30    1    845    1518    937    1203    3788    history1    9    2    33    history1    1.2    13.8    30.3	history2    24    1    30       952    1344    895    1093       history2    8    2    37    history2    0.6    12



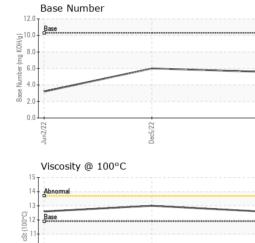
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# **OIL ANALYSIS REPORT**

VISUAL



	White Metal	scalar	*Visual	NONE	NONE	NONE	
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
	Precipitate	scalar	*Visual	NONE	NONE	NONE	
	Silt	scalar	*Visual	NONE	NONE	NONE	
	Debris	scalar	*Visual	NONE	NONE	NONE	
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Dec5/22 Jul24/23	Appearance	scalar	*Visual	NORML	NORML	NORML	
Jul	Odor	scalar	*Visual	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
	Free Water	scalar	*Visual		NEG	NEG	
	FLUID PROPERT	IES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	11.9	12.6	13.0	<b>1</b> 2.6
	GRAPHS						
	Ferrous Alloys	~					
Dec5/22 -	60 - iron						
Dect	50 - nickel						
	_ 40 -						
	E 30-						
	20 -						
	10						
	0						
	Jun2/22	Dec5/22		Jul24/23			
	Ē	De		Jul			
	Non-ferrous Metal	S					
	copper						
	12 - Bessesses lead	-					
	10-		\				
	udd .						
	6						
	4 Address and a state of the st	In the local division in the local divisione					
	0			and the second			
		22-		23			
	Jun2/22 -	Dec5/22		Jul24/23			
				Jul24,	Baco Number		
	Jun2/22			12.0	Base Number		
	Viscosity @ 100°C			12.0			
	Viscosity @ 100°C			12.0			
	Viscosity @ 100°C			12.0			
	Viscosity @ 100°C			12.0			
	Viscosity @ 100°C			12.0			
	Viscosity @ 100°C			12.0 10.0 (PH 8.0 PH 8.0 PH 6.0			
	Viscosity @ 100°C	;		12.0 (0) (0) (0) (0) (0) (0) (0) (0) (0) (0	Base	2	
	Viscosity @ 100°C	;		12.0 (0) (0) (0) (0) (0) (0) (0) (0) (0) (0	Base	ec5/22 -	
	Viscosity @ 100°C			12.0 10.0		Dec5/22	
Laboratory	Viscosity @ 100°C	501 Madis		12.0 10.0	Base	ino Constructio	on - Off Road Sho
Laboratory Sample No.	Viscosity @ 100°C	501 Madise Received	: 11 /	12.0 10.0	Base	ino Constructio	on - Off Road Sho TH AVE SOUT
Laboratory	Viscosity @ 100°C	501 Madis Received Diagnose	: 11 /	12.0 10.0	Base	ino Constructio	on - Off Road Sho TH AVE SOUTI SEATTLE, W
Laboratory Sample No. Lab Number Unique Number Test Package	Viscosity @ 100°C	501 Madis Received Diagnose Diagnosti Tests: FT	: 11 / d : 14 / cian : Don -IR, ICP, K\	12.0 (0) (0) (0) (0) (0) (0) (0) (0) (0) (0	Base 2272unr Gary Merl	i <b>no Constructi</b> e 9125 10	on - Off Road Sho TH AVE SOUTI SEATTLE, W. US 9810 Contact: Zac
Laboratory Sample No. Lab Number Unique Number	Viscosity @ 100°C	501 Madis Received Diagnose Diagnosti Tests: FT <i>ice at 1-80</i>	: 11 / cian : 14 / cian : Don -IR, ICP, KV 20-237-1369	12.0 10.0	Base 2272unr Gary Merl	i <b>no Constructi</b> e 9125 10	on - Off Road Sho TH AVE SOUTI SEATTLE, W US 9810

Submitted By: Dump Truck Shop - Zack Page 2 of 2