

Populations, Activity and Emissions of Diesel Nonroad Equipment in EPA Region 7

Nonroad PEMS Fuel and Oil Analysis Results Appendix T

Assessment and Standards Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

Prepared for EPA by
Eastern Research Group, Inc. (ERG)
EPA Contract No. EP-C-06-080

Part A

EPA in-house Diesel Fuel Analysis Results

NVFEL Fuel Analysis Report

16797

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House

Owner: x Phone: (734) 214-4400

2565 Plymouth Rd

Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

Inspection information logged in by NST on 2/18/09.

VOC

Season:

ASD-3597-9706-20071026 FLAG: 16797

Comments: return unused fuel to Carl Fulper

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	2/19/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	2/19/09
49	Olefins In by FIA D1319	1.6	Volume Percent			RCG	2/23/09
46	Aromatics by FIA D1319	31.9	Volume Percent			RCG	2/23/09
69	Specific Gravity @ 60 deg F D4052	0.84902	60/60F			NT	2/23/09
692	Degrees API D4052	35.16	Degrees API			NT	2/23/09
691	Density @ 60 deg F D4052	0.84819	g/cm-03 @ 60 deg F			NT	2/23/09
44	Cetane Index D976	48.1	Cetane Index			NST	3/3/09
102	IPB Diesel D86	349.5	Degrees F			RG	2/19/09
111	10 percent Diesel D86	419.9	Degrees F			RG	2/19/09
151	50 percent Diesel D86	517.3	Degrees F			RG	2/19/09
191	90 percent Diesel D86	624.9	Degrees F			RG	2/19/09
210	End Point Diesel D86	654.8	Degrees F			RG	2/19/09
211	Residue Diesel D86	0.8	mL			RG	2/19/09
212	Total Recovery Diesel D86	97.8	mL			RG	2/19/09
213	Loss Diesel D86	1.4	mL			RG	2/19/09
47	Aromatics In Diesel Fuel SFC D5186	30.1	Mass Percent			FS	3/3/09
422	Sulfur In LS Diesel D2622	0.00134	Weight Percent			NST	2/25/09

NVFEL Fuel Analysis Report

17160

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House
 Owner: x Phone: (734) 214-4400
 2565 Plymouth Rd
 Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: X

Inspection information logged in by NST on 4/23/09.

VOC

Season:

ASD-0349-1836-20080924 FTAG: 17160

Comments: Please return to Carl Fulper for further analysis

Test Code	Test Method	Results	Units	Fuel_ Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	5/1/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	5/1/09
49	Olefins In by FIA D1319	1.4	Volume Percent			RCG	4/24/09
46	Aromatics by FIA D1319	32.7	Volume Percent			RCG	4/24/09
69	Specific Gravity @ 60 deg F D4052	0.85069	60/60F			NT	4/27/09
692	Degrees API D4052	34.84	Degrees API			NT	4/27/09
691	Density @ 60 deg F D4052	0.84985	g/cm-03 @ 60 deg F			NT	4/27/09
44	Cetane Index D976	47.0	Cetane Index			RCG	5/13/09
102	IPB Diesel D86	356.5	Degrees F			RG	5/1/09
111	10 percent Diesel D86	413.6	Degrees F			RG	5/1/09
151	50 percent Diesel D86	512.1	Degrees F			RG	5/1/09
191	90 percent Diesel D86	637.5	Degrees F			RG	5/1/09
210	End Point Diesel D86	680.9	Degrees F			RG	5/1/09
211	Residue Diesel D86	1	mL			RG	5/1/09
212	Total Recovery Diesel D86	96.7	mL			RG	5/1/09
213	Loss Diesel D86	2.3	mL			RG	5/1/09
47	Aromatics in Diesel Fuel SFC D5186	32.6	Mass Percent			FS	
422	Sulfur in LS Diesel D2622	0.00092	Weight Percent			NST	4/23/09

NVFEL Fuel Analysis Report

17161

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House
 Owner: x Phone: (734) 214-4400
 2565 Plymouth Rd
 Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: X

VOC

Inspection information logged in by NST on 4/23/09.

Season:

ASD-0349-2422-20080923 FTAG: 17161

Comments: Please return to Carl Fulper for further analysis.

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	5/1/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	5/1/09
49	Olefins In by FIA D1319	1.3	Volume Percent			RCG	4/24/09
46	Aromatics by FIA D1319	32.3	Volume Percent			RCG	4/24/09
69	Specific Gravity @ 60 deg F D4052	0.84998	60/60F			NT	4/27/09
692	Degrees API D4052	34.97	Degrees API			NT	4/27/09
691	Density @ 60 deg F D4052	0.84914	g/cm-03 @ 60 deg F			NT	4/27/09
44	Cetane Index D976	46.7	Cetane Index			RCG	5/13/09
102	IPB Diesel D86	340.1	Degrees F			RG	5/1/09
111	10 percent Diesel D86	407.6	Degrees F			RG	5/1/09
151	50 percent Diesel D86	507.9	Degrees F			RG	5/1/09
191	90 percent Diesel D86	635.4	Degrees F			RG	5/1/09
210	End Point Diesel D86	686.8	Degrees F			RG	5/1/09
211	Residue Diesel D86	1.3	mL			RG	5/1/09
212	Total Recovery Diesel D86	97.4	mL			RG	5/1/09
213	Loss Diesel D86	1.3	mL			RG	5/1/09
47	Aromatics in Diesel Fuel SFC D5186	32.2	Mass Percent			FS	4/29/09
422	Sulfur in LS Diesel D2622	0.00098	Weight Percent			NST	4/23/09

NVFEL Fuel Analysis Report

17162

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House

Owner: x Phone: (734) 214-4400

2565 Plymouth Rd

Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: X

VOC

Inspection information logged in by NST on 4/23/09.

Season:

ASD-2523-6087-20070927 FTAG: 17162

Comments: Please return to Carl Fulper for further analysis.

Test Code	Test Method	Results	Units	Fuel_ Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	5/1/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	5/1/09
49	Olefins In by FIA D1319	1.8	Volume Percent			RCG	4/28/09
46	Aromatics by FIA D1319	26	Volume Percent			RCG	4/28/09
69	Specific Gravity @ 60 deg F D4052	0.84234	60/60F			NT	4/27/09
692	Degrees API D4052	36.48	Degrees API			NT	4/27/09
691	Density @ 60 deg F D4052	0.84151	g/cm-03 @ 60 deg F			NT	4/27/09
44	Cetane Index D976	49.4	Cetane Index			RCG	5/13/09
102	IPB Diesel D86	349.5	Degrees F			RG	5/1/09
111	10 percent Diesel D86	415.2	Degrees F			RG	5/1/09
151	50 percent Diesel D86	509.2	Degrees F			RG	5/1/09
191	90 percent Diesel D86	623.7	Degrees F			RG	5/1/09
210	End Point Diesel D86	665.6	Degrees F			RG	5/1/09
211	Residue Diesel D86	0.9	mL			RG	5/1/09
212	Total Recovery Diesel D86	97.5	mL			RG	5/1/09
213	Loss Diesel D86	1.6	mL			RG	5/1/09
47	Aromatics In Diesel Fuel SFC D5186	26.4	Mass Percent			FS	4/29/09
422	Sulfur In LS Diesel D2622	0.00129	Weight Percent			NST	4/23/09

NVFEL Fuel Analysis Report

17163

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House

Owner: x Phone: (734) 214-4400

2565 Plymouth Rd

Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: X

Inspection information logged in by NST on 4/23/09.

VOC

Season:

ASD-3858-5754-20070920 FTAG: 17163

Comments: Please return to Carl Fulper for further analysis.

Test Code	Test Method	Results	Units	Fuel_ Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0.1	Volume Percent			RG	5/1/09
66	Percent Evaporated at 300 Degrees F D86	0.1	Volume Percent			RG	5/1/09
49	Olefins In by FIA D1319	1.5	Volume Percent			RCG	4/28/09
46	Aromatics by FIA D1319	31.1	Volume Percent			RCG	4/28/09
69	Specific Gravity @ 60 deg F D4052	0.84987	60/60F			NT	4/27/09
692	Degrees API D4052	35	Degrees API			NT	4/27/09
691	Density @ 60 deg F D4052	0.84903	g/cm-03 @ 60 deg F			NT	4/27/09
44	Cetane Index D976	47.1	Cetane Index			RCG	5/13/09
102	IPB Diesel D86	355.3	Degrees F			RG	5/1/09
111	10 percent Diesel D86	420.4	Degrees F			RG	5/1/09
151	50 percent Diesel D86	510.8	Degrees F			RG	5/1/09
191	90 percent Diesel D86	616.7	Degrees F			RG	5/1/09
210	End Point Diesel D86	661.2	Degrees F			RG	5/1/09
211	Residue Diesel D86	1.1	mL			RG	5/1/09
212	Total Recovery Diesel D86	97.9	mL			RG	5/1/09
213	Loss Diesel D86	1	mL			RG	5/1/09
47	Aromatics in Diesel Fuel SFC D5186	30	Mass Percent			FS	4/29/09
422	Sulfur in LS Diesel D2622	0.00076	Weight Percent			NST	4/23/09

NVFEL Fuel Analysis Report

17164

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House

Owner: x Phone: (734) 214-4400

2565 Plymouth Rd

Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: X

VOC

Inspection information logged in by NST on 4/23/09.

Season:

ASD-2523-0713-20070926 FTAG: 17164

Comments: Please return to Carl Fulper for further analysis.

Test Code	Test Method	Results	Units	Fuel_ Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	5/1/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	5/1/09
49	Olefins In by FIA D1319	0.9	Volume Percent			RCG	5/13/09
46	Aromatics by FIA D1319	27	Volume Percent			RCG	5/13/09
69	Specific Gravity @ 60 deg F D4052	0.84336	60/60F			NT	4/27/09
692	Degrees API D4052	36.28	Degrees API			NT	4/27/09
691	Density @ 60 deg F D4052	0.84253	g/cm-03 @ 60 deg F			NT	4/27/09
44	Cetane Index D976	49.2	Cetane Index			RCG	5/13/09
102	IPB Diesel D86	351.3	Degrees F			RG	5/1/09
111	10 percent Diesel D86	416.7	Degrees F			RG	5/1/09
151	50 percent Diesel D86	510.6	Degrees F			RG	5/1/09
191	90 percent Diesel D86	623.1	Degrees F			RG	5/1/09
210	End Point Diesel D86	665.1	Degrees F			RG	5/1/09
211	Residue Diesel D86	0.9	mL			RG	5/1/09
212	Total Recovery Diesel D86	97.5	mL			RG	5/1/09
213	Loss Diesel D86	1.6	mL			RG	5/1/09
47	Aromatics In Diesel Fuel SFC D5186	26.6	Mass Percent			FS	4/29/09
422	Sulfur In LS Diesel D2622	0.00101	Weight Percent			NST	4/23/09

NVFEL Fuel Analysis Report

17165

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House

Owner: x Phone: (734) 214-4400

2565 Plymouth Rd

Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: X

VOC

Inspection information logged in by NST on 4/23/09.

Season:

ASD-3597-0726-20071008 FTAG: 17165

Comments: Please return to Cori Fulper for further analysis.

Test Code	Test Method	Results	Units	Fuel_ Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0.1	Volume Percent			RG	5/1/09
66	Percent Evaporated at 300 Degrees F D86	0.1	Volume Percent			RG	5/1/09
49	Olefins In by FIA D1319	1.9	Volume Percent			RCG	4/24/09
46	Aromatics by FIA D1319	28.6	Volume Percent			RCG	4/24/09
69	Specific Gravity @ 60 deg F D4052	0.84529	60/60F			NT	4/27/09
692	Degrees API D4052	35.9	Degrees API			NT	4/27/09
691	Density @ 60 deg F D4052	0.84445	g/cm-03 @ 60 deg F			NT	4/27/09
44	Cetane Index D976	48.3	Cetane Index			RCG	5/13/09
102	IPB Diesel D86	347.2	Degrees F			RG	5/1/09
111	10 percent Diesel D86	414.9	Degrees F			RG	5/1/09
151	50 percent Diesel D86	508.5	Degrees F			RG	5/1/09
191	90 percent Diesel D86	618.7	Degrees F			RG	5/1/09
210	End Point Diesel D86	660.6	Degrees F			RG	5/1/09
211	Residue Diesel D86	1	mL			RG	5/1/09
212	Total Recovery Diesel D86	97.8	mL			RG	5/1/09
213	Loss Diesel D86	1.2	mL			RG	5/1/09
47	Aromatics In Diesel Fuel SFC D5186	28.6	Mass Percent			FS	4/29/09
422	Sulfur In LS Diesel D2622	0.00139	Weight Percent			NST	4/23/09
422	Sulfur in LS Diesel D2622	0.00138	Weight Percent			NST	4/23/09

14-Apr-09

NVFEL Fuel Analysis Report

17009

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ASD

Batch# 0

Facility Name: US EPA Facility Type: In House

Owner: x Phone: (734) 214-4400

2565 Plymouth Rd

Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

Inspection Information logged in by NST on 4/6/09.

VOC

Season:

ASD-9272-2494-20081001 FTAG: 17009 Comments: Return unused fuel to Cori Fulper

Test Code	Test Method	Results	Units	Fuel_ Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	4/6/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	4/6/09
49	Olefins In by FIA D1319	1.5	Volume Percent			RCG	4/13/09
49	Olefins In by FIA D1319	0.9	Volume Percent			RCG	4/13/09
46	Aromatics by FIA D1319	24.9	Volume Percent			RCG	4/13/09
46	Aromatics by FIA D1319	25.6	Volume Percent			RCG	4/13/09
69	Specific Gravity @ 60 deg F D4052	0.8406	60/60F			NT	4/6/09
692	Degrees API D4052	36.83	Degrees API			NT	4/6/09
691	Density @ 60 deg F D4052	0.83977	g/cm-03 @ 60 deg F			NT	4/6/09
44	Cetane Index D976	47.9	Cetane Index			NST	4/14/09
102	IPB Diesel D86	339.8	Degrees F			RG	4/6/09
111	10 percent Diesel D86	400.1	Degrees F			RG	4/6/09
151	50 percent Diesel D86	493.2	Degrees F			RG	4/6/09
191	90 percent Diesel D86	630	Degrees F			RG	4/6/09
210	End Point Diesel D86	676.6	Degrees F			RG	4/6/09
211	Residue Diesel D86	0.8	mL			RG	4/6/09
212	Total Recovery Diesel D86	97	mL			RG	4/6/09
213	Loss Diesel D86	2.2	mL			RG	4/6/09
47	Aromatics in Diesel Fuel SFC D5186	26	Mass Percent			FS	4/7/09
422	Sulfur in LS Diesel D2622	0.00092	Weight Percent			NST	4/8/09

16-Apr-09

NVFEL Fuel Analysis Report

17010

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ASD

Batch# 0

Facility Name: US EPA Facility Type: In House

Owner: x Phone: (734) 214-4400

2565 Plymouth Rd

Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

VOC

Inspection information logged in by NST on 4/6/09.

Season:

ASD-2523-021020071001 FTAG: 17010 Comments: Return unused sample to Carl Fulper

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0.1	Volume Percent			RG	4/6/09
66	Percent Evaporated at 300 Degrees F D86	0.1	Volume Percent			RG	4/6/09
49	Olefins In by FIA D1319	1.1	Volume Percent			RCG	4/16/09
46	Aromatics by FIA D1319	26.4	Volume Percent			RCG	4/16/09
69	Specific Gravity @ 60 deg F D4052	0.84251	60/60F			NT	4/6/09
692	Degrees API D4052	36.45	Degrees API			NT	4/6/09
691	Density @ 60 deg F D4052	0.84168	g/cm-03 @ 60 deg F			NT	4/6/09
44	Cetane Index D976	49.2	Cetane Index			NST	4/14/09
102	IPB Diesel D86	353.3	Degrees F			RG	4/6/09
111	10 percent Diesel D86	414.2	Degrees F			RG	4/6/09
151	50 percent Diesel D86	508.7	Degrees F			RG	4/6/09
191	90 percent Diesel D86	619.7	Degrees F			RG	4/6/09
210	End Point Diesel D86	662.8	Degrees F			RG	4/6/09
211	Residue Diesel D86	1	mL			RG	4/6/09
212	Total Recovery Diesel D86	97.8	mL			RG	4/6/09
213	Loss Diesel D86	1.2	mL			RG	4/6/09
47	Aromatics in Diesel Fuel SFC D5186	26.7	Mass Percent			FS	4/7/09
422	Sulfur in LS Diesel D2622	0.00084	Weight Percent			NST	4/8/09

16-Apr-09

NVFEL Fuel Analysis Report

17011

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ASD

Batch# 0

Facility Name: US EPA Facility Type: In House

Owner: x Phone: (734) 214-4400

2565 Plymouth Rd

Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

Inspection information logged in by NST on 4/6/09.

VOC

Season:

ASD-3858-1482-20070917 FTAG: 17011

Comments: Return unused sample to Carl Fulper

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	4/6/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	4/6/09
49	Olefins In by FIA D1319	1.4	Volume Percent			RCG	4/16/09
46	Aromatics by FIA D1319	29.1	Volume Percent			RCG	4/16/09
69	Specific Gravity @ 60 deg F D4052	0.84897	60/60F			NT	4/6/09
69	Specific Gravity @ 60 deg F D4052	0.84898	60/60F			NT	4/6/09
692	Degrees API D4052	35.17	Degrees API			NT	4/6/09
692	Degrees API D4052	35.17	Degrees API			NT	4/6/09
691	Density @ 60 deg F D4052	0.84814	g/cm-03 @ 60 deg F			NT	4/6/09
691	Density @ 60 deg F D4052	0.84813	g/cm-03 @ 60 deg F			NT	4/6/09
44	Cetane Index D976	47.9	Cetane Index			NST	4/14/09
102	IPB Diesel D86	352.9	Degrees F			RG	4/6/09
111	10 percent Diesel D86	422.8	Degrees F			RG	4/6/09
151	50 percent Diesel D86	515.7	Degrees F			RG	4/6/09
191	90 percent Diesel D86	622.9	Degrees F			RG	4/6/09
210	End Point Diesel D86	666.7	Degrees F			RG	4/6/09
211	Residue Diesel D86	0.6	mL			RG	4/6/09
212	Total Recovery Diesel D86	97.9	mL			RG	4/6/09
213	Loss Diesel D86	1.5	mL			RG	4/6/09
47	Aromatics In Diesel Fuel SFC D5186	29.5	Mass Percent			FS	4/7/09
422	Sulfur in LS Diesel D2622	0.00121	Weight Percent			NST	4/8/09

16-Apr-09

NVFEL Fuel Analysis Report

17012

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ASD

Batch# 0

Facility Name: US EPA Facility Type: In House

Owner: x Phone: (734) 214-4400

2565 Plymouth Rd

Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

Inspection information logged in by NST on 4/6/09.

VOC

Season:

ASD-0062-6092-20081009 FTAG: 17012

Comments: Return unused sample to Carl Fulper

Test Code	Test Method	Results	Units	Fuel_ Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0.1	Volume Percent			RG	4/6/09
66	Percent Evaporated at 300 Degrees F D86	0.1	Volume Percent			RG	4/6/09
49	Olefins in by FIA D1319	1.4	Volume Percent			RCG	4/16/09
46	Aromatics by FIA D1319	32.8	Volume Percent			RCG	4/16/09
69	Specific Gravity @ 60 deg F D4052	0.85203	60/60F			NT	4/6/09
692	Degrees API D4052	34.57	Degrees API			NT	4/6/09
691	Density @ 60 deg F D4052	0.85119	g/cm-03 @ 60 deg F			NT	4/6/09
44	Cetane Index D976	46.5	Cetane Index			NST	4/14/09
102	IPB Diesel D86	357.3	Degrees F			RG	4/6/09
111	10 percent Diesel D86	411.6	Degrees F			RG	4/6/09
151	50 percent Diesel D86	512.2	Degrees F			RG	4/6/09
191	90 percent Diesel D86	630.5	Degrees F			RG	4/6/09
210	End Point Diesel D86	674.8	Degrees F			RG	4/6/09
211	Residue Diesel D86	0.8	mL			RG	4/6/09
212	Total Recovery Diesel D86	97.8	mL			RG	4/6/09
213	Loss Diesel D86	1.4	mL			RG	4/6/09
47	Aromatics in Diesel Fuel SFC D5186	33.7	Mass Percent			FS	4/7/09
422	Sulfur in LS Diesel D2622	0.00068	Weight Percent			NST	4/8/09

16-Apr-09

NVFEL Fuel Analysis Report

17013

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ASD

Batch# 0

Facility Name: US EPA Facility Type: In House

Owner: x Phone: (734) 214-4400

2565 Plymouth Rd

Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

Inspection information logged in by NST on 4/6/09.

VOC

Season:

ASD-9272-0853-20081006 FTAG: 17013

Comments: Return unused sample to Carl Fulper

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	4/6/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	4/6/09
49	Olefins in by FIA D1319	1	Volume Percent			RCG	4/16/09
46	Aromatics by FIA D1319	25	Volume Percent			RCG	4/16/09
69	Specific Gravity @ 60 deg F D4052	0.84005	60/60F			NT	4/6/09
692	Degrees API D4052	36.94	Degrees API			NT	4/6/09
691	Density @ 60 deg F D4052	0.83922	g/cm-03 @ 60 deg F			NT	4/6/09
44	Cetane Index D976	48.0	Cetane Index			NST	4/14/09
102	IPB Diesel D86	339.4	Degrees F			RG	4/6/09
111	10 percent Diesel D86	398.7	Degrees F			RG	4/6/09
151	50 percent Diesel D86	492.4	Degrees F			RG	4/6/09
191	90 percent Diesel D86	630	Degrees F			RG	4/6/09
210	End Point Diesel D86	676.9	Degrees F			RG	4/6/09
211	Residue Diesel D86	0.8	mL			RG	4/6/09
212	Total Recovery Diesel D86	97	mL			RG	4/6/09
213	Loss Diesel D86	2.2	mL			RG	4/6/09
47	Aromatics in Diesel Fuel SFC D5186	25.7	Mass Percent			FS	4/7/09
422	Sulfur in LS Diesel D2622	0.00090	Weight Percent			NST	4/8/09

16-Apr-09

NVFEL Fuel Analysis Report

17014

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ASD

Batch# 0

Facility Name: US EPA Facility Type: In House

Owner: x Phone: (734) 214-4400

2565 Plymouth Rd

Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

Inspection Information logged in by NST on 4/6/09.

VOC

Season:

ASD-9272-3481-2080930

FTAG: 17014

Comments: Return unused sample to Carl Fulper

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0.1	Volume Percent			RG	4/6/09
66	Percent Evaporated at 300 Degrees F D86	0.1	Volume Percent			RG	4/6/09
49	Olefins in by FIA D1319	1.4	Volume Percent			RCG	4/16/09
46	Aromatics by FIA D1319	26.3	Volume Percent			RCG	4/16/09
69	Specific Gravity @ 60 deg F D4052	0.84052	60/60F			NT	4/6/09
692	Degrees API D4052	36.85	Degrees API			NT	4/6/09
691	Density @ 60 deg F D4052	0.83969	g/cm-03 @ 60 deg F			NT	4/6/09
44	Cetane Index D976	47.7	Cetane Index			NST	4/14/09
102	IPB Diesel D86	343.8	Degrees F			RG	4/6/09
111	10 percent Diesel D86	398.4	Degrees F			RG	4/6/09
151	50 percent Diesel D86	491.5	Degrees F			RG	4/6/09
191	90 percent Diesel D86	624.4	Degrees F			RG	4/6/09
210	End Point Diesel D86	674.1	Degrees F			RG	4/6/09
211	Residue Diesel D86	1.1	mL			RG	4/6/09
212	Total Recovery Diesel D86	97.6	mL			RG	4/6/09
213	Loss Diesel D86	1.3	mL			RG	4/6/09
47	Aromatics in Diesel Fuel SFC D5186	26	Mass Percent			FS	4/7/09
422	Sulfur in LS Diesel D2622	0.00077	Weight Percent			NST	4/8/09

NVFEL Fuel Analysis Report

16883

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House
 Owner: x Phone: (734) 214-4400
 2565 Plymouth Rd
 Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

VOC

Inspection information logged in by NST on 3/9/09.

Season:

ASD-8391-3333-20080812-1 FTAG: 16883

Comments: 1st test of 2, return unused fuel to Carl Fulper

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	3/9/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	3/9/09
49	Olefins in by FIA D1319	2.1	Volume Percent			RCG	3/23/09
46	Aromatics by FIA D1319	24.5	Volume Percent			RCG	3/23/09
69	Specific Gravity @ 60 deg F D4052	0.83776	60/60F			NT	3/9/09
692	Degrees API D4052	37.4	Degrees API			NT	3/9/09
691	Density @ 60 deg F D4052	0.83694	g/cm-03 @ 60 deg F			NT	3/9/09
44	Cetane Index D976	49.4	Cetane Index			NST	3/24/09
102	IPB Diesel D86	341.9	Degrees F			RG	3/9/09
111	10 percent Diesel D86	396.6	Degrees F			RG	3/9/09
151	50 percent Diesel D86	497.5	Degrees F			RG	3/9/09
191	90 percent Diesel D86	637.5	Degrees F			RG	3/9/09
210	End Point Diesel D86	684.5	Degrees F			RG	3/9/09
211	Residue Diesel D86	0.9	mL			RG	3/9/09
212	Total Recovery Diesel D86	96.7	mL			RG	3/9/09
213	Loss Diesel D86	2.4	mL			RG	3/9/09
47	Aromatics in Diesel Fuel SFC D5186	23.5	Mass Percent			FS	3/19/09
422	Sulfur in LS Diesel D2622	0.00100	Weight Percent			NST	3/11/09

NVFEL Fuel Analysis Report

16884

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House
 Owner: x Phone: (734) 214-4400
 2565 Plymouth Rd
 Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

VOC

Inspection information logged in by NST on 3/9/09.

Season:

ASD-8391-3333-20080812-2 FTAG: 16884

Comments: 2nd test of 2, return unused fuel to Carl Fulper

Test Code	Test Method	Results	Units	Fuel Code: 6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent		RG	3/9/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent		RG	3/9/09
49	Olefins In by FIA D1319	2.3	Volume Percent		RCG	3/23/09
46	Aromatics by FIA D1319	23.8	Volume Percent		RCG	3/23/09
69	Specific Gravity @ 60 deg F D4052	0.83773	60/60F		NT	3/9/09
692	Degrees API D4052	37.41	Degrees API		NT	3/9/09
691	Density @ 60 deg F D4052	0.8369	g/cm-03 @ 60 deg F		NT	3/9/09
44	Cetane Index D976	49.1	Cetane Index		NST	3/24/09
102	IPB Diesel D86	336	Degrees F		RG	3/9/09
111	10 percent Diesel D86	393.6	Degrees F		RG	3/9/09
151	50 percent Diesel D86	495	Degrees F		RG	3/9/09
191	90 percent Diesel D86	633.6	Degrees F		RG	3/9/09
210	End Point Diesel D86	682.9	Degrees F		RG	3/9/09
211	Residue Diesel D86	0.6	mL		RG	3/9/09
212	Total Recovery Diesel D86	96.3	mL		RG	3/9/09
213	Loss Diesel D86	3.1	mL		RG	3/9/09
47	Aromatics In Diesel Fuel SFC D5186	23.5	Mass Percent		FS	3/19/09
422	Sulfur In LS Diesel D2622	0.00098	Weight Percent		NST	3/11/09

01-Apr-09

NVFEL Fuel Analysis Report**16885**

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ASD

Batch# 0

Facility Name: US EPA Facility Type: In House

Owner: x Phone: (734) 214-4400

2565 Plymouth Rd

Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

VOC

Inspection information logged in by NST on 3/9/09.

Season:

ASD-8418-0097-20080817 FTAG: 16885 Comments: return unused fuel to Carl Fulper

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	3/9/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	3/9/09
49	Olefins In by FIA D1319	1.7	Volume Percent			RCG	3/23/09
46	Aromatics by FIA D1319	22.5	Volume Percent			RCG	3/23/09
69	Specific Gravity @ 60 deg F D4052	0.83656	60/60F			NT	3/9/09
692	Degrees API D4052	37.65	Degrees API			NT	3/9/09
691	Density @ 60 deg F D4052	0.83573	g/cm-03 @ 60 deg F			NT	3/9/09
44	Cetane Index D976	49.5	Cetane Index			NST	3/24/09
102	IPB Diesel D86	342.9	Degrees F			RG	3/9/09
111	10 percent Diesel D86	396.3	Degrees F			RG	3/9/09
151	50 percent Diesel D86	494.9	Degrees F			RG	3/9/09
191	90 percent Diesel D86	637.3	Degrees F			RG	3/9/09
210	End Point Diesel D86	687.2	Degrees F			RG	3/9/09
211	Residue Diesel D86	1.2	mL			RG	3/9/09
212	Total Recovery Diesel D86	96.8	mL			RG	3/9/09
213	Loss Diesel D86	2	mL			RG	3/9/09
47	Aromatics In Diesel Fuel SFC D5186	23.1	Mass Percent			FS	3/19/09
422	Sulfur In LS Diesel D2622	0.00154	Weight Percent			NST	3/11/09

NVFEL Fuel Analysis Report

16886

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House

Owner: x Phone: (734) 214-4400

2565 Plymouth Rd

Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

Inspection information logged in by NST on 3/9/09.

VOC

Season:

ASD-8418-2958-20080819 FTAG: 16886

Comments: return unused fuel to Carl Fulper

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	3/9/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	3/9/09
49	Olefins In by FIA D1319	1.4	Volume Percent			RCG	3/23/09
46	Aromatics by FIA D1319	22.4	Volume Percent			RCG	3/23/09
69	Specific Gravity @ 60 deg F D4052	0.83544	60/60F			NT	3/9/09
692	Degrees API D4052	37.87	Degrees API			NT	3/9/09
691	Density @ 60 deg F D4052	0.83461	g/cm-03 @ 60 deg F			NT	3/9/09
44	Cetane Index D976	48.9	Cetane Index			NST	3/24/09
102	IPB Diesel D86	334.9	Degrees F			RG	3/9/09
111	10 percent Diesel D86	389.8	Degrees F			RG	3/9/09
151	50 percent Diesel D86	487.9	Degrees F			RG	3/9/09
191	90 percent Diesel D86	634.5	Degrees F			RG	3/9/09
210	End Point Diesel D86	684.3	Degrees F			RG	3/9/09
211	Residue Diesel D86	0.6	mL			RG	3/9/09
212	Total Recovery Diesel D86	96	mL			RG	3/9/09
213	Loss Diesel D86	3.4	mL			RG	3/9/09
47	Aromatics In Diesel Fuel SFC D5186	22.9	Mass Percent			FS	3/19/09
422	Sulfur In LS Diesel D2622	0.00139	Weight Percent			NST	3/11/09

NVFEL Fuel Analysis Report

16887

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House
 Owner: x Phone: (734) 214-4400
 2565 Plymouth Rd
 Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

VOC

Inspection Information logged in by NST on 3/9/09.

Season:

ASD-8418-0377-20080825 FTAG: 16887 Comments: return unused fuel to Carl Fulper

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	3/9/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	3/9/09
49	Olefins in by FIA D1319	2	Volume Percent			RCG	3/23/09
46	Aromatics by FIA D1319	22.7	Volume Percent			RCG	3/23/09
69	Specific Gravity @ 60 deg F D4052	0.83537	60/60F			NT	3/9/09
692	Degrees API D4052	37.89	Degrees API			NT	3/9/09
691	Density @ 60 deg F D4052	0.83454	g/cm-03 @ 60 deg F			NT	3/9/09
44	Cetane Index D976	48.7	Cetane Index			NST	3/24/09
102	IPB Diesel D86	335.1	Degrees F			RG	3/9/09
111	10 percent Diesel D86	388.8	Degrees F			RG	3/9/09
151	50 percent Diesel D86	486.1	Degrees F			RG	3/9/09
191	90 percent Diesel D86	631.9	Degrees F			RG	3/9/09
210	End Point Diesel D86	680.9	Degrees F			RG	3/9/09
211	Residue Diesel D86	0.9	mL			RG	3/9/09
212	Total Recovery Diesel D86	96	mL			RG	3/9/09
213	Loss Diesel D86	3.1	mL			RG	3/9/09
47	Aromatics in Diesel Fuel SFC D5186	23.3	Mass Percent			FS	3/19/09
422	Sulfur in LS Diesel D2622	0.00118	Weight Percent			NST	3/11/09

NVFEL Fuel Analysis Report

16888

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House

Owner: x Phone: (734) 214-4400

2565 Plymouth Rd

Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

VOC

Inspection information logged in by NST on 3/9/09.

Season:

ASD-0062-0748-20071008

FTAG: 16888

Comments: return unused fuel to Carl Fulper

Test Code	Test Method	Results	Units	Fuel_ Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	3/9/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	3/9/09
49	Olefins In by FIA D1319	1.7	Volume Percent			RCG	3/26/09
49	Olefins In by FIA D1319	1.7	Volume Percent			RCG	3/26/09
46	Aromatics by FIA D1319	32.1	Volume Percent			RCG	3/26/09
46	Aromatics by FIA D1319	32.4	Volume Percent			RCG	3/26/09
69	Specific Gravity @ 60 deg F D4052	0.85255	60/60F			NT	3/9/09
692	Degrees API D4052	34.47	Degrees API			NT	3/9/09
691	Density @ 60 deg F D4052	0.85171	g/cm-03 @ 60 deg F			NT	3/9/09
44	Cetane Index D976	46.1	Cetane Index			NST	3/24/09
102	IPB Diesel D86	360.7	Degrees F			RG	3/9/09
111	10 percent Diesel D86	416	Degrees F			RG	3/9/09
151	50 percent Diesel D86	509.5	Degrees F			RG	3/9/09
191	90 percent Diesel D86	629	Degrees F			RG	3/9/09
210	End Point Diesel D86	671.5	Degrees F			RG	3/9/09
211	Residue Diesel D86	1.3	mL			RG	3/9/09
212	Total Recovery Diesel D86	97	mL			RG	3/9/09
213	Loss Diesel D86	1.7	mL			RG	3/9/09
47	Aromatics In Diesel Fuel SFC D5186	33.4	Mass Percent			FS	3/19/09
422	Sulfur In LS Diesel D2622	0.00082	Weight Percent			NST	3/11/09
422	Sulfur In LS Diesel D2622	0.00083	Weight Percent			NST	3/11/09

NVFEL Fuel Analysis Report

16793

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House
 Owner: x Phone: (734) 214-4400
 2565 Plymouth Rd
 Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

VOC

Inspection information logged in by NST on 2/18/09.

Season:

ASD-8418-0961-20080824 FTAG: 16793

Comments: return unused fuel to Carl Fulper

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	2/19/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	2/19/09
49	Olefins In by FIA D1319	1.4	Volume Percent			RCG	2/25/09
49	Olefins In by FIA D1319	1.2	Volume Percent			RCG	2/19/09
46	Aromatics by FIA D1319	23.4	Volume Percent			RCG	2/25/09
46	Aromatics by FIA D1319	23.7	Volume Percent			RCG	2/19/09
69	Specific Gravity @ 60 deg F D4052	0.83554	60/60F			NT	2/23/09
692	Degrees API D4052	37.85	Degrees API			NT	2/23/09
691	Density @ 60 deg F D4052	0.83471	g/cm-03 @ 60 deg F			NT	2/23/09
44	Cetane Index D976	49.0	Cetane Index			NST	3/3/09
102	IPB Diesel D86	340.7	Degrees F			RG	2/19/09
111	10 percent Diesel D86	391.8	Degrees F			RG	2/19/09
151	50 percent Diesel D86	488.9	Degrees F			RG	2/19/09
191	90 percent Diesel D86	635.3	Degrees F			RG	2/19/09
210	End Point Diesel D86	682.6	Degrees F			RG	2/19/09
211	Residue Diesel D86	0.8	mL			RG	2/19/09
212	Total Recovery Diesel D86	97.2	mL			RG	2/19/09
213	Loss Diesel D86	2	mL			RG	2/19/09
47	Aromatics In Diesel Fuel SFC D5186	23.2	Mass Percent			FS	3/3/09
422	Sulfur in LS Diesel D2622	0.00124	Weight Percent			NST	2/25/09

NVFEL Fuel Analysis Report

16794

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House
 Owner: x Phone: (734) 214-4400
 2565 Plymouth Rd
 Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

Inspection information logged in by NST on 2/18/09.

VOC

Season:

ASD-2745-1190-20071010 FTAG: 16794

Comments: return unused fuel to Carl Fulper

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	2/19/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	2/19/09
49	Olefins in by FIA D1319	2.1	Volume Percent			RCG	2/23/09
46	Aromatics by FIA D1319	24	Volume Percent			RCG	2/23/09
69	Specific Gravity @ 60 deg F D4052	0.84198	60/60F			NT	2/23/09
692	Degrees API D4052	36.56	Degrees API			NT	2/23/09
691	Density @ 60 deg F D4052	0.84115	g/cm-03 @ 60 deg F			NT	2/23/09
44	Cetane Index D976	49.5	Cetane Index			NST	3/3/09
102	IPB Diesel D86	347.7	Degrees F			RG	2/19/09
111	10 percent Diesel D86	416.7	Degrees F			RG	2/19/09
151	50 percent Diesel D86	509.2	Degrees F			RG	2/19/09
191	90 percent Diesel D86	622.4	Degrees F			RG	2/19/09
210	End Point Diesel D86	662.4	Degrees F			RG	2/19/09
211	Residue Diesel D86	0.8	mL			RG	2/19/09
212	Total Recovery Diesel D86	97.6	mL			RG	2/19/09
213	Loss Diesel D86	1.6	mL			RG	2/19/09
47	Aromatics in Diesel Fuel SFC D5186	26.1	Mass Percent			FS	3/3/09
422	Sulfur in LS Diesel D2622	0.00070	Weight Percent			NST	2/25/09

NVFEL Fuel Analysis Report

16795

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House
 Owner: x Phone: (734) 214-4400
 2565 Plymouth Rd
 Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

VOC

Inspection information logged in by NST on 2/18/09.

Season:

ASD-3858-4862-20071012 FTAG: 16795

Comments: return unused fuel to Carl Fulper

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	2/19/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	2/19/09
49	Olefins in by FIA D1319	2.6	Volume Percent			RCG	2/23/09
46	Aromatics by FIA D1319	27.7	Volume Percent			RCG	2/23/09
69	Specific Gravity @ 60 deg F D4052	0.84473	60/60F			NT	2/23/09
692	Degrees API D4052	36.01	Degrees API			NT	2/23/09
691	Density @ 60 deg F D4052	0.84389	g/cm-03 @ 60 deg F			NT	2/23/09
44	Cetane Index D976	48.7	Cetane Index			NST	3/3/09
102	IPB Diesel D86	352.8	Degrees F			RG	2/19/09
111	10 percent Diesel D86	417.4	Degrees F			RG	2/19/09
151	50 percent Diesel D86	510.5	Degrees F			RG	2/19/09
191	90 percent Diesel D86	621.6	Degrees F			RG	2/19/09
210	End Point Diesel D86	663	Degrees F			RG	2/19/09
211	Residue Diesel D86	1	mL			RG	2/19/09
212	Total Recovery Diesel D86	97.4	mL			RG	2/19/09
213	Loss Diesel D86	1.6	mL			RG	2/19/09
47	Aromatics In Diesel Fuel SFC D5186	27.7	Mass Percent			FS	3/3/09
422	Sulfur In LS Diesel D2622	0.00073	Weight Percent			NST	2/25/09
422	Sulfur In LS Diesel D2622	0.00075	Weight Percent			NST	2/25/09

NVFEL Fuel Analysis Report

16796

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House
 Owner: x Phone: (734) 214-4400
 2565 Plymouth Rd
 Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

VOC

Inspection information logged in by NST on 2/18/09.

Season:

ASD-3597-4734-20071023 FTAG: 16796

Comments: return unused fuel to Carl Fulper

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	2/19/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	2/19/09
49	Olefins in by FIA D1319	1.6	Volume Percent			RCG	2/23/09
46	Aromatics by FIA D1319	31.7	Volume Percent			RCG	2/23/09
69	Specific Gravity @ 60 deg F D4052	0.8472	60/60F			NT	2/23/09
692	Degrees API D4052	35.52	Degrees API			NT	2/23/09
691	Density @ 60 deg F D4052	0.84636	g/cm-03 @ 60 deg F			NT	2/23/09
44	Cetane Index D976	48.1	Cetane Index			NST	3/3/09
102	IPB Diesel D86	346.5	Degrees F			RG	2/19/09
111	10 percent Diesel D86	417.2	Degrees F			RG	2/19/09
151	50 percent Diesel D86	512.2	Degrees F			RG	2/19/09
191	90 percent Diesel D86	622	Degrees F			RG	2/19/09
210	End Point Diesel D86	660.6	Degrees F			RG	2/19/09
211	Residue Diesel D86	1	mL			RG	2/19/09
212	Total Recovery Diesel D86	97.6	mL			RG	2/19/09
213	Loss Diesel D86	1.4	mL			RG	2/19/09
47	Aromatics In Diesel Fuel SFC D5186	29.6	Mass Percent			FS	3/3/09
422	Sulfur In LS Diesel D2622	0.00199	Weight Percent			NST	2/25/09

NVFEL Fuel Analysis Report

16747

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House
 Owner: x Phone: (734) 214-4400
 2565 Plymouth Rd
 Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

VOC

Inspection information logged in by NST on 1/28/09.

Season:

ASD-8925-2466-20080722 FTAG: 16747

Comments:

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	2/2/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	2/2/09
49	Olefins In by FIA D1319	2.3	Volume Percent			RCG	2/4/09
49	Olefins In by FIA D1319	2.6	Volume Percent			RCG	2/4/09
46	Aromatics by FIA D1319	27.4	Volume Percent			RCG	2/4/09
46	Aromatics by FIA D1319	26.5	Volume Percent			RCG	2/4/09
69	Specific Gravity @ 60 deg F D4052	0.84428	60/60F			NT	1/28/09
692	Degrees API D4052	36.1	Degrees API			NT	1/28/09
691	Density @ 60 deg F D4052	0.84344	g/cm-03 @ 60 deg F			NT	1/28/09
44	Cetane Index D976	47.8	Cetane Index			NST	2/10/09
102	IPB Diesel D86	360.4	Degrees F			RG	2/2/09
111	10 percent Diesel D86	417.2	Degrees F			RG	2/2/09
151	50 percent Diesel D86	501.7	Degrees F			RG	2/2/09
191	90 percent Diesel D86	609.5	Degrees F			RG	2/2/09
210	End Point Diesel D86	665.4	Degrees F			RG	2/2/09
211	Residue Diesel D86	0.5	mL			RG	2/2/09
212	Total Recovery Diesel D86	97.7	mL			RG	2/2/09
213	Loss Diesel D86	1.8	mL			RG	2/2/09
47	Aromatics In Diesel Fuel SFC D5186	27.7	Mass Percent			FS	2/4/09
422	Sulfur In LS Diesel D2622	0.00123	Weight Percent			NST	2/5/09

NVFEL Fuel Analysis Report

16748

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House
 Owner: x Phone: (734) 214-4400
 2565 Plymouth Rd
 Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

VOC

Inspection information logged in by NST on 1/28/09.

Season:

ASD-0229-0045-20080801 FTAG: 16748

Comments:

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys.	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	2/2/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	2/2/09
49	Olefins In by FIA D1319	2.7	Volume Percent			RCG	2/4/09
46	Aromatics by FIA D1319	21.8	Volume Percent			RCG	2/4/09
69	Specific Gravity @ 60 deg F D4052	0.83894	60/60F			NT	1/28/09
692	Degrees API D4052	37.17	Degrees API			NT	1/28/09
691	Density @ 60 deg F D4052	0.83811	g/cm-03 @ 60 deg F			NT	1/28/09
44	Cetane Index D976	48.8	Cetane Index			NST	2/10/09
102	IPB Diesel D86	345.1	Degrees F			RG	2/2/09
111	10 percent Diesel D86	397.7	Degrees F			RG	2/2/09
151	50 percent Diesel D86	495.8	Degrees F			RG	2/2/09
191	90 percent Diesel D86	633	Degrees F			RG	2/2/09
210	End Point Diesel D86	678.1	Degrees F			RG	2/2/09
211	Residue Diesel D86	0.5	mL			RG	2/2/09
212	Total Recovery Diesel D86	97.5	mL			RG	2/2/09
213	Loss Diesel D86	2	mL			RG	2/2/09
47	Aromatics in Diesel Fuel SFC D5186	23.5	Mass Percent			FS	2/4/09
422	Sulfur in LS Diesel D2622	0.00085	Weight Percent			NST	2/5/09

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House

Owner: x Phone: (734) 214-4400

2565 Plymouth Rd

Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

VOC

Inspection Information logged in by NST on 1/28/09.

Season:

ASD-0229-3781-20080731 FTAG: 16749

Comments:

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	2/2/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	2/2/09
49	Olefins in by FIA D1319	3.4	Volume Percent			RCG	2/5/09
46	Aromatics by FIA D1319	32.3	Volume Percent			RCG	2/5/09
69	Specific Gravity @ 60 deg F D4052	0.85412	60/60F			NT	1/28/09
692	Degrees API D4052	34.17	Degrees API			NT	1/28/09
691	Density @ 60 deg F D4052	0.85328	g/cm-03 @ 60 deg F			NT	1/28/09
44	Cetane Index D976	47.2	Cetane Index			NST	2/10/09
102	IPB Diesel D86	350	Degrees F			RG	2/2/09
111	10 percent Diesel D86	428.4	Degrees F			RG	2/2/09
151	50 percent Diesel D86	523.6	Degrees F			RG	2/2/09
191	90 percent Diesel D86	633.8	Degrees F			RG	2/2/09
210	End Point Diesel D86	668.9	Degrees F			RG	2/2/09
211	Residue Diesel D86	0.4	mL			RG	2/2/09
212	Total Recovery Diesel D86	97.60001	mL			RG	2/2/09
213	Loss Diesel D86	2	mL			RG	2/2/09
47	Aromatics in Diesel Fuel SFC D5186	30.1	Mass Percent			FS	2/4/09
422	Sulfur in LS Diesel D2622	0.00072	Weight Percent			NST	2/5/09

NVFEL Fuel Analysis Report

16750

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House
 Owner: x Phone: (734) 214-4400
 2565 Plymouth Rd
 Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

VOC

Inspection information logged in by NST on 1/28/09.

Season:

ASD-9960-6086-20080804 FTAG: 16750

Comments:

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	2/2/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	2/2/09
49	Olefins In by FIA D1319	2	Volume Percent			RCG	2/4/09
46	Aromatics by FIA D1319	25.3	Volume Percent			RCG	2/4/09
69	Specific Gravity @ 60 deg F D4052	0.84136	60/60F			NT	1/28/09
692	Degrees API D4052	36.68	Degrees API			NT	1/28/09
691	Density @ 60 deg F D4052	0.84053	g/cm-03 @ 60 deg F			NT	1/28/09
44	Cetane Index D976	49.0	Cetane Index			NST	2/10/09
102	IPB Diesel D86	342.9	Degrees F			RG	2/2/09
111	10 percent Diesel D86	406.4	Degrees F			RG	2/2/09
151	50 percent Diesel D86	503.4	Degrees F			RG	2/2/09
191	90 percent Diesel D86	621.9	Degrees F			RG	2/2/09
210	End Point Diesel D86	666.5	Degrees F			RG	2/2/09
211	Residue Diesel D86	0.7	mL			RG	2/2/09
212	Total Recovery Diesel D86	97.6	mL			RG	2/2/09
213	Loss Diesel D86	1.7	mL			RG	2/2/09
47	Aromatics in Diesel Fuel SFC D5186	26	Mass Percent			FS	2/4/09
422	Sulfur in LS Diesel D2622	0.00519	Weight Percent			NST	2/5/09

NVFEL Fuel Analysis Report

16751

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House
 Owner: x Phone: (734) 214-4400
 2565 Plymouth Rd
 Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

VOC

Inspection information logged in by NST on 1/28/09.

Season:

ASD-9960-5674-20080805 FTAG: 16751

Comments:

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	2/4/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	2/4/09
49	Olefins In by FIA D1319	2.6	Volume Percent			RCG	2/5/09
46	Aromatics by FIA D1319	25.6	Volume Percent			RCG	2/5/09
69	Specific Gravity @ 60 deg F D4052	0.84231	60/60F			NT	1/28/09
692	Degrees API D4052	36.49	Degrees API			NT	1/28/09
691	Density @ 60 deg F D4052	0.84148	g/cm-03 @ 60 deg F			NT	1/28/09
44	Cetane Index D976	48.2	Cetane Index			NST	2/10/09
102	IPB Diesel D86	343	Degrees F			RG	2/4/09
111	10 percent Diesel D86	403.4	Degrees F			RG	2/4/09
151	50 percent Diesel D86	500.3	Degrees F			RG	2/4/09
191	90 percent Diesel D86	628.7	Degrees F			RG	2/4/09
210	End Point Diesel D86	672.7	Degrees F			RG	2/4/09
211	Residue Diesel D86	0.7	mL			RG	2/4/09
212	Total Recovery Diesel D86	97.4	mL			RG	2/4/09
213	Loss Diesel D86	1.9	mL			RG	2/4/09
47	Aromatics In Diesel Fuel SFC D5186	27.3	Mass Percent			FS	2/4/09
422	Sulfur In LS Diesel D2622	0.00857	Weight Percent			NST	2/5/09

10-Feb-09

NVFEL Fuel Analysis Report

16752

Page 1 of 1

ASD

Batch# 0

Facility Name: US EPA Facility Type: In House

Owner: x Phone: (734) 214-4400

2565 Plymouth Rd

Ann Arbor, MI 48105 Washtenaw County

USA

Samples Type: x

VOC

Inspection information logged in by NST on 1/28/09.

Season:

ASD-9960-6086-20080724 FIAG: 16752

Comments:

Test Code	Test Method	Results	Units	Fuel Code:	6	Analys	Analysis Date
65	Percent Evaporated at 200 Degrees F D86	0	Volume Percent			RG	2/4/09
66	Percent Evaporated at 300 Degrees F D86	0	Volume Percent			RG	2/4/09
49	Olefins In by FIA D1319	2.1	Volume Percent			RCG	2/5/09
46	Aromatics by FIA D1319	25.9	Volume Percent			RCG	2/5/09
69	Specific Gravity @ 60 deg F D4052	0.84137	60/60F			NT	1/28/09
692	Degrees API D4052	36.68	Degrees API			NT	1/28/09
691	Density @ 60 deg F D4052	0.84053	g/cm-03 @ 60 deg F			NT	1/28/09
44	Cetane Index D976	49.2	Cetane Index			NST	2/10/09
102	IPB Diesel D86	349.5	Degrees F			RG	2/4/09
111	10 percent Diesel D86	407.5	Degrees F			RG	2/4/09
151	50 percent Diesel D86	504.9	Degrees F			RG	2/4/09
191	90 percent Diesel D86	623.5	Degrees F			RG	2/4/09
210	End Point Diesel D86	667.1	Degrees F			RG	2/4/09
211	Residue Diesel D86	0.9	mL			RG	2/4/09
212	Total Recovery Diesel D86	97.4	mL			RG	2/4/09
213	Loss Diesel D86	1.7	mL			RG	2/4/09
47	Aromatics In Diesel Fuel SFC D5186	26.3	Mass Percent			FS	2/4/09
422	Sulfur In LS Diesel D2622	0.00501	Weight Percent			NST	2/5/09
422	Sulfur In LS Diesel D2622	0.00503	Weight Percent			NST	2/5/09

Part B

Paragon Diesel Fuel Analysis Results

June 9, 2009

Carl Fulper
U. S. EPA
2000 Traverwood Drive
Ann Arbor, MI 48105

RE: Workorder: 169690

Dear Carl Fulper:

Paragon Laboratories, Inc. received the samples associated with the workorder listed above for the analyses presented in the following report. The analyses pertain only to the aliquot of sample received.

This material is confidential and is intended solely for the person to whom it is addressed. If this is received in error, please contact the number below.

Please note that any unused portion of the sample(s) will be discarded 60 days after sample receipt, unless requested otherwise.

We appreciate the opportunity to assist you. If you have any questions concerning this report, please contact an Account Coordinator at (734) 462-3900.

Sincerely,



Jeniffer Lynch
jlynch@paragonlaboratories.com
Account Coordinator

SAMPLE SUMMARY

Workorder: 169690 US EPA-052609

Lab ID	Sample ID	Sample Description	Matrix	Date Collected	Date Received	Collector
1696900001	2523-0210-20071001	FTAG 17010	Diesel	10/1/2007 00:00	5/26/2009 10:50	Carl Fulper
1696900002	0062-6092-20081009	FTAG 17012	Diesel	10/9/2008 00:00	5/26/2009 10:50	Carl Fulper
1696900003	9272-3481-20080930	FTAG 17014	Diesel	9/30/2008 00:00	5/26/2009 10:50	Carl Fulper
1696900004	9272-2494-20081001	FTAG 17009	Diesel	10/1/2008 00:00	5/26/2009 10:50	Carl Fulper
1696900005	9960-6086-20080724	FTAG 16752	Diesel	7/24/2008 00:00	5/26/2009 10:50	Carl Fulper
1696900006	9960-5674-20080805	FTAG 16751	Diesel	8/5/2008 00:00	5/26/2009 10:50	Carl Fulper
1696900007	0229-3781-20080731	FTAG 16749	Diesel	7/31/2008 00:00	5/26/2009 10:50	Carl Fulper
1696900008	8925-2466-20080722	FTAG 16747	Diesel	7/22/2008 00:00	5/26/2009 10:50	Carl Fulper
1696900009	3597-9706-20071026	FTAG 16797	Diesel	10/26/2007 00:00	5/26/2009 10:50	Carl Fulper
1696900010	9660-6086-20080804	FTAG 16750	Diesel	8/4/2008 00:00	5/26/2009 10:50	Carl Fulper
1696900011	8418-0377-20080825	FTAG 16887	Diesel	8/25/2008 00:00	5/26/2009 10:50	Carl Fulper
1696900012	8418-2958-20080819	FTAG 16886	Diesel	8/19/2008 00:00	5/26/2009 10:50	Carl Fulper
1696900013	8391-3333-20080812-2	FTAG 16884	Diesel	8/12/2008 00:00	5/26/2009 10:50	Carl Fulper
1696900014	8391-3333-20080812-1	FTAG 16883	Diesel	8/12/2008 00:00	5/26/2009 10:50	Carl Fulper
1696900015	3858-4862-20071012	FTAG 16795	Diesel	10/12/2007 00:00	5/26/2009 10:50	Carl Fulper
1696900016	8418-0961-20080824	FTAG 16793	Diesel	8/24/2008 00:00	5/26/2009 10:50	Carl Fulper
1696900017	8418-0097-20080817	FTAG 16885	Diesel	8/17/2008 00:00	5/26/2009 10:50	Carl Fulper
1696900018	0062-0748-20071008	FTAG 16888	Diesel	10/8/2007 00:00	5/26/2009 10:50	Carl Fulper
1696900019	9272-0853-20081006	FTAG 17013	Diesel	10/6/2008 00:00	5/26/2009 10:50	Carl Fulper
1696900020	3858-1482-20070917	FTAG 17011	Diesel	9/17/2007 00:00	5/26/2009 10:50	Carl Fulper
1696900021	2745-1190-20071010	FTAG 16794	Diesel	10/10/2007 00:00	5/26/2009 10:50	Carl Fulper
1696900022	3597-4734-20071023	FTAG 16796	Diesel	10/23/2007 00:00	5/26/2009 10:50	Carl Fulper
1696900023	0029-0045-20080801	FTAG 16748	Diesel	8/1/2008 00:00	5/26/2009 10:50	Carl Fulper
1696900024	2523-0713-20070926	FTAG 17164	Diesel	9/26/2007 00:00	5/26/2009 10:50	Carl Fulper
1696900025	3597-0726-20071008	FTAG 17165	Diesel	10/8/2007 00:00	5/26/2009 10:50	Carl Fulper
1696900026	2523-6087-20070927	FTAG 17162	Diesel	9/27/2007 00:00	5/26/2009 10:50	Carl Fulper
1696900027	3858-5754-20070920	FTAG 17163	Diesel	9/20/2007 00:00	5/26/2009 10:50	Carl Fulper
1696900028	0349-1836-20080924	FTAG 17160	Diesel	9/24/2008 00:00	5/26/2009 10:50	Carl Fulper
1696900029	0349-2422-20080923	FTAG 17161	Diesel	9/23/2008 00:00	5/26/2009 10:50	Carl Fulper
1696900030	0968-7000619-20070723		Diesel	7/23/2007 00:00	5/26/2009 10:50	Carl Fulper

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900001	Date Collected: 10/1/2007 00:00	Matrix: Diesel
Sample ID: 2523-0210-20071001	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 17010	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.74 % m/m	1	0.05			5/28/2009 14:03	DHN
Hydrogen (Wt%)		13.26 % m/m	1	0.05			5/28/2009 14:03	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19575 BTU/lb	1	175			6/3/2009 13:29	AKH
Gross Heating Value (MJ/kg)		45.531 MJ/kg	1				6/3/2009 13:29	AKH
Net Heating Value (BTU/lb)		18365 BTU/lb	1	175			6/3/2009 13:29	AKH
Net Heating Value(MJ/kg)		42.718 MJ/kg	1				6/3/2009 13:29	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.09 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.09 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.04 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		0.04 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.08 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900001**

Date Collected: 10/1/2007 00:00

Matrix: Diesel

Sample ID: 2523-0210-20071001

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 17010

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900002	Date Collected: 10/9/2008 00:00	Matrix: Diesel
Sample ID: 0062-6092-20081009	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 17012	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		87.10 % m/m	1	0.05			5/28/2009 14:03	DHN
Hydrogen (Wt%)		12.90 % m/m	1	0.05			5/28/2009 14:03	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19390 BTU/lb	1	175			6/8/2009 09:00	AKH
Gross Heating Value (MJ/kg)		45.100 MJ/kg	1				6/8/2009 09:00	AKH
Net Heating Value (BTU/lb)		18213 BTU/lb	1	175			6/8/2009 09:00	AKH
Net Heating Value(MJ/kg)		42.363 MJ/kg	1				6/8/2009 09:00	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.10 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.10 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.04 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.03 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900002**

Date Collected: 10/9/2008 00:00

Matrix: Diesel

Sample ID: 0062-6092-20081009

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 17012

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEL
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEL

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900003	Date Collected: 9/30/2008 00:00	Matrix: Diesel
Sample ID: 9272-3481-20080930	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 17014	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.70 % m/m	1	0.05			5/28/2009 14:03	DHN
Hydrogen (Wt%)		13.30 % m/m	1	0.05			5/28/2009 14:03	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19642 BTU/lb	1	175			6/8/2009 09:00	AKH
Gross Heating Value (MJ/kg)		45.686 MJ/kg	1				6/8/2009 09:00	AKH
Net Heating Value (BTU/lb)		18428 BTU/lb	1	175			6/8/2009 09:00	AKH
Net Heating Value(MJ/kg)		42.864 MJ/kg	1				6/8/2009 09:00	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.03 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		<0.05 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		0.04 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		0.02 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.08 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		0.16 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		0.05 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.26 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900003**

Date Collected: 9/30/2008 00:00

Matrix: Diesel

Sample ID: 9272-3481-20080930

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 17014

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900004	Date Collected: 10/1/2008 00:00	Matrix: Diesel
Sample ID: 9272-2494-20081001	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 17009	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.75 % m/m	1	0.05			5/28/2009 14:03	DHN
Hydrogen (Wt%)		13.25 % m/m	1	0.05			5/28/2009 14:03	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19564 BTU/lb	1	175			6/8/2009 09:00	AKH
Gross Heating Value (MJ/kg)		45.506 MJ/kg	1				6/8/2009 09:00	AKH
Net Heating Value (BTU/lb)		18355 BTU/lb	1	175			6/8/2009 09:00	AKH
Net Heating Value(MJ/kg)		42.695 MJ/kg	1				6/8/2009 09:00	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.10 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.10 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		0.02 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.03 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		0.03 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		0.02 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.07 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900004**

Date Collected: 10/1/2008 00:00

Matrix: Diesel

Sample ID: 9272-2494-20081001

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 17009

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900005	Date Collected: 7/24/2008 00:00	Matrix: Diesel
Sample ID: 9960-6086-20080724	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 16752	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.75 % m/m	1	0.05			5/28/2009 14:03	DHN
Hydrogen (Wt%)		13.25 % m/m	1	0.05			5/28/2009 14:03	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19548 BTU/lb	1	175			6/8/2009 08:58	AKH
Gross Heating Value (MJ/kg)		45.469 MJ/kg	1				6/8/2009 08:58	AKH
Net Heating Value (BTU/lb)		18339 BTU/lb	1	175			6/8/2009 08:58	AKH
Net Heating Value(MJ/kg)		42.657 MJ/kg	1				6/8/2009 08:58	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.16 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.16 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		0.02 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.04 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		0.04 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		0.04 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		0.058 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.11 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900005**

Date Collected: 7/24/2008 00:00

Matrix: Diesel

Sample ID: 9960-6086-20080724

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 16752

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900006	Date Collected: 8/5/2008 00:00	Matrix: Diesel
Sample ID: 9960-5674-20080805	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 16751	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.81 % m/m	1	0.05			5/28/2009 14:03	DHN
Hydrogen (Wt%)		13.19 % m/m	1	0.05			5/28/2009 14:03	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19647 BTU/lb	1	175			6/8/2009 08:54	AKH
Gross Heating Value (MJ/kg)		45.699 MJ/kg	1				6/8/2009 08:54	AKH
Net Heating Value (BTU/lb)		18444 BTU/lb	1	175			6/8/2009 08:54	AKH
Net Heating Value(MJ/kg)		42.900 MJ/kg	1				6/8/2009 08:54	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.08 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.08 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.02 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.04 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

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Generated: 6/9/2009 4:07:55 PM

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ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900006**

Date Collected: 8/5/2008 00:00

Matrix: Diesel

Sample ID: 9960-5674-20080805

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 16751

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900007	Date Collected: 7/31/2008 00:00	Matrix: Diesel
Sample ID: 0229-3781-20080731	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 16749	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.95 % m/m	1	0.05			5/28/2009 14:03	DHN
Hydrogen (Wt%)		13.05 % m/m	1	0.05			5/28/2009 14:03	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19589 BTU/lb	1	175			6/8/2009 08:58	AKH
Gross Heating Value (MJ/kg)		45.565 MJ/kg	1				6/8/2009 08:58	AKH
Net Heating Value (BTU/lb)		18399 BTU/lb	1	175			6/8/2009 08:58	AKH
Net Heating Value(MJ/kg)		42.796 MJ/kg	1				6/8/2009 08:58	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.08 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.08 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.03 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		0.05 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		0.08 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		0.023 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.04 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900007**

Date Collected: 7/31/2008 00:00

Matrix: Diesel

Sample ID: 0229-3781-20080731

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 16749

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900008	Date Collected: 7/22/2008 00:00	Matrix: Diesel
Sample ID: 8925-2466-20080722	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 16747	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.86 % m/m	1	0.05			5/28/2009 14:03	DHN
Hydrogen (Wt%)		13.14 % m/m	1	0.05			5/28/2009 14:03	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19526 BTU/lb	1	175			6/8/2009 08:58	AKH
Gross Heating Value (MJ/kg)		45.418 MJ/kg	1				6/8/2009 08:58	AKH
Net Heating Value (BTU/lb)		18328 BTU/lb	1	175			6/8/2009 08:58	AKH
Net Heating Value(MJ/kg)		42.630 MJ/kg	1				6/8/2009 08:58	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.09 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.09 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		0.04 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		0.02 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.03 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		0.03 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		0.015 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.19 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900008**

Date Collected: 7/22/2008 00:00

Matrix: Diesel

Sample ID: 8925-2466-20080722

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 16747

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900009	Date Collected: 10/26/2007 00:00	Matrix: Diesel
Sample ID: 3597-9706-20071026	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 16797	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.90 % m/m	1	0.05			5/28/2009 14:03	DHN
Hydrogen (Wt%)		13.10 % m/m	1	0.05			5/28/2009 14:03	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19298 BTU/lb	1	175			6/8/2009 08:58	AKH
Gross Heating Value (MJ/kg)		44.887 MJ/kg	1				6/8/2009 08:58	AKH
Net Heating Value (BTU/lb)		18103 BTU/lb	1	175			6/8/2009 08:58	AKH
Net Heating Value(MJ/kg)		42.107 MJ/kg	1				6/8/2009 08:58	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.07 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.07 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.03 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		0.02 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.03 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900009**

Date Collected: 10/26/2007 00:00

Matrix: Diesel

Sample ID: 3597-9706-20071026

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 16797

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900010	Date Collected: 8/4/2008 00:00	Matrix: Diesel
Sample ID: 9660-6086-20080804	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 16750	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.72 % m/m	1	0.05			5/28/2009 14:03	DHN
Hydrogen (Wt%)		13.28 % m/m	1	0.05			5/28/2009 14:03	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19678 BTU/lb	1	175			6/8/2009 08:54	AKH
Gross Heating Value (MJ/kg)		45.770 MJ/kg	1				6/8/2009 08:54	AKH
Net Heating Value (BTU/lb)		18466 BTU/lb	1	175			6/8/2009 08:54	AKH
Net Heating Value(MJ/kg)		42.952 MJ/kg	1				6/8/2009 08:54	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.14 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.14 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.03 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		0.02 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		0.02 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.10 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900010**

Date Collected: 8/4/2008 00:00

Matrix: Diesel

Sample ID: 9660-6086-20080804

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 16750

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900011	Date Collected: 8/25/2008 00:00	Matrix: Diesel
Sample ID: 8418-0377-20080825	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 16887	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.49 % m/m	1	0.05			5/28/2009 14:03	DHN
Hydrogen (Wt%)		13.51 % m/m	1	0.05			5/28/2009 14:03	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19656 BTU/lb	1	175			6/8/2009 08:56	AKH
Gross Heating Value (MJ/kg)		45.720 MJ/kg	1				6/8/2009 08:56	AKH
Net Heating Value (BTU/lb)		18423 BTU/lb	1	175			6/8/2009 08:56	AKH
Net Heating Value(MJ/kg)		42.853 MJ/kg	1				6/8/2009 08:56	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.09 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.09 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		0.03 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.04 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		0.11 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		0.02 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.14 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900011**

Date Collected: 8/25/2008 00:00

Matrix: Diesel

Sample ID: 8418-0377-20080825

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 16887

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900012	Date Collected: 8/19/2008 00:00	Matrix: Diesel
Sample ID: 8418-2958-20080819	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 16886	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.58 % m/m	1	0.05			5/28/2009 14:03	DHN
Hydrogen (Wt%)		13.42 % m/m	1	0.05			5/28/2009 14:03	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19663 BTU/lb	1	175			6/8/2009 08:56	AKH
Gross Heating Value (MJ/kg)		45.737 MJ/kg	1				6/8/2009 08:56	AKH
Net Heating Value (BTU/lb)		18439 BTU/lb	1	175			6/8/2009 08:56	AKH
Net Heating Value(MJ/kg)		42.889 MJ/kg	1				6/8/2009 08:56	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.19 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.19 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		0.13 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.04 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		0.33 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.33 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

Report ID: 169690 - 658243

Generated: 6/9/2009 4:07:57 PM

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ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900012**

Date Collected: 8/19/2008 00:00

Matrix: Diesel

Sample ID: 8418-2958-20080819

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 16886

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900013	Date Collected: 8/12/2008 00:00	Matrix: Diesel
Sample ID: 8391-3333-20080812-2	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 16884	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.63 % m/m	1	0.05			5/29/2009 08:52	DHN
Hydrogen (Wt%)		13.37 % m/m	1	0.05			5/29/2009 08:52	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19411 BTU/lb	1	175			6/8/2009 08:54	AKH
Gross Heating Value (MJ/kg)		45.150 MJ/kg	1				6/8/2009 08:54	AKH
Net Heating Value (BTU/lb)		18191 BTU/lb	1	175			6/8/2009 08:54	AKH
Net Heating Value(MJ/kg)		42.313 MJ/kg	1				6/8/2009 08:54	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.23 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.23 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		0.02 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.06 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		0.15 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		0.02 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		0.012 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.22 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		0.02 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900013**

Date Collected: 8/12/2008 00:00

Matrix: Diesel

Sample ID: 8391-3333-20080812-2

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 16884

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900014	Date Collected: 8/12/2008 00:00	Matrix: Diesel
Sample ID: 8391-3333-20080812-1	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 16883	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.69 % m/m	1	0.05			5/29/2009 08:52	DHN
Hydrogen (Wt%)		13.31 % m/m	1	0.05			5/29/2009 08:52	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19679 BTU/lb	1	175			6/8/2009 08:54	AKH
Gross Heating Value (MJ/kg)		45.774 MJ/kg	1				6/8/2009 08:54	AKH
Net Heating Value (BTU/lb)		18465 BTU/lb	1	175			6/8/2009 08:54	AKH
Net Heating Value(MJ/kg)		42.950 MJ/kg	1				6/8/2009 08:54	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.27 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.27 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		0.04 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.05 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		0.08 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		0.04 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		0.019 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.16 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900014**

Date Collected: 8/12/2008 00:00

Matrix: Diesel

Sample ID: 8391-3333-20080812-1

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 16883

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900015	Date Collected: 10/12/2007 00:00	Matrix: Diesel
Sample ID: 3858-4862-20071012	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 16795	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.75 % m/m	1	0.05			5/29/2009 08:52	DHN
Hydrogen (Wt%)		13.25 % m/m	1	0.05			5/29/2009 08:52	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19575 BTU/lb	1	175			6/3/2009 13:29	AKH
Gross Heating Value (MJ/kg)		45.531 MJ/kg	1				6/3/2009 13:29	AKH
Net Heating Value (BTU/lb)		18366 BTU/lb	1	175			6/3/2009 13:29	AKH
Net Heating Value(MJ/kg)		42.720 MJ/kg	1				6/3/2009 13:29	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.11 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.11 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		0.02 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.03 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		0.05 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		0.04 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		0.010 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.06 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

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ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900015**

Date Collected: 10/12/2007 00:00

Matrix: Diesel

Sample ID: 3858-4862-20071012

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 16795

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900016	Date Collected: 8/24/2008 00:00	Matrix: Diesel
Sample ID: 8418-0961-20080824	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 16793	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.64 % m/m	1	0.05			5/29/2009 08:52	DHN
Hydrogen (Wt%)		13.36 % m/m	1	0.05			5/29/2009 08:52	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19624 BTU/lb	1	175			6/8/2009 08:56	AKH
Gross Heating Value (MJ/kg)		45.644 MJ/kg	1				6/8/2009 08:56	AKH
Net Heating Value (BTU/lb)		18405 BTU/lb	1	175			6/8/2009 08:56	AKH
Net Heating Value(MJ/kg)		42.809 MJ/kg	1				6/8/2009 08:56	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.11 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.11 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		0.04 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		0.02 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.04 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		0.22 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		0.03 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.16 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900016**

Date Collected: 8/24/2008 00:00

Matrix: Diesel

Sample ID: 8418-0961-20080824

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 16793

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900017	Date Collected: 8/17/2008 00:00	Matrix: Diesel
Sample ID: 8418-0097-20080817	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 16885	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.56 % m/m	1	0.05			5/29/2009 08:52	DHN
Hydrogen (Wt%)		13.44 % m/m	1	0.05			5/29/2009 08:52	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19715 BTU/lb	1	175			6/8/2009 08:56	AKH
Gross Heating Value (MJ/kg)		45.858 MJ/kg	1				6/8/2009 08:56	AKH
Net Heating Value (BTU/lb)		18489 BTU/lb	1	175			6/8/2009 08:56	AKH
Net Heating Value(MJ/kg)		43.006 MJ/kg	1				6/8/2009 08:56	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.12 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.12 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		0.05 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.06 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		0.30 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		0.02 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.22 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

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ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900017**

Date Collected: 8/17/2008 00:00

Matrix: Diesel

Sample ID: 8418-0097-20080817

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 16885

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900018	Date Collected: 10/8/2007 00:00	Matrix: Diesel
Sample ID: 0062-0748-20071008	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 16888	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		87.04 % m/m	1	0.05			5/29/2009 08:52	DHN
Hydrogen (Wt%)		12.96 % m/m	1	0.05			5/29/2009 08:52	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19431 BTU/lb	1	175			6/3/2009 13:29	AKH
Gross Heating Value (MJ/kg)		45.197 MJ/kg	1				6/3/2009 13:29	AKH
Net Heating Value (BTU/lb)		18249 BTU/lb	1	175			6/3/2009 13:29	AKH
Net Heating Value(MJ/kg)		42.446 MJ/kg	1				6/3/2009 13:29	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.13 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.13 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		0.03 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.04 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		0.02 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.05 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900018**

Date Collected: 10/8/2007 00:00

Matrix: Diesel

Sample ID: 0062-0748-20071008

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 16888

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900019	Date Collected: 10/6/2008 00:00	Matrix: Diesel
Sample ID: 9272-0853-20081006	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 17013	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.67 % m/m	1	0.05			5/29/2009 08:52	DHN
Hydrogen (Wt%)		13.33 % m/m	1	0.05			5/29/2009 08:52	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19539 BTU/lb	1	175			6/8/2009 09:00	AKH
Gross Heating Value (MJ/kg)		45.448 MJ/kg	1				6/8/2009 09:00	AKH
Net Heating Value (BTU/lb)		18323 BTU/lb	1	175			6/8/2009 09:00	AKH
Net Heating Value(MJ/kg)		42.619 MJ/kg	1				6/8/2009 09:00	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		0.10 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.25 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.25 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		0.13 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		0.03 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.06 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		0.50 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		0.04 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.42 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900019**

Date Collected: 10/6/2008 00:00

Matrix: Diesel

Sample ID: 9272-0853-20081006

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 17013

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900020	Date Collected: 9/17/2007 00:00	Matrix: Diesel
Sample ID: 3858-1482-20070917	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 17011	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.88 % m/m	1	0.05			5/29/2009 08:52	DHN
Hydrogen (Wt%)		13.12 % m/m	1	0.05			5/29/2009 08:52	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19440 BTU/lb	1	175			6/3/2009 13:31	AKH
Gross Heating Value (MJ/kg)		45.217 MJ/kg	1				6/3/2009 13:31	AKH
Net Heating Value (BTU/lb)		18243 BTU/lb	1	175			6/3/2009 13:31	AKH
Net Heating Value(MJ/kg)		42.433 MJ/kg	1				6/3/2009 13:31	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.26 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Sodium		0.26 ppm m/m	1	0.05			6/8/2009 14:12	EEI
Magnesium		0.02 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Aluminum		0.03 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Potassium		0.07 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Calcium		0.19 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Iron		0.12 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:12	EEI
Zinc		0.02 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Selenium		0.14 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900020**

Date Collected: 9/17/2007 00:00

Matrix: Diesel

Sample ID: 3858-1482-20070917

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 17011

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI
Lead		0.01 ppm m/m	1	0.01			6/8/2009 14:12	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900021	Date Collected: 10/10/2007 00:00	Matrix: Diesel
Sample ID: 2745-1190-20071010	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 16794	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.65 % m/m	1	0.05			5/29/2009 08:52	DHN
Hydrogen (Wt%)		13.35 % m/m	1	0.05			5/29/2009 08:52	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19555 BTU/lb	1	175			6/3/2009 13:29	AKH
Gross Heating Value (MJ/kg)		45.485 MJ/kg	1				6/3/2009 13:29	AKH
Net Heating Value (BTU/lb)		18337 BTU/lb	1	175			6/3/2009 13:29	AKH
Net Heating Value(MJ/kg)		42.653 MJ/kg	1				6/3/2009 13:29	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Sodium		0.14 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Sodium		0.14 ppm m/m	1	0.05			6/8/2009 14:47	EEI
Magnesium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Aluminum		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Potassium		0.04 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Calcium		0.03 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Iron		0.02 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:47	EEI
Zinc		0.07 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI

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ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900021**

Date Collected: 10/10/2007 00:00

Matrix: Diesel

Sample ID: 2745-1190-20071010

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 16794

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EI
Lead		0.06 ppm m/m	1	0.01			6/8/2009 14:47	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900022	Date Collected: 10/23/2007 00:00	Matrix: Diesel
Sample ID: 3597-4734-20071023	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 16796	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.79 % m/m	1	0.05			5/29/2009 08:52	DHN
Hydrogen (Wt%)		13.21 % m/m	1	0.05			5/29/2009 08:52	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19462 BTU/lb	1	175			6/8/2009 08:58	AKH
Gross Heating Value (MJ/kg)		45.268 MJ/kg	1				6/8/2009 08:58	AKH
Net Heating Value (BTU/lb)		18256 BTU/lb	1	175			6/8/2009 08:58	AKH
Net Heating Value(MJ/kg)		42.465 MJ/kg	1				6/8/2009 08:58	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Sodium		0.34 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Sodium		0.34 ppm m/m	1	0.05			6/8/2009 14:47	EEI
Magnesium		0.03 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Aluminum		0.02 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Potassium		0.12 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Calcium		0.10 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Iron		0.10 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Copper		0.032 ppm m/m	1	0.001			6/8/2009 14:47	EEI
Zinc		0.14 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI

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ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900022**

Date Collected: 10/23/2007 00:00

Matrix: Diesel

Sample ID: 3597-4734-20071023

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 16796

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900023	Date Collected: 8/1/2008 00:00	Matrix: Diesel
Sample ID: 0029-0045-20080801	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 16748	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.64 % m/m	1	0.05			5/29/2009 08:52	DHN
Hydrogen (Wt%)		13.36 % m/m	1	0.05			5/29/2009 08:52	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19733 BTU/lb	1	175			6/8/2009 08:54	AKH
Gross Heating Value (MJ/kg)		45.900 MJ/kg	1				6/8/2009 08:54	AKH
Net Heating Value (BTU/lb)		18515 BTU/lb	1	175			6/8/2009 08:54	AKH
Net Heating Value(MJ/kg)		43.065 MJ/kg	1				6/8/2009 08:54	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Sodium		0.18 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Sodium		0.18 ppm m/m	1	0.05			6/8/2009 14:47	EEI
Magnesium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Aluminum		0.02 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Potassium		0.06 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Calcium		0.05 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Iron		0.05 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Copper		0.013 ppm m/m	1	0.001			6/8/2009 14:47	EEI
Zinc		0.08 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI

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ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900023**

Date Collected: 8/1/2008 00:00

Matrix: Diesel

Sample ID: 0029-0045-20080801

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 16748

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900024	Date Collected: 9/26/2007 00:00	Matrix: Diesel
Sample ID: 2523-0713-20070926	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 17164	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.75 % m/m	1	0.05			6/2/2009 06:32	DHN
Hydrogen (Wt%)		13.25 % m/m	1	0.05			6/2/2009 06:32	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19602 BTU/lb	1	175			6/3/2009 13:31	AKH
Gross Heating Value (MJ/kg)		45.594 MJ/kg	1				6/3/2009 13:31	AKH
Net Heating Value (BTU/lb)		18393 BTU/lb	1	175			6/3/2009 13:31	AKH
Net Heating Value(MJ/kg)		42.783 MJ/kg	1				6/3/2009 13:31	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Sodium		0.31 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Sodium		0.31 ppm m/m	1	0.05			6/8/2009 14:47	EEI
Magnesium		0.02 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Aluminum		0.03 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Potassium		0.06 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Calcium		0.50 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Iron		0.03 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:47	EEI
Zinc		0.21 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900024**

Date Collected: 9/26/2007 00:00

Matrix: Diesel

Sample ID: 2523-0713-20070926

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 17164

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900025	Date Collected: 10/8/2007 00:00	Matrix: Diesel
Sample ID: 3597-0726-20071008	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 17165	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.88 % m/m	1	0.05			6/2/2009 06:32	DHN
Hydrogen (Wt%)		13.12 % m/m	1	0.05			6/2/2009 06:32	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19366 BTU/lb	1	175			6/3/2009 13:29	AKH
Gross Heating Value (MJ/kg)		45.046 MJ/kg	1				6/3/2009 13:29	AKH
Net Heating Value (BTU/lb)		18169 BTU/lb	1	175			6/3/2009 13:29	AKH
Net Heating Value(MJ/kg)		42.262 MJ/kg	1				6/3/2009 13:29	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Sodium		0.13 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Sodium		0.13 ppm m/m	1	0.05			6/8/2009 14:47	EEI
Magnesium		3.32 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Aluminum		0.21 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Potassium		0.10 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Calcium		0.33 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Iron		0.43 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:47	EEI
Zinc		0.13 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Tin		0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900025**

Date Collected: 10/8/2007 00:00

Matrix: Diesel

Sample ID: 3597-0726-20071008

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 17165

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900026	Date Collected: 9/27/2007 00:00	Matrix: Diesel
Sample ID: 2523-6087-20070927	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 17162	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.76 % m/m	1	0.05			6/2/2009 06:32	DHN
Hydrogen (Wt%)		13.24 % m/m	1	0.05			6/2/2009 06:32	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19550 BTU/lb	1	175			6/3/2009 13:31	AKH
Gross Heating Value (MJ/kg)		45.473 MJ/kg	1				6/3/2009 13:31	AKH
Net Heating Value (BTU/lb)		18342 BTU/lb	1	175			6/3/2009 13:31	AKH
Net Heating Value(MJ/kg)		42.663 MJ/kg	1				6/3/2009 13:31	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Sodium		0.20 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Sodium		0.20 ppm m/m	1	0.05			6/8/2009 14:47	EEI
Magnesium		0.02 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Aluminum		0.03 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Potassium		0.06 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Calcium		0.25 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Iron		0.06 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:47	EEI
Zinc		0.08 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900026**

Date Collected: 9/27/2007 00:00

Matrix: Diesel

Sample ID: 2523-6087-20070927

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 17162

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900027**

Date Collected: 9/20/2007 00:00

Matrix: Diesel

Sample ID: 3858-5754-20070920

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 17163

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		87.03 % m/m	1	0.05			6/2/2009 06:32	DHN
Hydrogen (Wt%)		12.97 % m/m	1	0.05			6/2/2009 06:32	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19442 BTU/lb	1	175			6/3/2009 13:31	AKH
Gross Heating Value (MJ/kg)		45.222 MJ/kg	1				6/3/2009 13:31	AKH
Net Heating Value (BTU/lb)		18259 BTU/lb	1	175			6/3/2009 13:31	AKH
Net Heating Value(MJ/kg)		42.469 MJ/kg	1				6/3/2009 13:31	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Beryllium	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Boron	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Sodium	0.18 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Sodium	0.18 ppm m/m	1	0.05				6/8/2009 14:47	EEI
Magnesium	0.05 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Aluminum	0.06 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Potassium	0.06 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Calcium	0.21 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Titanium	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Vanadium	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Chromium	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Manganese	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Iron	0.17 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Cobalt	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Nickel	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Copper	<0.001 ppm m/m	1	0.001				6/8/2009 14:47	EEI
Zinc	0.03 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Selenium	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Strontium	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Molybdenum	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Silver	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Cadmium	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Tin	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Antimony	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Barium	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI

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ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900027**

Date Collected: 9/20/2007 00:00

Matrix: Diesel

Sample ID: 3858-5754-20070920

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 17163

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900028**

Date Collected: 9/24/2008 00:00

Matrix: Diesel

Sample ID: 0349-1836-20080924

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 17160

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		87.06 % m/m	1	0.05			6/2/2009 06:32	DHN
Hydrogen (Wt%)		12.94 % m/m	1	0.05			6/2/2009 06:32	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19478 BTU/lb	1	175			6/8/2009 09:00	AKH
Gross Heating Value (MJ/kg)		45.305 MJ/kg	1				6/8/2009 09:00	AKH
Net Heating Value (BTU/lb)		18297 BTU/lb	1	175			6/8/2009 09:00	AKH
Net Heating Value(MJ/kg)		42.559 MJ/kg	1				6/8/2009 09:00	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Beryllium	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Boron	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Sodium	0.11 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Sodium	0.11 ppm m/m	1	0.05				6/8/2009 14:47	EEI
Magnesium	0.02 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Aluminum	0.02 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Potassium	0.05 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Calcium	0.12 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Titanium	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Vanadium	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Chromium	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Manganese	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Iron	0.03 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Cobalt	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Nickel	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Copper	<0.001 ppm m/m	1	0.001				6/8/2009 14:47	EEI
Zinc	0.05 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Selenium	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Strontium	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Molybdenum	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Silver	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Cadmium	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Tin	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Antimony	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI
Barium	<0.01 ppm m/m	1	0.01				6/8/2009 14:47	EEI

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ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900028**

Date Collected: 9/24/2008 00:00

Matrix: Diesel

Sample ID: 0349-1836-20080924

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 17160

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900029	Date Collected: 9/23/2008 00:00	Matrix: Diesel
Sample ID: 0349-2422-20080923	Date Received: 5/26/2009 10:50	
Sample Desc: FTAG 17161	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		87.06 % m/m	1	0.05			6/2/2009 06:32	DHN
Hydrogen (Wt%)		12.94 % m/m	1	0.05			6/2/2009 06:32	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19435 BTU/lb	1	175			6/8/2009 08:56	AKH
Gross Heating Value (MJ/kg)		45.205 MJ/kg	1				6/8/2009 08:56	AKH
Net Heating Value (BTU/lb)		18254 BTU/lb	1	175			6/8/2009 08:56	AKH
Net Heating Value(MJ/kg)		42.459 MJ/kg	1				6/8/2009 08:56	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Sodium		0.39 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Sodium		0.39 ppm m/m	1	0.05			6/8/2009 14:47	EEI
Magnesium		0.03 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Aluminum		0.04 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Potassium		0.06 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Calcium		0.15 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Iron		0.19 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:47	EEI
Zinc		0.09 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900029**

Date Collected: 9/23/2008 00:00

Matrix: Diesel

Sample ID: 0349-2422-20080923

Date Received: 5/26/2009 10:50

Sample Desc: FTAG 17161

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EI

ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: 1696900030	Date Collected: 7/23/2007 00:00	Matrix: Diesel
Sample ID: 0968-7000619-20070723	Date Received: 5/26/2009 10:50	
Sample Desc:	PO: PR-MI09-00226/H80432	

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
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Elemental Analysis

Analytical Method: ASTM D5291

Carbon (Wt%)		86.84 % m/m	1	0.05			6/2/2009 06:32	DHN
Hydrogen (Wt%)		13.16 % m/m	1	0.05			6/2/2009 06:32	DHN

Individual Parameters

Analytical Method: ASTM D240

Gross Heating Value (BTU/lb)		19553 BTU/lb	1	175			6/3/2009 13:31	AKH
Gross Heating Value (MJ/kg)		45.481 MJ/kg	1				6/3/2009 13:31	AKH
Net Heating Value (BTU/lb)		18353 BTU/lb	1	175			6/3/2009 13:31	AKH
Net Heating Value(MJ/kg)		42.689 MJ/kg	1				6/3/2009 13:31	AKH

Metals by ICP-MS

Analytical Method: EPA SW 846-6020

Arsenic		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Beryllium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Boron		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Sodium		0.17 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Sodium		0.17 ppm m/m	1	0.05			6/8/2009 14:47	EEI
Magnesium		0.02 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Aluminum		0.03 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Potassium		0.05 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Calcium		0.04 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Titanium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Vanadium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Chromium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Manganese		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Iron		0.02 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Cobalt		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Nickel		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Copper		<0.001 ppm m/m	1	0.001			6/8/2009 14:47	EEI
Zinc		0.05 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Selenium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Strontium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Molybdenum		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Silver		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Cadmium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Tin		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Antimony		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI
Barium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EEI

Report ID: 169690 - 658243

Generated: 6/9/2009 4:08:01 PM

Page 61 of 62

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ANALYTICAL RESULTS

Workorder: 169690 US EPA-052609

Lab ID: **1696900030**

Date Collected: 7/23/2007 00:00

Matrix: Diesel

Sample ID: 0968-7000619-20070723

Date Received: 5/26/2009 10:50

Sample Desc:

PO: PR-MI09-00226/H80432

Parameters	Qual	Result Units	DF	RL	Min	Max	Analyzed	By
Thallium		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EI
Lead		<0.01 ppm m/m	1	0.01			6/8/2009 14:47	EI

Part C

Polaris Oil Sample Results

UNIT ID
8391-3333-20080812 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



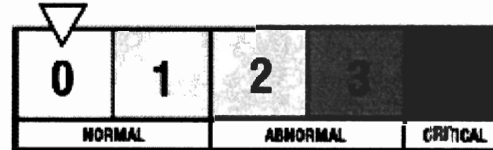
POLARIS
Laboratories

COMPANY INFORMATION
US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 08/12/08
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02228
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188871

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

	WEAR METALS PPM										CONTAMINANT METALS - PPM		MULTI-SOURCE METALS - PPM						ADDITIVE METALS PPM					
S A M P L E #	I R O N	C H R O M I U M	N I C K E L	A L U M I N U M	C O P P E R	L E A D	T I N	C A D M I U M	S I L V E R	V A N A D I U M	S I L I C O N	S O D I U M	P O T A S S I U M	T I T A N I U M	M O L Y B D E N U M	A N T I M O N Y	M A N G A N E S E	L I T H I U M	B O R O N	M A G N E S I U M	C A L C I U M	B A R I U M	P H O S P H O R O U S	Z I N C
1	3	0	1	1	0	1	0	0	0	0	4	3	0	0	117	0	0	0	140	11	3674	0	1240	1483

S A M P L E #	DATE SAMPLED DATE RECEIVED	UNIT TIME LUBE TIME	L U B E CHG	F I L T E R CHG	F U E L est	S O O T Vol.	W A T E R Infrared	V I S 40C CS	V I S 100C CS	T A N Total Acid	T B N Total Base	I-R O X I D A	I-R N I T R A	ISO C O D E	4 M I C R O N	6 M I C R O N	10 M I C R O N	14 M I C R O N	21 M I C R O N	38 M I C R O N	70 M I C R O N	100 M I C R O N
1	08/12/08 05/28/09		U	U	<1%	<.1%	<.1		15.2	3.21	14.00	9	11									

SAMP #	PQ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
3858-4862-20071012 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARIS
Laboratories

COMPANY INFORMATION
US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 10/12/07
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02230
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188870

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

S A M P L E #	WEAR METALS PPM										CONTAMINANT METALS - PPM		MULTI-SOURCE METALS - PPM						ADDITIVE METALS PPM					
	IRON	CHROMIUM	NICKEL	ALUMINUM	COPPER	LEAD	TIN	CADMIUM	SILVER	VANADIUM	SILICON	SODIUM	POTASSIUM	TITANIUM	MOLYBDENUM	ANTIMONY	MANGANESE	LITHIUM	BORON	MAGNESIUM	CALCIUM	BARIUM	PHOSPHOROUS	ZINC
1	17	0	1	0	2	0	0	0	0	0	7	3	0	0	20	0	0	0	22	293	2981	0	1264	1512

S A M P L E #	DATE SAMPLED	UNIT TIME	L U B E CHG	F I L T E R CHG	F U E L est	S O O T Vol.	W A T E R Infrared	V I S 40C CS	V I S 100C CS	T A N Total Acid	T B N Total Base	I-R O X I D A	I-R N I T R A	ISO C O D E	4 M I C R O N	6 M I C R O N	10 M I C R O N	14 M I C R O N	21 M I C R O N	38 M I C R O N	70 M I C R O N	100 M I C R O N
	DATE RECEIVED	LUBE TIME																				
1	10/12/07 05/28/09		U	U	<1%	0.3%	<.1		14.9	3.10	10.90	13	17									

SAMP #	PQ																
1	12																

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
2523-0713-20070926 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARIS
Laboratories

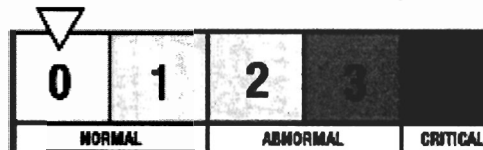
COMPANY INFORMATION

US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR, MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 09/24/07
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02227
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188869

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

S A M P L E #	WEAR METALS PPM										CONTAMINANT METALS - PPM		MULTI-SOURCE METALS - PPM						ADDITIVE METALS PPM					
	IRON	CHROMIUM	NICKEL	ALUMINUM	COPPER	LEAD	TIN	CADMIUM	SILVER	VANADIUM	SILICON	SODIUM	POTASSIUM	TITANIUM	MOLYBDENUM	ANTIMONY	MANGANESE	LITHIUM	BORON	MAGNESIUM	CALCIUM	BARIUM	PHOSPHORUS	ZINC
1	35	0	1	1	1	0	0	0	0	0	6	4	0	0	231	0	0	0	144	45	3318	0	1226	1497

S A M P L E	DATE SAMPLED	UNIT TIME	L U B E	F I L T E R	F U E L	S O O T	W A T E R	V I S	V I S	T A N	T B N	I-R	I-R	ISO	4	6	10	14	21	38	70	100
#	DATE RECEIVED	LUBE TIME	CHG	CHG	est	Vol.	Infrared	40C CS	100C CS	Total Acid	Total Base	O X I D A	N I T R A	C O D E	M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	
1	09/24/07 05/28/09		U	U	<1%	0.8%	<.1		15.4	3.98	9.88	10	15									

SAMP #	PQ																							
1	15																							

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
3858-1482-20070917 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



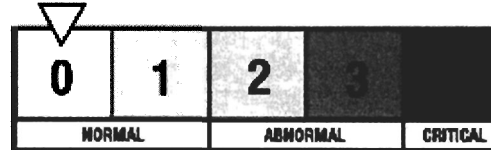
POLARIS
Laboratories

COMPANY INFORMATION
US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 09/17/07
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02226
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188868

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM							ADDITIVE METALS PPM				
S A M P L E #	I R O N	C H R O M I U M	N I C K E L	A L U M I N U M	C O P P E R	L E A D	T I N	C A D M I U M	S I L V E R	V A N A D I U M	S I L I C O N	S O D I U M	P O T A S S I U M	T I T A N I U M	M O L Y B D E N U M	A N T I M O N Y	M A N G A N E S E	L I T H I U M	B O R O N	M A G N E S I U M	C A L C I U M	B A R I U M	P H O S P H O R O U S	Z I N C	
1	10	3	2	1	1	0	0	0	0	0	7	3	5	0	8	0	0	0	0	15	284	2591	0	1197	1389

S A M P L E #	DATE SAMPLED	UNIT TIME	L U B E CHG	F I L T E R CHG	F U E L est	S O O T Vol.	W A T E R Infrared	V I S 40C CS	V I S 100C CS	T A N Total Acid	T B N Total Base	I-R	I-R	ISO C O D E	4 M I C R O N	6 M I C R O N	10 M I C R O N	14 M I C R O N	21 M I C R O N	38 M I C R O N	70 M I C R O N	100 M I C R O N
	DATE RECEIVED	LUBE TIME										O X I D A	N I T R A									
1	09/17/07 05/28/09		U	U	<1%	<.1%	<.1		14.4	2.83	11.20	7	10									

SAMP #	PQ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									</
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Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
0229-0045-20080801 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARIS
Laboratories

COMPANY INFORMATION

US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR, MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 08/11/08
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02233
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188867

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit hours/miles/kilometers not provided for this sample;

	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM						ADDITIVE METALS PPM				
S A M P L E #	I R O N	C H R O M I U M	N I C K E L	A L U M I N U M	C O P P E R	L E A D	T I N	C A D M I U M	S I L V E R	V A N A D I U M	S I L I C O N	S O D I U M	P O T A S S I U M	T I T A N I U M	M O L Y B D E N U M	A N T I M O N Y	M A N G A N E S E	L I T H I U M	B O R O N	M A G N E S I U M	C A L C I U M	B A R I U M	P H O S P H O R O U S	Z I N C
1	37	0	3	0	0	1	0	0	0	0	5	4	1	0	11	0	0	0	7	12	3643	0	1217	1450

S A M P L E #	DATE SAMPLED	UNIT TIME	L U B E CHG	F I L T E R CHG	F U E L est	S O O T Vol.	W A T E R Infrared	V I S 40C CS	V I S 100C CS	T A N Total Acid	T B N Total Base	I-R O X I D A	I-R N I T R A	ISO C O D E	4 M I C R O N	6 M I C R O N	10 M I C R O N	14 M I C R O N	21 M I C R O N	38 M I C R O N	70 M I C R O N	100 M I C R O N
1	08/11/08 05/28/09	1000	U	U	<1%	<.1%	<.1		14.5	4.16	11.90	7	10									

SAMP #	PQ													
1	13													

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
0349-2422-20080924 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARIS[™]
Laboratories

COMPANY INFORMATION
US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 09/24/08
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02229
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188866

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM							ADDITIVE METALS PPM				
S A M P L E #	I R O N	C H R O M I U M	N I C K E L	A L U M I N U M	C O P P E R	L E A D	T I N	C A D M I U M	S I L V E R	V A N A D I U M	S I L I C O N	S O D I U M	P O T A S S I U M	T I T A N I U M	M O L Y B D E N U M	A N T I M O N Y	M A N G A N E S E	L I T H I U M	B O R O N	M A G N E S I U M	C A L C I U M	B A R I U M	P H O S P H O R O U S	Z I N C	
1	13	1	1	1	3	3	0	0	0	0	5	3	0	0	2	0	0	0	0	0	345	2778	0	1319	1561

S A M P L E #	DATE SAMPLED	UNIT TIME	L U B E CHG	F I L T E R CHG	F U E L est	S O O T Vol.	W A T E R Infrared	V I S 40C CS	V I S 100C CS	T A N Total Acid	T B N Total Base	I-R	I-R	ISO C O D E	4	6	10	14	21	38	70	100
	DATE RECEIVED	LUBE TIME										O X I D A	N I T R A		M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	
1	09/24/08 05/28/09		U	U	<1%	<.1%	<.1		15.6	2.97	12.40	9	12									

SAMP #	PQ														
1	13														

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
2523-6087-20070927 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARISTM
Laboratories

COMPANY INFORMATION

US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 09/27/07
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02234
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188865

LOCATION
I

ANALYST
AWB

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings (opinion based solely on information provided); In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM							ADDITIVE METALS PPM				
S A M P L E #	I R O N	C H R O M I U M	N I C K E L	A L U M I N U M	C O P P E R	L E A D	T I N	C A D M I U M	S I L V E R	V A N A D I U M	S I L I C O N	S O D I U M	P O T A S S I U M	T I T A N I U M	M O L Y B D E N U M	A N T I M O N Y	M A N G A N E S E	L I T H I U M	B O R O N	M A G N E S I U M	C A L C I U M	B A R I U M	P H O S P H O R O U S	Z I N C	
1	3	0	1	1	0	0	0	0	0	0	6	4	0	0	246	0	0	0	0	142	10	3315	0	1289	1482

S A M P L E #	DATE SAMPLED	UNIT TIME	L U B E CHG	F I L T E R CHG	F U E L est	S O O T Vol.	W A T E R Infrared	V I S 40C CS	V I S 100C CS	T A N Total Acid	T B N Total Base	I-R	I-R	ISO C O D E	4	6	10	14	21	38	70	100
	DATE RECEIVED	LUBE TIME										O X I D A	N I T R A		M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	
1	09/27/07 05/28/09		U	U	<1%	<.1%	<.1		14.3	3.99	10.60	10	12									

SAMP #	PQ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
0349-1836-20080922 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



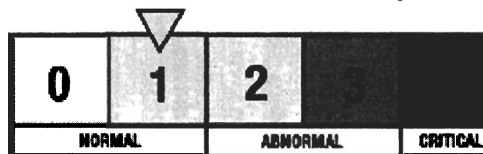
POLARIS
Laboratories

COMPANY INFORMATION
US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 09/22/08
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02206
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188863

LOCATION
I

ANALYST
AC

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data flagged for observation only; Iron is at a MINOR LEVEL; Nickel is at a MINOR LEVEL; Tin is at a MINOR LEVEL; Unable to recommend EXTENDING DRAIN INTERVAL on this sample due to incomplete lubricant information. We must have LUBRICANT MANUFACTURER, PRODUCT NAME _ GRADE (if applicable); In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

S A M P L E #	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM						ADDITIVE METALS PPM				
	IRON	CHROMIUM	NICKEL	ALUMINUM	COPPER	LEAD	TIN	CADMIUM	SILVER	VANADIUM	SILICON	SODIUM	POTASSIUM	TITANIUM	MOLYBDENUM	ANTIMONY	MANGANESE	LITHIUM	BORON	MAGNESIUM	CALCIUM	BARIUM	PHOSPHORUS	ZINC
1	82	3	5	3	23	12	7	0	0	0	12	4	1	0	10	0	0	0	0	352	2821	1	1244	1540

S A M P L E #	DATE SAMPLED	DATE RECEIVED	UNIT TIME	LUBE CHG	FILT ER CHG	FUEL est	SOOT Vol.	WATER Infrared	VIS 40C CS	VIS 100C CS	TAN Total Acid	TBN Total Base	I-R OXIDA	I-R NITRA	ISO CODE	4 MICRON	6 MICRON	10 MICRON	14 MICRON	21 MICRON	38 MICRON	70 MICRON	100 MICRON
1	09/22/08	05/28/09		U	U	<1%	<.1%	<.1		15.7	4.65	7.84	7	10									

SAMP #	PQ															
1	14															

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
9272-0853-20081006 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARIS[™]
Laboratories

COMPANY INFORMATION

US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 10/06/08
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02232
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188864

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM						ADDITIVE METALS PPM				
S A M P L E #	I R O N	C H R O M I U M	N I C K E L	A L U M I N U M	C O P P E R	L E A D	T I N	C A D M I U M	S I L V E R	V A N A D I U M	S I L I C O N	S O D I U M	P O T A S S I U M	T I T A N I U M	M O L Y B D E N U M	A N T I M O N Y	M A N G A N E S E	L I T H I U M	B O R O N	M A G N E S I U M	C A L C I U M	B A R I U M	P H O S P H O R O U S	Z I N C
1	7	0	1	1	1	1	0	0	0	0	5	4	0	0	98	0	0	0	503	440	1641	0	1145	1413

S A M P L E #	DATE SAMPLED	UNIT TIME	L U B E C H G	F I L T E R C H G	F U E L est	S O O T Vol.	W A T E R Infrared	V I S 40C CS	V I S 100C CS	T A N Total Acid	T B N Total Base	I-R	I-R	ISO C O D E	4 M I C R O N	6 M I C R O N	10 M I C R O N	14 M I C R O N	21 M I C R O N	38 M I C R O N	70 M I C R O N	100 M I C R O N
	DATE RECEIVED	LUBE TIME										O X I D A	N I T R A									
1	10/06/08 05/28/09		U	U	<1%	0.1%	<.1		14.8	3.66	6.94	9	12									

SAMP #	PQ																						
1	12																						

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
9960-5674-20080805 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARISTM
Laboratories

COMPANY INFORMATION
US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 08/05/08
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02205
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB # 188862 LOCATION I ANALYST EAD

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing; Unable to recommend EXTENDING DRAIN INTERVAL on this sample due to incomplete lubricant information. We must have LUBRICANT MANUFACTURER, PRODUCT NAME _ GRADE (if applicable);

	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM						ADDITIVE METALS PPM				
S A M P L E #	I R O N	C H R O M I U M	N I C K E L	A L U M I N U M	C O P P E R	L E A D	T I N	C A D M I U M	S I L V E R	V A N A D I U M	S I L I C O N	S O D I U M	P O T A S S I U M	T I T A N I U M	M O L Y B D E N U M	A N T I M O N Y	M A N G A N E S E	L I T H I U M	B O R O N	M A G N E S I U M	C A L C I U M	B A R I U M	P H O S P H O R O U S	Z I N C
1	5	0	2	0	0	0	0	0	0	0	3	2	0	0	110	0	0	0	139	7	3197	0	1373	1519

SAMP LE #	DATE SAMPLED	UNIT TIME	LUBE CHG	FILTER CHG	FUEL GC	SOOT Vol.	WATER Infrared	VIS 40C CS	VIS 100C CS	TAN Total Acid	TBN Total Base	I-R OXIDA	I-R NITRA	ISO CODE	4 MICRON	6 MICRON	10 MICRON	14 MICRON	21 MICRON	38 MICRON	70 MICRON	100 MICRON
	DATE RECEIVED	LUBE TIME																				
1	08/05/08 05/28/09		U	U	0.1%	<.1%	<.1		11.5	3.68	13.20	9	11									

SAMP #	PQ															
1	13															

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
9272-3481-20080930 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



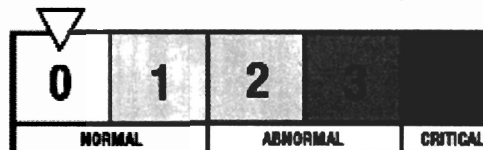
POLARIS[™]
Laboratories

COMPANY INFORMATION
US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 09/30/08
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02208
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188860

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM						ADDITIVE METALS PPM				
S A M P L E #	IRON	CHROMIUM	NICKEL	ALUMINUM	COPPER	LEAD	TIN	CADMIUM	SILVER	VANADIUM	SILICON	SODIUM	POTASSIUM	TITANIUM	MOLYBDENUM	ANTIMONY	MANGANESE	LITHIUM	BORON	MAGNESIUM	CALCIUM	BARIUM	PHOSPHOROUS	ZINC
1	8	0	1	2	2	0	0	0	0	0	5	4	3	0	93	0	0	0	501	414	1571	0	1120	1355

S A M P L E #	DATE SAMPLED	UNIT TIME	L U B E C H G	F I L T E R C H G	F U E L e s t	S O O T V o l.	W A T E R I n f r a r e d	V I S 4 0 C C S	V I S 1 0 0 C C S	T A N T o t a l A c i d	T B N T o t a l B a s e	I-R O X I D A	I-R N I T R A	ISO C O D E	4 M I C R O N	6 M I C R O N	10 M I C R O N	14 M I C R O N	21 M I C R O N	38 M I C R O N	70 M I C R O N	100 M I C R O N
	DATE RECEIVED	LUBE TIME																				
1	09/30/08 05/28/09		U	U	<1%	<.1%	<.1		14.4	2.83	7.22	7	10									

SAMP #	PQ															
1	11															

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
0062-0748-20071007 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARISTM
Laboratories

COMPANY INFORMATION
US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR, MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 10/07/07
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02207
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188861

LOCATION
I

ANALYST
RNF

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data flagged for observation only; Copper is at a MODERATE LEVEL; COPPER is most likely LEACHING into the oil via the OIL COOLER core tubing. This typically DOES NOT REQUIRE MAINTENANCE ACTION unless there is evidence of COOLANT in the oil; Iron is at a MINOR LEVEL; IRON SOURCE in engines can be cylinder liners, iron pistons, hardened steel camshafts, crankshafts, gears, hardened rocker arms, valve bridges, alloyed steel cam follower rollers, etc.; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant;

	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM							ADDITIVE METALS PPM				
S A M P L E #	I R O N	C H R O M I U M	N I C K E L	A L U M I N U M	C O P P E R	L E A D	T I N	C A D M I U M	S I L V E R	V A N A D I U M	S I L I C O N	S O D I U M	P O T A S S I U M	T I T A N I U M	M O L Y B D E N U M	A N T I M O N Y	M A N G A N E S E	L I T H I U M	B O R O N	M A G N E S I U M	C A L C I U M	B A R I U M	P H O S P H O R O U S	Z I N C	
1	119	2	3	5	209	4	3	0	0	0	19	4	4	0	3	0	2	0	32	431	2154	0	1001	1269	

S A M P L E #	DATE SAMPLED	UNIT TIME	L U B E C H G	F I L T E R C H G	F U E L e s t	S O O T V o l.	W A T E R I n f r a r e d	V I S 4 0 C C S	V I S 1 0 0 C C S	T A N T o t a l A c i d	T B N T o t a l B a s e	I-R O X I D A	I-R N I T R A	ISO C O D E	4 M I C R O N	6 M I C R O N	10 M I C R O N	14 M I C R O N	21 M I C R O N	38 M I C R O N	70 M I C R O N	100 M I C R O N	
1	10/07/07 05/28/09		U	U	<1%	0.3%	<.1		11.4	4.18	7.93	8	15										

SAMP #	PQ																						
1	16																						

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
8418-0377-20080825 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



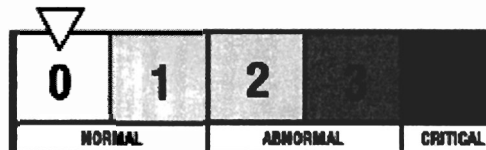
POLARISTM
Laboratories

COMPANY INFORMATION
US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR, MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 08/25/08
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02210
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188858

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM						ADDITIVE METALS PPM				
S A M P L E #	IRON	CHROMIUM	NICKEL	ALUMINUM	COPPER	LEAD	TIN	CADMIUM	SILVER	VANADIUM	SILICON	SODIUM	POTASSIUM	TITANIUM	MOLYBDENUM	ANTIMONY	MANGANESE	LITHIUM	BORON	MAGNESIUM	CALCIUM	BARIUM	PHOSPHOROUS	ZINC
1	11	0	1	0	0	0	0	0	0	0	3	2	6	0	3	0	0	0	32	28	2327	0	990	1243

S A M P L E #	DATE SAMPLED	DATE RECEIVED	UNIT TIME	LUBE TIME	L U B E C H G	F I L T E R C H G	F U E L e s t	S O O T V o l.	W A T E R I n f r a r e d	V I S 4 0 C C S	V I S 1 0 0 C C S	T A N T o t a l A c i d	T B N T o t a l B a s e	I-R O X I D A	I-R N I T R A	ISO C O D E	4 M I C R O N	6 M I C R O N	10 M I C R O N	14 M I C R O N	21 M I C R O N	38 M I C R O N	70 M I C R O N	100 M I C R O N
1	08/25/08	05/28/09			U	U	<1%	0.3%	<.1		14.4	2.69	8.79	14	13									

SAMP #	PQ													
1	14													

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
8418-2958-20080819 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARISTM
Laboratories

COMPANY INFORMATION
US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 08/19/08
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02209
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188859

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM							ADDITIVE METALS PPM				
SAMPLE #	IRON	CHROMIUM	NICKEL	ALUMINUM	COPPER	LEAD	TIN	CADMIUM	SILVER	VANADIUM	SILICON	SODIUM	POTASSIUM	TITANIUM	MOLYBDENUM	ANTIMONY	MANGANESE	LITHIUM	BORON	MAGNESIUM	CALCIUM	BARIUM	PHOSPHORUS	ZINC
1	8	0	1	0	0	0	0	0	0	0	3	2	4	0	2	0	0	0	33	26	2195	0	1021	1193

SAMPLE #	DATE SAMPLED	UNIT TIME	LUBE	FILTER	FUEL	SOOT	WATER	VIS 40C	VIS 100C	TAN Total Acid	TBN Total Base	I-R OXIDA	I-R NITRA	ISO CODE	4 MICRON	6 MICRON	10 MICRON	14 MICRON	21 MICRON	38 MICRON	70 MICRON	100 MICRON
1	08/19/08 05/28/09		U	U	<1%	<.1%	<.1	15.1	2.90	8.78	7	10										

SAMP #	PQ																					
1	14																					

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
9272-2494-20081001 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



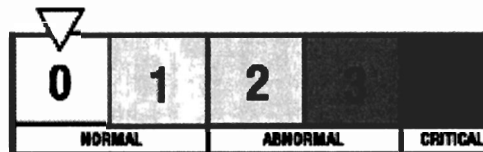
POLARISTM
Laboratories

COMPANY INFORMATION
US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 10/01/08
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02212
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188856

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM						ADDITIVE METALS PPM					
S A M P L E #	I R O N	C H R O M I U M	N I C K E L	A L U M I N U M	C O P P E R	L E A D	T I N	C A D M I U M	S I L V E R	V A N A D I U M	S I L I C O N	S O D I U M	P O T A S S I U M	T I T A N I U M	M O L Y B D E N U M	A N T I M O N Y	M A N G A N E S E	L I T H I U M	B O R O N	M A G N E S I U M	C A L C I U M	B A R I U M	P H O S P H O R O U S	Z I N C	
1	4	0	1	1	0	0	0	0	0	0	5	5	0	0	96	0	0	0	0	562	435	1647	0	1119	1396

S A M P L E #	DATE SAMPLED	UNIT TIME	L U B E CHG	F I L T E R CHG	F U E L est	S O O T Vol.	W A T E R Infrared	V I S 40C CS	V I S 100C CS	T A N Total Acid	T B N Total Base	I-R O X I D A	I-R N I T R A	ISO C O D E	4	6	10	14	21	38	70	100
	DATE RECEIVED	LUBE TIME													M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	
1	10/01/08 05/28/09		U	U	<1%	0.1%	<.1		15.6	2.98	7.56	11	12									

SAMP #	PQ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														</
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Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
0062-6092-20081009 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARISTM
Laboratories

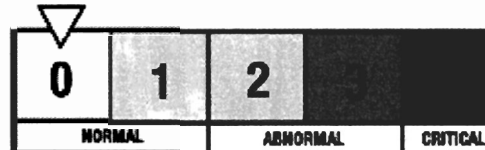
COMPANY INFORMATION

US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 10/09/08
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02211
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188857

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM						ADDITIVE METALS PPM				
S A M P L E #	I R O N	C H R O M I U M	N I C K E L	A L U M I N U M	C O P P E R	L E A D	T I N	C A D M I U M	S I L V E R	V A N A D I U M	S I L I C O N	S O D I U M	P O T A S S I U M	T I T A N I U M	M O L Y B D E N U M	A N T I M O N Y	M A N G A N E S E	L I T H I U M	B O R O N	M A G N E S I U M	C A L C I U M	B A R I U M	P H O S P H O R O U S	Z I N C
1	10	0	2	0	0	0	0	0	0	0	3	2	4	0	1	0	0	0	29	7	2290	0	946	1222

S A M P L E #	DATE SAMPLED	UNIT TIME	L U B E C H G	F I L T E R C H G	F U E L est	S O O T Vol.	W A T E R Infrared	V I S 40C CS	V I S 100C CS	T A N Total Acid	T B N Total Base	I-R	I-R	ISO C O D E	4	6	10	14	21	38	70	100
	DATE RECEIVED	LUBE TIME										O X I D A	N I T R A		M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	
1	10/09/08 05/28/09		U	U	<1%	<.1%	<.1		15.6	2.66	7.20	10	11									

SAMP #	PQ														
1	13														

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
3858-5754-20070920 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARIS[™]
Laboratories

COMPANY INFORMATION

US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 09/20/07
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02218
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188797

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit hours/miles/kilometers not provided for this sample;

	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM						ADDITIVE METALS PPM				
S A M P L E #	I R O N	C H R O M I U M	N I C K E L	A L U M I N U M	C O P P E R	L E A D	T I N	C A D M I U M	S I L V E R	V A N A D I U M	S I L I C O N	S O D I U M	P O T A S S I U M	T I T A N I U M	M O L Y B D E N U M	A N T I M O N Y	M A N G A N E S E	L I T H I U M	B O R O N	M A G N E S I U M	C A L C I U M	B A R I U M	P H O S P H O R O U S	Z I N C
1	14	1	1	1	0	0	0	0	0	0	3	2	0	0	4	0	0	0	2	55	2509	0	1003	1191

S A M P L E #	DATE SAMPLED	DATE RECEIVED	UNIT TIME	LUBE TIME	F I L T E R C H G	F U E L e s t	S O O T V o l.	W A T E R I n f r a r e d	V I S 40C C S	V I S 100C C S	T A N T o t a l A c i d	T B N T o t a l B a s e	I-R O X I D A	I-R N I T R A	ISO C O D E	4 M I C R O N	6 M I C R O N	10 M I C R O N	14 M I C R O N	21 M I C R O N	38 M I C R O N	70 M I C R O N	100 M I C R O N
1	09/20/07	05/28/09	1000	U	U	<1%	<.1%	<.1		13.6	3.56	7.00	8	11									

SAMP #	PQ																
1	13																

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
3597-095K-20071003 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARIS
Laboratories

COMPANY INFORMATION
US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR, MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 10/03/07
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02216
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB # 188796
LOCATION I
ANALYST FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant;

	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM							ADDITIVE METALS PPM				
S A M P L E #	IRON	CHROMIUM	NICKEL	ALUMINUM	COPPER	LEAD	TIN	CADMIUM	SILVER	VANADIUM	SILICON	SODIUM	POTASSIUM	TITANIUM	MOLYBDENUM	ANTIMONY	MANGANESE	LITHIUM	BORON	MAGNESIUM	CALCIUM	BARIUM	PHOSPHOROUS	ZINC	
1	3	0	2	0	0	0	0	0	0	0	4	2	1	0	1	0	0	0	5	10	3654	0	1185	1425	

S A M P L E #	DATE SAMPLED	UNIT TIME	L U B E CHG	F I L T E R CHG	F U E L est	S O O T Vol.	W A T E R Infrared	V I S 40C CS	V I S 100C CS	T A N Total Acid	T B N Total Base	I-R O X I D A	I-R N I T R A	ISO C O D E	4 M I C R O N	6 M I C R O N	10 M I C R O N	14 M I C R O N	21 M I C R O N	38 M I C R O N	70 M I C R O N	100 M I C R O N
1	10/03/07 05/28/09	1000 1000	U	U	<1%	<.1%	<.1		14.9	3.58	11.20	12	11									

SAMP #	PQ															
1	12															

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
9960-6086-20080804 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARIS™
Laboratories

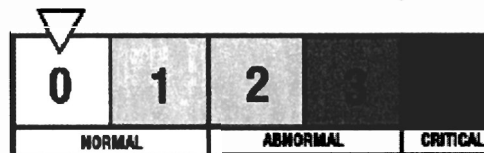
COMPANY INFORMATION

US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 08/04/08
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02219
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188795

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM						ADDITIVE METALS PPM				
S A M P L E #	I R O N	C H R O M I U M	N I C K E L	A L U M I N U M	C O P P E R	L E A D	T I N	C A D M I U M	S I L V E R	V A N A D I U M	S I L I C O N	S O D I U M	P O T A S S I U M	T I T A N I U M	M O L Y B D E N U M	A N T I M O N Y	M A N G A N E S E	L I T H I U M	B O R O N	M A G N E S I U M	C A L C I U M	B A R I U M	P H O S P H O R O U S	Z I N C
1	3	0	1	0	0	0	0	0	0	0	4	3	0	0	108	0	0	0	145	7	3199	0	1352	1545

S A M P L E #	DATE SAMPLED	DATE RECEIVED	UNIT TIME	LUBE TIME	LUBE CHG	FILTER CHG	FUEL GC	SOOT Vol.	WATER Infrared	VIS 40C CS	VIS 100C CS	TAN Total Acid	TBN Total Base	I-R OXIDA	I-R NITRA	ISO CODE	4	6	10	14	21	38	70	100
																	MICRON	MICRON	MICRON	MICRON	MICRON	MICRON	MICRON	MICRON
1	08/04/08	05/28/09			U	U	0.2%	<.1%	<.1		11.3	3.91	9.41	9	10									

SAMP #	PQ																							
1	16																							

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
8925-2466-20080722 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARISTM
Laboratories

COMPANY INFORMATION

US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR, MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 07/22/08
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02223
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB # 188794 LOCATION I ANALYST RNF

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data flagged for observation only; Potassium is at a MINOR LEVEL; Potassium sources: coolant (antifreeze), lube additive or supplement, coating on new bearings, rust preventive coating, or environmental; Unit and/or lube TIME missing; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant;

	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM						ADDITIVE METALS PPM					
S A M P L E #	I R O N	C H R O M I U M	N I C K E L	A L U M I N U M	C O P P E R	L E A D	T I N	C A D M I U M	S I L V E R	V A N A D I U M	S I L I C O N	S O D I U M	P O T A S S I U M	T I T A N I U M	M O L Y B D E N U M	A N T I M O N Y	M A N G A N E S E	L I T H I U M	B O R O N	M A G N E S I U M	C A L C I U M	B A R I U M	P H O S P H O R O U S	Z I N C	
1	14	1	2	1	29	0	0	0	0	0	7	13	26	0	2	0	0	0	0	1	294	2457	0	1118	1357

SAMP #	DATE SAMPLED		UNIT TIME	LUBE TIME	LUBE CHG	FILTER CHG	FUEL est	SOOT Vol.	WATER Infrared	VIS 40C CS	VIS 100C CS	TAN Total Acid	TBN Total Base	I-R OXIDA	I-R NITRA	ISO CODE	4 MICRON	6 MICRON	10 MICRON	14 MICRON	21 MICRON	38 MICRON	70 MICRON	100 MICRON
	DATE	RECEIVED																						
1	07/22/08	05/28/09			U	U	<1%	<.1%	<.1		14.9	3.50	8.83	8	11									

SAMP #	PQ																							
1	12																							

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
2523-0210-20071001 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARISTM
Laboratories

COMPANY INFORMATION
US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR, MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 10/01/07
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02224
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188793

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM							ADDITIVE METALS PPM				
S A M P L E #	I R O N	C H R O M I U M	N I C K E L	A L U M I N U M	C O P P E R	L E A D	T I N	C A D M I U M	S I L V E R	V A N A D I U M	S I L I C O N	S O D I U M	P O T A S S I U M	T I T A N I U M	M O L Y B D E N U M	A N T I M O N Y	M A N G A N E S E	L I T H I U M	B O R O N	M A G N E S I U M	C A L C I U M	B A R I U M	P H O S P H O R O U S	Z I N C	
1	3	0	1	1	0	0	0	0	0	0	5	4	3	0	241	0	0	0	135	9	3302	0	1259	1457	

S A M P L E #	DATE SAMPLED	UNIT TIME	L U B E CHG	F I L T E R CHG	F U E L GC	S O O T Vol.	W A T E R Infrared	V I S 40C CS	V I S 100C CS	T A N Total Acid	T B N Total Base	I-R O X I D A	I-R N I T R A	ISO C O D E	4 M I C R O N	6 M I C R O N	10 M I C R O N	14 M I C R O N	21 M I C R O N	38 M I C R O N	70 M I C R O N	100 M I C R O N
1	10/01/07 05/28/09		U	U	0.1%	<.1%	<.1		13.3	3.30	9.70	6	9									

SAMP #	PQ															
1	13															

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
0229-3781-20080731 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARISTM
Laboratories

COMPANY INFORMATION

US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 07/31/08
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02220
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188792

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

S A M P L E #	WEAR METALS PPM										CONTAMINANT METALS - PPM		MULTI-SOURCE METALS - PPM							ADDITIVE METALS PPM				
	IRON	CHROMIUM	NICKEL	ALUMINUM	COPPER	LEAD	TIN	CADMIUM	SILVER	VANADIUM	SILICON	SODIUM	POTASSIUM	TITANIUM	MOLYBDENUM	ANTIMONY	MANGANESE	LITHIUM	BORON	MAGNESIUM	CALCIUM	BARIUM	PHOSPHORUS	ZINC
1	29	1	2	2	0	2	0	0	0	0	10	3	1	0	0	0	0	0	0	10	3620	0	1196	1381

S A M P L E #	DATE SAMPLED	UNIT TIME	L U B E CHG	F I L T E R CHG	F U E L est	S O O T Vol.	W A T E R Infrared	V I S 40C CS	V I S 100C CS	T A N Total Acid	T B N Total Base	I-R O X I D A	I-R N I T R A	ISO C O D E	4 M I C R O N	6 M I C R O N	10 M I C R O N	14 M I C R O N	21 M I C R O N	38 M I C R O N	70 M I C R O N	100 M I C R O N
1	07/31/08 05/28/09		U	U	<1%	<.1%	<.1		15.3	3.38	9.90	6	9									

SAMP #	PQ																
1	10																

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
3597-9706-20071026 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



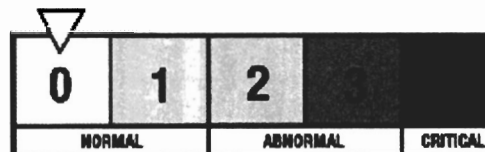
POLARIS
Laboratories

COMPANY INFORMATION
US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED N/A
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02217
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE 15
MICRON RATING FULLFLOW
FILTER TYPE 0.00
SUMP CAPACITY 0
HYD SYSTEM PRESSURE
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188791

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

	WEAR METALS PPM										CONTAMINANT METALS - PPM		MULTI-SOURCE METALS - PPM						ADDITIVE METALS PPM						
S A M P L E #	I R O N	C H R O M I U M	N I C K E L	A L U M I N U M	C O P P E R	L E A D	T I N	C A D M I U M	S I L V E R	V A N A D I U M	S I L I C O N	S O D I U M	P O T A S S I U M	T I T A N I U M	M O L Y B D E N I U M	A N T I M O N Y	M A N G A N E S E	L I T H I U M	B O R O N	M A G N E S I U M	C A L C I U M	B A R I U M	P H O S P H O R O U S	Z I N C	
1	22	0	2	3	1	0	0	0	0	0	4	6	0	0	2	0	0	0	0	0	13	3672	1	1133	1380

S A M P L E	DATE SAMPLED	UNIT TIME	L U B E	F I L T E R	F U E L	S O O T	W A T E R	V I S	V I S	T A N	T B N	I-R	I-R	ISO	4	6	10	14	21	38	70	100
#	DATE RECEIVED	LUBE TIME	CHG	CHG	est	Vol.	Infrared	40C CS	100C CS	Total Acid	Total Base	O X I D A	N I T R A	C O D E	M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	
1	N/A 05/28/09		U	U	<1%	<.1%	<.1		15.9	3.71	9.16	7	9									

SAMP #	PQ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
3597-0726-20071008 E
SECOND ID

UNIT TYPE
UNIDENTIFIED ENGINE
APPLICATION
TRANSPORTATION



POLARIS™
Laboratories

COMPANY INFORMATION

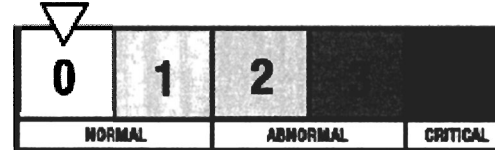
US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 10/08/07
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02222
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT

based on comments, not individual flags



LAB #
188789

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

S A M P L E #	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM						ADDITIVE METALS PPM				
	IRON	CHROMIUM	NICKEL	ALUMINUM	COPPER	LEAD	TIN	CADMIUM	SILVER	VANADIUM	SILICON	SODIUM	POTASSIUM	TITANIUM	MOLYBDENUM	ANTIMONY	MANGANESE	LITHIUM	BORON	MAGNESIUM	CALCIUM	BARIUM	PHOSPHORUS	ZINC
1	32	0	2	8	40	0	0	0	0	0	4	7	3	0	0	0	0	0	9	9	2999	0	1014	1276

S A M P L E #	DATE SAMPLED DATE RECEIVED	UNIT TIME LUBE TIME	L U B E CHG	F I L T E R CHG	F U E L GC	S O O T Vol.	W A T E R Infrared	V I S 40C CS	V I S 100C CS	T A N Total Acid	T B N Total Base	I-R O X I D A	I-R N I T R A	ISO C O D E	4 M I C R O N	6 M I C R O N	10 M I C R O N	14 M I C R O N	21 M I C R O N	38 M I C R O N	70 M I C R O N	100 M I C R O N
1	10/08/07 05/28/09		U	U	0.1%	<.1%	<.1		11.2	2.67	7.73	5	12									

SAMP #	PQ																
1	17																

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
8418-0097-20080817 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARISTM
Laboratories

COMPANY INFORMATION
US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 08/17/08
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02215
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188788

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM							ADDITIVE METALS PPM				
S A M P L E #	IRON	CHROMIUM	NICKEL	ALUMINUM	COPPER	LEAD	TIN	CADMIUM	SILVER	VANADIUM	SILICON	SODIUM	POTASSIUM	TITANIUM	MOLYBDENUM	ANTIMONY	MANGANESE	LITHIUM	BORON	MAGNESIUM	CALCIUM	BARIUM	PHOSPHOROUS	ZINC	
1	18	0	2	1	2	0	0	0	0	0	4	2	2	0	12	0	0	0	13	287	2535	0	1144	1384	

S A M P L E #	DATE SAMPLED	DATE RECEIVED	UNIT TIME	LUBE TIME	L U B E C H G	F I L T E R C H G	F U E L e s t	S O O T V o l.	W A T E R I n f r a r e d	V I S 4 0 C C S	V I S 1 0 0 C C S	T A N T o t a l A c i d	T B N T o t a l B a s e	I-R O X I D A	I-R N I T R A	ISO C O D E	4	6	10	14	21	38	70	100
																	M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N	M I C R O N
1	08/17/08	05/28/09			U	U	<1%	0.2%	<.1		16.0	4.03	7.46	9	12									

SAMP #	PQ																
1	16																

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
3597-4734-20071023 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARISTM
Laboratories

COMPANY INFORMATION
US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 10/23/07
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02221
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB # 188790 LOCATION I ANALYST FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant;

	WEAR METALS PPM										CONTAMINANT METALS - PPM		MULTI-SOURCE METALS - PPM							ADDITIVE METALS PPM				
S A M P L E #	IRON	CHROMIUM	NICKEL	ALUMINUM	COPPER	LEAD	TIN	CADMIUM	SILVER	VANADIUM	SILICON	SODIUM	POTASSIUM	TITANIUM	MOLYBDENUM	ANTIMONY	MANGANESE	LITHIUM	BORON	MAGNESIUM	CALCIUM	BARIUM	PHOSPHOROUS	ZINC
1	13	2	2	0	0	0	0	0	0	0	5	5	2	0	0	0	0	0	2	14	3570	1	1206	1381

S A M P L E #	DATE SAMPLED		UNIT TIME		L U B E C H G	F I L T E R C H G	F U E L e s t	S O O T V o l.	W A T E R I n f r a r e d	V I S 4 0 C C S	V I S 1 0 0 C C S	T A N T o t a l A c i d	T B N T o t a l B a s e	I-R O X I D A	I-R N I T R A	ISO C O D E	4	6	10	14	21	38	70	100
	DATE RECEIVED	LUBE TIME															MICRON	MICRON	MICRON	MICRON	MICRON	MICRON	MICRON	MICRON
1	10/23/07 05/28/09	1000 1000			U	U	<1%	<.1%	<.1		14.6	2.98	10.30	6	9									

SAMP #	PQ																							
1	9																							

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
9960-6086-20080724 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARISTM
Laboratories

COMPANY INFORMATION
US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 07/24/08
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02225
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB # 188787 LOCATION I ANALYST EAD

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM						ADDITIVE METALS PPM				
S A M P L E #	I R O N	C H R O M I U M	N I C K E L	A L U M I N U M	C O P P E R	L E A D	T I N	C A D M I U M	S I L V E R	V A N A D I U M	S I L I C O N	S O D I U M	P O T A S S I U M	T I T A N I U M	M O L Y B D E N U M	A N T I M O N Y	M A N G A N E S E	L I T H I U M	B O R O N	M A G N E S I U M	C A L C I U M	B A R I U M	P H O S P H O R O U S	Z I N C
1	3	0	1	0	0	0	0	0	0	0	3	3	0	0	101	0	0	0	136	6	2963	0	1240	1443

S A M P L E #	DATE SAMPLED DATE RECEIVED	UNIT TIME LUBE TIME	L U B E CHG	F I L T E R CHG	F U E L GC	S O O T Vol.	W A T E R Infrared	V I S 40C CS	V I S 100C CS	T A N Total Acid	T B N Total Base	I-R O X I D A	I-R N I T R A	ISO C O D E	4 M I C R O N	6 M I C R O N	10 M I C R O N	14 M I C R O N	21 M I C R O N	38 M I C R O N	70 M I C R O N	100 M I C R O N
1	07/24/08 05/28/09		U	U	0.3%	<.1%	<.1		11.4	3.15	9.57	6	9									

SAMP #	PQ															
1	5															

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

UNIT ID
2745-1190-20071010 E
SECOND ID

UNIT TYPE
DIESEL ENGINE
APPLICATION
TRANSPORTATION



POLARIS[™]
Laboratories

COMPANY INFORMATION
US EPA-NTL
CARL FULPER
734-214-4400
2000 TRAVERWOOD DR.
ANN ARBOR , MI 48105

ACCOUNT NUMBER 11018100000000
DATE SAMPLED 10/10/07
DATE RECEIVED 05/28/09
DATE COMPLETED 05/29/09

TRACKING # 09128Y02231
MANUFACTURER/MODEL
LUBE MFR
LUBE TYPE - GRADE
MICRON RATING 15
FILTER TYPE FULLFLOW
SUMP CAPACITY 0.00
HYD SYSTEM PRESSURE 0
FLUID ADDED

OVERALL SEVERITY OF REPORT
based on comments, not individual flags



LAB #
188872

LOCATION
I

ANALYST
FLG

FLUID ANALYSIS REPORT - 877-808-3750

COMMENTS Data indicates no abnormal findings. Resample at normal interval; In order to properly compare data to the right standards, we need manufacturer and model of the unit, and the manufacturer, type and grade of the lubricant; Unit and/or lube TIME missing;

	WEAR METALS PPM										CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM							ADDITIVE METALS PPM				
S A M P L E #	I R O N	C H R O M I U M	N I C K E L	A L U M I N U M	C O P P E R	L E A D	T I N	C A D M I U M	S I L V E R	V A N A D I U M	S I L I C O N	S O D I U M	P O T A S S I U M	T I T A N I U M	M O L Y B D E N U M	A N T I M O N Y	M A N G A N E S E	L I T H I U M	B O R O N	M A G N E S I U M	C A L C I U M	B A R I U M	P H O S P H O R O U S	Z I N C	
1	8	0	2	0	0	0	0	0	0	0	3	4	1	0	1	0	0	0	0	0	12	3561	0	1177	1366

SAMP #	DATE SAMPLED	DATE RECEIVED	UNIT TIME	LUBE TIME	LUBE CHG	FILTER CHG	FUEL est	SOOT Vol.	WATER Infrared	VIS 40C CS	VIS 100C CS	TAN Total Acid	TBN Total Base	I-R OXIDA	I-R NITRA	ISO CODE	4 MICRON	6 MICRON	10 MICRON	14 MICRON	21 MICRON	38 MICRON	70 MICRON	100 MICRON
1	10/10/07	05/28/09			U	U	<1%	<.1%	<.1		14.2	3.43	12.90	14	16									

SAMP #	PQ															
1	14															

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.