



APPLICATION FOR REGISTRATION AS A REGISTERED SERVICE COMPANY

Public Service Commission
SFN 51277 (2/2014)



TYPE OR PRINT - AN INCOMPLETE OR ILLEGIBLE APPLICATION WILL BE REJECTED

Name of Company Westmor Fluid Solutions, LLC.	Email Address ryan.hartin@westmor-ind.com	Application Date 2/29/2016	
Mailing Address 14044 W Freeway Drive	City Columbus	State MN	Zip Code 55038-9705
Telephone Number 763-571-8110	Cell Phone Number 651-842-2551	Fax Number 763-571-1789	

Select below all device types your company will certify:

Scales (include maximum capacity, if applicable)	Liquid (include maximum flow rate, if applicable)
<input type="checkbox"/> 1. Rail <input type="checkbox"/> 2. Truck <input type="checkbox"/> 3. Livestock <input type="checkbox"/> 4. Hopper: Max. Capacity: _____ <input type="checkbox"/> 5. Belt <input type="checkbox"/> 6. Over 30 lbs.: Max. Capacity: _____ <input type="checkbox"/> 7. 30 lbs. or less <input type="checkbox"/> 8. Class II (indicate on your calibration report which weight kit is Class II certified) <input type="checkbox"/> 9. Other: Please List:	<input checked="" type="checkbox"/> 1. Retail Fuel (less than 20 gal. per minute) <input checked="" type="checkbox"/> 2. High Flow Retail Fuel (20 gal. per minute or greater) <input checked="" type="checkbox"/> 3. Vehicle Tank: Max. Flow Rate: _____ <input checked="" type="checkbox"/> 4. Stationary Bulk (fuel or oil): Max. Flow Rate: _____ <input checked="" type="checkbox"/> 5. LPG <input checked="" type="checkbox"/> 6. Stationary LPG <input checked="" type="checkbox"/> 7. Fertilizer: Max. Flow Rate: _____ <input type="checkbox"/> 8. Chemical <input type="checkbox"/> 9. Anhydrous <input checked="" type="checkbox"/> 10. Loading Rack <input type="checkbox"/> 11. Other: Please List:

List below all persons employed by your company as a North Dakota Registered Service Person and the device types they are registered to certify (attach a separate sheet to list additional employees):

Permit No.	Employee	Device Types Registered to Certify (list using device type numbers from above)
<i>e.g. 1001</i>	<i>e.g. John Doe</i>	<i>e.g. Scales - 2, 3, 6, 8; e.g. Liquid - 1, 2, 6</i>
1511	Scott Fish	1,2,3,4,7,10
1550	Terry Freeman	1,2,3,4,7,10
1517	Brent Gilbertson	1,2,3,4,5,6,7,10
1485	Steve Pishler	1,2,3,4,5,6,7,10
1663	Clifford Swanson	1,2,3,4,7,10

Continued on Page 2

2 WM-16-114 Filed: 3/3/2016 Pages: 39
Application for permit
 Westmor Fluid Solutions, LLC

Application for Registration as a Registered Service Company
Page 2

List below all field standards (attach current calibration reports):

Prover Certs are attached.	

Additional Application Items (initial where appropriate):

Standardized Test Report	<input type="checkbox"/> Copy enclosed
	<input checked="" type="checkbox"/> No change in report filed previously
Tested and Approved Sticker	<input type="checkbox"/> Copy enclosed
	<input checked="" type="checkbox"/> No change in sticker filed previously
Photocopy of Crimped Lead Wire Seal	<input type="checkbox"/> Copy enclosed
	<input checked="" type="checkbox"/> No change in crimped lead wire seal filed previously

Public Company Listing:

Include my company information on your registered service company list for public contact.
 Yes No

I am _____, and have authority to represent this company.
By signing this application, I declare that I have examined this form and accompanying documentation, and to the best of my knowledge and belief, the facts stated and documentation provided is true, correct, and complete.

Signature

Send Completed Application and Related Documents To:

Public Service Commission
600 E Boulevard Ave Dept 408
Bismarck ND 58505-0480
Telephone: (701) 328-2400
Fax: (701) 328-2410

Bauske, Shelly A.

From: Ryan Hartin <ryan.hartin@westmor-ind.com>
Sent: Friday, March 04, 2016 1:47 PM
To: Bauske, Shelly A.
Subject: Re: Application for Registration as a Registered Service Company Question
Attachments: 100 Gal Ser# 051271555-0103 (TLR-122).pdf

Hi Shelly,

The 100 gallon prover (S/N 888231104) MN Barcode 019269 is due to be certified (metrology dated 1/7/2015) -I have to find out why it wasn't done, I'll send you the new cert as soon as it gets done.

The 100 gallon prover (S/N 10903211-8) MN Barcode 017845 is due to be certified (metrology dated 5/6/2014) -This prover is used on our test stand for reference, we don't use it to certify equipment. Sorry I shouldn't have had it in with the other certs.

Do you still have the 100 gallon prover (S/N 051271555-0103) – last certified 11/21/2014? -This one was done and I attached the new cert.

Thanks for letting me know about these.

*Thank you,
Ryan Hartin
Westmor Fluid Solutions, LLC
14044 W Freeway Drive
Columbus, MN 55038-9705
Direct 651-842-2551
Main 763-571-8110*

On Fri, Mar 4, 2016 at 1:39 PM, Bauske, Shelly A. <sbauske@nd.gov> wrote:

Thank you Ryan.

A couple more things regarding metrology:

The 100 gallon prover (S/N 888231104) MN Barcode 019269 is due to be certified (metrology dated 1/7/2015)

The 100 gallon prover (S/N 10903211-8) MN Barcode 017845 is due to be certified (metrology dated 5/6/2014)

Do you still have the 100 gallon prover (S/N 051271555-0103) – last certified 11/21/2014?

Thank you.

From: Ryan Hartin [mailto:ryan.hartin@westmor-ind.com]
Sent: Friday, March 04, 2016 12:59 PM

To: Bauske, Shelly A.
Subject: Re: Application for Registration as a Registered Service Company Question

Hi Shelly,

Attached is the new forms that are signed, I'll put the original in the mail today.

Also I attached prover certificates for two of our new provers.

Thank you,

Ryan Hartin

Westmor Fluid Solutions, LLC

14044 W Freeway Drive

Columbus, MN 55038-9705

Direct [651-842-2551](tel:651-842-2551)

Main [763-571-8110](tel:763-571-8110)

On Fri, Mar 4, 2016 at 11:34 AM, Bauske, Shelly A. <sbauske@nd.gov> wrote:

Receipt Date: November 18, 2015
 Test Date: November 23, 2015
 Report Date: November 23, 2015

State Test No.: 335099
 Serial No.: 7312 B
 Barcode: 200758

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
 14044 W. FREEWAY DRIVE
 COLUMBUS, MN 55038
 Contact: Ryan Hartin
 Phone: 763-502-9613
 PO Number: None
 SOP: 32
 Technician ID: 19

Item(s) Submitted: 5 Gallon Measure
 Manufacturer: Seraphin
 Material: Mild Steel
 Equipment Number: None
 Condition: Good
 Temperature: 18.5 °C
 Pressure: 737.4 mmHg
 Relative Humidity: 35.0 %
 Standard H₂O Temp.: 16.9 °C
 Artifact H₂O Temp.: 16.9 °C

Nominal Volume (gal)		Error (in ³)	Volume at Zero Line (gal)	Uncertainty (in ³)	Coefficient of Expansion (°F)
5	As Found	0.01	5.0000	0.62	0.0000186
	As Left	0.01	5.0000	0.62	

Neck Calibration: No neck calibration was done at this time.

This measure or prover has been calibrated as a "to contain after wet down" vessel with a pour time of 30 seconds, a drain time of 10 seconds after cessation of full flow and at a reference temperature of 60 °F.

The measure or prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008). The confidence interval is 95%.

Erik Alfvín



Metrologist

Reviewed by:
 Mark Nicollet


 Quality Manager

Receipt Date: November 18, 2015
 Test Date: November 23, 2015
 Report Date: November 23, 2015

State Test No.: 335100
 Serial No.: 46801
 Barcode: 200668

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
 14044 W. FREEWAY DRIVE
 COLUMBUS, MN 55038
 Contact: Ryan Hartin
 Phone: 763-502-9613
 PO Number: None
 SOP: 32
 Technician ID: 19

Item(s) Submitted: 5 Gallon Measure
 Manufacturer: Seraphin
 Material: Mild Steel
 Equipment Number: None
 Condition: Good
 Temperature: 18.5 °C
 Pressure: 737.4 mmHg
 Relative Humidity: 35.0 %
 Standard H₂O Temp.: 16.8 °C
 Artifact H₂O Temp.: 16.8 °C

Nominal Volume (gal)		Error (in ³)	Volume at Zero Line (gal)	Uncertainty (in ³)	Coefficient of Expansion (°F)
5	As Found	0.06	5.0002	0.62	0.0000186
	As Left	0.06	5.0002	0.62	

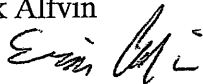
Neck Calibration: No neck calibration was done at this time.

This measure or prover has been calibrated as a "to contain after wet down" vessel with a pour time of 30 seconds, a drain time of 10 seconds after cessation of full flow and at a reference temperature of 60 °F.

The measure or prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

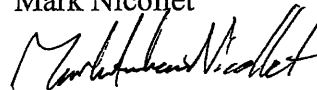
The reported uncertainty conforms to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008). The confidence interval is 95%.

Erik Alfvin



Metrologist

Reviewed by:
 Mark Nicollet



Quality Manager

Receipt Date: November 18, 2015
 Test Date: November 23, 2015
 Report Date: November 23, 2015

State Test No.: 335098
 Serial No.: 07-05341
 Barcode: 200667

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
 14044 W. FREEWAY DRIVE
 COLUMBUS, MN 55038
 Contact: Ryan Hartin
 Phone: 763-502-9613
 PO Number: None
 SOP: 32
 Technician ID: 19

Item(s) Submitted: 5 Gallon Measure
 Manufacturer: Seraphin
 Material: Stainless Steel
 Equipment Number: None
 Condition: Excellent
 Temperature: 18.5 °C
 Pressure: 737.4 mmHg
 Relative Humidity: 35.0 %
 Standard H₂O Temp.: 16.3 °C
 Artifact H₂O Temp.: 16.3 °C

Nominal Volume (gal)		Error (in ³)	Volume at Zero Line (gal)	Uncertainty (in ³)	Coefficient of Expansion (°F)
5	As Found	0.15	5.0007	0.62	0.0000265
	As Left	0.15	5.0007	0.62	

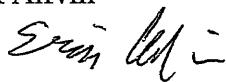
Neck Calibration: No neck calibration was done at this time.

This measure or prover has been calibrated as a "to contain after wet down" vessel with a pour time of 30 seconds, a drain time of 10 seconds after cessation of full flow and at a reference temperature of 60 °F.

The measure or prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

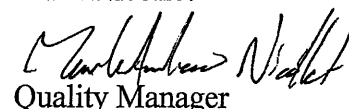
The reported uncertainty conforms to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008). The confidence interval is 95%.

Erik Alfvén



Metrologist

Reviewed by:
 Mark Nicollet



Quality Manager

Receipt Date: August 27, 2015
Test Date: August 31, 2015
Report Date: August 31, 2015

State Test No.: 334723
Serial No.: 1214688351-2
Barcode: 202839

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 763-502-9613
PO Number: NONE
SOP: 33
Technician ID: 11

Item(s) Submitted: 100 Gallon Prover
Manufacturer: Westmor Fluid Solutions
Material: Stainless Steel (304)
Description: Dry Bottom
Condition: New
Temperature: 23.7 °C
Pressure: 735.7 mmHg
Relative Humidity: 52. %
Standard H₂O Temp.: 18.0 °C
Artifact H₂O Temp.: 18.0 °C

Nominal Volume (gal)		Tested Volume (gal)	Error (in ³)	Uncertainty (in ³)	Coefficient of Expansion(/°F)
100	As Found	99.985	-3.4	3.0	0.0000288
	As Left	99.985	-3.4	3.0	

Neck Calibration: Chart meets NIST Handbook 105-3 specifications.

This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to NIST Technical Note 1297. The confidence interval is 95 %.

Results apply to item identified in this report only.

Pete Whebbe



Metrologist

Reviewed by:

Mark Nicollet



Quality Manager



Receipt Date: November 16, 2015
Test Date: November 18, 2015
Report Date: November 18, 2015

State Test No.: 335087
Serial No.: 051271555-0103
Barcode: 202102

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 763-502-9613
PO Number: None
SOP: 33
Technician ID: 19

Item(s) Submitted: 100 Gallon Prover
Manufacturer: Determan Brownie Inc
Material: Stainless Steel (304)
Description: Dry Bottom
Condition: Excellent
Temperature: 20.1 °C
Pressure: 715.6 mmHg
Relative Humidity: 56.3 %
Standard H₂O Temp.: 15.1 °C
Artifact H₂O Temp.: 15.1 °C

Nominal Volume (gal)		Tested Volume (gal)	Error (in ³)	Uncertainty (in ³)	Coefficient of Expansion(°F)
100	As Found	100.003	0.8	3.0	0.0000288
	As Left	100.003	0.8	3.0	

Neck Calibration: No neck calibration was done at this time.

This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008). The confidence interval is 95%.

Erik Alfvin

Metrologist

Reviewed by:

Mark Nicollet

Quality Manager

Receipt Date: May 11, 2015
Test Date: May 13, 2015
Report Date: May 13, 2015

State Test No.: 334242
Serial No.: 060810915-0201
Barcode: 200748

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 763-502-9613
PO Number: NONE
SOP: 33
Technician ID: 07

Item(s) Submitted: 100 Gallon Prover
Manufacturer: Determan Brownie, Inc.
Material: Stainless Steel (304)
Description: Dry Bottom
Condition: Good
Temperature: 21.8°C
Pressure: 743.4 mmHg
Relative Humidity: 43. %
Standard H₂O Temp.: 11.8 °C
Artifact H₂O Temp.: 12.0 °C

Nominal Volume (gal)		Tested Volume (gal)	Error (in ³)	Uncertainty (in ³)	Coefficient of Expansion(°F)
100	As Found	99.997	-0.7	3.0	0.0000288
	As Left	99.997	-0.7	3.0	

Neck Calibration: No neck calibration was done at this time.

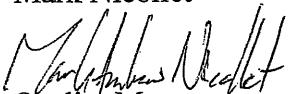
This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to NIST Technical Note 1297. The confidence interval is 95 %.

Results apply to item identified in this report only.

Mark Nicollet


Quality Manager

Reviewed by:

Pete Whebbe


Metrologist

Receipt Date: July 27, 2015
 Test Date: July 28, 2015
 Report Date: July 28, 2015

State Test No.: 334600
 Serial No.: 051320997-0102
 Barcode: 202342

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
 14044 W. FREEWAY DRIVE
 COLUMBUS, MN 55038
 Contact: Ryan Hartin
 Phone: 763-502-9613
 PO Number: NONE
 SOP: 33
 Technician ID: 07

Item(s) Submitted: 100 Gallon Prover
 Manufacturer: Determan Brownie Inc
 Material: Stainless Steel (304)
 Description: Dry Bottom
 Condition: Excellent
 Temperature: 24.6 °C
 Pressure: 732.6 mmHg
 Relative Humidity: 52. %
 Standard H₂O Temp.: 16.6 °C
 Artifact H₂O Temp.: 16.6 °C

Nominal Volume (gal)		Tested Volume (gal)	Error (in ³)	Uncertainty (in ³)	Coefficient of Expansion(°F)
100	As Found	99.984	-3.8	3.0	0.0000288
	As Left	99.984	-3.8	3.0	

Neck Calibration: No neck calibration was done at this time.

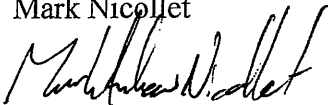
This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to NIST Technical Note 1297. The confidence interval is 95 %.

Results apply to item identified in this report only.

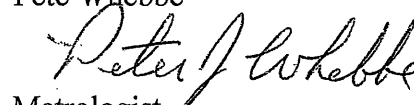
Mark Nicollet



Quality Manager

Reviewed by:

Pete Whebbe



Metrologist

Receipt Date: October 5, 2015
Test Date: October 6, 2015
Report Date: October 6, 2015

State Test No.: 334889
Serial No.: J31111168-0103
Barcode: 201898

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 763-502-9613
PO Number: None
SOP: 33
Technician ID: 11

Item(s) Submitted: 100 Gallon Prover
Manufacturer: Determan Brownie Inc.
Material: Stainless Steel (304)
Description: Dry Bottom
Condition: Good
Temperature: 21.2 °C
Pressure: 740.5 mmHg
Relative Humidity: 47. %
Standard H₂O Temp.: 19.0 °C
Artifact H₂O Temp.: 18.8 °C

Nominal Volume (gal)		Tested Volume (gal)	Error (in ³)	Uncertainty (in ³)	Coefficient of Expansion(°F)
100	As Found	99.981	-4.3	3.0	0.0000288
	As Left	99.981	-4.3	3.0	

Neck Calibration: No neck calibration was done at this time.

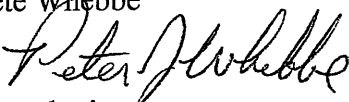
This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to NIST Technical Note 1297. The confidence interval is 95 %.

Results apply to item identified in this report only.

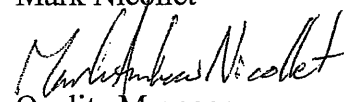
Pete Whebbe



Metrologist

Reviewed by:

Mark Nicollet



Quality Manager

Receipt Date: November 18, 2015
Test Date: November 20, 2015
Report Date: November 20, 2015

State Test No.: 335101
Serial No.: 3978131-4
Barcode: 018636

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 763-502-9613
PO Number: None
SOP: 33
Technician ID: 19

Item(s) Submitted: 100 Gallon Prover
Manufacturer: Brownie
Material: Stainless Steel
Description: Dry Bottom
Condition: Good
Temperature: 17.5 °C
Pressure: 742.5 mmHg
Relative Humidity: 37.7 %
Standard H₂O Temp.: 14.6 °C
Artifact H₂O Temp.: 14.7 °C

Nominal Volume (gal)		Tested Volume (gal)	Error (in ³)	Uncertainty (in ³)	Coefficient of Expansion(/°F)
100	As Found	99.991	-2.2	3.0	0.0000265
	As Left	99.991	-2.2	3.0	

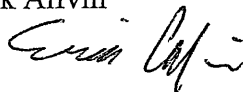
Neck Calibration: No neck calibration was done at this time.

This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008). The confidence interval is 95%.

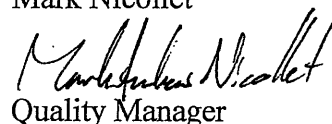
Erik Alfvín



Metrologist

Reviewed by:

Mark Nicollet


Quality Manager

Receipt Date: January 5, 2015
Test Date: January 7, 2015
Report Date: January 7, 2015

State Test No.: 333605
Serial No.: 888231104
Barcode: 019269

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 763-502-9613
PO Number: NONE
SOP: 33
Technician ID: 07

Item(s) Submitted: 100 Gallon Prover
Manufacturer: Brownie
Material: Stainless Steel
Description: Dry Bottom
Condition: Good
Temperature: 19.9°C
Pressure: 757.1 mmHg
Relative Humidity: 23. %

Nominal Volume		Volume (gallons)	Error (in ³)	Uncertainty (in ³)	Coefficient of Expansion(°F)
100 gal	As Found	99.957	-9.9	3.0	0.0000265
	As Left	100.003	0.7	3.0	

Neck Calibration: No neck calibration was done at this time.

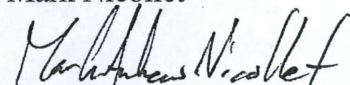
This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to NIST Technical Note 1297. The confidence interval is 95 %.

Results apply to item identified in this report only.

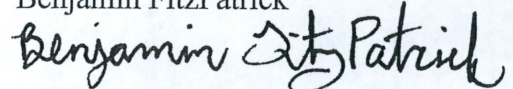
Mark Nicollet



Quality Manager

Reviewed by:

Benjamin FitzPatrick



Deputy Director

Receipt Date: July 23, 2015
 Test Date: July 23, 2015
 Report Date: July 23, 2015

State Test No.: 334583
 Serial No.: 3610-02
 Barcode: 200685

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
 14044 W. FREEWAY DRIVE
 COLUMBUS, MN 55038
 Contact: Ryan Hartin
 Phone: 763-502-9613
 PO Number: NONE
 SOP: 33
 Technician ID: 18

Item(s) Submitted: 100 Gallon Prover
 Manufacturer: Brownie
 Material: Mild Steel
 Description: Dry Bottom
 Condition: Good
 Temperature: 26.1 °C
 Pressure: 737.1 mmHg
 Relative Humidity: 44. %
 Standard H₂O Temp.: 17.9 °C
 Artifact H₂O Temp.: 18.0 °C

Nominal Volume (gal)		Tested			Coefficient of Expansion(°F)
		Volume (gal)	Error (in ³)	Uncertainty (in ³)	
100	As Found	100.026	6.0	3.0	0.0000186
	As Left	100.000	0.0	3.0	

Neck Calibration: No neck calibration was done at this time.

This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to NIST Technical Note 1297. The confidence interval is 95 %.

Results apply to item identified in this report only.

Benjamin FitzPatrick

Benjamin FitzPatrick
 Deputy Director

Reviewed by:

Pete Whebbe

Pete Whebbe
 Metrologist

Receipt Date: May 26, 2015
Test Date: May 28, 2015
Report Date: May 28, 2015

State Test No.: 334300
Serial No.: 0314542120
Barcode: 202504

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 763-502-9613
PO Number: NONE
SOP: 33
Technician ID: 07

Item(s) Submitted: 100 Gallon Prover
Manufacturer: Westmor Fluid Solutions
Material: Stainless Steel (304)
Description: Dry Bottom
Condition: Excellent
Temperature: 23.6°C
Pressure: 738.6 mmHg
Relative Humidity: 55. %
Standard H₂O Temp.: 15.1 °C
Artifact H₂O Temp.: 15.3 °C

Nominal Volume (gal)	Tested			Coefficient of Expansion(°F)
	Volume (gal)	Error (in ³)	Uncertainty (in ³)	
100	As Found	99.983	-3.9	3.0
	As Left	99.998	-0.4	3.0

Neck Calibration: No neck calibration was done at this time.

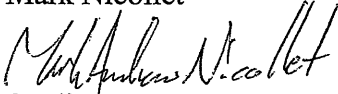
This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to NIST Technical Note 1297. The confidence interval is 95 %.

Results apply to item identified in this report only.

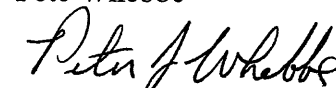
Mark Nicollet



Quality Manager

Reviewed by:

Pete Whebbe



Metrologist

Receipt Date: November 16, 2015 State Test No.: 335087
Test Date: November 18, 2015 Serial No.: 051271555-0103
Report Date: November 18, 2015 Barcode: 202102

Calibration Report

WESTMOR FLUID SOLUTIONS LLC Item(s) Submitted: 100 Gallon Prover
14044 W. FREEWAY DRIVE Manufacturer: Determan Brownie Inc
COLUMBUS, MN 55038 Material: Stainless Steel (304)
Contact: Ryan Hartin Description: Dry Bottom
Phone: 763-502-9613 Condition: Excellent
PO Number: None Temperature: 20.1 °C
SOP: 33 Pressure: 715.6 mmHg
Technician ID: 19 Relative Humidity: 56.3 %
Standard H₂O Temp.: 15.1 °C
Artifact H₂O Temp.: 15.1 °C

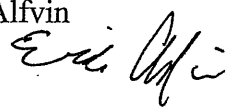
Nominal Volume (gal)		Tested Volume (gal)	Error (in ³)	Uncertainty (in ³)	Coefficient of Expansion(°F)
100	As Found	100.003	0.8	3.0	0.0000288
	As Left	100.003	0.8	3.0	


Neck Calibration: No neck calibration was done at this time.

This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008). The confidence interval is 95%.

Erik Alfvin

Metrologist

Reviewed by:
Mark Nicollet

Quality Manager

Receipt Date: April 28, 2015
 Test Date: May 1, 2015
 Report Date: May 1, 2015

State Test No.: 334191
 Serial No.: 1214688350-2
 Barcode: 202754

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
 14044 W. FREEWAY DRIVE
 COLUMBUS, MN 55038
 Contact: Ryan Hartin
 Phone: 763-502-9613
 PO Number: NONE
 SOP: 33
 Technician ID: 07

Item(s) Submitted: 100 Gallon Prover
 Manufacturer: Westmor
 Material: Stainless Steel (304)
 Description: Dry Bottom
 Condition: New
 Temperature: 21.7°C
 Pressure: 735.9 mmHg
 Relative Humidity: 51. %
 Standard H₂O Temp.: 10.7 °C
 Artifact H₂O Temp.: 10.6 °C

Nominal Volume (gal)	Tested			Coefficient of Expansion(°F)	
		Volume (gal)	Error (in ³)		Uncertainty (in ³)
100	As Found	100.152	35.1	3.0	0.0000288
	As Left	100.002	0.5	3.0	

Neck Calibration: Chart meets NIST Handbook 105-3 specifications.

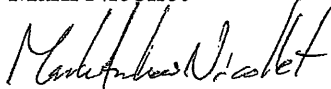
This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to NIST Technical Note 1297. The confidence interval is 95 %.


Results apply to item identified in this report only.

Mark Nicollet


 Quality Manager

Reviewed by:

Pete Whebbe


 Metrologist



Receipt Date: February 18, 2016
Test Date: February 19, 2016
Report Date: February 19, 2016

State Test No.: 335561
Serial No.: 0615785533-2
Barcode: 202963

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 651-842-2551
PO Number: None
SOP: 33
Technician ID: 11

Item(s) Submitted: 100 Gallon Prover
Manufacturer: Westmor Fluid Solutions
Material: Stainless Steel (304)
Description: Dry Bottom
Condition: New
Temperature: 19.1 °C
Pressure: 718.4 mmHg
Relative Humidity: 41.4 %
Standard H₂O Temp.: 7.6 °C
Artifact H₂O Temp.: 7.7 °C

Nominal Volume (gal)		Tested Volume (gal)	Error (in ³)	Uncertainty (in ³)	Coefficient of Expansion(°F)
100	As Found	100.063	14.5	2.4	0.0000288
	As Left	100.002	0.4	2.4	

Neck Calibration: Neck calibration performed, meets NIST Handbook 105-3 specifications.

This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008). The confidence interval is 95 %.

Pete Whebbe
Pete Whebbe
Metrologist

Reviewed by:
Mark Nicollet
Mark Nicollet
Quality Manager



Receipt Date: May 19, 2014
Test Date: May 21, 2014
Report Date: May 21, 2014

State Test No.: 332553
Serial No.: 100110260-0101
Bar Code: 200071

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
7220 CENTRAL AVE NE
MINNEAPOLIS, MN 55432
Contact: Ryan Hartin
Phone: 763-502-9613
PO Number: None
SOP: 33
Technician ID: 08

Item(s) Submitted: 500 Gallon Prover
Manufacturer: Determan Brownie Inc.
Material: ss
Description: Dry Bottom
Condition: Good
Temperature: 21.2°C
Pressure: 737.4 mmHg
Relative Humidity: 53. %

Nominal Volume		Volume (gallons)	Error (in ³)	Uncertainty (in ³)	Coefficient of Expansion(/°F)
500 gal	As Found	500.045	10	14	0.0000265
	As Left	500.002	0	14	

Neck Calibration: No neck calibration was done at this time.

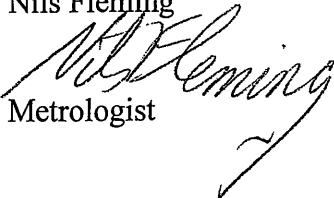
This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of flow and at a reference temperature of 60°F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to NIST Technical Note 1297. The confidence interval is 95%.

Results apply to item identified in this report only.

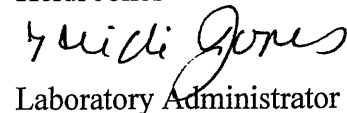
Nils Fleming



Metrologist

Reviewed by:

Heidi Jones



Laboratory Administrator

Receipt Date: November 16, 2015
 Test Date: November 17, 2015
 Report Date: November 17, 2015

State Test No.: 335088
 Serial No.: 031271251-0101
 Barcode: 202101

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
 14044 W. FREEWAY DRIVE
 COLUMBUS, MN 55038
 Contact: Ryan Hartin
 Phone: 763-502-9613
 PO Number: None
 SOP: 33
 Technician ID: 19

Item(s) Submitted: 500 Gallon Prover
 Manufacturer: Determan Brownie Inc
 Material: Stainless Steel (304)
 Description: Dry Bottom
 Condition: Excellent
 Temperature: 18.6 °C
 Pressure: 726.2 mmHg
 Relative Humidity: 56.4 %
 Standard H₂O Temp.: 14.0 °C
 Artifact H₂O Temp.: 13.8 °C

Nominal Volume (gal)		Tested Volume (gal)	Error (in ³)	Uncertainty (in ³)	Coefficient of Expansion(°F)
500	As Found	499.961	-9	14	0.0000288
	As Left	499.961	-9	14	

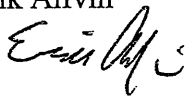
Neck Calibration: No neck calibration was done at this time.

This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008). The confidence interval is 95%.

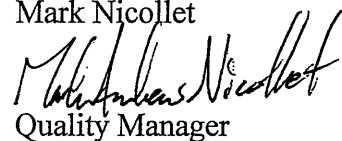
Erik Alfvín



Metrologist

Reviewed by:

Mark Nicollet



Quality Manager

Receipt Date: November 18, 2015
 Test Date: November 19, 2015
 Report Date: November 20, 2015

State Test No.: 335102
 Serial No.: 5956670-01
 Barcode: 019278

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
 14044 W. FREEWAY DRIVE
 COLUMBUS, MN 55038
 Contact: Ryan Hartin
 Phone: 763-502-9613
 PO Number: None
 SOP: 33
 Technician ID: 19

Item(s) Submitted: 500 Gallon Prover
 Manufacturer: Brownie
 Material: Mild Steel
 Description: Dry Bottom
 Condition: Good
 Temperature: 18.6 °C
 Pressure: 731.9 mmHg
 Relative Humidity: 39.6 %
 Standard H₂O Temp.: 13.4 °C
 Artifact H₂O Temp.: 13.3 °C

Nominal Volume (gal)		Tested Volume (gal)	Error (in ³)	Uncertainty (in ³)	Coefficient of Expansion(°F)
500	As Found	500.155	35.7	14	0.0000186
	As Left	500.010	2.3	14	

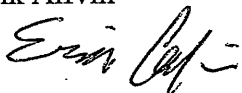
Neck Calibration: No neck calibration was done at this time.

This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008). The confidence interval is 95%.

Erik Alfvin



Metrologist

Reviewed by:

Mark Nicollet



Quality Manager

Receipt Date: October 5, 2015
 Test Date: October 6, 2015
 Report Date: October 6, 2015

State Test No.: 334890
 Serial No.: 090610694-0101
 Barcode: 201203

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
 14044 W. FREEWAY DRIVE
 COLUMBUS, MN 55038
 Contact: Ryan Hartin
 Phone: 763-502-9613
 PO Number: NONE
 SOP: 33
 Technician ID: 11

Item(s) Submitted: 1000 Gallon Prover
 Manufacturer: Determan Brownie
 Material: Stainless Steel
 Description: Dry Bottom
 Condition: Good
 Temperature: 20.8 °C
 Pressure: 740.7 mmHg
 Relative Humidity: 48. %
 Standard H₂O Temp.: 16.5 °C
 Artifact H₂O Temp.: 15.8 °C

Nominal Volume (gal)		Tested Volume (gal)	Error (in ³)	Uncertainty (in ³)	Coefficient of Expansion(1/°F)
1000	As Found	1000.016	3.7	28.0	0.0000265
	As Left	1000.016	3.7	28.0	

Neck Calibration: New chart meets NIST Handbook 105-3 specifications.

This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to NIST Technical Note 1297. The confidence interval is 95 %.

Results apply to item identified in this report only.

Pete Whebbe

Pete J. Whebbe
 Metrologist

Reviewed by:

Mark Nicollet

Mark Nicollet
 Quality Manager

Receipt Date: May 11, 2015
Test Date: May 13, 2015
Report Date: May 13, 2015

State Test No.: 334241
Serial No.: 060810915-0101
Barcode: 200749

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 763-502-9613
PO Number: NONE
SOP: 33
Technician ID: 07

Item(s) Submitted: 1000 Gallon Prover
Manufacturer: Determan Brownie Inc
Material: Stainless Steel (304)
Description: Dry Bottom
Condition: Good/New Chart
Temperature: 21.1°C
Pressure: 744.2 mmHg
Relative Humidity: 42. %
Standard H₂O Temp.: 12.9 °C
Artifact H₂O Temp.: 11.3 °C

Nominal Volume (gal)		Tested Volume (gal)	Error (in ³)	Uncertainty (in ³)	Coefficient of Expansion(°F)
1000	As Found	1000.018	4	30	0.0000288
	As Left	1000.018	4	30	

Neck Calibration: Chart meets NIST Handbook 105-3 specifications for accuracy.

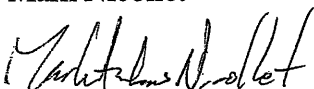
This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to NIST Technical Note 1297. The confidence interval is 95 %.

Results apply to item identified in this report only.

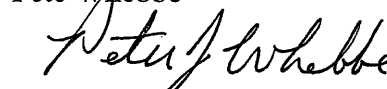
Mark Nicollet



Quality Manager

Reviewed by:

Pete Whebbe



Metrologist

Receipt Date: July 27, 2015
Test Date: July 28, 2015
Report Date: July 28, 2015

State Test No.: 334601
Serial No.: 11978368-1
Barcode: 202358

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 763-502-9613
PO Number: NONE
SOP: 33
Technician ID: 07

Item(s) Submitted: 1000 Gallon Prover
Manufacturer: Determan Brownie Inc
Material: Stainless Steel (304)
Description: Dry Bottom
Condition: Excellent
Temperature: 24.8 °C
Pressure: 732.8 mmHg
Relative Humidity: 56. %
Standard H₂O Temp.: 15.5 °C
Artifact H₂O Temp.: 15.9 °C

Nominal Volume (gal)		Tested Volume (gal)	Error (in ³)	Uncertainty (in ³)	Coefficient of Expansion(°F)
1000	As Found	999.981	-4	28	0.0000288
	As Left	999.981	-4	28	

Neck Calibration: No neck calibration was done at this time.

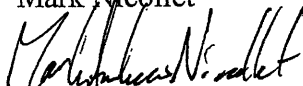
This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to NIST Technical Note 1297. The confidence interval is 95 %.

Results apply to item identified in this report only.


Mark Nicollet



Quality Manager

Reviewed by:

Pete Whebbe



Metrologist

Receipt Date: May 26, 2015
Test Date: May 27, 2015
Report Date: May 27, 2015

State Test No.: 334301
Serial No.: 0114527708
Barcode: 202505

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 763-502-9613
PO Number: NONE
SOP: 33
Technician ID: 07

Item(s) Submitted: 1000 Gallon Prover
Manufacturer: Westmor Fluid Solutions
Material: Stainless Steel (304)
Description: Dry Bottom
Condition: Excellent
Temperature: 23.°C
Pressure: 735.9 mmHg
Relative Humidity: 56. %
Standard H₂O Temp.: 12.3 °C
Artifact H₂O Temp.: 12.5 °C

Nominal Volume (gal)		Tested Volume (gal)	Error (in ³)	Uncertainty (in ³)	Coefficient of Expansion(/°F)
1000	As Found	999.845	-36	30	0.0000288
	As Left	1000.003	1	30	

Neck Calibration: No neck calibration was done at this time.


This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to NIST Technical Note 1297. The confidence interval is 95 %.

Results apply to item identified in this report only.

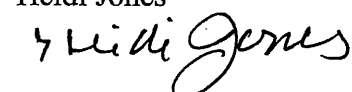
Mark Nicollet



Quality Manager

Reviewed by:

Heidi Jones



Laboratory Administrator

Receipt Date: April 28, 2015
 Test Date: May 1, 2015
 Report Date: May 1, 2015

State Test No.: 334190
 Serial No.: 1214688350-1
 Barcode: 202753

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
 14044 W. FREEWAY DRIVE
 COLUMBUS, MN 55038
 Contact: Ryan Hartin
 Phone: 763-502-9613
 PO Number: NONE
 SOP: 33
 Technician ID: 07

Item(s) Submitted: 1000 Gallon Prover
 Manufacturer: Westmor
 Material: Stainless Steel (304)
 Description: Dry Bottom
 Condition: New
 Temperature: 21.7°C
 Pressure: 736.2 mmHg
 Relative Humidity: 50. %
 Standard H₂O Temp.: 10.2 °C
 Artifact H₂O Temp.: 10.3 °C

Nominal Volume (gal)		Tested		Uncertainty (in ³)	Coefficient of Expansion(/°F)
		Volume (gal)	Error (in ³)		
1000	As Found	1000.533	123	30	0.0000288
	As Left	1000.000	0	30	

Neck Calibration: Chart meets NIST Handbook 105-3 specifications.

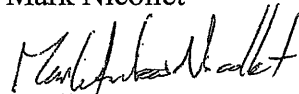
This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to NIST Technical Note 1297. The confidence interval is 95 %.

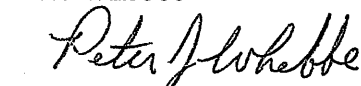
Results apply to item identified in this report only.

Mark Nicollet


 Quality Manager

Reviewed by:

Pete Whebbe


 Metrologist

Receipt Date: August 27, 2015
Test Date: September 2, 2015
Report Date: September 2, 2015

State Test No.: 334722
Serial No.: 1214688351-1
Barcode: 202838

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 763-502-9613
PO Number: NONE
SOP: 33
Technician ID: 07

Item(s) Submitted: 1000 Gallon Prover
Manufacturer: Westmore Fluid Solutions
Material: Stainless Steel (304)
Description: Dry Bottom
Condition: New
Temperature: 25.2 °C
Pressure: 734.9 mmHg
Relative Humidity: 51. %
Standard H₂O Temp.: 16.9 °C
Artifact H₂O Temp.: 17.1 °C

Nominal Volume (gal)		Tested Volume (gal)	Error (in ³)	Uncertainty (in ³)	Coefficient of Expansion(°F)
1000	As Found	1000.053	12	30	0.0000288
	As Left	1000.053	12	30	

Neck Calibration: Chart meets NIST Handbook 105-3 specifications.

This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to NIST Technical Note 1297. The confidence interval is 95 %.

Results apply to item identified in this report only.

Mark Nicollet



Quality Manager

Reviewed by:

Pete Whebbe



Metrologist



Receipt Date: February 18, 2016
 Test Date: February 18/19 2016
 Report Date: February 19, 2016

State Test No.: 335562
 Serial No.: 0615785533-1
 Barcode: 202964

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
 14044 W. FREEWAY DRIVE
 COLUMBUS, MN 55038
 Contact: Ryan Hartin
 Phone: 651-842-2551
 PO Number: None
 SOP: 33
 Technician ID: 19

Item(s) Submitted: 1000 Gallon Prover
 Manufacturer: Westmor Fluid Solutions
 Material: Stainless Steel (304)
 Description: Dry Bottom
 Condition: New
 Temperature: 18.2 °C
 Pressure: 730.5 mmHg
 Relative Humidity: 35.2 %
 Standard H₂O Temp.: 9.0 °C
 Artifact H₂O Temp.: 7.4 °C

Nominal Volume (gal)		Tested Volume (gal)	Error (in ³)	Uncertainty (in ³)	Coefficient of Expansion(°F)
1000	As Found	1000.090	21	24	0.0000288
	As Left	1000.090	21	24	

Neck Calibration: Neck calibration preformed, meets NIST Handbook 105-3 specifications.

This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008). The confidence interval is 95 %.

Erik Alfvín

 Metrologist

Reviewed by:
 Mark Nicolle

 Quality Manager

Receipt Date: May 28, 2015
Test Date: May 28 & 29, 2015
Report Date: May 29, 2015

State Test No.: 334312
Serial No.: 090610694-0201
Barcode: 200498

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 763-502-9613
PO Number: NONE
SOP: 33
Technician ID: 07

Item(s) Submitted: 1500 Gallon Prover
Manufacturer: Determan Brownie
Material: Stainless Steel (304)
Description: Dry Bottom
Condition: Good
Temperature: 24.°C
Pressure: 734.5 mmHg
Relative Humidity: 51. %
Standard H₂O Temp.: 12.5 °C
Artifact H₂O Temp.: 12.6 °C

Nominal Volume (gal)		Tested Volume (gal)	Error (in ³)	Uncertainty (in ³)	Coefficient of Expansion(°F)
1500	As Found	1500.013	3	45	0.0000288
	As Left	1500.013	3	45	

Neck Calibration: Neck scale plate meets NIST Handbook 105-3 specifications.

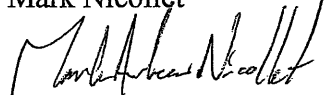
This prover has been calibrated as a "to contain after wet down" vessel with a drain time of 30 seconds after cessation of full flow and at a reference temperature of 60 °F.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to NIST Technical Note 1297. The confidence interval is 95 %.

Results apply to item identified in this report only.

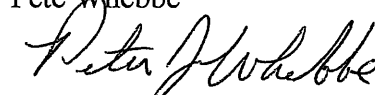
Mark Nicollet



Quality Manager

Reviewed by:

Pete Whebbe



Metrologist

Receipt Date: June 16, 2015
Test Date: June 18, 2015
Report Date: June 18, 2015

State Test No.: 334409
Serial No.: 24360
Barcode: 201188

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 763-502-9613
PO Number: NONE
SOP: 34
Technician ID: 11

Item(s) Submitted: 25 gallon LPG Prover
Manufacturer: Arrow
Material: Mild Steel
Description: Wet Bottom
Condition: Good
Temperature: 25.1°C
Pressure: 737.6 mmHg
Relative Humidity: 53. %
Standard H₂O Temp.: 16.8 °C
Artifact H₂O Temp.: 17.4 °C

Nominal Volume (gal)	Error As Found (in ³)	Error As Left (in ³)	Uncertainty (in ³)	Coefficient of Expansion(°F)
25	-5	-5	4	0.0000186

Neck Calibration: No neck calibration was done at this time.

This prover has been calibrated as a "to contain after wet down" vessel at a reference temperature of 60 °F and a reference pressure of 100 psig.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to NIST Technical Note 1297. The confidence interval is 95%.

Results apply to item identified in this report only.

Pete Whebbe



Metrologist

Reviewed by:

Mark Nicollet



Quality Manager

Receipt Date: June 16, 2015
Test Date: June 18, 2015
Report Date: June 18, 2015

State Test No.: 334409
Serial No.: 24360
Barcode: 201188

Pressure Correction Chart

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 763-502-9613
PO Number: NONE
SOP: 34
Technician ID: 11

Item(s) Submitted: 25 gallon LPG Prover
Manufacturer: Arrow
Material: Mild Steel
Description: Wet Bottom
Condition: Good
Temperature: 25.1°C
Pressure: 737.6 mmHg
Relative Humidity: 53. %

Pressure Gauge Reading (PSIG)	Volume Correction (gal)
0	-0.079
10	-0.071
20	-0.062
30	-0.054
40	-0.045
50	-0.037
60	-0.034
70	-0.031
80	-0.028
90	-0.025
100	-0.022
110	-0.019
120	-0.017
130	-0.014
140	-0.012
150	-0.009
160	-0.007
170	-0.004
180	-0.002
190	0.001
200	0.003

Pete Whebbe



Metrologist

Receipt Date: June 16, 2015
Test Date: June 17, 2015
Report Date: June 17, 2015

State Test No.: 334410
Serial No.: 28816
Barcode: 019785

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 763-502-9613
PO Number: NONE
SOP: 34
Technician ID: 11

Item(s) Submitted: 100 gallon LPG Prover
Manufacturer: ARROW
Material: Mild Steel
Description: Wet Bottom
Condition: Good
Temperature: 25.5°C
Pressure: 735.1 mmHg
Relative Humidity: 50. %
Standard H₂O Temp.: 15.1 °C
Artifact H₂O Temp.: 15.7 °C

Nominal Volume (gal)	Error As Found (in ³)	Error As Left (in ³)	Uncertainty (in ³)	Coefficient of Expansion(/°F)
100	-14	-14	10	0.0000186

Neck Calibration: No neck calibration was done at this time.

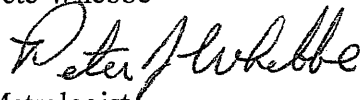
This prover has been calibrated as a "to contain after wet down" vessel at a reference temperature of 60 °F and a reference pressure of 100 psig.

The prover listed above has been compared by volumetric transfer methods to the standards of the State of Minnesota using water as the calibration medium. The standards are traceable to the SI through NIST. Statistical process control charts indicate standards are currently in control. All gauges were sealed in place.

The reported uncertainty conforms to NIST Technical Note 1297. The confidence interval is 95%.

Results apply to item identified in this report only.

Pete Whebbe


Metrologist

Reviewed by:

Mark Nicollet


Quality Manager

Receipt Date: June 16, 2015
Test Date: June 17, 2015
Report Date: June 17, 2015

State Test No.: 334410
Serial No.: 28816
Barcode: 019785


Pressure Correction Chart

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038
Contact: Ryan Hartin
Phone: 763-502-9613
PO Number: NONE
SOP: 34
Technician ID: 11

Item(s) Submitted: 100 gallon LPG Prover
Manufacturer: ARROW
Material: Mild Steel
Description: Wet Bottom
Condition: Good
Temperature: 25.5°C
Pressure: 735.1 mmHg
Relative Humidity: 50. %

Pressure Gauge Reading (PSIG)	Volume Correction (gal)
0	-0.228
10	-0.207
20	-0.186
30	-0.165
40	-0.144
50	-0.123
60	-0.111
70	-0.098
80	-0.086
90	-0.073
100	-0.061
110	-0.054
120	-0.047
130	-0.040
140	-0.033
150	-0.026
160	-0.020
170	-0.015
180	-0.009
190	-0.004
200	0.002

Pete Whebbe



Metrologist

Receipt Date: June 16, 2015
Test Date: June 16, 2015
Report Date: June 17, 2015

State Test No.: 334411
Set Serial No.: None
Barcode: 201189

Calibration Report

WESTMOR FLUID SOLUTIONS LLC
14044 W. FREEWAY DRIVE
COLUMBUS, MN 55038

Contact: Ryan Hartin
Phone: 763-502-9613
PO Number: NONE
SOP: 12
Technician ID: 11

Item(s) Submitted: Cast Hand Weights
Manufacturer: Rice Lake
ASTM E617 Type: II
Equipment ID#: None
Condition: Fair/Heavy Paint
Temperature: 20.°C
Pressure: 740.3 mmHg
Relative Humidity: 45. %

Nominal Value	Serial No.	Correction (mg)		NIST HB105-1 Class		Unc. (mg) (k=2)
		As Found	As Left	As Found	As Left	
25 lb		9980.	590.	*	F	75.
25 lb		10630.	-30.	*	F	75.
25 lb		10140.	-260.	*	F	75.
25 lb		9590.	800.	*	F	75.
25 lb		9240.	-50.	*	F	75.
25 lb		9370.	470.	*	F	75.
25 lb		10130.	-40.	*	F	75.
25 lb		8640.	130.	*	F	75.
25 lb		10640.	30.	*	F	75.
25 lb		10410.	690.	*	F	75.
25 lb		10510.	210.	*	F	75.
25 lb		8250.	410.	*	F	75.
25 lb		10390.	110.	*	F	75.
25 lb		7450.	50.	*	F	75.
25 lb		10550.	80.	*	F	75.
25 lb		10180.	130.	*	F	75.
25 lb		8510.	30.	*	F	75.
25 lb		9730.	500.	*	F	75.
25 lb		9320.	-60.	*	F	75.
25 lb		10390.	160.	*	F	75.

* Weight(s) as found exceed NIST HB 105-1 Class F tolerance.

Weights were heavily painted. A light coat of sprayed-on flat aluminum paint is recommended. See attached.

When used as a set these weights meet NIST HB 105-1 class F tolerances.

The resulting tolerance class of the weight is determined by combining the correction of the weight and the uncertainty of the measurement. The corrections given above correlate to a conventional mass scale versus 8.0 g/cm³ density and an air density of 1.2 mg/cm³. The items listed above have been compared to the Standards of the State of Minnesota which are currently in control. These standards are traceable to the SI through NIST. Calibration processes were monitored and found to be in control. Uncertainty calculations conform to NIST Technical Note 1297. Results apply to items identified in this report only.

Pete Whobbe

Peter J. Whobbe
Metrologist

Reviewed by:

Mark Nicollet

Mark Nicollet
Quality Manager

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Metrological Traceability For:

Minnesota

This laboratory has demonstrated evidence of an unbroken chain of metrological traceability of its standards to the international system of units (SI), documented measurement uncertainties, uses documented measurement procedures, successfully completed training and proficiency tests, documented calibration intervals, submitted a quality management system, and demonstrated suitable measurement assurance for the Scope listed on this certificate.

The Office of Weights and Measures Program assesses laboratories to NIST Handbook 143 - Program Handbook for State Weights and Measures Laboratories and ISO/IEC 17025:2005.

Scope

Mass Echelon II	Weight Carts	Volume Gravimetric, I
50 kg to 1 mg	10 000 lb to 2000 lb	20 L to 10 mL
1000 lb to 0.001 lb	Wheel Load Weighers	100 gal to 0.25 qt
4 oz to 0.03125 oz	20 000 lb to 2000 lb	Volume Transfer, II
Mass Echelon III	Railroad Test Cars	1500 gal to 5 gal
50 kg to 1 mg	110 000 lb to 80 000 lb	100 gal to 25 gal LPG
5000 lb to 0.001 lb		
4 oz to 0.03125 oz		



2016 to 2017

Carol T. Hoekert, Chief
NIST Office of Weights and Measures

Effective Dates: 2016-01-01 to 2017-12-31



**MICHIGAN DEPARTMENT OF AGRICULTURE
& RURAL DEVELOPMENT**

LABORATORY DIVISION

E.C. HEFFRON METROLOGY LABORATORY



NVLAP Lab Code 2000408-0

940 Venture Lane
Williamston, Michigan 48895
517/655-8202
517/655-8303 (Fax)

26

This report shall not be reproduced, except in full, without the written approval of the Laboratory Division.

Calibration Report

TEST NO: MI-09-15-12459

TEST DATE: 9/29/2015

Page 1 of 2

CALIBRATED FOR:

Westmor Fluid Solutions
14044 West Freeway Drive
Columbus, MN 55038

CALIBRATED BY:

Michigan Dept. of Agriculture
E.C. Heffron Metrology Laboratory
940 Venture Lane
Williamston, MI 48895

CONTACT: Scott Fish

PHONE: (763) 571-8110

FAX: (763) 502-9862

S/N: 000045

MODEL NO: H44025
(LR)IA251AAWWE

MFG: Flow MD

TEST ITEM: One 20-Gallon Small Volume Prover.

DATE OF ARRIVAL: 9/29/2015

TEST ITEM CONDITION ON ARRIVAL: Good

TEST METHOD: MI-14SVP, a gravimetric calibration procedure for use with small volume provers

This prover has been compared to the Standards of the State of Michigan which are traceable to the National Institute of Standards and Technology. NIST test numbers are on file.

The prover was calibrated to determine the volume of water delivered at 60° F from one run of the piston between two optical switches.

The volume for the item in this report is as found or as left at the time of calibration. The result applies only to the item calibrated.

The process used for calibrating this item meets the requirements of ANSI/NCSS Z540-1.

The prover was not adjusted.

Calibration processes were monitored and found to be in control. Uncertainty calculations conform to NIST Technical Note 1297. Components attributed to the effects of viscosity of the water were not included in the uncertainties. The combined standard uncertainty is multiplied by a coverage factor of $k=2$ to report the expanded uncertainty, which defines an interval with a confidence level of approximately 95%.

The environmental conditions in the laboratory are maintained at:
Temperature: 18°C - 27°C ± 2°C; maximum change 1°C/h.
Relative Humidity (maximum per 4 hours): 40% to 60% ± 10%.

CALIBRATED FOR:
Westmor Fluid Solutions
14044 West Freeway Drive
Columbus, MN 55038

TEST NO: MI-09-15-12459

S/N: 000045

TEST DATE: 9/29/2015

This report shall not be used to claim endorsement by NIST, WMD, NVLAP, or any agency of the U.S. Government or the State of Michigan.

Prover Constants:

Area Thermal Expansion Coef. (Ga)	$1.92 \times 10^{-5} / ^\circ\text{F}$
Detector Thermal Expansion Coef. (GI)	$9.60 \times 10^{-6} / ^\circ\text{F}$
Modulus of Elasticity (E)	2.8×10^7 psi
Inside Diameter (ID)	17 in
Wall Thickness (WT)	0.582 in

The following volume was determined:

NOMINAL VALUE	VOLUME	UNCERTAINTY \pm K = 2
20 gal	20.0088 gal	0.0019 gal

Signed:

Nicholas A. Santos

9/30/2015

[Signature]

9/30/2015

Calibrating Metrologist

Date Approved Signatory

Date

United States Department of Commerce

National Institute of Standards and Technology

Certificate of Metrological Traceability For:

Michigan



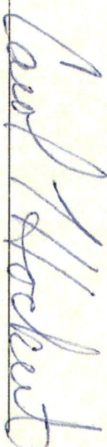
This laboratory has demonstrated evidence of an unbroken chain of metrological traceability of its standards to the international system of units (SI), documented measurement uncertainties, uses documented measurement procedures, successfully completed training and proficiency tests, documented calibration intervals, submitted a quality management system, and demonstrated suitable measurement assurance for the Scope listed on this certificate.

The Office of Weights and Measures Program assesses laboratories to NIST Handbook 143 - Program Handbook for State Weights and Measures Laboratories and ISO/IEC 17025:2005.

Scope

Mass Echelon I	Mass Echelon III	Volume Gravimetric, I
30 kg to 1 mg	500 kg to 1 mg	2 l to 100 ml
Mass Echelon II	5000 lb to 0.001 lb	25 gal to 0.5 pt
30 kg to 1 mg	8 oz to 0.03125 oz	Volume, SVP
50 lb to 1 µlb	Weight Carts	30 gal to 5 gal
8 oz to 0.03125 oz	6000 lb to 2000 lb	Volume Transfer, II
	Wheel Load Weighers	2000 gal to 5 gal
	< 20 000 lb	100 gal to 50 gal LPG

2014 - 2015


Carol T. Hoekert, Chief
NIST Office of Weights and Measures

Effective Dates: 2014-01-01 to 2015-12-31