<u>EXHIBIT</u> ENTERPRISE EXPORT ETHANE MASS MEASUREMENT PROCEDURES

- 1) Acronyms and Definitions
 - a) "Agreement" means the agreement to which this Exhibit is attached.
 - b) "Agreement Effective Date" means the effective date of the Agreement.
 - c) "API" means American Petroleum Institute.
 - d) "ASTM" means ASTM International.
 - e) "Barrel" means 42 U.S. Gallons.
 - f) "Baseline Meter Factor" means the Meter Factor established after meter installation or maintenance that is the reference to which subsequent Meter Factors are compared.
 - g) "Customer" means the customer (as defined in the Agreement), its affiliates, its designees, or its inspector.
 - h) "Day" means a period commencing at a local time on one calendar day agreed on by all Parties involved and ending at the same time on the next calendar day.
 - i) "DCF" means density correction factor.
 - j) "Enterprise" means the Enterprise Products Partners L.P. affiliate contracting in the Agreement.
 - k) "Ethane Product" is defined in the Agreement.
 - I) "EVP" means equilibrium vapor pressure.
 - m) "Export Ethane Product" is defined in the Agreement.
 - n) "Force Majeure" is defined in the Agreement.
 - o) "Flowing Day" means a day during which Product actually flows.
 - p) "Gallon" means a U.S. gallon of 231 cubic inches of liquid at 60°F and a pressure the greater of 1 atmosphere or the EVP of the liquid.
 - q) "g/cc" means grams per cubic centimeter.
 - r) "GPA" means GPA Midstream.
 - s) "Historical Meter Factor" means a Meter Factor that was determined prior to the proving frequency prescribed below at similar operating conditions with a similar product.
 - t) "inspector" means the contractor hired by and for a Party.
 - u) "Independent Inspector" means a mutually agreed to independent 3rd party inspector.
 - v) "Liquid Measurement Policy" means the Enterprise measurement guidance document (a copy of which is available upon request) specifying how liquid custody measurement systems are to be designed, installed, operated, and maintained.
 - w) "Meter Factor" means a dimensionless number obtained by dividing the volume of liquid passed through the meter (as measured by a prover during proving) by the corresponding meter indicated volume at standard conditions. The Meter Factor must meet the uncertainty standards below.
 - x) "Meter Verification" applies to Coriolis meters and means the use of proprietary software to:

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- i) Provides in-process flow meter health verification by analyzing the meter components related to measurement performance; and
- ii) Evaluate other physical Coriolis meter characteristics.
- y) "MMB" means Enterprise Measurement and Material Balance.
- z) "MPMS" means the API Manual of Petroleum Measurement Standards.
- aa) "NGL" means a natural gas liquid.
- bb) "Party" or "Parties" refers to Enterprise and/or the Customer, as the case may be.
- cc) "psia" means pounds per square inch absolute.
- dd) "psig" means pounds per square inch gauge.
- 2) Design and Installation
 - a) General
 - i) Enterprise's intent is to design, operate, and maintain its custody transfer measurement facilities in a manner to meet or exceed the criteria set out in the MPMS, GPA Midstream standards, ASTM standards, relevant governmental regulations, the Liquid Measurement Policy, MMB standards, Enterprise Engineering standards, and other relevant Enterprise policies and standards, all as of the date of the Agreement.
 - ii) Ethane Product and Export Ethane Product shall be measured by this Measurement Procedure using a Coriolis flow meter.
 - iii) The measuring facility shall be operated at a pressure greater than the EVP (as determined by MMB) to ensure the stream is in a liquid state and contains no vapor.
 - iv) Unless otherwise approved by MMB, a backpressure regulator/control valve shall be installed at the outlet of the meter run to keep the metering pressure above the EVP.
 - v) All equipment employed in metering and sampling, and all equipment that might affect quantity and/or quality determination, shall be approved by MMB. Due consideration shall be given to the operating pressure, temperature, and other characteristics of the Product being measured.
 - vi) References to specific chapters and sections within API, ASTM, GPA, or similar publications are as of the Effective Date of the Agreement to which this Exhibit is attached.
 - vii) Enterprise reserves the right to implement any changes to these publications based on Enterprise's cost-benefit analysis of the change, the ready availability of equipment necessary to make the change, or such other assessment as Enterprise, in its sole discretion, may deem appropriate.
 - b) Flow Meters (Coriolis)
 - i) Coriolis meters shall be installed in accordance with the MPMS, the Liquid Measurement Policy, MMB Standards, and Enterprise Engineering standards.
 - c) Density Determination
 - i) Because of the difficulty in pycing and proving Export Ethane Product, Export Ethane Product Coriolis meters shall not be pyced. For said meters when configured to

output mass, density shall be calculated using an equation of state and using the resulting density table attached at "Exhibit _-1" ("Density Table"). The equation of state and resulting density table may be revised from time to time by mutual written agreement of the Parties, each Party acting in a commercially reasonable manner.

- d) Density Meters (when installed)
 - i) Where required, density meters shall be installed and calibrated in accordance with MPMS Chapter 9.4 using a Pycnometer.
 - ii) The accuracy of the density meter shall be within +/- 0.001 gm/cc over its entire range and repeatable to +/- 0.0005 gm/cc.
 - iii) The average of three (3) consecutive Pycnometer provings will establish product flowing density, provided the repeatability and reproducibility comply with MPMS Chapter 9.4. The 3 consecutive provings must:
 - (1) agree within +/- 0.0005 g/cc; and
 - (2) be within +/- 0.0015 of the previously accepted calibration factor.
 - iv) Density meters shall be calibrated at the same frequency as Coriolis or when accuracy is in question.
 - v) The output may be connected directly into a flow computer capable of internally converting the density meter's output signal to corrected flowing density in gm/cc, or to a separate frequency converter and into the flow computer as a 4-20 milliamp signal.
 - vi) Except when using a Density Table, density measurement may not be utilized for transaction calculations without a proving and pycing during the ticket period.
- e) Pressure Transmitters
 - i) Pressure transmitters must exhibit a discrimination of 1.0 psig or better.
 - ii) Pressure transmitters shall be verified at the end device at the time of meter proving using a reference gauge. The variation between the end device reading and the reference gauge must not exceed 3.0 psig.
- f) Temperature Transmitters
 - i) Temperature transmitters must exhibit a discrimination of 0.1°F or better.
 - ii) Temperature transmitters shall be verified at the end device at the time of meter proving using a certified thermometer or a precision electronic temperature device. The variation between the end device reading and the certified thermometer or precision electronic temperature device must not exceed 0.2°F.
 - iii) Where dual temperature transmitters are used, if after verification, the 2 transmitters do not agree within 0.2°F of each other, they shall be replaced with shop calibrated temperature transmitters which were calibrated using an electronic temperature device.
- g) Flow Computers
 - i) Unless otherwise approved by MMB, all NGL and Purity Product metering systems shall have an MMB approved flow computer.

- ii) Security shall be implemented on the flow computer to prevent access from unauthorized personnel.
- iii) Flow computers shall be capable of accepting a variety of signals, including, but not limited to, pulses from the flow meter, signals from the density transmitter (if installed), and signals from the pressure and temperature transmitters. The flow computer shall convert, as required, and totalize these signals into flow weighted pressure, flow weighted temperature, flowing density, corrected flowing density, volume, mass, and specific gravity at 60°F.
- iv) Flow computer output resolution shall be to the nearest barrel.
- h) Composite Sampling Systems
 - i) If required by contract, composite sampling and/or analyzers may be required for quality verification of a product.
 - ii) The composite sampler shall be operated to collect a flow-proportional sample, based on indicated volume, only when there is flow through the meter.
 - iii) The samples shall be accumulated in and collected from floating-piston cylinders with mixing capability.
- Meter Security and Sealing
 - i) Where required by contract or governmental regulation, or site-specific situations, measurement systems shall be designed to facilitate sealing all components that can directly affect quantity and quality determination.
 - ii) Site specific sealing requirements shall be determined by Enterprise operations personnel upon start up and may require additional seal points.
 - iii) Enterprise operations personnel shall determine who is authorized to remove Enterprise locks and seals.
 - iv) Enterprise considers the unauthorized removal of or tampering with measurement and security devices as sufficient justification to suspend transfer operations until the purpose and effect of such actions are determined and resolved.
- 3) Use of Inspector
 - a) Without limiting either Party's rights to witness the other Party's measurement activities (as described below), the non-measuring Party may, at its own cost, hire and appoint an inspector to witness meter provings and sampling.
- 4) Meter Factors and Determination of Meter Factor
 - a) Objective:

The object of meter proving is to obtain a Meter Factor with a demonstrated uncertainty not exceeding +/- 0.0275%. The number of proving runs will be determined by using MPMS Chapter 4.8 Table A.1 – Repeatability Criteria for 0.027% Uncertainty (Preferred Uncertainty) for +/- 0.00027 Random Uncertainty in Average Meter Factor.

- b) General:
 - i) Product must be flowing for a meter to be proved.

- ii) Meter provings, calibration of instruments, and maintenance of measurement equipment will normally be performed by Enterprise personnel or delegated to 3rd party contractors under the direction of an Enterprise representative.
- iii) The new Meter Factor shall be used after each successful proving if it meets the proving criteria in this Exhibit.
- iv) Meter provings shall be by the applicable MPMS standard for the type of meter.
- v) Enterprise and the Customer are each responsible for proving their respective measurement facilities.
- c) Mass Measurement:
 - Direct mass measurement is accomplished by utilizing a Coriolis meter, and a flow computer to accumulate mass pulses from the flow meter transmitter and to report in pounds.
- d) Volumetric Measurement of Export Ethane Product:
 - i) The conversion of mass output of the Coriolis meter to volume shall be done by calculation using the density from the Coriolis meter, which was calibrated using a density derived from an equation of state using the Density Table.
- e) Proving Intervals
 - i) Baseline Meter Factor: Each meter shall be proven twice when initially placed into service and immediately after maintenance. The second prove's Meter Factor is the Baseline Meter Factor.
 - ii) Subsequent provings shall normally be made for each loading batch, but at least every 31 Flowing Days. If operational issues, weather, or unavailability of a prover or prover contractor prevent the proving within the 31 Flowing Days, the proving interval may be extended to 45 Flowing Days.
 - (1) If the consistency of the Meter Factor allows, and both Parties agree, the proving interval between provings may be extended to up to 60 Flowing Days.
 - iii) Where practical, a meter shall be proved prior to any maintenance being performed.
 - iv) Use of Historical Meter Factor:
 - (1) If during a movement, a meter was planned to be proved, but cannot be proved successfully within the prescribed frequency (e.g., maintenance, the flow rate changes significantly, or the Product changes), a Historical Meter Factor may be used.
 - (2) In the event a meter is not proved within the prescribed frequency, then prior to any subsequent movement, Enterprise will notify the customer and both Parties must agree to the use of a Historical Meter Factor prior to the movement.
 - v) Should a Party request an unscheduled prove:
 - (1) The other Party shall make reasonable efforts to perform the prove; and
 - (2) The requesting Party shall pay for all costs of the unscheduled prove unless the prove determines the instrumentation is outside of the tolerances in this Exhibit.
- f) Change in Meter Factor

- If the new Meter Factor deviates from the prior Meter Factor by more than +/-0.0025, the Enterprise field representative shall determine the corrective action to take (if any required).
- ii) If the new Meter Factor deviates from the Baseline Meter Factor by +/- 0.0050 or more, the Enterprise field representative shall determine the corrective action to take (if any required), and the meter shall be re-proved. If a meter is repaired, a new Baseline Meter Factor shall be established.
- iii) Change in zero.
 - (1) If the zero changes or the meter is repaired or replaced, then the meter shall be zero verified and re-proved to establish a new Baseline Meter Factor.

g) Corrections:

- i) If the Meter Factor deviates from the previous Meter Factor under like operating conditions by more than +/- 0.0025, the ticketed volume must be adjusted:
 - (1) If the time of malfunction can be determined by historical data, then the volume measured since that point in time shall be corrected using the new Meter Factor.
 - (2) If the time of malfunction cannot be determined, correct ½ of the volume measured since the previous successful prove using the new Meter Factor. All required corrections to measured volumes and shall describe the findings, method of repair, and calculations used in making the correction on the meter proving report shall be recorded. A correction ticket for the amount of the correction shall be issued.
- ii) If a correction is required, then a correction ticket shall be issued for the quantity corrected, and shall include the following:
 - (1) Describe the findings;
 - (2) Method of repair; and
 - (3) Calculations used in making the correction on the meter proving report shall be recorded.
- h) If a Customer's representative is not present during the proving, then Enterprise shall, if requested by the Customer, within 2 business Days:
 - i) provide Customer with a meter proving report stating the results of the prove, any method of repair, and calculations used in making the correction; and
 - ii) provide Customer with a correction ticket for the amount corrected.
- 5) Density Factor
 - a) The proving intervals, tolerances, repairs and methods of correction are the same as those provided for above in Meter Factors and Determination of Meter Factors.
 - b) For Export Ethane Product, the density shall be calculated using an equation of state using the Density Table.
- 6) Custody Measurement Station Failure
 - a) If a failure occurs on a custody measurement station or the station is out of service while Product is being delivered, then the volume shall be determined or estimated by one of the following methods and in the order stated:

- By using the data recorded by any check measurement equipment that was accurately registering;
- ii) By correcting the error if the percentage error can be ascertained by calibrations, tests, or mathematical calculations;
- iii) By using historical pipeline gain/loss; or
- iv) By using such other method as the Parties may agree.

7) Sampling Procedures

- a) Where a composite sampler is installed, a flow-proportioned composite sample shall be collected from the composite sample container at completion of the loading of the applicable vessel.
- b) Samples shall be analyzed in accordance with the Enterprise approved testing method specified by the applicable product specification or contract.
- c) Normally, 3 samples shall be taken from the composite sampler:
 - One sample shall be used by Enterprise for analysis. If Enterprise is responsible for custody measurement, the Enterprise sample shall be analyzed and the analysis used to account for the transfer.
 - ii) One sample (if requested) shall be used by the Customer for analysis. If the Customer is responsible for custody measurement, the Customer sample shall be analyzed and the analysis used to account for the transfer
 - iii) One sample will be retained as a referee, and, if required, used for dispute resolution as described below. The referee sample shall be held for a period agreed to by the Parties or consistent with the Enterprise Liquid Measurement Policy.
- d) The sampling party shall provide its sample container and the referee sample container. The other Party shall provide its sample container.
- e) If a sample system failure occurs such that either no sample was taken or a representative sample was not obtained, the following procedures shall be utilized in the order stated:
 - The sample collected by any on-stream back-up sampling device that has extracted a flow-proportioned sample;
 - ii) An average of the composite samples taken over a mutually agreed time frame, not to exceed the last 3 months of properly sampled deliveries;
 - iii) Daily grab samples for the time in question; or
 - iv) Such other method as the Parties may agree.

8) Ticketing

- a) General:
 - The measuring Party shall be responsible for preparation of the ticket. A copy of the ticket shall be given to the other Party when generated or the commencement of the next business Day.
 - ii) The measuring Party shall provide the other Party with a ticket as prescribed in the Agreement.
- b) Volume Basis Streams:

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- i) The ticket shall identify the product and state the net volume in Barrels of product measured.
- ii) The ticket shall include all factors associated with its production.
- c) Mass Basis Streams:
 - i) The ticket shall:
 - (1) Identify the product;
 - (2) State the total mass measured in pounds;
 - (3) Show the pounds of each product based on its weight fraction as determined by analysis (if required);
 - (4) Show the equivalent Barrels of each product by utilizing the calculation procedure outlined in MPMS Chapter 14 (if required);
 - (5) Show product analysis; and
 - (6) Show total barrels (if required).
 - ii) The component density in a vacuum shall be in accordance with GPA Standard 2145.
- d) Ticket support documentation shall be produced and retained by the measuring Party in accordance with industry standards and the audit provisions of this Exhibit. The measuring Party shall not refuse any reasonable request from the non-measuring Party to receive copies of the supporting documentation. The copies of the supporting documentation shall be provided within 10 business Days following any such request.

9) Witnessing

- a) Provings
 - i) Each Party agrees to allow the other Party to witness all provings, testing, and calibration of measurement equipment under this Agreement.
 - ii) For scheduled measurement facility provings, if requested by the non-proving party, the proving Party agrees to provide the other Party 72 hours' notice.
- b) Sampling
 - i) Each Party has the right to witness the other Party's sampling and testing of the samples. If requested by the other Party, the Party performing such tests and/or determinations shall provide the other Party at least 72 hours' advance notice of any such test and/or determination.

10) Audit Rights

- a) Each Party and its duly authorized representatives shall have access (as provided below) to the measurement records and other documents maintained by the other Party which relate to the measurement, composition, or handling of the Products being delivered under the Agreement.
- b) Each Party shall have the right to audit such records once a year at any reasonable time or times within 24 months of the rendition of any statement or invoice forming the basis of such claim.
- c) Neither Party shall make claim on the other for any adjustment after the 24 month period.
- d) The Party requesting the audit must give the other Party at least 30 Days' written notice.

e) No audit may cover a period that has previously been audited.

11) Presumed Correct

a) Except in the case of manifest error, fraud, or as provided in "Dispute," the Enterprise's results shall be presumed correct and binding on both Parties.

12) Disputes

- a) Quantity Measurement:
 - i) If both the Enterprise measurement facility and the Customer measurement facility are installed, operated, and maintained according to their respective measurement standard, and the difference in measurement of quantity is less than or equal to an absolute value of 0.50%, Enterprise's measurement shall be deemed correct.
 - ii) If the difference is more than an absolute value of 0.50%, the Parties shall resolve the disputes as provided in (c) below.
- b) Analytical Measurement
 - i) Analytical disputes must be based upon laboratory analysis utilizing the appropriate Enterprise approved test method. After analyzing their respective samples according to the Enterprise approved test method, if the Parties disagree, each shall send the other a copy of their respective sample results, and, if the sample results differ by more than the GPA 2186/2177 reproducibility limits for one or more components, then the referee sample shall be sent to a mutually agreed upon independent 3rd party laboratory, which shall analyze the sample using the Enterprise approved test method. If the 3rd party laboratory and the Enterprise analyses are within the GPA 2186/2177 reproducibility limits for the components in question, then the Enterprise analysis shall be accepted by the Customer and Enterprise as final and conclusive for the composition of the stream. Otherwise, the 3rd party laboratory results shall be accepted by the Customer and Enterprise as final and conclusive for the composition of the stream.
- c) Other Measurement Disputes and Dispute Resolution
 - i) If there is any other dispute, controversy, or claim arising out of or relating to this Exhibit (a "Measurement Dispute"), the Parties shall attempt to settle such Measurement Dispute by negotiation between executives who have authority to settle the Measurement Dispute.
 - ii) A Party shall deliver to the other Party a written notice (a "Notice of Measurement Dispute") to commence this process of mutual discussions.
 - iii) Within 15 Days of the delivery of Notice of Measurement Dispute, the receiving Party shall submit to the other Party a written response.
 - iv) The Notice of Measurement Dispute and the response must include:
 - (1) A statement of the respective Party's position
 - (2) A summary of the facts
 - (3) Arguments supporting its position
 - (4) Name and title of the executive who will represent that Party
 - (5) Name and title of any other individual who will accompany the executive.

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- v) Within 30 Days following delivery of a Notice of Measurement Dispute, the executives of both Parties shall meet at a mutually acceptable time and place in Houston, TX and thereafter as often as they reasonably deem necessary, to attempt to resolve the Measurement Dispute.
- vi) All information disclosed and positions taken during the negotiations and any mediation will be treated as confidential, and as compromise and settlement information for the purposes of any applicable rules of evidence.

13) Right to Change

- a) Enterprise reserves, in its sole discretion, the right from time to time, as it deems necessary, to make:
 - i) Non-substantive changes to this Exhibit; and
 - ii) Changes to this Exhibit driven by industry practice, governmental regulations, or the reasonable operational requirements of Enterprise.
- b) Where multiple analytical test methods are allowed, Enterprise reserves, in its sole discretion, the right from time to time, as it deems necessary, to change the approved analytical test method.
- c) Any change to this Exhibit or the approved analytical test method must be made on a non-discriminatory basis to similarly situated Customers.



Exhibit _ - 1 Density Table

Density - Pounds per US Barrel (lb/US. Barrel)								
°F	2 PSIG	4 PSIG	6 PSIG	8 PSIG	10 PSIG	15 PSIG	20 PSIG	25 PSIG
-150	196.8402	196.8441	196.8480	196.8519	196.8558	196.8655	196.8752	196.8849
-149	196.6041	196.6080	196.6119	196.6158	196.6198	196.6295	196.6393	196.6491
-148	196.3676	196.3715	196.3755	196.3794	196.3833	196.3932	196.4031	196.4129
-147	196.1306	196.1346	196.1386	196.1426	196.1465	196.1565	196.1664	196.1763
-146	195.8933	195.8973	195.9013	195.9053	195.9093	195.9193	195.9293	195.9393
-145	195.6555	195.6596	195.6636	195.6677	195.6717	195.6818	195.6918	195.7019
-144	195.4174	195.4214	195.4255	195.4296	195.4336	195.4438	195.4540	195.4641
-143	195.1788	195.1829	195.1870	195.1911	195.1952	195.2054	195.2156	195.2259
-142	194.9398	194.9439	194.9480	194.9522	194.9563	194.9666	194.9769	194.9872
-141	194.7003	194.7045	194.7086	194.7128	194.7170	194.7274	194.7377	194.7481
-140	194.4604	194.4646	194.4688	194.4730	194.4772	194.4877	194.4981	194.5086
-139	194.2201	194.2244	194.2286	194.2328	194.2370	194.2476	194.2581	194.2687
-138	193.9794	193.9836	193.9879	193.9921	193.9964	194.0070	194.0176	194.0283
-137	193.7382	193.7425	193.7467	193.7510	193.7553	193.7660	193.7767	193.7874
-136	193.4965	193.5008	193.5052	193.5095	193.5138	193.5246	193.5354	193.5462
-135	193.2544	193.2588	193.2631	193.2675	193.2718	193.2827	193.2936	193.3044
-134	193.0118	193.0162	193.0206	193.0250	193.0294	193.0403	193.0513	193.0622
-133	192.7688	192.7732	192.7776	192.7821	192.7865	192.7975	192.8086	192.8196
-132	192.5253	192.5297	192.5342	192.5386	192.5431	192.5542	192.5654	192.5765
-131		192.2858	192.2903	192.2948	192.2993	192.3105	192.3217	192.3329
-130		192.0414	192.0459	192.0504	192.0549	192.0662	192.0775	192.0888
-129		191.7965	191.8010	191.8056	191.8101	191.8215	191.8329	191.8443
-128		191.5511	191.5556	191.5602	191.5648	191.5763	191.5878	191.5993
-127			191.3098	191.3144	191.3190	191.3306	191.3422	191.3537
-126			191.0634	191.0681	191.0728	191.0844	191.0961	191.1077
-125			190.8166	190.8213	190.8260	190.8377	190.8495	190.8612
-124			190.5692	190.5739	190.5787	190.5905	190.6024	190.6142
-123				190.3261	190.3309	190.3428	190.3547	190.3667
-122				190.0777	190.0825	190.0946	190.1066	190.1186
-121				189.8288	189.8337	189.8458	189.8579	189.8700
-120				189.5797	189.5843	189.5965	189.6087	189.6209
-119					189.3343	189.3467	189.3590	189.3713
-118					189.0839	189.0963	189.1087	189.1211
-117					188.8328	188.8454	188.8579	188.8704
-116						188.5939	188.6065	188.6191
-115						188.3419	188.3546	188.3673
-114						188.0892	188.1021	188.1149
-113						187.8361	187.8490	187.8619
-112						187.5823	187.5953	187.6084
-111						187.3280	187.3411	187.3543
-110						187.0730	187.0863	187.0995
-109						186.8189	186.8308	186.8442
-108							186.5748	186.5883
-107							186.3182	186.3317
-106							186.0609	186.0746
-105							185.8030	185.8168
-104							185.5445	185.5584
-103							185.2862	185.2993

	Density - Pounds per US Barrel (lb/US. Barrel)							
٥F	2 PSIG	4 PSIG	6 PSIG	8 PSIG	10 PSIG	15 PSIG	20 PSIG	25 PSIG
-102								185.0396
-101								184.7793
-100								184.5182



Rev. #	Date	Explanation
Rev 10	May 2023	Updated to match format of NGL Measurement Procedures
R11	Sept 2023	Minor changes.
R12	Sept 2023	Updated sample retention period to match other products.
R13	February 2024	Deleted: A Customer's witness signature does not constitute the approval of the use of out-of-
		tolerance equipment, but does attest to the validity of the proving report.

