

ADDENDUM NO. 2
March 17, 2023
225107

RE: ALBURGH VILLAGE WATER TANK REPLACEMENT

FROM: DuBOIS & KING, INC.
P.O. Box 339
Randolph, Vermont 05060
(802) 728-3376

TO: Prospective Bidders

This Addendum forms part of the Contract Documents and modifies the original Bidding Documents issued by the Village of Alburgh, Vermont, for the Alburgh Village Water Tank Replacement project dated February 10, 2023. **Acknowledge receipt of this Addendum in the space provided on Page 1 of the Bid Form. Failure to do so will subject the Bidder to disqualification.**

I. Bid Opening Date Change

Bids for the construction of the Project will be received at the Village of Alburgh located at 1 North Main Street, Suite 2, Alburgh, VT 05440 until **Friday, March 31, 2023 at 10:00 AM local time**. At that time the Bids received will be opened and read.

II. Questions Deadline Date Change

Any additional questions pertaining to this Bid should be submitted to Jonathan Ashley via email at jashley@dubois-king.com no later than **Wednesday, March 22, 2023 at 5:00 PM** local time.

III. Questions & Answers

The following addresses questions received by phone and email.

Question 1: Section 25.02 of the Instructions to Bidders and Section SC-19.16 of the Supplementary Conditions refer to “Appendix B” for DBE requirements and reporting. Where is Appendix B?

Answer 1: The reference to Appendix B is incorrect. Section 25.02 of the Instructions to Bidders and Section SC-19.16 of the Supplementary Conditions should refer to Exhibit E, which starts on the 200th page of the PDF of the bid documents.

Question 2: Will alternative technical specifications for tank mixing be considered? (Proposed modifications were submitted with this question).

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Answer 2: See attached revised Specification 46 4141, with deletions made in strikeout and additions made in bold. A CertiSafe NSF Active Tank Mixer appears to meet the revised specification requirements as a pre-approved alternative.

Question 3: What building or construction permits will the Contractor need to obtain for this project? Is there a cost associated with the permits or will the cost of the Building Permit be waived?

Answer 3: The permit for construction of the project has already been obtained and is included in the Contract Documents (Public Water System Construction Permit C-3900-20.0). The Contractor is responsible for complying with the permit conditions. If the approved construction schedule submitted prior to the start of work requires an extension of the permit expiration date, the Owner is responsible for the permit extension application and associated fee.

Question 4: There is a street sign on Vantine Avenue that states the “legal load limit” is “24,000 pounds”. This is an issue for typical water tower erection work as our tractor trailers for steel delivery will in every case exceed this maximum (an empty tractor trailer typically exceeds this weight). As an alternative, we also took a look at access via Industrial Park Rd – cutting through the Bee Line warehouse parking lot – but we similarly discovered that Industrial Park Rd has the same 24,000 pound limit. Please clarify how you expect access to this site and material deliveries to work under these restrictions. Please note, this will likely also be an issue for concrete trucks / deliveries as well as the steel deliveries.

Answer 4: Contractor shall apply for an Excess Weight Permit from the Town of Alburch (see **Attachment 1**). All costs associated with the application and permit shall be included in the bid under Pay Item 3, including but not limited to, an appropriate allowance determined by the Bidder for repair of damages to the road and insurance costs.

Question 5: Spec 33 1619, Page 9, Part 4.01.J.2 mentions a single inlet/outlet pipe and Drawing C4 shows a single ductile iron pipe leading to the tank. However, Drawings C9 and C10 show a separate inlet pipe and a separate outlet pipe. Please clarify whether there are one or two inlet/outlet pipes.

Answer 5: A single inlet/outlet pipe is required.

Question 6: Spec 33 1619, Page 10, Part 4.01.J.3 states that the overflow pipe shall have a minimum thickness of 1/4 inch. Drawing C9 calls out Sch 40 (t = 0.322") pipe. Please clarify the required minimum thickness of the overflow pipe.

Answer 6: The overflow pipe shall be 8" Schedule 40 Steel.

Question 7: Spec 33 1619, Page 10, Part 4.01.J.3 calls for a weirbox on the overflow pipe as does Drawing C9. Is a siphon overflow an acceptable alternate?

Answer 7: The plans and specifications require a weir box. Proposed alternate overflows can be reviewed as a proposed substitution in the submittal process.

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Question 8: The specs and drawings make no mention of providing insulation on the inlet/outlet pipe. Is pipe insulation required? If so, what kind and how thick?

Answer 8: Provide 2-inch thick polyurethane insulation (Foamglas One by Owens Corning or approved equal) with 10 mil PVC covering, aluminum jacket and stainless steel bands. Tape all insulation joints.

Question 9: Drawing C10 shows the overflow pipe at the tank exterior being SDR-35 PVC pipe. Please confirm that this is supposed to be carbon steel, not PVC. If the answer to this question is that PVC is required, then at what point outside the tank does it start?

Answer 9: The overflow pipe at the tank exterior should be 8" Schedule 40 Steel.

Question 10: What is the 'WL' on Drawing C5? It is not in the legend on Drawing C2.

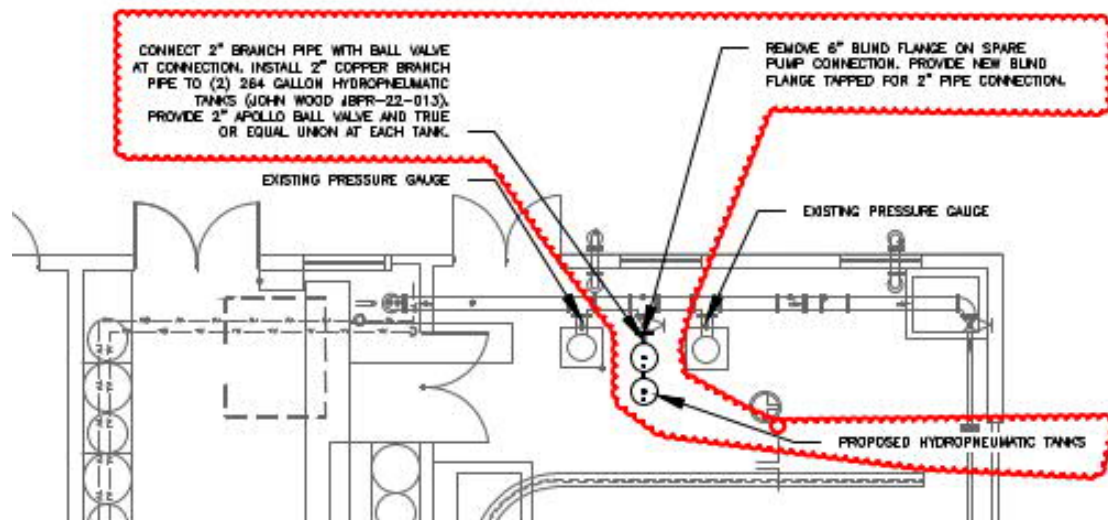
Answer 10: The WL linetype is the boundary of a wetland that was delineated on the site. The WB linetype is the wetland buffer.

Question 11: Please Note: the match lines on Drawings C9 & C10 reference the wrong Drawings – should be C9 & C10, not C7 and C8.

Answer 11: Agreed.

Question 12: What work on Drawing C11 is included in the contractor's scope and to be included in the bid?

Answer 12: The work in the Contractor's scope is described in Specification 01150 3.02.A.13 and marked in revision cloud on the drawing excerpt below as well as the controls system as described in Answer 36.



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Question 13: Please define what is required for Substantial Completion. The GC page 4 par #42 does not provide a clear definition.

Answer 13: The definition of Substantial Completion provided in the General Conditions is accurate and shall not be modified by the following clarification. To help clarify the Bidder's question, following are some items that are not required to achieve Substantial Completion:

1. Installation of the chain link fence and gate.
2. Final grading of untraveled areas.
3. Removal of erosion control measures.
4. Full establishment of grass growth.
5. Providing equipment manuals and warranty documents.

Question 14: The work hours of 7:30am to 5:00pm will make it difficult to get paint work done. This work is dependent on good weather and the crews often work to dark. Please consider extending the work hours.

Answer 14: Work hours for painting will be allowed to extend to dusk.

Question 15: The work day restrictions will make it difficult to meet schedules. Crews often work Saturday, Sunday and holidays to make up bad weather days. Please consider allowing work on these days.

Answer 15: The following work will generally be allowed from 8am to 5pm on Saturdays and Sundays: Above-ground work that does not require daily observation by the Engineer or coordination with the Water System Operator and does not produce excessive noise, dust, traffic, or other disturbance of residents. The Contractor shall provide a proposed weekend schedule specifically detailing all proposed activities, number of crew members, and equipment to be utilized for weekend work to the Engineer and Owner for review and approval by 10am on Fridays. Contractor shall provide all necessary Certified Payroll information for Davis Bacon and Related Acts compliance for all personnel who work on weekends. No work will be allowed on holidays.

Foreseeable bad weather days are addressed in Exhibit B.

Question 16: The spec requires a number of progress meetings. Can these meeting be conducted via conference call, Zoom or Teams?

Answer 16: Remote participation in the meetings can be accommodated. In-person representation may be required to address site-specific activities.

Question 17: There is a discrepancy on whether a project sign is required. There is a Sample Project Sign (shown after the NTP on page 202 of 546 in the specs) but another section states it is not required. Please clarify.

Answer 17: A Project Sign is required per Specification 01150 3.02.A.3.

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Question 18: Please confirm the galvanized conduit inside the tower is not painted.

Answer 18: Confirmed.

Question 19: There is a discrepancy in the disinfection method required. Spec 33 0110.59, Page 3, Part 3.02A states Method 1 or 2 but Spec 33 1619, Page 7, Part 3.01.B.8.a states Method 3. Please clarify which method is required.

Answer 19: The referenced sections do not have a discrepancy. Specification 33 1619, Page 7, Part 3.01.B.8.a indicates Method 3 is not allowed.

Question 20: Our standard hatches are 30" diameter. Please confirm these are acceptable in lieu of the 24" x 36" listed in the Spec 33 1619, Page 8, Part 4.01.D & 4.01.F.

Answer 20: 30-inch diameter hatches are acceptable for the hatches required in Part 4.01.D and 4.01.F.

Question 21: The mixer spec is confusing on what is required to be included in the bid. In Spec 46 4141, Page 1, Part 1.01 it states to "furnish and place into operation" a tank mixer, however in Spec 46 4141, Page 1, Part 1.03.D it states that factory services for "delivery, placement and startup shall be available, but not included in the bid". Part 1.04.A of the same spec asks for submittals and if approved a NTP will be issued and 3.01.A states that placement, startup, and service "shall be provided by others and not the factory equipment manufacturer". There is no breakout pricing on the bid form for separate acceptance. Please clarify what is required to be included in the bid for the mixer.

Answer 21: See attached revised specification 46 4141 (**Attachment 2**), with deletions made in strikeout and additions made in bold.

Question 22: There is nothing listed in the specs or drawings requiring a tank bottom drain. Without one listed, we would put in a coupling with a T handle plug. However, without an inside tank ladder, there is no way to get to the plug to remove the water that does not go out the outlet pipe. As such, we suggest adding a Babco non-freeze drain valve so the tank can be drained for entrance thru the bottom manhole. Please confirm.

Answer 22: A Babco non-freeze drain valve or approved equal shall be provided. The tank drain shall be connected to the overflow pipe at the upper shaft platform so that the tank would drain through the overflow pipe when the drain valve is opened.

Question 23: Drawing C9 requires 120,000 gallons of storage between the BCL (Elev 241.0 ft) and Elev 253.2 ft. Our standard 300MG Waterspheroid design utilizes a 32'-6 head range and will not meet the 120,000 gallons of storage between those 2 listed elevations. Please confirm that tank design is up to the Contractor and that the notes about 120k gallons and 180k gallons between certain elevations are simply notes for reference and not project requirements.

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Answer 23: As indicated on Drawing C9, all elevations shall be set based on the “lag pump on” elevation of 253.2’. The other tank elevations are dependent on the tank manufacturer. To meet system operating requirements, a minimum of 120,000 gallons of water storage are required below the “lag pump on” elevation to meet fire protection requirements and a total of 300,000 gallons of storage are required in the tank.

Question 24: In relation to Spec 03300, Page 3, Part 2.05, please specify the concrete class that is required for the foundation design.

Answer 24: The tank foundation design, including required concrete class, shall be provided by the tank contractor, including a foundation design stamped by a Vermont-licensed professional engineer as noted on Drawing C10. The tank foundation is not specified in Section 03300. The tank foundation design shall conform to AWWA D100, Section 12, and all other applicable standards.

Question 25: In relation to Spec 03300, Page 3, Part 2.03.A, ASTM C150 Type I cement is specified. There have been regional shortages of Type I cement. In the event this is the case, please confirm that ASTM C595 Type II cement is an acceptable alternative.

Answer 25: For the concrete materials specified in Section 03300, ASTM C150 Type I or Type I/II cement are required. Alternative cement products for Section 03300 work would need to be approved by submittal as a substitution.

Question 26: There is no common excavation for this project how will the excavation be paid for? Are we supposed to carry it in each individual item?

Answer 26: Per Section 01150 Part 3.01.C, each pay item shall be full compensation for all costs in connection with the item including but not limited to excavation (along with several other included costs that are listed in that section).

Question 27: Can concrete waste blocks be used as thrust blocks?

Answer 27: No.

Question 28: According to Sheet C9 of the Plans, the Inlet and Outlet are two separate pipes. However, the specs indicate its one shared 12” Inlet/Outlet Pipe. Please clarify which one we should base our bid on.

Answer 28: One shared 12” inlet/outlet pipe is required.

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Question 29: Please remove the below qualification noted on page 331619-1 of the Specs.:

- 2) As providing a safe work environment is critical for this project, other contractors, and the community, to be approved to bid on this project, given the complexity, and risk associated with the work, all tank contractors are required to have an Experience Modification Rate (EMR) below 0.75 and a Total Recordable Incident Rate (TRIR) below 2.5 for the last three (3) years. Bidders are required to verify the above requirement by providing with their proposal a statement from their insurance carrier confirming the EMR requirement, and their last three (3) years of OSHA 300 Logs to confirm the TRIR requirement.

Answer 29: Section 33 1619 Part 1.01.B.2 shall be replaced with the following:

“Providing a safe work environment is critical for this project, Owner’s representatives, and the community. To be approved to bid on this project, Bidder’s shall provide evidence of safety performance for the past three (3) years including reportable incidents, which can be satisfied by a certified statement from the Bidder, documentation from the Bidder’s insurance carrier, and information from project references, or some combination of these sources or other comparable sources.”

Question 30: What is the anticipated Notice to Proceed or Construction Start Date?

Answer 30: Contract signing/Notice to Proceed is anticipated to be on or about May 11, 2023.

Question 31: Will an Independent 3rd Party Inspection for Welding and/or Finishes/Paint be required? If yes, will this Inspection Firm be determined by the Tank Contractor, Engineer or Owner? If not Owner or Engineer but Contractor is expected to pay, please provide additional details needed to incorporate this cost into our bid.

Answer 31: Yes. The independent 3rd party inspection firms shall be determined and paid for by the Tank Contractor. Requirements for paint/finishes inspection are included in Section 09 9200 Part 3.07. Requirements for weld inspection and testing are included in Section 33 1619, Part 3.01.B.5.

Question 32: Do you have an engineers estimate for the project you can share?

Answer 32: An Opinion of Probable Construction Costs (OPCC) was prepared and the trendline for the last two years of Engineering News Record Construction Index data was used to adjust the unit pricing. This resulted in an OPCC of \$2.0 to \$2.3 Million.

Question 33: Can rigid insulation be used inside the foundation ring wall to reduce the cover depth of the 12” ductile iron water main and then bend to minimum bury depth outside the foundation ring wall?

Answer 33: Yes. Refer to the trench insulation detail on Sheet C7.

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Question 34: Can contact information be provided for any local site civil and electrical/controls contractors?

Answer 34: Contact information for the following site civil contractors is included in the Planholder list:

- Kingsbury Companies
- GW Tatro Construction
- Goodhue Excavation

Other local site civil contractors who are aware of the project include:

- Palmer Construction, Inc. 802-796-3395 dhpalmer@fairpoint.net
- Partner Excavation, Inc. 802-309-1161 partnerexcavation@yahoo.com and beaulacexcavating@yahoo.com

A controls contractor who is familiar with the project and provided input on the revised controls design described in Answer 36 is:

- Champlin Associates 802-879-7136 frank@champlinassociates.com

Electrical contractors in the area include:

- Mark Mallette Electric 802-233-6931 mark.mallette@yahoo.com
- EC Electric 802-796-4610 eccleland@yahoo.com
- TW Electric 802-363-3534 twelectric1@gmail.com

This list is provided for informational purposes only and the qualifications of these potential subcontractors have not been evaluated. The list is not all-inclusive and there may be other subcontractors not listed who would be available and interested in doing this work.

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Question 35: Is there lead-containing paint on the existing tank?

Answer 35: The attached Limited Lead Containing Paint Survey, April 18, 2014, was located (see **Attachment 3**).

Payment for Item 2, Existing Elevated Water Storage Tank Demo, shall include the following:

- All appropriate lead-safe work practices, including but not limited to isolating the work area(s) as needed, and shall be conducted by trained personnel when demolition work or disturbance of lead containing surfaces is conducted.
- Demolition contractors must comply with the VOSHA Lead in Construction Standard (1926.62) requirements (designed to protect contractor employees) if demolition activities impact lead containing surfaces.
- Handling, transportation, and disposal costs associated with lead containing paint materials.
- Any other work incidental to the demolition, removal, and proper disposal of the existing water storage tank.

Question 36: The existing water system controls may be outdated and be difficult to find technical support and parts for. Can an alternative controls system be specified?

Answer 36: Yes. Drawings will be updated in a subsequent Addendum to reflect the following changes.

The new control system will include replacing the Control Notes on E1 with the following: “Provide new duplex/triplex booster pumps control panel located in external MCC to replace existing controls, to include:

1. NEMA Type 1 painted steel wall mounted enclosure with back panel.
2. Operators and indicators located on enclosure outer door.
3. Incoming power terminal blocks.
4. Incoming power lightning arrester.
5. Control power circuit breaker.
6. Alarm auto dialer circuit breaker.
7. 24VDC control power supply.
8. Control relays as required.
9. Primex VPAC 10 PLC/HMI with required inputs/outputs.
10. Factory PLC/HMI programming to customer specifications.
11. Banner PM2 series radio for tank level monitoring communication.
12. One tank control mode-off-PID control mode switch.
13. Three pump hand-off-auto switches.
14. Three pump run pilot lights.
15. Three pump fail pilot lights.
16. Alarm aux contacts to existing externally mounted Sensaphone.
17. Terminal blocks and ground lugs as required.
18. Engraved nameplates and labels.
19. Self-laminating wire numbers.
20. UL Label 508.

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21. Wire and conduit connections to equipment.
22. Control panel programming to include tank level monitoring and PID modes.”

Contractor will also be responsible for furnishing and installing the following components:

1. Control building mounted banner radio Yagi Series Antenna with 50 foot antenna cable.
2. Water tower mounted Banner PM2 Series Radio for tank level monitoring communication.
3. Water tower mounted Banner Radio Yagi Series Antenna with 50 foot antenna cable.

This will allow for the new tower to be built, then the control panel to be swapped over. The controls can then be run in Control Type 2 (PID) mode (see Sheet C11) while the pressure transducer is installed on the new tower.

Electrical work shall include wiring the booster pump VFDs into the new control panel. Wire conduit will also be needed to bring the new transducer wire back to the control panel.

Contractor shall provide field installation, Operator training, integration, and commissioning services for the controls system.

The above work will be paid for under 01150 Part 3.02.A.11.

Question 37: Section 01150 Part 3.02.A.1 indicates the Pay Item includes water level transducers, but the plans and technical specification do not specify or call out the transducers. Can you please indicate what level monitoring equipment should be included in the Bid?

Answer 37: The water tank level transducer shall be a Sigma Controls, Inc. Model 90000PT Pressure Transmitter (see **Attachment 4**). The water level controls shall be programmed to match the current sequence for high lift pump operations at the water treatment plant (referred to as Control Type 1 on C11).

This document constitutes Addendum 2 for this project.

(municipality)
Vermont Agency of Transportation
Department of Motor Vehicles
Uniform Municipal Excess Weight Permit
FLEET

Approval is hereby given for the granting of a fleet permit under the provisions of VSA Title 23, Sec. 1400a, and any amendments thereto, covering the operations of motor vehicles over local highways and bridges with gross loads as follows:

Owner: _____

Address: _____

Contact: _____ Phone# _____

Type(s) of Vehicle(s)	# of Axles	Product Carried	Max. Weight Requested	Max. Weight Approved
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Approved for the following highways (list may be attached): _____

The following restrictions apply (list may be attached): _____

This approval shall be effective for no more than a one year period ending March 31, _____. This approval covers all vehicles bearing the company name. If permit is to cover unmarked company trucks, please attach a list to this form giving year and make of truck, VIN#, maximum weight and registration #.

The holder of a permit shall be liable for any damage to highways or bridges per VSA Title 23, Sec 1400a (c) and is required to furnish the municipality a valid **Certificate of Insurance** in the following amounts: a minimum of \$100,000/\$300,000 Personal Injury Liability Coverage and \$100,000 Property Damage Coverage.

Approved : _____ Title _____ Date _____
(Duly authorized agent)

Note: Effective July 1, 1994, a Vermont State permit is not required to operate on local highways and bridges.

INSTRUCTIONS FOR APPLICANT

1. Permit is valid for up to one year expiring on March 31.
2. You must include a valid certificate of insurance in the amount of a minimum of \$100,000/\$300,000 Personal Injury Liability Coverage and \$100,000 Property Damage Coverage.
3. Please include \$5.00 for each single vehicle application, or \$10.00 for a fleet permit.
4. Single vehicle permits must be carried in the permitted truck. Fleet permits are not required to be carried in the trucks.
5. Please use the following codes:

Type of Vehicle

TK	Truck
TR	Tractor
TT	Truck Tractor

Products

A	All Products
F	Unprocessed forest products
M	Unprocessed milk products
Q	Unprocessed quarry products

INSTRUCTIONS FOR MUNICIPALITY

1. You may attach a copy of approved highways and/or restrictions to this form.
2. Effective July 1, 1994, a Vermont blanket permit is not required for issuance of Municipal Excess weight permits.
3. Special weight limits which are higher or lower than legal limits for highways or bridges within your jurisdiction must be on file with the Vermont Department of Motor Vehicles.

SECTION 46 4141 - IN-TANK WATER TREATMENT EQUIPMENT

PART 1 GENERAL

1.01 EQUIPMENT OVERVIEW

- A. These specifications provide the requirements to furnish and place into operation a potable tank mixer at Alburgh Village Water Tank Replacement.

1.02 REFERENCES

- A. Occupational Safety and Health Administration, OSHA
- B. Department of Transportation, DOT
- C. NSF / ANSI Standard 61
- D. Underwriters Laboratories Inc., UL 508

1.03 QUALITY ASSURANCE

- A. Continuous Operation Equipment. The mixer shall operate continuously, all day and all night, using 120 VAC as the power source.
- B. No Visual Defects. The mixer shall have no visual defects, and shall have high quality welds, assembly, and corrosion resistant finish.
- C. Qualified US Manufacturer. The manufacturer of the mixer shall have extensive experience in the production of such equipment, and the equipment shall be manufactured in the continental United States.
- D. ~~Factory-Startup Services.~~ Delivery, placement and startup services shall be ~~available, but not~~ included in the bid. For ~~factory~~ delivery and placement, services shall be performed by full time ~~factory~~ employees **of the mixer manufacturer** experienced in the operation of this equipment and who have completed OSHA safety trainings applicable to this type of placement.
- E. Warranty. The mixer shall be warranted to be free of defects in materials and workmanship for a period of 5 years. This equipment warranty would run directly from the manufacturer of the equipment to the owner. The equipment warranty would not be part of the contract or any required bond.

1.04 SUBMITTALS

- A. The awarded Bidder shall provide an electronic copy of the following documents. Upon acceptance of these documents by the Engineer, ~~the Bidder will be issued a Notice to Proceed, and may then proceed to placement of the equipment may proceed.~~

1. Manufacture Qualification Document
2. List of Supplied Equipment
3. Manufacturer Product Sheets
4. Electric Power Source Requirements
5. NSF / ANSI Standard 61 Documentation
6. Warranty Statement
7. Operation Manuals

1.05 FIELD SERVICES

- A. Placement and startup. Equipment manufacturer shall offer placement and startup performed by equipment manufacturer's full time factory employees trained in the operation of the mixer who have completed OSHA safety trainings applicable to this type of equipment placement and startup.

PART 2 PRODUCT SPECIFICATIONS

2.01 MANUFACTURER

- A. Specified Equipment. The mixer shall be manufactured by Ixom Watercare, Inc. of Dickinson, ND, or be a pre-approved alternative.
- B. Pre-approved Alternative(s). Alternatives to the specified equipment will be considered on the following basis only.
1. Ten (10) Days Before Bid. To offer equipment as a pre-approved alternative, written application from the alternative supplier shall be made to the Engineer at least 10 days in advance of the bid opening.
 2. No Material Difference in Quality of Equipment or in Vendor Support. The application should include:
 - a. A brief description of how the offered alternative does or does not meet each of the specifications in this document.

b. An analysis of how acceptance of the alternative equipment would likely affect the overall water quality goals of the project.

c. A statement of the science and support background of the supplier of the alternative equipment, so that the benefits and costs of the alternative equipment to the Owner can be estimated by the Engineer.

3. Five (5) Days Notice to Bidders. If the alternative equipment is accepted by the Engineer, an informational addendum to these specifications shall be distributed by the Engineer to plan holders at least 5 days in advance of the bid opening.

2.02 PERFORMANCE AND FEATURES

- A. The primary objective of the mixer is to prevent icing within the storage tank and to mitigate stratification and stagnation.
- B. Complete Water Circulation Required. To meet the project objectives, the tank or reservoir circulation shall be achieved by a single or multiple submerged units within the reservoir capable of providing long distance circulation of water. The mixer shall have a direct measurable flow rate where suction shall enter specified mixer's intake **or propeller** positioned within **2 18** inches of reservoir floor and discharging water vertically in a sheet flow pattern to induce a large volume, low velocity flow to reach the tank or reservoir water surface. The mixer must be placement flexible in design to allow best hydraulic positioning for tank or reservoir conditions to prevent hydraulic short circuiting within tank or reservoir. ~~Suction not within 2 inches of tank or reservoir floor is not allowed.~~ **The mixing unit shall have a low center of gravity to prevent accidental tip over.**
- C. Number of units required. To meet the project objectives, the following number of mixers are required.

Qty	Model	Tank or Reservoir
1	GridBee GS-9 potable tank mixer or pre-approved alternative	Alburgh Village Tank Replacement 300,000 gallon elevated steel tank

- D. Complete Mix: The mixer manufacturer guarantees that the ~~subject~~ **specified** tank will be completely mixed by the mixer. In continuous operation of the mixer:
- (1) ~~The temperature uniformity at least once per 24 hours all water temperatures~~ within the tank shall converge to within 0.8 degrees C **within 24 hours of mixer activation**, and
- (2) ~~The chlorine concentration uniformity at least once per 72 hours all chlorine concentrations~~ within the tank shall converge to within **0.2 0.18 mg/l within 72 hours of mixer activation**.
- E. Fit Through Small Hatch Opening. The mixer shall be capable of fitting through a clear, unobstructed **minimum** opening of ~~12"~~ **24" diameter** without requiring disassembly or assembly.
- F. Continuous Operation with 120VAC, 20 Amp Power Source. The mixer shall operate continuously during day and night while connected to electric grid power.
- G. Stainless Steel Construction. The mixer shall be constructed primarily of Type 316 stainless steel metal for strength and superior corrosion resistance.
- H. Motor. The mixer shall be mechanically operated by a submersible motor that meets the following criteria.
1. Direct Drive, with no gearbox and no lubrication maintenance required.
 2. Designed for submersible operation. Mixer design shall ~~include flow sleeve or housing around motor to provide water flow past motor per submersible motor design~~ criteria to lower the total motor temperature and increase winding life. **The pump and motor shall be designed so that they will operate in a fully-submerged condition in the water.**
 3. Designed for Continuous Operation without overheating or compromising motor life expectancy **and without exceeding temperature rise limits for the motor insulation system**. Constant, full speed operation, variable frequency drive or other method of speed reduction not required ~~and not allowed~~. **Automatic reset, on-winding thermal overload protection and surge arresters required.**
 4. 120 VAC, 20 Amp power source shall be supplied by others and not the mixer manufacturer.

- I. Exposed Rotating Protection. The mixer shall not have any rotating equipment openly exposed. Rotating shafts, impellers, and motors shall not be openly exposed **and protection shall prevent contact with and storage tank coatings, power cable, retrieval chain, or water tank structure.** ~~and~~ In the event of any part of the mixer exterior contacting the floor or cord, it shall not cause damage to either.
- J. Low Elevation Intake: The mixer shall be supplied with an intake capable of being positioned at the lowest elevation of the tank or reservoir floor. ~~The intake level mixer shall bring water into the mixer at horizontal layer within 2 inches of~~ **be placed at the lowest elevation possible near** the tank or reservoir floor to prevent hydraulic short circuiting of inflow water through the tank.
- K. Restraint System. The mixer shall not require any brackets, penetrations, rope, ties, or fixed connections to the tank or reservoir columns, walls, or floor below the overflow elevation. The mixer shall allow for placement and servicing without requiring tank or reservoir to be drained. The mixer shall not require the use of a diver or diving team to enter the tank or reservoir to complete placement or service of the specified equipment.
- L. Functional for All Water Levels. The mixer shall function properly and not be negatively impacted by fluctuating water levels down to 24 inches of water depth. Devices requiring more than 24 inches of water depth to properly function without damage not allowed.
- M. SCADA and Controls. The mixer shall have the option to add an Electric Control Box including a motor current indicator in a 4-20mA analog output and remote on/off control via 24VDC relay.
- N. Chlorine Boost Connection: The mixer shall be supplied with a connection point for injection of sodium hypochlorite. The connection point shall be compatible with a ½" (1.3 cm) diameter hose and be rated for contact with 12.5% Sodium Hypochlorite solution.
- O. The complete mixer shall be NSF / ANSI Standard 61 and NSF / ANSI Standard 372 listed for safe contact with potable water. The mixer shall be NSF / ANSI Standard 61 listed to be safely in contact with a potable water volume as low as 5,000 gallons.

P. Maintenance Requirements. The mixer shall operate normally with the following maintenance features.

1. No scheduled lubrication is required of any system components including motor.
2. No spare parts shall be required to be kept on hand.

Q. Equipment Support. The mixer manufacturer shall offer full factory support with the following staff and support services.

1. Customer Service, Application Engineering, and Equipment Engineering staff available by email or toll free phone.
2. Field personnel for placing and servicing the specified mixer.
3. Public website with detailed information available describing the mixer for this project and related applications of this equipment into potable water tanks and reservoirs.
4. Service plans for preventative maintenance and continued technology improvements for the specified mixer.

PART 3 EXECUTION

3.01 CONTRACTOR PLACEMENT

- A. Placement, Startup, and Service. Shall be provided by ~~others and not the factory equipment manufacturer.~~ **full time employees of the mixer manufacturer experienced in the operation of this equipment and who have completed OSHA safety trainings applicable to this type of placement.**

END OF SECTION



Shaping the Future

Cardno ATC

171 Commerce Street
Williston, VT 05495

Phone +1 802 862 1980

Fax +1 802 862 1405

www.cardno.com

www.cardnoatc.com

April 18, 2014

Mr. Robert Clarke
Project Manager
Phelps Engineering Inc.
79 Court Street
PO Box 367
Middlebury, VT 05753

RE: Limited Lead Containing Paint Survey
Alburgh Water tower
Alburgh, Vermont
Cardno ATC Project # 63.26342.0003

Transmitted via electronic mail to: rclark@phelpseng.com

Dear Robert:

This report details the findings of the lead containing paint (LCP) survey performed at the above referenced structure.

LEAD-BASED PAINT SURVEY

Cardno ATC performed a limited LCP inspection of representative paint coated surfaces that are anticipated to be impacted by the proposed painting project. The lead-containing paint inspection was performed by Mr. Jesse Stratton, on March 24, 2014.

Representative paint chip samples were collected from building components, placed in labeled containers, which were sealed and submitted to the laboratory for analysis. Paint chip samples were submitted to and analyzed by EMSL Analytical, Inc of Cinnaminson, NJ using the EPA paint chip digestion method SW846-7420/3051. The quantity of lead is reported on a weight basis and recorded as a percent.

Cardno ATC identified three (3) components with associated LCP. The following table is a listing of painted surfaces that were sampled by Cardno ATC and analyzed. The lead-containing paint sample results are reported as percent by weight.

Table 1: SUMMARY OF LCP SAMPLE RESULTS

Location	Component	Substrate	Result (% Weight)
Interior	Overflow Pipe	Metal	0.015
Interior	Wall	Metal	0.016
Exterior	Door	Metal	<0.010
Exterior	Wall	Metal	0.010
Exterior	Overflow pipe drain	Metal	<0.010

Bold = LCP sample results

The implications of LCP existing in a non-residential building are related to the future use of the facility and the need to impact these painted surfaces during the renovation and demolition process.

The Occupational Safety and Health Administration (OSHA) does not acknowledge any quantitative threshold for a lead-based paint. Paint with a detectable amount of lead, regardless of the level, is recognized as a LCP. The possible exposure hazard to workers impacting these coated surfaces should be assessed and contractors and their employees must adhere to OSHA Lead in Construction Standards. Specifically, contractor and subcontractors are required to comply with 29 CFR 1926.62 Lead Exposure on Contractors Interim Final Rule and 29 CFR 1926.59 Hazard Communication for the Construction Industry.

To fully comply with EPA regulations, sampling of demolition debris waste streams may be required, depending on the requirements of the receiving facility.

OSHA recognizes that construction type work on surfaces coated with LCP has a potential to expose workers to hazardous levels of lead and requires that appropriate safety and health measures be followed as stated in 29 CFR 1926.62 and 29 CFR 1926.59. OSHA states that until the employer performs an exposure assessment and documents that employees are not exposed above the permissible exposure limit (PEL) of greater than 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of air, the employer must treat employees as if they were exposed above the PEL for the following operations:

- Manual renovation and demolition of structures, manual scraping, manual sanding and use of heat gun where lead-containing coatings or paints are present;
- Abrasive blasting;
- Power tool cleaning;
- Lead burning;
- Using lead-containing mortar or spray painting with LCP;
- Abrasive blasting, rivet blasting or welding, cutting or burning on any structure where lead-containing coatings or paint are present;
- Cleanup activities where dry expendable abrasives are used; and
- Any other task the employer believes may cause an excess of the PEL.

Work precautions include providing respiratory protection, protective work clothing and equipment, change areas, hand washing facilities, biological monitoring and training until an exposure assessment has determined that the work activity will result in an exposure below the PEL. Additional requirements under this standard include a written compliance program as well as record keeping.

RECOMMENDATIONS

- Appropriate lead-safe work practices, including but not limited to isolating the work area(s), should be conducted by trained personnel when demolition/ renovation work or disturbance of lead containing surfaces is conducted.
- Renovation/demolition contractors must comply with the VOSHA Lead in Construction Standard (1926.62) requirements (designed to protect contractor employees) if renovation/demolition activities impact lead containing surfaces.

Laboratory hardcopy of results are included in Appendix A. Applicable Cardno ATC certifications are included in Appendix B. Thank you for selecting Cardno ATC for your environmental management needs. If you have any questions concerning this report, please feel free to contact us at (802) 862-1980.

Sincerely,



Jesse Stratton
Staff Scientist
for Cardno ATC
Direct Line +1 802 862 1980
Email: jesse.stratton@cardno.com



Stephen Znamierowski
Senior Project Manager
for Cardno ATC
Direct Line +1 802 862 1980
Email: Stephen.znamierowski@cardno.com

APPENDIX A

LEAD-CONTAINING PAINT SAMPLE RESULTS BY SW846-7420/3051

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (856) 303-2500 / (856) 786-5974

<http://www.EMSL.com>cinnaminsonleadlab@emsl.com

EMSL Order: 201404620

CustomerID: ATCE53

CustomerPO:

ProjectID:

tn: **Jesse Stratton**
Cardno ATC
171 Commerce Street P.O. Box 1486
Williston, VT 05495

Phone: (802) 434-2113
Fax: (802) 434-2160
Received: 03/25/14 9:52 AM
Collected: 3/24/2014

object: 63.26342.0003

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
01 Site: Interior-Overflow Pipe	0001	3/24/2014	3/28/2014	0.015 % wt
02 Site: Interior-Walls	0002	3/24/2014	3/28/2014	0.016 % wt
03 Site: Exterior Door	0003	3/24/2014	3/28/2014	<0.010 % wt
04 Site: Exterior Wall	0004	3/24/2014	3/28/2014	0.010 % wt
05 Site: Exterior Overflow Pipe	0005	3/24/2014	3/28/2014	<0.010 % wt

Julie Smith - Laboratory Director
NJ-NELAP Accredited:03036
or other approved signatory

ysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in report are not blank corrected. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. * slight modifications to methods applied. "<" (than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise

les analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NELAP Certifications: NJ 03036, NY 10872, PA 68-00367, AIHA-LAP, LLC ELLAP 100194, A2LA 2845.01

l report from 03/31/2014 10:07:40

eport ChmSnglePm/nQC-7.21.0 Printed: 3/31/2014 10:07:40 AM

Page 1 of 1



EMSL ANALYTICAL, INC.
LABORATORY PRODUCTS - TRAINING

Lead (Pb) Chain of Custody

EMSL Order ID (Lab Use Only):

201404620

Cinnaminson, NJ 08077

PHONE: 1-800-220-3675

FAX: (856) 786-5974

Company: Cardno ATC		EMSL-Bill to: <input type="checkbox"/> Different <input checked="" type="checkbox"/> Same If Bill to is Different note instructions in Comments**	
Street: 171 Commerce Street PO Box 1486		Third Party Billing requires written authorization from third party	
City: Williston	State/Province: VT	Zip/Postal Code: 05495	Country: United States
Report To (Name): Jesse Stratton		Telephone #: 802-862-1980	
Email Address: jesse.stratton@cardno.com		Fax #:	Purchase Order:
Project Name/Number: 63.26342.0003		Please Provide Results: <input type="checkbox"/> FAX <input checked="" type="checkbox"/> E-mail <input type="checkbox"/> Mail	
U.S. State Samples Taken: VT		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	
Turnaround Time (TAT) Options* - Please Check			
<input type="checkbox"/> 3 Hour <input type="checkbox"/> 6 Hour <input type="checkbox"/> 24 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input checked="" type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week			
*Analysis completed in accordance with EMSL's Terms and Conditions located in the Price Guide			
Matrix	Method	Instrument	Reporting Limit
Chips <input checked="" type="checkbox"/> % by wt. <input type="checkbox"/> mg/cm ² <input type="checkbox"/> ppm	SW846-7000B	Flame Atomic Absorption	0.01%
Air	NIOSH 7082	Flame Atomic Absorption	4 µg/filter
	NIOSH 7105	Graphite Furnace AA	0.03 µg/filter
	NIOSH 7300 modified	ICP-AES/ICP-MS	0.5 µg/filter
Wipe* <input type="checkbox"/> ASTM <input type="checkbox"/> non ASTM <input type="checkbox"/> *If no box is checked, non-ASTM Wipe is assumed	SW846-7000B	Flame Atomic Absorption	10 µg/wipe
	SW846-6010B or C	ICP-AES	1.0 µg/wipe
	SW846-7000B/7010	Graphite Furnace AA	0.075 µg/wipe
TCLP	SW846-1311/7000B/SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)
	SW846-1131/SW846-6010B or C	ICP-AES	0.1 mg/L (ppm)
Soil	SW846-7000B	Flame Atomic Absorption	40 mg/kg (ppm)
	SW846-7010	Graphite Furnace AA	0.3 mg/kg (ppm)
	SW846-6010B or C	ICP-AES	2 mg/kg (ppm)
Wastewater Unpreserved <input type="checkbox"/> Preserved with HNO ₃ pH < 2 <input type="checkbox"/>	SM3111B/SW846-7000B	Flame Atomic Absorption	0.4 mg/L (ppm)
	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)
	EPA 200.7	ICP-AES	0.020 mg/L (ppm)
Drinking Water Unpreserved <input type="checkbox"/> Preserved with HNO ₃ pH < 2 <input type="checkbox"/>	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)
	EPA 200.8	ICP-MS	0.001 mg/L (ppm)
TSP/SPM Filter	40 CFR Part 50	ICP-AES	12 µg/filter
	40 CFR Part 50	Graphite Furnace AA	3.6 µg/filter
Other:			
Name of Sampler:		Signature of Sampler:	
Sample #	Location	Volume/Area	Date/Time Sampled
1- PC D1	Intake - Corros pipe	NA	3/24/14 - 1040
2- 1-02	Exterior - Wall	↓	- 1041
3- 1-03	Ext. Door	↓	- 1050
4- 1-04	Ext. Wall	↓	- 1051
5- 1-05	Ext. overflow pipe	↓	- 1055
Client Sample #s: R-1 - PC D5		Total # of Samples: 5	
Relinquished (Client):	Date: 3/24/14	Time: 1200	
Received (Lab):	Date: 3/25/14	Time: 9:50am	EX
Comments:			

APPENDIX B

APPLICABLE CARDNO ATC CERTIFICATIONS

LEAD CONSULTING ENTITY

CARDNO ATC
171 COMMERCE STREET P.O. BOX 1486
WILLISTON, VT 05495

Vermont Department of Health
Environmental Health
P.O. Box 70 - Drawer 30
Burlington, VT 05402-0070

LICENSE: LC373715

EXPIRES: Monday, March 23, 2015

CERTIFICATE OF LICENSE
VERMONT LEAD REGULATORY PROGRAM

THIS CERTIFICATE SHALL REMAIN IN FORCE UNTIL THE EXPIRATION DATE UNLESS REVOKED
OR VOIDED BEFORE THAT TIME.

THIS CERTIFICATE IS NOT TRANSFERABLE AND IS VALID ONLY FOR THE ABOVE PARTY.

COPY OF THIS CERTIFICATE MUST BE ON SITE AT ALL TIMES.

A handwritten signature in dark ink, appearing to be 'AMTS', is located to the right of the text 'COPY OF THIS CERTIFICATE MUST BE ON SITE AT ALL TIMES.'.

LEAD LABORATORY

EMSL ANALYTICAL INC. - 200
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077

VERMONT DEPT OF HEALTH
ENVIRONMENTAL HEALTH
PO BOX 70 - DRAWER 30
BURLINGTON VT 05402-0070

LICENSE: LL357101

EXPIRES: Wednesday, July 02, 2014

**CERTIFICATE OF LICENSE
VERMONT LEAD REGULATORY PROGRAM**

THIS CERTIFICATE SHALL REMAIN IN FORCE UNTIL THE EXPIRATION DATE UNLESS REVOKED
OR VOIDED BEFORE THAT TIME.

THIS CERTIFICATE IS NOT TRANSFERABLE AND IS VALID ONLY FOR THE ABOVE PARTY.

COPY OF THIS CERTIFICATE MUST BE ON SITE AT ALL TIMES.
AND PAINT CHIPS

ANALYSIS OF SOIL, DUST

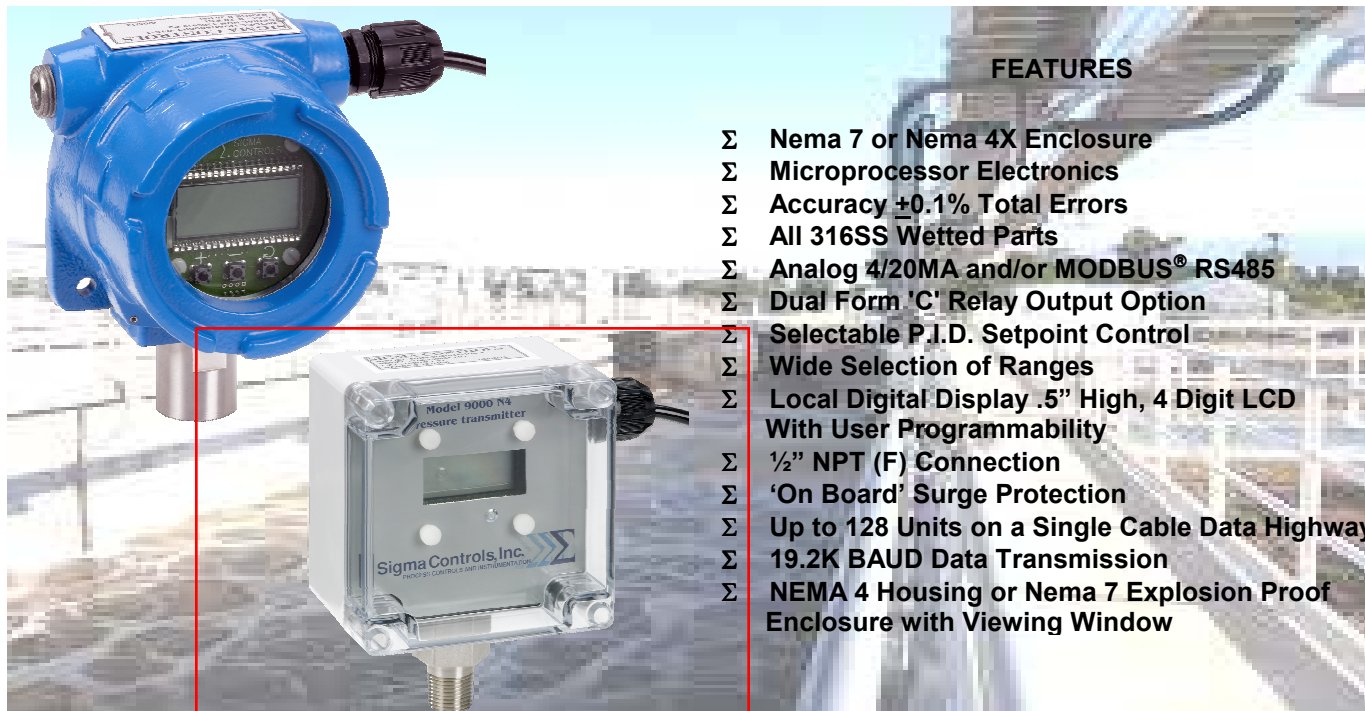


Sigma Controls, Inc.

PROCESS CONTROLS AND INSTRUMENTATION



SERIES 9000PT/N4 MICROPROCESSOR BASED INDICATING PRESSURE TRANSMITTER/CONTROLLER



FEATURES

- Σ Nema 7 or Nema 4X Enclosure
- Σ Microprocessor Electronics
- Σ Accuracy $\pm 0.1\%$ Total Errors
- Σ All 316SS Wetted Parts
- Σ Analog 4/20MA and/or MODBUS® RS485
- Σ Dual Form 'C' Relay Output Option
- Σ Selectable P.I.D. Setpoint Control
- Σ Wide Selection of Ranges
- Σ Local Digital Display .5" High, 4 Digit LCD With User Programmability
- Σ 1/2" NPT (F) Connection
- Σ 'On Board' Surge Protection
- Σ Up to 128 Units on a Single Cable Data Highway
- Σ 19.2K BAUD Data Transmission
- Σ NEMA 4 Housing or Nema 7 Explosion Proof Enclosure with Viewing Window

ENGINEERING FEATURES

- Σ Solid State Microprocessor Design
- Σ Long Term Stability
- Σ Excellent Performance $\pm 0.1\%$ Total Error
- Σ 316SS Wetted Parts Explosion Proof N4 Enclosure
- Σ Integral Terminal Block
- Σ Fully Temperature Compensated 0-50° C
- Σ 4/20MA Analog and/or Digital Outputs Standard. MODBUS® RTU
- Σ Dual Relay Output Option
- Σ User Selectable P.I.D. Control Output
- Σ Digitally Compatible with all Sigma 'MYRIAD' Level and Pump Controllers

The Sigma Controls Model 9000PT pressure transmitter is a state of the art, microprocessor based instrument with industry standard 4/20MA two-wire output and digital output for remote communication.

Both pressure and temperature information is available in digital mode which includes MODBUS® RTU.

Utilizing a state of the art media isolated silicon strain gauge and microprocessor signal conditioning, the 9000PT offers a

broad range of features and benefits.

The integral large (0.5") alpha-numeric display provides local indication of pressure or loop current and is fully user programmable for specific application needs.

User selectable P.I.D. algorithm allow 'turnable' setpoint control output for pumps, valves, etc.

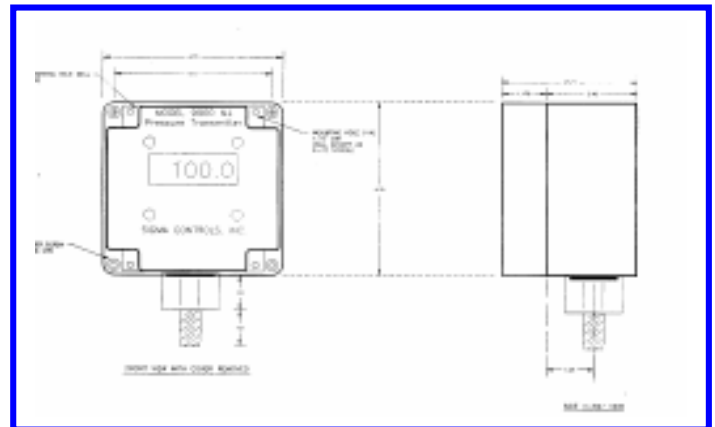
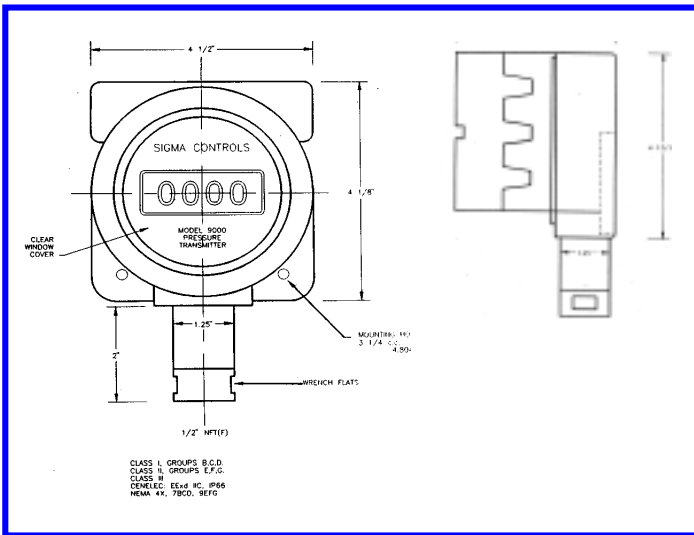
VISIT OUR WEBSITE AT SIGMA CONTROLS.COM

SERIES 9000PT/N4 MICROPROCESSOR BASED INDICATING PRESSURE TRANSMITTER

SPECIFICATIONS

Ranges	Ft Water, 0/12, 0/35, 0/70, 0/115, 0/160, 0/350 (Custom calibration at no charge.)
Pressure (PSIG)	3, 5, 15, 30, 50, 100, 300. (Other ranges available, consult factory.) 150 PSI
Thermal Limits	Maximum Operating: -40°C / 85°C (-40°F / 185°F)
Compensated	0°C / 50°C (-32°F / 122°F)
temperature Effects	± 0.25% Output Span within Compensated Range
Accuracy	= ± 0.1%
Input	15-45 VDC
Output	4/20MA 4/20MA & MODBUS®
Electrical Connection	Integral Compression Screw Terminal Block
Cable Color Code	Black (-) 24 VDC Yellow Digital Output 'A'; Blue Digital Output 'B' Red (+) 24 VDC
Relay Option	Dual Form 'C' 5 AMP Relay Output with User Selectable On/Off Setpoints
Process Connection	1/2" NPT (F) 316SS
Materials of Const.	316SS Body, Buna N 'O' Ring, Neoprene Grommet, 316SS Diaphragm, Aluminum Enclosure
Electrical Connections	1/2" NPT (F)
Local Indication	4 Digit LCD 0.5" High, Fully User Programmable for Zero Span, Decimal Point, Engineering Unit
Housings	Cast Aluminum: Nema 7 ABS: Nema 4X

DIMENSIONS



PH: 215-257-3412
FAX: 215-257-3416
EMAIL: les@sigmacontrols.com

MODEL: 9000PT-A-B-MB/TVSS

9000PT Pressure Transmitter

A = Range: 005, 015, 030, 100, 300 PSI **150 PSI**

B = Input/Output:

4/20MA.....(1)

4/20MA and MODBUS.....(4)

C = Options:

Mounting BracketMB

Transient Suppressor.....TVSS

Dual Relay.....R2

Aluminum.....N7

ABS.....N4X

EXAMPLE: 9000PT-100-1-MB-N7