

# TOWN COUNCIL — AGENDA REQUEST FORM THIS FORM WILL BECOME PART OF THE BACKGROUND INFORMATION USED BY THE COUNCIL AND PUBLIC

Please submit Agenda Request Form, including back up information, 8 days prior to the requested meeting date. Public Hearing requests must be submitted 20

days prior to the requested meeting date to meet publication deadlines (exceptions may be authorized by the Town Manager, Chairman/Vice Chair).

	MEETI	ng Information	
Date Submitted: 1/21/21		Date of Meeting: 2/11/21	
Submitted by: Sarita Croce		Time Required: 15	
Department: DPW/WWTP		Background Info. Supplied: Yes 🖂	No 🗌
Speakers: Sarita Croce			
Category of B	SUSINESS (	(PLEASE PLACE AN "X" IN THE APPROPRIATE BOX)	
Appointment:		Recognition/Resignation/Retirement:	
Public Hearing:		Old Business:	
New Business:	$\boxtimes$	Consent Agenda:	
Nonpublic:		Other:	
	J	ITLE OF ITEM	
Request withdrawal of \$377,12 replacement vacuum truck.	9 from C	apital Reserve Fund for the purch	ase of a
	DESC	RIPTION OF ITEM	
		cuum truck which is used for mainter \$440,000 was budgeted for this pure	
	Refe	ERENCE (IF KNOWN)	
RSA:		Warrant Article:	
Charter Article:		Town Meeting:	
Other:		N/A:	
EQUIPMENT RE	QUIRED (	PLEASE PLACE AN "X" IN THE APPROPRIATE BOX)	
Projector:		Grant Requirements:	
Easel:		Joint Meeting:	
Special Seating:		Other:	
Laptop:		None:	$\boxtimes$
	Cont	ACT INFORMATION	
Name: Sarita Croce		Address: 36 Mast Road,	Merrimack NH
Phone Number: 603-420-1620		Email Address: scroce@merrim	acknh.gov
		Approval	
Town Manager: Yes ⊠ No □		Chair/Vice Chair: Yes No No	
	Hold for	Meeting Date:	



## TOWN OF MERRIMACK, NH DEPARTMENT OF PUBLIC WORKS WASTEWATER TREATMENT FACILITY

36 MAST ROAD - P.O. BOX 235 - MERRIMACK, NH 03054 PHONE: 603-883-8196 - FAX: 603-886-1513 - WWW.MERRIMACKNH.GOV

To:

Kyle Fox

Public Works Director

From: Sarita Croce

Assistant Public Works Director/Wastewater

Cc:

Michael Gorman

Sewer Inspector

**Date:** January 20, 2021

**SUBJECT:** 

Request to Purchase Combination Sewer Cleaner Truck for Collection

**Systems Operation and Maintenance** 

The Wastewater Treatment Plant is requesting permission from the Town Council to withdraw up to \$377,129 from the Capital Reserve fund for the purpose of purchasing a combination sewer cleaner truck. The budget allotted \$440,000 to purchase the truck. The selected bid was the lowest bid.

#### **Sewer Truck Operation**

The truck is used for the maintenance and cleaning of the town's collections system. This equipment serves a crucial role in the prevention of sewer system overflow; it is used as an emergency response piece of equipment to sewer system backups that if not cleared immediately would cause sewer system overflows. This is also an important piece of equipment for the roles it serves to the treatment plant itself, as it is used for the cleaning of the chlorine contact chambers for algae removal for proper sampling. It is also used for cleaning multiple tanks within the facility to reduce the physical labor of the maintenance and operations staff during heavy cleaning of the various chambers. This equipment will serve a crucial role in the cleaning of the pump station wet wells located throughout the town, and also the main pump station for the facility.

A typical truck has water tanks and a waste storage tank. The waste storage tank is typically raised to completely empty the debris tank of solids once the tank is full of solids. The process for emptying the debris body includes elevating the waste tank on the truck. This can create a tipping hazard. To address this issue the Town has elected to add 6,000 pounds of payload capacity to the rear axle and an ejector plate emptying system.

#### **Bid Evaluation**

The current combination vacuum sewer cleaning truck (Vac Con) is scheduled for replacement for this fiscal year in the approved 2020 - 2027 Capital Improvement Program (CIP), minor purchases. The Vac Con is a 2005 combination sewer cleaning truck with a fan based vacuum blower system, and a FMC Bean water pump powering the jetting, and wash down system. The Vac Con System is mounted to an International 6 wheel body and chassis, the combination sewer cleaning truck is used year round as one of our most vital pieces of equipment for the proper functioning of the collections system. The current Vac Con will be traded in at the purchase of the replacement combination sewer cleaning truck.

The Town received bids for a new Combination Cleaning Truck on November 24, 2020. Vac Con did not submit a bid. The Table below provides a summary of the bid prices and trade in value:

Vendor	Trade in Value	Price including Trade in
HP Fairfield (Super Products "Camel")	\$30,000.00	\$369,729.00 base bid \$377,129 (including the additional payload and ejector plate)
Donovan Equipment (Aqua Tech)	\$25,000.00	\$400,614.00
CN Wood (Vactor)	\$25,00.00	\$417,713.00
JF McDermott (Sewer Equipment Company of America "900 ECO"	\$20,000.00	\$451,149.00

Based on a review of the bids Donovan Equipment was considered non-responsive to the bid as indicated below

Bid Spec Requirement	Donovan Equipment
The body shall be cylindrical having a minimum usable liquid capacity of 12 cubic yards to store sanitary wastewater removed from the sewers.	Debris body of was only 10 Yard.
The current vehicle holds 6 yards of liquid. This limitation impacts the Town ability to clean sewers. Twelve yards allows the Town to be more effective when working remotely by minimizing work stoppage to empty the truck.	
A stainless steel micro-strainer (to 30 microns) shall be provided prior to the blower inlet, with (3) removable cartridge style screens and bottom drain port. Or equivalent filtration system.	Air filtration system not called out in bid packet, just checked off as compliant.
This configuration protects the entire blower system by preventing particulate from entering the blowers. Dirt and rust solidify on the rotating lobes inside the blowers and typically cannot be repaired. Blower replacement is estimated to cost \$10,000.	
High pressure water pump shall be rated capable of continuous delivery of 100 GPM at 2500 PSI (submit manufacturer support documentation).	Water pump not compliant with requirement. Maximum 80 psi provided in package
This will allow the Town to more effectively jet sewers with	

Bid Spec Requirement	Donovan Equipment
high pressure water.	
An extreme cold weather recirculation system - minimum 25	Winter recirculation system flow rate was
GPM via transmission power transfer option at chassis engine	20 GPM. At this flowrate, observed freezing
idle speed.	has occurred.
Tale speed.	nas occurred.
Insufficient water movement during freezing temperature	
could cause catastrophic damage to water system from	
freezing of water lines in the truck to bursting of lines, fittings,	
and complete failure of water pump. Complete failure of the	
system could results in greater than \$50,000 of repairs.	
Dual outward mounted rear door props shall be included as	Single door prop. A second prop would
standard to prevent operator from entering door swing path	need to be affixed to the truck.
when engaging rear door prop. This is a single piece of steel	need to be unixed to the truck.
that keeps a door open during hydraulics failure. 2 props are	
required in case of failure of the single.	
All water tanks shall be fully baffled for maximum	Tanks are baffled, in increments 137 gallons
compartment storage of 150 gallons.	over spec (287 gallons).
Excess of 150 gallons storage per compartment will render the	
truck less stables when turning, stopping (off-road) and	
working on uneven surfaces.	
Trucks with larger haffle starges quantities are typically used in	
Trucks with larger baffle storage quantities are typically used in	
Town/Cities where most of the work is completed on paved flat	
surfaces. The Town currently spends a large amount of time on	
cross county runs which are not paved or flat.  The body shall be capable of high dump height of 60".	Only capable of 42" dump height.
The body shall be capable of high dump height of 60.	Only capable of 42 dump height.
This specification allows to flexibility to dump into containment	
areas when required (dumpster, high berm).	
For stability safety, the water tanks shall not elevate with	The water tanks are fixed to the sides of the
debris body during dump cycle.	debris body and rise with the debris body
debris body during during cycle.	The state of the s
This is a safety issue when emptying the truck on uneven	while dumping.
surfaces (easements). When the water tanks' rise with the	
debris body it increases the enter mass of the vehicle, making it	
less stable. Truck tipping hazard.	Non-compliant with specification.
iess stable. Truck apping nazara.	
Body shall have a float type automatic shut-off system	Only single ball float, instead of dual ball
protecting the Positive Displacement Blower with (2) 10"	float.
stainless steel shut-off balls located in the debris body. Each	iloat.
float ball housing shall be within a non-corrosive slide-out	Non-Compliant with specification.

Bid Spec Requirement	Donovan Equipment
screen assembly and be accessed without the use of tools.	
This is a protection for our blower equipment on the truck. It stops the system from continuing to vacuum and potentially pulling water or debris into the blower assembly.	
Duel ball floats help protect system when truck is positioned on any sloped surface. A single blower would cost \$10,000 to replace. In this situation, repair of a blower is highly unlikely.	
Industrial style rear debris body door shall be flat, and shall	Rounded rear door, take up additional
open and close hydraulically by cylinders mounted at the top of	indoor storage space. Adds an additional
the body.	foot or more to the length of the vehicle.
The flat door is important for taking up less space for indoor parking required for cold weather storage. The garage where the vehicle is parked has very little clearance.	Non –compliant with specification.
Vacuum hose shall be designed for front operation with hose mounted and stored at front mounted work station. Front mounted location is required for ease of positioning vacuum hose as well as minimizing need for operator to swing hose into traffic.	Does not meet requirement. Vacuum hose and jet system designed for rear operation.
This is critically important for off road driving. Driving forward is much safer than driving in reverse.	
A minimum 6" connection between tanks shall be provided.	Only 4 inch connection between tanks. Takes longer for tanks to equalize during
This is important for the proper and efficient filling of the fresh	filling, and is slower to supply water volume
water system as well as water being supplied to water pump.	to pump.

#### **Reference Checks**

The Town contacted the references for the Camel listed in the bid and also visited Saco Maine to inspect their in-service Camel and discuss their experience with the truck. The fleet manager and the truck operator both were satisfied with the truck and stated that has operated without significant issues since purchased since the summer of 2019. The truck is on the road Monday thru Friday and provides service for both catch basins and sewer lines.

#### Recommendation

The Wastewater Treatment Plant is therefore recommending the purchase of the Camel Sewer Truck for \$377,129. Attached are copies of all the bids submitted.



## FINANCE DEPARTMENT 6 Baboosic Lake Road Merrimack, NH 03054

Tel: 603-424-7075 Fax: 603-424-0461

## Combination Sewer Cleaner Truck for Waste Water Treatment Facility Bid Form

Due by 2:00PM on Tuesday, November 24, 2020

Combination Sewer Cleaner Truck, according to the Bid specifications	e Town's \$ 399,729.00
Mfg & Model: Superproducts Camel MA	boxx 12yd
Allowance for Trade in	(\$ <u>30,000.00</u> )
	Total price: \$ 369,729.00
Warranty: See ATTACLED DOCS	
Enclosed:  Warranty information  Detailed specifications on equipment  The above bid is provided in accordance with the T  November 2, 2020 except as indicated below:	own of Merrimack's bid invitation dated
Bidder: HP Fair ieic  Street Address: 554 maple 57000  City, State, Zip Code: Hoptingn Nit 03229  Phone No: 603-722-8106  Authorized Signature: Mandre Fax No:  Printed Name: Michael Kaulach  Email: michael Kaulach  HPFA-Field.co.	



INTENT

# TOWN OF MERRIMACK, NEW HAMPSHIRE

FINANCE DEPARTMENT 6 Baboosic Lake Road Merrimack, NH 03054

Tel: 603-424-7075 Fax: 603-424-0516

## BID SPECIFICATIONS COMBINATION SEWER CLEANER TRUCK

INTERT	7
The intent of this specification is to provide for the purchase of one (1) new and unused single-	
The state of the s	
EQUIVALENT PRODUCT	
Bids will be accepted for consideration on any make or model that is equal or superior to the	
logs in the specimen. Decisions of equivalency will he at the eale interpretation of the Management	
Bidder shall demonstrate a reasonable likeness of the equipment being offered within a	
recorded to the of leadest. Chilibrian appropriate challes and he appropriate the state of the s	
Early and the state of the stat	
A blanket statement that equipment proposed will meet all requirements will not be sufficient to	
establish equivalence. Original manufacturer's brochures of the proposed unit are to be submitted with the proposal.	
BIDDER REFERENCES	
To ensure adequate local availability of parts and competent service from experienced suppliers, bids are preferred from local vendors who have sold and serviced at least 30 units of same	•
manufacturer within service area of Merrimack NH Sewer and should include contacts with	
phone numbers.	
SERVICE AND SUPPORT	
Location of warranty service center and amount of inventory shall be noted which may be verified	
Amount of OEM parts at this facility: this information to be included with bid package submittal.	
rears of servicing equipment being bid: this information to be included with hid package	
Subifical.	
Number of factory qualified service technician: this information to be included with bid package	
oublitte.	
GENERAL	
The specification herein states the minimum requirements of the Merrimack, NH Sewer. All bids	
	1 1

must be regular in every respect. Unauthorized conditions, limitations, or provisions shall be cause for rejection. Any bid not prepared and submitted in accordance with the bid document and specification, or any bid lacking sufficient technical literature to enable the Merrimack NH Sewer to make a reasonable determination of compliance to the specification will be considered "non-responsive" and grounds for rejection.	Comply	
The equipment shall be of modular design consisting of vacuum system, water tanks system, debris body and drive system.	Comply	
A sub frame shall be fabricated to the exact dimensions of the truck chassis for mounting of modular components.	Comply	
All components of the module shall attach to the sub frame and not directly to the chassis.	Comply	_
Sub frame shall be designed to ASME standards for maximum applied loads, chassis frame movement and even distribution of weight to the chassis and suspension	Comply	
Sub frame shall be continuous and uninterrupted from back of cab to end of frame.  DEBRIS BODY		
Efficiency of air movement through debris body will be measured for minimal restriction as measured by vacuum pressure gauge while operating blower at full speed. Pressure drop throughout entire system (from 8" hose inlet to blower inlet) including specified filtration and blower protection devices shall be no greater than 3" hg as measured at blower.	Comply	
The body shall be cylindrical having a minimum usable liquid capacity of 12 cubic yards.	Comply	
The body shall be capable of high dump height of 60". Dump height of 60" must be achieved without the use of scissor lift mechanism.	Comply	
The debris storage body shall be constructed with a minimum 1/4" corrosion and abrasion esistant steel.	Comply	-
The debris storage body shall have a minimum yield point of 50,000 PSI and a minimum tensile strength of 70,000 PSI.	Comply	
Body shall have a rear door that is hinged at the top and is equipped with a replaceable type seal. Adjustable for periodic compensation of door seal wear.	Comply	
intering door swilly bath when endaging test door prop	Comply	
edila body.	Comply	
loople acting tryotautic dump cylinder	Comply	
Search directly beliefe (SD Of the thick	Comply	***************************************
or stability and safety, dumping must be accomplished while the pivot point of the body remains xed to the subframe.	Comply	
costion. Door shall be unlocked, opened, closed, and locked by a failsafe hydraulically activated equential positive locking system, cam operated by a single hydraulic cylinder, with all controls ocated behind truck cab, forward of the debris body, so operator is not subject to sewage when umping.	Comply	
pray nozzles to flush the front most area of the debris body. System must produce a flow of 0GPM. Control valve shall be on the curb side of the unit.	Comply	
lody shall have a float type automatic shut-off system protecting the Positive Displacement slower with (2) 10" stainless steel shut-off balls located in the debris body. Each float ball ousing shall be within a non-corrosive slide-out screen assembly and be accessed without the se of tools. NOTE (1) 10" stainless steel shut-off balls – Have found dual system to hang p.	NOTE	

The water tank shall be located for the lowest possible center of gravity while providing 100% gravity flooded intakes to water pump.	Compl	y
Fresh water shall enter the tanks through an in line 6" air gap, all aluminum covered anti-siphon Water level circle to water pump.	Comply	,
Water level sight tubes of non-yellowing plastic shall be installed on both tanks.  The sides of these water tanks shall not extend	-	1
The sides of these water tanks shall not extend more than 48" out from the centerline of the truc	Comply	-
A fresh water drain system shall be provided to completely in the true	K Compiy	
A fresh water drain system shall be provided to completely drain the fresh water system from on location utilizing the 3" Y-strainer.  A minimum 6" connection between the complete system from the fresh water system from the fr	Comply	
A minimum 6" connection between tanks shall be provided.	Comply	_
For stability safety, the water tanks shall not elevate with debris body during dump cycle. Note,	Note	_
An air purge system utilizing the chassis air system shall be provided to assist displacing of residual water out of the high-pressure water system. System shall not be residual water out of the high-pressure water system.		
compressor to fill a 13-gallon auxiliary air storage chamber with pressure gauge and pressure equipped with ball valve and all pressure sequipped with ball valve and all pressure requipped with ball valve and all pressure requipped with ball valve and all pressure requipped with ball valve and all pressure in the chassis compressor. System shall be	Comply	
A 3 in-line "Y" trap strainer shall be located at inlet of water tank fill air-gap.		-
A 3 in-line "Y" trap stainless steel strainer shall be located between the water cells and water comp.	Comply	
Gate Valve shall be provided at water average	Comply	
valer lank must be a certified motored	Comply	
e necessary upon delivery black drag to 1000 galloris, at a minimum. Certification shall	Note	~
Vater tanks shall be constructed of 1/8" aluminum with baffled compartments maximum 150 allons each. Or other equivalent material. Note 250 gallon, poly.	Note	01
VATER PUMP SYSTEM	Comply	
or most efficient use of horsepower and and	COMPLA	
or most efficient use of horsepower and reduced fuel consumption, high pressure rodder pump hall be hydraulically driven via (2) variable displacement pumps	Comply	
olt PTO's.	Comply	
igh pressure water pump shall be rated capable of continuous delivery of 100 GPM at 2500 PSI (ubmit manufacturer support documentation).	Comply	
gh-pressure water (rodder) pump system shall be completely controlled through the range with complete on the controlled system. Control and throttle located on the control panel.	Comply	
gital flow meter shall be displayed in front LCD display. Flow meter shall be capable of ovided.	Comply	
ater pump speed to remain fully adjustable via an independent operator input regardless of the Clected vacuum drive speed.		
ITIABLE flow systems routing water back to the	omply	
explanation of horsenower consumation	omply	
ater (rodder) pump shall include smooth and pulsation operation mode feature without altering C	omply	
ward 2" to 18" depending on flow dynamics and less the wave shall allow nozzle to punch	omply	
stems that require the use of air individual to submitted with bid or explained below	mply	
nage.	mply	
oil to water heat exchanger will be provided in the water system to cool all hydraulic fluids on unit. State horsepower requirement to operate hydraulics at full speed:	mply	

The debris body shall be equipped with a rear door drain to drain off excess liquids while retaining solids and shall include a manually operated 6" knife valve with cam-lock coupler and 25' of lay flat hose having camlock quick connects.	Comply	1
The debris body shall be equipped with a rear door drain at however dead	Comple	+
	Comply	
be included at this location.		
Vertical (cyclone) centrifugal separators shall be installed in-line between the debris body and the		L
	<b>e</b> NOTE	
The state of the s		
THE STATE OF SHALL HIS THE STATE OF THE STAT		
of safety, a minimum of (5) vacuum tuhee shall be stored on authoridate		_
or clamps).	SComply	
A curb-side, folding 3-pipe rack shall be provided, constructed of steel tubing, spring assisted.	Momm	_
THE THE PROPERTY OF THE PROPER	NOTE	
1 OU COLDING. IUIUIIIU DEUIDE (2011 DO PROMADA DO DA L. C. L.	NOTE	_
The state of the s	TOIL	
THE PARTY OF THE PARTY ISSUE WITH THE PACKE PROVIDE UNIT PAIN APPARE		
Trodi door mounted lololling Z-DIDE PACK Shall be provided constructed of shall be in	Comply	_
TOTAL OF OF THE PROPERTY OF TH	- Canapay	
Pipe Storage Racks on rear door with quick releases and (2) Pipe Storage Racks Curbside valst level.	See	
Callet 10 t Of.	Above	
A stainless steel micro-strainer (to 30 microns) shall be provided prior to the blower inlet, with (3) emovable cartridge style screens and bottom drain port. Or equivalent filtration system. Note:	NOTE	
splash shield shall be mounted around the lower 60% of door opening to direct liquid and	Comply	
penings.	- Janagary	
lubrication manifold system shall be provided to allow ground level greasing of boom lift and	Comply	
The state of the s	Compay	
reased.	Comply	706. 9
6" valve, electrically activated, air operated valve debris body vacuum relief system shall be	Comply	
ne debris intake hose (3) Kunkel relief valves shall be included	Comply	
debris inlet deflector distributing load evenly in debris body shall be included	Campul	
AICK IANNO	Comply	
The ter maximum suchqui.	Comply	
he water tank material shall require no internal coating and shall be repairable if patching is	Con	count /
danos.	Comply	
ne water tanks shall be easily removed from the subframe to provide complete access to the	Comomina	
and offession of frighten purposes	Comply	
ne water tanks shall be adequately vented and connected to provide complete filling.	Comply	
te water tarks shall be totally separate from the debris tanks and provide no structural august the	Comply	
to water tarks shall shalle no common walls with the debris tanks to prevent corrected	Comply	
tings.	Comply	
ne water tanks shall carry a 10 year warranty against corrosion or cracking at a minimum.	Comply	-
water talks stiall be fully damed to form a maximum composition of the state of the	Note	
on compared the little of the seven has depended that the state of the		
ion turning and stopping and for Salety of hersonnel that evetome herself at 450 minutes		
INTELLIGITIES AND DISTORDED AND AND AND AND AND AND AND AND AND AN	1	
allon compartments are preferred. Exceptions of requirement shall be explained in detail ecompanied with detailed engineering drawings. Note: 250 gallon.	1	

The water pump shall provide precise 0-80 GPM controlled flow at variable pressure up to 2500 Ap extreme cold was the	Comply	у
An extreme cold weather recirculation system - minimum 25 GPM via transmission PTO at chassis engine idle speed. Note – 40 GPM	Note	
A Hydro-pheumatic nitrogen charged commutation		-
a 2.5 gallon capacity and 1000 to 2500 PSI property and 1000 PSI	Note	
sediment from the bottom of the nume	Comply	
A nozzle rack accommodating (3) nozzles shall be provided in curbside toolbox. The nozzles shall be labeled on storage rack for pipe size/flow and application. Note – Cube-side tool box System shall be relieved to protect operator.	Note	
landoun shall be supplied that allows for about	Comply	
Handgun shall be supplied that allows for changing of flow pattern from a fine mist to a steady stream.  Handgun shall come equipped with quick connect couplers.	Comply	
An additional 1" water relief value of ""	Comply	
An additional 1" water relief valve shall be provided.	Comply	Concession, name of
nid-ship quick disconnect handgun couplers shall be provided.	Comply	
ront and rear quick disconnect handgun couplers shall be provided.		
IVUIU-CACAVAIION MACKAGA Includes I	Comply	
ow meter in clear view of adjustment control.  water pump hour meter shall be provided.	Comply	
nign-pressure hose real canable of operating at any line	Comply	
high-pressure hose reel capable of operating at system pressure shall be provided.  Similar of a 1,300 gallon fresh water capacity. Note – 1500 gallons	Comply	
ACUUM/VACUUM DRIVE SYSTEM	Comply	
acuum shall be provided by a positive die		
acuum shall be provided by a positive displacement rotary lobe type blower driven via chassis and heavy duty split transfer case direct to the blower.	Comply	
herizontal allowers shall prevent drive axle from engaging.	Committee	
horizontal silencer with rain cap shall exhaust above the cab.	Comply	
blower tachometer / hour meter shall be provided and displayed digitally on front control creen.	Comply Comply	
or most efficient use of horsepower and fuel consumption, full vacuum and/or combination peration shall be approximately 1750 RPM of chassis drive engine.	Comply	
ower shall be driven by the chassis engine and shall produce inlet volume of 4500 cfm @ 0" hg 2250 rpm, and 3490 cfm @ 18" hg @ 2250 rpm vacuum (Roots 824RCS 18 or equal). Drive	Comply	
closed with a steel cage quark for safety.	Comply	-
ansfer case shall be activated by air via a one touch control located in cab with animated in the shift blower drive system about the shift blower drive system about the same activation at Ft control panel.	Comply	
not shift blower drive system shall be provided, including transfer case, air shift control, cuum relief, and front control for blower engagement.	Comply	
ower shall be driven from chassis engine via the transmission drive shafts and heavy duty split transfer case direct to blower, engagement via one touch control on front control panel.	Comply	
e blower drive mechanism shall be engaged and disengaged via an electrical switch located at operator's station on the front mounted hose reel. This feature shall reduce blower runtime over shall be provided with a horizontal eiter with a provided with a horizontal eiter with a provided with a horizontal eiter with a	Comply	
wer shall be provided with a horizontal silencer with exhaust above the cab and rain cap electing the silencer from rain water.	Comply	
ower shall draw air from two (2) separate ports in the debris body. Note Single, better draulic shut off valves shall be provided at the suction, return and filter lines to permit servicing the hydraulic system.	lote	
	The state of the s	

VACUUM BOOM SYSTEM		
Vacuum hose shall be designed for front operation with hose mounted and stored at front	Comply	
mounted work station. Front mounted location is required for ease of positioning vacuum hose a	25	
well as minimizing need for operator to swing hose into traffic.		
All connections between debris body and vacuum system will be of the self-adjusting pressure	Comply	
intting type.		
Vacuum hose will remain stationary and not rise with debris body.	Comply	
Upper debris tube shall consist of an anchored steel tube and elbow.	Comply	THE RESERVE THE PERSON NAMED IN
A sub-frame mounted cab guard shall be mounted behind cab with boom rest cradle.	Commiler	The second second second
All vacuum pipes shall be connected to vacuum pick up tube and extension pipes by adjustable	Comply	
lover-center quick clamps to join the aluminum flanges on pipes.	Compay	
One (1) quick clamp for each pipe supplied shall be provided.	Comply	
Boom pedestal shall be directly mounted to module subframe.		
Boom support used for travel mode shall not interfere with access or require removal to tilt hood	Comply	
rorward.	Compay	
A control station shall be equipped with a control joystick for all directions as well as a safety	Comply	
emergency shut-down button, which shall automatically eliminate power to boom.	Compay	
The vacuum boom shall have a heavy-duty flexible hose assembly joining the transition pipe to	Comply	
the debris body, and a 70-degree elbow and 5-1/2 heavy duty hose at the suction end of the	Compay	
boom.		
Boom shall rotate 180 degrees and shall be operated by an electric over hydraulic system. Lift	Note	
and swing movements shall be actuated by hydraulic cylinders. Note 225 Degree	1.0.0	
The horizontal inner steel vacuum tube and inner box beam boom section shall telescope (tube		No
within tube, box beam within box beam) and retract a minimum of 10' without affecting the		140
vertical position of the pick-up tubes, and shall be located at the front work station in its retracted	1	
position, providing 324" maximum reach off the longitudinal axis of unit. Note: We have heard		
of many Customers having issues with this system, from wear of many parts to debris		
plugging the system.		
A joystick for hydraulic control of the boom shall be installed on hose reel front panel.	Comply	
A removable 4" diameter storage "Post" to stabilize the lower boom hose during transport	Comply	
Storage device shall not interfere with raising hood.		
A cordless remote boom control system equipped to activate boom functions, throttle, water	Comply	
pump on/off, hose reel in/out, hose reel speed, vacuum relief on/off and emergency	"	
disengagement e-stop shall be provided.		
A rotatable inlet hose for telescopic boom shall be provided.	Comply	
A detailed engineering drawing must be supplied showing the relationship of the hose reel in	Comply	
relation with the vacuum boom range of motion. Drawing shall show module mounted on chassis	5,	
full arc of vacuum hose both retracted and extended, full rotation of arc for hose reel in the		
extended position and dimension all arc lengths of vacuum boom retracted and extended.		
Drawing shall highlight intersection areas whereby combination cleaning is possible (within full		•
arc on telescoping boom system).		
Unit must be capable of a lift of 35' of sewer flow (including liquids, rags, grease, and other	Comply	
solids)		
HOSE REEL		
THEORE THE TECHNOLOGY CONTROL TO STREET OF THE THEORY OF THE THE THEORY OF THE THE THE THEORY OF THE THEORY OF THE THEORY OF THE THEORY OF THE	Comply	
Hose reel assembly shall be direct frame mounted.	1-	
Hose reel assembly shall be mounted on an independent frame that can be removed from	Comply	
Hose reel assembly shall be mounted on an independent frame that can be removed from brackets attached permanently to front of main truck frame members.	"	
Hose reel assembly shall be mounted on an independent frame that can be removed from brackets attached permanently to front of main truck frame members.  Reel will be manufactured out of 1/4" spun steel for added structural strength and shall require n	"	
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operating range.	[C1]	
The hose reel shall rotate about the reel assembly centerline so the reel shall never extend	Comply	
beyond the truck width. Reel coverage diagram shall be submitted with hid	Comply	
Controls shall accessible on both sides of the hose reel via a mounting station for the wiseless	Comply	
liernote control, allowing operator to work at either side of unit for safety nurnoses	Compiy	
600 x 1" Piranna Sewer Hose / 2500 Psi shall be provided	Comply	-
An automatic hose level wind scroll device shall be supplied. An air-cylinder actuated pipels salls	- 6	
nozzle blockages.	Compay	
An air-cylinder actuated pinch-roller shall exert downward pressure across full width of reel to retain hose on reel when encountering nozzle blockages. Pinch roller must be activated via a ontouch, backlit button with lighted feedback on the control panel.	Comply	
Digital footage counter displaying footage values shall be provided. System must be capable of resetting value to ensure operator safety. Accuracy To Within One Percent Of Actual Distance, Large Easy To Read Lcd Screen located on the front control panel screen.	Comply	
TU Leader Hose	Comply	
WASHDOWN EQUIPMENT	C CARRIED LY	
A handgun with 1/2" x 35' hose shall be provided at mid-ship to which allow the operator to deliver water to area served by pick up hose and to the inside of the debris body for clean out.	Comply	
hand sprayer with adjustable spray-pattern to be provided with trigger-style gun		
FRONT OPERATING STATION AND CONTROLS		-
Primary operator station will be located at front of hose reel.	Comply	
All operator controls should be located on a single control panel that can be rotated on a 90	Comply	
degree arc for an operator customizable location. The control panel shall also feature the ability to raise and lower to accommodate operators of different height.		
Station shall include a 7" Touch enabled display screen with corresponding tactile buttons for reading critical machine data including (hose footage, hose reel speed settings, water pressure, water flow. Air mover information, chassis data, mode indicator, chassis fuel level, and diagnostic controls), Back lit button keypads with, laser etched function icons, and 4 light feedback indicators. These buttons shall operate the following functions: All setup functions (remote/panel selector, work lights, hose reel extend/retract, hose reel lock, and pinch roller activation) and Vacuum functions. Additionally, there will be separate sealed rocker switches for Water Pump on/off and Throttle up/down. There shall be a multi flow control dial for controlling the full range of the water pump.		
There shall be a hose reel joystick to control the pay in and pay out of the hose reel, this joystick shall offer speed control that increases the further the joystick is moved in either direction. There shall be an additional hose reel speed dial for setting specific speed ranges of the reel. There shall be a boom joystick that controls all function of the boom including up/down, left/right, and extend/retract. There shall be a E-Stop button to bring the machine to safe operating condition	Comply	
Tachometer and hour meter for chassis engine provided at control station shall be provided.	Comply	-
Tachometer and hour meter for blower provided at control station shall be provided.	Comply	
provided.	Comply	
Blower Engagement/Vacuum Relief - Sealed Electric/Air NEMA 4 Switch shall be provided.	Comply	
water pump nour meter shall be provided.	Comply	
TO nour meter shall be provided.	Complet	
A temperature light and alarm shall be provided. Light and alarm will be activated when hydraulic temperature reaches 180 F.	Comply	
Front control screen shall display a water level indicator to show level of water through the range of the tank.	Comply	***************************************
Front control screen shall display the debris body level.	Comply	
N CAB CONTROLS	Сошріу	
All In cab controls are to be located on a single in cab control screen. This shall be a full color	Comply	

display screen. It shall utilize 12 back lit tactile (glove ready) buttons on the sides of the screen as well as feature touch screen operation.	Comply	
All Back up camera Features shall be displayed on the In Cab Control Screen.	Comple	
All work lights shall be able to be activated or deactivated in cab with on screen controls.	Comply	
All work lights shall be able to be activated or deactivated in cab with on screen controls.	Comply	
All work lights shall be able to be activated or deactivated in cab with on screen controls.	Comply	-
All work lights shall be able to be activated or deactivated in cab with on screen controls.	Comply	
All work lights shall be able to be activated or deactivated in cab with on screen controls.	Comply	
All work lights shall be able to be activated or deactivated in cab with on screen controls.	Comply	
All standard arrow boards or arrow stick shall be controlled via an on screen controller	Comply	
All safety strobes and beacons shall be controlled via on screen controller	Comply	
Jet or Combo mode shall be activated via one touch button on the control panel. Control screen	Comply	
imust display an on screen representation of the chassis drive system and must animate to show	Comply	
as drive systems activate or deactivate.		
Recirculation must be activated on the in cab control screen and visibly show that it is active at all times.	Comply	
ELECTRICAL & SAFETY LIGHTING	1	
The entire system shall be vapor sealed to eliminate moisture damage, "Nema-4" type or equal.		
Logs, reports, and hour meters will be accessible via the display.	Comply	
All electrical connections shall be void of exposed wires or terminals nor should they be painted.	Comply	
Paint process shall be completed prior to installation of wiring.	Comply	
All wiring shall be color-coded and encased in conduit to scaled terminal boxes with circuit breakers.	Comply	
All other lights required by State and Federal Laws.	Comply	
One-piece directional 10-light arrow board (Signal Master or equal) shall be mounted on rear	Comply	
door or debris body, with controls mounted in cab.	Compay	
Handheld, Pistol Grip LED Spot light with rechargeable Lithium Ion battery.	Comply	
Operator station shall have back lit buttons for low light operation.	Comply	
Hose reel manhole work lights shall be provided	Comply	
(2) L.E.D. Boom work lights shall be provided.	Comply	
L.E.D. Work light at midship curbside shall be provided.	Comply	
L.E.D. Work light at midship street side shall be provided.	Comply	
(2) L.E.D. Rear door work lights shall be provided	Comply	
L.E.D. Lights, Clearance, Back-Up, Stop, Tail & Turn shall be provided.	Comply	
Mid-Ship L.E.D Bubble Type Turn Signals Shall be Provided	Comply	
SAFETY EQUIPMENT	Comply	
E-stop shall be located at each operator interface location. Standard locations to include: front hose reel, mid-ship curbside dump controls, & wireless controller (if equipped.)	Comply	
Electrical system controls shall be configured to allow for single point operation only. Upon engagement of controls at specified locations, additional controls shall be disabled.	Comply	
Electrical system must enable self-check to ensure all switches are in home position prior to critical function enablement. System must "lock out" controls when switch is not in home position.	Comply	
Rear work lights shall be activated upon engagement of reverse gear.		
(1) Emergency Flare Kit	Comply	
(1) 5# Fire Extinguisher.	Comply	
7" dash monitor 2 comora system shall be associated A.F.	Comply	
7" dash monitor, 2-camera system shall be provided. A Front Hose Reel Color Camera with 130 degree Viewing Angle shall be provided to provide a front visual of the manhole cover to aid in equipment set-up. A rear back-up color camera with 130 degree viewing angle shall be provided. Camera to have automatic activation when the unit is switched to reverse.	Comply	
The unit shall utilize a high temperature monitoring safety device to automatically disable the vacuum system when the outlet temperature of the positive displacement blower reaches a high temperature limit.	Comply	

Digital water pressure shall be displayed in front LCD display. Pressure gauge shall be capable of displaying water system pressure in all pump operating modes.	Comply
SEWER TOOLS AND ACCESSORIES	
(1) 30 Sand Nozzle	+
(1) 30 deg. Sanitary Nozzle	Comply
(1) 15 deg. Penetrator Nozzie	Comply
(1) i" Small finned nozzle pipe skid	Comply
VACUUM TOOLS AND ACCESSORIES	Comply
The basic vacuum tube package shall include the following:	
(1) 8" x 3' aluminum pipe	
(2) 8" x 5' aluminum pipe	Comply
(1) 8" x 6'6" catch basin tube	Comply
(4) 8" quick clamps	Comply
CHASSIS EQUIPMENT AND STORAGE	Comply
Two (2) front tow hooks shall be provided.	-
Two (2) rear tow hooks shall be provided.	Comply
A safety cone storage rack shall be provided to contain safety cones in the inverted position.	Comply
Aluminum Toolbox - Behind Cab	Comply
(1) 18" x 24" x 24" Aluminum Toolbox Mounted street side shall be provided. Note 22x14x60	Comply
(1) 48" x 22" x 24" Aluminum Toolbox Mounted curb side shall be provided. Note 10x18x48	Comply
2) 18 in. x 16 in. x 12 in. Aluminum Toolbox - Front Bumper shall be provided. Note curb side	Comply
00	Note
(1) 60" x 24" x 24" Aluminum Toolbox Mounted street side shall be provided. Note 18x18x48 Curb side safety	Note
4) Long Handle Tool Storage Locations Behind Cab shall be provided	Comply
MODULE FINISH Painting of the module shall be with a DuPont Imron Elite Polyurethane Enamel Top Coat.	Comply
Application is to be a wet top coat applied to a dried and sanded primer base. Powder Coat Surface prep material with steel shot blast Grit G-80. Wash, Rinse & surface stch with Iron Phosphate, Rinse, dry & seal. Powder Coat Industrial Coating TGIC Super Durable, 4ml thick average with a Finish of 80+Gloss rating @60 degrees.	
The unit shall be a new model. No discontinued models will be accepted	<del> </del>
reightliner 114SD Conventional Cab Chassis	Comply
The unit shall be equipped with a diesel engine, turbo charged and after cooled, with a Detroit Diesel 13 12.8L; 435 HP @ 1800 RPM, 1650 LB/FT @ 1100 RPM Note: 450HP	Comply Comply
Set Forward Axle	Comply
The unit shall be equipped with an Allison 4000 RDS Automatic Transmission with PTO	Comply
Provision	Compay
The unit shall be equipped with a Meritor MFS-20-133A 20,000# Wide Track, I-Beam Type Single Front Axle	Comply
he linit shall be equipped with a 20 000# Flat I and Flat I	Comply
the drift shall be equipped with a 20,000# Flat Lear Front Suspension	Note
The unit shall be equipped with a Meritor RT-46-160P 46,000# R-Series Tandem Rear Axle Note 10,000# Rears - HENDRICKSON RT403 @40.000#	
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The unit shall be equipped with a 20,000# Flat Leaf Front Suspension The unit shall be equipped with a Meritor RT-46-160P 46,000# R-Series Tandem Rear Axle Note 10,000# Rears - HENDRICKSON RT403 @40,000# The unit shall be equipped with a 46,000# Hendrickson RT463 Rear Suspension Note 40,000# Rears - HENDRICKSON RT403 @40,000# The unit shall be equipped with a 114 inch BBC flat room aluminum conventional cab The unit shall have a wheelbase of 277 inches The unit shall have a 7/16 x 3-9/16 x 11-1/8 inch steel frame with 120 KSI rating The unit shall have a 1/4 inch C-Channel inner frame reinforcement The unit shall have a 71 inch rear frame overhang The unit must be capable of fuel dosing of after treatment enabled in PTO mode-cleans hydrocarbons at high temperatures only.  Unit must be equipped with air actuated rear axle lockers on one switch, and inter axle cross pocking on other switch, to lock in both of the tandem axles (DCDL/IAD)	Comply Comply Comply Comply Comply
The unit shall be equipped with a Meritor RT-46-160P 46,000# R-Series Tandem Rear Axle Note 10,000# Rears - HENDRICKSON RT403 @40,000#  The unit shall be equipped with a 46,000# Hendrickson RT463 Rear Suspension Note 40,000# Rears - HENDRICKSON RT403 @40,000#  The unit shall be equipped with a 114 inch BBC flat room aluminum conventional cab  The unit shall have a wheelbase of 277 inches  The unit shall have a 7/16 x 3-9/16 x 11-1/8 inch steel frame with 120 KSI rating  The unit shall have a 1/4 inch C-Channel inner frame reinforcement  The unit shall have a 71 inch rear frame overhang  The unit must be capable of fuel dosing of after treatment enabled in PTO mode-cleans by drocarbons at high temperatures only.  Unit must be equipped with air actuated rear axle lockers on one switch, and inter axle cross	Comply Comply Comply Comply Comply Comply

Comply

(1) 8" x 7'-6" Aluminum Vacuum Tube	Comply
(1) 8" x 78" Higbee C/B Nozzle Assembly	Comply
(6) 8" Quick Clamp Assembly	Comply
1) 8" Adjustable Air Adapter	Comply
1) Flexible Hose Guide	Comply
DEALER	+
quipment dealer must be within 40 miles of Merrimack Water Treatment facility.	Comply
quipment dealer must have road trucks available for travel to customer's site	Comply
Parts must be in stock at dealer's location, and on occasion from manufacturer within 48 hours.	Comply
quipment dealer must have been representing offered product for over 20 years	- Compiy
Dealer must have over 50 units of the model offered out in the field	<del>                                     </del>
Varranty	+
extended warranty on emissions system pricing to be included in bid package (pricing for all varranty periods offered to be included with bid package.)	Comply
Varranties to be included in bid package on all aspects of Unit. Listed out in induvial line items or clarity.	Comply
raining	+
raining in the operations and maintenance of the unit to be included.	Comply



554 Maple Street Hopkinton, NH 03229 P: (603) 225-9576 F: (603) 228-5246

### Sales Quote

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received by that date				
CUSTOMER NO	826536	TERRITORY	393	PAGE 1 of 4
ORDER DATE	11/23/2020	CUSTOMER PO	79328Kaulb	ach
QUOTE DATE	01/21/2021	SHIPPED VIA		
SALES ORDER	5914307 - SQ	FREIGHT TERMS	EXW- CUST	OMER FRT ACCOUNT
1000000		EX2	DIRECT BIL	L TRANSER AT ORIGIN
PAYMENT TERMS	Net 30 Days from	m Invoice Date	CO	DE 002
DELIVERY INSTRUCT	ONS:			

REQUESTED SHIP DATE 11/23/2020

SOLD TO: TOWN OF MERRIMACK CHP 80 TURKEY HILL RD MERRIMACK NH 03054-4024 SHIP TO: TOWN OF MERRIMACK CHP 80 TURKEY HILL RD MERRIMACK NH 03054-4024

#### DESCRIPTION/REMARKS

DUMP TYPE CAMEL MAXXX / 12 YD (9.2m) COMBINATION SEWER CLEANER

Chassis ? 2020 Freightliner 114SD Detroit DD13 450 Horsepower, Allison 4000 RDS Auto, 46k rear end, 12 yard body.

#### STANDARD COMPONENTS

Hydraulic powered open and close, full height and width flat rear door

Four (4) mechanical, wedge pin and receiver, hydraulically operated tailgate latches Exterior

mechanical liquid level gauge with stainless steel float and rod

Body raised with a two stage double acting telescopic cylinder

-EJECTOR STYLE WITH SIDE DRAIN, KNIFE VALVE AND DECANT HOSE

Internal debris tank flushing system

Vacuum pump direct shaft driven from a heavy duty transfer case

Blower engagement from front control panel

An externally mounted, vertical cyclone separator with a 16" diameter clean out (ceramic coated as discussed via conference call on 1/20.

Separate bill to be issued for coating)

Drip tube to be added to cyclone separator at dealer

Vacuum relief vent door to automatically relieve vacuum

Water storage tanks 1500 gallon usable capacity

Rotational molded non-cross linked polyethylene construction with ultraviolet stabilizer

A single curbside fill system with strainer and 4" air gap

The hose reel assembly front mounted with 270 degree manual rotation

The hose extends 18 inches

The hose reel capacity of 1000' of 1" I.D. sewer hose.

Reel driven by a double chain, hydraulic drive

A containment system enclosing the top 1/4 of the hose reel

Self-contained air purge system for purging water to prevent freeze-up

Power boom with 250 degree hydraulic rotation lockable in any position

Boom is equipped with a heavy duty channel reinforced elbow

Joy sticks permanently mounted to the operator control station for boom, hose reel functions

Hydraulic boom extension of 8', true telescoping tube inside of tube design

The operator control center is located at the front of unit

Advanced logic Can-BUS command and control systems network

Self-diagnostic control system

Quarter fenders ? front and back of rear wheels

Safety cone rack complete with 6 - 28" orange cones

Powder coat finish, unit only, white

Rear bumper

Assy, Body, Camel, 12yd, Dump

R	NET DUE	CASH DISC.	IF PAID BY	SUB-TOTAL	377,129.00
E	377,129.00	0.00	02/20/2021	FREIGHT & HANDLING	0.00
M A				SALES TAX	0.00
R				TOTAL(USD)	377,129.00
K				PREPAID AMOUNT	



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CUSTOMER NO	826536	TERRITORY	393	PAGE 2 of 4
ORDER DATE	11/23/2020	CUSTOMER PO	79328Kaulbach	
QUOTE DATE	01/21/2021	SHIPPED VIA		
SALES ORDER	DER 5914307 - SQ FRE		EXW- CUSTOM	ER FRT ACCOUNT
		EX2	DIRECT BILL TR	RANSER AT ORIGIN
PAYMENT TERMS	Net 30 Days from	m Invoice Date	CODE	002
DELIVERY INSTRUCT	IONS:			

REQUESTED SHIP DATE 11/23/2020

SOLD TO: TOWN OF MERRIMACK CHP 80 TURKEY HILL RD MERRIMACK NH 03054-4024

SHIP TO: TOWN OF MERRIMACK CHP 80 TURKEY HILL RD MERRIMACK NH 03054-4024

8" vacuum system, "Roots type PD Model 824, 18" hg. and 4500 cfm

Pleated final filter assembly

VACUUM PUMP HIGH TEMP RELIEF SYSETM

Rear splash shield Cover, No Accu-level Cover, 6" Front Drain

Rear body drain, 6", knife valve, 10' x 6" fabric drain hose, camlock cap (RIV Valve)

Standpipe, Rear drain, vertical asm Baffle, Interior rear door, stainless steel

Cover, 3" Tailgate 80 GPM @ 2500 PSI Winter recirculation

Retractable hose reel with live center with 50' x 1/2" hose

Low water warning light and alarm with water capacity digital display

Manual Accumulator shut off valve (Standard)

Wireless remote

Boom Decals, Red w/Black Border (choose qty 2) (standard)

800' 1" hose

Fully auto power level wind

Hose reel tension system

Hose reel digital counter (automatic)

LED Boom work lights

LED Flood light package, tailgate area, power unit area

LED Package 2 - (2) Tailgate beacon omni-directional strobe, (2) Boom beacon omni-directional strobe

Rear-mounted light bar

Lower curbside toolbox 18" x 18" x 48"

Curbside toolbox 18" x 18" x 48"

Cordless Rechargeable Handheld Work light

Driver side toolbox 22"x 14" x 60"

Back of cab vertical tube rack

Tube Rack, Tailgate, Fold Down

Camera system, front

Urethane paint finish, white

Hydro-X Kit, Bandlock Style (SP Style)

Rotor Nozzle

3D Cleaning Nozzle

Large Chisel Nozzle

1" finned nozzle extension

Nozzle rack curbside tool box

Hose, 25', plastic - Single Jacket Filler Hose

R	NET DUE	CASH DISC.	IF PAID BY	SUB-TOTAL	377,129.00
M	377,129.00	0.00	02/20/2021	FREIGHT & HANDLING	0.00
A				SALES TAX	0.00
R				TOTAL(USD)	377,129.00
K				PREPAID AMOUNT	



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ORDER DATE	11/23/2020	CUSTOMER PO	79328Kaulb	ach
QUOTE DATE	01/21/2021	SHIPPED VIA		
SALES ORDER	5914307 - SQ	FREIGHT TERMS	EXW- CUST	OMER FRT ACCOUNT
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PAYMENT TERMS	Net 30 Days from	m Invoice Date	co	DE 002
<b>DELIVERY INSTRUCT</b>	IONS:			

REQUESTED SHIP DATE 11/23/2020

SOLD TO: TOWN OF MERRIMACK CHP 80 TURKEY HILL RD MERRIMACK NH 03054-4024 SHIP TO: TOWN OF MERRIMACK CHP 80 TURKEY HILL RD MERRIMACK NH 03054-4024

1/2" dia x 35' Whip hose with quick disconnects
Leader Hose 1" x 10'
Wash-down handgun
Tiger tail Sewer Hose Guide
Hydrant wrench
Puller hook
Front / rear tow hooks
2 1/2 pound fire extinguisher (for 1 additional, 1 included with chassis)
7" dash monitor, 2-camera system shall be provided. A Front Hose Reel Color Camera with 130 degree & A rear back-up color camera with 130
degree viewing
(1) Emergency Flare Kit
Behind cab toolbox
Toolbox curb-side 18x18x36 opens up
Fluidizing Suction Tube Nozzle 8" x 24"
Super tube Lock ring 8"
Gaskets for Super tube O-ring, Gasket 8"
8" X 36" Super tube w/ Crown
8" x 36" Super tube ? Aluminum x2
8" x 60" Super tube ? Aluminum x3
8" x 84" Super tube - Aluminum
8" x 96" Super tube ? Aluminum
**Flat flange style tubes and clamps
One (1) year warranty, unit module on defects in material and workmanship
Ten (10) year warranty, on water tanks, defects in material and workmanship
Ten (10) year warranty, on debris tank, defects in material and workmanship
Three (3) year warranty, on water pump, defects in material and workmanship
Two (2) each operation, maintenance and parts manual
PDI - Prep - Deliver to Merrimack

R	NET DUE	CASH DISC.	IF PAID BY	SUB-TOTAL	377,129.00
E M	377,129.00	0.00	02/20/2021	FREIGHT & HANDLING	0.00
Ä				SALES TAX	0.00
R				TOTAL(USD)	377,129.00
K				PREPAID AMOUNT	



554 Maple Street Hopkinton, NH 03229 P: (603) 225-9576 F: (603) 228-5246

### Sales Quote

IMPORTANT: All invoices are due and payable in U.S. Dollars in Guadalupe County, Texas, or where indicated below. No goods to be returned without our written permission. Goods must be returned transportation charges pre-paid. A handling charge will be made on all returned goods. LATE CHARGE: A late charge of 1.5% of any past due balance of the dealers account as of the last day of the month will be billed as of the 15th day of the following month if payment has not been received by that date.

CUSTOMER NO	826536	TERRITORY	393	PAGE 4 of 4
ORDER DATE	11/23/2020	CUSTOMER PO	79328Kaulbach	
QUOTE DATE	01/21/2021	SHIPPED VIA		
SALES ORDER	5914307 - SQ	FREIGHT TERMS	EXW- CUSTOM	ER FRT ACCOUNT
		EX2	DIRECT BILL TI	RANSER AT ORIGIN
PAYMENT TERMS	Net 30 Days from	Net 30 Days from Invoice Date		002
DELIVERY INSTRUCT	IONS:			

REQUESTED SHIP DATE 11/23/2020

SOLD TO: TOWN OF MERRIMACK CHP 80 TURKEY HILL RD MERRIMACK NH 03054-4024 SHIP TO: TOWN OF MERRIMACK CHP 80 TURKEY HILL RD MERRIMACK NH 03054-4024

ITEM NUMBER	BRANCH	DESCRIPTION	PICK SLIP#/ LOT/SERIAL	QUANTITY SHIPPED	LIST PRICE	DISC%	EXTENDED AMOUNT
SEWERHPF	9958	CAMEL MAXXX COMBO		1	407,129.00	0	407,129.00
TRADEINQUOTEHPF	9958	2006 VacCon		1	-30,000.00		-30,000.00

R	NET DUE	CASH DISC.	IF PAID BY	SUB-TOTAL	377,129.00
M	377,129.00	0.00	02/20/2021	FREIGHT & HANDLING	0.00
A				SALES TAX	0.00
R				TOTAL(USD)	377,129.00
K				PREPAID AMOUNT	



### FINANCE DEPARTMENT 6 Baboosic Lake Road Merrimack, NH 03054

Tel: 603-424-7075 Fax: 603-424-0461

# Combination Sewer Cleaner Truck for Waste Water Treatment Facility Bid Form

Due by 2:00PM on Tuesday, November 24, 2020

Combination Sewer Cleaner Truck, according to the Bid specifications	Town's \$ 471, 490.00
Mfg & Model: SEWER FQUIDMENT CO.	
Allowance for Trade in	(\$ <u>20,000.09</u> )
	Total price: \$ 451,149.00
Warranty: ENGNE AND AFTER TREAMENT WAPRI SEWER EQUIPMENT 1 EXTRY YEAR Enclosed: TOTAL LYRS — Warranty information — Detailed specifications on equipment	PNITY COVADAGE 3 YRS/100,000 mi
The above bid is provided in accordance with the To November 2, 2020 except as indicated below:	own of Merrimack's bid invitation dated
SHEET	
Bidder: J.F. M.D.R.P. M.D.T. ORP. Street Address: 1235 AUBURN ST. City, State, Zip Code: WHITMAN MASS. Phone No: 500 580 3740 Authorized Signature: DAWN J. KENNEDU. Printed Name: BRIAN J. KENNEDU. Email: BRIAN J. KENNEDU.	00380- 308 580 7747 

## Exceptions

- J.F. Mcdermott is 70 miles away from Merrimack WWTP.
- Tank shall be constructed of welded/repairable .50", U.V. stabilized Duraprolene with a ten (10) year factory warranty. The Duraprolene is to be ultraviolet stabilized to prevent material break down. Total tank capacity shall be 1200 gallons of water with two interconnected 600 gallon tanks. The tanks shall be interconnected with a 6" crossover pipe. The baffles in the tank will be constructed of .50" Duraprolene. These baffles will reduce sloshing and distortion by forming internal compartments. Tank bottom will be flat bottom type; pump intake will be located such to allow sediment to settle at tank bottom rather than entering and damaging pump.
- No LCD Computer Screen on front of Hose Reel. All functions are monitored with Analog Pressure and Hydraulic Gauges. 12 Volt wiring, switches and hydraulic levers operate front hose reel.
- All hydraulic functions shall be powered from the engine directly.
   No power take off's (PTO'S), chassis drive line transfer cases, belt drive/jack shaft power dividers etc.
- System power is provided by twin hydrostatic transmissions, one to supply power to the water pump drive and the second to provide power to the blower drive.

J.F. McDermott has been in business for over 75 years selling and servicing sewer cleaning equipment. Service dept with 2 Techs and service trucks. Parts and equipment in shop; pumps blowers on shelf.



FINANCE DEPARTMENT 6 Baboosic Lake Road Merrimack, NH 03054

Tel: 603-424-7075

Fax: 603-424-0516

# BID SPECIFICATIONS COMBINATION SEWER CLEANER TRUCK

INTENT		
The intent of this specification is to provide for the purchase of one (1) new and unused single-		
engine combination sewer and catch basin cleaner used for removing all debris commonly found	1	
in catch basins/storm lead structures and sanitary sewer lines/manhole structures using a front		
mounted operating station. The unit shall consist of a Positive Displacement (PD) Blower vacuum		
system, a hydraulically driven high pressure water pump, an enclosed sealed body for storage of		
collected debris and equipped with a self-contained water supply as the source for the water		
pump system. The unit shall have the capability of operating both vacuum and water system		
simultaneously at full operating speeds continuously. (Submit horsepower requirements of all		
systems on unit)		
EQUIVALENT PRODUCT	+	*
Bids will be accepted for consideration on any make or model that is equal or superior to the		
equipment specified. Decisions of equivalency will be at the sole interpretation of the Marrimack		
INH Sewer Purchasing and Public Services Director.		
Bidder shall demonstrate a reasonable likeness of the equipment being offered within a		
reasonable time of request. Equipment demonstrated shall be equipped with all accessories and		
components required in this specification to ascertain equivalence.		
A blanket statement that equipment proposed will meet all requirements will not be sufficient to	-	
establish equivalence. Original manufacturer's brochures of the proposed unit are to be		
submitted with the proposal.		
BIDDER REFERENCES		
To ensure adequate local availability of parts and competent service from experienced suppliers,		
plus are preferred from local vendors who have sold and serviced at least 30 units of same		
manufacturer within service area of Merrimack NH Sewer and should include contacts with		
phone numbers.		
SERVICE AND SUPPORT	$\overline{}$	
Location of warranty service center and amount of inventory shall be noted which may be verified	_	
and inspected.		
Amount of OEM parts at this facility: this information to be included with bid package submittal.		
Years of servicing equipment being bid: this information to be included with bid package		
submittal.		
Number of factory qualified service technician: this information to be included with bid package		
submittal.		
GENERAL		
The specification herein states the minimum requirements of the Merrimack, NH Sewer. All bids		
Sever. All bigs		

must be regular in every respect. Unauthorized conditions, limitations, or provisions shall be	
cause for rejection. Any bid not prepared and submitted in accordance with the hid document	
and specification, or any bid lacking sufficient technical literature to enable the Marrimack NIA	1 1
Sewer to make a reasonable determination of compliance to the specification will be considered	
"non-responsive" and grounds for rejection.	
SUBFRAME	
The equipment shall be of modular design consisting of vacuum system, water tanks system,	
geons body and drive system.	
A sub frame shall be fabricated to the exact dimensions of the truck chassis for mounting of	
modular components.	
All components of the module shall attach to the sub frame and not directly to the chassis.	
Sub trame shall be designed to ASME standards for maximum applied loads, chassis frame	<del></del>
movement and even distribution of weight to the chassis and suspension.	
Sub frame shall be continuous and uninterrupted from back of cab to end of frame.	
DEBRIS BODY	
Efficiency of air movement through debris body will be measured for minimal restriction as	
measured by vacuum pressure gauge while operating blower at full speed. Pressure drop	
throughout entire system (from 8" hose inlet to blower inlet) including specified filtration and	
blower protection devices shall be no greater than 3" hg as measured at blower.	
The body shall be cylindrical having a minimum usable liquid capacity of 12 cubic yards.	
The body shall be capable of high dump height of 60". Dump height of 60" must be achieved	
without the use of scissor lift mechanism.	
The debris storage body shall be constructed with a minimum 1/4" corrosion and abrasion	
resistant steel.	
The debris storage body shall have a minimum yield point of 50,000 PSI and a minimum tensile	
strength of 70,000 PSI.	
Body shall have a rear door that is hinged at the top and is equipped with a replaceable type	
seal. Adjustable for periodic compensation of door seal wear.	
Dual outward mounted rear door props shall be included as standard to prevent operator from	
entering door swing path when engaging rear door prop.	1
For optimal particulate separation, vacuum shall be drawn from separate ports in the top of the	
debris body.	
Body shall be dumped by raising the body to a 50 degree angle utilizing a forward mounted,	
double acting hydraulic dump cylinder.	1 1
Dump controls, accessory controls, e-stop control shall be provided at a central curb side	
location directly bening the cab of the truck.	
For stability and safety, dumping must be accomplished while the pivot point of the body remains	
inced to the Subframe.	
Industrial style rear debris body door shall be flat, and shall open and close hydraulically by	
by indees mounted at the top of the pody. Door shall open 50 degrees from the fully closed	
position. Door shall be unjocked, opened, closed, and locked by a faileste hydraulically activated 1	
sequential positive locking system, cam operated by a single hydraulic cylinder with all controls.	
pocated belind truck cab, forward of the debris body, so operator is not subject to sewage when	
dumping.	
Debris body shall have a body flush out system with a fan-type spray nozzle located in the front	
wall of the debits body to aid in the flushing of neavy dehris. The nozzle shall also utilize (2)	1 1
spray nozzles to flush the front most area of the debris body. System must produce a flow of	
over w. Control valve shall be on the curb side of the unit.	
Body shall have a float type automatic shut-off system protecting the Positive Displacement	
Diower with (2) 10" Stainless steel shut-off balls located in the debris body. Each float ball	
indusing shall be within a non-corrosive slide-out screen assembly and be accessed without the	
housing shall be within a non-corrosive slide-out screen assembly and be accessed without the use of tools.	

The debris body shall be equipped with a rear door drain to drain off excess liquids while retaining solids and shall include a manually operated 6" knife valve with cam-lock coupler and 25" of ley flat hose having camlock quick connects.  The debris body shall be equipped with a rear door drain at bottom dead center to drain off excess liquids with an internal screen to prevent large solids from passing. A manually operated 6" knife valve with cam-lock coupler and 25" of lay flat hose having camlock quick connects shall be included at this location.  Vertical (cyclone) centrifugal separators shall be installed in-line between the debris body and the air mover, for each debris body discharge port. Each separator shall include large fallout chamber cleanout door.  For safety, a minimum of (5) vacuum tubes shall be stored on curbside storage racks to minimize operator exposure to traffic side of unit. Shall include quick release retainer handles (no bungees or clamps).  A curb-side, folding 3-pipe rack shall be provided, constructed of steel tubing, spring assisted. Shall include quick release retainer handles (no bungees or clamps).  A steet-side, folding 3-pipe rack shall be provided, constructed of steel tubing, spring assisted. Shall include quick release retainer handles (no bungees or clamps).  A rear door mounted folding 2-pipe rack shall be provided, constructed of steel tubing, spring assisted. Shall include quick release retainer handles (no bungees or clamps).  A rear door mounted folding 2-pipe rack shall be provided, constructed of steel tubing, spring assisted. Shall include quick release retainer handles (no bungees or clamps).  A statiless steel micro-strainer (to 30 microns) shall be provided prior to the blower inlet, with (3) removable cartridge style screens and bottom drain port. Or equivalent filtration system.  A plash is highly shall be mounted around he lower 60% of door opening to direct liquid and debris away from the chassis. Shield shall be mounted around he lower 60% of openings.  A		
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gallor compartments are preferred. Exceptions of requirement shall be explained in detail	which fulfilling and Stopping and for safety of personnel that systems haffled at 150 maximum	
accompanied with detailed engineering drawings.	gallott compartments are preferred. Exceptions of requirement shall be explained in detail	
	accompanied with detailed engineering drawings.	

The water tank shall be located for the lowest possible center of gravity while providing 100% gravity flooded intakes to water pump.	
Fresh water shall enter the tanks through an in line 6" air gap, all aluminum covered anti-siphon device.	
Water level sight tubes of non-yellowing plastic shall be installed on both tanks.	
The sides of these water tanks shall not extend more than 48" out from the centerline of the trival	
C1185515.	1 1
A fresh water drain system shall be provided to completely drain the fresh water system from one location utilizing the 3" Y-strainer.	
A minimum 6" connection between tanks shall be provided	
For stability safety, the water tanks shall not elevate with debris body during dump evole	
All all purge system utilizing the chassis air system shall be provided to essist displacing at	
itestitudi water out of the high-pressure water system. System shall utiliza the trust shades	
politipiessor to illi a 13-gallon auxiliary air storage chamber with pressure going and pressure	
protection valves to isolate the holding tank from the chassis compressor Quetom shall be	
equipped with ball valve and all necessary high pressure piping hoses, couplings and controls	
A 3 II-line if trap strainer shall be located at inlet of water tank fill air-gan	
A 3 in-line "Y" trap stainless steel strainer shall be located between the water calls and water	-+-
pump.	1
A Gate Valve shall be provided at water pump.	
water tank must be a certified metered capacity of 1300 gallons, at a minimum. Certification should	
do nodosati aboli delively.	
Water tanks shall be constructed of 1/8" aluminum with baffled compartments maximum 150	
ganons each. Or other equivalent material.	1
Liquid Float Level Indicator shall be provided.	
WATER PUMP SYSTEM	
for most efficient use of horsepower and reduced fuel consumption, high pressure rodder pump	
stall be trydiadilically differ via (2) variable displacement numbs	
hydraulic powered rodder pump via (2) variable displacement hydraulic pumps utilizing (2) 10- bolt PTO's.	
ligh pressure water pump shall be rated capable of continuous delivery of 100 GPM at 2500 PSI	
submit manufacturer support documentation).	
ligh-pressure water (rodder) pump system shall be completely controlled through the	
ase of the oribodia computer controlled system. Control and throttle located on the control and the	
rigital flow fileter Strail De displayed in front I (1) display Flow motor shall be seemble of	
asplaying system flow in all pump operating modes. In addition, a low water alarm chall be	1
ovided.	1
Vater pump speed to remain fully adjustable via an independent operator input regardless of the elected vacuum drive speed.	
/ariable flow systems routing water back-to-tank are not considered equal due to additional	
ball, horsepower and fuel consumption. Any deviation from this drive requirement should be an	1
an explanation of horsepower consumption	1
Vater (rodder) pump shall include smooth and pulsation operation mode feature without altering	
amp now.	
When required to assist nozzle breaking through obstructions, water pump "pulsation mode"	
illan provide a forward-acting nozzle surge. Pulsation surge wave shall allow pozzle to purch	
sivered 2 to 10 depending on how dynamics and length of hose in sewer pine	1
Apidiation of lorward-acting pulsation method shall be submitted with hid or supplied by	
ysterio trial require trie use of air induction into the water numb shall not be accorded	
valer pump location shall provide a flooded gravity suction inlet to eliminate potential cavitation.	
anage.	
n oil to water heat exchanger will be provided in the water system to cool all hydraulic fluids on the unit. State horsepower requirement to operate hydraulics at full speed:	
IE UIII. DIGIE HOISPOWER requirement to operate budge. Use as to II	1 1

T.I.	
The water pump shall provide precise 0-80 GPM controlled flow at variable pressure up to 2500 PSI.	
An extreme cold weather recirculation system - minimum 25 GPM via transmission PTO at chassis engine idle speed.	
A hydro-pneumatic nitrogen charged accumulator system shall be provided with all control	
valves, piping and noses for either continuous flow or jackhammer rodding. Accumulator shall be I	
a 2.5 ganori capacity and 1000 to 2500 PSI pressure rating	1
I wo (2) 1/2" high pressure ball valves shall be provided for draining the water pump and flushing	
sediment from the bottom of the pump.	į.
A nozzle rack accommodating (3) nozzles shall be provided in curbside toolbox. The pozzles	
shall be labeled on storage rack for pipe size/flow and application	1
System shall be relieved to protect operator	
Handgun shall be supplied that allows for changing of flow pattern from a fine mist to a steady	
Su Gain.	1
Handgun shall come equipped with quick connect couplers.	
An additional 1" water relief valve shall be provided.	
A mid-ship quick disconnect handgun couplers shall be provided.	
ront and rear quick disconnect handoun couplers shall be provided	
Tydro-Excavation Package - Includes Lances, Nozzles, Storage Tray, and Vacuum Tubes	-+-
realer system shall allow precise variable flow control range of 0-22 GPM at 2500 DCI with digital	
iow meter in clear view of adjustment control.	-
A water pump hour meter shall be provided.	
A high-pressure hose reel capable of operating at system pressure shall be provided.	
winimum of a 1,300 gallon fresh water capacity.	
ACUUM/VACUUM DRIVE SYSTEM	
/acuum shall be provided by a positive displacement rotary lobe type blower driven via chassis	
righte and heavy duty split transfer case direct to the blower.	1
nterlock safety system shall prevent drive axle from engaging	
A horizontal silencer with rain cap shall exhaust above the cab.	
A blower tachometer / hour meter shall be provided and displayed digitally on front control	
creen.	
for most efficient use of horsepower and fuel consumption, full vacuum and/or combination	
peration shall be approximately 1/50 HPM of chassis drive engine	
Blower shall be driven by the chassis engine and shall produce inlet volume of 4500 cfm @ 0" hg	
2250 rpm, and 3490 cfm @ 18" hg @ 2250 rpm vacuum (Roots 824RCS 18 or equal). Drive ngine not to exceed 1760 RPM.	1
or added protection the vessel and a later to the vessel and the v	
or added protection, the vacuum system shall have three (3) relief valves set at 18" hg, heavy	
uty horizontal mounted noise muffler, removable and cleanable filter screen, and shall be nclosed with a steel cage guard for safety.	
ransfer case shall be activated by air vis a one touch control to the	
ransfer case shall be activated by air via a one touch control located in cab with animated onfirmation on screen.	
hot shift blower drive system shall be provided, including transfer case, air shift control,	
acuum relief, and front control for blower engagement	
account feliet, and front control for plower engagement	
lower shall be driven from chassis engine via the transmission drive shafts and because drive shafts	
lower shall be driven from chassis engine via the transmission drive shafts and heavy duty split haft transfer case direct to blower, engagement via one touch control on front control page.	
lower shall be driven from chassis engine via the transmission drive shafts and heavy duty split haft transfer case direct to blower, engagement via one touch control on front control panel. he blower drive mechanism shall be engaged and disengaged via an electrical switch located at the operator's station on the front mounted hose reel. This feature shall reduce blower until the control of the control on the front mounted hose reel.	
lower shall be driven from chassis engine via the transmission drive shafts and heavy duty split naft transfer case direct to blower, engagement via one touch control on front control panel. he blower drive mechanism shall be engaged and disengaged via an electrical switch located at e operator's station on the front mounted hose reel. This feature shall reduce blower runtime and to extend the blower service life.	
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VACUUM BOOM SYSTEM	
Vacuum hose shall be designed for front operation with hose mounted and stored at front	
industrial work station. From mounted location is required for each of positioning vacuum bases of	
won as imminizing need for operator to swing nose into traffic	
All connections between debris body and vacuum system will be of the self-adjusting pressure.	
nting type.	
Vacuum hose will remain stationary and not rise with debris body.	<del></del>
Upper debris tube shall consist of an anchored steel tube and elbow	
A sub-frame mounted cab guard shall be mounted behind cab with boom rest cradio	
All vacuum pipes shall be connected to vacuum pick up tube and extension pipes by adjustable.	
by electrical quick clamps to join the aluminum flanges on pines	
One (1) quick clamp for each pipe supplied shall be provided	$\overline{}$
300m pedestal shall be directly mounted to module subframe	
Boom support used for travel mode shall not interfere with access or require removal to tilt hood orward.	
A control station shall be equipped with a control joystick for all directions as well as a safety emergency shut-down button, which shall automatically eliminate power to boom.	
The vacuum boom shall have a heavy-duty flexible hose assembly joining the transition pipe to	
the debris body, and a 70-degree elbow and 5-1/2 heavy duty hose at the suction end of the boom.	
Boom shall rotate 180 degrees and shall be operated by an electric over hydraulic system. Lift	
and swing movements shall be actuated by hydraulic cylinders	1
The horizontal inner steel vacuum tube and inner box beam boom section shall telescope (tube	
ittill tube, bux beatti within box beam) and retract a minimum of 10' without effecting the	
ertical position of the pick-up tubes, and shall be located at the front work station in its retracted	1
osition, providing 324" maximum reach off the longitudinal axis of unit.	
removable 4" diameter storage "Poet" to the life to th	
removable 4" diameter storage "Post" to stabilize the lower boom hose during transport.	
cordless remote boom control system equipped to activate boom functions, throttle, water	
ump on/off, hose reel in/out, hose reel speed, vacuum relief on/off and emergency	
isengagement e-stop shall be provided.	
rotatable inlet hose for telescopic boom shall be provided	
detailed engineering drawing must be supplied showing the relationship of the beautiful	
riduon with the vacuum poom (Singe of motion Trawing shall show module manufacture)	
in all of vacuum hose both retracted and extended full rotation of arc for bosc roal in the	1
Ateriated position and diffiension all arc lengths of vacuum boom retrooted and automated	1
rawing stigli inightight intersection areas whereby combination cleaning is possible (within the	
o on telegooping boom system)	
nit must be capable of a lift of 35' of sewer flow (including liquids, rags, grease, and other blids)	
OSE REEL	
ose reel assembly shall be direct frame mounted.	
ose reel assembly shall be mounted on an independent frame that can be removed from	
ackets attached permanently to front of main truck frame members.	
eel will be manufactured out of 1/4" soun steel for added structural strength and shall require no	
torrai of external fellioleginetis that could damade rodder hose	
use reel shall be driven by adjustable gear reduction chain and sprocket accombine	
ose reel shall operate at full rotational speed while chassis engine is at idlo	
ydraulic Telescoping Rotating Hose Reel - 800' capacity of 1" hose shall be provided.	
te from mounted hose reel shall telescope 15" forward down centerline of truck	
fillre reel assembly shall rotate 270 degrees on a large diameter hall bearing	
ose reel shall include a dual locking device to positively lock reel in any position across	
gorito to positively lock feel in any position across	

operating range.	
The hose reel shall rotate about the reel assembly centerline so the reel shall never extend	
beyond the truck width. Reel coverage diagram shall be submitted with bid.	
Controls shall accessible on both sides of the hose reel via a mounting station for the wireless	
remote control, allowing operator to work at either side of unit for safety purposes.	
800' x 1" Piranha Sewer Hose / 2500 Psi shall be provided	
An automatic hose level wind scroll device shall be supplied. An air-cylinder actuated pinch-roller	
shall exert downward pressure across full width of reel to retain hose on reel when encountering	1 1
nozzle blockages.	1 1
An air-cylinder actuated pinch-roller shall exert downward pressure across full width of reel to	
retain hose on reel when encountering nozzle blockages. Pinch roller must be activated via a one	
touch, backlit button with lighted feedback on the control panel.	
Digital footage counter displaying footage values shall be provided. System must be capable of	
resetting value to ensure operator safety. Accuracy To Within One Percent Of Actual Distance,	
Large Easy To Read Lcd Screen located on the front control panel screen.	
10' Leader Hose	
WASHDOWN EQUIPMENT	
A handgun with 1/2" x 35' hose shall be provided at mid-ship to which allow the operator to	1
deliver water to area served by pick up hose and to the inside of the debris body for clean out.	
Hand sprayer with adjustable spray-pattern to be provided with trigger-style gun.	
FRONT OPERATING STATION AND CONTROLS	
Primary operator station will be located at front of hose reel.	
All operator controls should be located on a single control panel that can be rotated on a 90	
degree arc for an operator customizable location. The control panel shall also feature the ability	
to raise and lower to accommodate operators of different height.	
Station shall include a 7" Touch enabled display screen with corresponding tactile buttons for	
reading critical machine data including ( hose footage, hose reel speed settings, water pressure,	
water flow. Air mover information, chassis data, mode indicator, chassis fuel level, and diagnostic	
controls), Back lit button keypads with, laser etched function icons, and 4 light feedback	1
indicators. These buttons shall operate the following functions: All setup functions (remote/panel	1
selector, work lights, hose reel extend/retract, hose reel lock, and pinch roller activation) and	
Vacuum functions. Additionally, there will be separate sealed rocker switches for Water Pump	1
on/off and Throttle up/down. There shall be a multi flow control dial for controlling the full range of the water pump.	
There shall be a hose reel joystick to control the pay in and pay out of the hose reel, this joystick shall offer speed control that increases the further the joystick is moved in either direction. There	
shall be an additional hose reel speed dial for setting specific speed ranges of the reel. There	
shall be a boom joystick that controls all function of the boom including up/down, left/right, and	1
extend/retract. There shall be a E-Stop button to bring the machine to safe operating condition	
Tachometer and hour meter for chassis engine provided at control station shall be provided.	
Tachometer and hour meter for blower provided at control station shall be provided.	
All Hydraulic Functions - Color Coded, Sealed Electric/Hydraulic NEMA 4 switches shall be	
provided.	
Blower Engagement/Vacuum Relief - Sealed Electric/Air NEMA 4 Switch shall be provided.	
Water pump hour meter shall be provided.	
PTO hour meter shall be provided.	
A temperature light and alarm shall be provided. Light and alarm will be activated when hydraulic	
temperature reaches 180 F.	
Front control screen shall display a water level indicator to show level of water through the range	
of the tank.	
Front control screen shall display the debris body level.	
IN CAB CONTROLS	
All In cab controls are to be located on a single in cab control screen. This shall be a full color	-+-+
The strain of a fall color	

display screen. It shall utilize 12 back lit tactile (glove ready) buttons on the sides of the screen	
as well as feature touch screen operation.	
All Back up camera Features shall be displayed on the In Cab Control Screen.	
All work lights shall be able to be activated or deactivated in cab with on screen controls.	
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All work lights shall be able to be activated or deactivated in cab with on screen controls.	
All standard arrow boards or arrow stick shall be controlled via an on screen controller	
All safety strobes and beacons shall be controlled via on screen controller	
Jet or Combo mode shall be activated via one touch button on the control panel. Control screen	
must display an on screen representation of the chassis drive system and must animate to show	
as drive systems activate or deactivate.	
Recirculation must be activated on the in cab control screen and visibly show that it is active at	
all times.	
ELECTRICAL & SAFETY LIGHTING	
The entire system shall be vapor sealed to eliminate moisture damage, "Nema-4" type or equal.	
Logs, reports, and hour meters will be accessible via the display.	
All electrical connections shall be void of exposed wires or terminals nor should they be painted.	
Paint process shall be completed prior to installation of wiring.	
All wiring shall be color-coded and encased in conduit to scaled terminal boxes with circuit	
breakers.	
All other lights required by State and Federal Laws.	
One-piece directional 10-light arrow board (Signal Master or equal) shall be mounted on rear	
door of debris body, with controls mounted in cab.	
Handheld, Pistol Grip LED Spot light with rechargeable Lithium Ion battery.	
Operator station shall have back lit buttons for low light operation.	
Hose reel manhole work lights shall be provided	
(2) L.E.D. Boom work lights shall be provided.	
L.E.D. Work light at midship curbside shall be provided.	
L.E.D. Work light at midship street side shall be provided.	
(2) L.E.D. Rear door work lights shall be provided	
L.E.D. Lights, Clearance, Back-Up, Stop, Tail & Turn shall be provided.	
Mid-Ship L.E.D Bubble Type Turn Signals Shall be Provided	
SAFETY EQUIPMENT	
E-stop shall be located at each operator interface location. Standard locations to include: front hose reel, mid-ship curbside dump controls, & wireless controller (if equipped.)	
Electrical system controls shall be configured to allow for single point operation only. Upon	
engagement of controls at specified locations, additional controls shall be disabled.	
Electrical system must enable self-check to ensure all switches are in home position prior to	
critical function enablement. System must "lock out" controls when switch is not in home position.	
Rear work lights shall be activated upon engagement of reverse gear.	
(1) Emergency Flare Kit	
(1) 5# Fire Extinguisher.	
7" dash monitor, 2-camera system shall be provided. A Front Hose Reel Color Camera with 130	
degree Viewing Angle shall be provided to provide a front visual of the manhole cover to aid in	
equipment set-up. A rear back-up color camera with 130 degree viewing angle shall be provided.	
Camera to have automatic activation when the unit is switched to reverse.	
The unit shall utilize a high temperature monitoring safety device to automatically disable the	
vacuum system when the outlet temperature of the positive displacement blower reaches a high	
temperature limit.	

Digital water pressure shall be displayed in front LCD display. Pressure gauge shall be capable	
of displaying water system pressure in all pump operating modes.	
SEWER TOOLS AND ACCESSORIES	
(1) 30 Sand Nozzle	
(1) 30 deg. Sanitary Nozzle	
(1) 15 deg. Penetrator Nozzle	
(1) 1" Small finned nozzle pipe skid	<del>                                     </del>
VACUUM TOOLS AND ACCESSORIES	<del> </del>
The basic vacuum tube package shall include the following:	
(1) 8" x 3' aluminum pipe	
(2) 8" x 5' aluminum pipe	
(1) 8" x 6'6" catch basin tube	
(4) 8" quick clamps	ļ
CHASSIS EQUIPMENT AND STORAGE	
Two (2) front tow hooks shall be provided.	
Two (2) rear tow hooks shall be provided.	
A safety cone storage rack shall be provided to contain safety cones in the inverted position.	
Aluminum Toolbox - Behind Cab	
(1) 18" x 24" x 24" Aluminum Toolbox Mounted street side shall be provided.	
(1) 48" x 22" x 24" Aluminum Toolbox Mounted curb side shall be provided.	
(2) 18 In. x 16 In. x 12 In. Aluminum Toolbox - Front Bumper shall be provided.	
(1) 60" x 24" x 24" Aluminum Toolbox Mounted street side shall be provided.	
(4) Long Handle Tool Storage Locations Behind Cab shall be provided	
MODULE FINISH	
Painting of the module shall be with a DuPont Imron Elite Polyurethane Enamel Top Coat.	
Application is to be a wet top coat applied to a dried and sanded primer base.	
CHASSIS SPECIFICATION	
The unit shall be a new model. No discontinued models will be accepted	
Freightliner 114SD Conventional Cab Chassis	
The unit shall be equipped with a diesel engine, turbo charged and after cooled, with a Detroit Diesel 13 12.8L; 435 HP @ 1800 RPM, 1650 LB/FT @ 1100 RPM	
Set Forward Axle	
The unit shall be equipped with an Allison 4000 RDS Automatic Transmission with PTO	
Provision	
The unit shall be equipped with a Meritor MFS-20-133A 20,000# Wide Track, I-Beam Type	
Single Front Axle	
The unit shall be equipped with a 20,000# Flat Leaf Front Suspension	
The unit shall be equipped with a Meritor RT-46-160P 46,000# R-Series Tandem Rear Axle	
The unit shall be equipped with a 46,000# Hendrickson RT463 Rear Suspension	
The unit shall be equipped with a 114 inch BBC flat room aluminum conventional cab	
The unit shall have a wheelbase of 277 inches	
The unit shall have a 7/16 x 3-9/16 x 11-1/8 inch steel frame with 120 KSI rating	
The unit shall have a 1/4 inch C-Channel inner frame reinforcement	
The unit shall have a 71 inch rear frame overhang	
The unit must be capable of fuel dosing of after treatment enabled in PTO mode-cleans	
hydrocarbons at high temperatures only.	
Unit must be equipped with air actuated rear axle lockers on one switch, and inter axle cross	
locking on other switch, to lock in both of the tandem axles (DCDL/IAD)	
The unit must be compliant with all DOT and FMCSA regulations.	
ADDITIONAL PARTS	
(1) 8" x 3' Aluminum Vacuum Tube	-
(1) 8" x 5' Aluminum Vacuum Tube	
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FINANCE DEPARTMENT 6 Baboosic Lake Road Merrimack, NH 03054

Tel: 603-424-7075

Fax: 603-424-0461

## Combination Sewer Cleaner Truck for Waste Water Treatment Facility Bid Form

Due by 2:00PM on Tuesday, November 24, 2020

Combination Sewer Cleaner Truck, according to the Bid specifications	* 425,614**
Mfg & Model: HIVAC Aquatech BIO	
Allowance for Trade in	(\$ 25,000)
	Total price: \$ 400, 614 00
Warranty: 1 year 1000 hours parts and la	abor
Enclosed:  Warranty information  Detailed specifications on equipment  The above bid is provided in accordance with the To November 2, 2020 except as indicated below:	own of Merrimack's bid invitation dated
Bidder: Donous Equipmed  Street Address: 6 Enterprise Dr  City, State, Zip Code: Londonserry, NU 03053  Phone No: 603 234 8313 Fax No:  Authorized Signature: Frinted Name: I with Villamore  Email: Nate o Janous Company. Con.	Date: 11/24/20



FINANCE DEPARTMENT 6 Baboosic Lake Road Merrimack, NH 03054

Tel: 603-424-7075 Fax: 603-424-0516

# BID SPECIFICATIONS COMBINATION SEWER CLEANER TRUCK

INTENT	Ves	ra
The intent of this specification is to provide for the purchase of one (1) new and unused single-engine combination sewer and catch basin cleaner used for removing all debris commonly found in catch basins/storm lead structures and sanitary sewer lines/manhole structures using a front mounted operating station. The unit shall consist of a Positive Displacement (PD) Blower vacuum system, a hydraulically driven high pressure water pump, an enclosed sealed body for storage of collected debris and equipped with a self-contained water supply as the source for the water pump system. The unit shall have the capability of operating both vacuum and water system simultaneously at full operating speeds continuously. (Submit horsepower requirements of all systems on unit)	,	
EQUIVALENT PRODUCT		
Bids will be accepted for consideration on any make or model that is equal or superior to the equipment specified. Decisions of equivalency will be at the sole interpretation of the Merrimack NH Sewer Purchasing and Public Services Director.	/	
Bidder shall demonstrate a reasonable likeness of the equipment being offered within a reasonable time of request. Equipment demonstrated shall be equipped with all accessories and components required in this specification to ascertain equivalence.	/	
A blanket statement that equipment proposed will meet all requirements will not be sufficient to establish equivalence. Original manufacturer's brochures of the proposed unit are to be submitted with the proposal.	/	
BIDDER REFERENCES		
To ensure adequate local availability of parts and competent service from experienced suppliers, bids are preferred from local vendors who have sold and serviced at least 30 units of same manufacturer within service area of Merrimack NH Sewer and should include contacts with phone numbers.	1	
SERVICE AND SUPPORT		
Location of warranty service center and amount of inventory shall be noted which may be verified and inspected.		
Amount of OEM parts at this facility: this information to be included with bid package submittal.		
Years of servicing equipment being bid: this information to be included with bid package submittal.	1	10 year
Number of factory qualified service technician: this information to be included with bid package submittal.	<b>V</b>	
GENERAL	1	
The specification herein states the minimum requirements of the Merrimack, NH Sewer. All bids		

must be regular in every respect. Unauthorized conditions, limitations, or provisions shall be cause for rejection. Any bid not prepared and submitted in accordance with the bid document and specification, or any bid lacking sufficient technical literature to enable the Merrimack NH Sewer to make a reasonable determination of compliance to the specification will be considered		
"non-responsive" and grounds for rejection.		
SUBFRAME		
The equipment shall be of modular design consisting of vacuum system, water tanks system,	7	
debris body and drive system.	$\checkmark$	
A sub frame shall be fabricated to the exact dimensions of the truck chassis for mounting of	7	
modular components.	V	
All components of the module shall attach to the sub frame and not directly to the chassis.	/	
Sub frame shall be designed to ASME standards for maximum applied loads, chassis frame	*/	
movement and even distribution of weight to the chassis and suspension.		
Sub frame shall be continuous and uninterrupted from back of cab to end of frame.	/	
	-	
DEBRIS BODY	-	
Efficiency of air movement through debris body will be measured for minimal restriction as		
measured by vacuum pressure gauge while operating blower at full speed. Pressure drop	V	
throughout entire system (from 8" hose inlet to blower inlet) including specified filtration and		, 1
blower protection devices shall be no greater than 3" hg as measured at blower.		
The body shall be cylindrical having a minimum usable liquid capacity of 12 cubic yards.		-
The body shall be capable of high dump height of 60". Dump height of 60" must be achieved without the use of scissor lift mechanism.		w
The debris storage body shall be constructed with a minimum 1/4" corrosion and abrasion	./	
resistant steel.	V	
The debris storage body shall have a minimum yield point of 50,000 PSI and a minimum tensile strength of 70,000 PSI.	1	
Strength of 70,000 f of.		
S. J. J. III.	-	
Body shall have a rear door that is hinged at the top and is equipped with a replaceable type		- 1
seal. Adjustable for periodic compensation of door seal wear.		<del></del> '
Dual outward mounted rear door props shall be included as standard to prevent operator from		V
entering door swing path when engaging rear door prop.	- +	1
For optimal particulate separation, vacuum shall be drawn from separate ports in the top of the debris body.		J
Body shall be dumped by raising the body to a 50 degree angle utilizing a forward mounted,		
double acting hydraulic dump cylinder.	V	
Dump controls, accessory controls, e-stop control shall be provided at a central curb side		
location directly behind the cab of the truck.	V .	
For stability and safety, dumping must be accomplished while the pivot point of the body remains	./	
fixed to the subframe.		
Industrial style rear debris body door shall be flat, and shall open and close hydraulically by		
cylinders mounted at the top of the body. Door shall open 50 degrees from the fully closed		,
position. Door shall be unlocked, opened, closed, and locked by a failsafe hydraulically activated		<b>V</b>
sequential positive locking system, cam operated by a single hydraulic cylinder, with all controls		
located behind truck cab, forward of the debris body, so operator is not subject to sewage when		
dumping.		1 7 1
Debris body shall have a body flush out system with a fan-type spray nozzle located in the front		
wall of the debris body to aid in the flushing of heavy debris. The nozzle shall also utilize (2)		
spray nozzles to flush the front most area of the debris body. System must produce a flow of	V	
80GPM. Control valve shall be on the curb side of the unit.		
Body shall have a float type automatic shut-off system protecting the Positive Displacement		
Blower with (2) 10" stainless steel shut-off balls located in the debris body. Each float ball		<b>V</b>
housing shall be within a non-corrosive slide-out screen assembly and be accessed without the		
use of tools.		

The debris body shall be equipped with a rear door drain to drain off excess liquids while		Ι
retaining solids and shall include a manually operated 6" knife valve with cam-lock coupler and		
25' of lay flat hose having camlock quick connects.	✓	
The debris body shall be equipped with a rear door drain at bottom dead center to drain off	,	
excess liquids with an internal screen to prevent large solids from passing. A manually operated		
6" knife valve with cam-lock coupler and 25' of lay flat hose having camlock quick connects shall	<b>V</b>	
be included at this location.		
Vertical (cyclone) centrifugal separators shall be installed in-line between the debris body and the		<b></b>
air mover, for each debris body discharge port. Each separator shall include large fallout		
chamber cleanout door.	V	
For safety, a minimum of (5) vacuum tubes shall be stored on curbside storage racks to minimize		
operator exposure to traffic side of unit. Shall include quick release retainer handles (no bungees		/
or clamps).		
A curb-side, folding 3-pipe rack shall be provided, constructed of steel tubing, spring assisted.		-
Shall include quick release retainer handles (no hungees as elemes)		
Shall include quick release retainer handles (no bungees or clamps).		
A street-side, folding 3-pipe rack shall be provided, constructed of steel tubing, spring assisted.		./
Shall include quick release retainer handles (no bungees or clamps).		
A rear door mounted folding 2-pipe rack shall be provided, constructed of steel tubing, spring		
assisted. Shall include quick release retainer handles (no bungees or clamps).		<b>V</b>
(2) Pipe Storage Racks on rear door with quick releases and (2) Pipe Storage Racks Curbside		
waist level.	V _	
A stainless steel micro-strainer (to 30 microns) shall be provided prior to the blower inlet, with (3)	./	
removable cartridge style screens and bottom drain port. Or equivalent filtration system.	V	
A splash shield shall be mounted around the lower 60% of door opening to direct liquid and		
debris away from the chassis. Shield shall be minimum 10" deep bolted assembly with no		
openings.	V	
A lubrication manifold system shall be provided to allow ground level greasing of boom lift and	/	
swing cylinders, float level indicator, top rear door hinges and debris body hoist cylinder pins.	V	
A plastic lube chart shall be provided to call out when specific points on the unit should be		-
greased.	$\sqrt{}$	
A 6" valve, electrically activated, air operated valve debris body vacuum relief system shall be	1	
located in the inlet of the vacuum system to allow the venting of the tank and relieve vacuum at	V	
the debris intake hose.(3) Kunkel relief valves shall be included.	٧,	
A debris inlet deflector distributing load evenly in debris body shall be included.	1	
WATER TANKS		
The water tanks shall be manufactured from a non-corrosive material to prevent rust yet still		
provide for maximum strength.		
The water tank material shall require no internal coating and shall be repairable if patching is	1	
required.		
The water tanks shall be easily removed from the subframe to provide complete access to the	1	
truck chassis for maintenance purposes.		
The water tanks shall be adequately vented and connected to provide complete filling.	·/	
	-\ <u>/</u>	
The water tanks shall be totally separate from the debris tanks and provide no structural support.	V	
The water tanks shall share no common walls with the debris tanks to prevent corrosion.	V_	
The water tanks shall come equipped with an anti-siphon device and 25' of hydrant fill hose and fittings.	/	
The water tanks shall carry a 10 year warranty against corrosion or cracking at a minimum.	Libeti	mi
All water tanks shall be fully baffled to form a maximum compartment storage of 150 gallons for		1
each compartment. Merrimack NH Sewer has determined that for the stability of the vehicle		
when turning and stopping and for safety of personnel that systems baffled at 150 maximum		V
gallon compartments are preferred. Exceptions of requirement shall be explained in detail		
accompanied with detailed engineering drawings.		

The water tank shall be located for the lowest possible center of gravity while providing 100%		
gravity flooded intakes to water pump.	1	
Fresh water shall enter the tanks through an in line 6" air gap, all aluminum covered anti-siphon device.	1	
Water level sight tubes of non-yellowing plastic shall be installed on both tanks.	V	
The sides of these water tanks shall not extend more than 48" out from the centerline of the truck		
chassis.	V	
A fresh water drain system shall be provided to completely drain the fresh water system from one		
location utilizing the 3" Y-strainer.	V	/
A minimum 6" connection between tanks shall be provided.		1
For stability safety, the water tanks shall not elevate with debris body during dump cycle.		1
An air purge system utilizing the chassis air system shall be provided to assist displacing of		<u> </u>
residual water out of the high-pressure water system. System shall utilize the truck chassis air	/	
compressor to fill a 13-gallon auxiliary air storage chamber with pressure gauge and pressure	\	
protection valves to isolate the holding tank from the chassis compressor. System shall be	V	
equipped with ball valve and all necessary high pressure piping hoses, couplings and controls.		
A 3 in-line "Y" trap strainer shall be located at inlet of water tank fill air-gap.	1.	
A 3 in-line "Y" trap stainless steel strainer shall be located between the water cells and water	/	
pump.	V/	
A Gate Valve shall be provided at water pump.	1	
Water tank must be a certified metered capacity of 1300 gallons, at a minimum. Certification shall		
be necessary upon delivery. 1450	V	
Water tanks shall be constructed of 1/8" aluminum with baffled compartments maximum 150		1
gallons each. Or other equivalent material.	1	$\checkmark$
Liquid Float Level Indicator shall be provided.	1	
WATER PUMP SYSTEM		6
For most efficient use of horsepower and reduced fuel consumption, high pressure rodder pump		1
shall be hydraulically driven via (2) variable displacement pumps		V,
Hydraulic powered rodder pump via (2) variable displacement hydraulic pumps utilizing (2) 10-		
bolt PTO's.	1	1
bolt PTO's. High pressure water pump shall be rated capable of continuous delivery of 100 GPM at 2500 PSI		1
		1
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	/	
The water pump shall provide precise 0-80 GPM controlled flow at variable pressure up to 2500 PSI.		,
An extreme cold weather recirculation system - minimum 25 GPM via transmission PTO at chassis engine idle speed.		1
A hydro-pneumatic nitrogen charged accumulator system shall be provided with all control valves, piping and hoses for either continuous flow or jackhammer rodding. Accumulator shall be a 2.5 gallon capacity and 1000 to 2500 PSI pressure rating.	1 1	/
Two (2) 1/2" high pressure ball valves shall be provided for draining the water pump and flushing sediment from the bottom of the pump.		
A nozzle rack accommodating (3) nozzles shall be provided in curbside toolbox. The nozzles shall be labeled on storage rack for pipe size/flow and application.	1	
System shall be relieved to protect operator.		
Handgun shall be supplied that allows for changing of flow pattern from a fine mist to a steady stream.	/	
Handgun shall come equipped with quick connect couplers.	1	
An additional 1" water relief valve shall be provided.	1	
A mid-ship quick disconnect handgun couplers shall be provided.	1	
Front and rear quick disconnect handgun couplers shall be provided.	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1
Hydro-Excavation Package - Includes Lances, Nozzles, Storage Tray, and Vacuum Tubes. Water system shall allow precise variable flow control range of 0-22 GPM at 2500 PSI with digital flow meter in clear view of adjustment control.	1	
A water pump hour meter shall be provided.	V	
A high-pressure hose reel capable of operating at system pressure shall be provided.	1	
Minimum of a 1,300 gallon fresh water capacity.		
VACUUM/VACUUM DRIVE SYSTEM	4	
Vacuum shall be provided by a positive displacement rotary lobe type blower driven via chassis		
engine and heavy duty split transfer case direct to the blower.	V,	
Interlock safety system shall prevent drive axle from engaging.		1
A horizontal silencer with rain cap shall exhaust above the cab.		1
A blower tachometer / hour meter shall be provided and displayed digitally on front control screen.		1
For most efficient use of horsepower and fuel consumption, full vacuum and/or combination		-/
operation shall be approximately 1750 RPM of chassis drive engine.		<u> </u>
Blower shall be driven by the chassis engine and shall produce inlet volume of 4500 cfm @ 0" hg @ 2250 rpm, and 3490 cfm @ 18" hg @ 2250 rpm vacuum (Roots 824RCS 18 or equal). Drive engine not to exceed 1760 RPM.	<b>/</b>	
For added protection, the vacuum system shall have three (3) relief valves set at 18" hg, heavy duty horizontal mounted noise muffler, removable and cleanable filter screen, and shall be enclosed with a steel cage guard for safety.	/	
Transfer case shall be activated by air via a one touch control located in cab with animated confirmation on screen.	$\sqrt{}$	
A hot shift blower drive system shall be provided, including transfer case, air shift control,		
vacuum relief, and front control for blower engagement.	<b>V</b> ,	
Blower shall be driven from chassis engine via the transmission drive shafts and heavy duty split shaft transfer case direct to blower, engagement via one touch control on front control panel.	<b>V</b> .	
The blower drive mechanism shall be engaged and disengaged via an electrical switch located at the operator's station on the front mounted hose reel. This feature shall reduce blower runtime and to extend the blower service life.	1	
Blower shall be provided with a horizontal silencer with exhaust above the cab and rain cap protecting the silencer from rain water.		/
Blower shall draw air from two (2) separate ports in the debris body.	<del>, ,  </del>	V
Hydraulic shut off valves shall be provided at the suction, return and filter lines to permit servicing of the hydraulic system.	1	•

VACUUM BOOM SYSTEM		1
Vacuum hose shall be designed for front operation with hose mounted and stored at front		/
mounted work station. Front mounted location is required for ease of positioning vacuum hose as		
well as minimizing need for operator to swing hose into traffic.		V
All connections between debris body and vacuum system will be of the self-adjusting pressure		
fitting type.		1
Vacuum hose will remain stationary and not rise with debris body.		10
Upper debris tube shall consist of an anchored steel tube and elbow.		11
A sub-frame mounted cab guard shall be mounted behind cab with boom rest cradle.		1
All vacuum pipes shall be connected to vacuum pick up tube and extension pipes by adjustable	/.	
over-center quick clamps to join the aluminum flanges on pipes.	<b>V</b> /	
One (1) quick clamp for each pipe supplied shall be provided.		7
Boom pedestal shall be directly mounted to module subframe.	,	1
Boom support used for travel mode shall not interfere with access or require removal to tilt hood	//	
forward.	V,	
A control station shall be equipped with a control joystick for all directions as well as a safety		
emergency shut-down button, which shall automatically eliminate power to boom.	V	
The vacuum boom shall have a heavy-duty flexible hose assembly joining the transition pipe to		/
the debris body, and a 70-degree elbow and 5-1/2 heavy duty hose at the suction end of the		$\mathcal{J}$
boom.	/	V
Boom shall rotate 180 degrees and shall be operated by an electric over hydraulic system. Lift	1	
and swing movements shall be actuated by hydraulic cylinders.		
The horizontal inner steel vacuum tube and inner box beam boom section shall telescope (tube		/
within tube, box beam within box beam) and retract a minimum of 10' without affecting the		./
vertical position of the pick-up tubes, and shall be located at the front work station in its retracted		V
position, providing 324" maximum reach off the longitudinal axis of unit.		
A joystick for hydraulic control of the boom shall be installed on hose reel front panel.		V
A removable 4" diameter storage "Post" to stabilize the lower boom hose during transport.		NA
Storage device shall not interfere with raising hood.		NIA
A cordless remote boom control system equipped to activate boom functions, throttle, water	/	
pump on/off, hose reel in/out, hose reel speed, vacuum relief on/off and emergency	V	
disengagement e-stop shall be provided.	/	
A rotatable inlet hose for telescopic boom shall be provided.	V	
A detailed engineering drawing must be supplied showing the relationship of the hose reel in		
relation with the vacuum boom range of motion. Drawing shall show module mounted on chassis,		
full arc of vacuum hose both retracted and extended, full rotation of arc for hose reel in the	V	
extended position and dimension all arc lengths of vacuum boom retracted and extended.		
Drawing shall highlight intersection areas whereby combination cleaning is possible (within full		
arc on telescoping boom system).	-/-	
Unit must be capable of a lift of 35' of sewer flow (including liquids, rags, grease, and other solids)	1	,
HOSE REEL		- ' -
Hose reel assembly shall be direct frame mounted.		
Hose reel assembly shall be mounted on an independent frame that can be removed from		<del>~</del> _
		$\checkmark$
brackets attached permanently to front of main truck frame members.  Reel will be manufactured out of 1/4" spun steel for added structural strength and shall require no	<del>- ,  </del>	
internal or external reinforcements that could damage rodder hose.		
	1	
Hose reel shall be driven by adjustable gear reduction chain and sprocket assembly.	4	
Hose reel shall operate at full rotational speed while chassis engine is at idle.	V/	
Hydraulic Telescoping Rotating Hose Reel - 800' capacity of 1" hose shall be provided.	V	
The front mounted hose reel shall telescope 15" forward down centerline of truck.	<del>- /  </del>	-
Entire reel assembly shall rotate 270 degrees on a large diameter ball bearing.	/	
Hose reel shall include a dual locking device to positively lock reel in any position across		

operating range.	1	
The hose reel shall rotate about the reel assembly centerline so the reel shall never extend		1
beyond the truck width. Reel coverage diagram shall be submitted with bid.		$\checkmark$
Controls shall accessible on both sides of the hose reel via a mounting station for the wireless		1
remote control, allowing operator to work at either side of unit for safety purposes.	1	V
800' x 1" Piranha Sewer Hose / 2500 Psi shall be provided		
An automatic hose level wind scroll device shall be supplied. An air-cylinder actuated pinch-roller	/	
shall exert downward pressure across full width of reel to retain hose on reel when encountering		
nozzle blockages.	V	
An air-cylinder actuated pinch-roller shall exert downward pressure across full width of reel to		
retain hose on reel when encountering nozzle blockages. Pinch roller must be activated via a one		
touch, backlit button with lighted feedback on the control panel.		
Digital footage counter displaying footage values shall be provided. System must be capable of	1	
resetting value to ensure operator safety. Accuracy To Within One Percent Of Actual Distance,	1	
Large Easy To Read Lcd Screen located on the front control panel screen.	<b>v</b> /	
10' Leader Hose	/	
WASHDOWN EQUIPMENT		
A handgun with 1/2" x 35' hose shall be provided at mid-ship to which allow the operator to		
deliver water to area served by pick up hose and to the inside of the debris body for clean out.	$\checkmark$	
Hand sprayer with adjustable spray-pattern to be provided with trigger-style gun.		
FRONT OPERATING STATION AND CONTROLS		
Primary operator station will be located at front of hose reel.		/
All operator controls should be located on a single control panel that can be rotated on a 90		<u> </u>
degree arc for an operator customizable location. The control panel shall also feature the ability	./	
to raise and lower to accommodate operators of different height.	V	
Station shall include a 7" Touch enabled display screen with corresponding tactile buttons for		
reading critical machine data including ( hose footage, hose reel speed settings, water pressure,		
water flow. Air mover information, chassis data, mode indicator, chassis fuel level, and diagnostic		/
controls), Back lit button keypads with, laser etched function icons, and 4 light feedback		./
indicators. These buttons shall operate the following functions: All setup functions (remote/panel		V
selector, work lights, hose reel extend/retract, hose reel lock, and pinch roller activation) and		
Vacuum functions. Additionally, there will be separate sealed rocker switches for Water Pump		
on/off and Throttle up/down. There shall be a multi flow control dial for controlling the full range of		
the water pump.		
There shall be a hose reel joystick to control the pay in and pay out of the hose reel, this joystick	1	1
shall offer speed control that increases the further the joystick is moved in either direction. There	./	
shall be an additional hose reel speed dial for setting specific speed ranges of the reel. There	V	
shall be a boom joystick that controls all function of the boom including up/down, left/right, and	/	
extend/retract. There shall be a E-Stop button to bring the machine to safe operating condition	/_	
Tachometer and hour meter for chassis engine provided at control station shall be provided.	V	
Tachometer and hour meter for blower provided at control station shall be provided.		
All Hydraulic Functions - Color Coded, Sealed Electric/Hydraulic NEMA 4 switches shall be	./	
provided.	V/	
Blower Engagement/Vacuum Relief - Sealed Electric/Air NEMA 4 Switch shall be provided.	1/	
Water pump hour meter shall be provided.	1/	A. S.
PTO hour meter shall be provided.	<b>√</b>	1
A temperature light and alarm shall be provided. Light and alarm will be activated when hydraulic		1
temperature reaches 180 F.		
Front control screen shall display a water level indicator to show level of water through the range		1
of the tank.		/
Front control screen shall display the debris body level.		V
IN CAB CONTROLS		
All In cab controls are to be located on a single in cab control screen. This shall be a full color		<u> </u>

		1
display screen. It shall utilize 12 back lit tactile (glove ready) buttons on the sides of the screen as well as feature touch screen operation.	1	
All Back up camera Features shall be displayed on the In Cab Control Screen.	-	
All work lights shall be able to be activated or deactivated in cab with on screen controls.	V	
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All work lights shall be able to be activated or deactivated in cab with on screen controls.		
All standard arrow boards or arrow stick shall be controlled via an on screen controller		
All safety strobes and beacons shall be controlled via on screen controller		
Jet or Combo mode shall be activated via one touch button on the control panel. Control screen		1
must display an on screen representation of the chassis drive system and must animate to show		
as drive systems activate or deactivate.		
Recirculation must be activated on the in cab control screen and visibly show that it is active at		
all times. ELECTRICAL & SAFETY LIGHTING		
The entire system shall be vapor sealed to eliminate moisture damage, "Nema-4" type or equal.	V	
Logs, reports, and hour meters will be accessible via the display.		
All electrical connections shall be void of exposed wires or terminals nor should they be painted.		
Paint process shall be completed prior to installation of wiring.	V	
All wiring shall be color-coded and encased in conduit to scaled terminal boxes with circuit		
breakers.	\ <u>\</u>	
All other lights required by State and Federal Laws.	V ,	
One-piece directional 10-light arrow board (Signal Master or equal) shall be mounted on rear door of debris body, with controls mounted in cab.	V.	
Handheld, Pistol Grip LED Spot light with rechargeable Lithium Ion battery.	1	
Operator station shall have back lit buttons for low light operation.	1	
Hose reel manhole work lights shall be provided	<b>Y</b>	
(2) L.E.D. Boom work lights shall be provided.	1	
L.E.D. Work light at midship curbside shall be provided.	1	
L.E.D. Work light at midship street side shall be provided.	-Y	1
(2) L.E.D. Rear door work lights shall be provided	1	<u> </u>
L.E.D. Lights, Clearance, Back-Up, Stop, Tail & Turn shall be provided.	/-	<del>,</del>
Mid-Ship L.E.D Bubble Type Turn Signals Shall be Provided	- V	_/_
SAFETY EQUIPMENT		
E-stop shall be located at each operator interface location. Standard locations to include: front	<del>- / -  </del>	
hose reel, mid-ship curbside dump controls, & wireless controller (if equipped.)	1	
Electrical system controls shall be configured to allow for single point operation only. Upon		-
engagement of controls at specified locations, additional controls shall be disabled.		V ,
Electrical system must enable self-check to ensure all switches are in home position prior to	<del></del>	-
critical function enablement. System must "lock out" controls when switch is not in home position.		1
Rear work lights shall be activated upon engagement of reverse gear.	/	-
(1) Emergency Flare Kit	1,	
(1) 5# Fire Extinguisher.		
7" dash monitor, 2-camera system shall be provided. A Front Hose Reel Color Camera with 130	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
degree Viewing Angle shall be provided to provide a front visual of the manhole cover to aid in		
equipment set-up. A rear back-up color camera with 130 degree viewing angle shall be provided.	V 1	
Camera to have automatic activation when the unit is switched to reverse.		
The unit shall utilize a high temperature monitoring safety device to automatically disable the		_
vacuum system when the outlet temperature of the positive displacement blower reaches a high	1	1
temperature limit.		V

		1
Digital water pressure shall be displayed in front LCD display. Pressure gauge shall be capable	T	
of displaying water system pressure in all pump operating modes.	,	V
SEWER TOOLS AND ACCESSORIES	11/	
(1) 30 Sand Nozzle	V	
(1) 30 deg. Sanitary Nozzle	1//	
(1) 15 deg. Penetrator Nozzle		
(1) 1" Small finned nozzle pipe skid		
VACUUM TOOLS AND ACCESSORIES		
The basic vacuum tube package shall include the following:	. /	
(1) 8" x 3' aluminum pipe	1/	
(2) 8" x 5' aluminum pipe	1	
(1) 8" x 6'6" catch basin tube	V	
(4) 8" quick clamps		
CHASSIS EQUIPMENT AND STORAGE		
Two (2) front tow hooks shall be provided.	V	
Two (2) rear tow hooks shall be provided.	V	
A safety cone storage rack shall be provided to contain safety cones in the inverted position.	V.	
Aluminum Toolbox - Behind Cab		
(1) 18" x 24" x 24" Aluminum Toolbox Mounted street side shall be provided.	1	V
(1) 48" x 22" x 24" Aluminum Toolbox Mounted curb side shall be provided.	J	1
(2) 18 ln. x 16 ln. x 12 ln. Aluminum Toolbox - Front Bumper shall be provided.		1/
(1) 60" x 24" x 24" Aluminum Toolbox Mounted street side shall be provided.	1	
(4) Long Handle Tool Storage Locations Behind Cab shall be provided		
MODULE FINISH	+ ,	
Painting of the module shall be with a DuPont Imron Elite Polyurethane Enamel Top Coat.		
Application is to be a wet top coat applied to a dried and sanded primer base.	V	
CHASSIS SPECIFICATION	1,	
The unit shall be a new model. No discontinued models will be accepted	1	
Freightliner 114SD Conventional Cab Chassis		
The unit shall be equipped with a diesel engine, turbo charged and after cooled, with a Detroit		
Diesel 13 12.8L; 435 HP @ 1800 RPM, 1650 LB/FT @ 1100 RPM	1	
Set Forward Axle		
The unit shall be equipped with an Allison 4000 RDS Automatic Transmission with PTO		
Provision	V	
The unit shall be equipped with a Meritor MFS-20-133A 20,000# Wide Track, I-Beam Type		,
Single Front Axle	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
The unit shall be equipped with a 20,000# Flat Leaf Front Suspension		V
The unit shall be equipped with a Meritor RT-46-160P 46,000# R-Series Tandem Rear Axle	1	
The unit shall be equipped with a 46,000# Hendrickson RT463 Rear Suspension		<b>V</b>
The unit shall be equipped with a 114 inch BBC flat room aluminum conventional cab	1.0	
The unit shall have a wheelbase of 277 inches	. /	
The unit shall have a 7/16 x 3-9/16 x 11-1/8 inch steel frame with 120 KSI rating	1/	
The unit shall have a 1/4 inch C-Channel inner frame reinforcement		
The unit shall have a 71 inch rear frame overhang	1	
The unit must be capable of fuel dosing of after treatment enabled in PTO mode-cleans		
hydrocarbons at high temperatures only.	V	
Unit must be equipped with air actuated rear axle lockers on one switch, and inter axle cross		
locking on other switch, to lock in both of the tandem axles (DCDL/IAD)	1/	
	1	
The unit must be compliant with all DOT and FMCSA regulations.	1	
The unit must be compliant with all DOT and FMCSA regulations.  ADDITIONAL PARTS	1	
The unit must be compliant with all DOT and FMCSA regulations.	1/	

(4) OR TIONAL I VI TI		
(1) 8" x 7'-6" Aluminum Vacuum Tube	1	
(1) 8" x 78" Higbee C/B Nozzle Assembly	11/	
(6) 8" Quick Clamp Assembly	11/	
(1) 8" Adjustable Air Adapter	1	1
(1) Flexible Hose Guide		
	1	
DEALER	TJ	
Equipment dealer must be within 40 miles of Merrimack Water Treatment facility.		
Equipment dealer must have road trucks available for travel to customer's site		1
Parts must be in stock at dealer's location, and on occasion from manufacturer within 48 hours	1	1
Equipment dealer must have been representing offered product for over 20 years		1
Dealer must have over 50 units of the model offered out in the field		V
Warranty	1	
Extended warranty on emissions system pricing to be included in bid package (pricing for all warranty periods offered to be included with bid package.)		
Warranties to be included in bid package on all aspects of Unit. Listed out in induvial line items		
for clarity.	1	
Training	11/	
Training in the operations and maintenance of the unit to be included.	1	



## TOWN OF MERRIMACK, NEW HAMPSHIRE

FINANCE DEPARTMENT 6 Baboosic Lake Road Merrimack, NH 03054

Tel: 603-424-7075 Fax: 603-424-0461

## Combination Sewer Cleaner Truck for Waste Water Treatment Facility Bid Form

Due by 2:00PM on Tuesday, November 24, 2020

Combination Sewer Cleaner Truck, according to the Tow Bid specifications	'n's \$_442,713.00
Mfg & Model: Vactor 2112i PD Combo Sewer Cleaner mounted	on 2022 Freightliner 114SD Chassis
Allowance for Trade in	(\$_25,000.00)
Tota	ıl price: \$417,713.00
Warranty: Standard - 1 Year / Water Pump - 2 Years / Debris Bod	y - 5 Years / Water Tanks - 10 Tears
Enclosed: X_ Warranty informationX_ Detailed specifications on equipment	
The above bid is provided in accordance with the Town of November 2, 2020 except as indicated below:	of Merrimack's bid invitation dated
	The state of the s
Bidder: C.N. Wood Enviro, LLC	
Street Address: 200 Merrimac Street	4.500
City, State, Zip Code: Woburn, MA 01801	
Phone No: 781-935-1919 Fax No: 781-9	937-9809
Authorized Signature: Mulut	
Printed Name: Paula F.Benard	140000
Email: tfiore@cn-wood.com	Date: 11/20/20



## TOWN OF MERRIMACK, NEW HAMPSHIRE

FINANCE DEPARTMENT 6 Baboosic Lake Road Merrimack, NH 03054

Tel: 603-424-7075

Fax: 603-424-0516

## **BID SPECIFICATIONS** COMBINATION SEWER CLEANER TRUCK

INTENT	T	Т
The intent of this specification is to provide for the purchase of one (1) new and unused single-engine combination sewer and catch basin cleaner used for removing all debris commonly found in catch basins/storm lead structures and sanitary sewer lines/manhole structures using a front mounted operating station. The unit shall consist of a Positive Displacement (PD) Blower vacuum	n	
system, a hydraulically driven high pressure water pump, an enclosed sealed body for storage of collected debris and equipped with a self-contained water supply as the source for the water pump system. The unit shall have the capability of operating both vacuum and water system simultaneously at full operating speeds continuously. (Submit horsepower requirements of all systems on unit)		
EQUIVALENT PRODUCT	$\vdash$	$\vdash$
Bids will be accepted for consideration on any make or model that is equal or superior to the equipment specified. Decisions of equivalency will be at the sole interpretation of the Merrimack NH Sewer Purchasing and Public Services Director.		
Bidder shall demonstrate a reasonable likeness of the equipment being offered within a reasonable time of request. Equipment demonstrated shall be equipped with all accessories and components required in this specification to ascertain equivalence.		
A blanket statement that equipment proposed will meet all requirements will not be sufficient to establish equivalence. Original manufacturer's brochures of the proposed unit are to be submitted with the proposal.		
BIDDER REFERENCES		
To ensure adequate local availability of parts and competent service from experienced suppliers, bids are preferred from local vendors who have sold and serviced at least 30 units of same manufacturer within service area of Merrimack NH Sewer and should include contacts with phone numbers.	Yes	
SERVICE AND SUPPORT		
Location of warranty service center and amount of inventory shall be noted which may be verified and inspected.		
Amount of OEM parts at this facility: this information to be included with bid package submittal.	Approx.	\$1,5000,000.
Years of servicing equipment being bid: this information to be included with bid package submittal.	24 Years	
Number of factory qualified service technician: this information to be included with bid package submittal.	6 Qaulif	ed Technicia
GENERAL		
The specification herein states the minimum requirements of the Merrimack, NH Sewer. All bids		
	1000	

cause for rejection. Any bid not prepared and submitted in accordance with the bid document and specification, or any bid lacking sufficient technical literature to enable the Merrimack NH Sewer to make a reasonable determination of compliance to the specification will be considered "non-responsive" and grounds for rejection.  SUBFRAME  The equipment shall be of modular design consisting of vacuum system, water tanks system, debris body and drive system.  A sub frame shall be fabricated to the exact dimensions of the truck chassis for mounting of modular components.  All components of the module shall attach to the sub frame and not directly to the chassis.  Yes  Sub frame shall be designed to ASME standards for maximum applied loads, chassis frame movement and even distribution of weight to the chassis and suspension.  Sub frame shall be continuous and uninterrupted from back of cab to end of frame.  PEBRIS BODY  Efficiency of air movement through debris body will be measured for minimal restriction as measured by vacuum pressure gauge while operating blower at full speed. Pressure drop hroughout entire system (from 8" hose inlet to blower inlet) including specified filtration and blower protection devices shall be no greater than 3" hg as measured at blower.  The body shall be cylindrical having a minimum usable liquid capacity of 12 cubic yards.  The body shall be capable of high dump height of 60". Dump height of 60" must be achieved without the use of scissor lift mechanism.  The debris storage body shall have a minimum yield point of 50,000 PSI and a minimum tensile strength of 70,000 PSI.  Possible of the module at the top and is equipped with a replaceable type seal. Adjustable for periodic compensation of door seal wear.  Yes  The door swing path when engaging rear door props.			
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ousing shall be within a non-corrosive slide-out screen assembly and be accessed without the	Body shall have a float type automatic shut-off auctom protection the Decision By		
ousing shall be within a non-corrosive slide-out screen assembly and be accessed without the	Blower with (2) 10" stainless steel shut-off balls located in the debits basis to the first and the stainless steel shut-off balls located in the debits basis to the stainless steel shut-off balls located in the debits basis basis to the stainless steel shut-off balls located in the debits basis basis to the stainless steel shut-off balls located in the debits basis basis to the stainless steel shut-off balls located in the debits basis basis basis to the stainless steel shut-off balls located in the debits basis bas	Yes	
se of tools.	housing shall be within a non-corrosive slide-out career accomply and be accomply and be within a non-corrosive slide-out career accomply accomp		
	use of tools.		

The debris body shall be equipped with a rear door drain to drain off excess liquids while	Yes	
retaining solids and shall include a manually operated 6" knife valve with cam-lock coupler and	100	
25 of lay flat nose having camlock quick connects.		
The debris body shall be equipped with a rear door drain at bottom dead center to drain off		
excess liquids with an internal screen to prevent large solids from passing. A manually operated	Yes	
6" knife valve with cam-lock coupler and 25' of lay flat hose having camlock quick connects shall		
be included at this location.	1 1	
Vertical (cyclone) centrifugal separators shall be installed in-line between the debris body and the	Yes	
air mover, for each debris body discharge port. Each separator shall include large fallout		
chamber cleanout door.		
For safety, a minimum of (5) vacuum tubes shall be stored on curbside storage racks to minimize	Yes	
operator exposure to traffic side of unit. Shall include quick release retainer handles (no bungees or clamps).		
A curb-side, folding 3-pipe rack shall be provided, constructed of steel tubing, spring assisted.		
Shall include quick release retainer handles (no bungees or clamps).	Yes	
A street-side, folding 3-pipe rack shall be provided, constructed of steel tubing, spring assisted.		
Shall include quick release retainer handles (no bungees or clamps).	Yes	
A rear door mounted folding 2-pipe rack shall be provided, constructed of steel tubing, spring		
assisted. Shall include quick release retainer handles (no bungees or clamps).	Yes	
(2) Pipe Storage Racks on rear door with quick releases and (2) Pipe Storage Racks Curbside		
waist level.	Yes	
A stainless steel micro-strainer (to 30 microns) shall be provided prior to the blower inlet, with (3)		
removable cartridge style screens and bottom drain port. Or equivalent filtration system.	Yes	
A splash shield shall be mounted around the lower 60% of door opening to direct liquid and	Yes	
debris away from the chassis. Shield shall be minimum 10" deep bolted assembly with no		
openings.		
A lubrication manifold system shall be provided to allow ground level greasing of boom lift and		
swing cylinders, float level indicator, top rear door hinges and debris body hoist cylinder nine	Yes	
A plastic lube chart shall be provided to call out when specific points on the unit should be		
greased.	Yes	
A 6" valve, electrically activated, air operated valve debris body vacuum relief system shall be	Yes	
located in the inlet of the vacuum system to allow the venting of the tank and relieve vacuum at		
the debris intake hose.(3) Kunkel relief valves shall be included.		
A debris inlet deflector distributing load evenly in debris body shall be included.	Yes	
WATER TANKS		
The water tanks shall be manufactured from a non-corrosive material to prevent rust yet still		-
brovide for maximum strength.	Yes	
The water tank material shall require no internal coating and shall be repairable if patching is		
required.	Yes	
The water tanks shall be easily removed from the subframe to provide complete access to the		
ruck chassis for maintenance purposes.	Yes	
The water tanks shall be adequately vented and connected to provide complete filling.	Yes	
The water tanks shall be totally separate from the debris tanks and provide no structural support.	Yes	_
The water tanks shall share no common walls with the debris tanks to prevent corrosion	Yes	
he water tanks shall come equipped with an anti-siphon device and 25' of hydrant fill hose and		_
ittings.	Yes	
The water tanks shall carry a 10 year warranty against corrosion or cracking at a minimum.		
This water talks shall be fully ballied to form a maximum compartment storage of 150 gallons for 1	Von	—
each compartment. Merrimack NH Sewer has determined that for the stability of the vehicle	Yes	
The stability of the stability of the stability of the ventries		
when turning and stopping and for safety of personnel that systems haffled at 150 maximum.		
when turning and stopping and for safety of personnel that systems baffled at 150 maximum gallon compartments are preferred. Exceptions of requirement shall be explained in detail accompanied with detailed engineering drawings.		

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gravity flooded Intakes to water pump. Fresh water shall enter the tanks through an in line 6" air gap, all aluminum covered anti-siphon ves Mater level sight tubes of non-yellowing plastic shall be installed on both tanks.  Ves Water level sight tubes of non-yellowing plastic shall be installed on both tanks.  The sides of these water tanks shall not extend more than 48" out from the centerline of the truck chassis.  A fresh water drain system shall be provided to completely drain the fresh water system from one location utilizing the 3" Y-strainer.  A fresh water drain system shall be provided.  For stability safety, the water tanks shall not elevate with debris body during dump cycle.  An air purge system utilizing the chassis air system shall be provided to assist displacing of residual water out of the high-pressure water system. System shall tailize the truck chassis air compressor to fill a 13-gallon auxiliary air storage chamber with pressure gauge and pressure profection valves to isolate the holding tank from the chassis compressor. System shall be equipped with ball valve and all necessary high pressure piping hoses, couplings and controls.  A 3 in-line "Y" trap strainers shall be located at inlet of water tank fill air-gap.  A 3 in-line "Y" trap strainers shall be located at inlet of water tank fill air-gap.  A Gate Valve shall be provided at water pump.  Yes  Water tank must be a certified metered capacity of 1300 gallons, at a minimum. Certification shall be necessary upon delivery.  Water tanks shall be constructed of 1/8" aluminum with baffled compartments maximum 150 gallons each. Or other equivalent material.  Liquid Float Level Indicator shall be provided.  WATER PUMP SYSTEM  For most efficient use of horsepower and reduced fuel consumption, high pressure rodder pump shall be hydraulic pump will give provided.  WATER PUMP SYSTEM  For most efficient use of horsepower and reduced fuel consumption, high pressure rodder pump shall be hydraulic pump of the control panel.  Liquid Float Level Indica		
device.  Water level sight tubes of non-yellowing plastic shall be installed on both tanks.  Yes  The sides of these water tanks shall not extend more than 48" out from the centerline of the truck chassis.  A fresh water drain system shall be provided to completely drain the fresh water system from one location utilizing the 3" Y-strainer.  A fresh water drain system shall be provided to completely drain the fresh water system from one location utilizing the 3" Y-strainer.  A fininium of "connection between tanks shall be provided.  For stability safety, the water tanks shall not elevate with debris body during dump cycle.  An air purpe system utilizing the chassis air systems shall be provided to assist displacing of residual water out of the high-pressure water system. System shall utilize the truck chassis air compressor to fill a 13-gallon auxiliary air storage chamber with pressure gauge and pressure protection valves to isolate the holding tank from the chassis compressor. System shall be equipped with ball valve and all necessary high pressure piping hoses, couplings and controls.  A 3 in-line "Y' trap strainer shall be located at inlet of water tank fill air-gap.  A 3 in-line "Y' trap strainer shall be located at linet of water tank fill air-gap.  A 3 in-line "Y' trap strainer shall be located at linet of water tank fill air-gap.  A 3 in-line "Y' trap strainer shall be located at linet of water tank fill air-gap.  A 3 in-line "Y' trap strainer shall be located at linet of water tank fill air-gap.  A 3 in-line "Y' trap strainer shall be constructed of 1/8" aluminum with baffled compartments maximum 150 yes  Water tanks shall be constructed of 1/8" aluminum with baffled compartments maximum 150 yes  Water tanks shall be constructed of 1/8" aluminum with baffled compartments maximum 150 yes  Water tanks shall be constructed of 1/8" aluminum with baffled compartments maximum 150 yes  Water tanks shall be constructed of 1/8" aluminum with baffled compartments maximum 150 yes  Water tanks shall be constructed	The water tank shall be located for the lowest possible center of gravity while providing 100% gravity flooded intakes to water pump.	Yes
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The sides of these water tanks shall not extend more than 48" out from the centerline of the truck chassis.  A fresh water drain system shall be provided to completely drain the fresh water system from one location utilizing the 3" Y-strainer.  A fresh water drain system shall be provided to completely drain the fresh water system from one location utilizing the 3" Y-strainer.  A minimum 6" connection between tanks shall be provided.  Yes  For stability safety, the water tanks shall not elevate with debris body during dump cycle.  An air purge system utilizing the chassis air system shall be provided to assist displacing of residual water out of the high-pressure water system. System shall utilize the truck chassis air compressor to fill a 13-gallon auxiliary air storage chamber with pressure gauge and pressure protection valves to isolate the holding tank from the chassis compressor. System shall be equipped with ball valve and all necessary high pressure piping hoses, couplings and controls.  A 3 in-line "Y" trap strainer shall be located at inlet of water tank fill air-gap.  Yes  A 3 in-line "Y" trap strainer shall be located at inlet of water tank fill air-gap.  Yes  Water tank must be a certified metered capacity of 1300 gallons, at a minimum. Certification shall be necessary upon delivery.  Water tanks shall be constructed of 1/8" aluminum with baffled compartments maximum 150  Yes  Liquid Float Level indicator shall be provided.  Yes  WATER PUMP SYSTEM  For most efficient use of horsepower and reduced fuel consumption, high pressure rodder pump shall be hydraulically driven via (2) variable displacement pumps  Hydraulic powered rodder pump via (2) variable displacement hydraulic pumps utilizing (2) 10-bott PTO's.  Yes  High-pressure water pump shall be rated capable of continuous delivery of 100 GPM at 2500 PSI (submit manufacturer support documentation).  High-pressure water shall be capable of continuous delivery of 100 GPM at 2500 PSI (submit manufacturer support documentation).  Yes  High-pressure wa	Water level sight tubes of non-yellowing plastic shall be installed on both tanks.	Yes
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The water pump shall provide precise 0-80 GPM controlled flow at variable pressure up to 2500 PSI.	
<u>rsi.</u>	Yes
An extreme cold weather recirculation system - minimum 25 GPM via transmission PTO at chassis engine idle speed.	Yes
A hydro-pneumatic nitrogen charged accumulator system shall be provided with all control valves, piping and hoses for either continuous flow or jackhammer rodding. Accumulator shall be a 2.5 gallon capacity and 1000 to 2500 PSI pressure rating.	1 1
Two (2) 1/2" high pressure ball valves shall be provided for draining the water pump and flushing sediment from the bottom of the pump.	Yes
A nozzle rack accommodating (3) nozzles shall be provided in curbside toolbox. The nozzles shall be labeled on storage rack for pipe size/flow and application.	Yes
System shall be relieved to protect operator.	Yes
Handgun shall be supplied that allows for changing of flow pattern from a fine mist to a steady stream.	Yes
Handgun shall come equipped with quick connect couplers.	Yes
An additional 1" water relief valve shall be provided.	Yes
A mid-ship quick disconnect handgun couplers shall be provided.	Yes
Front and rear quick disconnect handgun couplers shall be provided	Yes
Hydro-Excavation Package - Includes Lances, Nozzles, Storage Tray, and Vacuum Tubos	
water system shall allow precise variable flow control range of 0-22 GPM at 2500 PSI with digita flow meter in clear view of adjustment control.	Yes
A water pump hour meter shall be provided.	Yes
A high-pressure hose reel capable of operating at system pressure shall be provided.	Yes
winimum of a 1,300 gallon fresh water capacity.	Yes
VACUUM/VACUUM DRIVE SYSTEM	res
Vacuum shall be provided by a positive displacement rotary lobe type blower driven via chassis	+
engine and neavy duty split transfer case direct to the blower.	Yes
nterlock safety system shall prevent drive axle from engaging.	Yes
A horizontal silencer with rain cap shall exhaust above the cab.	Yes
A blower tachometer / hour meter shall be provided and displayed digitally on front control screen.	Yes
or most efficient use of horsepower and fuel consumption, full vacuum and/or combination operation shall be approximately 1750 RPM of chassis drive engine.	Yes
Blower shall be driven by the chassis engine and shall produce inlet volume of 4500 cfm @ 0" hg @ 2250 rpm, and 3490 cfm @ 18" hg @ 2250 rpm vacuum (Roots 824RCS 18 or equal). Drive engine not to exceed 1760 RPM.	Yes
or added protection, the vacuum system shall have three (3) relief valves set at 18" hg, heavy luty horizontal mounted noise muffler, removable and cleanable filter screen, and shall be enclosed with a steel cage guard for safety.	Yes
ransfer case shall be activated by air via a one touch control located in cab with animated confirmation on screen.	Yes
Not shift blower drive system shall be provided, including transfer case, air shift control, acuum relief, and front control for blower engagement.	Yes
slower shall be driven from chassis engine via the transmission drive shafts and heavy duty split haft transfer case direct to blower, engagement via one touch control on front control panel.	Yes
he blower drive mechanism shall be engaged and disengaged via an electrical switch located at ne operator's station on the front mounted hose reel. This feature shall reduce blower runtime nd to extend the blower service life.	Yes
slower shall be provided with a horizontal silencer with exhaust above the cab and rain cap rotecting the silencer from rain water.	Yes
lower shall draw air from two (2) separate ports in the debris body.	Yes
lydraulic shut off valves shall be provided at the suction, return and filter lines to permit servicing f the hydraulic system.	Yes

VACUUM DOOM OVOTES	
VACUUM BOOM SYSTEM	
Vacuum hose shall be designed for front operation with hose mounted and stored at front mounted work station. Front mounted location is required for ease of positioning vacuum hose a	Yes
well as minimizing need for operator to swing hose into traffic.	°
All connections between debris body and vacuum system will be of the self-adjusting pressure	+
inting type.	Yes
Vacuum hose will remain stationary and not rise with debris body.	Yes
Upper debris tube shall consist of an anchored steel tube and elbow.	Yes
A sub-frame mounted cab guard shall be mounted behind cab with boom rest cradle	Yes
All vacuum pipes shall be connected to vacuum pick up tube and extension pipes by adjustable	1.00
over-center quick clamps to join the aluminum flanges on pipes.	Yes
One (1) quick clamp for each pipe supplied shall be provided.	Yes
Boom pedestal shall be directly mounted to module subframe.	Yes
Boom support used for travel mode shall not interfere with access or require removal to tilt bood	1.00
iorward.	Yes
A control station shall be equipped with a control joystick for all directions as well as a safety	
emergency shut-down button, which shall automatically eliminate power to boom	Yes
The vacuum boom shall have a heavy-duty flexible hose assembly joining the transition pine to	Yes
the debris body, and a 70-degree elbow and 5-1/2 heavy duty hose at the suction end of the boom.	
Boom shall rotate 180 degrees and shall be operated by an electric over hydraulic system. Lift	<del>                                     </del>
and swing movements snall be actuated by hydraulic cylinders.	Yes
The horizontal inner steel vacuum tube and inner box beam boom section shall telescope (tube	Yes
within tube, box beam within box beam) and retract a minimum of 10' without affecting the	l es
vertical position of the pick-up tubes, and shall be located at the front work station in its retracted	
bosition, providing 324 maximum reach off the longitudinal axis of unit.	
A joystick for hydraulic control of the boom shall be installed on hose reel front panel	Yes
A removable 4" diameter storage "Post" to stabilize the lower boom hose during transport	
Storage device shall not interfere with raising hood.	Yes
A cordless remote boom control system equipped to activate boom functions, throttle, water	Yes
pump on/off, hose reel in/out, hose reel speed, vacuum relief on/off and emergency	
disengagement e-stop shall be provided.	
A rotatable inlet hose for telescopic boom shall be provided.	
A detailed engineering drawing must be supplied showing the relationship of the hose reel in	Yes
relation with the vacuum boom range of motion. Drawing shall show module mounted on chassis, ull arc of vacuum hose both retracted and extended, full rotation of arc for hose reel in the	
extended position and dimension all arc lengths of vacuum boom retracted and extended.	
Drawing shall highlight intersection areas whereby combination cleaning is possible (within full	
arc on telescoping boom system).	
Unit must be capable of a lift of 35' of sewer flow (including liquids, rags, grease, and other	
olids)	Yes
IOSE REEL	
lose reel assembly shall be direct frame mounted.	Ver
lose reel assembly shall be mounted on an independent frame that can be removed from	Yes
rackets attached permanently to front of main truck frame members.	Yes
Reel will be manufactured out of 1/4" spun steel for added structural strength and shall require no	
nternal or external reinforcements that could damage rodder hose.	Yes
lose reel shall be driven by adjustable gear reduction chain and sprocket assembly.	
lose reel shall operate at full rotational speed while chassis engine is at idle.	Yes
lydraulic Telescoping Rotating Hose Reel - 800' capacity of 1" hose shall be provided.	Yes
the front mounted hose reel shall telescope 15" forward down centerline of truck.	Yes
ntiro rool accomply chall ratate 070 de esta esta esta esta esta esta esta est	Yes
lose reel shall include a dual locking device to positively lock reel in any position across	Yes
device to positively lock reel in any position across	Yes

operating range		
operating range.	Yes	
The hose reel shall rotate about the reel assembly centerline so the reel shall never extend		
beyond the truck width. Reel coverage diagram shall be submitted with bid.	Yes	
Controls shall accessible on both sides of the hose reel via a mounting station for the wireless	L.	
remote control, allowing operator to work at either side of unit for safety purposes.	Yes	
800' x 1" Piranha Sewer Hose / 2500 Psi shall be provided	Yes	
An automatic hose level wind scroll device shall be supplied. An air-cylinder actuated pinch-roller	· Van	
nozzle blockages.		
An air-cylinder actuated pinch-roller shall exert downward pressure across full width of reel to	Yes	
pretain nose on reel when encountering nozzie blockages. Pinch roller must be activated via a one	res	
louch, backlit button with lighted feedback on the control panel.	1	
Digital footage counter displaying footage values shall be provided. System must be capable of	- V	+
resetting value to ensure operator safety. Accuracy To Within One Percent Of Actual Distance	Yes	
Large Easy To Read Lcd Screen located on the front control panel screen.		
10' Leader Hose	Vai	-
WASHDOWN EQUIPMENT	Yes	+
A handgun with 1/2" x 35' hose shall be provided at mid-ship to which allow the operator to		-
deliver water to area served by pick up hose and to the inside of the debris body for clean out.	Yes	
Hand sprayer with adjustable spray pettern to be provided with the medical body for clean out.		-
Hand sprayer with adjustable spray-pattern to be provided with trigger-style gun.  FRONT OPERATING STATION AND CONTROLS	Yes	
Primary operator station will be located at front of hose reel.	Yes	
All operator controls should be located on a single control panel that can be rotated on a 90	Yes	
degree arc for an operator customizable location. The control panel shall also feature the ability		
to raise and lower to accommodate operators of different height.	ar a	
Station shall include a 7" Touch enabled display screen with corresponding tactile buttons for	Yes	
reading critical machine data including ( hose footage, hose reel speed settings, water pressure,		
water flow. Air mover information, chassis data, mode indicator, chassis fuel level, and diagnostic		
(controls), Back itt button keypads with, laser etched function icons, and 4 light feedback		
indicators. These buttons shall operate the following functions: All setup functions (remote/panel		
selector, work lights, nose reel extend/retract, hose reel lock, and pinch roller activation) and		
Vacuum functions. Additionally, there will be separate sealed rocker switches for Water Pump		
on/off and Throttle up/down. There shall be a multi flow control dial for controlling the full range of		
ine water pump.		
There shall be a hose reel joystick to control the pay in and pay out of the hose reel, this joystick	Yes	
Shall offer speed control that increases the further the joystick is moved in either direction. There		
Strail be an additional hose reel speed dial for setting specific speed ranges of the real. There		
shall be a boom joystick that controls all function of the boom including up/down left/right and		
extend/retract. There shall be a E-Stop button to bring the machine to safe operating condition		
achometer and nour meter for chassis engine provided at control station shall be provided	Yes	
achometer and hour meter for blower provided at control station shall be provided	Yes	
All Hydraulic Functions - Color Coded, Sealed Electric/Hydraulic NEMA 4 switches shall be		
provided.	Yes	
Blower Engagement/Vacuum Relief - Sealed Electric/Air NEMA 4 Switch shall be provided.	Yes	
water pump hour meter shall be provided.	Yes	<del>                                     </del>
PTO hour meter shall be provided.	Yes	
A temperature light and alarm shall be provided. Light and alarm will be activated when hydraulic	103	-
temperature reaches 180 F.	Yes	
Front control screen shall display a water level indicator to show level of water through the range		
of the tank.	Yes	
Front control screen shall display the debris had a large		
IN CAB CONTROLS	Yes	
All In cab controls are to be located on a single in cab control screen. This shall be a full color	Yes	

display screen. It shall utilize 12 back lit tactile (glove ready) buttons on the sides of the screen as well as feature touch screen operation.	Yes	
All Back up camera Features shall be displayed as the L.C. L.C		
All Back up camera Features shall be displayed on the In Cab Control Screen.  All work lights shall be able to be activated or deactivated in cab with on screen controls.	Yes	
All work lights shall be able to be activated or deactivated in cab with on screen controls.	Yes	
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All work lights shall be able to be activated or deactivated in cab with on screen controls.	Yes	
All standard arrow boards or arrow stills by the light of the standard arrow boards or arrow stills by the standard arrow beautiful at the stan	Yes	
All standard arrow boards or arrow stick shall be controlled via an on screen controller	Yes	
All safety strobes and beacons shall be controlled via on screen controller	Yes	
Jet or Combo mode shall be activated via one touch button on the control panel. Control screen	Yes	
must display an on screen representation of the chassis drive system and must animate to show as drive systems activate or deactivate.		
Recirculation must be activated on the in cab control screen and visibly show that it is active at	-	
all times.	Yes	
ELECTRICAL & SAFETY LIGHTING		
The entire system shall be vapor sealed to eliminate moisture damage, "Nema-4" type or equal.	Yes	
Logs, reports, and hour meters will be accessible via the display.		
All electrical connections shall be void of exposed wires or terminals nor should they be painted.	Yes	
Paint process shall be completed prior to installation of wiring.	Yes	
All wiring shall be color-coded and encased in conduit to scaled terminal boxes with circuit	100	
breakers.	Yes	
All other lights required by State and Federal Laws.	Yes	
One-piece directional 10-light arrow board (Signal Master or equal) shall be mounted on rear	res	
door of debris body, with controls mounted in cab.	Yes	
Handheld, Pistol Grip LED Spot light with rechargeable Lithium Ion battery.	Yes	
Operator station shall have back lit buttons for low light operation.	Yes	
Hose reel manhole work lights shall be provided	Yes	
(2) L.E.D. Boom work lights shall be provided.	Yes	
L.E.D. Work light at midship curbside shall be provided.	Yes	
L.E.D. Work light at midship street side shall be provided.	Yes	
(2) L.E.D. Rear door work lights shall be provided	Yes	· · · · · · · · · · · · · · · · · · ·
L.E.D. Lights, Clearance, Back-Up, Stop, Tail & Turn shall be provided.		
Mid-Ship L.E.D Bubble Type Turn Signals Shall be Provided	Yes	
SAFETY EQUIPMENT	Yes	
E-stop shall be located at each operator interface location. Standard locations to include: front		
hose reel, mid-ship curbside dump controls, & wireless controller (if equipped.)	Yes	
Electrical system controls shall be configured to allow for single point operation only. Upon		
lengagement of controls at specified locations, additional controls shall be disabled	Yes	
Electrical system must enable self-check to ensure all switches are in home position prior to		
critical function enablement. System must "lock out" controls when switch is not in home position I	Vac	
Hear work lights shall be activated upon engagement of reverse gear	Yes	
(1) Emergency Flare Kit	Yes	
(1) 5# Fire Extinguisher.	Yes	
7" dash monitor, 2-camera system shall be provided. A Front Hose Reel Color Camera with 130		
degree viewing Angle Shall be provided to provide a front visual of the manhole cover to aid in	Yes	
equipment set-up. A rear back-up color camera with 130 degree viewing angle shall be provided.		
Camera to have automatic activation when the unit is switched to reverse.		
The unit shall utilize a high temperature monitoring safety device to automatically disable the	Yes	
o and the state of		
vacuum system when the outlet temperature of the positive displacement blower reaches a high temperature limit.		

Digital water pressure shall be displayed in front LCD display. Pressure gauge shall be capable	
of displaying water system pressure in all pump operating modes.	Yes
SEWER TOOLS AND ACCESSORIES	
(1) 30 Sand Nozzle	Yes
(1) 30 deg. Sanitary Nozzle	Yes
(1) 15 deg. Penetrator Nozzle	Yes
(1) 1" Small finned nozzle pipe skid	Yes
VACUUM TOOLS AND ACCESSORIES	
The basic vacuum tube package shall include the following:	Yes
(1) 8" x 3' aluminum pipe	Yes
(2) 8" x 5' aluminum pipe	Yes
(1) 8" x 6'6" catch basin tube	Yes
(4) 8" quick clamps	Yes
CHASSIS EQUIPMENT AND STORAGE	1.00
Two (2) front tow hooks shall be provided.	Yes
Two (2) rear tow hooks shall be provided.	Yes
A safety cone storage rack shall be provided to contain safety cones in the inverted position.	Yes
Aluminum Toolbox - Behind Cab	Yes
(1) 18" x 24" x 24" Aluminum Toolbox Mounted street side shall be provided.	Yes
(1) 48" x 22" x 24" Aluminum Toolbox Mounted curb side shall be provided.	Yes
(2) 18 In. x 16 In. x 12 In. Aluminum Toolbox - Front Bumper shall be provided.	
(1) 60" x 24" x 24" Aluminum Toolbox Mounted street side shall be provided.	Yes
(4) Long Handle Tool Storage Locations Behind Cab shall be provided	Yes
MODULE FINISH	Yes
Painting of the module shall be with a DuPont Imron Elite Polyurethane Enamel Top Coat.	
Application is to be a wet top coat applied to a dried and sanded primer base.	Yes
CHASSIS SPECIFICATION	
The unit shall be a new model. No discontinued models will be accepted	V
Freightliner 114SD Conventional Cab Chassis	Yes
The unit shall be equipped with a diesel engine, turbo charged and after cooled, with a Detroit	Yes
Diesel 13 12.8L; 435 HP @ 1800 RPM, 1650 LB/FT @ 1100 RPM	Yes
Set Forward Axle	Yes
The unit shall be equipped with an Allison 4000 RDS Automatic Transmission with PTO	res
Provision	Yes
The unit shall be equipped with a Meritor MFS-20-133A 20,000# Wide Track, I-Beam Type	
Single Front Axle	Yes
The unit shall be equipped with a 20,000# Flat Leaf Front Suspension	Yes
The unit shall be equipped with a Meritor RT-46-160P 46,000# R-Series Tandem Rear Axle	Yes
The unit shall be equipped with a 46,000# Hendrickson RT463 Rear Suspension	
The unit shall be equipped with a 114 inch BBC flat room aluminum conventional cab	Yes
The unit shall have a wheelbase of 277 inches	Yes
The unit shall have a 7/16 x 3-9/16 x 11-1/8 inch steel frame with 120 KSI rating	Yes
The unit shall have a 1/4 inch C-Channel inner frame reinforcement	Yes
The unit shall have a 71 inch rear frame overhang	Yes
The unit must be capable of fuel dosing of after treatment enabled in PTO mode-cleans	Yes
hydrocarbons at high temperatures only.	Yes
Unit must be equipped with air actuated rear axle lockers on one switch, and inter axle cross	
locking on other switch, to lock in both of the tandem axles (DCDL/IAD)	Yes
The unit must be compliant with all DOT and FMCSA regulations.	
ADDITIONAL PARTS	Yes
(1) 8" x 3' Aluminum Vacuum Tube	
(1) 8" x 5' Aluminum Vacuum Tube	Yes
C/ - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 1	Yes

(1) 8" x 7'-6" Aluminum Vacuum Tube	Yes
(1) 8" x 78" Higbee C/B Nozzle Assembly	Yes
(6) 8" Quick Clamp Assembly	Yes
(1) 8" Adjustable Air Adapter	Yes
(1) Flexible Hose Guide	Yes
DEALER	+++
quipment dealer must be within 40 miles of Merrimack Water Treatment facility.	Yes
equipment dealer must have road trucks available for travel to customer's site	Yes
Parts must be in stock at dealer's location, and on occasion from manufacturer within 48 hours	Yes
equipment dealer must have been representing offered product for over 20 years	Yes
Dealer must have over 50 units of the model offered out in the field	Yes
Varranty	
extended warranty on emissions system pricing to be included in bid package (pricing for all varranty periods offered to be included with bid package.)	Yes
Varranties to be included in bid package on all aspects of Unit. Listed out in induvial line items or clarity.	Yes
raining	
raining in the operations and maintenance of the unit to be included.	Yes

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