December 9, 2013

Mr. Peter Ramanauskas
U.S. Environmental Protection Agency Region 5
77 W. Jackson Blvd.
LU-9J
Chicago, IL 60604

RE: Proposed Addendum to the Evaluation of Groundwater/Leachate Collection and Discharge System Work Plan
RACER Trust Property – Toledo, Ohio

Dear Mr. Ramanauskas:

This letter presents an addendum to the Evaluation of Groundwater/Leachate Collection and Discharge System Work Plan (Work Plan) to be conducted at the RACER Trust Property (Site) in Toledo, OH. This Addendum covers modifications to monitoring well installation and groundwater analyses.

MONITORING WELL INSTALLATION

Based upon a site meeting, which took place on August 15, 2013 between U.S. EPA, RACER, and CRA, it was determined that additional groundwater monitoring locations should be installed. The additional groundwater monitoring locations were agreed to be installed along the western drainage ditch of the Former Disposal Area (FDA). Figure 1 shows the approximate locations of the new groundwater monitoring locations.

MW146-12 has detected PCBs and Vinyl Chloride above the screening criteria in each of the sampling events. Therefore, the new groundwater monitoring locations will be installed at the bottom of the western drainage ditch upgradient and downgradient of MW146-12 to determine if there is further impact in this area. These locations will also be used to determine if Silver Creek is being impacted.

RACER proposes to use stainless steel drive-point piezometers for the new groundwater monitoring locations. Four (4) ¾-inch stainless steel drive-point piezometers will be installed in the locations indicated on Figure 1. Due to the difficulty with access at the site due to topography and overgrown vegetation, the drive-point piezometers will be installed by hand using the procedure presented in Attachment A. The procedure, however, will not include the sampling tube, so that a water level can be measured within the piezometers.

The drive point piezometers will be installed at approximately 3 feet below ground surface in order to intercept the top of the water table. Prior to installation, a visual inspection of each proposed location will be conducted to determine if the location is in an area of obvious groundwater discharge. If no discharge is detected, then the drive point piezometer will be advanced to approximately 3 feet below ground surface at the proposed location using the procedure described in Attachment A. The water level within the piezometer will then be measured to determine if the water table has been reached. The water level within the piezometer will be allowed to stabilize prior to measurement. If there is less than 2 foot of water within the monitor, then the drive point will be advanced 1 foot, and the water level in the piezometer will be allowed to recover for approximately 30 minutes prior to re-measurement of the water level. If there is approximately 2 foot (or more) of water within the piezometer, then the water level within the piezometer will be recorded and a groundwater sample will be collected using a peristaltic pump following CRA standard operating procedure.

The drivepoints will be purged as much as reasonably possible on the day of installation, and allowed to recover overnight or longer prior to sampling. If the drivepoints are very slow to recover, the drivepoint may be advanced another foot into the ground, and/or developed more intensively. It is understood that the small diameter of the drivepoints and possible slow recharge rate of the drivepoint wells will make collecting sufficient groundwater for samples a slow process.

GROUNDWATER ANALYSES

RACER proposes to simplify the groundwater parameters for the existing groundwater wells in order to save sampling time and laboratory costs. Table 3.1 of the Work Plan lists the analytical parameters to be run for all groundwater samples collected under the Work Plan. To date, only PCBs and VOCs have been detected above the screening criteria. Therefore, RACER wishes to only sample the existing wells for total and dissolved PCBs and total VOCs.

The new drive-point piezometers will be sampled for all the parameters listed in Table 3.1 over the course of four quarterly sampling events. The existing monitoring wells will continue to be sampled on a semi-annual basis and analyzed for total and dissolved PCBs and total VOCs only. This should provide enough data to determine whether or not to continue sampling any wells for the full set of parameters listed in Table 3.1.

Conestoga-Rovers and Associates, Inc. (CRA) will complete the field activities and will follow the approved Work Plan unless otherwise specified above.

In addition to the activities listed above, RACER will perform a visual inspection to locate any historical wells located south of Silver Creek. Historically, monitoring wells were installed south of Silver Creek during the voluntary cleanup during the late 1990s. Most of these monitoring wells have been abandoned over time but it is thought that a few may still exist south of Silver Creek. Any monitoring wells discovered will be checked for physical deterioration and the groundwater level will be collected. These wells will also be added to the site figure.

Should you have any questions on the above, please do not hesitate to contact me.

Yours truly,

Pamela L. Barnett

Pamela L. Barnett P.G.
Assemble Region Cleanup Manager (DE, LA, MA, OH, PA, VA)
RACER Trust

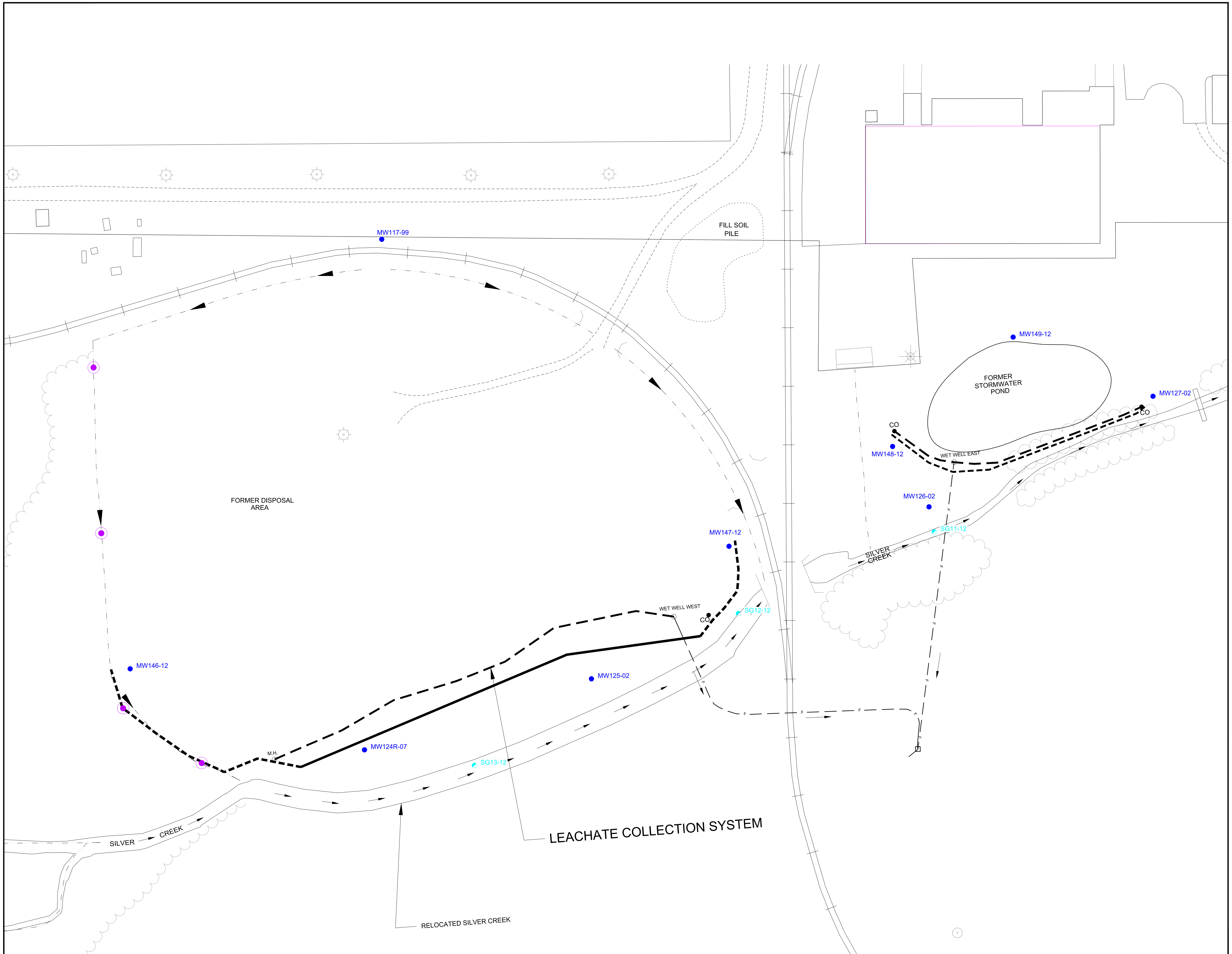
TABLES

TABLE 3.1

ANALYTICAL PARAMETERS
RACER SITE 1099, TOLEDO 103C LANDFILL
TOLEDO, OHIO

Dissolved Metals	*General Chemistry*	*Volatile Organic Compounds*		*Semi-Volatile Organic Compounds*		*PCBs*
Aluminum	Alkalinity, Total (as CaCO3)	1,1,1,2-Tetrachloroethane	Bromodichloromethane	1,2,4-Trichlorobenzene	Benzo(a)anthracene	Aroclor-1016 (PCB-1016)
Antimony	Ammonia	1,1,1-Trichloroethane	Bromoform	1,2-Dichlorobenzene	Benzo(a)pyrene	Aroclor-1221 (PCB-1221)
Arsenic	Biochemical Oxygen Demand (BOD)	1,1,2,2-Tetrachloroethane	Bromomethane (Methyl Bromide)	1,2-Diphenylhydrazine	Benzo(b)fluoranthene	Aroclor-1232 (PCB-1232)
Barium	Chemical Oxygen Demand (COD)	1,1,2-Trichloroethane	Carbon disulfide	1,3-Dichlorobenzene	Benzo(g,h,i)perylene	Aroclor-1242 (PCB-1242)
Beryllium	Chloride	1,1-Dichloroethane	Carbon tetrachloride	1,4-Dichlorobenzene	Benzo(k)fluoranthene	Aroclor-1248 (PCB-1248)
Cadmium	Cyanide (total)	1,1-Dichloroethene	Chlorobenzene	1-Methylnaphthalene	bis(2-Chloroethoxy)methane	Aroclor-1254 (PCB-1254)
Calcium	Dissolved Organic Carbon (DOC)	1,1-Dichloropropene	Chlorobromomethane	2,2'-oxybis(2-Chloropropane)	bis(2-Chloroethyl)ether	Aroclor-1260 (PCB-1260)
Chromium	Fluoride	1,2,3-Trichlorobenzene	Chloroethane	2,3-Dichlorophenol	bis(2-Ethylhexyl)phthalate	
Cobalt	Hardness	1,2,3-Trichloropropane	Chloroform (Trichloromethane)	2,4,5-Trichlorophenol	Butyl benzylphthalate	
Copper	Nitrate (as N)	1,2,4-Trichlorobenzene	Chloromethane (Methyl Chloride)	2,4,6-Trichlorophenol	Carbazole	
Iron	Nitrite (as N)	1,2,4-Trimethylbenzene	cis-1,2-Dichloroethene	2,4-Dichlorophenol	Chlordane	
Lead	Oil and Grease	1,2-Dibromo-3-chloropropane (DBCP)	cis-1,3-Dichloropropene	2,4-Dimethylphenol	Chrysene	***Total Petroleum Hydrocarbons***
Magnesium	Orthophosphate	1,2-Dibromoethane (Ethylene Dibromide)	Cymene (p-Isopropyltoluene)	2,4-Dinitrophenol	Dibenz(a,h)anthracene	
Manganese	pH (water)	1,2-Dichlorobenzene	Dibromochloromethane	2,4-Dinitrotoluene	Dibenzofuran	Volatile Petroleum Hydrocarbons
Mercury	Phenolics (Total)	1,2-Dichloroethane	Dibromomethane	2,6-Dinitrotoluene	Diethyl phthalate	Extractable Petroleum Hydrocarbons
Nickel	Phosphorus	1,2-Dichloroethene (total)	Dichlorodifluoromethane (CFC-12)	2-Chloronaphthalene	Dimethyl phthalate	
Potassium	Sulfate	1,2-Dichloropropane	Ethylbenzene	2-Chlorophenol	Di-n-butylphthalate	
Selenium	Sulfide	1,3,5-Trimethylbenzene	Hexachlorobutadiene	2-Methylnaphthalene	Di-n-octyl phthalate	
Silver	Sulfite	1,3-Dichlorobenzene	Isopropylbenzene	2-Methylphenol	Fluoranthene	
Sodium	Total Dissolved Solids (TDS)	1,3-Dichloropropane	Methylene chloride	2-Nitroaniline	Fluorene	
Thallium	Total Kjeldahl Nitrogen (TKN)	1,4-Dichlorobenzene	Naphthalene	2-Nitrophenol	Hexachlorobenzene	
Vanadium	Total Organic Carbon (TOC)	2,2-Dichloropropane	n-Butylbenzene	3&4-Methylphenol	Hexachlorobutadiene	
Zinc	Total Suspended Solids (TSS)	2,4-Dichlorophenol	n-Propylbenzene	3,3'-Dichlorobenzidine	Hexachlorocyclopentadiene	
		2-Butanone (Methyl Ethyl Ketone)	Styrene	3-Nitroaniline	Hexachloroethane	
		2-Chloroethyl vinyl ether	tert-Butylbenzene	4,6-Dinitro-2-methylphenol	Indeno(1,2,3-cd)pyrene	
		2-Chlorotoluene	Tetrachloroethene	4-Bromophenyl phenyl ether	Isophorone	
		2-Hexanone	Toluene	4-Chloro-3-methylphenol	Naphthalene	
		2-Phenylbutane (sec-Butylbenzene)	trans-1,2-Dichloroethene	4-Chloroaniline	Nitrobenzene	
		4-Chlorotoluene	trans-1,3-Dichloropropene	4-Chlorophenyl phenyl ether	N-Nitrosodimethylamine	
		4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	Trichloroethene	4-Methylphenol	N-Nitrosodi-n-propylamine	
		Acetone	Trichlorofluoromethane (CFC-11)	4-Nitroaniline	N-Nitrosodiphenylamine	
		Acrolein	Vinyl acetate	4-Nitrophenol	Pentachlorophenol	
		Acrylonitrile	Vinyl chloride	Acenaphthene	Phenanthrene	
		Benzene	Xylene (total)	Acenaphthylene	Phenol	
		Bromobenzene		Anthracene	Pyrene	
				Benzidine		

FIGURES



Nº	Revision	Date	Initial

N

0 20 40ft

LEGEND

- PROPOSED DRIVE-POINT PIEZOMETER LOCATION
- MW127-02 MONITORING WELL LOCATIONS
- TREE LINE
- SILVER CREEK
- SG11-12 STAFF GAUGE LOCATIONS (NOT USED IN CONTOUR)
- LEACHATE COLLECTION SYSTEM
- M.H. MANHOLE
- CO CLEANOUT
- WET WELL WET WELL
- SHEET PILE WALL
- F FORCEMAIN

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

Status	Date	Initial

PROPOSED DRIVE-POINT PIEZOMETER LOCATION

TOLEDO, OHIO

RACER PROPERTY

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager: A. L.	Reviewed By: A. L.	Date: NOVEMBER 2013	
Scale: 1:40'	Project Nº: 012609-T01	Report Nº: PRES012	Drawing Nº: 3

012609-T01(PRES012)GN-DE003 NOV 18/2013

ATTACHMENTS

Stainless Steel Drive-Point Piezometers

Model 615

The Model 615 Drive-Point Piezometer is designed as an affordable method to monitor shallow groundwater and soil vapor in suitable conditions.

The Drive-Points attach to inexpensive 3/4" (20 mm) NPT steel drive pipe which is widely available through local plumbing and hardware stores.

Solinst Drive-Point Piezometers are most often installed as permanent well points. They can also be used for short term monitoring applications.

High quality samples can be obtained if polyethylene or Teflon® lined tubing is attached to the stainless steel drive point. Groundwater sampling and hydraulic head measurements can be taken within the tubing using small diameter equipment, as described overleaf.

Solinst Drive-Point Piezometers can be driven into the ground with any direct push or drilling technology, including the Manual Slide Hammer shown at right. To avoid clogging or smearing of the screen during installation, a shielded version is also available.

Model 615 Drive-Point and Shielded Drive-Point Piezometer

Applications

- Groundwater sampling, including VOCs
- Water level monitoring
- Base flow monitoring in stream beds
- Contaminant plume delineations
- Soil gas sampling
- UST monitoring
- Low cost and minimal disturbance site assessment
- Sparge points

Installing Piezometers with a Manual Slide Hammer

High Quality Samples

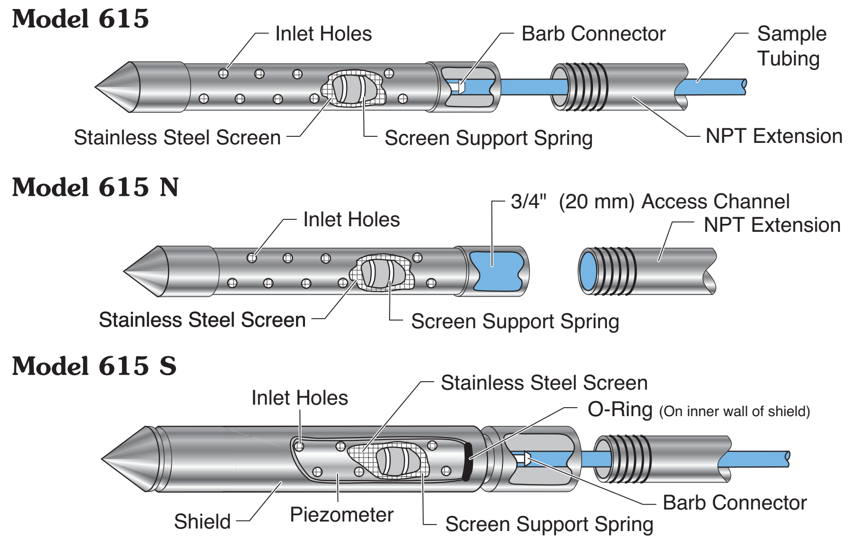
The Model 615 Piezometer has a stainless steel, 50 mesh cylindrical filter-screen, within a 3/4" (20 mm) stainless steel drive-point body, screen support and a barbed fitting for attachment of sample tubing. Optional heavy-duty extension couplings are also available to create a strengthened and more rugged piezometer.

The inner barbed fitting allows connection of 5/8" OD x 1/2" ID (16 mm x 12 mm) LDPE or Teflon sample tubing. This prevents sample water from contacting the steel extension rods, and maintains high sample integrity, even when inexpensive carbon steel extensions are used.

Ideal for soil vapor sampling. Where an air-tight connection is most desirable, the compression fitting option allows users to attach 1/4" (6 mm) sample tubing directly to the top of the screened portion of the drive-point.

The 615 S shielded drive-point has a single use, 1-1/2" (38 mm) dia. shield to avoid smearing and plugging of the screen during installation. The strengthened connector at the top of the drive-point acts as an annular seal, which avoids contamination from higher levels in the hole.

The 615 N, designed without a tubing barb, is to be used for water level measurements. This saves money and provides better access for Water Level Meters.



Sampling Within Narrow Diameters

Direct push sampling has quickly become a popular way to obtain groundwater samples. However, sampling within drive-points requires a narrow diameter sampler. Solinst offers several options for this specific sampling application.

Peristaltic Pump, Model 410

The Peristaltic Pump uses the suction lift principle. Suitable for 1/4" (6 mm) ID or larger diameters. The Peristaltic Pump provides a regulated and steady flow. It works effectively up to 33 ft. (10 m) at sea level.

WaTerra Pump, Model 404

The WaTerra Pump operates as an inertial pump. A check valve and tubing, is raised and lowered to lift a sample. The SS10 foot valve suits wells as narrow as 1/2" (12 mm) ID and works to depths of 74 ft. (25 m).

Miniature Point Source Bailer, Model 429

The 1/2" (12 mm) dia. stainless steel bailer works very well in the 615N. The bottom emptying device permits a regulated, steady flow.

Hydraulic Head

Water levels can be measured in any of the drive-points described, using a Solinst Model 102, or the Narrow Tape Solinst Model 101 or 101M Water Level Meter for the most accurate hydraulic head measurements.

Manual Slide Hammer

For the most inexpensive wellpoint installations, the Manual Slide Hammer can be used to install the Solinst Drive-Point Piezometers. The 25lb (11Kg) slide hammer and all other equipment can easily be transported in a car or truck to most sites.

A heavy duty drive head is used, on which the slide hammer impacts, and a tubing by-pass ensures that the tubing does not get damaged during installation.

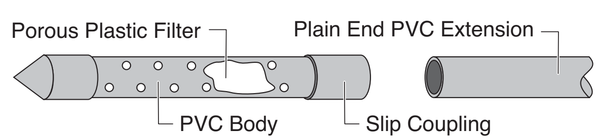
Couplings

Heavy duty couplings are available for the Model 615 Drive-Point Piezometers. The reinforced shoulder gives added support to the pipe threads, to withstand driving stresses and to give more accurate alignment. The maximum OD is 1.5" (38 mm).

Depth Limitations

Drive-point piezometers are not suitable for all sites. The depth limitations vary, especially with soil conditions and the drive method used.

Model 601 Standpipe Piezometer



The Model 601 Standpipe Piezometer, is the least expensive of the piezometer line, and is designed to be placed within an open hole. The pointed PVC tip is suitable for pushing into very loose sands at the base of a borehole, or for backfilling in place within test pits.

The piezometer uses a porous plastic filter set inside a perforated PVC body. It connects to the surface with 3/4" ID PVC riser pipe connected with slip couplings. The piezometer tips come in a variety of lengths.

Ideal for:

- Water level monitoring
- Construction control
- Slope stability investigations
- Soil gas monitoring
- Permeability measurement
- De-watering/drainage operations
- Metals monitoring

For further information contact: Solinst Canada Ltd.
Fax: +1 (905) 873-1992; (800) 516-9081 Tel: +1 (905) 873-2255; (800) 661-2023
35 Todd Road, Georgetown, Ontario, Canada L7G 4R8
Web Site: www.solinst.com E-mail: instruments@solinst.com

Solinst®

Drive-Point Piezometer Instructions

Model 615, 615N & 615S (with Slide Hammer)

WARNING: Before driving into the ground, be sure you have underground service clearance to avoid cables, gas lines, pipes, etc.

Installation with a Manual Slide Hammer

1. Ensure that all components are clean prior to use.
2. Cut the piezometer tubing to the depth of the proposed installation plus an additional 5 ft (1.5 m).
3. Connect the piezometer tubing to barbed fitting on the Drive-Point Piezometer Tip by pushing firmly until the tubing reaches the base of the fitting.
4. Slide a length of extension drive pipe over the tubing, and thread it firmly onto the Drive-Point Piezometer Tip. Tighten with a pipe wrench.

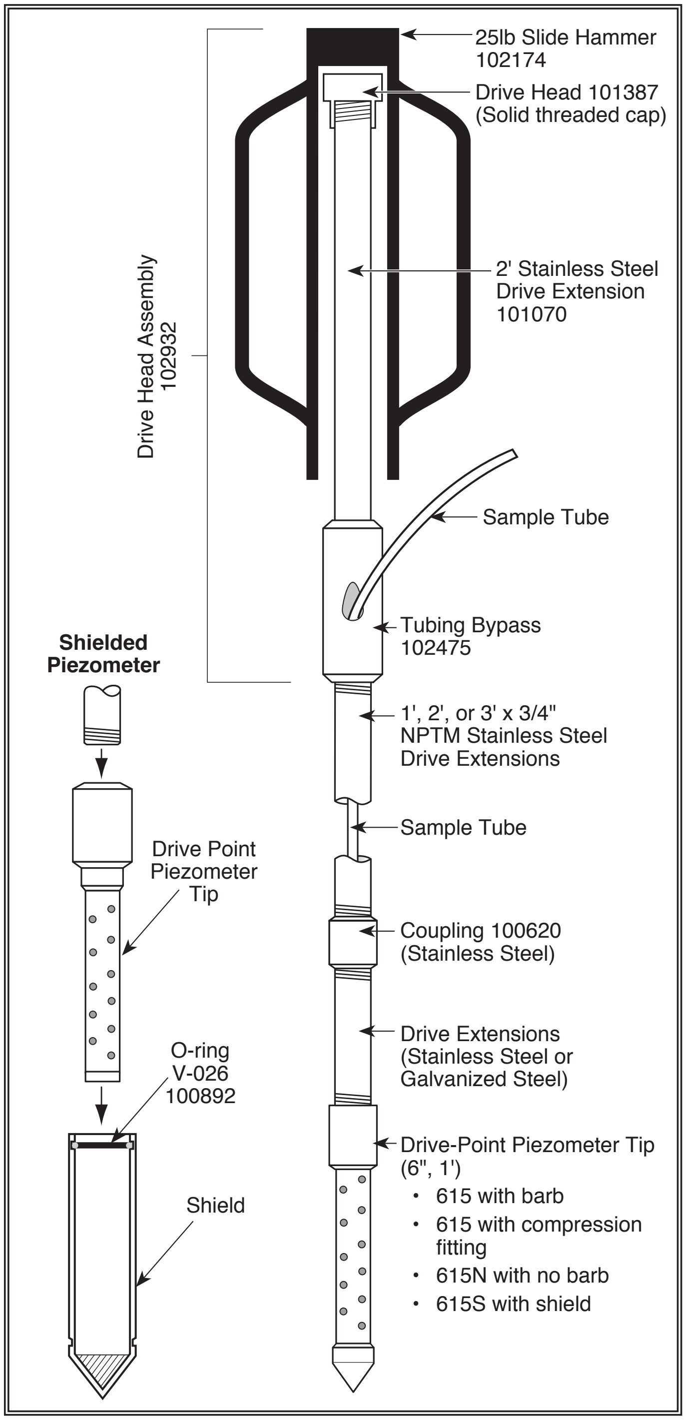
WARNING: When connecting or removing the Tubing Bypass, it is very important to hold the tubing to prevent it from turning. Failure to do so may result in the tube being dislodged from the Drive-Point Tip.

5. Hold the tubing to prevent it from turning, then slide the Tubing Bypass over the tubing and tighten it firmly onto the extension pipe, with the tubing extending through the side hole.
6. Thread a Drive Extension and the Drive Head onto the Tubing Bypass and tighten firmly.
7. Slide the Slide Hammer over the Drive Head and operate the hammer to drive the device until only about 6" (15 cm) of the extension pipe below the Tubing Bypass remains above the ground.
8. Remove the hammer, then holding the tubing to prevent it from turning, remove all sections of the Drive Head Assembly.
9. Slide a coupling over the tubing and tighten firmly onto the previous extension pipe. Slide the next extension pipe over the tubing and tighten it securely.
10. Repeat steps 5 through 10 until the desired sampling depth is reached.
11. Cut the piezometer tubing to fit flush to the top of the extension pipe. Attach a cap to the top of the piezometer to complete the installation.

Component List

- Drive-Point Piezometer Tip
- Extensions (suitable to reach the required depth)
- Couplings (one required for each extension)
- Manual Slide Hammer
- Piezometer tubing (suitable to reach the required depth)
- Drive Head Assembly (3 parts)

  Includes: Drive Head, Drive Extension & Tubing Bypass
- Stainless Steel Cap (101057)



Important Note about Shielded Piezometers

1. Before driving into the ground, ensure that the shield is on firmly and the o-ring seats properly.
2. Drive the Piezometer an equal length past the desired depth, then pull back/up to expose the inlet.
3. 1ft (102412) and 6" (104370) Replacement Shields are available when re-using the Drive-Point Piezometer.

Printed in Canada
April 14, 2009
(#103168)

For further information contact: Solinst Canada Ltd.
Fax: +1 (905) 873-1992; (800) 516-9081 Tel: +1 (905) 873-2255; (800) 661-2023
35 Todd Road, Georgetown, Ontario Canada L7G 4R8
Web Site: www.solinst.com E-mail: instruments@solinst.com