April 15, 2016

Mercator Medsystems, Inc.
% Adam Harris
Senior Regulatory Manager
Target Health, Inc.
261 Madison Avenue
24th Floor
New York, New York 10016

Re: K153501
  Trade/Device Name: Bullfrog Micro-infusion Device
  Regulation Number: 21 CFR 870.1210
  Regulation Name: Continuous Flush Catheter
  Regulatory Class: Class II
  Product Code: KRA
  Dated: March 16, 2016
  Received: March 17, 2016

Dear Adam Harris:

We have reviewed your Section 510(k) premarket notification of intent to market the device referenced above and have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (Act) that do not require approval of a premarket approval application (PMA). You may, therefore, market the device, subject to the general controls provisions of the Act. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration. Please note: CDRH does not evaluate information related to contract liability warranties. We remind you, however, that device labeling must be truthful and not misleading.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 898. In addition, FDA may publish further announcements concerning your device in the Federal Register.

Please be advised that FDA's issuance of a substantial equivalence determination does not mean that FDA has made a determination that your device complies with other requirements of the Act or any Federal statutes and regulations administered by other Federal agencies. You must comply with all the Act's requirements, including, but not limited to: registration and listing (21 CFR Part 807); labeling (21 CFR Part 801); medical device reporting (reporting of medical device-related adverse events) (21 CFR 803); good manufacturing practice requirements as set forth in
the quality systems (QS) regulation (21 CFR Part 820); and if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR 1000-1050.

If you desire specific advice for your device on our labeling regulation (21 CFR Part 801), please contact the Division of Industry and Consumer Education at its toll-free number (800) 638-2041 or (301) 796-7100 or at its Internet address http://www.fda.gov/MedicalDevices/ResourcesforYou/Industry/default.htm. Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21 CFR Part 807.97). For questions regarding the reporting of adverse events under the MDR regulation (21 CFR Part 803), please go to http://www.fda.gov/MedicalDevices/Safety/ReportaProblem/default.htm for the CDRH's Office of Surveillance and Biometrics/Division of Postmarket Surveillance.

You may obtain other general information on your responsibilities under the Act from the Division of Industry and Consumer Education at its toll-free number (800) 638-2041 or (301) 796-7100 or at its Internet address http://www.fda.gov/MedicalDevices/ResourcesforYou/Industry/default.htm.

Sincerely yours,

Kenneth J. Cavanaugh -S

for Bram D. Zuckerman, M.D.
Director
Division of Cardiovascular Devices
Office of Device Evaluation
Center for Devices and Radiological Health

Enclosure
4. INDICATIONS FOR USE STATEMENT

510(k) Number (if known): K153501

Device Name: Mercator MedSystems Bullfrog® Micro-Infusion Device

Indications For Use:

In selective areas of peripheral and coronary vessels, the Bullfrog Micro-Infusion Device is intended for the infusion of diagnostic and therapeutic agents that are indicated for delivery into the vessel wall or perivascular area. The Bullfrog Micro-Infusion Device is also intended for the infusion of diagnostic and therapeutic agents intraluminally.

Prescription Use X AND/OR Over-The-Counter Use ________
(Part 21 CFR 801 Subpart D) (21 CFR 807 Subpart C)

(PLEASE DO NOT WRITE BELOW THIS LINE-CONTINUE ON ANOTHER PAGE IF NEEDED)

Concurrence of CDRH, Office of Device Evaluation (ODE)
5. **510(K) SUMMARY**

510(k) Applicant  
Mercator MedSystems, Inc.  
2200 Powell Street, Suite 530  
Emeryville, CA  94608  
Telephone:  (510) 614-4550  
Facsimile:  (510) 614-4560

Contact Person:  Adam Harris, Target Health  
Phone:  (646) 218-2009  
Email:  aharris@targethealth.com  
Date of Summary:  30 November 2015

Device Overview  
**Trade Name:**  Bullfrog® Micro-Infusion Device  
**Common Name:**  Continuous Flush Infusion Catheter (per 21 CFR 870.1210)  
**Classification:**  Continuous Flush Infusion Catheter  
21 CFR 870.1210  
Product Code KRA  
**Panel:**  Cardiovascular

### Predicate Devices

<table>
<thead>
<tr>
<th><strong>510(k) Number</strong></th>
<th><strong>Trade or Proprietary or Model Name</strong></th>
<th><strong>Manufacturer</strong></th>
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<tbody>
<tr>
<td>K062752</td>
<td>Mercator MicroSyringe II Infusion Catheter</td>
<td>Mercator MedSystems</td>
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**Device Description**  
The Mercator MedSystems Bullfrog Micro-Infusion Device is a wire-guided, single-operator, endovascular catheter that consists of a perpendicular microneedle, which is sheathed by and contained within a semi-rigid polymer actuator balloon. The device is designed to be advanced to target vasculature and hydraulically actuated to move the microneedle through the external elastic lamina to deliver substances to adventitial and perivascular tissues. A compliant stabilizing balloon inflates with the actuator to provide a force opposite the needle tip for proper seating of the needle. The needle is retracted within the sheathing structure by vacuuming the hydraulic actuator.

**Intended Use**  
In selective areas of peripheral and coronary vessels, the Bullfrog Micro-Infusion Device is intended for the infusion of diagnostic and therapeutic agents that are indicated for
delivery into the vessel wall or perivascular area. The Bullfrog Micro-Infusion Device is also intended for the infusion of diagnostic and therapeutic agents intraluminally.

**Indications for Use**
N/A

**Technological Characteristics**
All materials used in the manufacture of the Bullfrog Micro-Infusion Device are suitable for this use and have been used in several previously cleared products.

**Performance Data**
Performance testing of the Bullfrog Micro-Infusion Device included mechanical and fluid delivery performance, biocompatibility, sterilization validation, in-vivo safety and effectiveness studies. All tests met the pre-determined specifications and acceptance criteria.

**Safety and Effectiveness**
The Bullfrog Micro-Infusion Device labeling contains instructions for use and any necessary cautions and warnings to assure safe and effective use of the device. The biocompatibility assessment was conducted in accordance with ISO 10993, Biological Evaluation of Medical Devices.

**Comparison to Predicate Devices**
The Bullfrog Micro-Infusion Device is substantially equivalent to the predicate. The Bullfrog Micro-Infusion Device has the same intended use, design and materials, mechanical safety, methods of introduction and methods of operation as the MicroSyringe II/Bullfrog Micro-Infusion Device from K062752. The Bullfrog Micro-Infusion Device has new technological characteristics related to currently available model sizes, in comparison to the predicate. The Bullfrog Micro-Infusion Device is available in three model sizes (2-4 mm, 3-6 mm and 4-8 mm), while the MicroSyringe II/Bullfrog Micro-Infusion Device from K062752 was cleared with data from only one model size (3-6 mm). Risk analysis has shown that the Bullfrog Micro-Infusion Device has the same risk profile as the predicate.