



May 30, 2025

Advanced Drainage Systems, Inc.

4671 Raindrop Way

Hilliard, OH 43026

REFERENCE: Third Party Review of Testing Procedures for Arcadia™ Hydrodynamic Separator at the Advanced Drainage Systems Engineering and Technology Center Hydraulics Laboratory, 4671 Raindrop Way, Hilliard, OH 43026

SUMMARY

Boggs Environmental Consultants, Inc. (BEC) was hired by Advanced Drainage Systems (ADS) in May of 2025, to serve as independent third-party oversight of the ADS Arcadia™ hydrodynamic separator (AR4 Model) test unit for removal of sediment with equivalent particle size distribution to the industry standard OK-110. The ADS Arcadia™ AR4 is a stormwater treatment device with a Maximum Treatment Flow Rate (MTFR) of 2.75 cubic feet per second (cfs) that removes suspended solids from stormwater runoff, with an average removal efficiency of 80% at the MTFR and a feed concentration of 300 mg/L. The device is an insert that can be installed in either a polypropylene or precast concrete manhole, and consists of an inlet chamber, a vertical cylinder, and angled baffles with concentric openings.

SCALED RESULTS

Testing flow rates ranged from 0.55 to 3.3 cfs, with a feed OK-110 concentration of 300 mg/L. Based upon NJDEP scaling methodology, the table below represents treatment and device information for the various Arcadia™ models.

Table 1 Standard Dimensions for Arcadia Models

Model ¹	Manhole Diameter ¹ (ft)	OK110 80% TSS Maximum (cfs)	Treatment Area (ft ²)	Chamber Depth (ft)	Wet Volume (ft ³)	50% Maximum Sediment Storage ² (ft ³)
Arcadia AR3	3	1.55	7.07	4.58	32.4	5.30
Arcadia AR4	4	2.75	12.57	6.75	84.8	9.42
Arcadia AR5	5	4.30	19.63	6.75	132.5	14.73
Arcadia AR6	6	6.19	28.27	6.75	190.8	21.21
Arcadia AR8	8	11.00	50.26	11	552.9	37.70
Arcadia AR10	10	17.19	78.54	13.5	1060.3	58.90

Notes:

1. In some areas, Arcadia units are available in additional diameters. Units not listed here are sized on the same surface loading rate as the units listed above.
2. 50% Sediment Storage Capacity is equal to manhole diameter x 9 inches of sediment depth. Each Arcadia unit has an 18-inch deep sediment sump.

Sincerely,

BOGGS ENVIRONMENTAL CONSULTANTS, INC

William R. Warfel

Principal Environmental Scientist