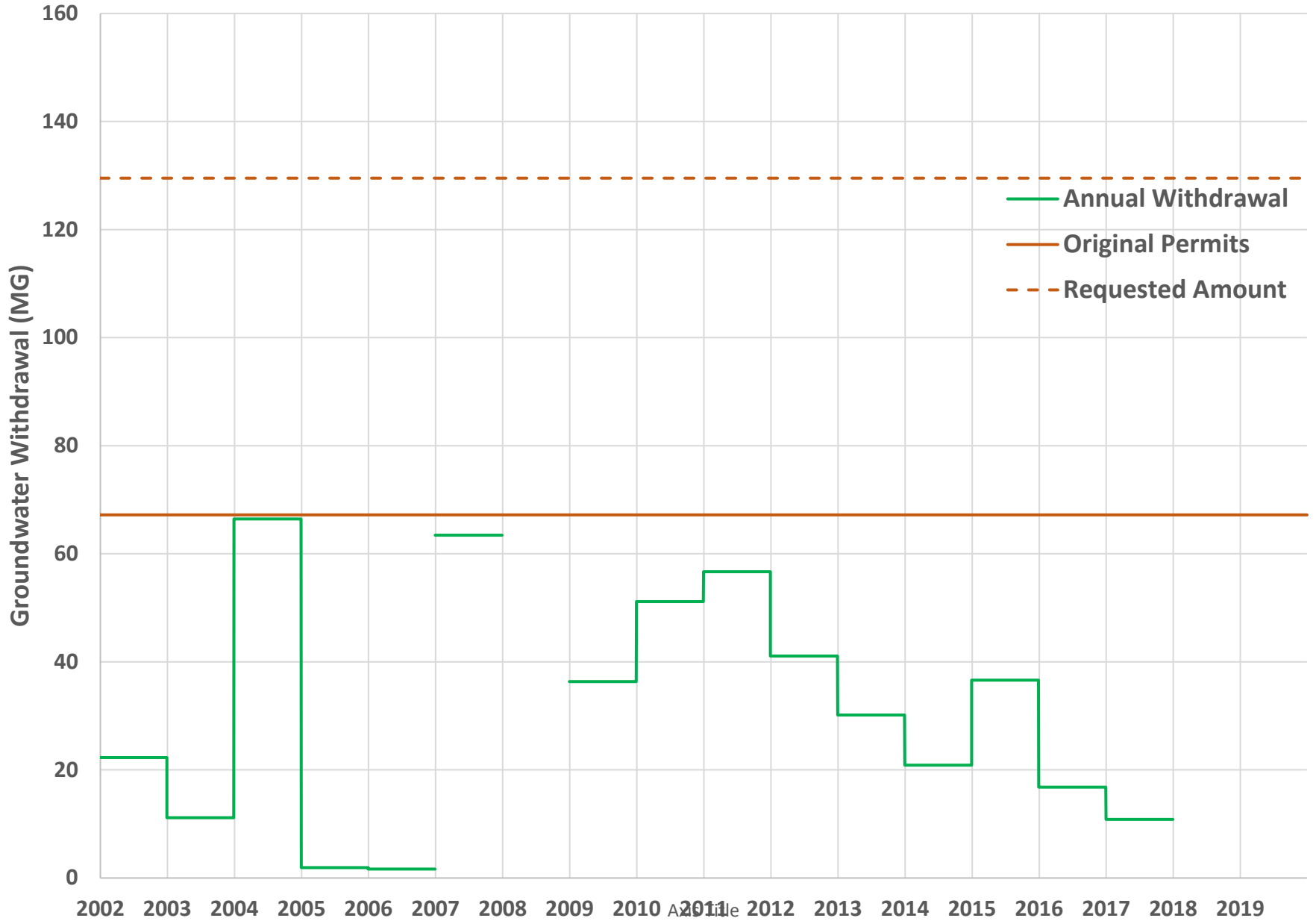


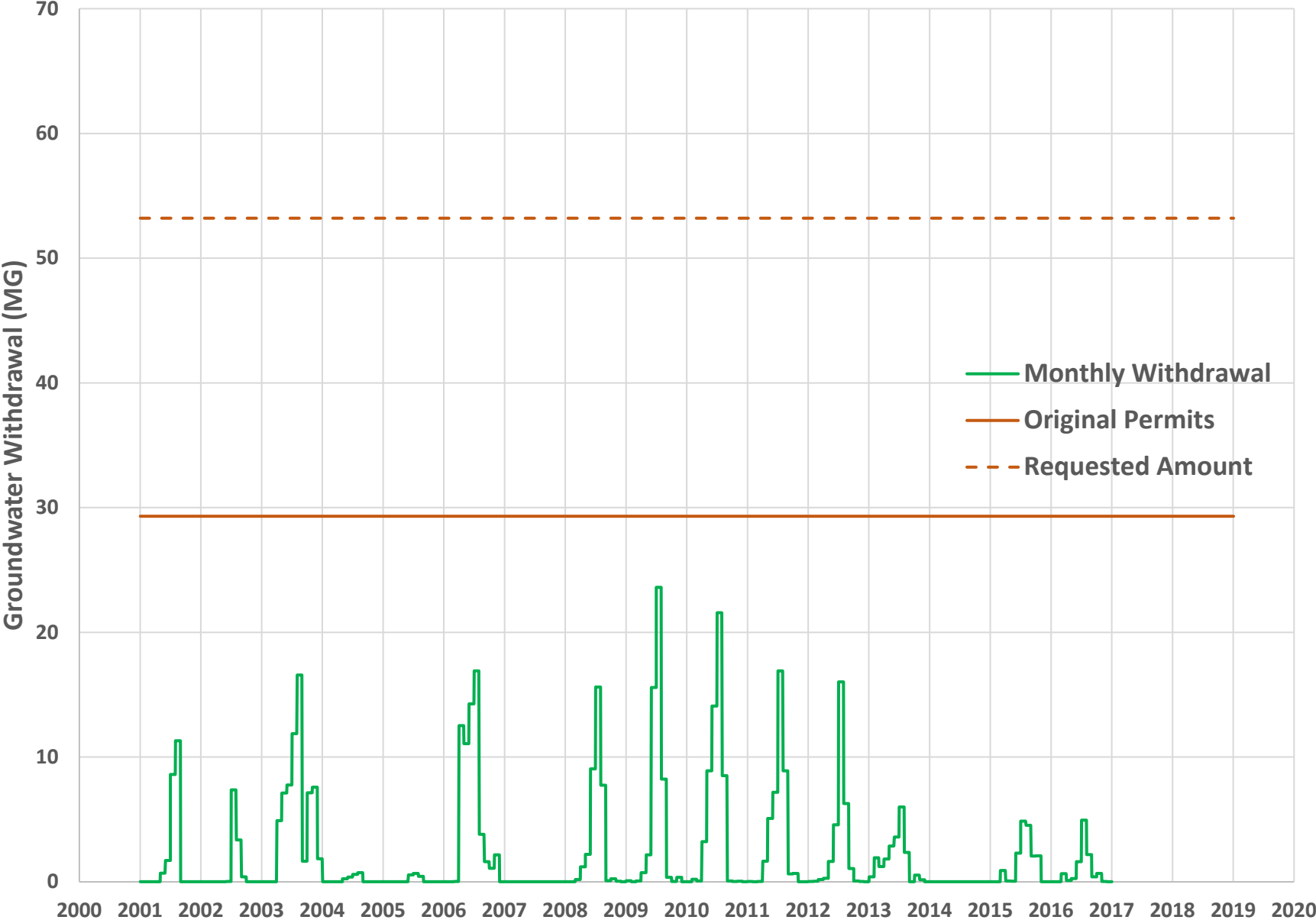
Basis for Marshall Johnson Grapeland Requested Withdrawal

- Information provided by applicant:
 - Potential maximum cultivated acreage = 250 ac
 - Plasticulture reduces water use by 50% to 75% versus overhead sprinkler
 - Tomato plants require a “precise” amount of water
 - From the Business Plan:
 - *“as a property both owned by Kuzzens, Inc., the complex must be available each year to ensure the company’s farming operation can remain in the state of Virginia.”*
 - Continue plasticulture tomato farming on the complex currently under cultivation
 - Utilize the greenhouse facility to its maximum potential of more than 10 million seedlings germinated per year and
 - Expand plasticulture tomato farming to all of the farmable land as soon as possible
 - Infrastructure is already in place to facilitate the expansion.
- Greenhouses:
 - 6 greenhouses planted between 2 to 3 times per year
 - Full capacity = 4,300 flats x 200 seeds/flat x 6 greenhouses x 2 plantings > **10 million seedlings**
 - Demand based on:
 - Maximum recorded over 4 years = 17.9 MG (2010)
 - Adjusted to 6 greenhouses planted 3x per year = **26.7 Mgal/year**
- Fields:
 - Use based on historical use / acre planted
 - Use calculated over period 2009 through 2012 and ranged from:
 - 260,000 gal/acre (2009)
 - 411,261 gal/acre (2011)
 - “Intent is to irrigate the entire 250 acres”
 - 250 acres * 411,261 gal/acre = **102.8 Mgal/year**
- Total Annual = 26.7 Mgal/year + 102.8 Mgal/year = **129.5 Mgal/year**

Annual Withdrawal - Marshall Johnson Grapeland



Monthly Withdrawal - Marshall Johnson Grapeland



Comparison - Groundwater Use and Water Levels

