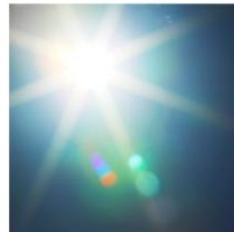


What's New in Water Supply

March 27, 2019

Scott Kudlas, Director
Office of Water Supply



Presentation Road Map

- Office of Water Supply
- 2018/2019 Legislative Actions, including HB1186 (2018)
- Groundwater Stakeholder Forum
- Eastern Shore Poultry
- Model Maintenance
- Q & A

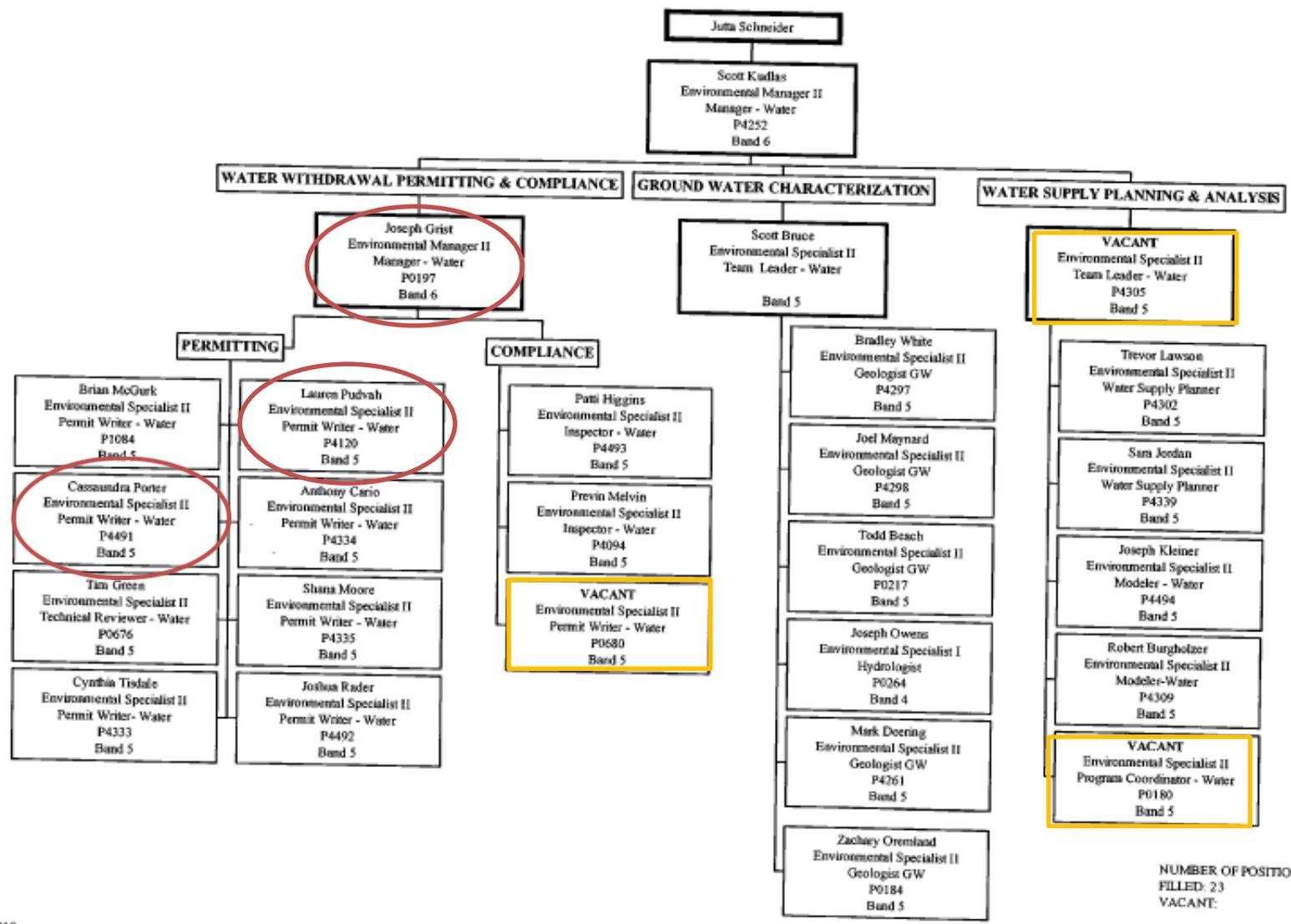


Office of Water Supply

- Water Withdrawal Permitting and Compliance
 - Surface Water and Groundwater Withdrawals
- Water Supply Planning & Analysis
 - Water Withdrawal Reporting
 - Water Supply Planning
 - Cumulative Impact Modeling
- Groundwater Characterization
- Drought Assessment & Response



OFFICE OF WATER SUPPLY
PAGE 10B



NUMBER OF POSITIONS: 26
FILLED: 23
VACANT:

OWS Permit Workload

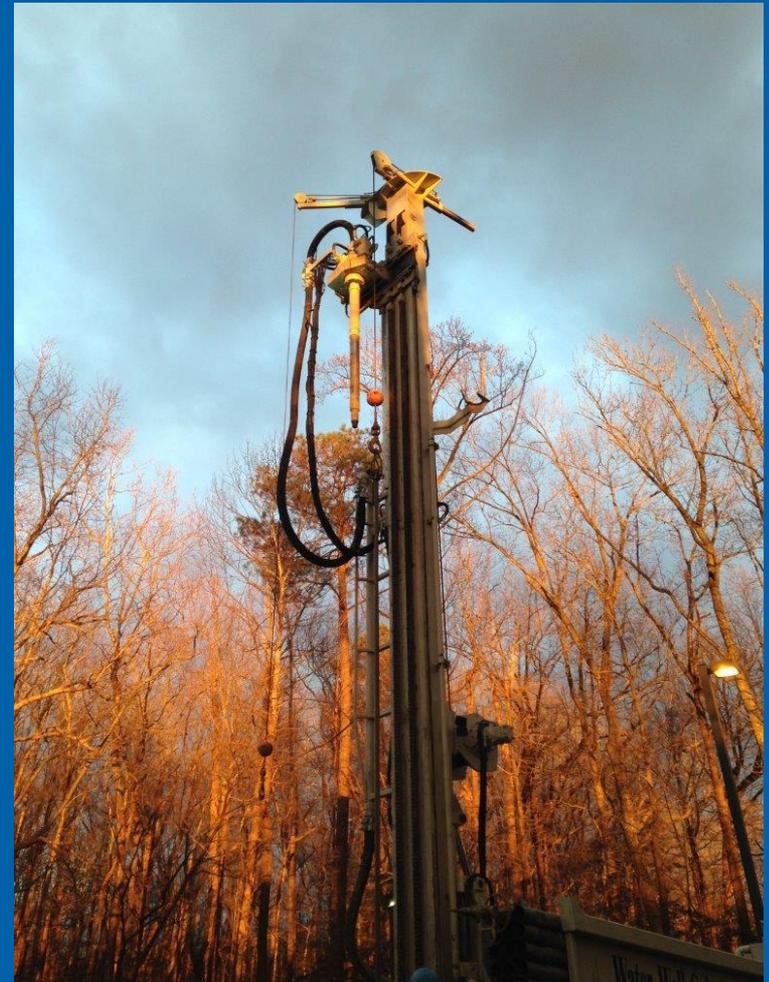
- 545 total permits (103 VWP, 442 GWP)
- 189 Individual Permits in Process
 - 32 VWP under review (11 new)
 - 157 GWP under review (83 new)
 - 95 Non Poultry (21 new)
 - 62 Poultry (all new)
- 70 risk based inspections annually

2018 Legislative Actions

- HB1036 (2018) Groundwater Trading Workgroup
 - Continuing to participate as a member of this group
 - Additional response to HB1036: 2018 Annual Groundwater Stakeholder Forum
- HB1186 (2018) Workgroup to discuss human consumption prioritization
 - Report of the workgroup delivered on October 31, 2018
 - A copy can be obtained from DEQ

HB 1186 (2018)

- Introduced by Del. Carr (Chief Patron). Del. Plum and Sen. Howell were Co-Patrons.
- Passed by indefinitely with a letter in H. ACNR Subcommittee #3. Chair made request of DEQ to study the bill.



HB 1186 (2018)

- May 2018: DEQ invited 24 organizations and agencies to participate as members of a stakeholder group to evaluate issues raised by HB 1186
- Met three times from early July through late August
- October 31: Delivered report to Del. Marshall

HB 1186 (2018)

- HB 1186 is not needed at this time for the following reasons:
 1. The existing science-based regulatory framework allowed for significant permit cuts, providing time to evaluate other alternatives that are underway. The framework would be undermined, creating regulatory uncertainty;
 2. The implementation of SWIFT and the aquifer recharge benefits it is expected to provide;
 3. Continued monitoring and characterization of aquifer conditions is needed in areas of hydrogeologic uncertainty;
 4. The benefits of ongoing water supply planning;
 5. The annual forum allowing for continued stakeholder engagement, evaluating aquifer conditions and other alternatives identified by the Eastern Virginia Groundwater Management Advisory Committee;
 6. Adverse economic impacts;
 7. DEQ has tools, including reopening permits, to address future aquifer conditions; and
 8. There is already a human consumption priority in the Code.
- During the test for consensus 17 members of the Work Group were present; 13 Work Group members indicated agreement with this statement and 4 Work Group members indicated that they could live with the statement position, but may have concerns.

HB 1186 (2018)

- The Work Group next tested the following statement about the current regulatory framework for consensus:
 - For the same reasons that we think it is not necessary at this time to move forward with HB 1186, we do not recommend pursuing other major legislative changes to the framework for permitted groundwater withdrawals at this time. This framework enables the evaluation of alternative permitting options as well as the continued monitoring of the aquifer characterization, which is underway. However, with respect to unpermitted groundwater withdrawals there is a need to consider regulating non-agricultural irrigation as recommended by the EVGMAC.
 - During the test for consensus, 15 members of the Work Group were present; 13 members indicated agreement with this statement and 2 members indicated that they could live with the statement position, but may have concerns.

2019 Legislative Actions

- SB 1599 (2019) Incentives for Surficial Aquifer Use on the Eastern Shore
 - Introduced by Senator Lewis
 - Signed by Governor March 21
 - Will be working to develop an implementation plan

2018 GW Stakeholders Forum

- 2nd Annual Meeting
- ~75 people attended
- Annual Reports - 2017-2018 Total Permitted/Reported Use Simulations for both VAHydro Groundwater Models for the Coastal Plain Model and Eastern Shore
- Presentation on 2018 updates to Coastal Plain Model: Included updated pumping and recharge values
- Preview of upcoming DEQ-USGS Eastern Shore Hydrogeologic Framework Update (expected pub. early 2020)
- Report on Water Supply Plans in Hampton Roads and on Eastern Shore

Eastern Shore Poultry

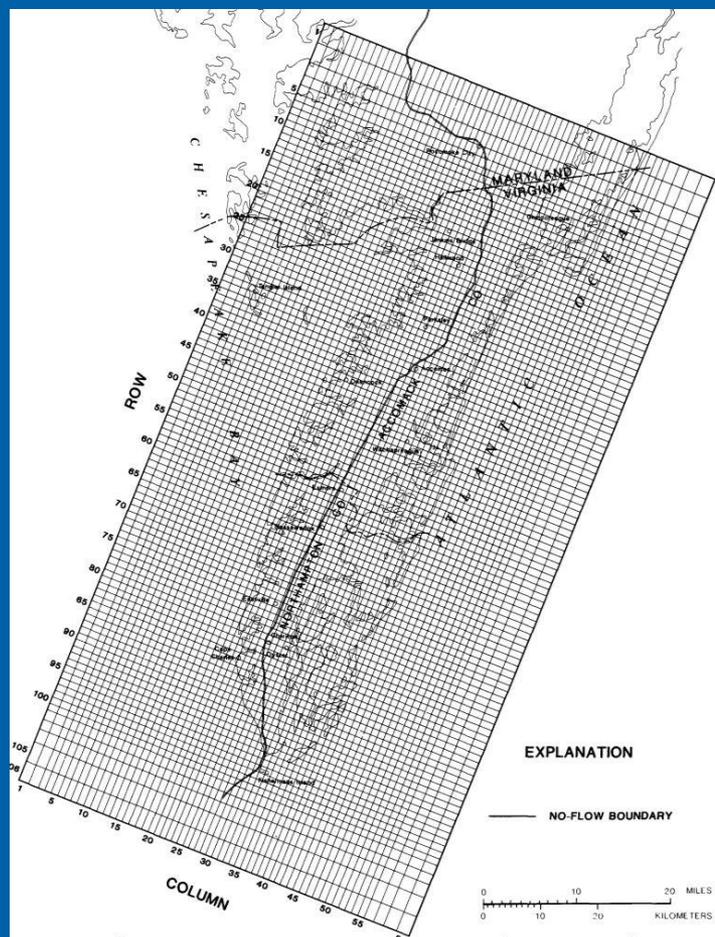
- Poultry Consent Orders and Permit Processing
 - SWCB approved a consent special order (CSO) covering 56 poultry farms (9/2019)
 - Brought facilities into compliance while data was collected/permit applications filed
 - Modeling conducted on 54 (December-February)
 - Public Information Session being planned
 - Draft permits 2nd Quarter of 2019
 - Public Hearings in June

Model Maintenance

- 1-2 year occurrence:
 - Pumping values updated - 2018
 - Measured heads updated – 2018
 - Recharge values updated – 2018
- 2-10 year occurrence:
 - Boundary conditions updated – upcoming
 - Hydraulic parameters recalibrated – upcoming
 - Updated geologic framework – 2018 and in progress
- 10+ occurrence :
 - Model overhaul – Eastern Shore – 2021, resources permitting

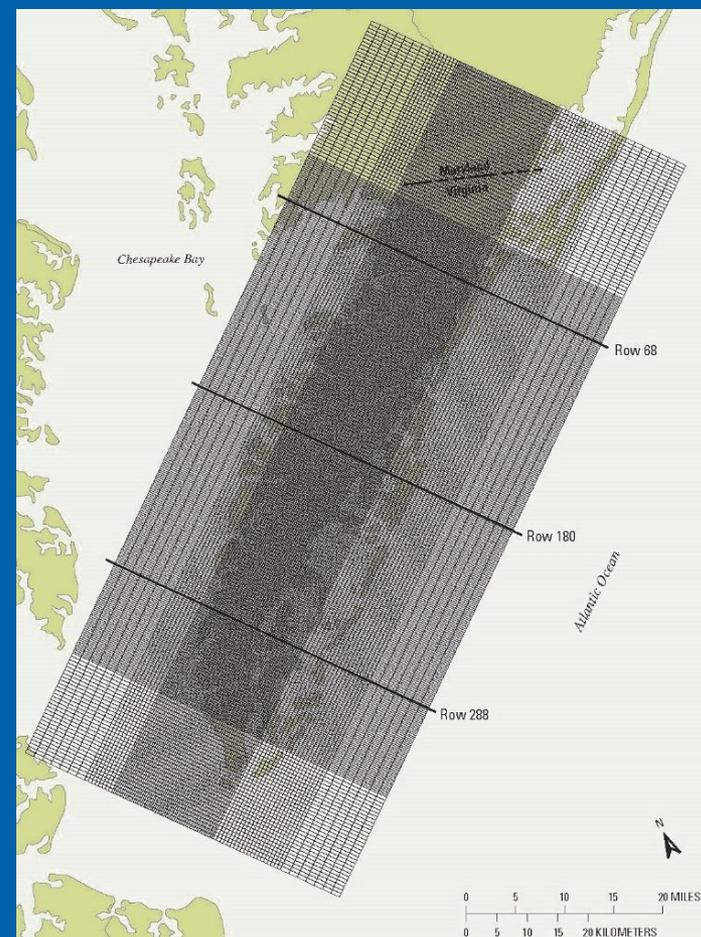
1994 USGS MODEL

- first numerical simulation
- 1982 SWCB framework



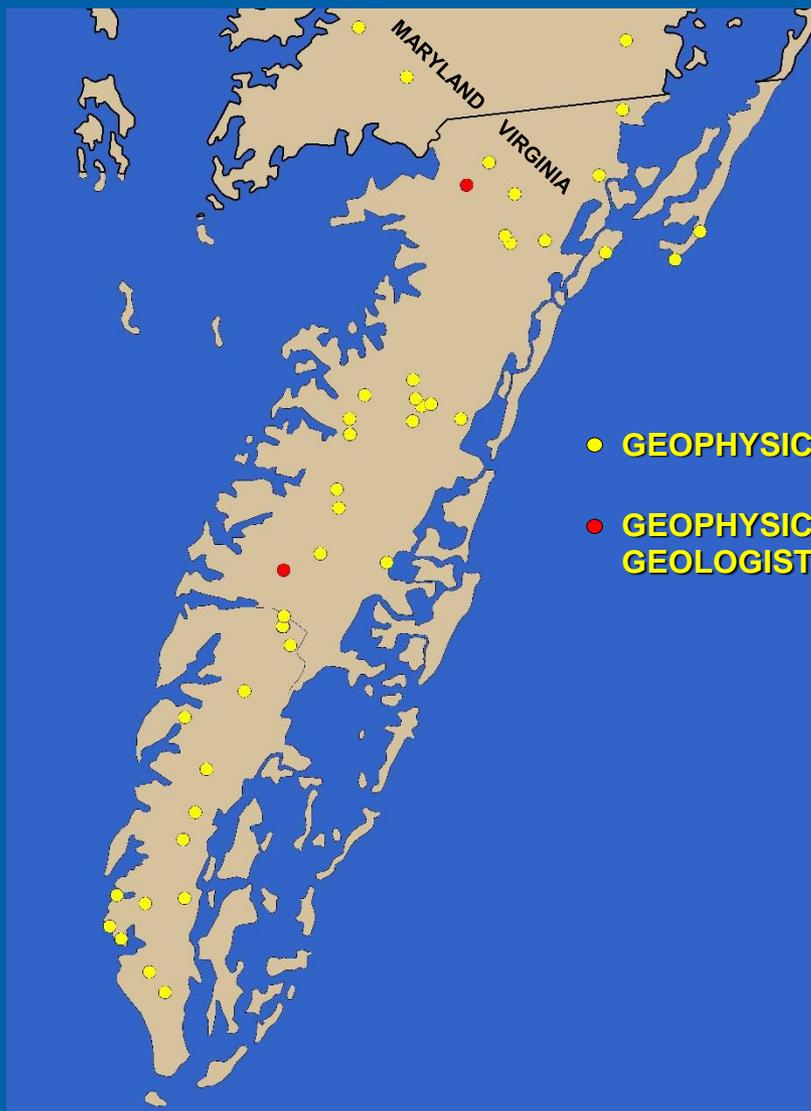
2009 USGS MODEL

- increased resolution
- 1982-94 framework

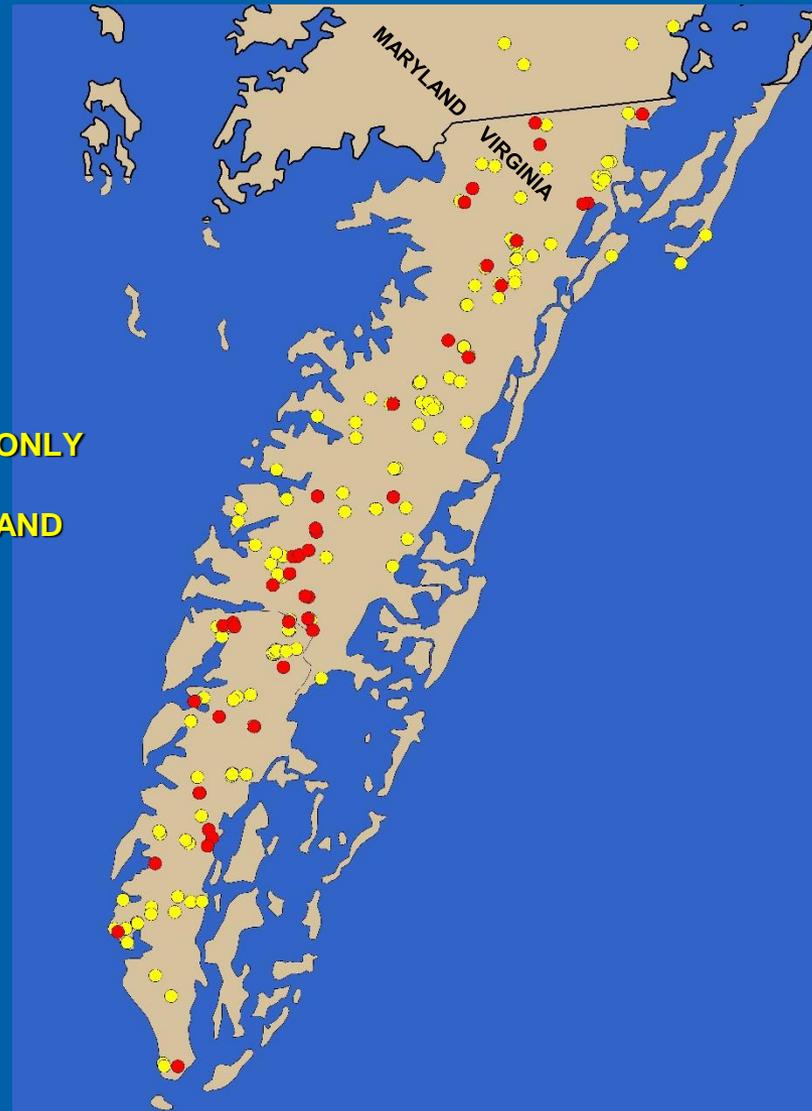




1994 47 BOREHOLES

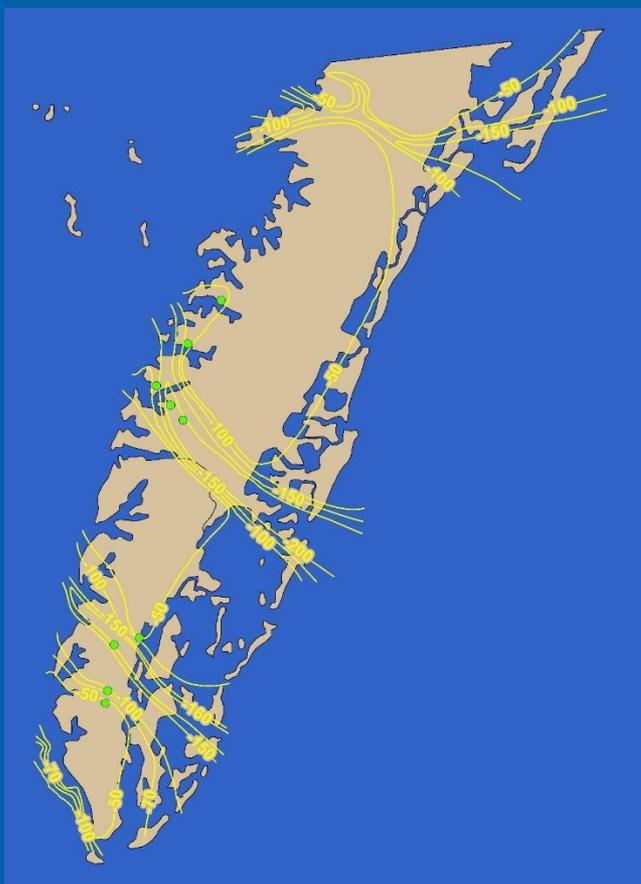


2018 202 BOREHOLES



- GEOPHYSICAL LOG ONLY
- GEOPHYSICAL LOG AND GEOLOGIST LOG

Paleochannel Refinement



2009/2011

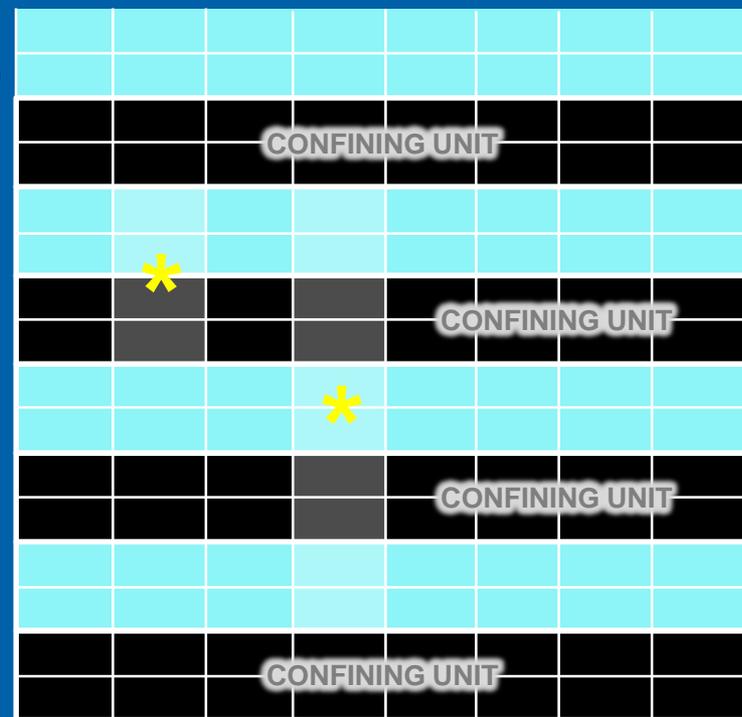
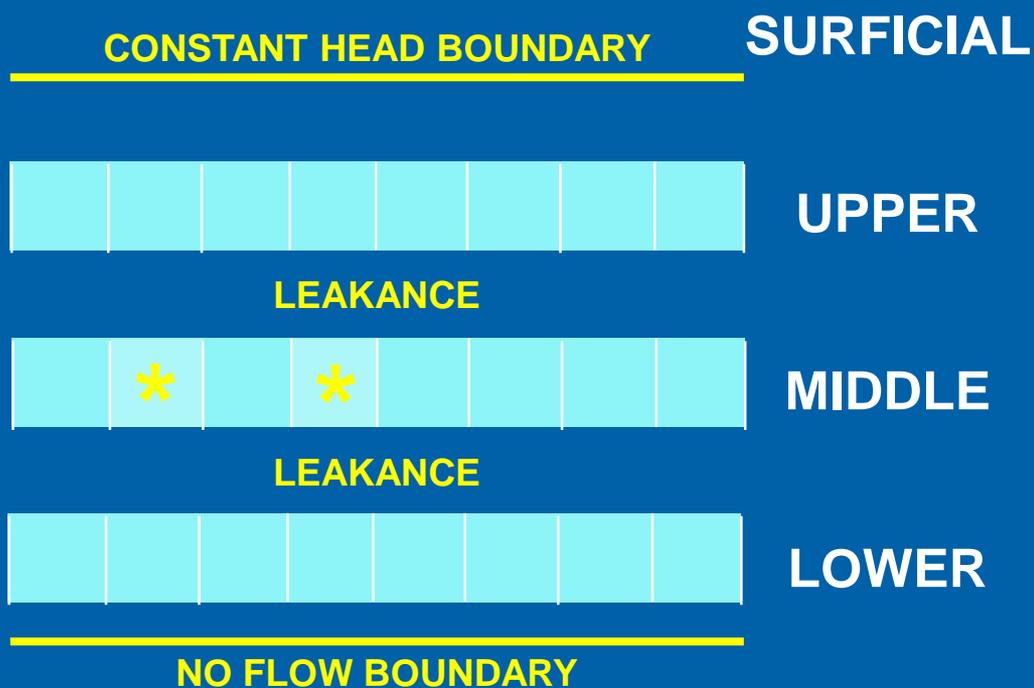


2019/2020



1994 MODEL

2009 MODEL



* PALEOCHANNEL K
= 1/10 CONFINED-AQUIFER K

* PALEOCHANNEL K
5 FT/D EASTVILLE
100 FT/D EXMORE



SOUTH

NORTH

VIRGINIA | MARYLAND

BEND

DISCHARGE

EASTVILLE

TILE-DRAIN

EXMORE

PERSIMMON POINT

DISCHARGE

FEET

FEET

0

0

-100

-100

-200

-200

-300

-300

-400

-400

-500

-500

250 mg/L

1,000 mg/L

UPCONING OR STAGNATION ZONE

SALTWATER RIDGE

SAMPLED WELL

VIRGINIA | MARYLAND

LINE OF SECTION

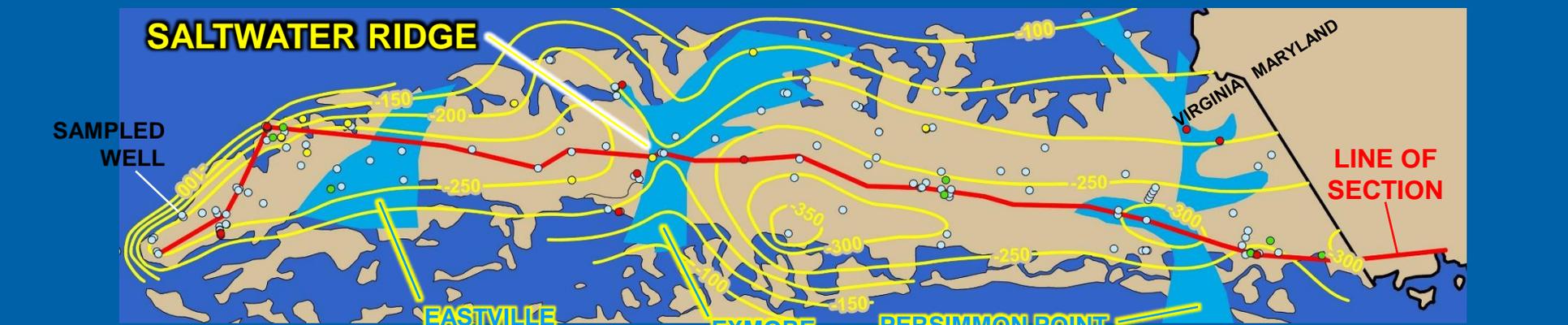
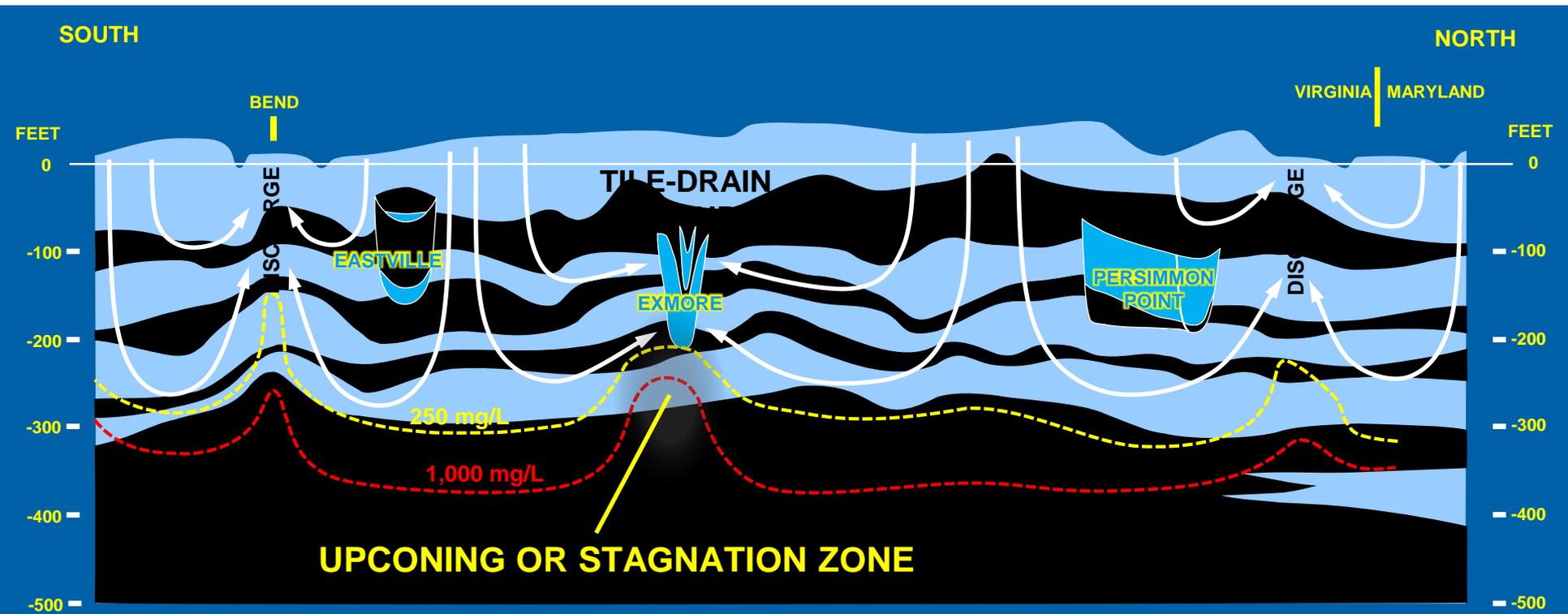
EASTVILLE

EXMORE

PERSIMMON POINT

5 MI

VERTICAL EXAGGERATION 260X





Questions?