



**Delaware Department of Natural
Resources & Environmental Control
DIVISION OF WATER
WATER SUPPLY SECTION**

DRBC
Water Management Advisory Committee

John T. Barndt, P.G.
October 22, 2015



Outline

- Water Well Permitting - State
- Groundwater Protection – CWA 106
- Source Water Protection – DWSRF Set asides
- Water Allocations –State
- Program Enhancements and Initiatives



Division of Water Water Supply Section

- **Well Permitting Program – Alan Pongratz**
- **Driller Licensing Program and Board– Alan Pongratz**
- *Water Allocation Program – Bill Cocke*
- **Ground-Water Protection Program – Anita Beckel**
- **Source Water Protection Program – Anita Beckel**
- **SWP Citizens and Technical Advisory Committee**
- **Resource Protection Area Technical Advisory Committee for New Castle County**
- **Water Supply Coordinating Council**



Well Permitting Program

- Review and Issue Permits for All Water Wells
- Maintain Well Permit Records and Well Permit Database
- Well Driller Licensing Program – Issue licenses, renewals, testing, disciplinary actions

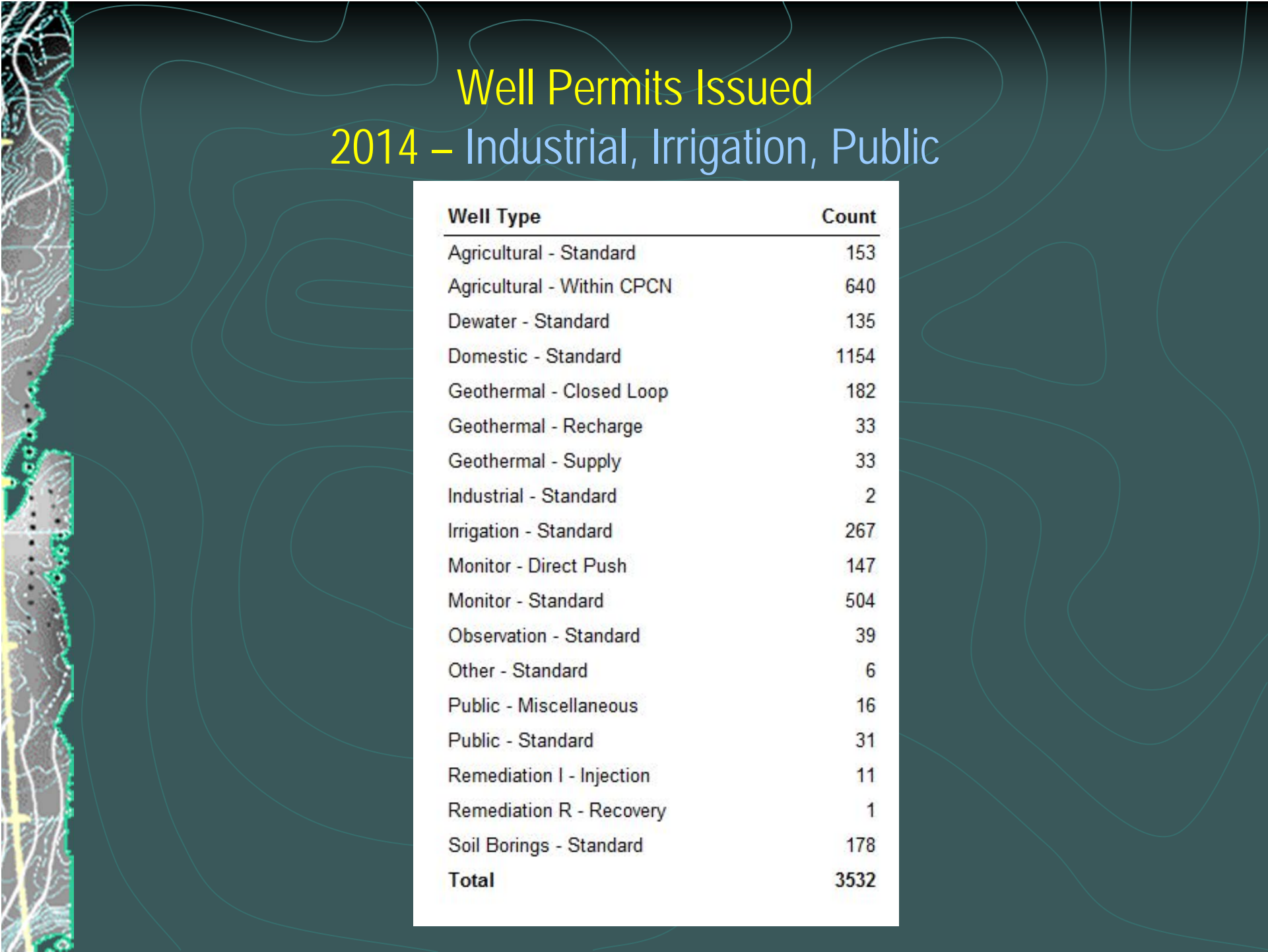
Steps in the Well Permit Review

- The Paper Trail: Permit Application // Completion Report & Formation Log // Reclassification or Continue-to-use of an Existing Well // Abandonment Report
- Well Permit Database Entry e.g. tax parcel id, location point, owner
- Inspectors review applications for completeness e.g. location, isolation from septic systems, and property lines
- Well locations screened against known contaminated sites
- Public/Irrigation Wells forwarded to Water Allocations for Permitting – *aquifer picks conducted by the GPB Hydrologists*
- Well Inspections – required for all Public Wells; other wells as needed e.g. location problems, small lots, contaminant sources etc.

A topographic map is visible on the left side of the slide, showing contour lines and a road network. The map is partially obscured by the text and bullet points.

Well Permit Reviews result in.....

- **Approval**
- Approval with special conditions e.g. location change, depth changes, confined aquifer, geophysical log, well/aquifer test, 24-hour call in, etc.
- **Variance Request for Approval by DNREC Secretary required such as where setbacks cannot be met**
- **Denial (RARE) e.g within municipal boundary or within 200 feet of water utility line or contamination problem**



Well Permits Issued 2014 – Industrial, Irrigation, Public

Well Type	Count
Agricultural - Standard	153
Agricultural - Within CPCN	640
Dewater - Standard	135
Domestic - Standard	1154
Geothermal - Closed Loop	182
Geothermal - Recharge	33
Geothermal - Supply	33
Industrial - Standard	2
Irrigation - Standard	267
Monitor - Direct Push	147
Monitor - Standard	504
Observation - Standard	39
Other - Standard	6
Public - Miscellaneous	16
Public - Standard	31
Remediation I - Injection	11
Remediation R - Recovery	1
Soil Borings - Standard	178
Total	3532

A topographic map with contour lines and a road network is visible on the left side of the slide, serving as a background for the text.

Some Current Well Permitting Topics

- On Line Well Permitting Issues – Outages, locations more accurate due to the GIS project, problems with data accuracy from applicants
- Training of New Employees in both Well Permitting and Water Allocations
- Call In Authorization – meant to allow inspections
- Emergency Well Documentation - meant for human health situations
- Allocations Program Guidance - Special requirements such as Aquifer/Well testing and Geophysical Log testing sent to drillers; test wells are optional but final well permit not approved until results provided
- Proposed Well Regulation issues mainly stemming from proposed Domestic Well Sampling Requirements; Hearing expected late 2016

Groundwater Protection Program:

- Well Permit Reviews near Problem Sites – Obtain recommendations from Responsible Program – forward to well permitting or allocation program
- Aquifer Picks by GPB Hydrologists for the SWP and Water Allocations Program for new well permits
- Ground-Water Management Zone Projects – Work with Hazardous Materials programs for GMZ Agreements – have well limitations (e.g. North Bowers Beach due to saltwater problems)
- Limited Hydrogeological Investigations – Usually from public complaints, driller requests, drinking water referrals from Office of Drinking Water, etc.
- Review Non-Hazardous Sites (e.g. Large Septic, Wastewater Spray, Sludge Application, Dredge disposal sites)
- Special Groundwater Projects –) 305 (b, Indian River Groundwater Monitoring Project



Source Water Protection Program:

- Delineation / Mapping of Source Areas for Public Drinking Water Supplies* - *~586 PWS Systems with ~1,000 wells and 6 surface water intakes; data from Office of Drinking Water; data from census or ODW population records for systems*
- Identification of All Existing or Potential Sources of Contamination within Source Area* - *DNREC Site Index Database*
- Determination the Susceptibility of Public Water Wells or Surface Water Intakes – Currently entered into contract with UD-WRA to update surface water assessments (including watershed areas in Pennsylvania)
- Public Notification of Susceptibility Determinations - *Consumer Confidence Reports: SWAPP Web Site; CTAC Meetings*
- Public Involvement in Development of the Source Water Assessment Plan - Citizen and Technical Advisory Committee

PWS Locations:

● GPS Locations Obtained for:

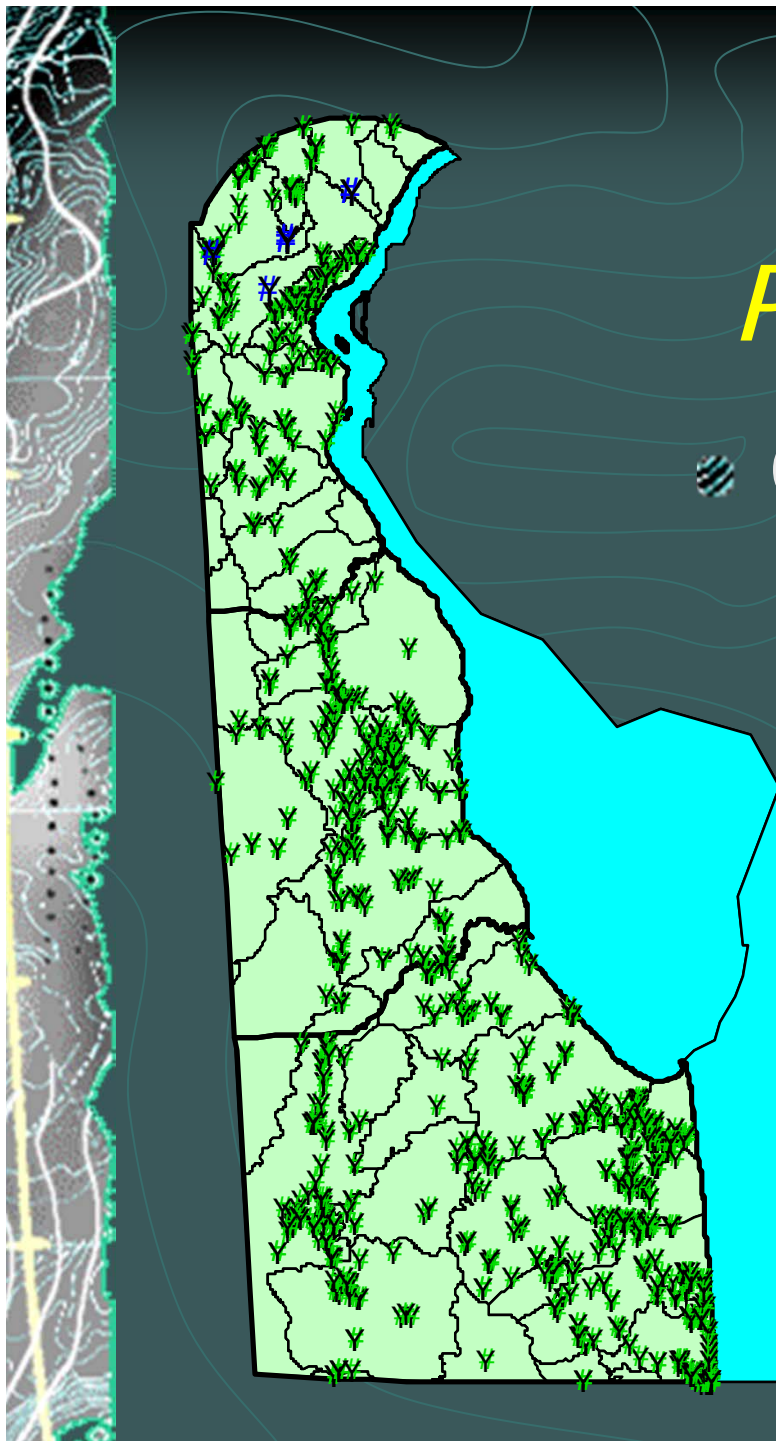
● 6 Community Surface Water Intakes

● 581 Community Public Wells
(e.g. municipalities, housing developments)

● 171 Non-Transient Non-Community Wells
(e.g. schools, daycare)

● 299 Transient Non-Community Wells
(e.g. restaurants, campgrounds)

Note: Represents approximately 520 PWS Systems





Water Allocation Program

- Allocation Permits Required for water withdrawals at or exceeding 50,000 gpd (surface and ground water) – Set daily, monthly, and annual use limits
- Allocation Permits for New, modification, and renewal
- Annual Water Use Reporting Required – On line reporting available
- Aquifer Storage and Recovery Facilities in coordination with the Underground Injection Control Program – UIC and Allocation and Well Permits Required
- Provide Technical Support to UIC Program for ASR and other UIC wells e.g. remediation wells

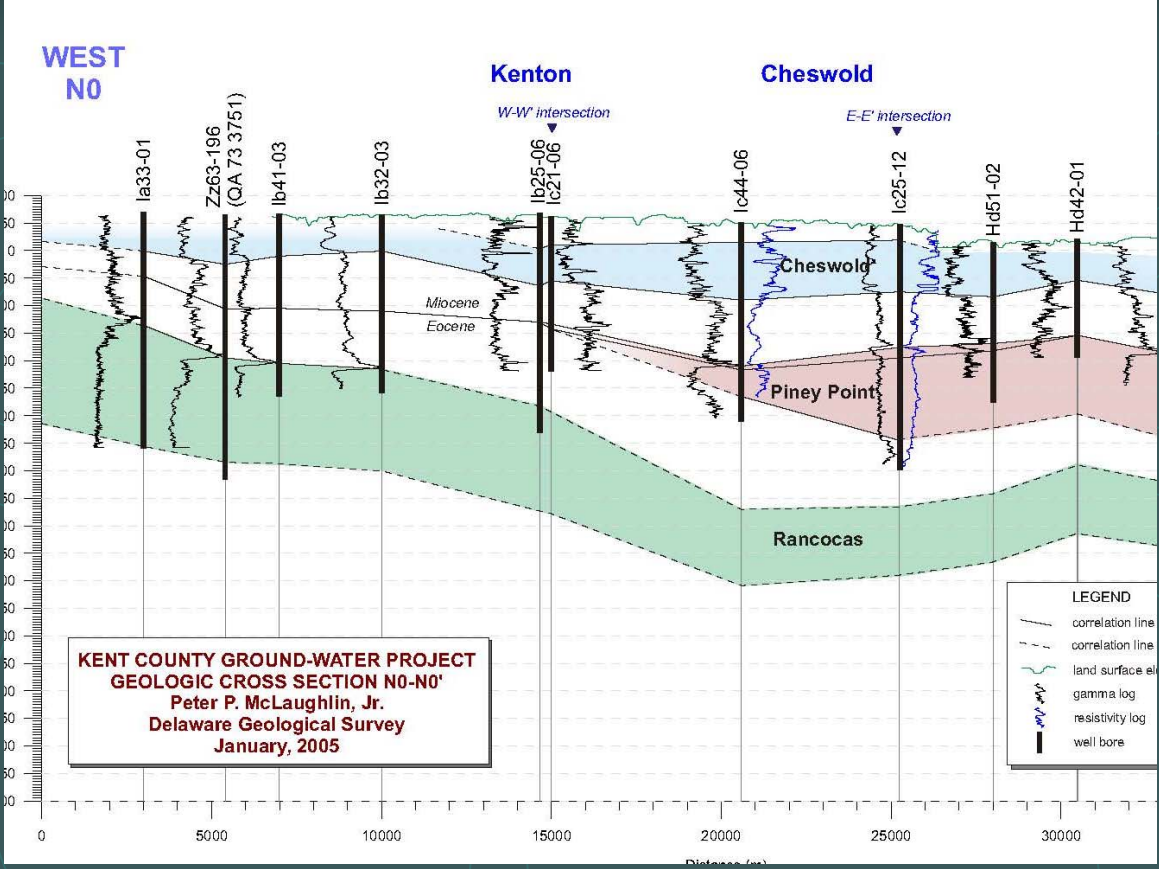
The background of the slide is a topographic map with contour lines. The map is oriented vertically on the left side of the slide, showing a cross-section of terrain with various elevations and features like roads and water bodies. The rest of the slide has a dark teal background with faint, light blue contour lines.

Allocation Program - Well Permit Reviews

- Allocation Program processes Well permits for 50,000 gpd or greater (public, industrial, irrigation) – 50K applies to tax parcel totals
- Allocation Program issues all Irrigation well permits and dewatering permits
- Requirements may include Geophysical logs, Aquifer testing, water flow gauging –[New Aquifer test form recently sent out by the Section]
- 15 day Advertising is required if 1 MGD or greater

Allocation Permit Review

- Allocations permits issued per system per aquifer (one system may have multiple aquifers with multiple allocation permits) and surface water withdrawals
- Aquifer picks for all allocated wells required; DNREC using the most recent work by DGS in assigning aquifers
- Reviews evaluate (e.g. model) impacts to adjacent users such as domestic wells
- Allocation limits are based on reasonable use
- DRBC Docket Limit set at 0.1 M gpd for new systems not in DRBC's comprehensive plan
- Allocation permits are 30 year duration, require water conservation standards, and annual reporting; some require water conservation plans
- 15 day advertising required for all allocation permits prior to issuance
- Annual Report of Monthly withdrawals and water levels due January 31



Delaware DRB Water Allocation Statistics (1)

- Number of Allocated Surface Water Systems - 27
- Number of Allocated Ground Water Systems - 135
- Water Reporting Statistics for 2014:
 - Total water use: 252,000 Million gallons reported
 - Farm water use: 3,000 Million gallons reported
 - Golf Course water use: 170 Million gallons reported
 - Industrial water use: 225,000 Million gallons reported
 - Public water use: 23,000 Million gallons reported
 - Remediation water use: 52 Million gallons reported
- Status of On line Water Use Reporting (well or intake monthly)
 - Total Paper records 2159
 - Total water use records 8341
 - Percentage paper reports 25.9%
 - Percentage Online 74.1%



Delaware DRB Water Allocation Statistics (2)

- **Status of Data Entry and storage**
 - 25 Public/Industrial facilities did not report on time
 - 6 still non-compliant unresolved
 - Irrigation – 100 allocated facilities not reporting
- **Current issues of concern**
 - Increase participation by irrigators in allocation program
 - Estimates of unallocated users
 - More complete tracking of water losses
 - Begin classifying consumptive and non-consumptive use
 - Delaware issues well permits before allocation permits
- **Self Sufficiency Reporting by northern NCC systems** – Newark, Wilmington, Artesian Water Company, New Castle, United Water Delaware – presently under review by the WSCC for the past three years

Program Initiatives (1)

- Delaware Water Supply Coordinating Council – DRBC represented; addressed drought responses, promoted water self-sufficiency in northern Delaware; quarterly reporting by DGS, State Climatologist, large water user in northern NCC
- Utilizing New Delaware Geological Survey Maps and Cross-Sections Updated from 1960/70's era maps – See Andres presentation, McLaughlin report for Kent and Sussex counties
- Utilize New On-line services by the DGS for Well data e.g. Geophysical Logs



Program Initiatives (2)

- Water Allocations and Source Water Programs Key for Aquifer designations - e.g. Dover has three allocation permits – Columbia, Cheswold, Piney Point Aquifer.
- Integration with Source Water Assessments
- USGS 2016 Cooperative Project on Water Use Reporting – Focus on improving Irrigation System reporting
- Limited Allocation Program Staff (2) for the state