

Developing Marginal Quality Water Supplies & Flexibility in Groundwater Use

Association of Western State Engineers – June 27, 2018

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OWRB
the water agency

The Issues:

- **No Regulatory framework (protection in the law) to utilize Marginal Quality groundwater**
 - *OWRB has no Statutory Authority to authorize or not authorize the use of groundwater >5000 ppm TDS – Or to promulgate well construction standards*
 - *Industrial users want/need to use marginal quality groundwater in lieu of fresh groundwater*
- **OWRB required to implement new Equal Proportionate Share “as soon as practical”**
 - *Basins highly under developed*
 - *Users requesting additional time to implement EPS*

Oklahoma Groundwater Law & Public Policy

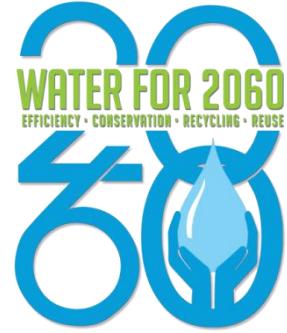
- **1973 Oklahoma Groundwater Law**

It is declared to be the public policy of the State of Oklahoma, in the interest of the agricultural stability, domestic, municipal, industrial and other beneficial uses, general economy, and health and welfare of the State and its citizens, to utilize the groundwater resources of the State, and for that purpose to provide reasonable regulations for the allocation for reasonable use based on hydrologic surveys of fresh groundwater basins or subbasins to determine a restriction on the production based upon the acres overlying the groundwater basin or subbasin.

- **2012 Comprehensive Water Plan** – Directs agency to utilize marginal quality sources and complete all unstudied basins and complete 20-year reviews/updates.

Water for 2060

Primary Recommendations



- Education and outreach campaigns
- Recognition and incentive programs
- Crop insurance reform
- Potable and non-potable reuse
- Increased use/reuse of brackish water, produced water, and other marginal quality waters
- Develop best practices guides

Current Water Use Statutes

Issue: No Regulatory framework (protection in the law) to utilize Marginal Quality groundwater

- OWRB has authority over Fresh Water only which is defined by statute as groundwater containing 0-5000 ppm TDS.
- All other water is considered Salt Water.
- Furthermore, licensed well drillers cannot construct a salt water well.

Current Water Quality Standards

- Current Water Quality Standards:
 - **(4) Highly Mineralized Treatable Groundwater (Class IV):** These are groundwaters which have very poor quality due to natural conditions and generally have a mean concentration of total dissolved solids of greater than or equal to 5000 milligrams per liter but less than 10,000 milligrams per liter.
 - (B) The beneficial uses for Limited Use Groundwater (Class III) and Highly Mineralized Treatable Groundwater (Class IV), not identified in Appendix H of this Chapter, shall be Agriculture and Industrial and Municipal Process and Cooling Water.

2018 Legislative Session – House Bill 3405

- Defines Marginal Quality Groundwater as groundwater containing 5000-10,000 ppm TDS.
- Allows the Board to promulgate rules regarding construction standards for marginal quality wells and permit the use of marginal quality groundwater.
- Rule of Capture >10,000 PPM TDS.
- Bill effective November 1, 2018.

2008 – SB1627

OCWP Marginal Quality Work Group



Proposed: Mapping Brackish GW in OK

- Desktop Pilot Study of 1 to 3 Counties: using existing well logs and other data
- Develop spatial database contour map of:
 - TDS by contours – something like:
 - 1,000-3,000 ppm
 - 3,000-10,000 ppm
 - >10,000 ppm (BTW)
- Other parameters of interest: Na, Cl, K, radionuclides, others?

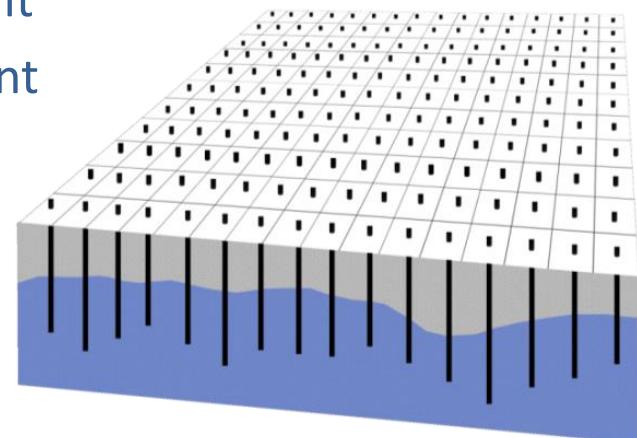
Groundwater Studies - Current Statute

Issue: OWRB required to implement new Equal Proportionate Share “as soon as practical”

- Once the Maximum Annual Yield for the groundwater basin has been approved by the Board, the Board shall convert the Equal Proportionate Share “as soon as practical”.
- This statutory language effectively requires the Board to implement the new EPS regardless of level of basin development.

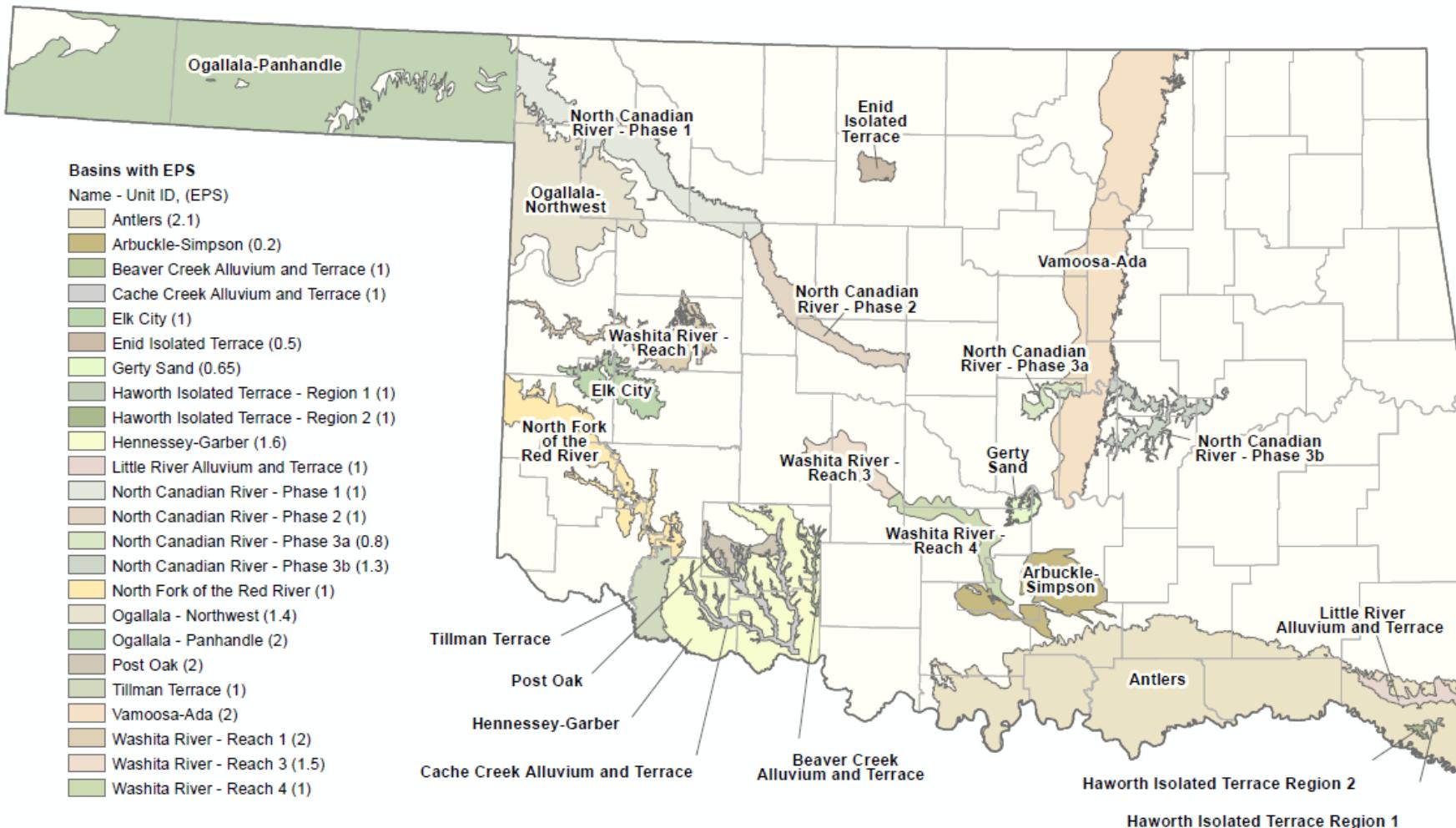
Maximum Annual Yield/Equal Proportionate Share

- Maximum Annual Yield (MAY)
 - The total amount of fresh groundwater that can be withdrawn while allowing a minimum 20-year life of the basin.
- Equal Proportionate Share (EPS)
 - Once the maximum annual yield has been established, the amount of water allocated to each permit applicant will be proportionate to the amount of land owned or leased by that applicant.
 - Each groundwater user is entitled to withdraw an equal share of water proportional to the amount of land owned.



Oklahoma Groundwater Resources

Groundwater Basins with Final Maximum Annual Yield Determination



This map represents groundwater basins that have a final maximum annual yield determination by the Oklahoma Water Resources Board. TITLE 785. OKLAHOMA WATER RESOURCES BOARD, CHAPTER 30. TAKING AND USE OF GROUNDWATER, SUBCHAPTER 9. MAXIMUM ANNUAL YIELD DETERMINATIONS.
<http://www.owrb.ok.gov> 10/18/2017



NW Oklahoma Basin Development

Basin	EPS	MAY	Acres in Study Area	Acres Permitted	% Permitted
Rush Springs	Not Set	Not Set	493,511	50,454	10%
Ogallala RM	Not Set	Not Set	270,011	42,372	16%
Ogallala NW	1.4	1198512	904,581	83,452	9%
Elk City	1	157440	75,407	2,842	4%
Garber-Wellington	Not Set	Not Set	272,739	30,077	11%
Canadian R.	Not Set	Not Set	537,525	59,990	11%
North Canadian R.	1	211840	237,729	34,723	15%
Salt Fork of the Arkansas R.	Not Set	Not Set	526,853	14,845	3%
North Fork of the Red R.	1	343042	98,754	18,715	19%
Washita R.	2	120320	259,512	50,135	19%

2018 Legislative Session - Senate Bill 1294

- Allows flexibility by the Board to delay or gradually implement the Equal Proportionate Share until the Total Allocated Amount reaches 25% of the Maximum Annual Yield.
- Establishes well spacing.



Questions?

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