



**Barton Springs
Edwards Aquifer**
CONSERVATION DISTRICT

BS/EACD

Special-called Meeting and Work Session on Proposed Rules

March 1, 2016



I. Drivers for Rules Change

- 1. Prospective Large Scale Permit Requests** – *Develop process and requirements for reviewing large permit requests and evaluating potential for unreasonable impacts to existing wells or long-term groundwater supplies.*
- 2. Implement H.B. 3405** – Further explore overarching concepts: *Unreasonable Impacts, Maximum Production Capacity, Monitoring, Mitigation etc*



II. Application Requirements

(Large Scale Permit Request - Over 200,000,000 gallons per year)

Additional application requirements related to Notice:

200-300 MGY – within 1 mile radius of proposed well, existing well, or well field.

300-400 MGY – within 1.5 mile radius of proposed well, existing well, or well field.

> 400 MGY – within 2 mile radius of proposed well, existing well, or well field.

- ❖ Notice no longer required for permit request for less than 2 million.
- ❖ District will send out e-notice and post in local paper



II. Application Requirements Continued

(Large Scale Permit Request - Over 200,000,000 gallons a year)

In addition to standard permit checklist requirements, production permit applications will require an aquifer test work plan and monitoring well network plan.

❖ Hydrogeological Report and Aquifer Test

	Anticipated Production Volume	Aquifer Test Requirements
Tier 1	>2,000,000 to 12,000,000 gallons per year	Abbreviated pump test and report
Tier 2	>12,000,000 to 200,000,000 gallons per year	Hydrogeologic report and <u>may</u> require installation of new observation wells if existing wells are not available or adequate for monitoring.
Tier 3	>200,000,000 gallons per year	Will require an aquifer test work plan and monitoring well network plan. <u>Will</u> require installation of one or more new observation wells.



Aquifer Test Requirements

(Large Scale Permit Request - Over 200,000,000 gallons a year)

- ❖ Monitoring well network plan minimum requirements:
 - ❖ General information – purpose of project, maps
 - ❖ Design and construction – well design for any new wells, data for each existing that will be used in the monitoring well network, equipment specifications
 - ❖ District access
 - ❖ Maintaining network
- ❖ Planning and implementation of plans shall be closely coordinated with the District to ensure the study is consistent with District standards and expectations.
- ❖ The plans must be approved by the District.
- ❖ Applicant may request 90-day extension to satisfy additional requirement.



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Aquifer Test Requirements

(Large Scale Permit Request - Over 200,000,000 gallons a year)

Monitoring well network shall be established by installing one or more new observation wells and identifying a sufficient number of existing wells **prior to commencement of the aquifer test.**

- ❖ Essential to have adequate monitoring network established for a thorough aquifer test.
- ❖ Onus needs to be on applicant not District staff
- ❖ Applicant will be responsible for all cost associated with the monitoring well network



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III. Unreasonable Impacts Defined



Component Parts

TWC Ch. 36, Sec. 36.113. PERMITS FOR WELLS; PERMIT AMENDMENTS.

d) ...Before granting or denying a permit, or a permit amendment ... , the district shall consider whether:

(2) the proposed use of water **unreasonably affects existing groundwater and surface water resources or existing permit holders;**

(f) ... Permits, and permit amendments ...may be issued **subject to terms and provisions ...that may be necessary to** prevent waste and achieve water conservation, **minimize as far as practicable the drawdown of the water table or the reduction of artesian pressure, lessen interference between wells,** or control and prevent subsidence.



Component Parts

TWC Ch. 36, Sec. 36.116. REGULATION OF SPACING AND PRODUCTION.

(a) In order to **minimize as far as practicable the drawdown of the water table or the reduction of artesian pressure, to control subsidence, to prevent interference between wells**, to prevent degradation of water quality, or to prevent waste, a district by rule may regulate:

HB 3405 Factors

The district ... shall issue ... the regular permit authorizing groundwater ... unless the district finds that authorizing groundwater production ... will cause:

- (1) a **failure to achieve the applicable adopted desired future conditions** for the aquifer; or
- (2) an **unreasonable impact** on existing wells.



Anatomy of Definition

“Unreasonable Impacts” – a significant **drawdown of the water table or reduction of artesian pressure** as a result of pumping from a well or well field, which contributes to, causes, or will cause:

1. **well interference** related to one or more water wells ceasing to yield water at the ground surface;
2. **well interference** related to a significant decrease in well yields that results in one or more water wells being unable to obtain either an authorized, historic, or usable volume or rate from a reasonably efficient water well;
3. **well interference** related to the lowering of water levels below a feasible pumping lift or reasonable pump intake level;
4. the degradation of **groundwater quality** such that the water is unusable or requires the installation of a treatment system.
5. the **Desired Future Condition (DFC)** to not be achieved;
6. depletion of **groundwater supply over a long-term basis**, including but not limited to chronic reductions in storage or overdraft of an aquifer;
7. a significant decrease in **springflow or baseflows to surface streams** including a decrease that may cause an established minimum springflow or environmental flow rate to not be achieved.

For permits issued under rule 3-1.55.1 and 3-1.55.4 (HB 3405) the District shall consider (1-5) listed above in any determination of unreasonable impacts.



Rule 3-1.6: Action on Permits

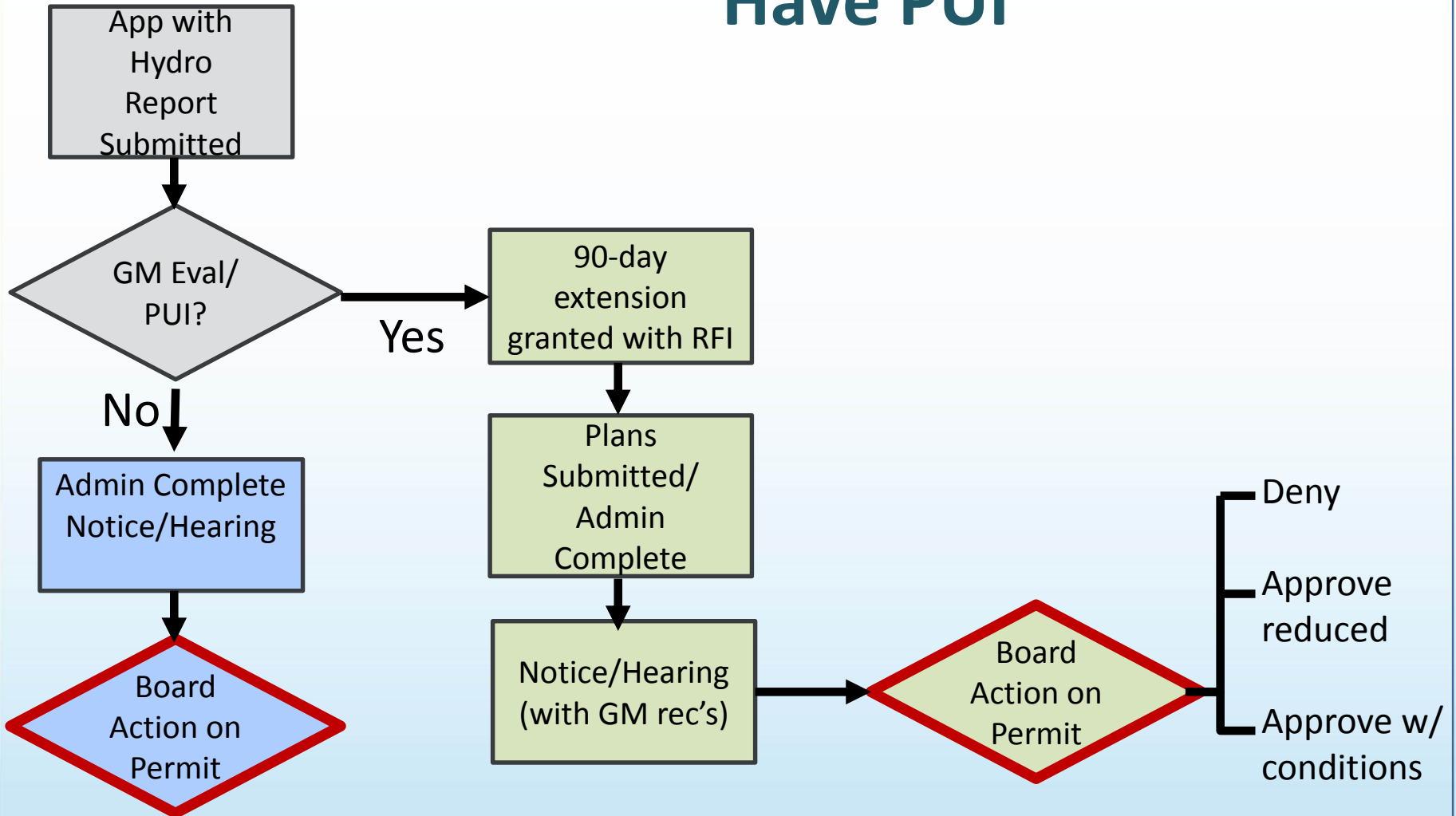
3-1.6. ACTION ON PERMITS.

A. Permits. Before approving, modifying, delaying, or denying a permit, the District shall consider whether:

4. The proposed use of water would not unreasonably affect existing groundwater and surface water resources by causing the potential for ~~present the possibility~~ of unreasonable impacts. ~~interference with the production of groundwater from exempt, existing, or previously permitted wells or other surface water resources,~~
5. ~~The proposed withdrawal of water would not cause drawdown of the water table or reduction of artesian pressure as far as practicable,~~
6. ~~The proposed use of water would not degrade groundwater or surface-water quality,~~



Process for Permits Determined to Have PUI





IV. Additional Requirements

(Once it is determined there is potential for Unreasonable Impacts)

- A. Avoidance Measures
 - B. Compliance Monitoring Plan & Compliance Network
 - C. Mitigation Plan
- ❖ Upon GM's notification there is 30 days to submit additional info Deny, modify, reduce, adjust, curtail
 - ❖ Automatic 90 day extension
 - ❖ Plans must be closely coordinated with the District and approved by District
 - ❖ Applicant assumes responsibility for establishing the plans and network along with associated costs



IV. Additional Requirements

(Once it is determined there is potential for Unreasonable Impacts)

A. Avoidance Measures

- ❖ Preemptive actions and measures to avoid unreasonable impacts

B. Compliance Monitoring Plan & Compliance Network

- ❖ Identifies installed index wells & compliance level triggers
- ❖ Plan must meet minimum requirements (pg77):
 - ❖ Description of hydrogeologic conditions
 - ❖ Location map of well network including index wells
 - ❖ Design and construction info for network wells
 - ❖ Groundwater sampling and analysis measures
 - ❖ Maintenance commitments and District access

C. Mitigation Plan

- ❖ Related specifically to well interference or groundwater quality degradation
- ❖ Plan must meet minimum requirements (pg78):
 - ❖ Description of hydrogeologic conditions
 - ❖ Location map of well network including index wells
 - ❖ Design and construction info for network wells
 - ❖ Groundwater sampling and analysis measures
 - ❖ Maintenance commitments and District access



District's Approach to Mitigation

“The District seeks to manage total groundwater production over the long term while avoiding unreasonable impacts. Mitigation shall be reserved only after all reasonable measures to avoid and prevent unreasonable impacts have been exhausted.” (pg 57)

- ❖ Not intended to be a short cut response for large scale projects that do pose a risk of unreasonable impacts.
- ❖ Mitigation plan documents a set of response measures for reacting to incidents where unreasonable impacts (well interference) is occurring.
- ❖ Known risks – the District will require or seek preemptive avoidance measures to remedy those wells before impacts occur
- ❖ Unknown risks – the mitigation plan is relied upon for unanticipated unreasonable impacts.



V. Applications with PUI – Permit Options

Goal – long-term avoidance of unreasonable impacts

Possible Board Actions:

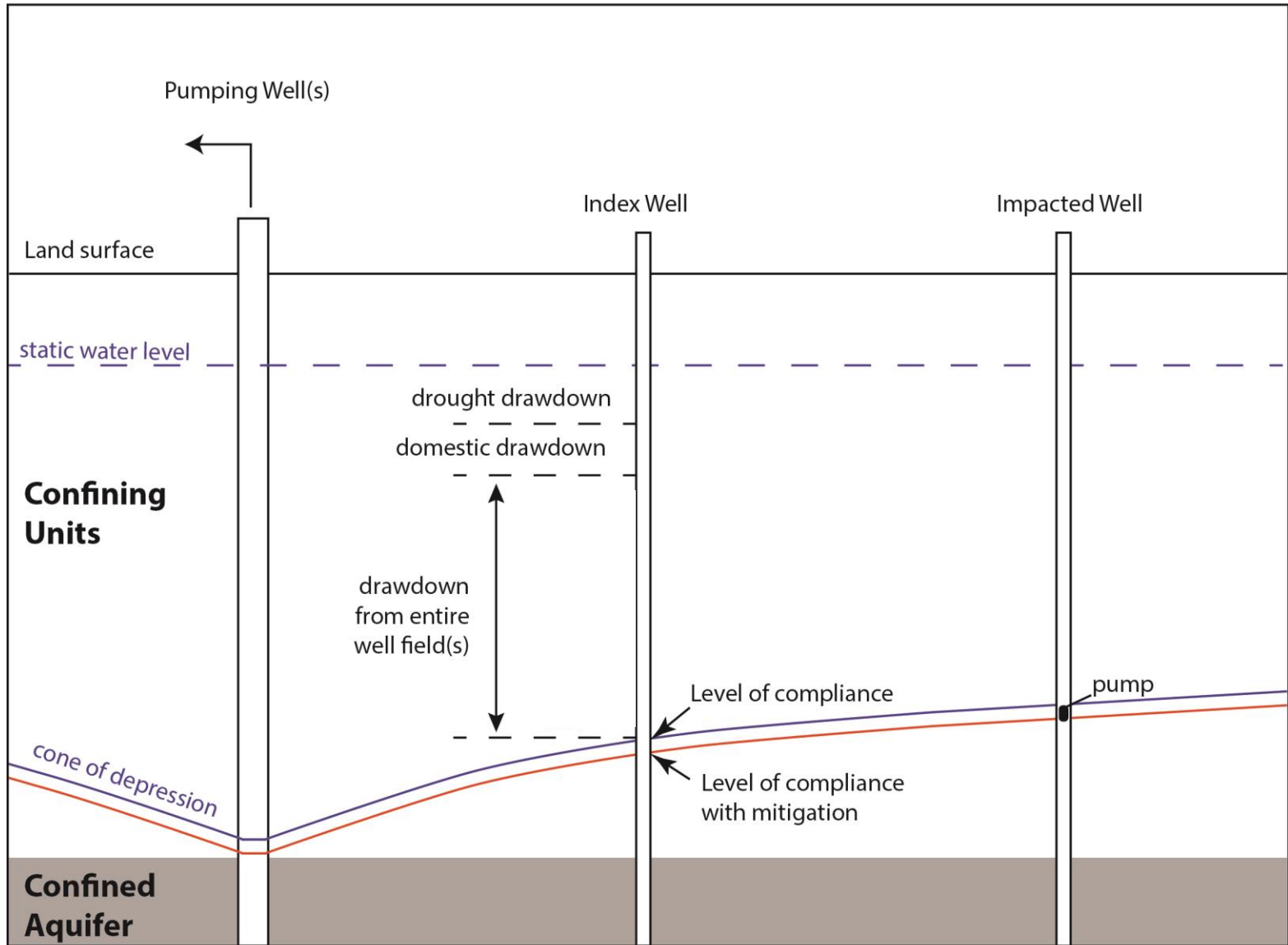
1. Denial,
2. Approved with reduced amount, or
3. Approved with Conditions:
 - a. Compliance Plan - to collected data to measure compliance
 - b. Mitigation Plan – for unanticipated UIs
 - c. Other reasonable preemptive measures necessary to avoid UIs



VI. Permit Scenario (Permit Request for 500,000,000 gal/yr PWS)

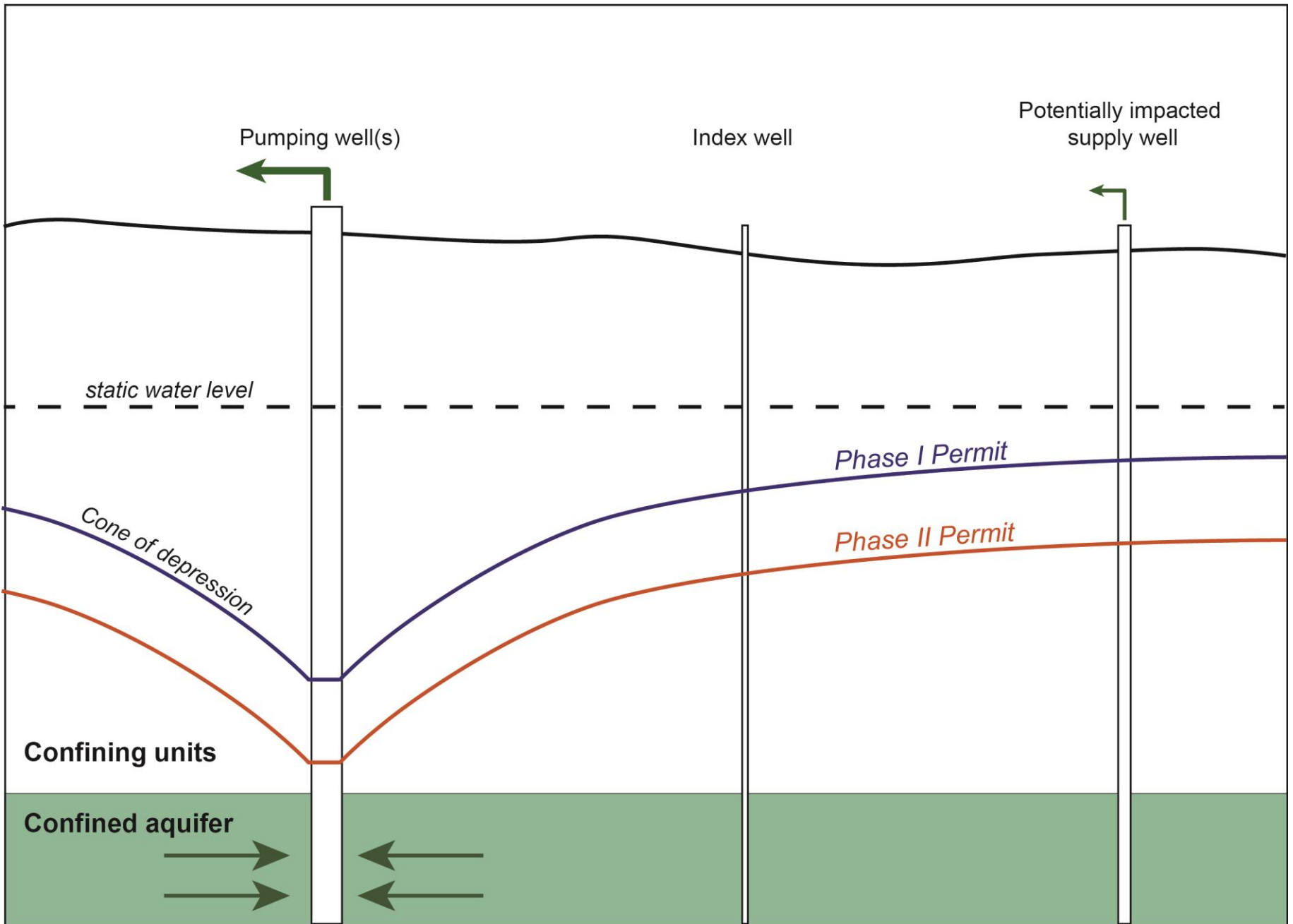
1. Application Requirements & Notice
 - ❖ Requirements related to Notice
 - ❖ Requirements related to Aquifer Test & Hydrogeological Report
2. Staff Review of Hydrogeological Report (Determination of Unreasonable Impacts)
3. Determination Triggers Additional Application Requirements (90 day extension)
 - ❖ Avoidance measures, Compliance Plan, Mitigation Plan
4. Permit brought before Board with full suite of tools
 - ❖ Staff develops a recommendation with proposed conditions
 - ❖ For example: Issuance of a phased permit structure with compliance triggers based on actual aquifer conditions

Schematic Well Diagram: Unreasonable Impacts



not to scale

Schematic Diagram: Unreasonable Impacts and Potential Permitting





Unreasonable Impacts - Summary

Primary Rule Drivers:

1. Implement HB 3405
2. Set framework for prospective large-scale permits

Regulatory Scheme:

- ❖ UIs defined as suite of factors assessed on case-by-case basis
- ❖ Hydrogeological Report and analysis of Aquifer Test data to determine PUI
- ❖ Permits with PUI require compliance and mitigation plans
- ❖ Proceed gradually (phased permits)
- ❖ Projected effects balanced with monitoring to assess aquifer response to long-term pumping
- ❖ Require reasonable preemptive measure to avoid UIs
- ❖ Mitigation reserved only for unanticipated UIs.



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Other Core Topic Areas



VII. Test Well and Aquifer Test Permit

1. Will not accept an aquifer test on temporarily completed well(s); may consider accepting an aquifer test for wells with temporary completions representative of permanent completion (isolating target production zones).
2. Additional Information Requirements:
 - ❖ An aquifer test workplan as specified in the Guidelines.
 - ❖ Plus (if over 200 MGY) an aquifer test monitoring plan and network will be required as a component of the workplan.
 - ❖ Well design plans and schematics for alternate completion.
3. Additional follow-up aquifer test required to be conducted on permanently completed wells to validate test well results



VIII. Transport

Where a property has been added to the District in a manner that the District's boundary divides the property so that some, but not all, of the property is within the District. After such a boundary change, groundwater from an existing well or wells on property added to the District may be transported outside the District for use on the portion of the same property outside the District when, at the time of the boundary change, the property inside and outside the District is:

- a) Contiguous;
- b) owned by the same property owner; and
- c) The water use type and amount existed prior to the boundary change.

This exception only applies property added to the District on or after June 19, 2015.



IX. Use Types

- ❖ Clarified Use Type definitions
- ❖ Necessary for historical use designations and demand-based permitting
- ❖ Defined Use Types:
 - ❖ Public Water Supply
 - Retail Public Water Supply
 - Wholesale Public Water Supply

 - ❖ Agricultural
 - Commercial Livestock
 - Agricultural Irrigation
 - Wildlife Management

 - ❖ Industrial
 - ❖ Irrigation
 - ❖ Commercial
 - ❖ Recreational



X. Replacement Wells

A well owner may apply to re-drill or replace a currently permitted or registered (exempt) deteriorated well if the following conditions apply:

1. the replacement well must be drilled on same tract of land and within 250 ft of the original well;
2. the replacement well must not be completed or equipped in a manner that would increase the production capacity (e.g. modification);
3. the replacement well complies with all applicable District rules and regulation, including current District well construction standards;
4. the replacement well will be used to produce the same or less amount of groundwater and for the same purpose of use of the original well;
5. the well that is being replaced is permanently plugged.

A well owner may only apply to re-drill or replace a registered exempt well while preserving an exempt designation if it complies with the current exemption criteria and above requirements

If well is permitted (Individual or LPP) can keep designation if it complies with above requirements



XI. Other Rule Changes

- ❖ Authorized Agent documentation (Rule 3-1.4 on pg 41)
- ❖ Permit Renewal (Rule 3-1.8 on pg 69)
(to implement new legislation)
- ❖ Permit Amendments (Rule 3-1.9 on pg 70)
- ❖ Regulation of Spacing (Rule 3-1.12 on pg 80,81)
- ❖ Aggregation (Rule 3-1.14 on pg 82)
- ❖ Fees (Rule 3-1.16 on pg 83,84)
- ❖ Conservation Rate Structure (Rule 3-6.1 on pg 112)
- ❖ Conflict of Interest (Rule 4-1.4 on pg 137)
(to implement new legislation)
- ❖ Notice and Hearing (Rule 4-1.11 on pg 162)
(to implement new legislation)



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XII. Timeline:

Th 2/25 - Rule Overview

Tue 3/1 – Workshop for Focused Discussion on Rules Changes

Th 3/3 - Notice is Posted for Rule Hearing

Th 3/10 – Additional Discussion of Rule at Board Meeting

Wed 3/23 – Public comments due by close of business

Th 3/24 – Rule Hearing. Possible Board Action to Adopt Rules