Eel River Valley
Groundwater Working Group

Meeting No. 1

October 21, 2015
1:00 pm – 3:00 pm

Humboldt County Agricultural Center

Public Works Department

Today's Agenda

1. Introduction

    - Review agenda, personal introductions

2. Sustainable Groundwater Management Act - Overview
3. Eel River Valley Groundwater Basin – Overview
4. Working Group

    - Review handouts

    - Purpose, role, expectations

    - Membership

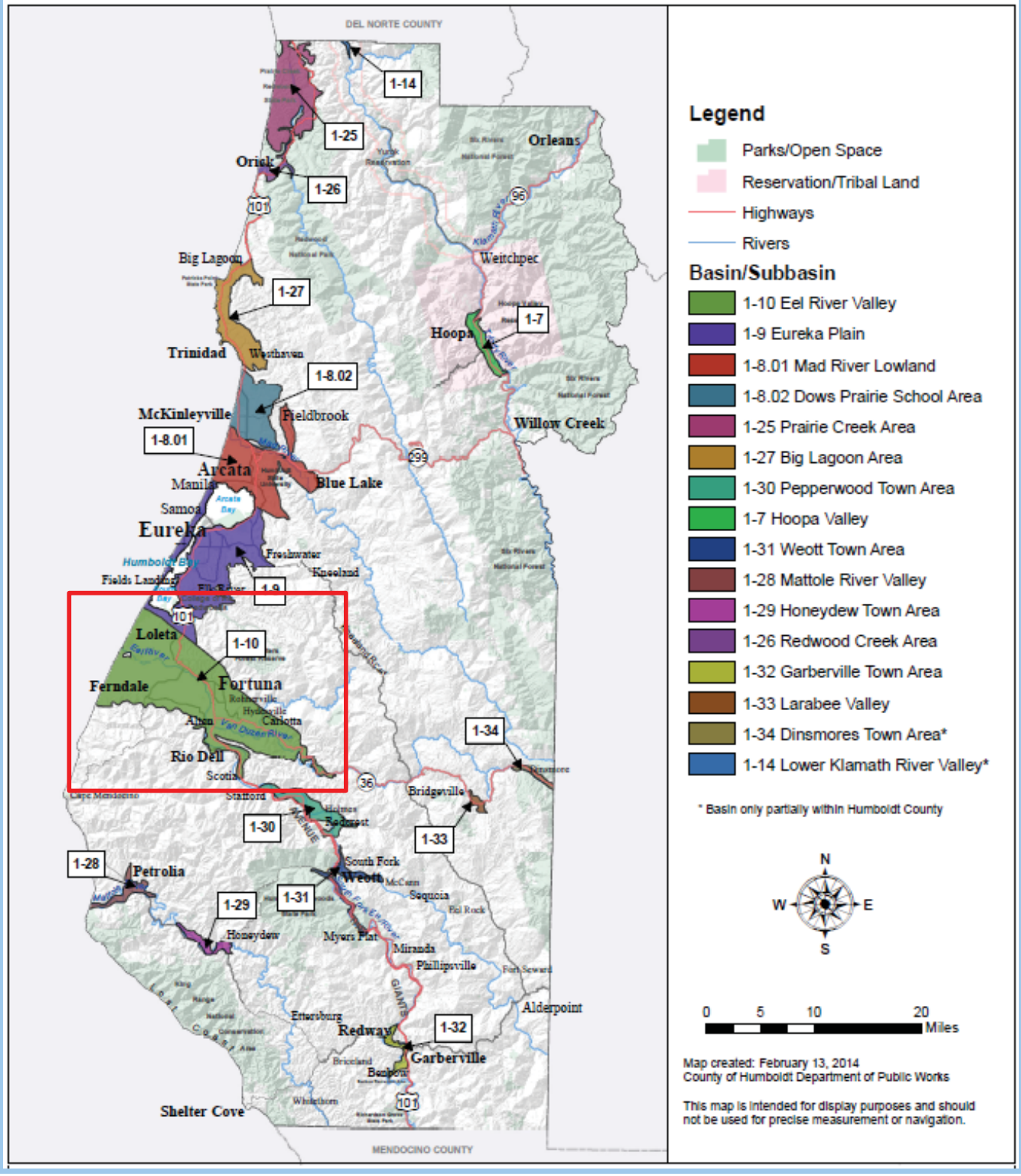
5. Proposition 1 Grant Program
6. Set Next Meeting Date

Sustainable Groundwater Management Act – Overview

New Addition to State Water Policy:

Water Code Section 113

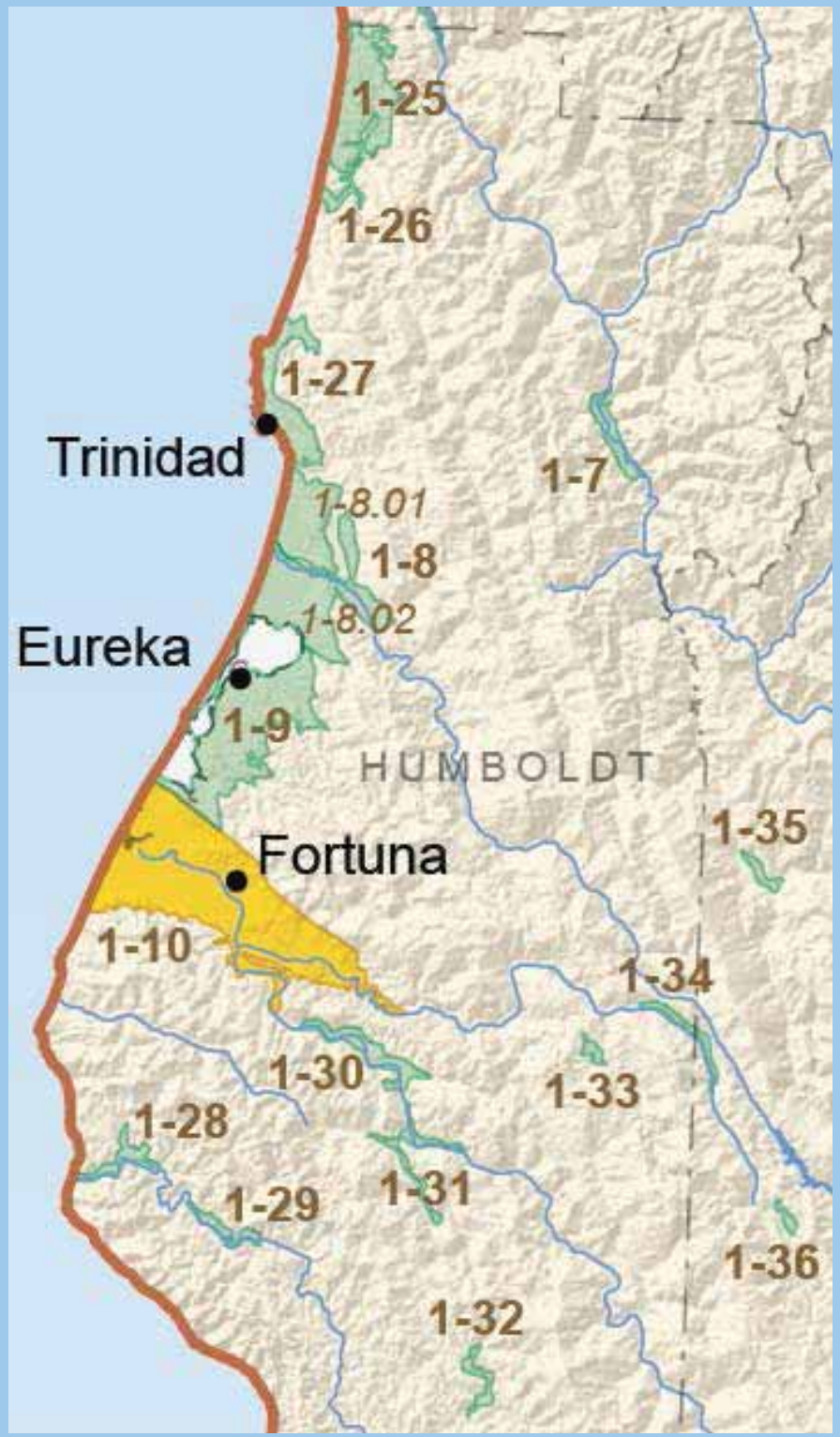
It is the policy of the state that groundwater resources be managed sustainably for long-term reliability and multiple economic, social, and environmental benefits for current and future beneficial uses. Sustainable groundwater management is best achieved locally through the development, implementation, and updating of plans and programs based on the best available science.



Humboldt County Designated Alluvial Groundwater Basins and Sub-basins

Source:
DWR Bulletin 118

Ranking of Groundwater Basin Importance – Humboldt County



Groundwater basin/subbasin

Basin prioritization ranking

- High
- Medium
- Low
- Very low

Source:
DWR Bulletin 118

Key Aspects of Sustainable Groundwater Management Act

1. Organized around designated alluvial groundwater basins and their prioritization rankings
2. Requires groundwater sustainability plans (GSP) for high- and medium-priority basins
3. Requires local groundwater sustainability agencies (GSA)
4. Overall goal is to operate within sustainable yield: maximum quantity of water that can be withdrawn annually without causing an undesirable result
5. Undesirable results include:
    - Lowering of groundwater levels and depletion of supply
    - Reduction of groundwater storage
    - Seawater intrusion
    - Degraded water quality
    - Subsidence
    - Depletions of interconnected surface waters with adverse impacts on beneficial uses of the surface water

Key Aspects of Sustainable Groundwater Management Act

6. Groundwater sustainability agencies will have powers and authorities, which they may elect to exercise:
   - Registration
   - Fees
   - Inspections
   - Measuring devices

   (not de minimis extractors)
   - Spacing
   - Control extractions (regulate/limit/suspend)
   - Reporting
   - Enforcement
7. Groundwater sustainability plans require:
   - Advisory committee and maintenance of interested persons list
   - Description of the basin
   - Measurable objectives to achieve the sustainability goal
   - Implementation measures (monitoring and management components, as applicable)
8. Groundwater plans will not establish or determine groundwater rights, but will govern how those rights are exercised

Key Aspects of Sustainable Groundwater Management Act

9. The groundwater sustainability agency shall consider the interests of all beneficial uses and users of groundwater. These interests include, but are not limited to:

    - Holders of overlying groundwater rights, including agricultural users and domestic well owners
    - Municipal well operators and public water systems
    - Local land use planning agencies
    - Environmental users of groundwater
    - Surface water users, if there is a hydrologic connection between surface and groundwater bodies
    - Federal and tribal lands
    - Economically disadvantaged communities

10. State can intervene if local agency is not managing its groundwater sustainably or not complying with the Act

Options for Groundwater Sustainability Agency and Groundwater Sustainability Plan

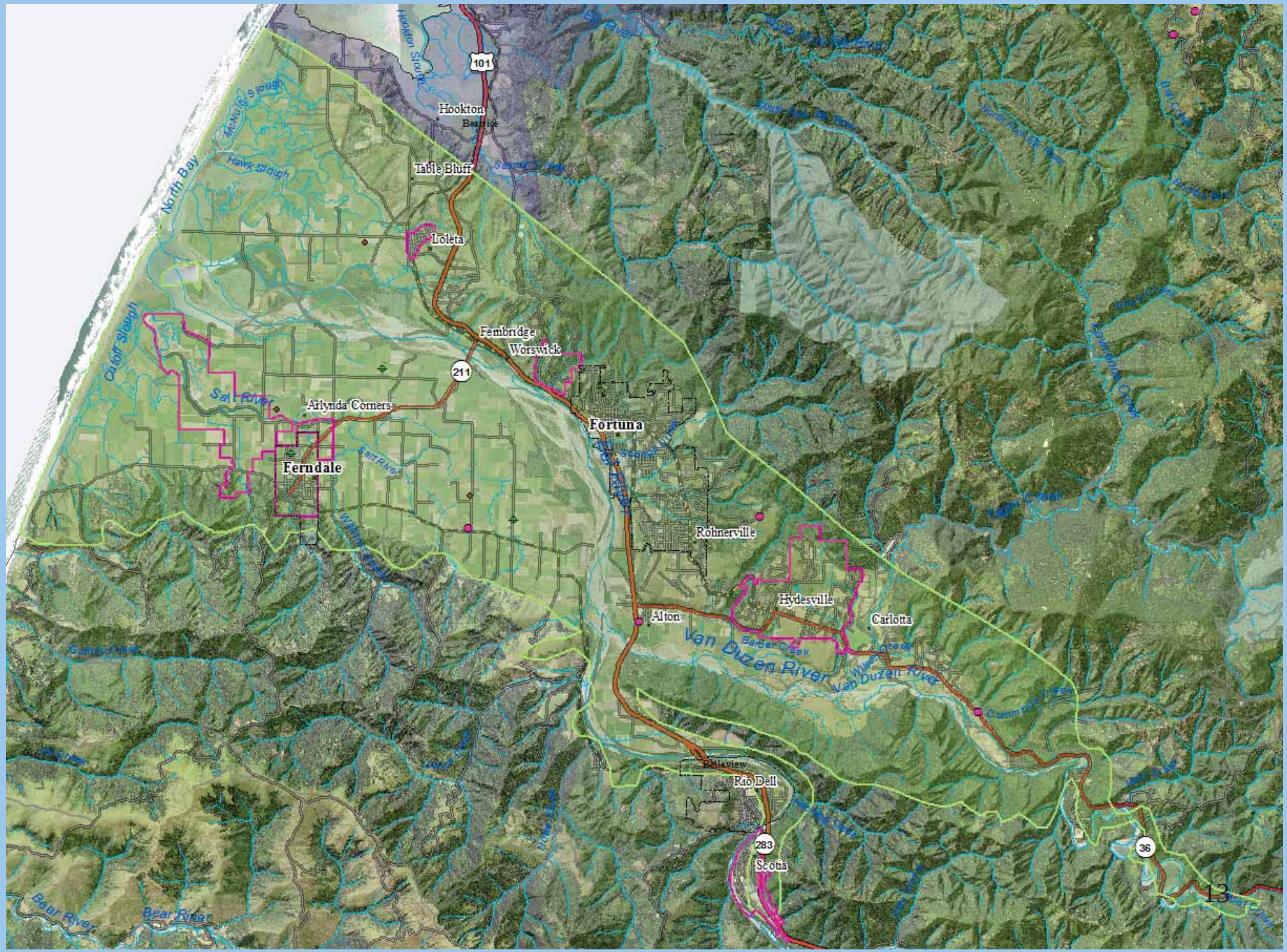
1. One GSA / One GSP
    a) County
    b) County with MOU (cities, districts, tribes)
    c) Joint Powers Authority
    d) New district
2. Multiple GSAs / One GSP
3. Multiple GSAs / Multiple GSPs, with coordination agreement

General Timeline for Sustainable Groundwater Management Act

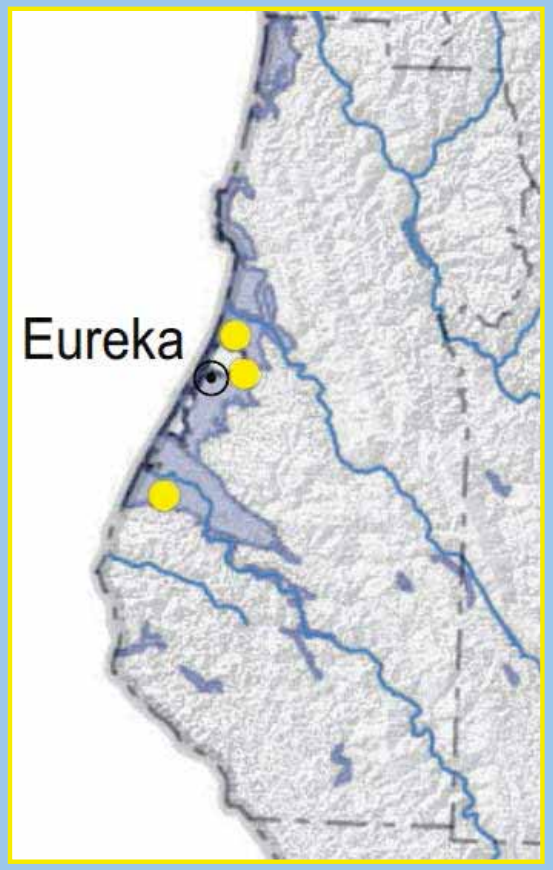
	State	Local
Late 2015/ Early 2016	Funding program for local agencies to develop groundwater plans (from Prop. 1)	
2016	June 1: DWR to adopt regulations for implementing program	
2017	DWR to publish Bulletin 118 – Interim Update (boundaries, prioritization)	Jan. 1: Due date for "alternative submittals" June 30: Groundwater sustainability agencies established for all high- and medium-priority basins
2018		
2019		
2020		
2021		
2022		Jan 31: Groundwater sustainability plans adopted for high- and medium-priority basins not in critical overdraft
2042		Achieve sustainability goal

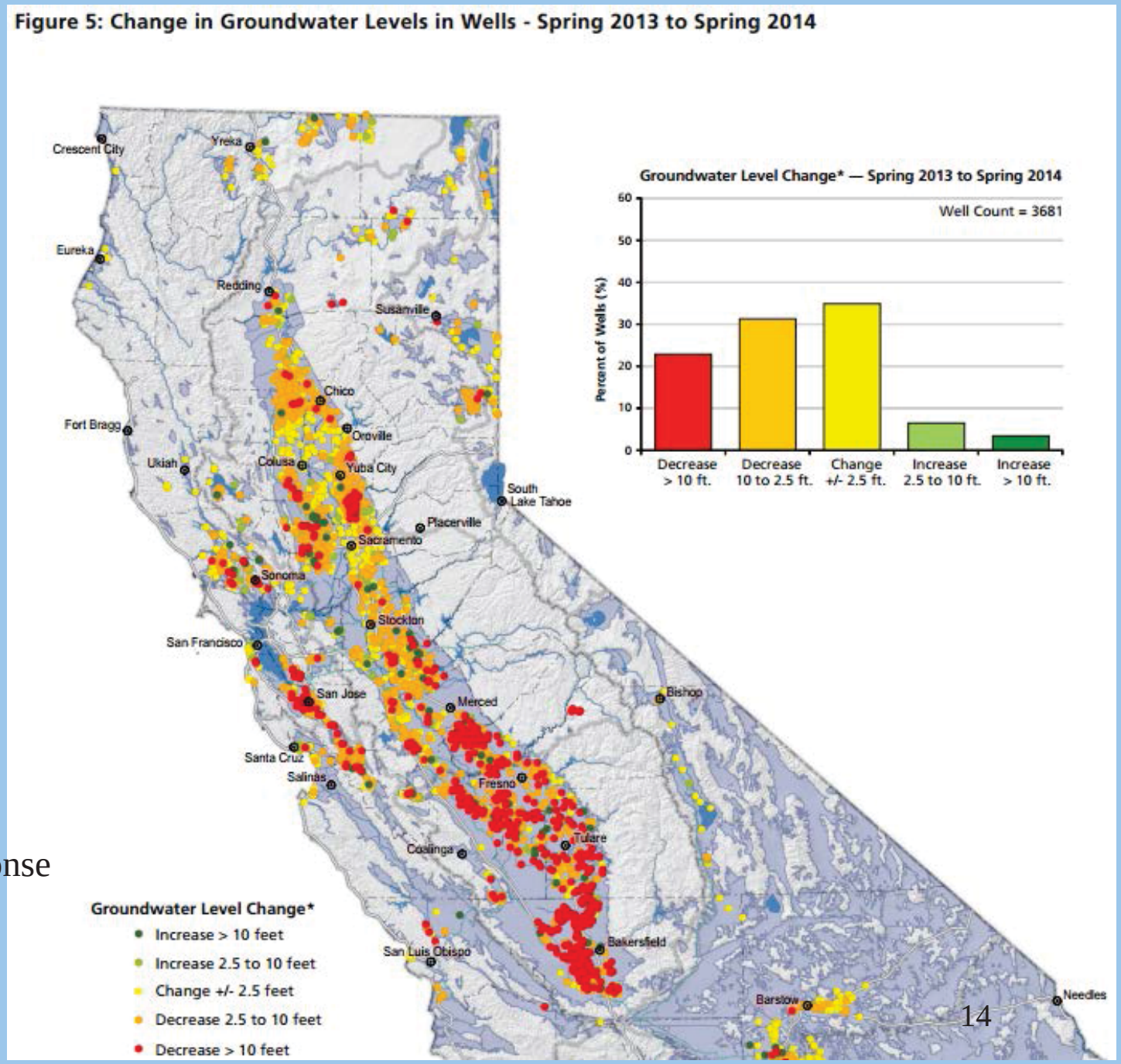
Eel River Valley Groundwater Basin – Overview

Eel River Valley Groundwater Basin

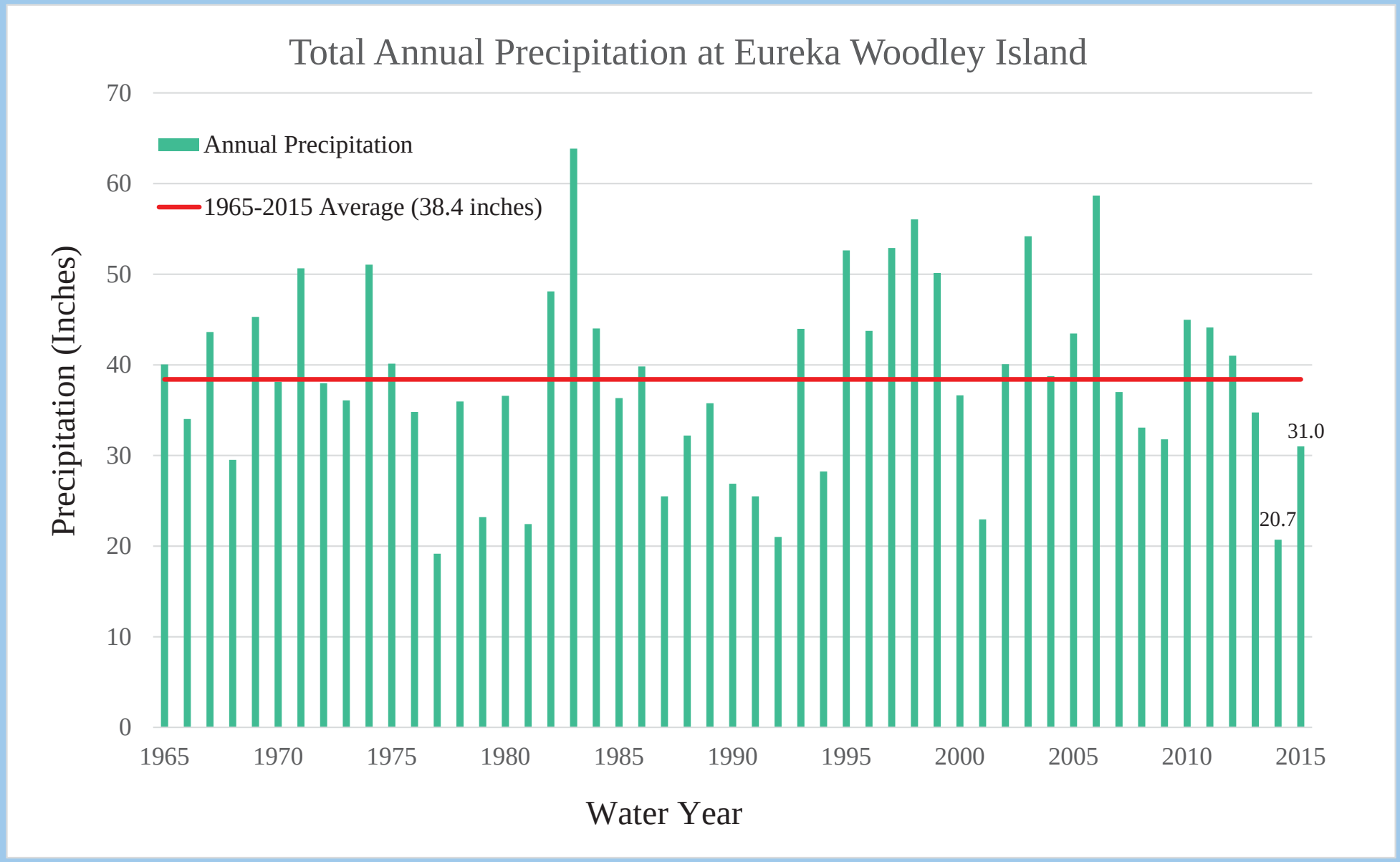


Change in Groundwater Levels – Spring 2013 to Spring 2014



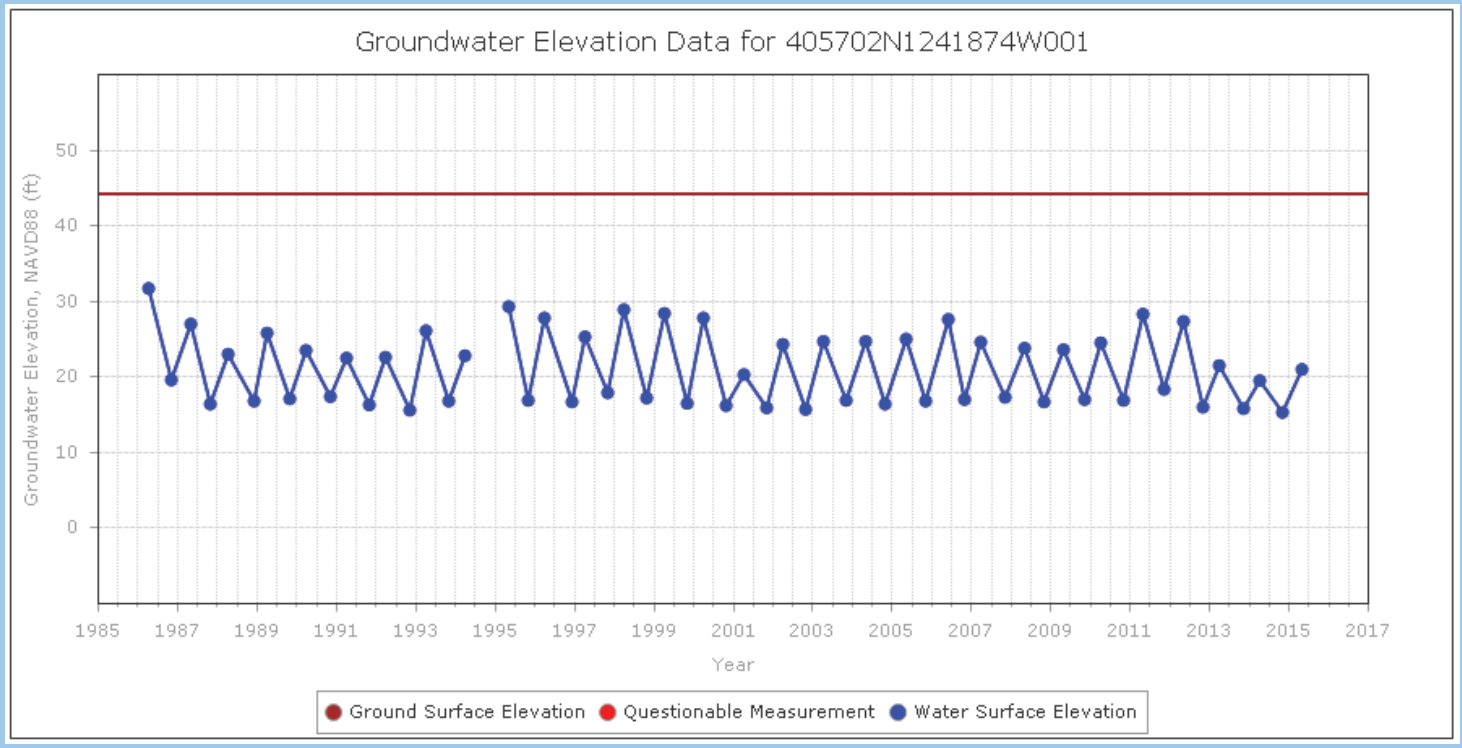


Source:
Public Update for Drought Response
(DWR, Nov. 2014)

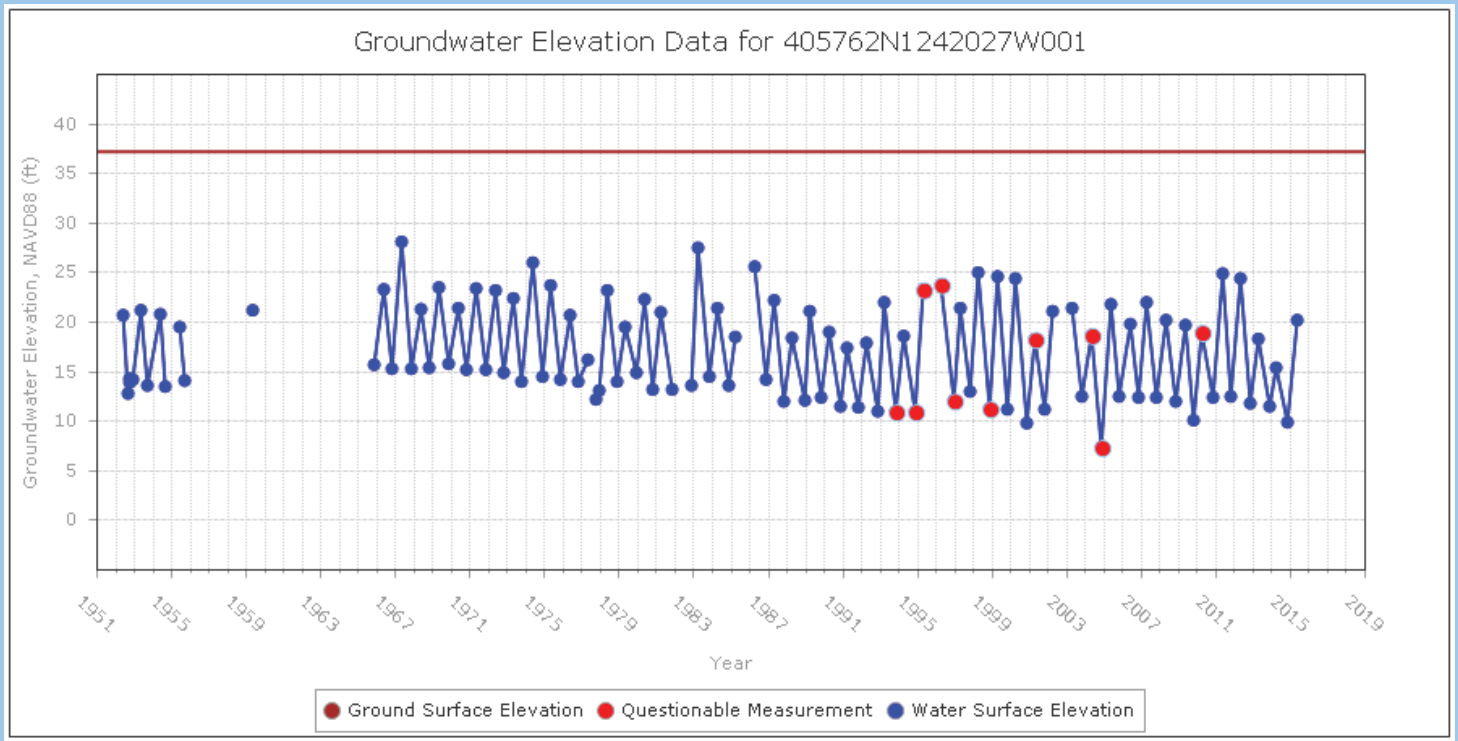


Source: California Data Exchange Center

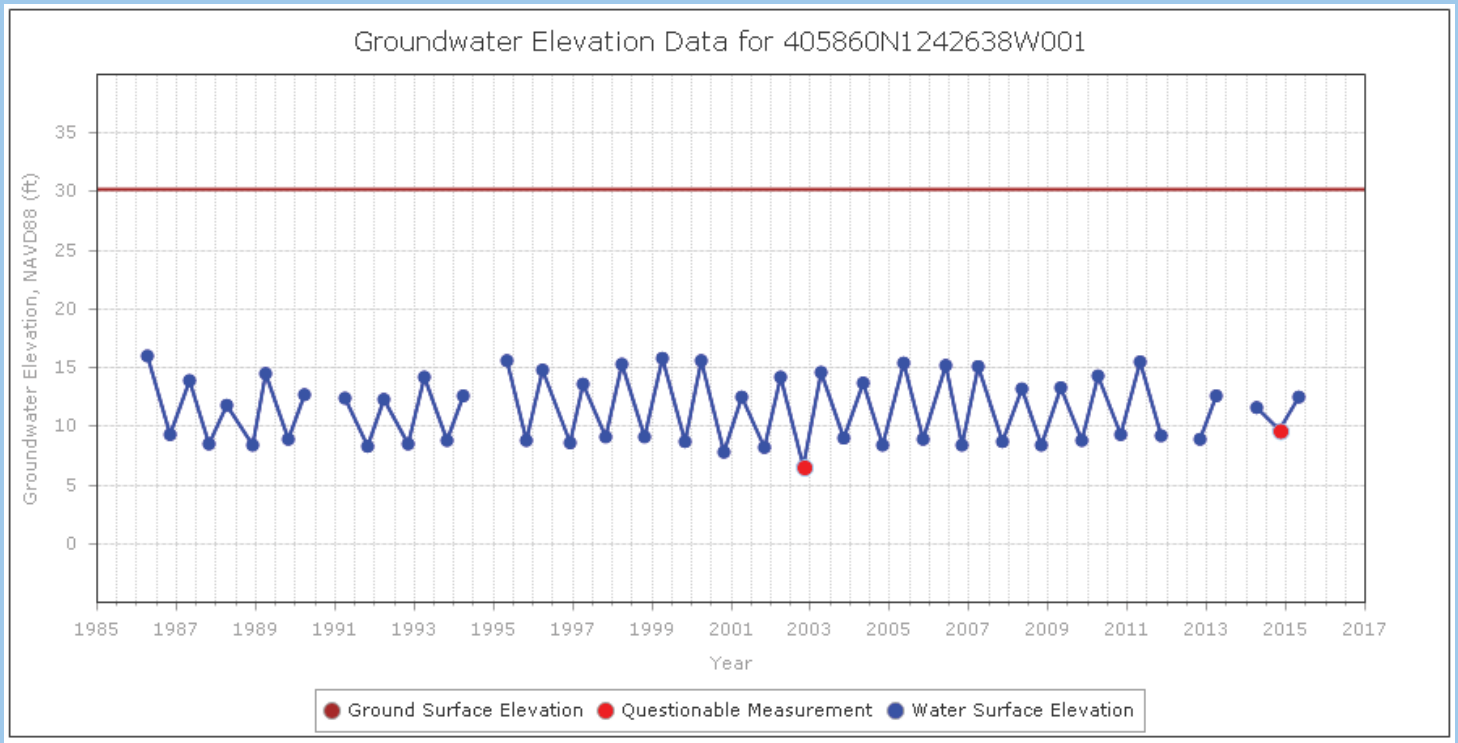
DWR Monitoring Wells in Eel River Basin



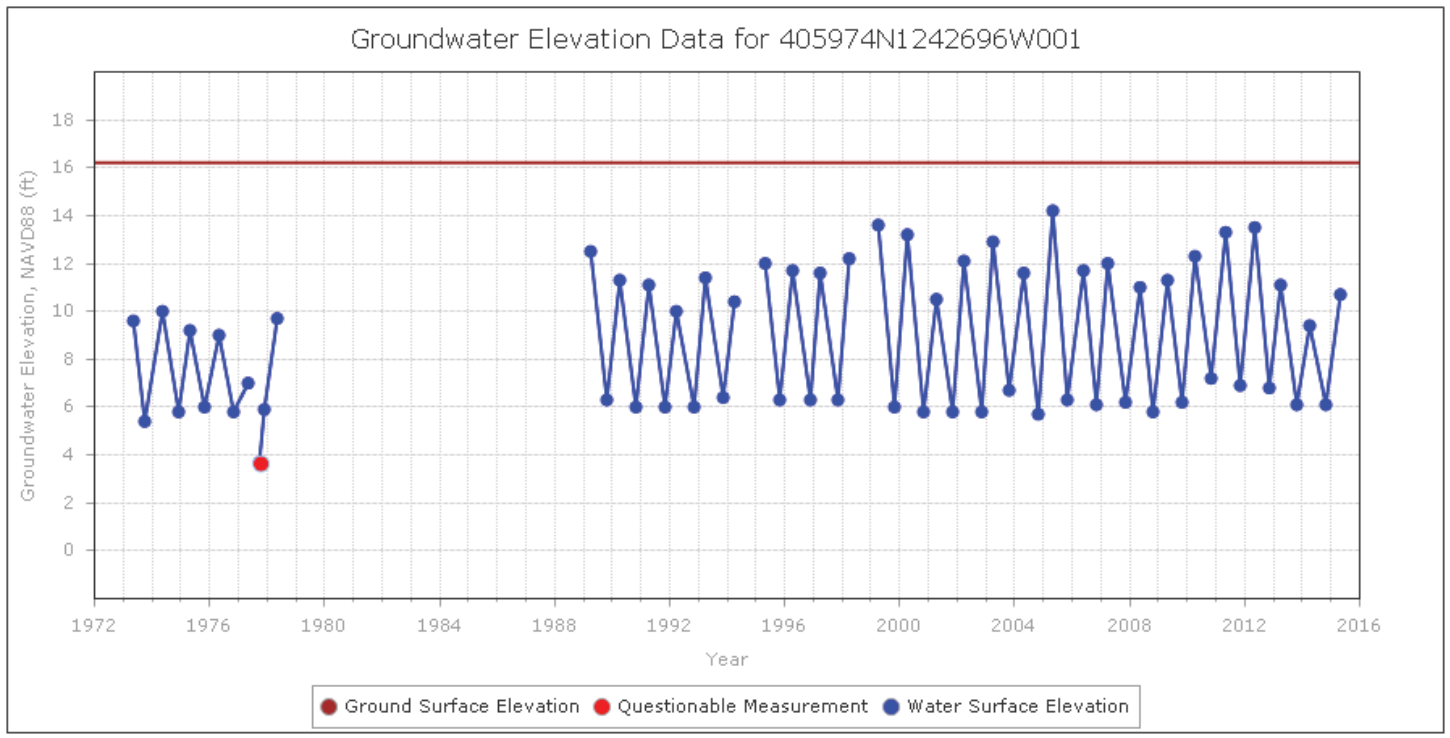
Pleasant Point Road (Ferndale)



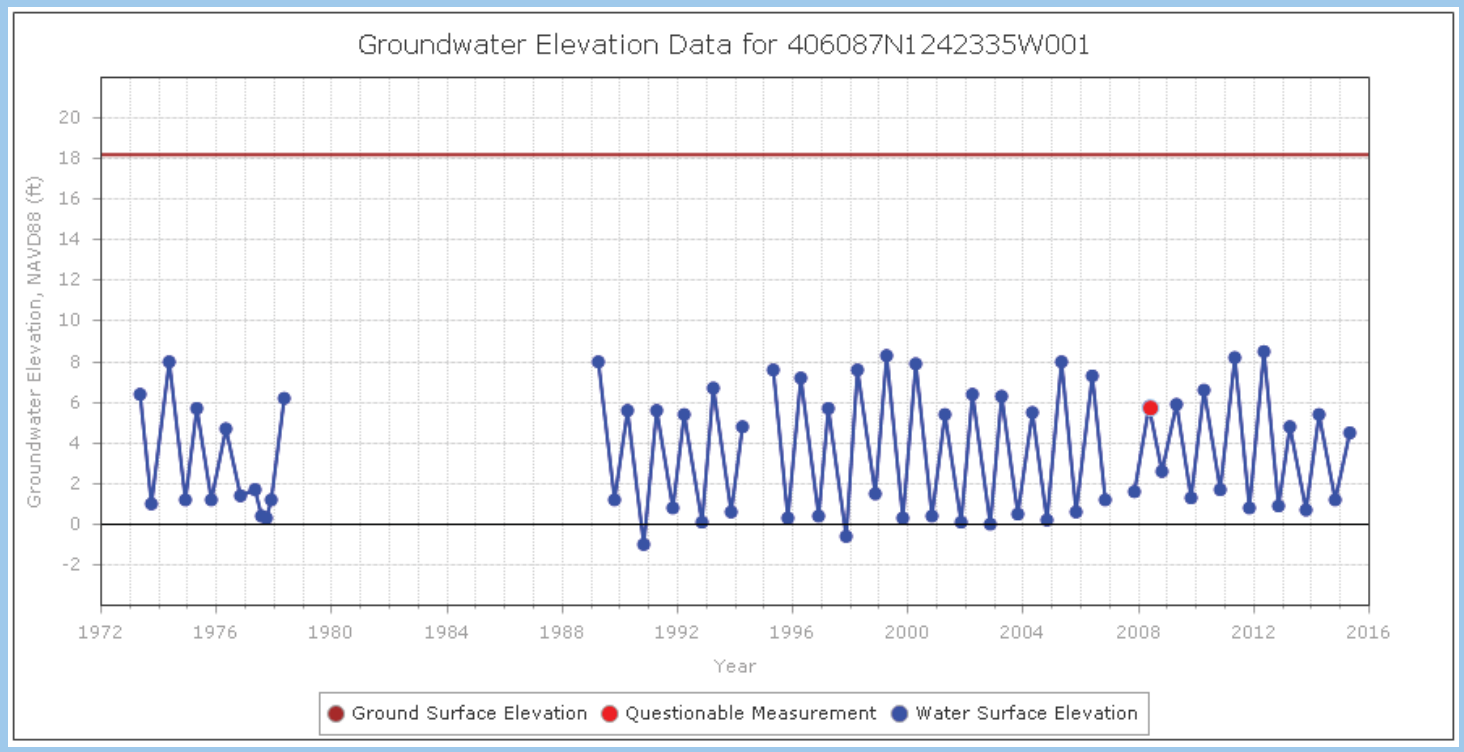
Waddington Road (Ferndale)



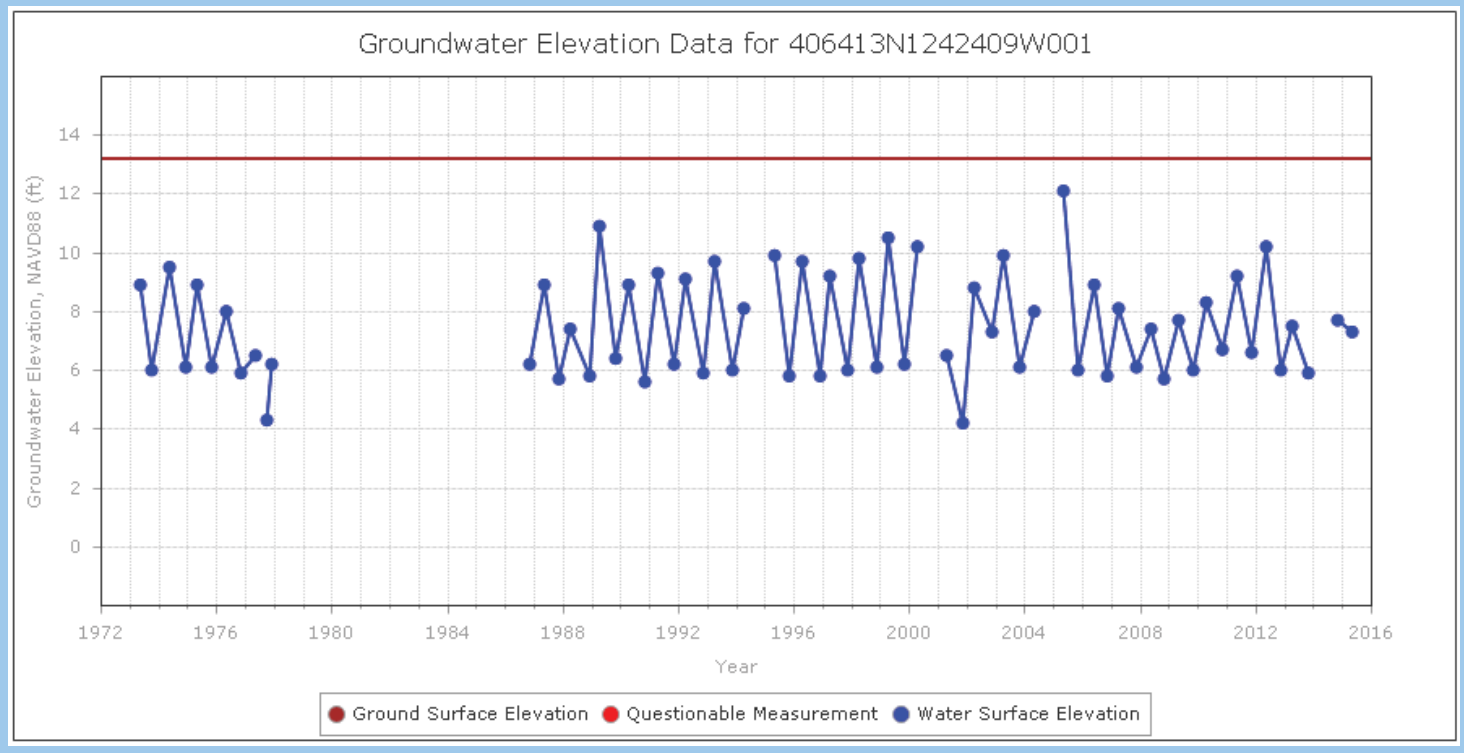
County Fairgrounds (Ferndale)



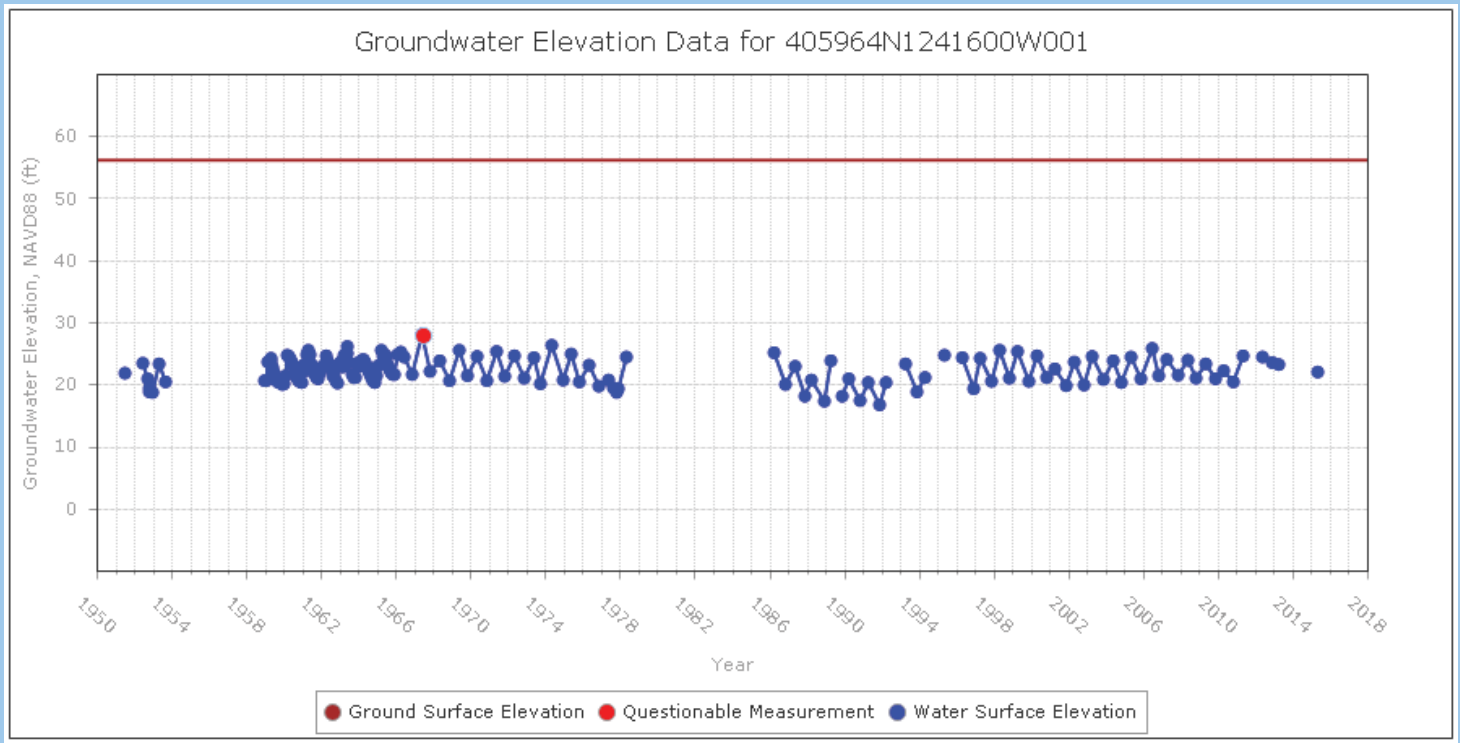
Dillon Road (Ferndale)



Goble Lane (Ferndale)



Cannibal Island Road (Loleta)



7th and K Streets (Fortuna)

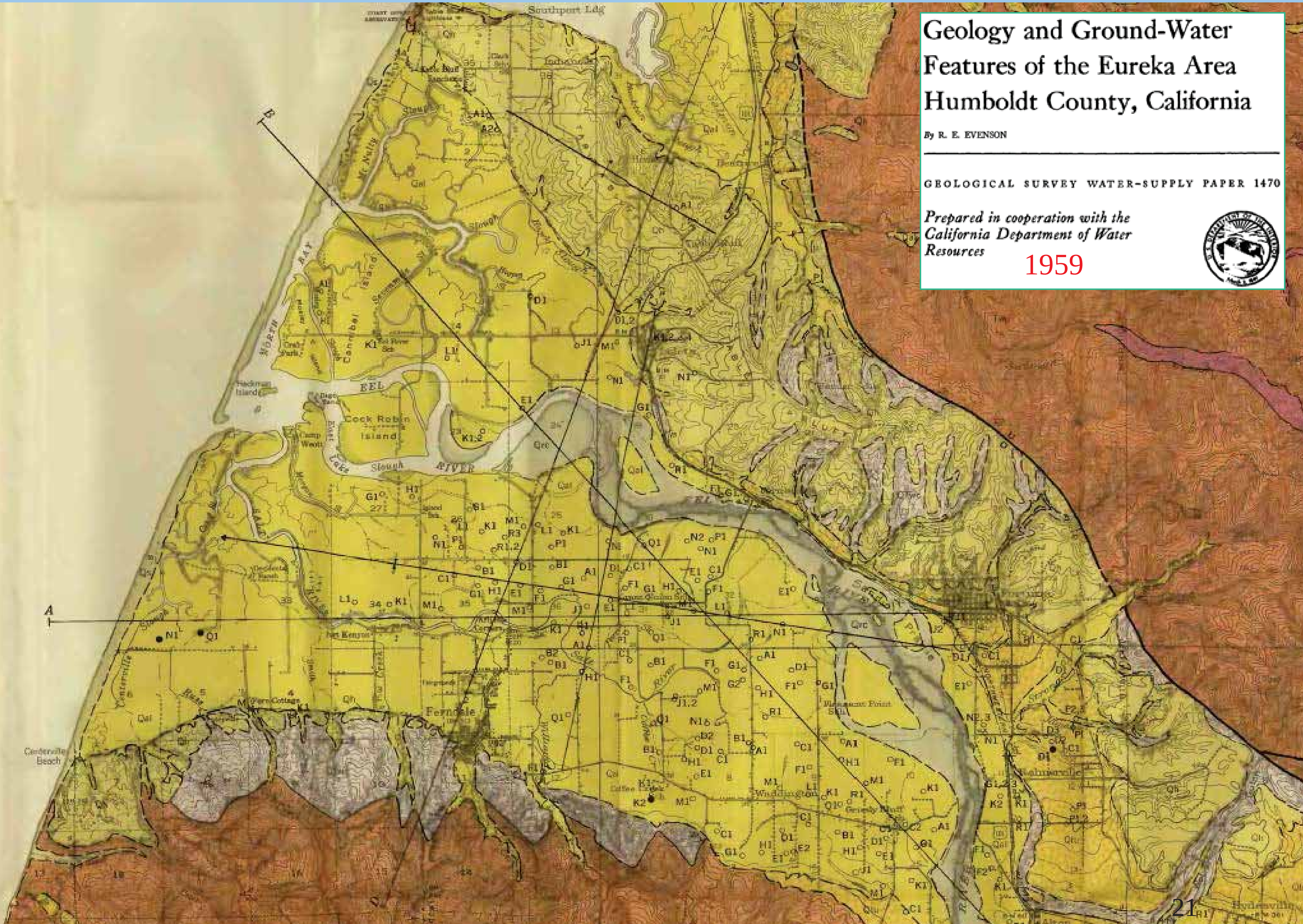
Geology and Ground-Water Features of the Eureka Area Humboldt County, California

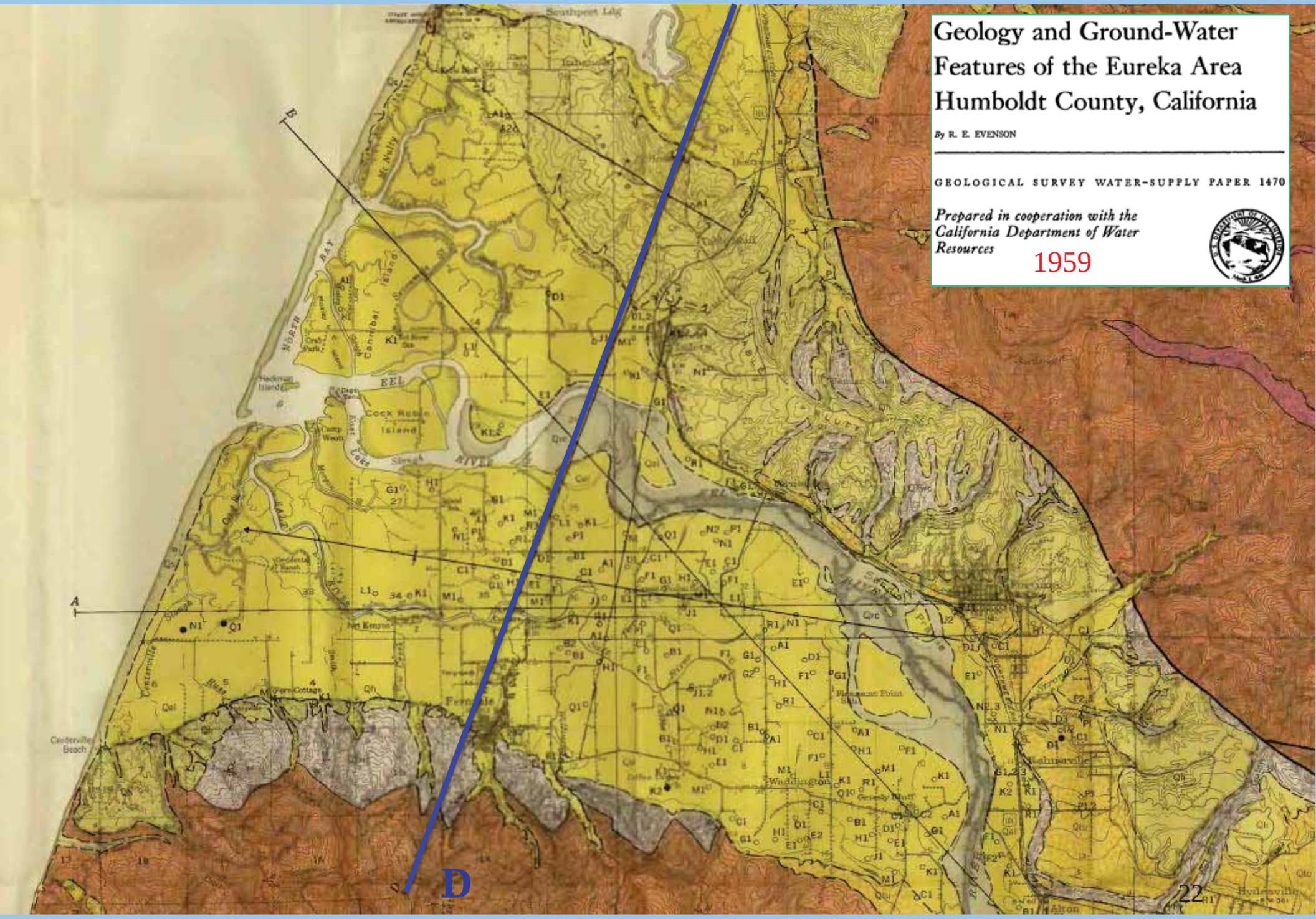
By R. E. EVENSON

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1470

Prepared in cooperation with the California Department of Water Resources

1959

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A
B
D
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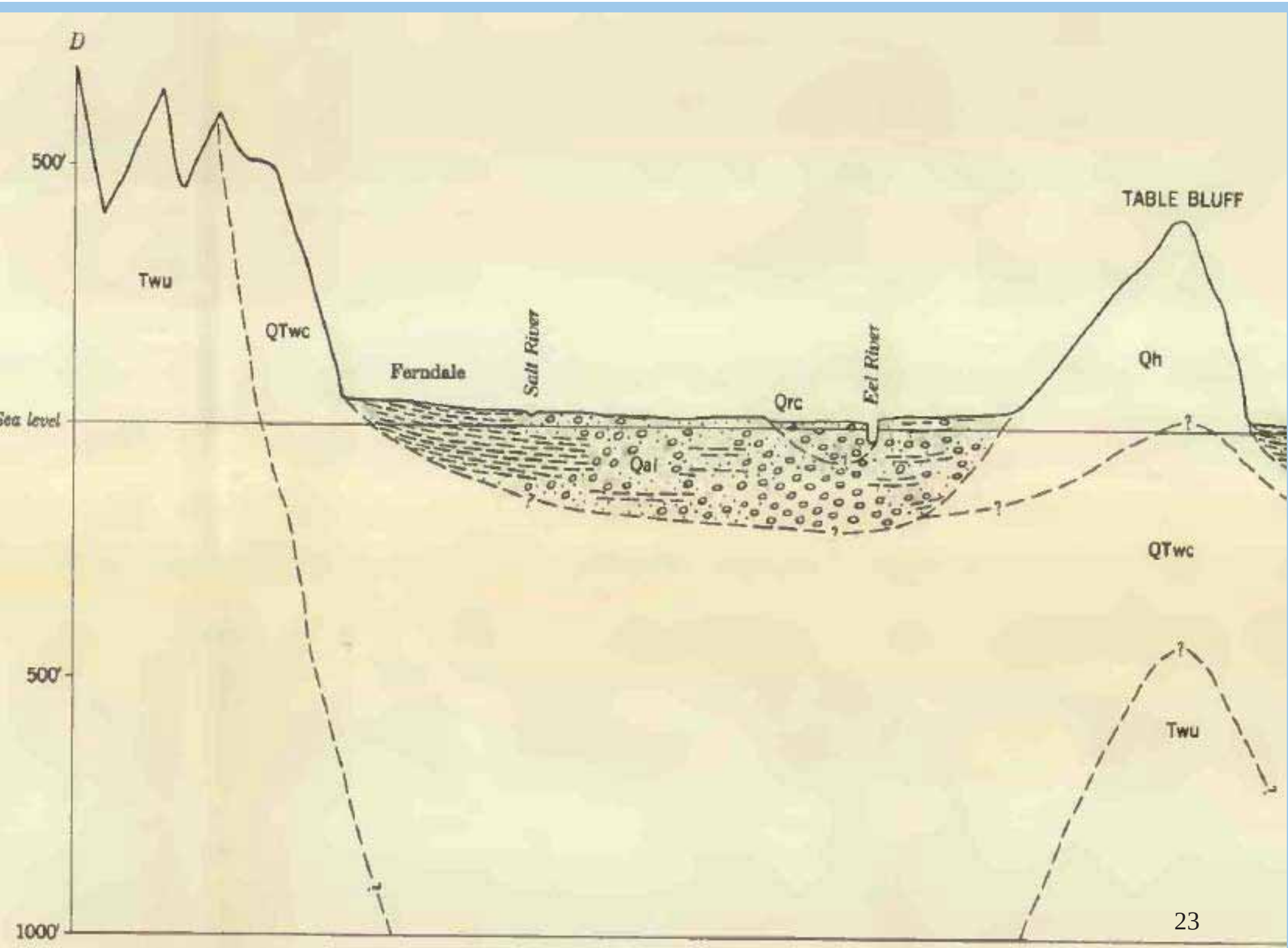
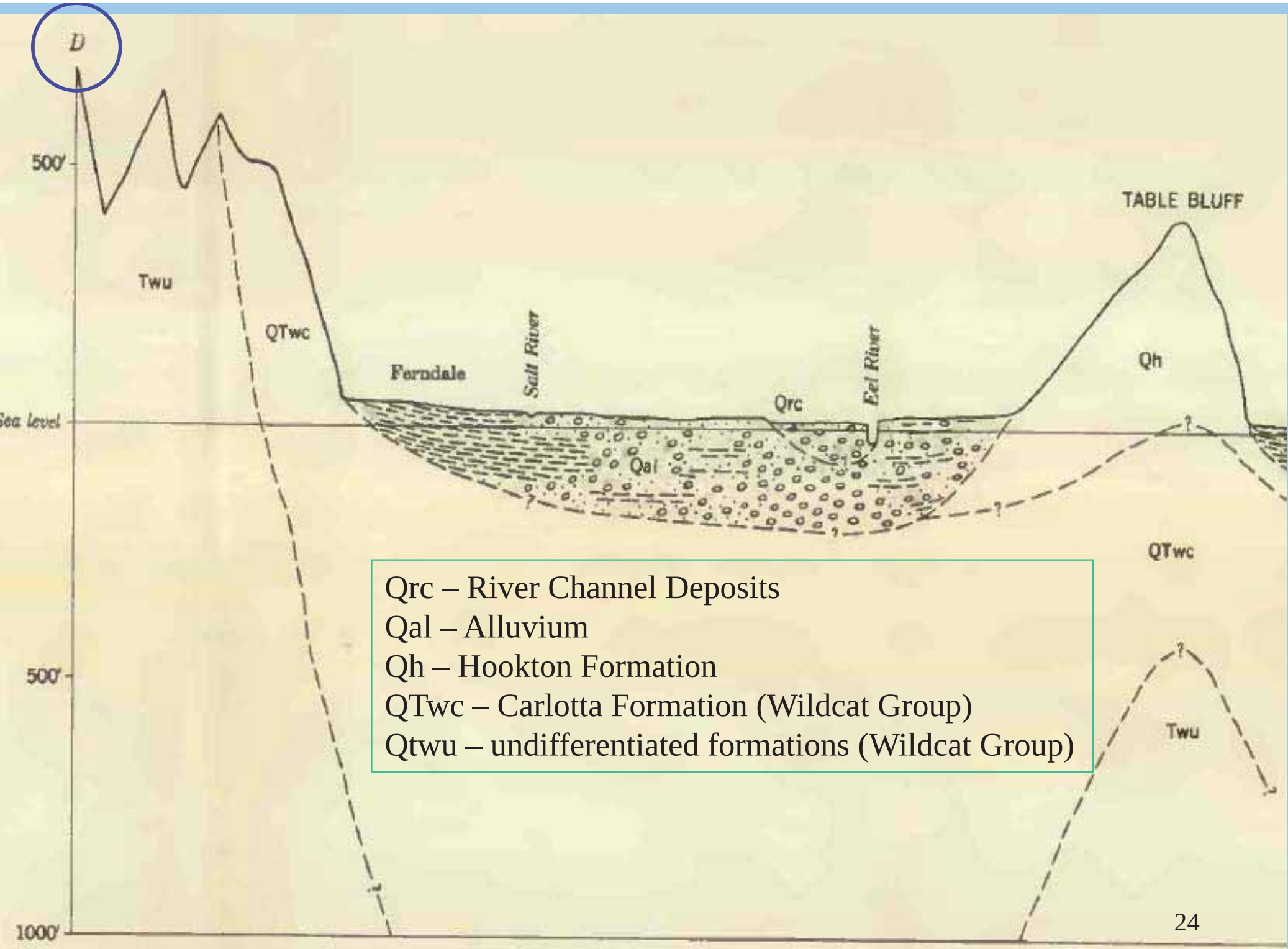
Fortuna
Ferndale
Centerville Beach



Source: Geology and Ground-Water Features of the Eureka Area, Humboldt County, California (Evenson, 1959)



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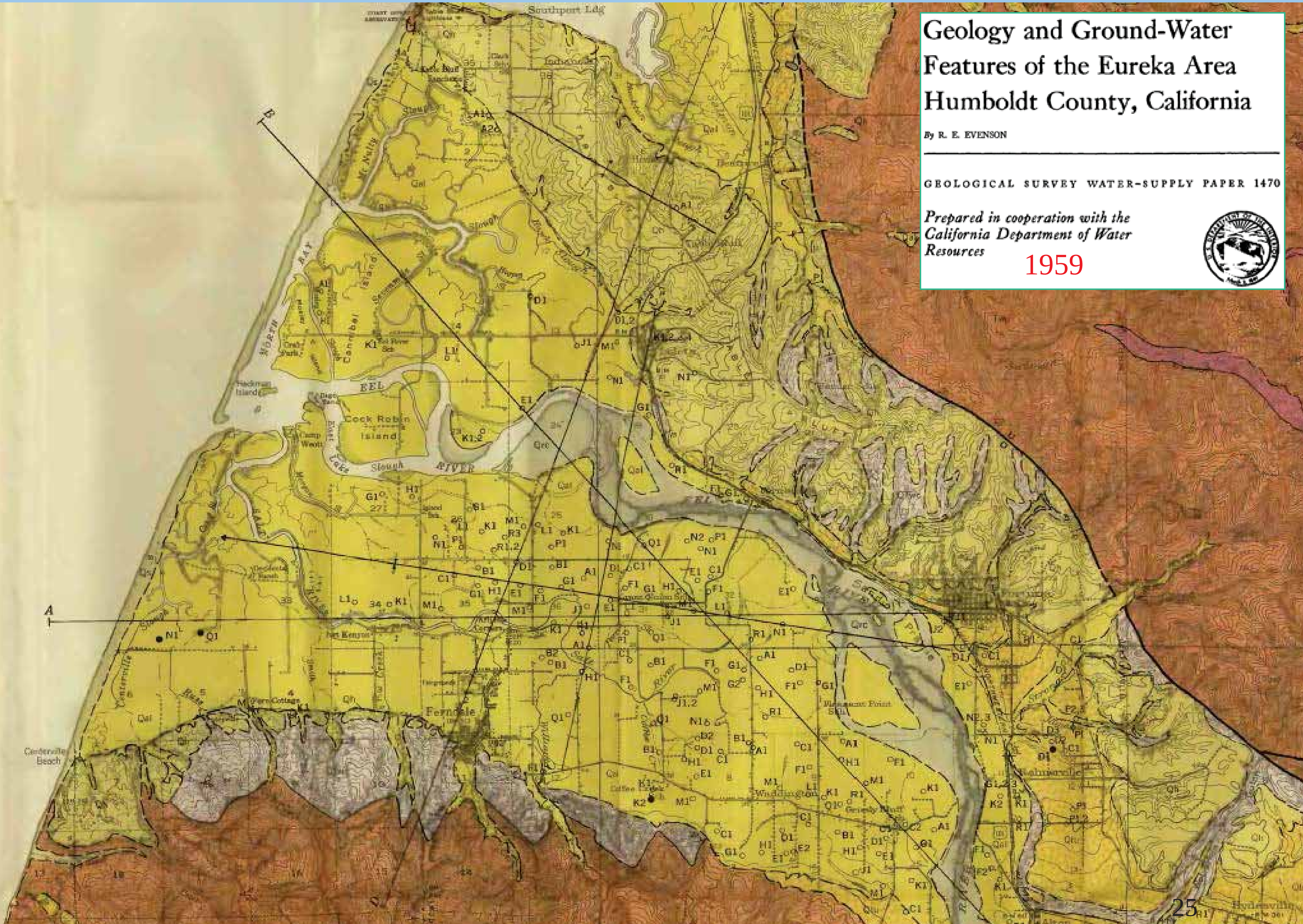

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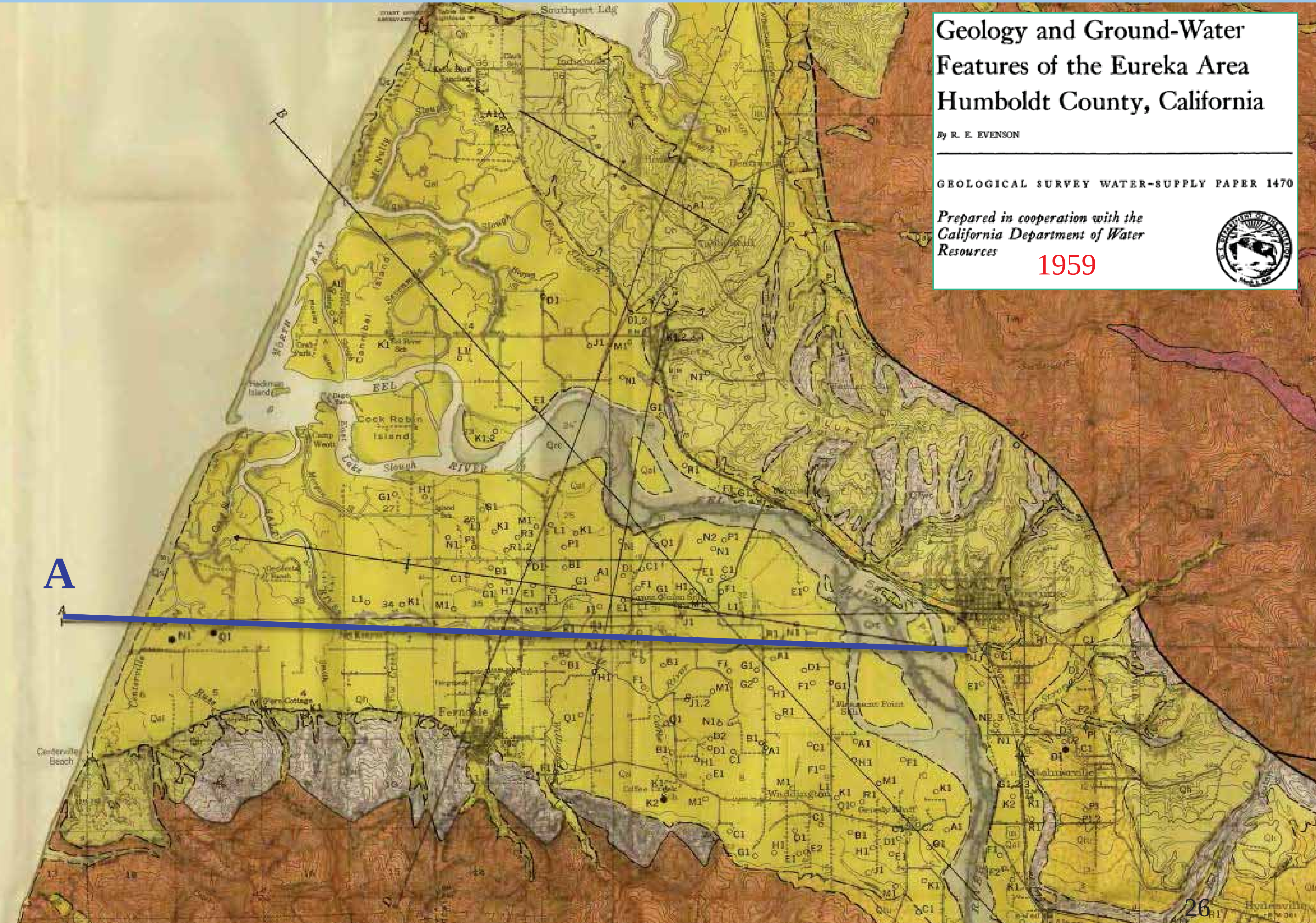
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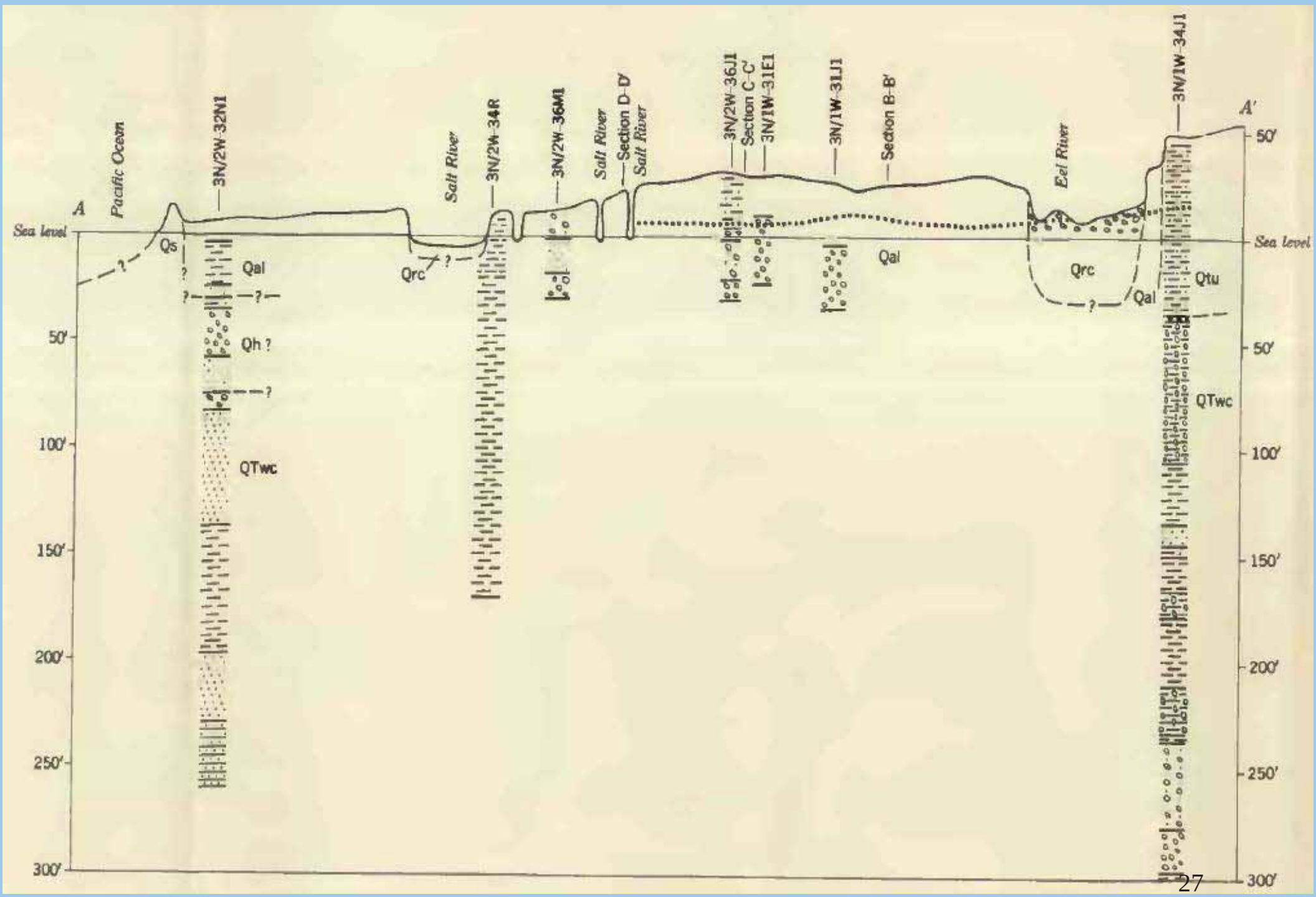

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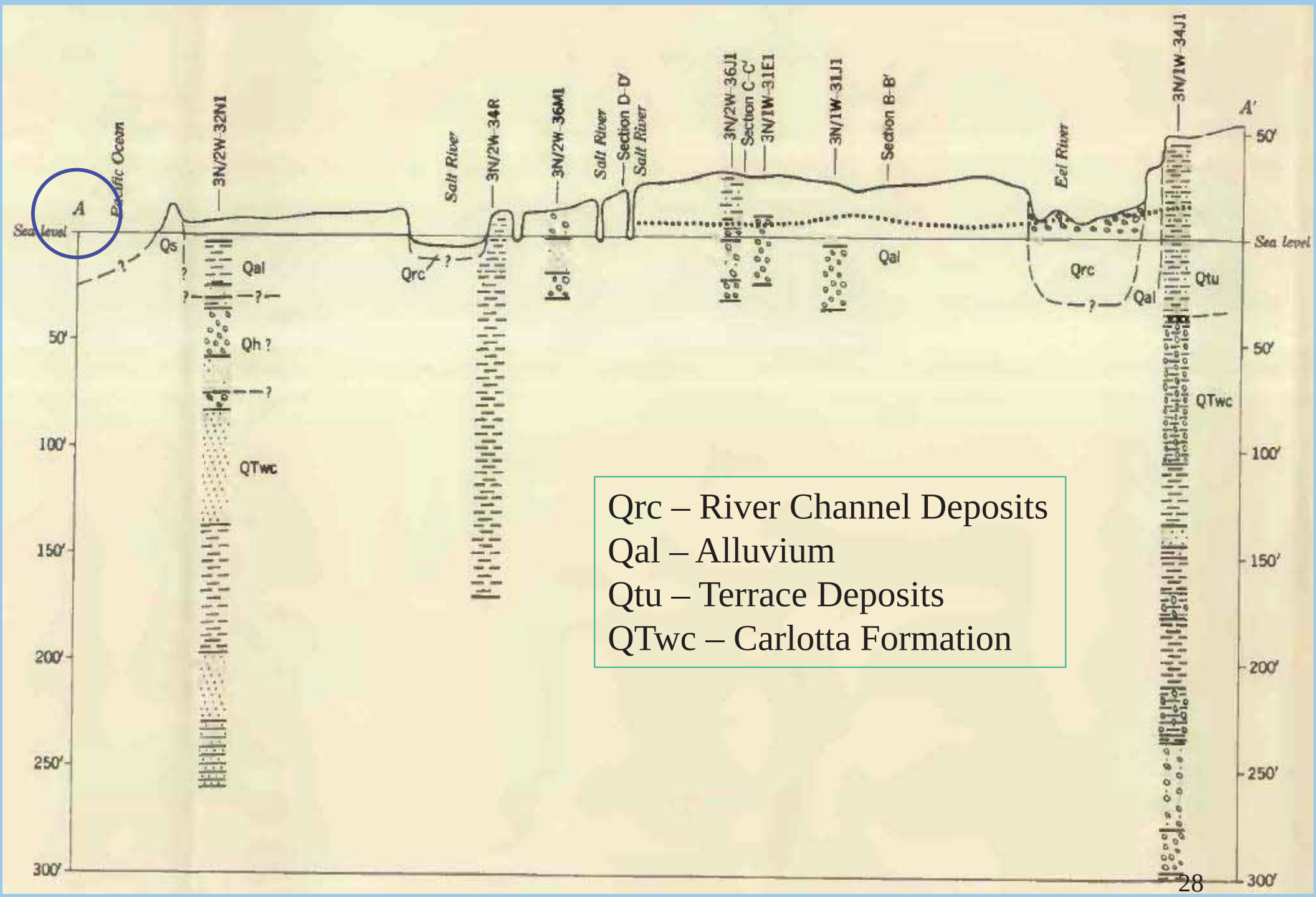

Qrc – River Channel Deposits
Qal – Alluvium
Qtu – Terrace Deposits
QTwc – Carlotta Formation

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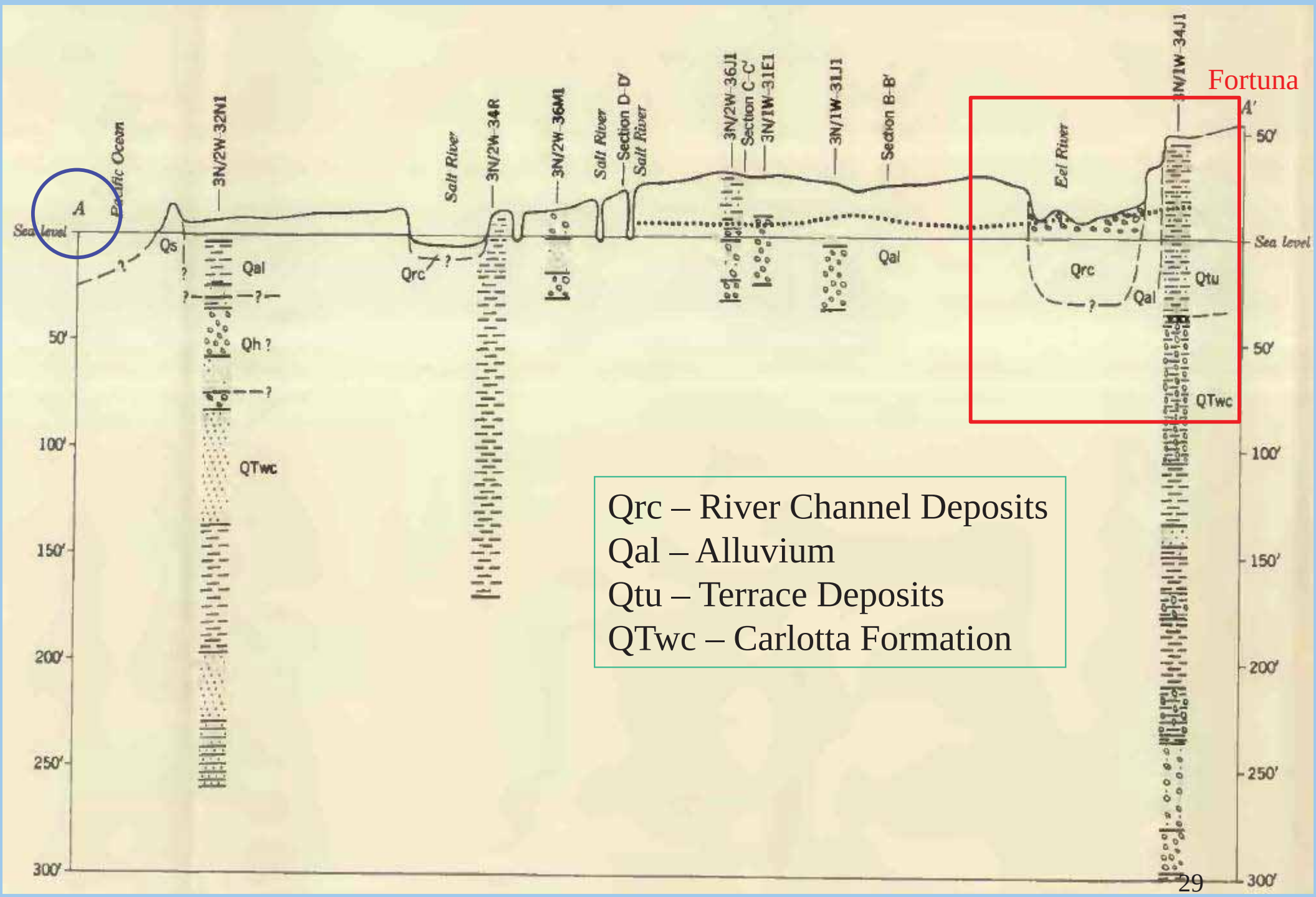

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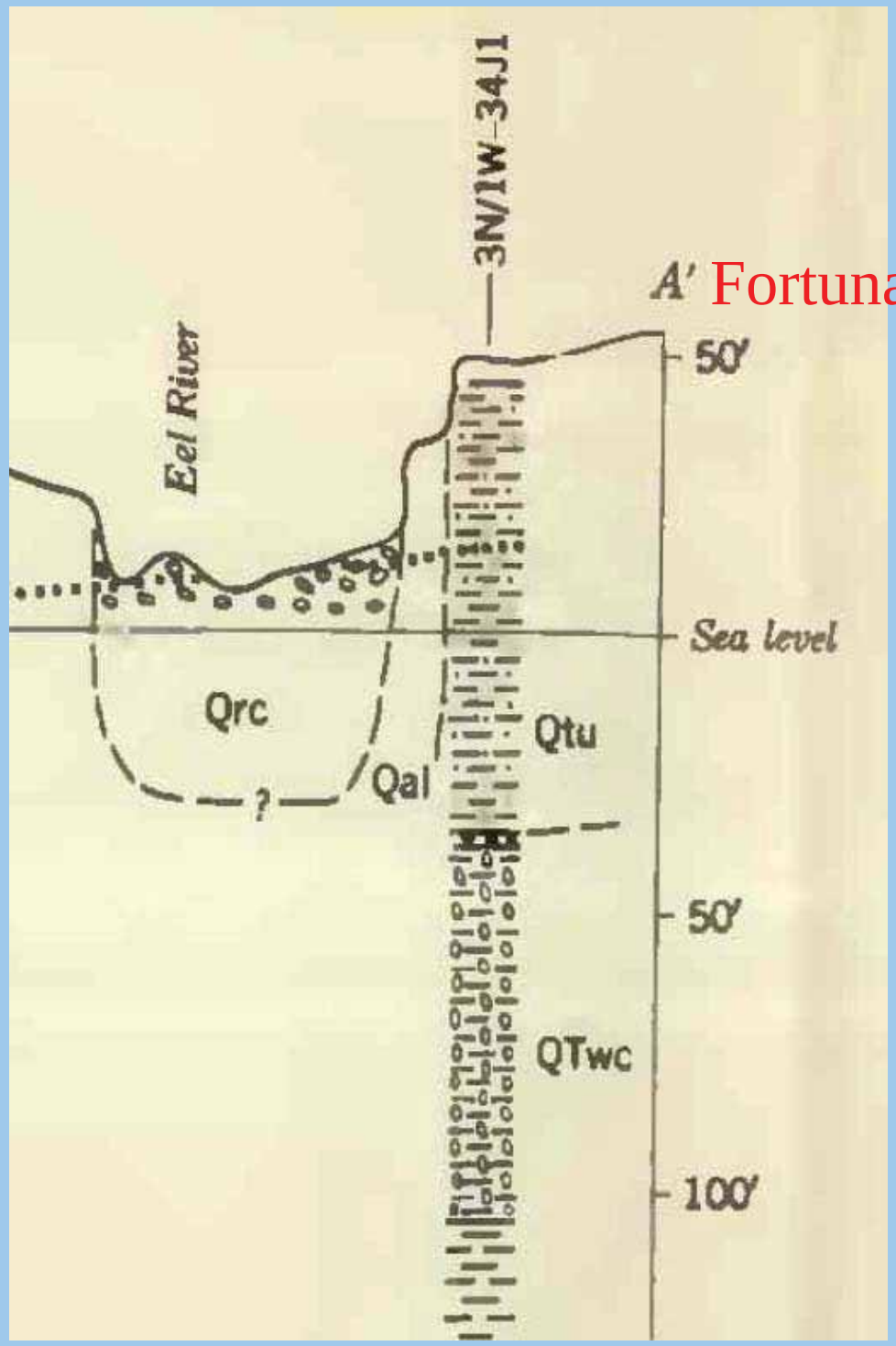

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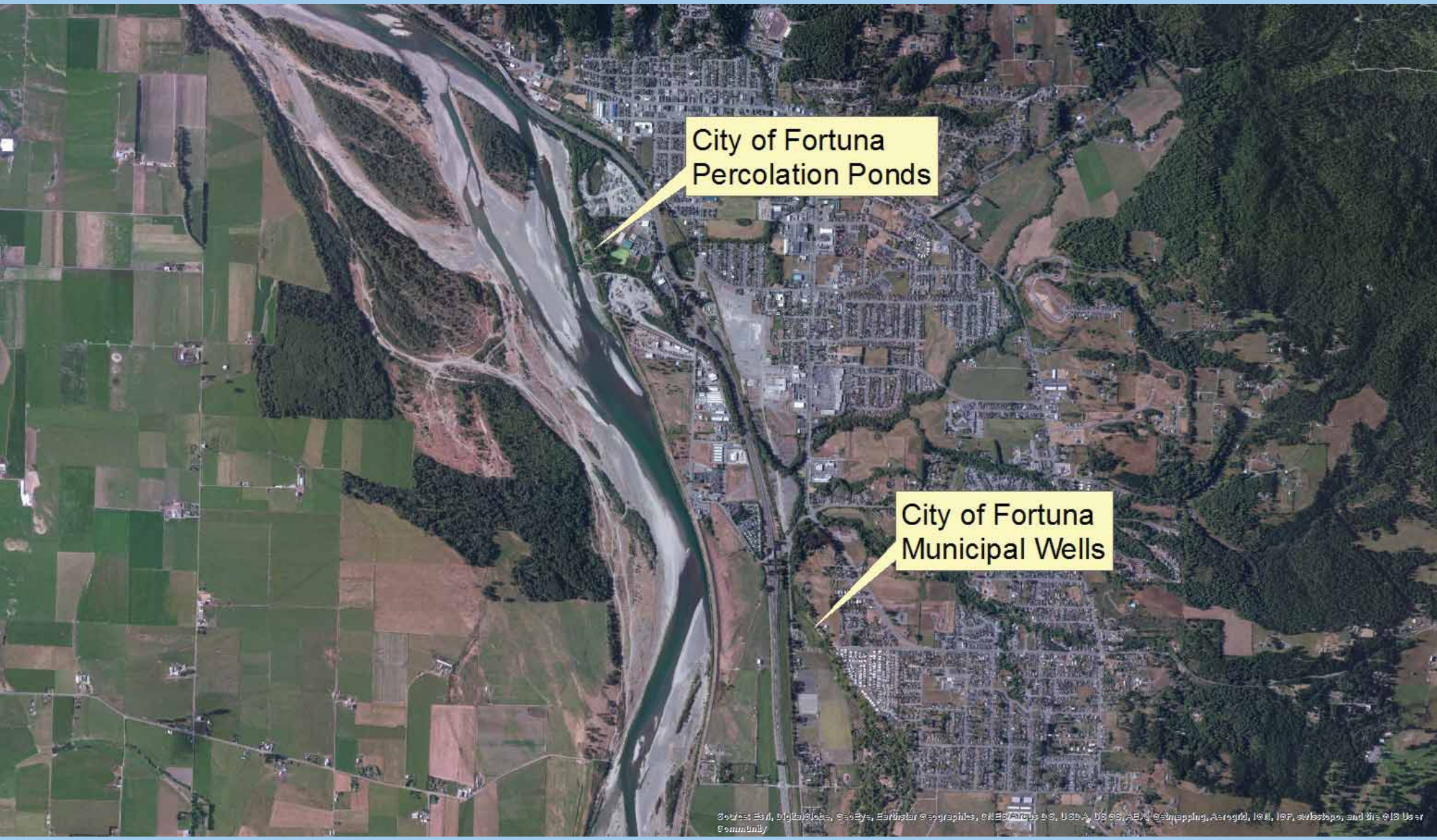
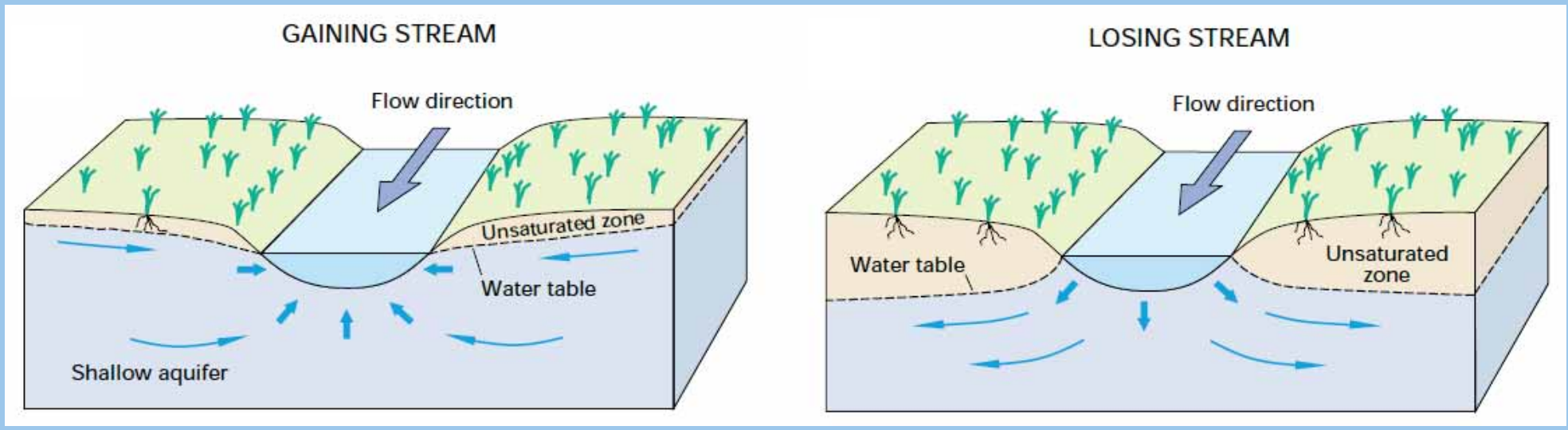


Imagery: Bing Maps

<u>City of Fortuna</u>

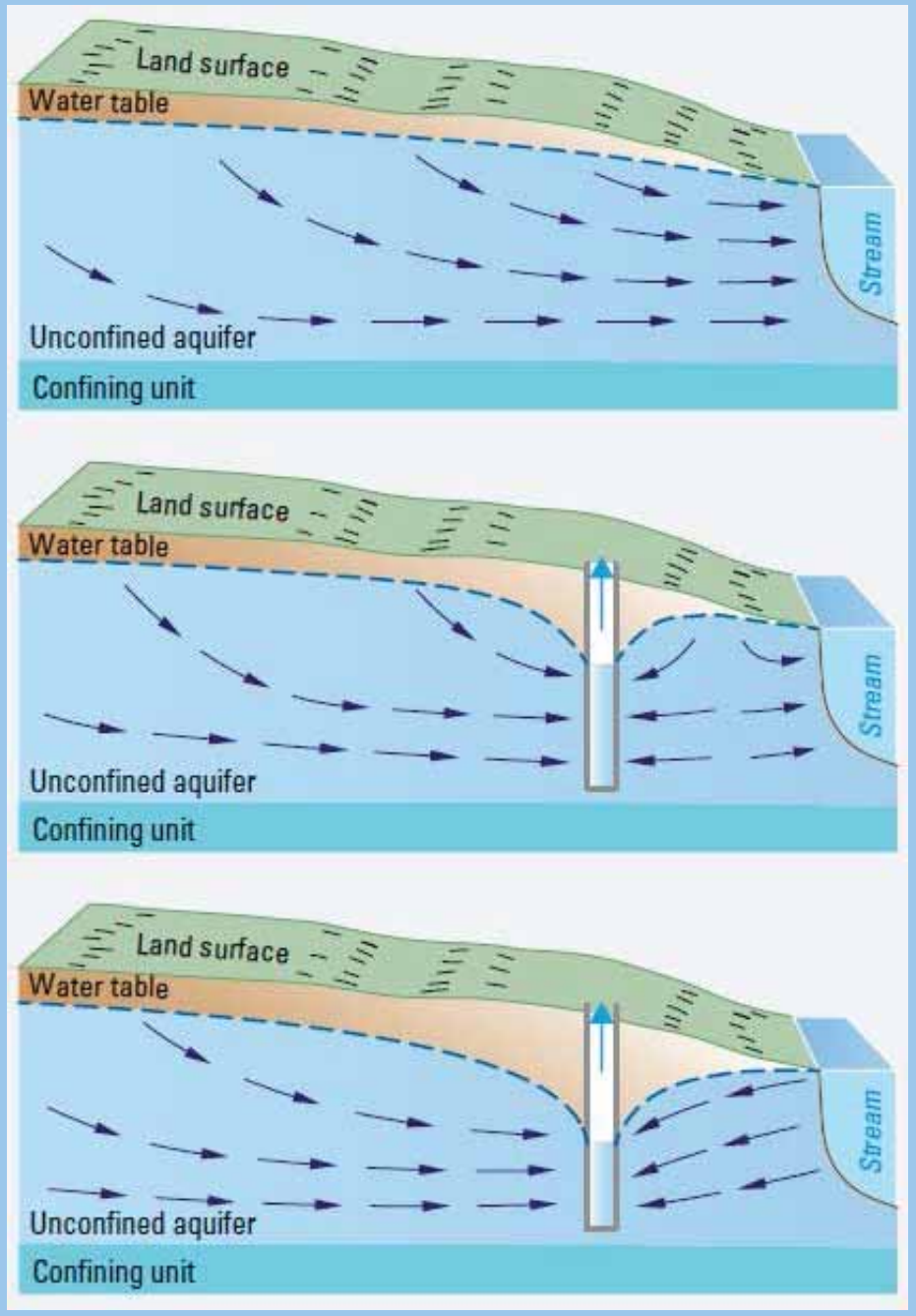
- Population 11,840 (2013)
- 4,300 water connections (2011)
- Economically disadvantaged community - 69% of state MHI (2013)

Groundwater and stream interactions



Source: USGS Circular 1139

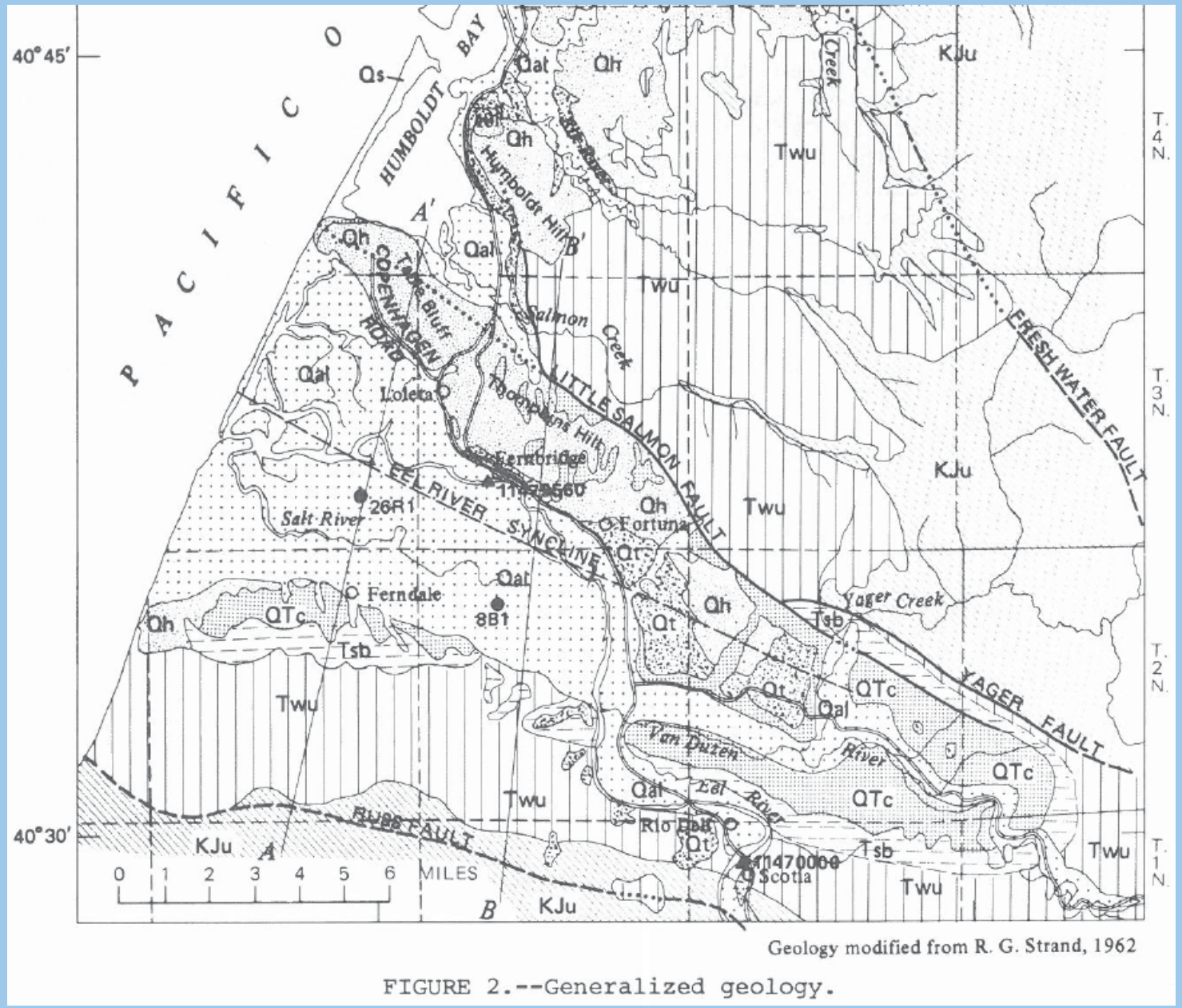
Pumping effects on groundwater and streams



Source: USGS Circular 1139

Absence of surface flow in lower Eel River (September 2014)

Source: The Press Democrat (9-14-2014)



Geology modified from R. G. Strand, 1962

FIGURE 2.--Generalized geology.

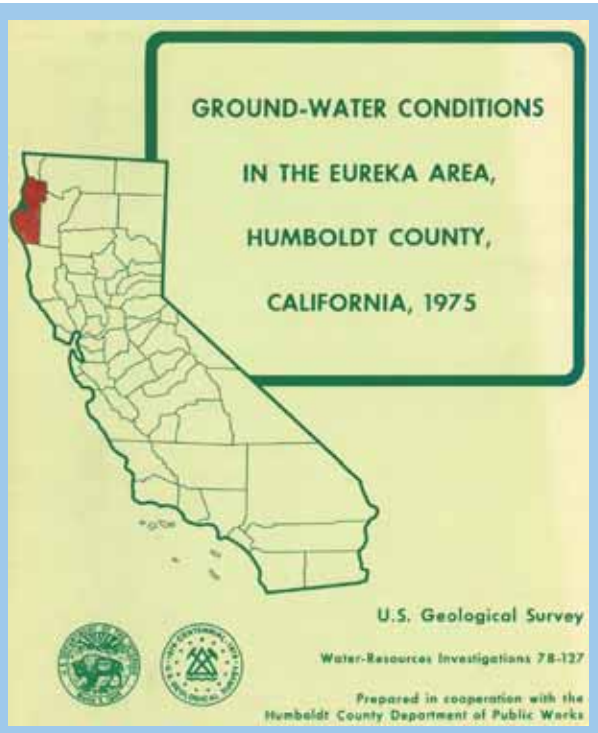


TABLE 3.--*Irrigation pumpage*

[Pumpage given in acre-feet]

Area	Land-use method						Energy-lift method
	1952[1]		1958[2]		1968[3]		1975
	Acres	Pumpage	Acres	Pumpage	Acres	Pumpage	Pumpage
Eel and Van Duzen River valleys upstream from confluence	1,200	1,200	1,900	3,200	1,900	3,000	2,900
Eel River flood plain	8,400	8,400	9,000	14,800	9,800	15,800	14,400
Mad River flood plain	1,600	1,600	1,900	3,200	2,400	4,100	4,100
Other areas[4]	800	800	1,000	1,700	1,400	2,300	2,500
Total	12,000	12,000	13,800	22,900	15,500	25,200	23,900

[1]Evenson, 1959. Based on 1 acre-foot/acre (12 inches per unit area).
[2]Based on California Department of Water Resources, 1965a and 1965b.
[3]Based on file data, California Department of Water Resources, Red Bluff, Calif.
[4]Principally the Table Bluff-Eureka Plain area, Dows Praire-McKinleyville area, and Blue Lake area.

Source: Ground-water Conditions of the Eureka Area, Humboldt County, California, 1975 (USGS)

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Last update 2/27/04

North Coast Hydrologic Region
Eel River Valley Groundwater Basin

California's Groundwater
Bulletin 118

Groundwater Budget (Type B)

Estimates of groundwater extraction are based on a survey conducted by the California Department of Water Resources in 1996. The survey included landuse and sources of water. Estimates of groundwater extraction for agricultural and municipal/industrial uses are 49,000 and 1,400 acre-feet respectively. Deep percolation from applied water is estimated to be 9,500 acre-feet.

Last update 2/27/04

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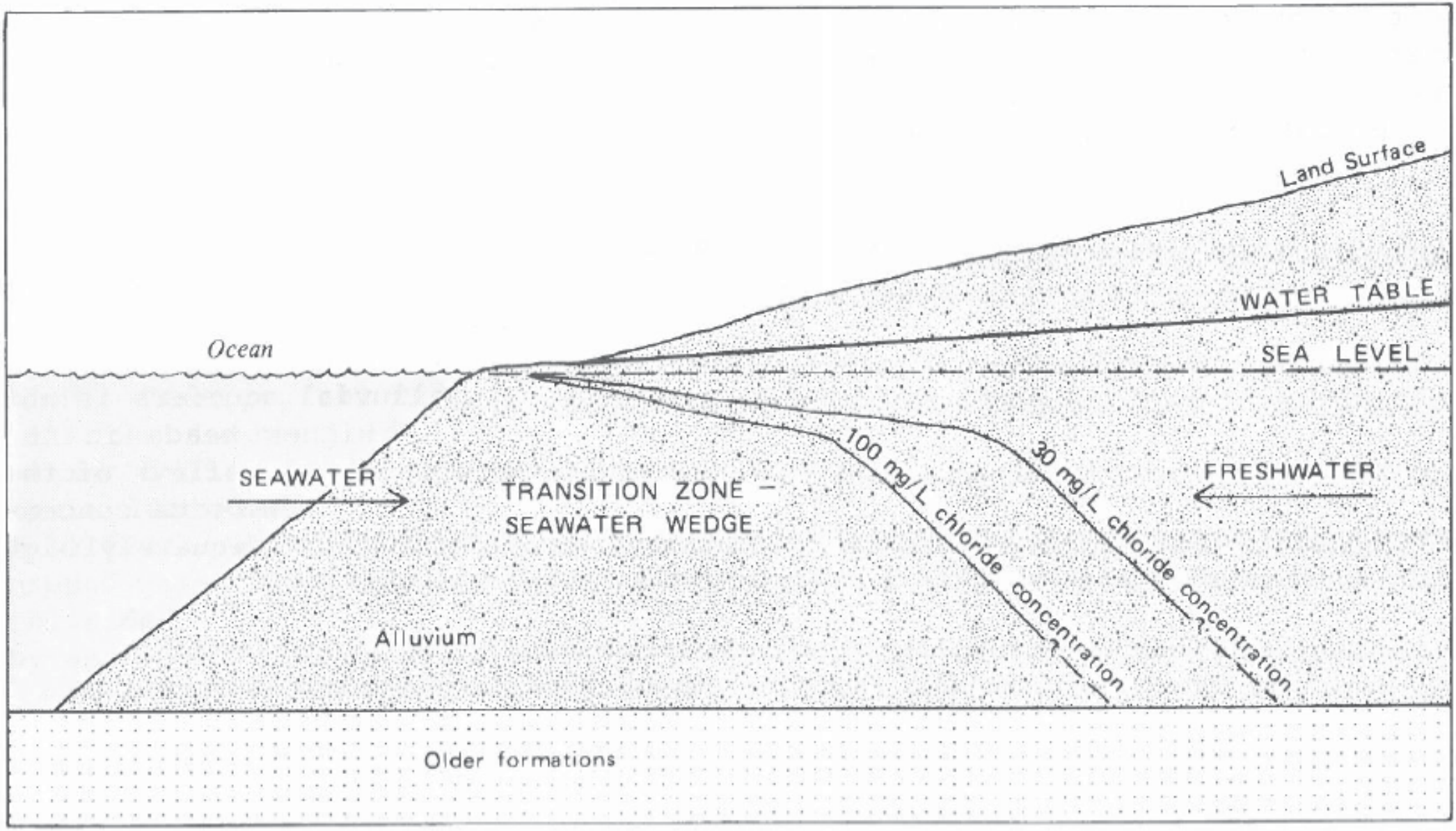


FIGURE 9.--Schematic section showing transition wedge in shallow aquifer.

Source: Ground-water Conditions of the Eureka Area, Humboldt County, California, 1975 (USGS)

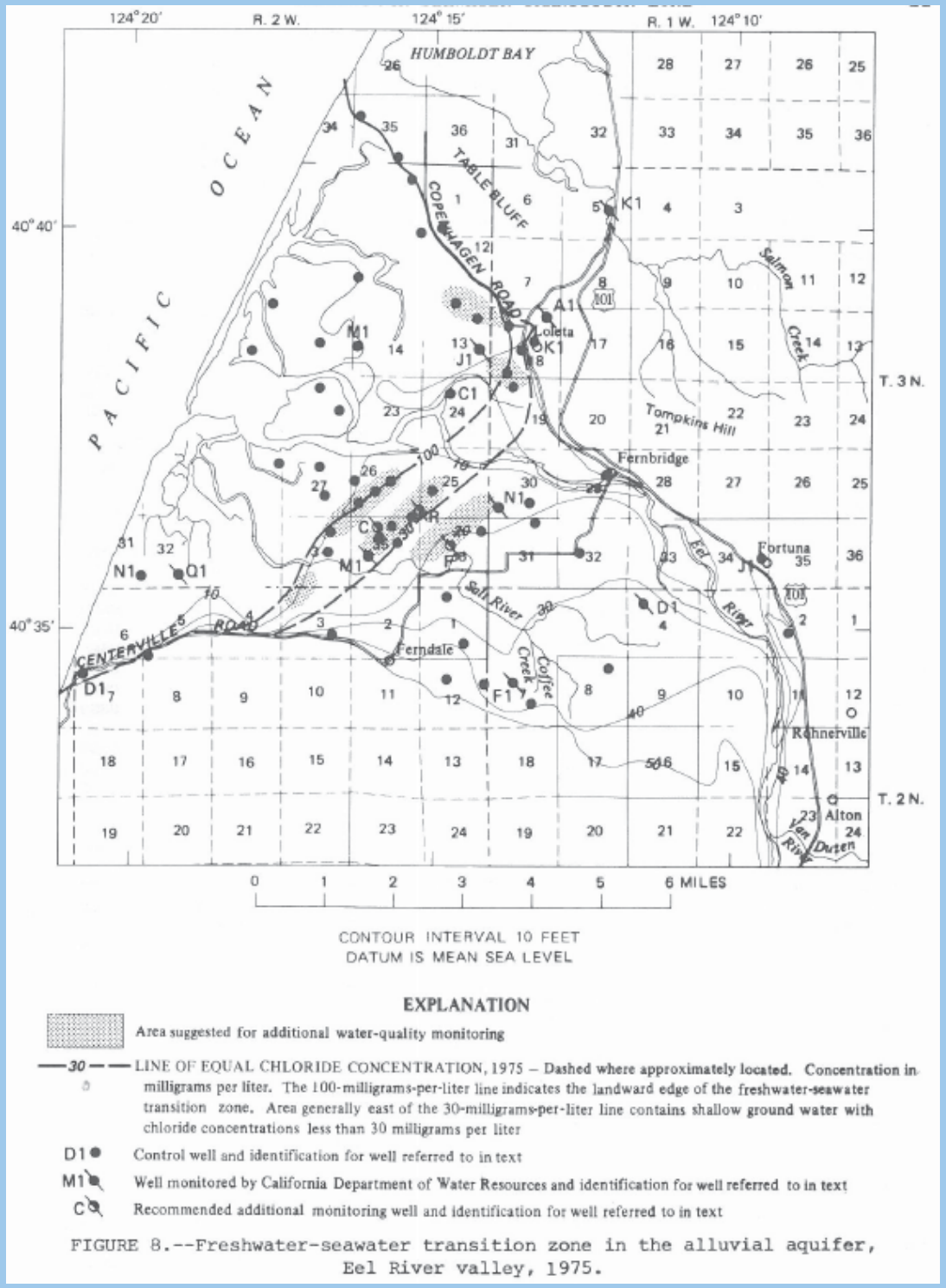
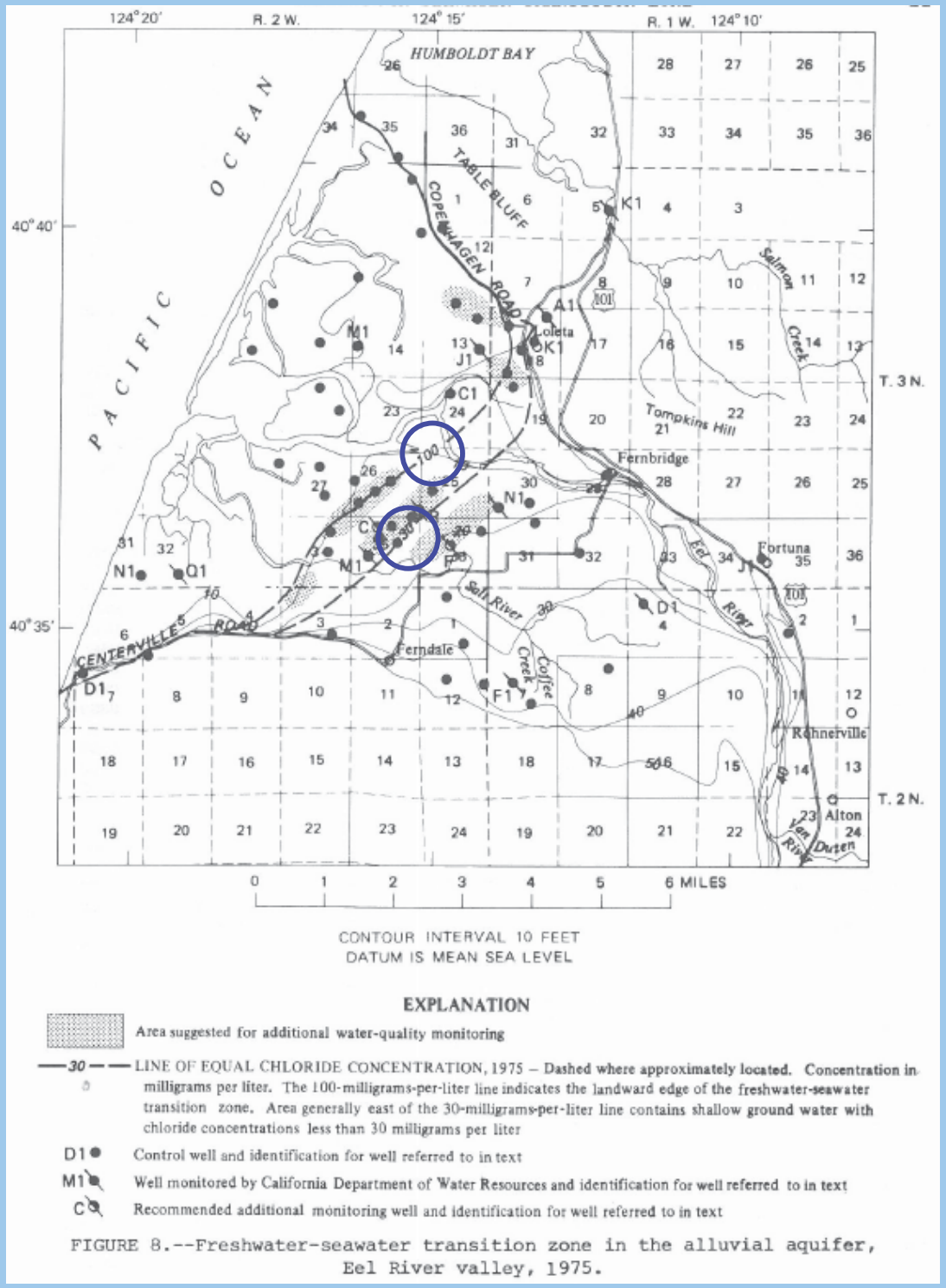


FIGURE 8.--Freshwater-seawater transition zone in the alluvial aquifer, Eel River valley, 1975.

Source: Ground-water Conditions of the Eureka Area, Humboldt County, California, 1975 (USGS)



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GROUND WATER MEETING FOR THE EEL RIVER BASIN

April 27, 2015

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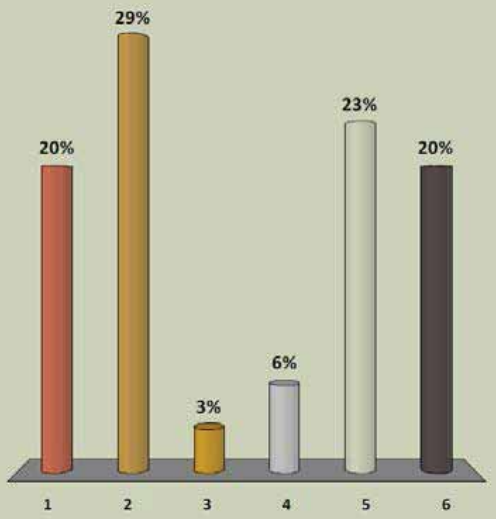
April 27, 2015

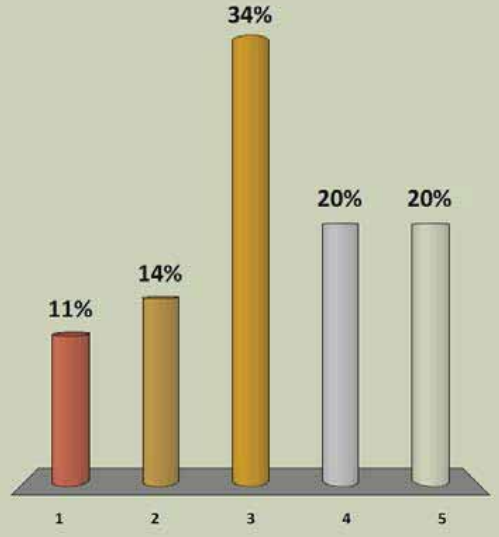
WHO IS REPRESENTED TODAY?

1. Municipal
2. Agricultural
3. Residential
4. Environmental
5. Scientific
6. Other



IN YOUR OPINION, THE STATE OF GROUND WATER FOR THE EEL RIVER BASIN IS?

1. An existing problem
2. An imminent problem
3. Future problem
4. Unlikely to be a future problem
5. Don't know

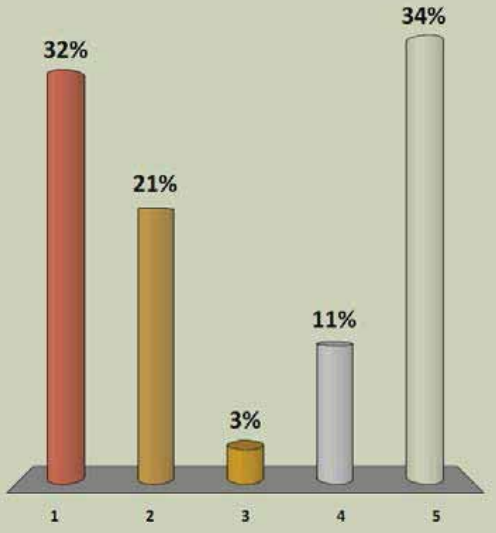


GROUND WATER MEETING FOR THE EEL RIVER BASIN

April 27, 2015

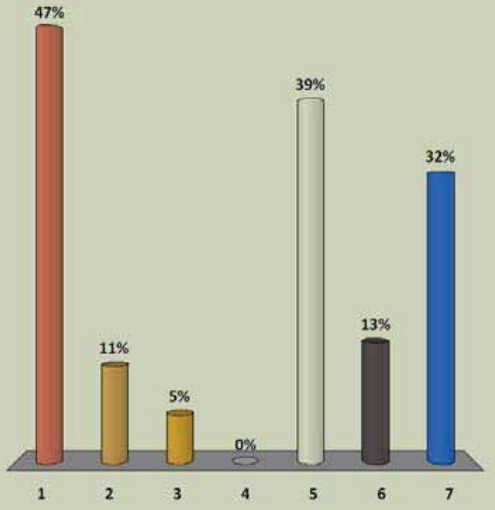
WHICH ISSUES ARE MOST IMPORTANT?

1. Loss of local control though state intervention
2. Pumping restrictions
3. Mandatory flow meters
4. High fees
5. Potential for changing hydrology from over usage



ARE YOU CONCERNED ABOUT?
(PICK TOP TWO ITEMS)

1. Lowering water tables/ reduced storage
2. Sea level intrusion
3. Degraded groundwater quality
4. Land subsidence
5. Reduced instream flows
6. All of the above
7. None likely to occur with current usage

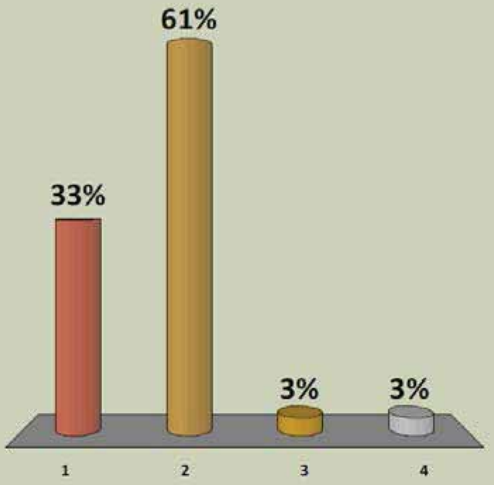


GROUND WATER MEETING FOR THE EEL RIVER BASIN

April 27, 2015

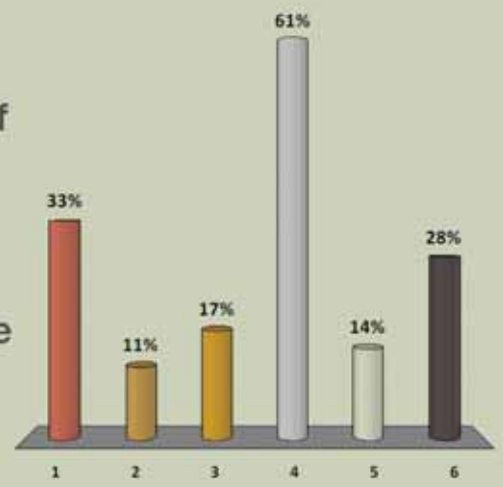
WHAT SHOULD GROUND WATER AGENCY GOVERNANCE BE?

1. County only
2. County in partnership with others (cities, water district, RCD, etc)
3. Other- creation of a new special district
4. None of the above: let the state control Eel River groundwater



WHAT SHOULD BE THE PRIORITIES FOR THE WORKING GROUP? (PICK TOP TWO)

1. Resolve governance structure
2. Funding plan
3. Determine the Co. of Humboldt's role
4. Gather existing groundwater data
5. Explore changing the basin's priority level
6. All of the above



Working Group

Eel River Valley Groundwater Working Group

Stakeholders

- Agricultural producers
- Municipal water suppliers
- Environmental interests
- Domestic users
- Well drillers
- Local agencies
- State/federal regulatory agencies
- General public

Working Group Formation

1. Review Working Group Formation Announcement (October 6, 2015)
2. Discuss role and composition of Working Group
3. Identify members

Spectrum of Public Participation

INCREASING LEVEL OF PUBLIC IMPACT

	Inform	Consult	Involve	Collaborate	Empower
Public participation goal	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunties and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the devlopment of alternatives and the identification of the preferred solution.	To place final decision-making in the hands of the public.
Promise to the public	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.
Example techniques	• Fact sheets • Web sites • Open houses	• Public comment • Focus groups • Surveys • Public meetings	• Workshops • Deliberate polling	• Citizen advisory committees • Consensus-building • Participatory decision-making	• Citizen juries • Ballots • Delegated decision

Source: Community Water Center (2015)

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Goal for Eel River Valley Groundwater Working Group

Proposition 1 Grant Program

Proposition 1 Sustainable Groundwater Planning Grant Program: Counties with Stressed Basins

(draft Proposal Solicitation Package, August 2015)

Proposition 1 Sustainable Groundwater Planning Grant Program: Counties with Stressed Basins

(draft Proposal Solicitation Package, August 2015)

1. Eligible projects include:

   Update or develop groundwater plans that protect basins and their beneficial uses and help facilitate basin-wide sustainable groundwater management, or actions that will lead to the update or development of such plans

2. Examples:

   - Interagency agreements for GSA
   - Completion of basin assessments, determining data gaps, groundwater modeling, etc.

3. Humboldt County eligible for $250,000

4. Applications due December 2015, grants awarded spring 2016

Proposed Work Plan Content

Proposed Work Plan Content

1. Support formation of GSA and preparation of GSP

   - Work products: GSA charter and GSP framework

2. Develop data and analysis to improve understanding of groundwater basin and provide a sound technical basis for the GSP

   - Work product: Preliminary water balance

3. Key elements:
   - Characterization of different aquifers (size, extent, properties, connectivity)
   - Groundwater flow patterns and recharge areas
   - Well information (location, depth, pumpage)
   - Land use information (irrigated pasture, return flows)
   - Groundwater/surface water interaction
   - Address spatial and temporal variability

Set Next Meeting Date

Information will be posted at

www.humboldtgov.org/groundwater