



Bulletin 74 Technical Advisory Committee Plenary Meeting #2 Draft Summary

Plenary Meeting #2
June 21, 2021, 1:00 pm – 4:00 pm
Virtual Meeting

Meeting Summary

California Department of Water Resources (DWR) hosted the second DWR Bulletin 74 Update Project Technical Advisory Committee (TAC) meeting with support from the Kearns & West facilitation team and Luhdorff & Scalmanini Consulting Engineers (LSCE) technical team. For a full list of attendees, please see the end of this summary.

This meeting summary contains a general description of presentation topics and summaries of closing remarks, question-and-answer sessions, poll responses, and question & answer sessions.

Welcome, Introductions, and Agenda Review

Julie Leimbach, facilitator from Kearns & West, welcomed attendees to the second TAC Plenary meeting. She reviewed the TAC purpose, process goals, and meeting objectives.

The meeting objectives were the following:

- Conclude Phase 1 of Focus Groups.
- Prepare TAC members for Phase 2 of Focus Groups.
- Provide next steps in the Bulletin 74 Well Standards Update process.

Polling Questions

The TAC members participated in polling questions #1 and #2. Polling questions and responses are included in Appendix A.

Review of Well Standards Update Process

Julie Haas, DWR Senior Engineer and Project Manager for the DWR Bulletin 74 Update Project, gave a review of the Wells Standards Update Process. She noted that Phase 1 was complete and thanked the project team, TAC members, and the stakeholders who have been following the process.

She outlined the overall schedule for the Well Standards Update.

- June – November 2021: During the next four months the project team will draft chapters of the updated Well Standards.
- November 2021 – February 2022: The TAC will review the draft chapters of the updated Well Standards in Phase 2 Focus Groups.
- March – June 2022: After DWR has considered the TAC's feedback, it will prepare an administrative draft for internal review, completing in the summer of 2022.
- August 2022: The TAC will then preview the public draft before it goes out for public review in the fall of 2022.
- September – November 2022: DWR will collect and consider public comments.
- November – December 2022: The TAC will preview the final Well Standards before they are published in December 2022.

The timeline for getting from the public review draft to the final draft may change slightly depending on how long the review of public comments takes DWR.

Haas reiterated that DWR very much appreciated the TAC's contributions. She noted that communication between stakeholders has increased in response to the Well Standards Update:

- The California Conference of Directors of Environmental Health (CCDEH) has reconvened their Water Wells Technical Advisory Committee, increasing communication between Local Enforcement Agencies (LEAs).
- Industry organizations have asked DWR to include the Well Standard Updates on their agendas and in their trainings.
- DWR has become more connected with the State Water Resources Control Board as they coordinate on the Model Well Ordinance Process and drywells. Since Californians are increasingly dependent on

groundwater, she expects that this coordination will continue to be necessary even after the Well Standards Update.

Haas reiterated the importance of the Focus Group meeting summaries as a resource for the Project Team when preparing the updated standards. Haas requested all TAC members review the summaries to confirm that their comments were correctly captured.

State Water Resources Control Board Model Well Ordinance Process and Drywells

John Borkovich, State Water Resources Control Board (SWRCB) Groundwater Monitoring Section Chief with the Division of Water Quality, presented on the Model Well Ordinance Process.

Borkovich outlined that the Water Boards will begin the public process for the update to the Model Well Ordinance in 2022 and plans to adopt it in 2023. The updated Model Well Ordinance plans to address GHEWs, dry wells, electronic submission of well completion reports, and well locations.

Amanda Magee, SWRCB Senior Engineering Geologist with the Division of Water Quality and STORMS Unit Chief, presented on SWRCB's Strategy to Optimize Resource Management of Stormwater (STORMS) threat-based framework for dry wells and other infiltration BMPs.

The top three research needs among those identified in the Board's California Drywell Guidance Research and Recommendations are:

- Stormwater quality and risk to groundwater
- Pollutant attenuation within the vadose zone
- Pretreatment guidance and effectiveness studies

The Board is considering how to incorporate contaminant attenuation and pre-treatment in the regulatory framework. Magee provided a threat-based framework that includes:

1. Land use as proxy for threat to groundwater
2. Attenuation rates based on soil types for commonly occurring pollutants in urban runoff
 - a. How to address CECs and dissolved or highly soluble pollutants
 - b. Change in attenuation over time

3. Pretreatment to reduce clogging and discharge of pollutants to vadose zone
4. Where existing groundwater quality is poor, consider potential benefit to groundwater quality via dilution
5. Utilize source control to address mobile/water soluble pollutants

Reflections on Phase 1 Focus Groups

Scott Lewis, LSCE Principal Geologist, provided some reflections from the Phase 1 Focus Groups. For more information, refer to the presentation slides on the [Box site](#).

Lewis's presentation included the following:

- Purpose and Goal of Phase 1 Focus Group Meetings
- Planning and preparation for Focus Group Meetings
- Thoughts on Well Standards Guiding Principles 1, 5, and 9.
- Major topics of discussion from each of the five Focus Groups
- Overall takeaways, thoughts and observations from the Phase 1 Focus Group Meetings

Lewis reported on overall takeaways from the Focus Groups Phase I:

- Take out ambiguous and discretionary language to avoid CEQA.
- Keep standards flexible so that drillers and LEAs can respond to site-specific conditions.
- There will always be a situation, condition, or issue that cannot be addressed in the Standards.
- Define "low risk" wells, to which minimum ministerial Standards can apply.
- There was interest in "white paper" issues that cannot be addressed in the standards.
- Many LEA's are under-resourced and need more support in reviewing well permit applications, especially for the variance process.
- There is a need for ongoing training in the Well Standards.

Question and Answer Session

Below is a summary of questions and comments on the proceeding section

and the responses from the project team.

Polling Questions

The TAC responded to polling question #3 and #4. See Appendix A for responses.

Break

Summary of Proposed White Paper Topics Identified in Phase 1 Focus Groups and Process

Julie Haas returned to give a summary of the potential white paper topics identified in the Phase 1 Focus Groups. Some white paper topics, e.g. issues related to groundwater contamination, are related to wells but are outside the scope of Bulletin 74.

Haas presented 23 potential white paper topics in the following categories:

- Research on effective seals
- Policy on effective seals
- Research on stormwater injection wells (drywells)
- Policy on stormwater injection wells
- Research on destruction
- Policy on destruction
- Other research
- Other policy

Polling Questions

The TAC responded to polling question #5. See Appendix for responses.

Phase 2 Focus Group Plan

Till Angermann, LSCE Principal Hydrogeologist, gave an overview of the plan for Phase 2 of the Focus Group.

Angermann's presentation included the following key points:

- Focus Groups for Phase 2 will be based on the four well types covered in the standards: water wells, monitoring wells, cathodic protection

wells, and geothermal heat exchange wells.

- Phase 2 Focus Group meetings will be held virtually and facilitated similarly to Phase 1 Focus Groups.
- TAC members are expected to provide input on specific sections of the draft chapters. TAC members should work with any constituencies they represent to provide representative feedback.
- TAC members should prepare feedback that is specific, solution-oriented, and aligned with DWR's mandate, Vision, and Guiding Principles.

Question and Answer

- Comment (C): Phase 2 will be more efficient and focused since the TAC has shared a lot of information and learned a lot in Phase 1. It will be a successful project.
- Q: When will DWR provide draft chapters for review? How much time will TAC members have to prepare feedback for the Focus Group meetings?
 - A: DWR will share draft chapters 4 weeks ahead of the first meeting for each Focus Group. Focus Groups will have at least two weeks in between meetings to gather additional input.
- Q: What counts as a group or constituency?
 - A: Some TAC members are representing groups or organizations (e.g., AWWA, CGA, CCDEH, Water Boards, etc.) and have committed to coordinate with their constituency to reflect the larger group's interests to DWR. DWR welcomes any TAC members to coordinate with colleagues in preparing comments to bring to FG discussions.
- Q: The CA Department of Toxic Substances Control (DTSC) generally provides a "Statement of Reasons" for any published guidance. Is DWR considering producing a similar type of document for the Updated Well Standards?
 - A: DWR will document the basis for any changes to the Well Standards. This documentation of context will be recorded outside of the Well Standards text.
- Q: Does DWR plan to evaluate the cost and economic impact of the

Well Standards Update?

- A: DWR does not explicitly take cost into account for the Well Standards, per the legislative mandate. However, the DWR Project Team will take into consideration any feedback that is relevant to the vision, mandate, and guiding principles for this Update.
- Q: Has DWR thought about how the Well Standards will address CEQA issues?
 - A: Guiding Principle #3 states that we will use discretionary language when there is good reason to do so. DWR has already received input to minimize discretionary language that may trigger CEQA review.

Closing Remarks

Kamyar Guivetchi, Chief of DWR Division of Statewide Integrated Water Management, thanks TAC members and provided closing remarks.

Review Next Steps & Action Items

TAC Members review all Phase 1 FG Summaries by July 1, 2021

Next Plenary TAC Meeting: Monday, October 1, 2021, 1:00 – 5:00 PM

Attendance

*Denotes California Groundwater Association Representative

+Denotes California Conference of Environmental Health Directors Representative

#Denotes Groundwater Resources Association of California Representative

Technical Advisory Committee

- David Alaniz, San Bernardino County Department of Public Health+
- Ed Anderson, Baroid Industrial Drilling Products
- Juan Anzora, Orange County Health Agency+
- Chris Beegan, State Water Resources Control Board
- Dana Booth, Sacramento County
- Jim Brookshire, Roadrunner Drilling & Pump Co., Inc.
- Kevin Brown, State Water Resources Control Board
- Aaron Button, State Water Resources Control Board
- Bill Cameron, Valley Water
- Tom Christopherson, Groundwater Solutions Group LLC
- Dean Coblish, Yellow Jacket Drilling
- Chris Coppinger, Geoscience Support Services Inc.
- Bill DeBoer, Montgomery and Associates#
- Randy Dockery, Gregg Drilling LLC
- Mike Duffy, Valley Water
- Adrienne Ellsaesser, Blackwater Consulting Engineers, Inc.
- Larry Ernst, Affinity Engineering
- David Field, Orange County Water District
- Randy Galinsky, Kinder Morgan
- Jacob Gallagher, Ellingson-DTD
- Christopher Guerre, CA Department of Toxic Substances Control
- Thomas Henderson, Eastern Municipal Water District
- Mark Howard, Layne Christensen Company
- Chris Hunley, Sacramento County Environmental Management Department+
- Vicki Jones, Merced County Department of Public Health+
- Misty Kaltreider, Solano County, Department of

Resource Management*

- Russell Kyle, Kyle Groundwater
- Bill Leever, Orange County Water District
- Mike Maggiora, Maggiora Bros. Drilling*
- Curtis McCalla, South West Pump & Drilling, Inc.
- Kevin McGillicuddy, Roscoe Moss Company
- Steve McKim, American Construction and Supply, Inc.
- Lisa Meline, Meline Engineering Corporation
- Travis Pacheco, Torrent Resources
- Keith Packard, East Bay Municipal Utility District
- Michael Palmer, de maximis, inc.
- Adam Questad, Geosyntec Consultants
- Ali Rezvani, State Water Resources Control Board
- John Ricker, County of Santa Cruz Health Service Agency (Retired)+
- Patrick Sarafolean, Minnesota Department of Health
- Adnan Siddiqui, Regional Water Quality Control Board, Los Angeles Region 4

- Allan Skouby, GeoPro, Inc.
- Kit Soo, Alameda County Water District
- Ronald Sorenson, Sorensen Groundwater Consulting, Inc.
- Jim Strandberg, Woodard & Curran#
- Steve Turner, Los Angeles Department of Water and Power
- Brian Villalobos, Geoscience Support Services Inc.
- Dave Vossler, West Yost
- Todd Wallbom, CA Department of Toxic Substances Control
- Jeremy Wire, Geoconsultants, Inc.*
- Amy Woodrow, Monterey County Water Resources Agency
- Joe Zilles, Kleinfelder, Inc.

Department of Water Resources (DWR)

- Julie Haas, Project Manager
- Bryan Platt

Presenters

- Amanda Magee, State Water Resources Control Board
- John Borkovich, State Water Resources Control Board
- Kamyar Guivetchi, DWR

**Luhdorff & Scalmanini Consulting
Engineers (LSCE)**

- Till Angermann
- Vicki Kretsinger
- Scott Lewis

Kearns & West Facilitation Team

- Chelsea Cullen
- Jack Hughes
- Julie Leimbach
- Sharon Hu

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Appendix A: Poll Results

This appendix contains a paraphrased summary of responses submitted by TAC members.

Poll #1: What is one surprising or interesting thing you learned from other Focus Group members?

Applications and limitations of different well types

- Application of angled wells for other applications.
- Monitoring wells are being drilled in areas (such as river channels) that should not have wells.

TAC members learned from the wide range expertise and interest represented on the TAC.

- There is a wide range in education/experience of participating LEAs.
- Diversity of experience, range of interests, and wide perspectives included and represented on the TAC is good to see.

New information

- Explosives are used frequently to destroy wells.
- Scope of Bulletin 74 includes water quality issues and not water quantity.
- Bentonite placed in clay layers between aquifers can be "blown out" due to pressure difference between the two aquifers – the use of bentonite seals (chip or slurries) would not be an adequate sealant choice to protect poor quality waters from intermingling with higher quality waters.
- Discussions around developing flexibility for annular seal requirements and setbacks.

Range of practices between LEAs

- LEAs may consider economics/cost of permitting when developing standards for preserving water quality.
- Other LEAs also have similar permitting requirements and oversee construction and destruction.
- LEAs may rely on drilling contractors and/or consultants to verify proper well construction and destruction.

- Process for appealing permitting requirements may exist at the State, County, and local levels.
- Scope of the Large Diameter Infiltration/Recharge Wells Focus Group includes storm water recharge via dry wells, not the broader recharge well umbrellas.

Poll #2: What is the biggest challenge in your region for groundwater management?

- Contaminants
 - Agricultural chemicals.
 - Assessment, management, cleanup of contaminated groundwater.
 - Limiting cross-contamination while drilling.
- Data availability
 - Obtaining accurate information for well locations, groundwater production, construction, dates, water levels.
 - Well log, e-log accuracy.
- Destruction of abandoned wells
 - Tracking wells and finding owners of abandoned wells.
- Regulatory challenges
 - Inconsistent interpretation of the standards poses risks to groundwater quality and challenges to finding drinking water.
 - Standards are applied differently throughout the state based on local variations in geology and range of local expertise.
 - Enforcement of permitting requirements.
 - Illegal use of groundwater.
 - Driller compliance.
 - Challenges related to hydrologic and jurisdictional boundaries.
- Groundwater
 - Decisions are made at the basin level and do not include permitting agencies.
 - Lack of basin characterization information and groundwater

usage.

- Defining relationship between groundwater and streamflow.
- Other
 - Seal verification.
 - Seawater Intrusion.
 - Risks from stormwater and managed aquifer recharge projects.
 - Adequate water supply and availability; subsidence.
 - Wells connecting aquifers with different heads and water quality.

Poll #3: What single improvement in Bulletin 74 would have the most impact to groundwater protection?

Destruction standards improvements

- Include clear destruction standards.

Improvements in function or process of Well Standards.

- Make Wells Standards inform State, County, and local regulatory standards in a way that permitting requirements are applied uniformly.
- Update Well Standards more frequently.
- There were a number of responses that DWR should provide more guidance and training for LEAs on the Well Standards.

Improvements in organization or structure of Well Standards

- Base consideration of wells on diameters, instead of intended usage.
- Several comments asked for use of flow charts and decision trees.

Inclusion of other well types

- Oil and gas, soil vapor probes.
- Soil vapor extraction wells, stormwater injection wells, inclinometers, grounding electrodes, non- and vertical wells.

Requirement of logs and assessments

- A documentation of well siting, design, testing, and a geologic log prepared by a professional.
- Required test holes and E-logs for all alluvial wells, regardless of the final drilling method for construction.

Sealing standards improvements

- Eliminate bentonite slurries.

- Require a minimum 50-ft sanitary seal on water supply wells unless there is a compelling need for a shallower seal.
- Include surface seals for flood conditions.

Poll #4: What single change in Bulletin 74 would have the most positive impact on your work?

Changes to destruction standards

- Eliminate native filler material for well destructions.
- Do not allow the free fall of cement grout or bentonite chips from the ground surface as a method to destroy a borehole.

Changes to sealing standards

- Eliminate temporary conductors, bentonite sanitary (surface) seals, and use of pre-hydrated bentonite sealing material.
- Remove the limit of bentonite chip seal lengths (currently at 10 foot).
- Do not allow the free fall of cement grout or bentonite chips from the ground surface as a method to provide a seal installation.
- Require tremie pipe for bentonite chip seal installation. This is only to be used for seals placed below the water table, such as lower test hole destruction or for intermediate seals used in nested monitoring wells.
- Disallow intermediate seals as a method to prevent poor water quality from entering the well casing for water supply wells. Seal from below the water quality concern to the ground surface with a continuous cement grout seal.
- Include additional seals or different materials and a good method of placements and consistent placement.

Improvements in organization or structure of Well Standards

- Several comments asked for use of flow charts and decision trees.
- Include links to guidance documents.
- Develop succinct summary of Well Standards.

Inclusion of guiding language

- Clearly convey purpose of Well Standards.
- Provide clear directives that CALEPA guidance incorporate.

- Include intent of regulations to help LEAs determine if variation requests meet the same level of protection.

Other

- Inclusion of other well types.
- Use of NSF61 Certified materials of construction.
- Clarification of the 'minimum horizontal separation distances', including their applicability, definition, and enforcement.

Poll #5: What is your number one “White Paper” topic (groundwater pollution issue related to wells, but outside of the Bulletin 74 scope)?

The top three proposed white paper topics from Julie Haas’ presentation most commonly mentioned in responses are as follows:

- 5. Policy on effective seals: Require standardized well logging to improve identification of aquifers and aquitards. Provide training on well logging and interpretation of e-logs. (11 responses.)
- 22. Other policy topics: Provide ongoing training in Bulletin 74 to well designers, drillers, and LEAs. (7 responses.)
- 7. Policy on effective seals: Establish a Standards Advisory Committee to review proposed new materials and methods and to address technical issues. (6 responses.)

The following proposed white paper topics received at least one response from poll responders: 1; 2; 3; 6; 8; 10; 11; 12; 17; 18; and 23.

- 1. Develop a standard laboratory test to evaluate sealing material hydraulic conductivity for well applications, including bonding to casing and vadose zone effects.
- 2. Study performance of inter-aquifer seals under differential pressure heads.
- 3. Identify best practices for centralizers and spacers.
- 6. Support consistent identification of distinct aquifers through regional mapping efforts and updating the Regional Bulletin 74 Series, as needed, in coordination with GSAs.
- 8. Improve tracking of observations of contaminant migration through wells, using existing State databases and applications.
- 10. Stormwater infiltration well (SIW) Vadose zone pollution attenuation studies.

- 11. SIW Pretreatment guidance and effectiveness studies.
- 12. SIW Infiltration testing guidance.
- 17. Explore options to improve regulatory process for SIWs (Underway by Water Boards).
- 18. Study effectiveness of perforation methods and practices for destruction.
- 23. Recommend standards for wells that are outside of Bulletin 74 and not currently regulated that pose a similar risk to groundwater as the four types that are included (e.g., soil vapor monitoring and extraction wells, construction dewatering wells, oil and gas extraction wells, and fracking wells).
- 20. Abandoned wells.

Other responses include the following suggestions for white paper topics:

- Superfund sites that do not have to be permitted by local jurisdictions.
- Well designs that incorporate details for an efficient service life and an effective destruction method without perforations or blasting the well prior to sealing.
- Improving enforcement of Well Standards.
- Research on effective seals in earthquake prone areas.
- Improvement of consistency of application of the Well Standards.
- Influence of displacement efficiency on resultant annular seals.