

OGDEN VALLEY CITY COUNCIL

MINUTES OF OGDEN VALLEY COUNCIL WORK SESSION MEETING

January 14, 2026, 1:00 p.m.
Huntsville Town Hall, Council Chambers, 7474 East 200 South, Huntsville, Utah

| Name | Title | Status |
|---------------------|----------------|---------|
| Janet Wampler | Mayor | Present |
| Tia Shaw | Council Member | Present |
| Peggy Dooling-Baker | Council Member | Present |
| Kay Hoogland | Council Member | Present |
| Chad Booth | Council Member | Present |
| Don Hickman | Council Member | Present |
| Sharon Robbins | Recorder | Present |
| Kathy Zindel | IT Director | Present |

1. Call to Order by Mayor Wampler at 1pm.
 - a. Pledge of Allegiance led by Mayor Wampler
 - b. Moment of Silence for approximately one minute

2. Introduction of Guests by Council member Hickman.

Hugh Hurlow, Department of Natural Resources, Utah Geological Survey, Groundwater Program Manager.

Lucy Jordan, formerly of DNR/UGS. Participation via Zoom.

3. Review of 2019 Hydrology Study by Utah Geological Survey.

Here is a summary of the presentation by Hugh Hurlow.

Executive Summary

A comprehensive hydrogeologic investigation of Ogden Valley (UGS Special Study 165, 2019) was conducted to understand:

- How groundwater and surface water interact
- The valley’s groundwater budget
- Long-term water-level and water-quality trends
- Impacts of future development, especially septic systems

The study was prompted by concerns over population growth, land development, and water-supply sustainability.

Study Area & Methods

- **44 square miles**, elevation **4800–9500 ft**, population ~7,000
- High seasonal use; agriculture + recreation
- Last major study was in 1985

- Data collected 2015–2016
- Extensive dataset:
 - 43 gravity stations
 - 80 well water levels
 - 215 stream/canal measurements
 - 307 isotope samples
 - Multiple seepage runs (spring & baseflow)

Hydrostratigraphy & Aquifer Structure

Key Findings

- Valley-fill aquifer is much thicker than previously thought:
 - Old estimate: ~750 ft
 - New estimate: **up to** ~2300 ft
- A **principal confining unit** (clay-rich) strongly controls groundwater flow and water quality.
- Confining unit is thickest on the “peninsulas” and thins toward valley edges.
- Springs occur where the confining unit reaches the surface.

Groundwater Levels & Flow

- 2016 potentiometric surface shows groundwater flows toward Pineview Reservoir and the Ogden City Well Field (OCWF).
- OCWF pumping influences confined aquifer levels but remains above the confining unit.
- Depth to water is shallow (<15 ft) across large areas.
- Long-term trends (1985–2016):
 - Some areas show declines of **30–40 ft**, partly influenced by pumping and seasonal variation.

Surface Water & Groundwater Interaction

Seepage Runs

March (pre-runoff):

- Basin-wide net gain: +63 cfs (~125 ac-ft/day)
- North Fork: +29 cfs
- South Fork: net +11% gain after losing to aquifer then regaining

November (baseflow):

- Basin-wide net loss: –24 cfs (~–48 ac-ft/day)
- South Fork: loses 25 cfs to aquifer, regains 10 cfs
- North Fork: 100% loss

Conclusion: Streams switch between gaining and losing depending on season. Surface water and groundwater are tightly connected.

Canals

- Ogden Valley Canal loses **~47%** of its flow (~3300 ac-ft/yr), providing major aquifer recharge.

Water Quality

General Quality

- Overall good; TDS averages **243 mg/L**.
- One well near arsenic standard.

Nitrate

- Shallow unconfined aquifer: elevated nitrate (geometric mean **3.0 mg/L**)
- Principal aquifer: lower but increasing (0.81 mg/L in 2016 vs. 0.42 mg/L in 1985/1998)
- USU shallow wells show hotspots up to **47 mg/L**

Conclusion: Shallow groundwater is vulnerable to surface contamination; nitrate is rising over time.

2016 Groundwater Budget (~67,000 acre-ft/yr)

Recharge sources are roughly equal:

- Streams & canals
- Mountain block recharge
- In-place precipitation recharge

Discharge:

- Largest component: Groundwater flow to Pineview Reservoir (31,000–34,000 ac-ft/yr)
- OCWF pumping
- Baseflow to streams

Compared to 1985, the total water budget is about half, due to improved methods and excluding bedrock springs.

Sub-Watershed Differences

- **North Fork:** Bedrock-dominated recharge
- **South Fork:** Surface-water-dominated
- **Middle Fork:** Mixed system

Isotopes & Environmental Tracers

- Groundwater largely reflects **winter precipitation**; summer rain does not significantly recharge aquifers.
- Shallow wells resemble stream signatures → **rapid recharge pathways**.
- OCWF water shows **younger age and higher vulnerability** than expected.
- Recharge temperatures indicate a mix of modern and older (Pleistocene) water.

👉 Septic System Impacts

- ~2,206 septic systems over valley-fill aquifers
- Unconfined aquifer area: 24,600 acres
- Modeling shows nitrate increases under all growth scenarios.

Recommendation

Minimum lot size ≥ 6 acres for conventional septic systems OR Use advanced treatment or sewer for higher densities.

Potential Impacts of Lowering the Water Table

If groundwater declines:

- Reduced baseflow to streams
- Reduced discharge to Pineview
- Stronger downward gradient at OCWF
- More shallow, nitrate-vulnerable water entering the confined aquifer
- Increased risk of nitrate exceedances in domestic wells

Major Conclusions

1. Aquifer is thicker and more complex than previously understood.
2. Surface water and groundwater are highly interconnected.
3. Streams and canals are major recharge sources.
4. Pineview Reservoir receives $\sim 31\text{--}34\text{k ac-ft/yr}$ of groundwater.
5. Water quality is generally good, but nitrate is a growing concern.
6. Septic density must be managed to protect groundwater.
7. Future development and water use will directly affect aquifer levels and streamflow.

4. Discussion and questions

City Council Discussion and Questions

Council member Hoogland brought up the 2023 Bowens & Collins Study and asked about the differences. The Bowens & Collins study is about demand and how to serve the demand.

One conclusion is there is more water in the South Fork than North Fork with dynamic differences in the two areas. When asked how this translates to development, the answer is there may be interference with existing wells. If looking to do development with septic systems, it is recommended to do a study that could propose conclusions about the level of development. It could also be a tool to evaluate water quality and develop a plan based on density.

Hurlow suggested looking at the South Fork stream flow hydrographic representation to see if there is less water to determine when the City will need to do another study.

Question asked by City Council was about the historic nitrate levels in Pineview Reservoir. One member of the audience indicated the current levels are 1.46.

Questions were asked about what happens with new wells. The wells drain the ground water and the water levels go down. Hurlow indicated that well interferences is a legal topic.

Question was asked about the impact of Powder Mountain development since upstream. Indications are it may impact water levels.

Interest was expressed in saving the Great Salt Lake, monitoring the water flow released from Pineview, and following the water all the way to the Great Salt Lake.

Hurlow indicated the threats to water are ground water diversions and the expansion of Ogden Valley wells to the cone of depression.

Planning Commission Discussion and Questions

Question asked about how important is it to update this study. Hurlow indicated to look at the stream hydrographs and stream levels to determine when the study should be updated.

Question asked about how to maintain water quality. Hurlow indicated various methods such as newer septic systems, treatment wetlands, and retention management.

Question asked about on-going monitoring – who can we go to?

Observation that larger lot sizes, greater than 6 acres, recommended based on assumptions of degradation. The Planning Commission should manage septic systems and monitor when well levels do down.

Question asked – is the Ogden City Well the greatest liability? If the Ogden well could be distributed, it would decrease the force in one place.

Public Comment

Tina Allred – Indicated there is a presentation from USU that shows 80% of the nitrates and phosphates in lakes are from surface water i.e., carrying manure from fields. Some water is lost from irrigation ditches from Causey. Piping would reduce the water loss.

Jim Brown – asked how many additional households will cause an adverse effect on the aquifer. He suggested we need to know the water use per household. This can be accomplished through modeling and a feasibility study.

Bart Braegger – indicated the Sage development with 3 acre lots is working. The agriculture is worse on the water supply than the development due to fertilization with manure.

Les Vierra – indicated there is a good YouTube video that shows the degradation for a 6 acre lot size scenario. He indicated the City could look at other scenarios.

Trina White – indicated the Ogden City Well is one of the main water sources from 2017 to now. Many more people have moved to the Valley. Farmland has been lost / Development has gained. She expressed the need to measure and refresh the study.

Miranda Menzies – indicated nitrate levels for Ogden City Wells is 1.43 to 1.46. Nitrates will need to be addressed as a long-term issue. She suggests a testing service for municipal and private wells.

5. Adjournment - Council member Hoogland moved to adjourn the meeting. Council member Shaw seconded the motion. All Council members voted Aye (5-0). Meeting adjourned at 3:00pm.

Link to the Full Study:

CHARACTERIZATION OF THE GROUNDWATER SYSTEM IN OGDEN VALLEY, WEBER COUNTY, UTAH, WITH EMPHASIS ON GROUNDWATER–SURFACE-WATER INTERACTION AND THE GROUNDWATER BUDGET

Study available here: https://ugspub.nr.utah.gov/publications/special_studies/ss-165/ss-165.pdf

The January 14, 2026 Special meeting minutes were approved on the 3rd day of February, 2026.

Recorder: *Sharon Robbins*

Printed: Sharon Robbins