Sunshine Coast Regional District

Water Supply Plan Feasibility Study Long-Term Ground Water Supply Sources

Test Well Drilling Program Results

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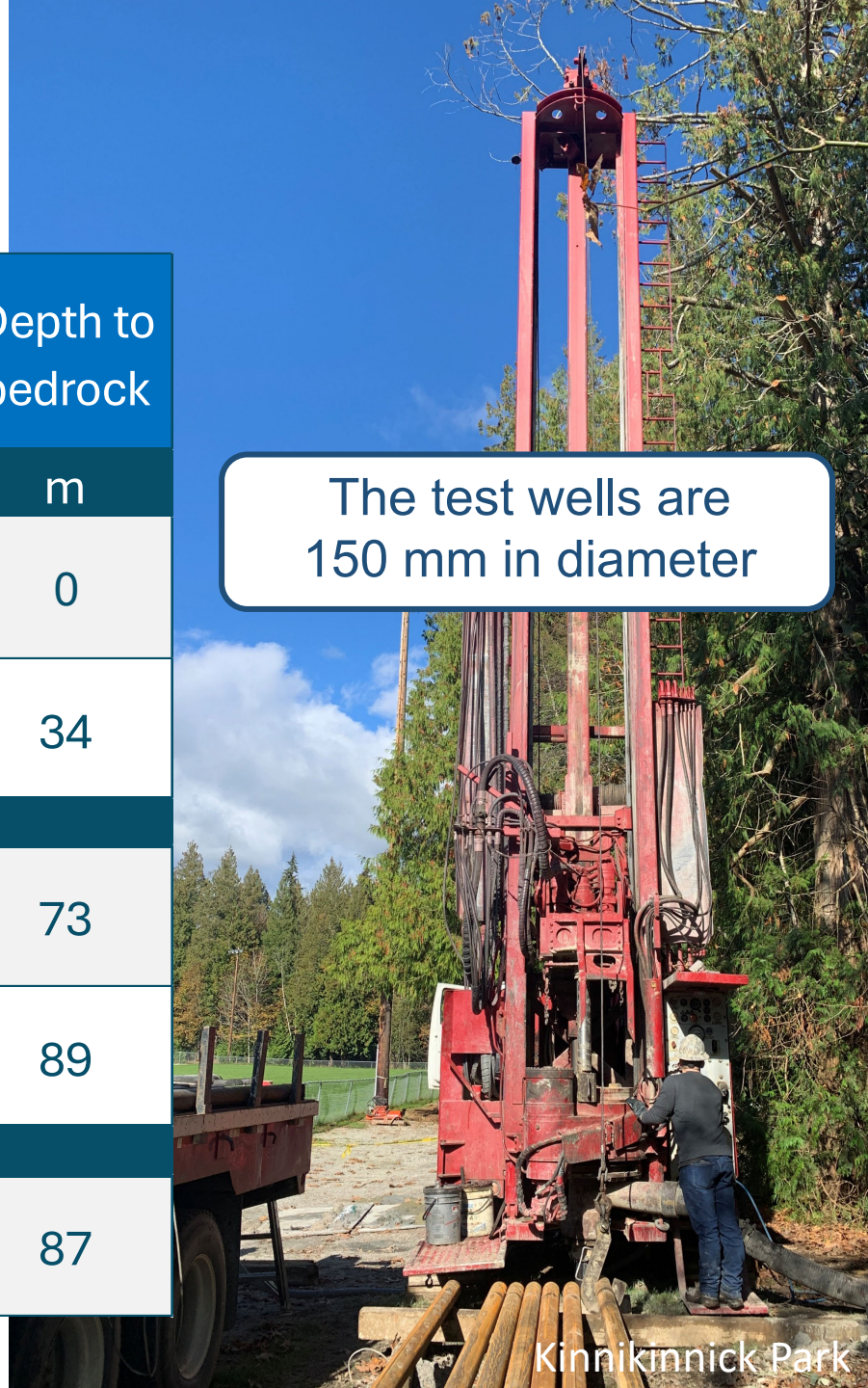
Test Well Drilling Locations

Test Well Drilling & Well Testing

Sep. 3, 2024 – Feb. 21, 2025.

Location	Formation	Drilling	Testing	Well Depth	Depth to bedrock
				m	m
1. RC Fire Hall	rock	Sep. 2024	-	274	0
2. Airport - Hilltop Rd.	sand & gravel, bedrock	Sep. 2024	Nov. 2024	186	34
3. Kinnikinnick Park	sand & gravel, bedrock	Oct. 2024	-	247	73
4. Whitaker Park	sand & gravel, bedrock	Nov. 2024	-	195	89
5. Sechelt | shíshálh Hospital	sand & gravel	Jan. 2025	Feb. 2025	83	87

Well drilling contractor: Fyfe Well & Water Services.



Test Well Drilling & Well Testing

Sep. 3, 2024 – Feb. 21, 2025.

Location	Well Name	Aquifer	Est. Yield
			L/s
1. RC Fire Hall	TW-1 (24)	fractured rock	0.95
2. Airport - Hilltop Rd.	TW-2 (24)	fractured rock	*4.6
3. Kinnikinnick Park	TW-3 (24)	*fractured rock*	1.2
4. Whitaker Park	TW-4 (24)	*sand & gravel*	2.2
5. Sechelt | shíshálh Hospital	TW-5 (25)	sand & gravel	*22+

* Based on pumping tests.


RC Fire Hall


Airport-Hilltop Rd.

TW-5(25)

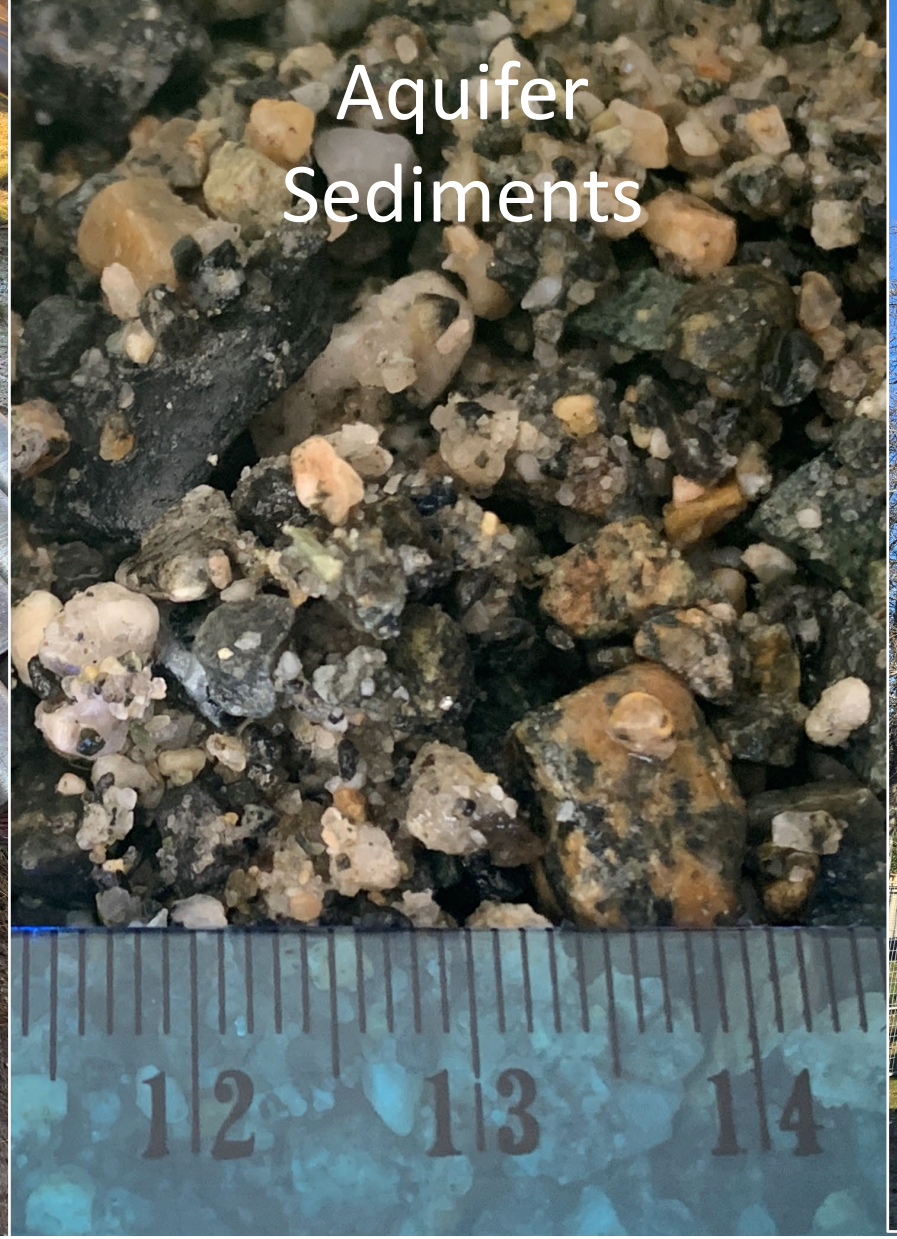
Sechelt | shíshálh

Hospital

TW-5(25) | Sechelt | shíshálh Hospital Site

Site-Specific Hydrogeology:

- ✓Water-bearing zones:
  - *24 - 57 m-bgs (sand and gravel).*
  - *64 - 84 m-bgs (sand and gravel).*
- ✓Lower permeable zone:
  - *57 - 64 m-bgs (sand, no significant production).*
- ✓Bedrock @87.5 m-bgs (granite rock).



TW-5(25) – Well Screen | Length: 6 m.

72-hour Pumping Test TW-5(25) | Sechelt | shíshálh Site

Key Findings of the 72-hour Pumping Test

- Average discharge rate: 22.2 L/s*.
- Production: 5.7 ML over a period of 72 hours.
- Drawdown: 3.96 m (~ 8% of the available water column).
- Potentially a very productive aquifer (at the tested location).

** which was the maximum pumping rate possible due to physical limitations of the pump-motor assembly that fits in a 150 mm well.*

Key Findings of the Pumping Test

- Water quality meets Canadian Drinking Water Quality Guidelines (CDWQG).

- Selected parameters:
  - **Arsenic**: 0.0002 mg/L (MAC = 0.01 mg/L)*.
  - **Iron**: 0.014 mg/L (AO = 0.3 mg/L).
  - **Manganese**: < 0.001 mg/L (AO = 0.02 mg/L; MAC = 0.12 mg/L).
  - **Electrical conductivity**: 158 µS/cm.
  - **Total dissolved solids**: 79 mg/L.

* *Health Canada issued a draft revised guideline (issued March 2025) reducing MAC for arsenic to 0.005 mg/L.*

Key Findings of the Pumping Test

- No well interference observed at the monitoring wells (Heidelberg Materials wells).

- No measurable evidence of saltwater intrusion.
  - *Based on water quality results.*

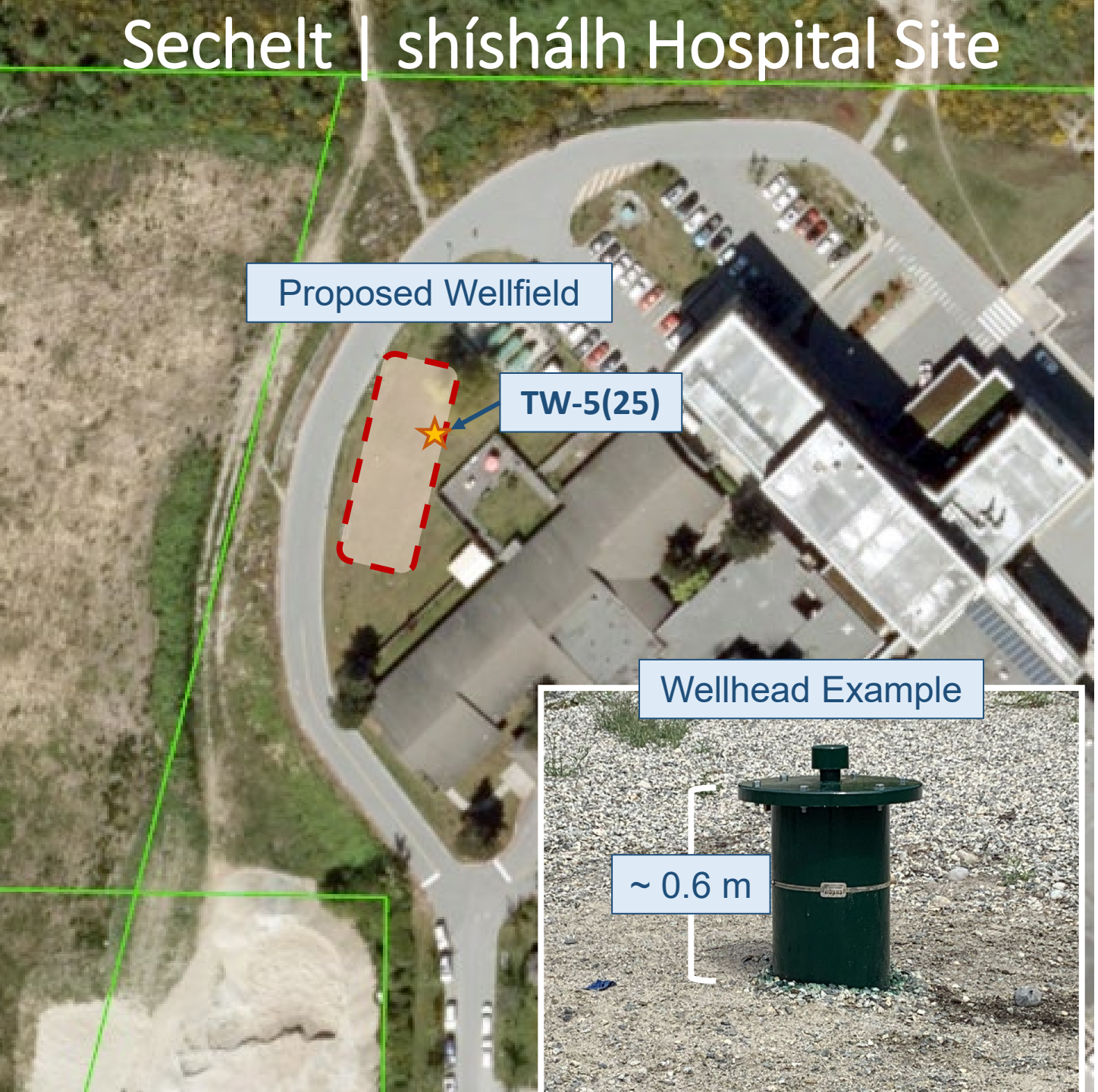
Key Findings of the Pumping Test

- ❑ Calculated (theoretical) long-term yield: 187 L/s.
- ❑ To be interpreted with some caution given that results are based on a pumping test rate of 22 L/s, and the aquifer response to higher-capacity pumping is currently unknown.

Expected Wellfield Capacity

- At least: 74 L/s.
- High-capacity testing needed to confirm wellfield capacity & long-term yield.

Sechelt | shíshálh Hospital Site



Preliminary Wellfield Design Considerations

- ❑ Production wells: 2.
- ❑ Casing diameter: 400 mm.
- ❑ Well depth: 85 m.
- ❑ Pump station (controls & disinfection) – location TBD.
- ❑ Backup Generator (genset).

Connect to Chapman Water System: tie-in to existing water main.

Concluding Remarks

Sechelt | shíshálh Hospital Site

- ❑ Expected wellfield capacity of at least 74 L/s.
- ❑ A reasonable assumption, based on the calculated theoretical long-term yield of 187 L/s.
- ❑ High-capacity pumping tests are required to confirm wellfield capacity.
- ❑ Potentially a very productive aquifer at this location.
- ❑ Excellent water quality (meets CDWQG).

Recommendations

Sechelt | shíshálh Hospital Site

- ❑ Advance to the next phase by drilling two production-sized test wells to facilitate high-capacity pumping tests:
  - ✓ To confirm wellfield capacity, long-term yield, and other considerations (*possible well interference, risk of saltwater intrusion and impact on streams*).
  - ✓ To inform future decisions and provide data for continued engagement with members of shíshálh Nation and VCH, and other stakeholders.

Recommendations (Next Steps)

- ❑ Submit a groundwater licence application for 74 L/s to the Ministry of Water, Land and Resource Stewardship.
- ❑ Design and implement a groundwater monitoring program for TW-5(25) including water quality and groundwater levels.
- ❑ Conduct a Groundwater at Risk of Containing Pathogens (GARP) assessment in support of determining disinfection requirements.
- ❑ Continue engagement with members of shíshálh Nation and Vancouver Coastal Health.

TW-5(25)

Kalwij Water Dynamics Inc.