



GWPR Phase 1 Implementation, GWPR Phase 2 Recommendations, Brief Summary of 06/07 Activities

By

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for

BCGWA 2007 AGM

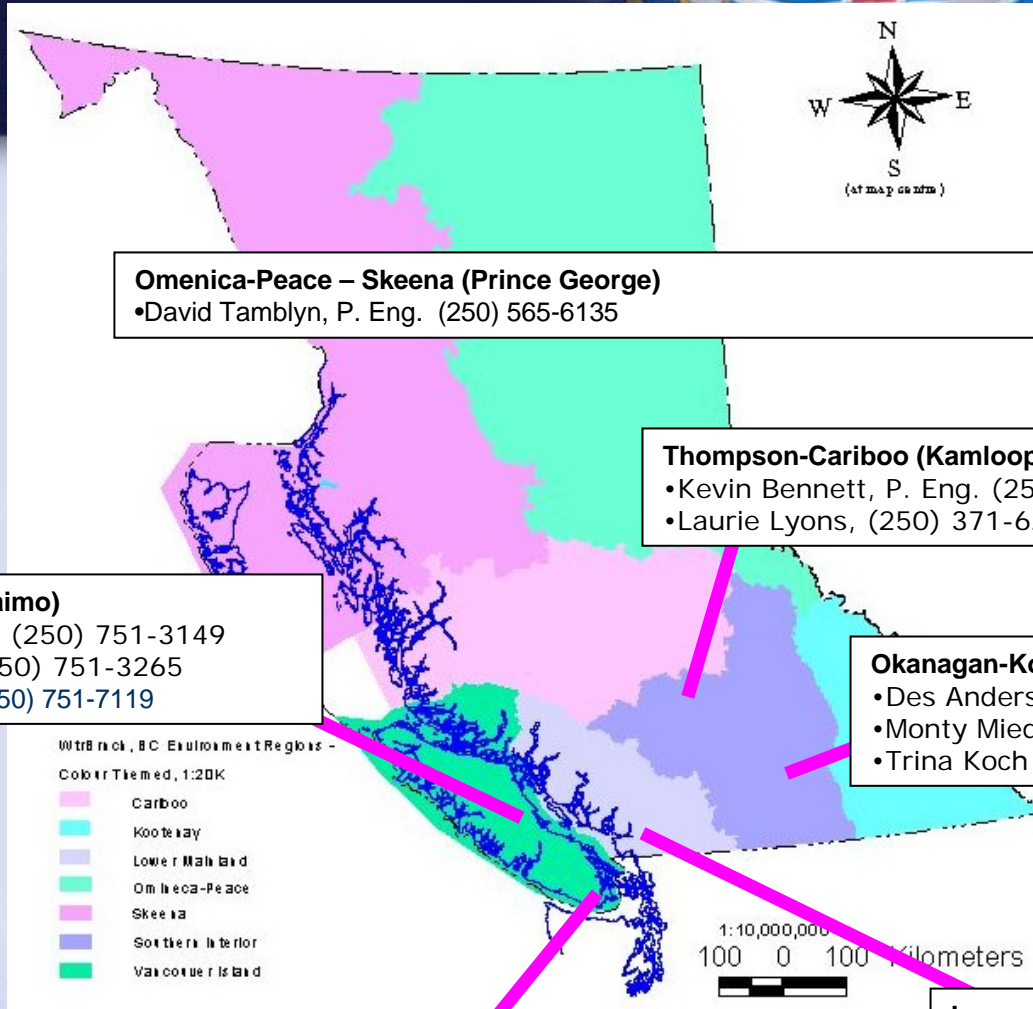
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Outline

- Ground Water Protection Regulation (GWPR) Phase 1 implementation:
 - Registration.
 - Summary of compliance activities.
 - Complaints.
- Ground Water Advisory Board (GWAB)'s Phase 2 GWPR Recommendations to Ministry of Environment (under consideration).
- Other 06/07 activities.

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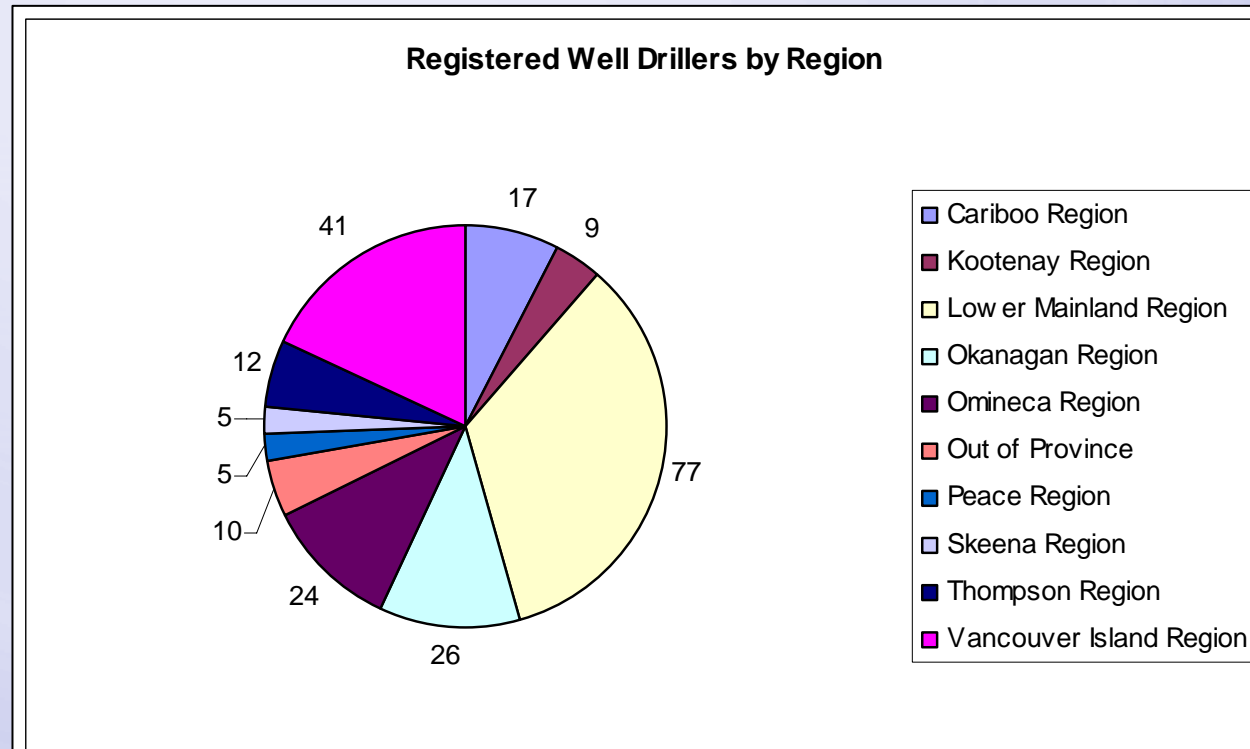
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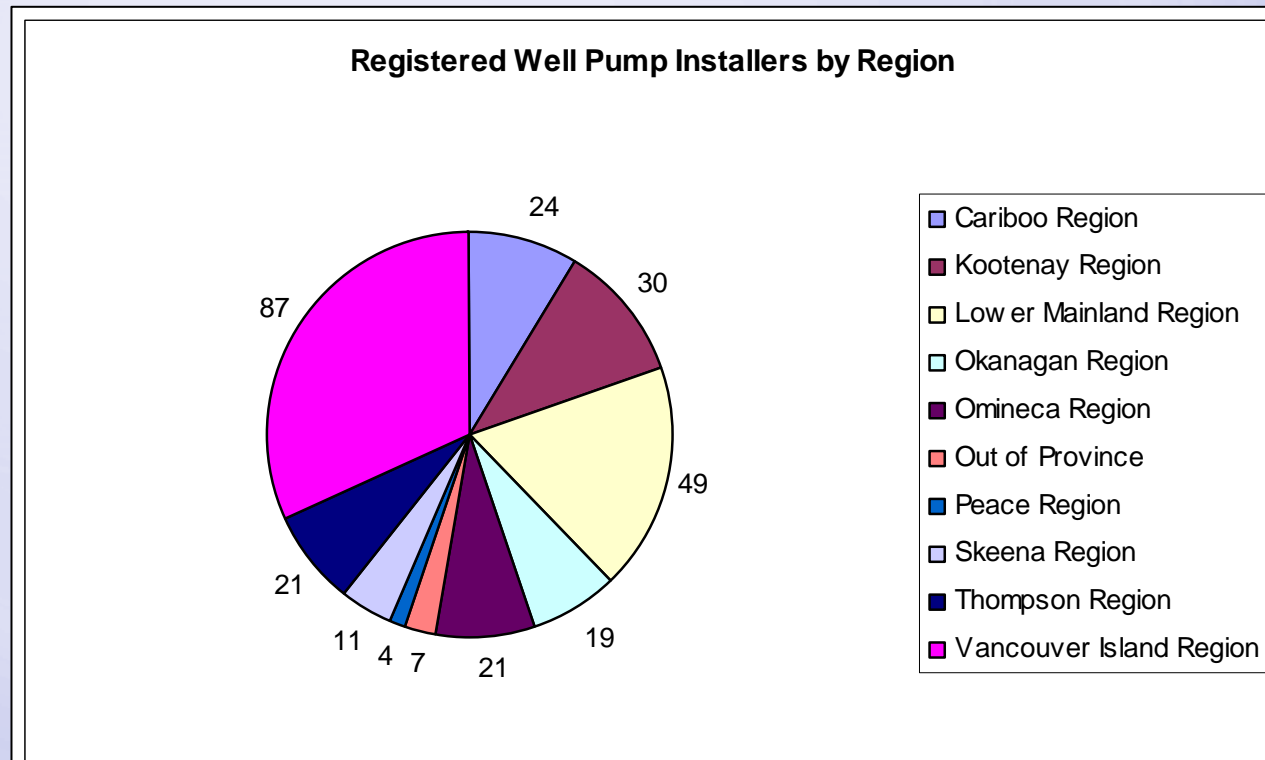
Registration of Well Drillers

- As of November 1, 2006: 226 drillers registered.
- Drillers:
 - 83.6% grand parented
 - 12.8% ITA certified
 - 3.5% CGWA certified



Registration of Well Pump Installers

- As of November 1, 2006: 273 pump installers registered.
- Pump installers:
 - 86.5% grand parented
 - 13.6% CGWA certified



Summary of 06/07 Compliance Activities - General

- Contacted drillers and pump installers in all regions to register.
 - Vancouver Island: all drilling companies contacted a registered driller (58/58=100%); about half of the companies thought to be involved in pump installation (104) have registered installer (~40-50%).
- 18+ on-site visits with drillers to inspect drilling, discuss installation of surface seal, other issues.
- On-site visits of 61 public water supply system wells to assess and identify wells.
- Made 28+ presentations to stakeholders (e.g., Geoexchange 2007, BCGWA regional meetings, Whonnock Community Association, Vancouver Island Real Estate Board, MOT) to promote compliance with the GWPR.

Summary of 06/07 Compliance Activities – General (cont.)

- Discussed ways to strengthen GWPR compliance with:
 - Public Health Engineers and Water Stewardship Division's Water Utilities group
 - Ministry of Transportation (use of Qualified Well Driller in proof of water)
 - Ministry of Community Services (model by-law for well closure)
- Reviewed Provincial Observation Wells for compliance with GWPR.
- Updated and distributed brochures on the GWPR and on groundwater quality – beginning to work with realtors on Vancouver Island.



Summary of 06/07 Compliance Activities – Identification of Community Wells

- 76/229 BC Parks wells plated and assessed.
- 169 Community wells on Vancouver Island plated and assessed by Public Health Inspectors (PHIs).
- 141/406 Community wells in the Okanagan plated and assessed by PHIs.
- Success depends on fostering cooperative approach with regional health authority staff.

Complaints

- Responded to ~90 complaints in 06/07 re:
 - Qualification of driller or pump installer.
 - Flowing artesian wells.
 - Well construction practices.
 - Well closure and well caps.
 - Use of geothermal wells and impact on groundwater.
 - Disposal of waste near wells or hauling of well water.
- Many complaints resolved over the phone (e.g., follow-up work, understanding of responsibility); some required site visits.
- Some complaints:
 - Were referred to MOE Environmental Protection (e.g., disposal of waste), Regional Health Authority.
 - We do not have authority to deal with (e.g., hauling of water, use of geothermal wells).





Receiving Complaints is Useful

- Allows ministry to target education and enforcement activities (efficient).
- Promotes culture of self-regulation and voluntary compliance within the industry.
- Helps ministry to evaluate effectiveness of the GWPR and make changes, as necessary.



How to File an Effective Complaint

- Complaint Form on-line
(http://www.env.gov.bc.ca/wsd/complaint_form.pdf).
- Determine if alleged breach is of the *Water Act* or GWPR (some may not be, e.g., breach of electrical code).
- Submit complaint to groundwater staff in MOE office.
- Provide as much relevant information as possible about the suspected breach – date, location, what was witnessed, who was involved, photos, etc.



What to Expect –Complainant

- Timely initial response from the ministry.
- Indication of nature of follow-up (risk evaluation, site visit, within our jurisdiction, etc.).
- Identity of complainant not revealed without permission (unless we proceed to a prosecution).
- Outcome of complaint (e.g., corrective or enforcement action taken, breach not substantiated, etc.).



Ground Water Advisory Board (GWAB) Phase 2 Recommendations – under Consideration by Ministry of Environment

- well siting,
- cross-connection between aquifers,
- controlling artesian flow
- well construction,
- well pump installation,
- flow testing,
- water analyses,
- storage of substances near the wellhead, and
- reporting.



GWAB Phase 2 – Siting Recommendations (under Consideration)

Siting of a new water supply well or a new permanent dewatering well from:

- Potential sources of contamination,
- Neighbouring water supply wells or
- Streams and licensed springs.



GWAB Phase 2 – Recommendations for Flowing Artesian Conditions (under Consideration)

- Driller should review well records and available MOE maps to determine if flowing artesian conditions are expected; if expected, notify the well owner prior to drilling.
- The well should be constructed to stop or control any flow of water.
- If the flow can not be stopped or controlled, the well should be properly closed.



GWAB Phase 2 – Recommendations for Additional Well Construction Standards (under Consideration)

Additional standards for:

- well casings and liners,
- flushing out chemicals used for well development or rehabilitation,
- minimizing sediment content, and
- disinfection after well completion.




GWAB Phase 2 – Pump Installation recommendations (under Consideration)

- Further restrictions on who can install :
 - a permanent well pump and
 - a permanent well pump of a particular size.
- Standards for installing a well pump:
 - Stability of the hole.
 - Access tube and a tap.
 - Restoration of the surface seal, if impaired.
 - Disinfection after pump installation.



GWAB Phase 2 – Flow Testing Recommendations (under Consideration)

- Short well yield test recommended for new and altered water supply wells or permanent dewatering wells made by drilling.
- A pumping test recommended for:
 - New community wells,
 - New private domestic wells for new developments where well yield is estimated to be <2 USgpm.
 - Large capacity non-domestic water supply wells.
- Minimum standards for pumping tests.



GWAB Phase 2 – Water Analyses (under Consideration)

- Water analysis recommended for new or altered water supply wells.
- Driller should collect a representative sample of ground water by pumping.
- Sample should be analyzed for a list of basic physical and inorganic chemical parameters.
- Analysis would not represent a potability test.



GWAB Phase 2 – Storage of Substances Near Wells (under Consideration)

- The owner of a water supply well should ensure that:
 - Any “junk” in S79 of the Act (e.g., carcasses, fertilizers),
 - paint and paint products,
 - varnishes and lacquers,
 - hydrocarbon fuels, fuel additives,
 - lubricants, solvents, and
 - herbicidesare not located within a minimum distance from the wellhead.



GWAB Phase 2 - Well Reports (under Consideration)

Well	Construction Report	Pump Installation Report	Pumping Test Report	Water Analysis Report
Water supply	✓	✓	✓	✓
Recharge or injection	✓	✓	✗	✗
Permanent vertical dewatering well made by drilling	✓	✓	✗	✗



Other Activities in 06/07

- Mine Reviews - Potential Impacts on Groundwater:
 - Hard rock mines in northern BC.
 - Limestone mine in Sechelt and rock quarries on Vancouver Island.
- Well water quality surveys:
 - Arsenic in the Chilliwack-Rosedale aquifer.
 - Nitrate in the aquifer at Williams Lake.
- Operation, maintenance, sampling of the provincial groundwater monitoring wells.
- Review of Observation Well Network on Vancouver Island and Okanagan.

Other Activities in 06/07 (cont.)

- MOU with Geological Survey of Canada (GSC) on characterization of regional aquifers (first in Canada).
- Okanagan WaterScape Poster released (GSC and Okanagan Basin Water Board).
- Successful symposium of groundwater research in the Okanagan Basin.
- 2000+ groundwater reports on ECOCAT.
- Inventory and identification of community wells on Vancouver Island.



Other Activities in 06/07 (cont.)

- EWELLS V1.0.5 completed and operational.
- 1012 Schedule 2s received; being processed into WELLS (plating of existing community wells).
- 5000 well records received in 06/07; ~600 well records processed into WELLS (challenges: data conversion in WELLS, teething of EWELLS and WELLS, different well report formats).

Other Activities in 06/07 (cont.)

- Backlog of well records:
 - Reorganized the well records library.
 - ~20,000 backlog (~ 6 years).
 - Categorizing them into:
 - 1) easily locatable,
 - 2) locatable with difficulty.





Other Activities in 06/07 (cont.)

- BC-AB Trade, Investment and Labour Mobility Agreement (TILMA).
- MOE (with Industry Training Authority):
 - Identify regulatory barriers for AB drillers.
 - Participate in working group to develop an Action Plan to address barriers.
 - Implement Action Plan.
 - Amend GWPR, if required, to address mobility barriers.



Planned for 07/08

- Develop Phase 2 of the regulation for Cabinet consideration.
- BC-Alberta TILMA.
- Address well record data processing.
- Continue to map and classify aquifers.
- Characterize aquifers on Vancouver Island and Okanagan Basin.
- Arsenic in well water survey on Vancouver Island and Northern BC.
- Continue groundwater monitoring of water levels and water quality.
- Township of Langley Water Management Plan.



Thank You!

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