



Quantum Murray LP



Kitkatla Remediation Program

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Prairies Division**



Presentation Agenda

- Kitkatla Village
- Site Information
- Remediation Program
- Trials & Tribulations
- Investigation
- Phase 2 Work
- Outcomes

Working within Aboriginal Communities

- Over 25 remediation projects within aboriginal communities;
- Common underlying themes for project success:
 - Utilizing local work force, specialized trades, equipment;
 - Education and training;
 - Continuity;
 - Logistics; and
 - Ensure outcome satisfies budgetary and local objectives;

Kitkatla Village

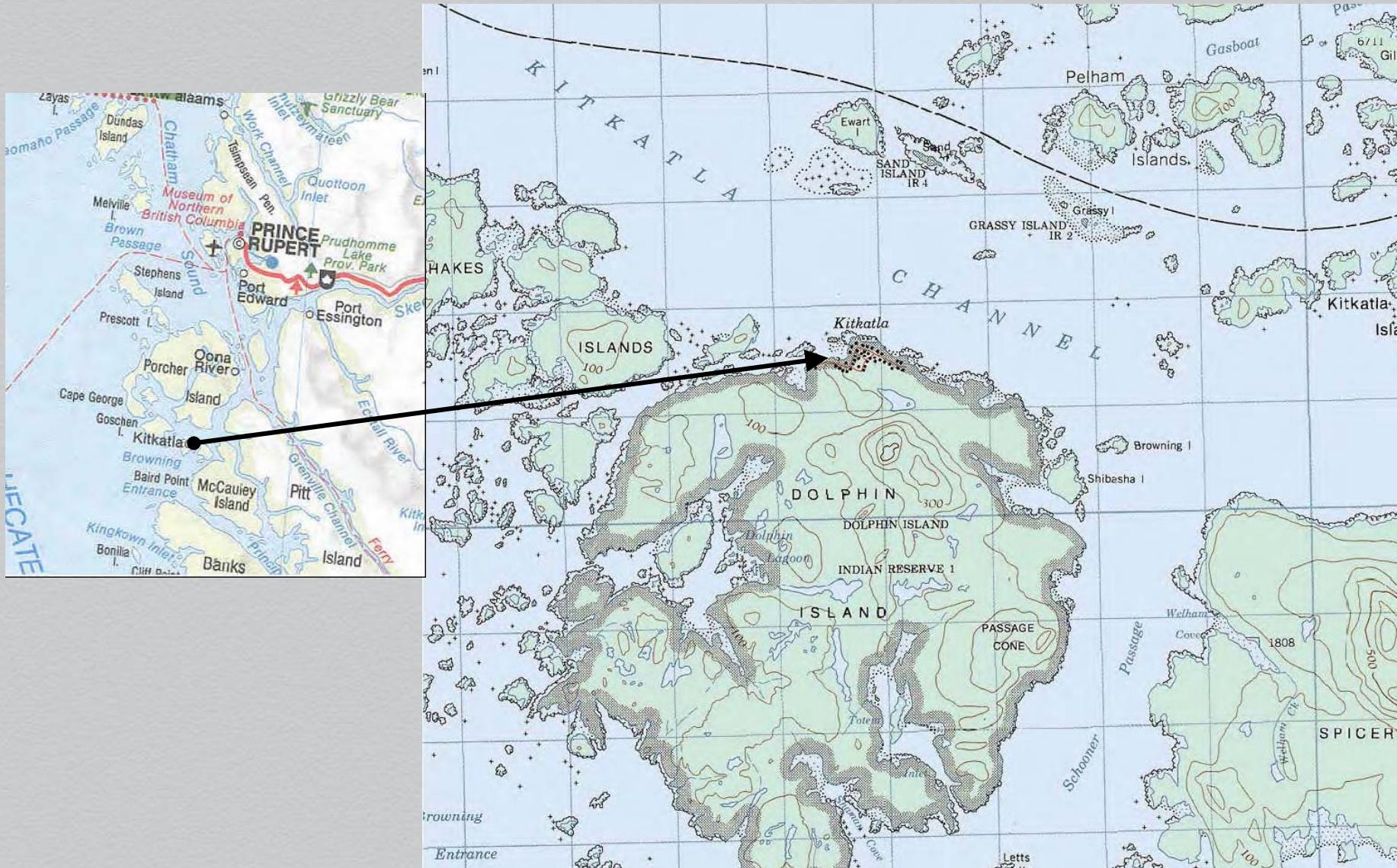


- Annual Rainfall = 2550mm (255 days under cloud)
- Rainiest months September – February >250mm/mo
- Transportation – Float plane or Ferry;
- Gitksan First Nation;
- Total Registered Population – 1766;
- 422 on reserve (23%);
- 95 household dwellings;

BC community wellbeing index score = 61

– BC First Nation average score = 70

Site Location



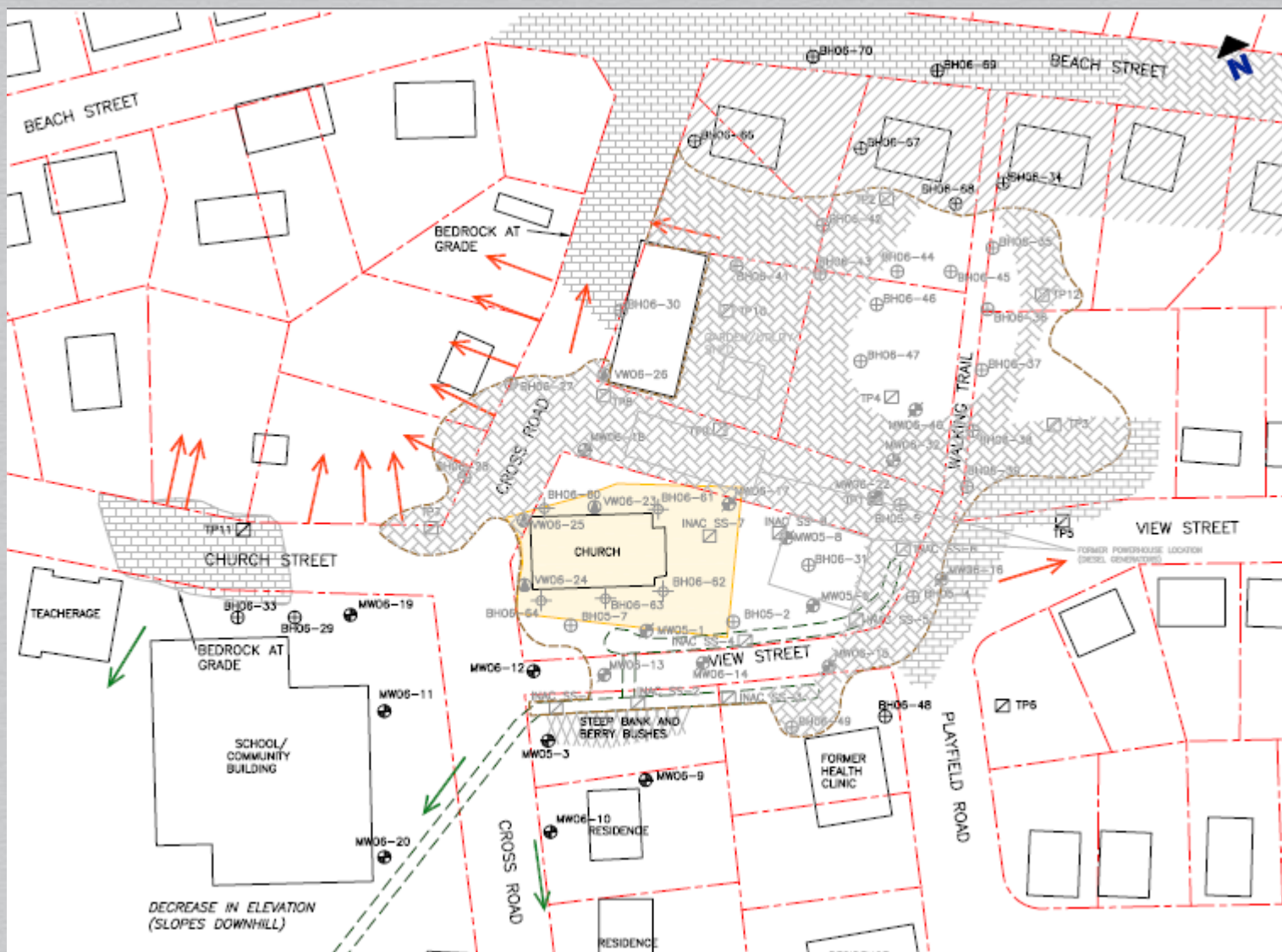
Site History

- Diesel generating station 1969 – 1990;
- Initial remediation conducted in 1996 (500m³);
- Elevated WT (approx. 1mbg);
- Oily sheen in ditches down gradient;
- Site assessment concluded large plume;
- Risk to human health and the environment;
- Initiated remediation entire plume 15,000m³.

Site Location



Plume



Pre-Remediation



Remediation Program

- Soil and surface/groundwater;
- 11,500m³ of HC impacted soil;
- Surface and groundwater treatment;
- Excavation depth to bedrock (approx. 6.5mbg);
- 3m buffer surrounding church;
- Barging in and out;
- Adequate drainage channels;

Remediation Program



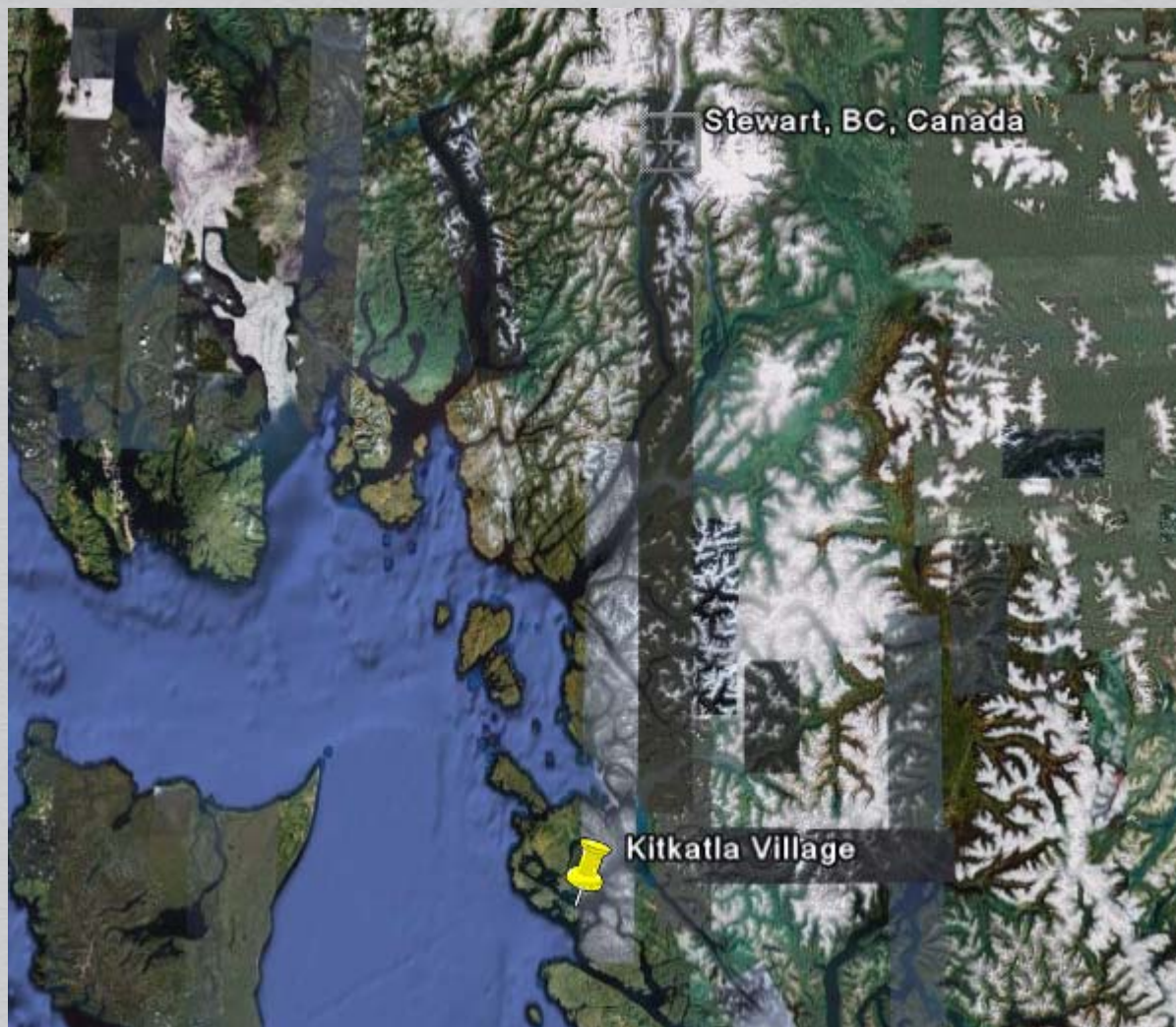
Water Treatment



Remediation Program



Backfill Source



Trials and Tribulations



Investigation for Future Work

- No more odour/oily water, etc.;
- 3,500m³ of HC impacted soil surrounding church;
- Geotechnically unstable to excavate (unknown stability);
- Additional site investigations;
- Physical information for ongoing remediation;

Investigation Outcomes



Options for Remediation

- Option 1 – Excavate and support existing structure;

Advantages

- Area remains unchanged;
- Less obstruction;

Disadvantages

- Instability of piles;
- More expensive option

- Option 2 – Move church to new location;

Advantages

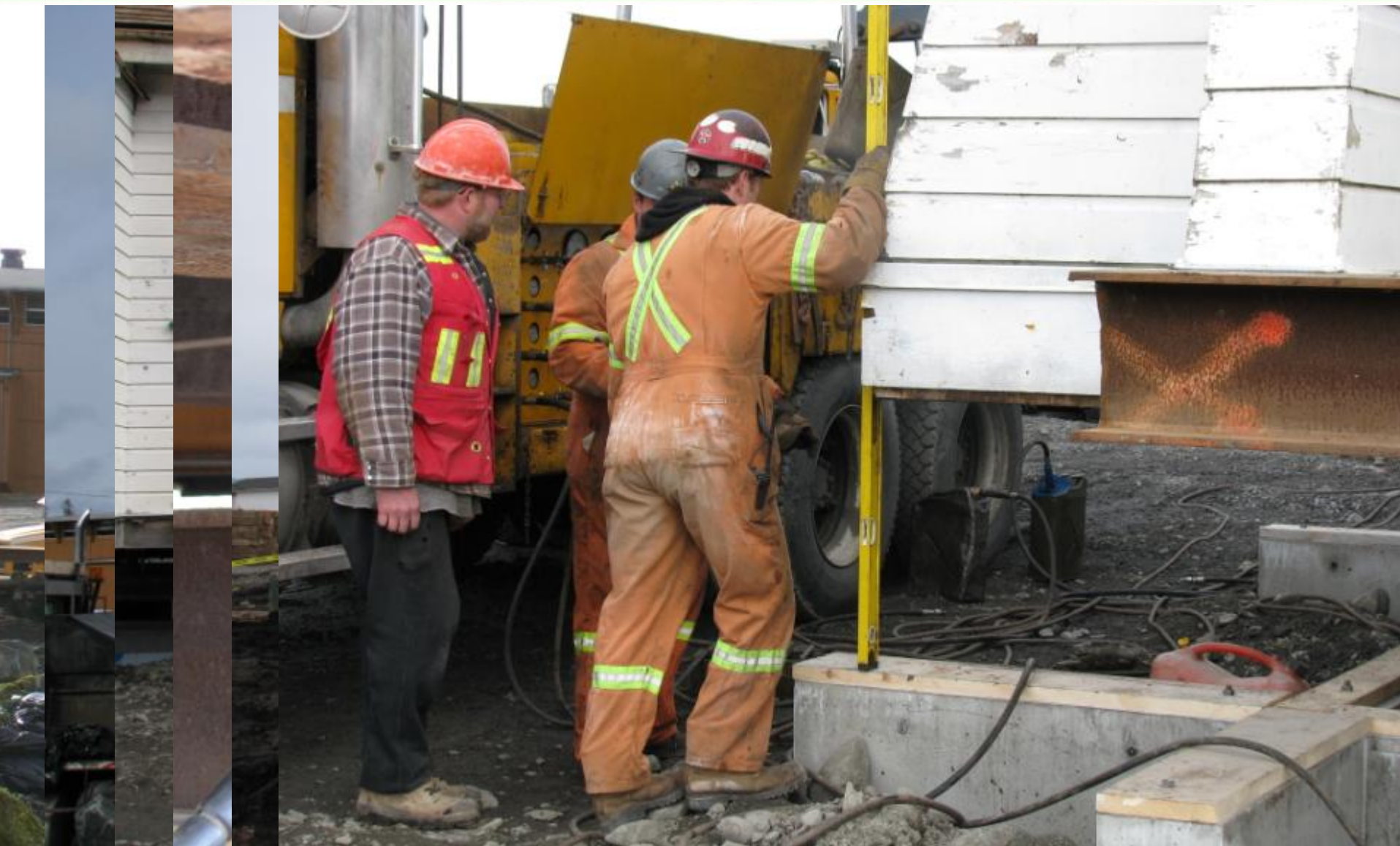
- New location;
- Expand Church St. and Cross Rd. Corner;
- Shorter Timeline;
- Flexibility of crawls space development.



Base Prep and Foundation Work



Relocation



Remediation Program



2008 Remediation Program





A dramatic landscape photograph featuring a body of water in the foreground, dark silhouetted land in the midground, and a range of mountains in the background. The sky is filled with heavy, dark clouds, with a bright, golden light source (the sun) breaking through near the horizon, creating a strong glow and reflecting on the water. The overall mood is serene yet powerful.

Thank You!