

January 2018

Consents and reports required by the Geothermal Energy Regulations 1961

This quick guide provides information about what you, as a bore owner or manager, need to do. You must provide certain information to WorkSafe New Zealand (WorkSafe) and you must notify WorkSafe when a notifiable accident or dangerous incident occurs.

Applying to WorkSafe for consent

The Geothermal Energy Regulations 1961 (the Regulations) set out the specific consents you need before:

- starting drilling, suspending, or abandoning
- a bore
- using explosives
- notifications.

Apply for consent at least 30 days before any planned work; otherwise you may not receive it. Apply for consents by using WorkSafe's *Details of Works Notice (DOWNs)* available at: worksafe.govt.nz

The Chief Geothermal Inspector (CGI) may waive the requirement to supply the relevant information before starting operations where it is a matter of urgency. In this case, the information will be expected once the operation is underway. The CGI will still require you to supply a specific minimum amount of information, if the circumstances warrant a waiver.

To avoid doubt, the CGI will not grant waivers for urgency if a situation has arisen because of poor planning.

All consent applications must specify an address (eg email) or fax number so WorkSafe can send you the application's written outcome.

Information required for consents to drill, suspend, or abandon a bore

Schedule 2 of the Regulations sets out the information you need to supply to WorkSafe before the CGI may give consent. You must provide the relevant information in Table 1 before you can start drilling, suspending, or abandoning a bore.

Along with the relevant information in Table 1, you must provide the following information:

- name and address of the bore owner
- and manager
- bore name and number (provided in accordance with regulation 31).

APPLYING FOR A BORE NAME AND NUMBER

Before obtaining a drilling consent, regulation 31 requires that you obtain the name and number for the proposed bore from the CGI.

The CGI will allow you to name bores jointly with the Regional Councils instead, but reserves the right to insist on changes if necessary.

DRILLING CONSENT	SUSPENSION CONSENT	ABANDONMENT CONSENT
<ul style="list-style-type: none"> - estimated drilling start date - bore's location in co-ordinates of the New Zealand Map Grid and the proposed depth - site safety provisions against blowout (eg site grouting) - rig specifications and capacity, including: <ul style="list-style-type: none"> - pumps - tank capacity - blowout prevention equipment - water supply - proposed spudding-in date and anticipated completion date - objectives in drilling or working over the bore - anticipated casing programme including: <ul style="list-style-type: none"> - hole sizes - specifications, sizes and proposed setting depths (both vertical and measured along the hole) - grouting/cementing programme including details of the casing used and amount of cement to be used - (proposed) wellhead master valve used or wellhead arrangement including: <ul style="list-style-type: none"> - class - type - factor of safety against the bore's expected maximum wellhead pressure - water table's expected depth and whether or not near surface ground waters are likely to be at, or approaching, boiling point temperatures for depth conditions - downhole bore measurement programme - summary of the predicted geology - address where you keep the daily logs - proposed sampling programme for collecting drill cuttings - proposed coring programme - proposed drilling fluids programme - proposed logging programme specifying: <ul style="list-style-type: none"> - types of logs to run - intervals to be logged - proposed deviation - casing - other bore surveys. 	<ul style="list-style-type: none"> - reason for suspension anticipated period for which suspension is required - status of the bore and full details of the drilling at the time the bore is to be suspended - suspension method. 	<ul style="list-style-type: none"> - estimated date of abandonment - summary of the reasons for abandonment - relevant data and information on the bore, including: <ul style="list-style-type: none"> - wellhead pressures - loss zones - downhole pressures and temperatures - a detailed programme of abandonment indicating: <ul style="list-style-type: none"> - operations sequence - cement or bridge plug positions - emplacing method and plug integrity testing - details of any intention to recover casing, tubing, surface or downhole equipment - details of any junk to be left in the hole.

Consent to use explosives

Before using explosives you must submit to the CGI a detailed programme for their use (regulation 29) at least 30 days before you intend to use explosives. If it's possible, include it in your initial DOWNs submission. Shorter notice could mean consent takes longer and delays the operation. If the programme requires last minute changes, update the plan and resubmit it.

You must also apply to the CGI for written consent to the commencement of the use of explosives. Provide the following information in Schedule 2 of the Regulations before the CGI may give consent:

- name of the person appointed to be in charge, as required by regulation 29(1)(b)
- depth and density of perforations
- type of gun, including pressure rating
- sequence of perforating
- type of detonator and primer.

You should submit this consent application at least 30 days before you intend to use explosives.

Reports and notifications

Downhole survey report

Downhole surveys, under regulation 35, are only required at WorkSafe's request. You must provide a downhole survey report to WorkSafe within one month of completing a requested downhole survey.

WorkSafe may request a downhole survey and review downhole survey reports before carrying out planned site inspections. WorkSafe may still request a downhole survey and report outside of a site inspection.

Summary report of completed drilling

Prepare a summary report within one month after completing drilling operations and submit it with the Details of Works Notice available at:

worksafe.govt.nz

Record and include the following information in the summary report:

- name and address of the bore owner and the manager
- bore name and number
- casing head flange:
 - elevation with respect to Moturiki datum
 - location, in metre coordinates, on the New Zealand Map Grid to the nearest half metre
- description of the work carried out on the bore
- start date of workover or well-drilling operations, or spudding-in of the bore, when total depth was reached and when the rig was released
- total depth reached
- details of the completed bore and wellhead with dimensioned schematic drawing
- hole sizes and depths
- casing and liner details including:
 - size
 - weight
 - grade
 - thread
 - coupling
 - number of joints
 - details of slotting
 - setting depths
- casing cementing details including the quantities used, whether single or multi-stage, and whether or not casing to casing (and casing to formation) annuli were completely filled
- details of any equipment left in the hole
- summary details, and interpretations, of:
 - wellhead pressures
 - chemical sampling
 - downhole measurements

- directional drilling details, including:
 - kick-off depth
 - angle build up
 - average and maximum deviation and severity
 - depth of any dog-legs, including side tracking
- drilling fluids used
- drilling fluid or circulation losses
- perforation record including:
 - casing size
 - intervals
 - hole density
 - size of holes
- geological description of bore lithology and stratigraphy.

Notifying WorkSafe of an accident or dangerous accident

Due to the challenges of the current notification requirements in the Geothermal Energy Regulations 1961, WorkSafe requires you to notify according to the Health and Safety at Work Act 2015 (HSWA).

You can notify using the notifiable events form [here](#)

Further to the notification requirements of HSWA, section 35A of the Geothermic Energy Regulations 1961 requires notification in the case of any incident that has or could have resulted in harm, including any of the following:

- A failure of the cement to pass a barrier 'test'.
- Any well kick that required corrective action and the time taken to recognise the kick and take the corrective action.
- Any blowout (that is to say an uncontrolled flow of well fluids from a well).
- Damage to any safety crucial equipment that requires intervention to ensure it will operate as designed.
- The detection of hydrogen sulphide in the course of operations at a well or in samples of well-fluids from a well where the presence of hydrogen sulphide in the reservoir being drawn on by the well was not anticipated by the responsible person before that detection.
- The taking of precautionary measures additional to any contained in the original drilling programme following failure to maintain a planned minimum separation distance between bores drilling from a particular installation.