



TAG Oil (NZ) Ltd
www.tagoil.com

February 2014

RE: Proposed Sidewinder B Wellsite, Norfolk Road Upper, Inglewood

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Dear Sir / Madam,

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I hope this letter finds you well. As you may be aware TAG Oil (NZ) Ltd (TAG) holds a permit from the New Zealand Government for petroleum exploration in the Inglewood area (PEP38748), and as such plans to develop new wellsites to facilitate exploration activities. The purpose of this letter is to provide you with information in regards to the construction and operation of the Sidewinder B wellsite, including drilling of up to 8 wells from the site.

1. General Description of Project:

TAG proposes to establish the Sidewinder B wellsite on land accessed from Norfolk Road Upper. TAG is seeking consent for drilling of up to 8 wells from the site. Initial plans are to drill two wells in mid-2014 and test these wells (this may involve some temporary flaring). If the results from testing prove that the wells are commercially viable for production, there will be small scale production facilities located on site to enable production of oil and gas.

2. Site Location

The proposed site location, including the new access track is shown on the attached plan.

3. Consents Required:

To undertake the proposed activities, TAG must first obtain consents from the Taranaki Regional Council (TRC), and from the New Plymouth District Council (NPDC). The NPDC manages issues like noise, light, hazardous substances and traffic and will place conditions on these aspects of the operation if required. Consents from the TRC will place controls on activities that may affect the quality of air, land and water.

4. Details of Activities

Site Access

The Sidewinder B wellsite will be accessed from a new entranceway on Norfolk Road Upper, approximately 1km from SH3.

Site Construction

A wellsite of approximately 1ha will be constructed. This will require importing metal and will temporarily involve soil disturbance, earthworks and heavy traffic. Site construction is carried out during daylight hours only and will take approximately 3-4 weeks depending on weather.

Rig Mobilisation and Demobilisation

Once the site is constructed, a drilling rig will be transported to the site. It typically takes 1 week to mobilise the rig to site and set it up, daylight working hours only. Rig mobilisation usually includes the transport and installation of the rig and associated equipment, including the rig camp. During this time there will be a short term increase in the amount of heavy traffic associated with the wellsite. To mitigate potential effects from increased heavy vehicles, trucking hours are restricted to day time hours only and speed restrictions are enforced. All landowners and occupiers with a 1km radius of the site will be notified prior to rig mobilisation and drilling activities.

Well Drilling Activities

It will take approximately 14 – 21 days to drill each well. Drilling operations will occur 24 hours per day. Ultimately, up to 8 wells may be drilled from the site, but not consecutively. This number is considered sufficient to allow thorough exploration and appraisal from the site over a number of years, with this single pad minimizing the overall effect on the environment of the area.

The highest level of noise will occur during the drilling phase and TAG undertake a series of measures, including the use of a state of the art drilling rig, to ensure that noise effects on surrounding residents are kept to an absolute minimum.

Well Testing

Production testing is undertaken to determine the nature of the hydrocarbons and assess the reservoirs ability to produce oil and / or gas prior to final investment decisions on the scale and nature of permanent production facilities. Production testing could involve flaring the gas portion of the product, while any oil will be stored in tanks and trucked off site. Flaring from testing may occur intermittently for up to 60 days per well.

Production Operations

If the proposed exploration programme locates a productive zone, and testing of the wells show that it is viable to produce from the wells then small scale production facilities will need to be developed on site. If the wells are oil wells, the facility will include tanks, separators etc. If the wells are commercially viable gas wells, then it is likely that a gas pipeline will be installed to connect the site to the existing Sidewinder Production Station (located on Durham Road Upper). The production station already has well established facilities and is capable of processing gas from the Sidewinder B wellsite.

Site Reinstatement

If exploration at the wellsite is not successful, the site will be decommissioned and abandoned. A programme for this will be developed by TAG when appropriate, depending on the nature of the reinstatement required. This programme will meet the requirements of legislation and consents prevailing at the time, and commitments made by TAG to the landowners.

5. Summary

The activities proposed may have potential associated effects relating to the use and storage of hazardous substances, noise from drilling and additional traffic generation.

TAG is the most active explorer in New Zealand, and has drilled more wells in New Zealand than any other explorer in the past three years. TAG's experience gives us confidence our operations will not adversely affect the community, land or surrounding environment and will make every effort to minimise any inconvenience or concerns you may have. We have been active in the Taranaki area for many years, and are committed to continue our engagement with the community; in the unlikely event of problems experienced by surrounding residents, TAG will deal with them quickly.

As part of our application to the NPDC, TAG is required to prepare a full Assessment of Environmental Effects (AEE). A summary of this document has been included with this letter. If you would like a copy of the AEE for further information I am more than willing to deliver one to you.

If you have any questions about the proposed Sidewinder B wellsite please do not hesitate to contact me at any time on 06 759 4019 or 027 666 8456.

Kind regards,



Andrea Smith
Land Liaison Manager

Sidewinder B Well Site, Norfolk Road Upper, Norfolk

Proposal

TAG proposes to undertake the following core activities at the site:

- Construct a well site;
- Drill up to 8 wells from the site;
- Test each well and undertake gas flaring associated with this testing;
- Install production facilities (if drilling is successful);
- Produce oil and gas from the wells (if drilling is successful);
- Install pipelines from the well site to existing production facilities (if drilling is successful); and
- Clear and reinstate the site if the wells are unsuccessful.

Summary of Assessment of Environmental Effects

Noise

The well site has been located to maximise buffer distances from nearby dwellings. The noise output from the rig likely to drill the wells has been assessed by a noise consultant. The New Plymouth District Plan permits noise levels of:

- 50dBa between the hours of 7am and 10pm; and
- 45dBa between the hours of 10pm and 7am the following day.

These noise limits are measured at the notional boundary of any habitable building. The 'notional boundary' is an imaginary buffer line located 20 metres from any dwelling or the property boundary if within 20m of the dwelling. The nearest dwelling to the wellhead (87 Norfolk Rd) is located 190 metres south-west of the well site; with the exception of this dwelling and two dwellings owned by the landowner, noise limits set in the District Plan will be complied with at all other 'notional boundaries'.

It is important to note the specific noise mitigation measures that will be undertaken by TAG at the well site:

- Site Bunding;
- Specifically designed acoustic panels installed on major noise sources of the rig e.g. diesel generators;
- Neighbouring landowners will be notified of the commencement of drilling and prior to any flaring operations. This will include a contact number neighbours can call with any concerns.

Traffic Activities

Traffic generation proposed for well site activities is detailed in the below table.

Proposed Traffic Generation

Phase of Development	Duration	Maximum Vehicle Movements per day
Construction	5-6 weeks	30 - 36 heavy vehicles and 20 light vehicles
Rig Mobilisation and De-mobilisation	4 days for mobilisation and 4 days for de-mobilisation	8 heavy vehicles and 16 light vehicles
Drilling	3-4 weeks	5 -7 heavy vehicles and 6 light vehicles

Production Phase	For the life of the well site and production facilities	Up to 3 heavy vehicles and 3 light vehicles
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The highest number of traffic movements associated with the well site occurs during the construction and rig mobilisation and demobilisation phases. This traffic is temporary in nature and there will be long periods throughout the life of the well site where there are very few (if any) vehicle movements.

The construction traffic and rig mobilisation and de-mobilisation traffic will occur during daylight hours only. Drilling is a 24hr activity so some of the traffic movements associated with the drilling phase will occur during night time hours. Again, drilling is a temporary activity which occurs over a period of a few weeks per well drilled.

TAG will enforce a speed limit for well site related heavy traffic of 60km/hour on Norfolk Road Upper to minimise disturbance to residents of dwellings along the road and to ensure the safety of road users. TAG will also install warning signage on Norfolk Road Upper alerting road users to the presence of well site traffic.

Flaring

Gas flaring is not normally required once a discovery is made and a permanent facility / pipeline has been installed at the location. Initially, when a well is first drilled, gas flaring may be temporarily required in association with:

- Well clean-up and initial testing;
- Production testing;
- During emergencies; and
- During planned maintenance and commissioning, servicing and decommissioning of equipment.

To enable initial testing, well clean up and production testing, TAG wishes to flare for up to 15 days per zone per well in accordance with Rule 9 of the Taranaki Regional Air Quality Plan. TAG will typically test four zones per well i.e. 60 days flaring per well. A resource consent will be sought from the Taranaki Regional Council (TRC) for this activity. This flaring will occur through a flare tank which will be located on the well site. The use of a flare tank minimises light and air emissions.

Flaring may also be temporarily required in relation to workovers once the wells are producing to enhance well production flows. This flaring will be covered in a consent applied for under Rule 12 of the Regional Air Quality Plan, to cover flaring from workovers, emergency situations and during planned maintenance, commissioning, servicing and decommissioning of equipment. This flaring will occur within a flare pit located on the well site. The nearest dwelling (other than those owned by the site landowner) is located greater than 300m metres south-west of the flare pit which is sufficient distance to prevent any adverse effects from light or from the air discharge. In addition, the existing area of bush located to the north-west of the site provides further screening of the flare pit.

Storage and Use of Hazardous Substances

All activities on the well site are likely to involve hazardous substances. The table below summaries the nature and use of the hazardous substances that may be present on the site at any stage of the site lifecycle.

Summary of Hazardous Substance Use and Storage Activities

Site Activity/Stage	Hazardous Substances
Well site Construction	Small quantities of fuel for equipment only
Drilling	Drilling mud chemicals Fuel for generators and equipment Produced hydrocarbons
Testing	Well workover chemicals

	Fuel for generators and equipment
Production	Produced hydrocarbons Pour Point Depressants (e.g. methanol)
No site activity	No chemicals

Hazardous substances will be transported to and from the site using a combination of road tankers and other vehicles suitable for the chemicals involved and their packaging. The route will be Mountain Road on to Norfolk Road Upper, before turning on to the well site entrance, with the same route in reverse used for the return trip.

Liquid hydrocarbons which flow from the well will be tankered from the site.

The containers for the other substances used and stored on the site depend largely on the nature of the substance, and the volume required. This in turn is a function of the activity occurring on the site at the time.

TAG are required to comply with the Hazardous Substances and New Organisms Act 1996 (HSNO) and will do so at all times. This includes Emergency Management and bunding of chemicals. The following mitigation measures will be implemented;

- The site will be surrounded by a perimeter drain which will drain to two skimmer pits which serve as secondary containment for any on-site spills;
- An off-site containment point has been identified where, in the unlikely event of a spill making it off-site, the spill could be contained;
- All site water is directed to the skimmer pits, and when there are activities occurring on the well site the shut off valve on the pit is turned off so discharges only occur during controlled conditions;
- All site discharges are the subject of TRC consents (or subject to compliance with TRC permitted activity rules); and
- Detailed spill contingency plans will be developed. These will comply with the Level 3 Emergency Management Regulations under HSNO, however will be extended to include landowner notification and contacts during an incident.

TAG staff and contractors are highly trained and experienced in dealing with Hazardous Substances and this fact and the above measures will ensure any potential adverse environmental effects from the storage and use of hazardous substances on the site are appropriately mitigated.

Stormwater and Sediment Management

During construction of the well site priority will be given to the establishment of perimeter drains. Care will be taken to ensure that runoff from disturbed areas outside the perimeter drains is either directed back to the drains, or directed through adequate silt control structures. Silt control devices will be installed at all discharge points. Sediment control measures will be undertaken largely in accordance with the 'Guidelines for Earthworks in the Taranaki Region' (TRC 2006).

A new bridge will be required across the stream to facilitate access to the site. The extent and duration of this work will be kept to a minimum to minimise the volume and duration of sediment discharge. Silt control for all earthworks in the vicinity of the stream will follow the TRC Guidelines for Earthworks in the Taranaki Region, with cross drains, sediment traps/pits, silt cloth and hay bales typically used, where required. No re-fuelling of equipment will take place immediately adjacent to the stream. No contaminants from the equipment will be released to the stream. This will be achieved by ensuring the equipment is in good working condition, and there are no oil leaks from hydraulics or engine components.

A catchment analysis has been undertaken and the bridge has been designed by an engineer to ensure appropriate sizing and structural integrity to ensure the bridge has been designed with the wider catchment hydrology in mind.

The measures put in place will ensure that adverse effects on surface water quality will be adequately mitigated.

Site Stormwater Discharge Management

Once the well site is constructed, attention will be given to controlling stormwater which runs off the well site and the associated plant and equipment that is located on the site.

Skimmer pits are designed to trap sediment and hydrocarbons through gravity separation. Treated water will be discharged from the skimmer pits into adjacent pasture during high rainfall events. The pits will be lined with Permaliner Flexible Polypropylene which is a high quality geo-membrane material and have been engineer designed.

Any water which is unsuitable for release via the skimmer pits (e.g. water heavily contaminated with hydrocarbons or contaminated with soluble chemicals from areas of the site) will be directed to the drilling sumps, and/or removed for off-site disposal.

The chances of contamination entering the storm water system are higher during the exploration phase of the site, as there are more chemicals (e.g. drilling muds) and greater activity involving the handling of these materials on the site. However, during drilling and testing the site is occupied 24 hours per day, and any incidents can be quickly identified and resolved.

If these safety measures fail and a serious spill occurs which cannot be contained within the bunded areas, the perimeter drain and skimmer pits are anticipated to catch all hydrocarbon fluids, thus containing the spill on-site. However, in the unlikely event of a spill off-site, there will be an opportunity to contain any contaminants at an off-site containment point. Off-site containment points will be confirmed prior to drilling operations commencing, and this will form part of the site spill contingency planning.

Maintenance of the skimmer pits usually involves occasional excavations to remove collected sediment. Weeds and debris are also cleared from the perimeter drains leading to the skimmer pits and they are occasionally cleaned out so they do not become blocked.

Produced water will only be discharged to the skimmer pits if it is sufficiently clean to do so. This is only likely to be during the production phase. Otherwise it will be directed to sumps and dealt with in an appropriate manner depending on its chemistry.

Summary

TAG Oil is proposing to construct and operate a well site, drilling up to 8 wells. The adverse effects on the environment from this proposal are discussed above. With careful design, construction and operation of the well site it is considered that all of these adverse effects can be avoided, remedied or mitigated.