

Shell Exploration NZ Limited
Pohokura Production Station
Monitoring Programme
Annual Report
2012-2013

Technical Report 2013-87

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Executive summary

Shell Exploration NZ Limited operates a petrochemical production station, and adjacent wellsite, located on Lower Otaraoa Road at Motunui, in the Waipapa and Manu catchments. This report for the period July 2012 – June 2013 describes the monitoring programme implemented by the Taranaki Regional Council to assess the Company's environmental performance during the period under review, and the results and environmental effects of the Company's activities.

The Company holds a total of 15 resource consents, which include a total of 183 conditions setting out the requirements that the Company must satisfy. The Company holds one consent to allow it to take and use water, two consents to discharge stormwater, three consents to discharge emissions into the air, four consents for various structures, two consents relating to deep well injection, one consent to discharge sludge, and one consent each to disturb and occupy the coastal marine area.

The Council's monitoring programme for the period under review included six inspections and four water samples collected for physicochemical analysis. The consent holder also collected various data as required by consent conditions and for self-monitoring purposes.

Results of stormwater discharge sampling were within the limits prescribed by the consents for the wellsite and production station at all times, except for one exceedance of the chloride limit in self-monitoring reported to the Council. This can be attributed to the drought conditions experienced in the summer of 2012/13 resulting in a build up of windborne salt spray on the site which was washed into the stormwater system by significant rainfall prior to sampling. No adverse effects were noted on the receiving waters at the time of this discharge.

There were no adverse effects on the environment as a result of discharges to air at the Pohokura facility. Inspections showed that emissions to air from flaring and other sources were well controlled, producing no adverse offsite effects. Self-monitoring by the Company found elevated levels of BTEX at the eastern boundary of the site compared to other monitored sites. Ongoing investigations have indicated benzene emissions in this area of the site are due to the periodic emissions from the condensate tank, as well as tank filling. Engineering work to investigate potential plant modifications to reduce these are currently underway as a priority.

Ongoing ecological assessments of the coastal area surrounding the Pohokura site have shown that the health of the three reefs in the vicinity is comparable to other reefs around the Taranaki coastline that are subjected to sand inundation. SENZL activities in the area do not appear to have had any adverse effect on the coastal environment.

During the period under review, the Company demonstrated a high level of environmental performance and compliance with the resource consents. The Pohokura facilities were well managed and maintained. A highly proactive approach to environmental stewardship and best practice continues to be demonstrated by the Company.

This report includes recommendations for the 2013-2014 year.

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1. Introduction

1.1 Compliance monitoring programme reports and the Resource Management Act 1991

1.1.1 Introduction

This report is the Annual Report for the period July 2012 – June 2013 by the Taranaki Regional Council on the monitoring programme associated with resource consents held by Shell Exploration NZ Limited [SENZL]. The Company operates a petrochemical production station, and adjacent wellsite, situated on Lower Otaraoa Road at Motunui, in the Waipapa and Manu catchments.

This report covers the results and findings of the monitoring programme implemented by the Council in respect of the consents held by SENZL that relate to discharges of water within the Waipapa and Manu catchments and the discharges of waste to land, consents for the occupation of the coastal marine area and maintenance of offshore structures, and the air discharge permits to cover emissions to air from the site.

One of the intents of the Resource Management Act (1991) is that environmental management should be integrated across all media, so that a consent holder's use of water, air, and land should be considered from a single comprehensive environmental perspective. Accordingly, the Taranaki Regional Council generally implements integrated environmental monitoring programmes and reports the results of the programmes jointly. This report discusses the environmental effects of SENZL's use of water, land and air, and is the fifth combined annual report by the Taranaki Regional Council for the onshore and offshore Pohokura facilities.

1.1.2 Structure of this report

Section 1 of this report is a background section. It sets out general information about compliance monitoring under the Resource Management Act and the Council's obligations and general approach to monitoring sites through annual programmes, the resource consents held by SENZL in the Waipapa and Manu catchments, the nature of the monitoring programme in place for the period under review, and a description of the activities and operations conducted at the Pohokura Production Station.

Section 2 presents the results of monitoring during the period under review, including scientific and technical data.

Section 3 discusses the results, their interpretations, and their significance for the environment.

Section 4 presents recommendations to be implemented in the 2013-2014 monitoring year.

A glossary of common abbreviations and scientific terms, and a bibliography, are presented at the end of the report.

1.1.3 The Resource Management Act (1991) and monitoring

The Resource Management Act primarily addresses environmental 'effects' which are defined as positive or adverse, temporary or permanent, past, present or future, or cumulative. Effects may arise in relation to:

- (a) the neighbourhood or the wider community around a discharger, and may include cultural and social-economic effects;
- (b) physical effects on the locality, including landscape, amenity and visual effects;
- (c) ecosystems, including effects on plants, animals, or habitats, whether aquatic or terrestrial;
- (d) natural and physical resources having special significance (eg, recreational, cultural, or aesthetic);
- (e) risks to the neighbourhood or environment.

In drafting and reviewing conditions on discharge permits, and in implementing monitoring programmes, the Taranaki Regional Council is recognising the comprehensive meaning of 'effects' inasmuch as is appropriate for each discharge source. Monitoring programmes are not only based on existing permit conditions, but also on the obligations of the Resource Management Act to assess the effects of the exercise of consents. In accordance with section 35 of the Resource Management Act (1991), the Council undertakes compliance monitoring for consents and rules in regional plans, and maintains an overview of the performance of resource users and consent holders. Compliance monitoring, including both activity and impact monitoring, enables the Council to continually re-evaluate its approach and that of consent holders to resource management and, ultimately, through the refinement of methods and considered responsible resource utilization, to collectively improve management of the region's resources.

1.1.4 Evaluation of environmental and consent performance

Besides discussing the various details of the performance and extent of compliance by the consent holder(s) during the period under review, this report also assigns an overall rating. The categories used by the Council, and their interpretation, are as follows:

- a **high** level of environmental performance and compliance indicates that essentially there were no adverse environmental effects to be concerned about, and no, or inconsequential (such as data supplied after a deadline), non-compliance with conditions.
- a **good** level of environmental performance and compliance indicates that adverse environmental effects of activities during the monitoring period were negligible or minor at most, or, the Council did not record any verified unauthorised incidents involving significant environmental impacts and was not obliged to issue any abatement notices or infringement notices, or, there were perhaps some items noted on inspection notices for attention but these items were not urgent nor critical, and follow-up inspections showed they have been dealt with, and any inconsequential non-compliances with conditions were resolved positively, co-operatively, and quickly.
- **improvement required (environmental) or improvement required (administrative compliance)** (as appropriate) indicates that the Council may have been obliged to

record a verified unauthorised incident involving measurable environmental impacts, and/or, there were measurable environmental effects arising from activities and intervention by Council staff was required and there were matters that required urgent intervention, took some time to resolve, or remained unresolved at the end of the period under review, and/or, there were on-going issues around meeting resource consent conditions even in the absence of environmental effects. Abatement notices may have been issued.

- **poor performance (environmental) or poor performance (administrative compliance)** indicates generally that the Council was obliged to record a verified unauthorised incident involving significant environmental impacts, or there were material failings to comply with resource consent conditions that required significant intervention by the Council even in the absence of environmental effects. Typically there were grounds for either a prosecution or an infringement notice.

1.2 Process description

In 2000, Fletcher Challenge Energy drilled the Pohokura 1 exploration well 4.5 kilometres off the coast of Waitara and two additional appraisal wells – one a further four kilometres out to sea and the other on land adjacent to the coastline at Motunui.

The Pohokura field is a low relief anticline at a depth of 3600 metres, approximately 16 kilometres long and 5 kilometres wide, extending offshore in a northwest direction. In January 2001, 400 square kilometres of 3D marine seismic helped SENZL define the structural configuration of the field, with a detailed bathymetry survey enabling marine data acquisition to come within 2 kilometres of the shoreline in water depths of 10 metres. The survey was followed up with 70 square kilometres of transitional 3D seismic that overlapped and linked with existing onshore seismic.



Photo 1 Pohokura Production Station

In 2002, detailed design and planning of the field, including the resource consenting process began, with construction commencing in 2005. In 2006, the major milestone of commercial gas to market was achieved from the three onshore wells.

Development of the field involved the drilling of three wells from a land-based site at Motunui, and five from an offshore platform located eight kilometres off the coast. A sub-sea pipeline transfers up to 13 million cubic metres of gas per day to the onshore production station at Motunui. The wellstream comprises a mixture of gas, condensate (light crude) and produced water.

The onshore production station situated on Lower Otaraoa Road, Motunui, processes the high-pressure gas flow from the off and onshore wells. Here the hydrocarbons are separated into natural gas and condensate. The natural gas is fed into the North Island gas network and the condensate is piped to storage tanks at Omata near New Plymouth for shipping to refineries. Produced water separated out from the wellstream is disposed of by deepwell injection at the Lower Otaraoa Rd wellsite. In 2012, a gas reinjection [GRI] facility was constructed adjacent to the wellsite to allow for increased production of condensate while the associated gas could be reinjected into the Pohokura formation.

All treated stormwater from the Pohokura site is discharged to the 'Duck Pond' within the Manu Stream.

1.3 Resource consents

1.3.1 Water discharge permits

Section 15(1)(a) of the Resource Management Act stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

SENZL holds water discharge permit **5997-1** to cover the discharge of treated stormwater from the Pohokura Production Station to an existing stormwater control system, being a body of water commonly known as 'the Duck Pond' within the Manu Stream catchment. This permit was issued by the Taranaki Regional Council on 16 June 2003 under Section 87(e) of the Resource Management Act. It was transferred to SENZL on 14 March 2006 and is due to expire on 1 June 2033. A change to special condition 3 was requested by SENZL and made in May 2011 to allow for the addition of a gas reinjection facility adjacent to the Lower Otaraoa Rd wellsite.

There are ten special conditions imposed on consent 5997-1.

Conditions 1 and 2 require provision of details relating to contingency and stormwater management planning to the Council.

Conditions 3 and 4 require adherence to the consent conditions and the information submitted in the applications, and adoption of the best practicable option at all times.

Condition 5 requires that hazardous substances storage areas be bunded with drainage to appropriate recovery systems, not to the stormwater catchment.

Conditions 6, 7 and 8 impose limits on contaminants in the discharge, and stipulate effects that the discharge shall not give rise to in the Manu Stream.
Conditions 9 and 10 are lapse and review provisions.

SENZL also holds water discharge permit **6269-1** to cover the discharge of treated stormwater from hydrocarbon exploration and production operations at the Lower Otaraoa Road Wellsite to the Duck Pond within the Manu Stream catchment. This permit was issued by the Taranaki Regional Council on 10 November 2004 under Section 87(e) of the Resource Management Act. It was transferred to SENZL on 14 March 2006 and is due to expire on 1 June 2033.

There are twelve special conditions imposed on consent 6269-1.

Conditions 1 and 2 require adherence to the consent conditions and the information submitted in the application, and adoption of the best practicable option at all times.

Condition 3 requires the provision of contingency planning details for the wellsite to the Council.

Condition 4 requires the consent holder to notify the Council prior to the commencement of site works and drilling operations.

Conditions 5 and 6 restrict the size of the stormwater catchment area, and require all site stormwater to be directed through the treatment system prior to discharge.

Condition 7 requires that hazardous substances storage areas be bunded with drainage to appropriate recovery systems, not to the stormwater catchment.

Conditions 8, 9 and 10 impose limits on contaminants in the discharge, and stipulate effects that the discharge shall not give rise to in the Manu Stream.

Conditions 11 and 12 are lapse and review provisions.

Shell Exploration NZ Ltd also holds water discharge permit **6176-1** to cover the discharge of waste drilling fluids, produced water and stormwater from hydrocarbon exploration and production operations by deepwell injection at the Lower Otaraoa Road Wellsite. This permit was issued by the Taranaki Regional Council on 23 May 2003 under Section 87(e) of the Resource Management Act. Changes were made to the conditions of the permit on 10 January 2005 and 9 June 2005. It was transferred to SENZL on 14 March 2006 and is due to expire on 1 June 2033.

There are seven special conditions imposed on consent 6176-1.

Condition 1 requires the submission of the injection well log and an injection management plan to the Council prior to the exercise of the consent.

Condition 2 stipulates that the activity must not contaminate or endanger any actual or potentially useable freshwater aquifers.

Conditions 3, 4 and 5 stipulate monitoring and reporting requirements relating to injection parameters and the composition of injected wastes.

Conditions 6 and 7 are lapse and review provisions.

The permits are attached to this report in Appendix I.

1.3.2 Air discharge permits

Section 15(1)(c) of the Resource Management Act stipulates that no person may discharge any contaminant from any industrial or trade premises into air, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

Shell Exploration NZ Ltd holds air discharge permit **6002-1** to cover the discharge of contaminants to air as products of combustion from the Pohokura Production Station involving equipment burning natural gas as fuel where the maximum heat release is in excess of 10 megawatts, together with miscellaneous emissions. This permit was issued by the Taranaki Regional Council on 16 June 2003 under Section 87(e) of the Resource Management Act. Changes were made to the conditions of the permit on 11 April 2005. It was transferred to SENZL on 14 March 2006 and is due to expire on 1 June 2033.

Eighteen special conditions are attached to the consent regarding: information and notification (incident reporting, site planning, consultation prior to alteration of plant equipment or processes, BTEX emission reduction strategies); emissions from the site (best practicable option, appropriate equipment and processes, plant maintenance, noxious and offensive airborne contaminants, oxides of carbon and nitrogen); recording and reporting (gas stream analysis, annual air discharge report, visible smoke log); and lapse and review provisions.

Shell Exploration NZ Ltd also holds air discharge permit **6003-1** to cover the discharge of emissions to air from combustion involving the flaring of petroleum products incidental to the treatment of gas at the Pohokura Production Station. This permit was issued by the Taranaki Regional Council on 16 June 2003 under Section 87(e) of the Resource Management Act. Changes were made to the conditions of the permit on 11 April 2005. It was transferred to SENZL on 14 March 2006 and is due to expire on 1 June 2033.

The twenty one special conditions attached to the consent are the same as those for consent 6002-1 above, but also include requirements for: notification of neighbouring residents prior to commissioning of the plant; maintenance of a flaring log; minimisation of flaring; prevention of black smoke during depressurisation; and notification to the Council when flaring of more than five minutes duration is expected.

The permits are attached to this report in Appendix I.

1.3.3 Discharges of wastes to land

Sections 15(1)(b) and (d) of the Resource Management Act stipulate that no person may discharge any contaminant onto land if it may then enter water, or from any industrial or trade premises onto land under any circumstances, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

Shell Exploration NZ Ltd holds discharge permit **6364-1** to cover the discharge of soil previously mingled with sludge, resin and other petrochemical wastes, and recovered from land, onto and into land between the Waipapa Stream and the Manu Stream. This permit was issued by the Taranaki Regional Council on 2 April 2004 under Section 87(e) of the Resource Management Act. Changes were made to the conditions of the permit on 20 May 2004 and 29 September 2009. It was transferred to SENZL on 14 March 2006 and is due to expire on 1 June 2033.

There are twelve special conditions imposed on consent 6364-1.

Conditions 1 and 2 require the preparation and maintenance of a management plan for the disposal area.

Condition 3 stipulates that no additional waste may be discharged to the area.

Condition 4 stipulates that no sludge shall be relocated to within 25 metres of any property boundary, excluding that of the Motunui methanol plant.

Condition 5 requires annual groundwater monitoring in the vicinity of the disposal area, and includes provision for soil testing if required.

Condition 6 stipulates effects that the discharge shall not give rise to in any water body.

Condition 7 is a review provision.

Conditions 8 and 9 require the consent holder to undertake the activity in accordance with the application, and that no discharge shall occur outside the specified area.

Conditions 10 and 11 require the approval of the Council prior to relocating any soil from the specified area to any other area, and prior to any change in land use that may result in release of contaminants to the environment.

The permit is attached to this report in Appendix I.

1.3.4 Coastal permits

Section 12(2)(a) of the Resource Management Act stipulates that no person may occupy any part of the coastal marine area unless expressly allowed by a rule in a regional coastal plan and in any relevant proposed regional coastal plan or by a resource consent.

SENZL holds coastal permit **5991-1** to occupy the coastal marine area for a radius of 50 metres around up to three offshore wellhead platforms situated at least 4 kilometres offshore, and also for a distance of 50 metres either side of the associated pipelines connecting the three offshore wellhead platforms to the foreshore at mean high water spring. This permit was issued by the Taranaki Regional Council on 16 June 2003 under Section 87(e) of the Resource Management Act and granted by Hon Chris Carter pursuant to the provisions of section 119 of the Resource Management Act on 12 July 2003. It is due to expire on 1 June 2033.

There are seven special conditions attached to the permit.

Condition 1 requires the consent holder to map the position of the platform(s) and provide a copy to the relevant authorities.

Conditions 2, 3 and 5 deal with public access.

Condition 4 requires the consent holder to adopt best practicable option to minimise effects on the environment.

Conditions 6 and 7 deal with expiry and review of consent conditions.

Section 14 of the Resource Management Act stipulates that no person may take, use, dam or divert any water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or it falls within some particular categories set out in Section 14.

SENZL holds coastal permit **5992-1** to take produced water and associated heat from aquifers in the coastal marine area associated with hydrocarbon exploration and production activities. This permit was issued by the Taranaki Regional Council on 16 June 2003 under Section 87(c) of the Resource Management Act. It is due to expire on 1 June 2033.

There are three special conditions attached to the consent.

Condition 1 requires that the activity be carried out in accordance with the application.

Conditions 2 and 3 deal with expiry and review of conditions.

Section 12(1)(b) of the Resource Management Act stipulates that no person may erect, reconstruct, place, alter, extend, remove, or demolish any structure that is fixed in, on, under, or over any foreshore or seabed, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

SENZL holds coastal permit **5993-1** to erect, place, use, reconstruct, alter, extend and maintain within the coastal marine area up to three offshore wellhead platforms, 24 structures (being well casings) situated at least 4 kilometres offshore, and the associated pipelines connecting the three offshore wellhead platforms by horizontal directional drilling to the shore above mean high water spring, and the related occupation of the seabed. This permit was issued in July 2003 by the Minister of Conservation under Section 87(c) of the Resource Management Act. Changes to conditions of the permit were made in March 2005 and August 2005. It is due to expire on 1 June 2033.

There are 13 special conditions attached to the permit.

Conditions 1, 2 and 3 require the consent holder to provide detailed plans of the activity, a programme for the installation of the platform(s) and pipeline(s), and a contingency plan (the latter two also to be provided to Ngati Rahiri Hapu).

Condition 4 requires that the structures are maintained in accordance with information submitted in the application.

Conditions 5, 6 and 7 deal with burial of the pipelines, possible exposure of the pipelines and the provision of a map showing the position of the pipeline(s) and platform(s).

Condition 8 deals with notification of maintenance works.

Condition 9 requires the consent holder to adopt the best practicable option to avoid or minimise the discharge of contaminants.

Condition 10 requires that all activity comply with the noise standards of the RCP.

Condition 11 deals with re-instatement of the site.

Conditions 12 and 13 deal with lapse and review of the consent.

SENZL holds coastal permit **5994-1** to disturb the seabed and foreshore of the coastal marine area by the process of erection, placement, use alteration, extension, maintenance, or removal of up to three offshore wellhead platforms situated at least 4 kilometres offshore, and the associated pipelines connecting up to three offshore wellhead platforms to the foreshore above mean high water spring by the use of horizontal directional drilling. This permit was issued in July 2003 by the Minister of Conservation under Section 87(c) of the Resource Management Act. Changes to conditions of the permit were made in March 2005. It is due to expire on 1 June 2033.

There are 20 special conditions attached to the permit.

Condition 1 requires the consent holder to provide detailed plans of the activity at least one month prior to the exercise of the consent.

Condition 2 requires that the consent holder, in conjunction with Council and tangata whenua, relocate, as far as practicable, kaimoana from the area to be disturbed.

Conditions 3 and 4 require the preparation of a contingency plan and a wildlife management plan.

Condition 5 requires the consent holder to establish artificial substrate to assist with kelp relocation and reinstatement.

Condition 6 requires the consent holder to provide Council and the Ngati Rahiri Hapu with a programme for the disturbance prior to commencement of works.

Condition 7 states that there shall be no re-fuelling of land based machinery in the coastal marine area.

Condition 8 requires the consent holder to notify the Council and the Ngati Rahiri Hapu prior to any maintenance involving disturbance, deposition or discharge to the CMA.

Condition 9 requires that work is carried out as proposed in the application.

Conditions 10, 11 and 12 deal with the best practicable option to avoid or minimise adverse effects on the environment and limiting disturbance.

Condition 13 requires that disturbance complies with noise standards as outlined in the RCP.

Conditions 14, 15, 16 and 17 deal with requirements upon the discovery of archaeological remains.

Condition 18 deals with re-instatement of the site, while conditions 19 and 20 deal with lapse and review of the consent.

The permits are attached to this report in Appendix I.

1.3.5 Related consents

SENZL also holds the following five consents in relation to the onshore Pohokura facilities which did not require active monitoring during the period under review. Deepwell injection consent **6175-1** has not yet been exercised.

6000-1 To erect and maintain a bridge over a tributary of the Waipapa Stream (expires 1 June 2033)

6005-1 To discharge emissions to air from exploration and production testing activities at the Lower Otaraoa Road Wellsite (expires 1 June 2033)

6175-1 To discharge waste fluids by deepwell injection at the Pohokura-A [Epiha Road] Wellsite (expires 1 June 2033)

6254-1 To install and maintain a culvert in a tributary of the Waipapa Stream for S.H.3 road widening purposes (expires 1 June 2033)

6577-1 To install a water bore for horizontal directional drilling purposes (expires 1 June 2023)

The permits are attached to this report in Appendix I.

1.4 Monitoring programme

1.4.1 Introduction

Section 35 of the Resource Management Act sets out obligation/s upon the Taranaki Regional Council to gather information, monitor, and conduct research on the exercise of resource consents, and the effects arising, within the Taranaki region and report upon these.

The Taranaki Regional Council may therefore make and record measurements of physical and chemical parameters, take samples for analysis, carry out surveys and inspections, conduct investigations, and seek information from consent holders.

The monitoring programme for the Pohokura Production Station consisted of four primary components.

1.4.2 Programme liaison and management

There is generally a significant investment of time and resources by the Taranaki Regional Council in ongoing liaison with resource consent holders over consent conditions and their interpretation and application:

- in discussion over monitoring requirements
- preparation for any reviews
- renewals
- new consents
- advice on the Council's environmental management strategies and content of regional plans and
- consultation on associated matters.

1.4.3 Site inspections

The Pohokura site was visited six times during the monitoring year. With regard to consents for the abstraction of or discharge to water, the main points of interest were plant processes with potential or actual discharges to receiving watercourses, including contaminated stormwater and process wastewaters. Air inspections focused on plant processes with associated actual and potential emission sources and characteristics, including potential odour, dust, noxious or offensive emissions. Sources of data being collected by the consent holder were identified and accessed, so that performance in respect of operation, internal monitoring, and supervision could be reviewed by the Council. The neighbourhood was surveyed for environmental effects.

1.4.4 Chemical sampling

The Taranaki Regional Council undertook sampling of the stormwater discharges from the site. The combined discharge was sampled on four occasions, and the samples analysed for BOD₅, chloride, conductivity, hydrocarbons, pH and suspended solids.

1.4.5 Data review

The conditions on various consents require the consent holder to provide information and data to Council, including the results of sampling, flaring logs, produced water records, various plans and reports.

2. Results

2.1 Water

2.1.1 Inspections

Six inspections were undertaken at the Pohokura Production Station and adjacent wellsite during the 2012 – 2013 monitoring year.

30 August 2012

The site was inspected during fine weather, but following a long period of typical winter weather including high rainfall. All ring drains and bunds were clear of any contaminants. The skimmer pits at the wellsite were clear. Minimal flaring was being undertaken at time of inspection with no apparent effects. Stormwater samples were taken from the sampling station by the wetland. The site was tidy and well managed.

1 November 2012

Inspection was undertaken with Paul Brown from STOS. Both sites were neat and tidy. Some minor flaring was being undertaken. No smoke or odours were evident. The stormwater discharge was sampled at the monitoring station. No discharge from the wetlands was occurring. There had been little or no rainfall during the previous week. Re-grassing of the earthworks area at the GRI site had just been completed. Everything was satisfactory.

5 March 2013

Perimeter inspection of the site from the seaward side near Lake Manu was undertaken. No effects from any discharge from Lake Manu were noted, nor from the Waihi stream at its discharge point to the sea.

30 April 2013

The site was inspected after recent heavy rainfall. The ring drains and bunds were all clear. The wetland area was flourishing, with no effects noted from any stormwater discharges. Samples were taken as part of routine monitoring. No flaring was occurring at the time of inspection. The site was neat and tidy. Everything was satisfactory.

12 June 2013

The site was, as always, neat and tidy. The wetland area and fire water ponds were all functioning perfectly. No flaring was occurring at the time. Water discharge samples were taken for analysis as per the monitoring programme.

24 June 2013

The site was inspected following recent inclement weather. The ring drains and bunds were secure. The stormwater system and wetland were clear of all contaminants. The skimmer pits in the top compound contained very clear water. Samples were taken as part of routine monitoring. No flaring was being undertaken at the time of inspection. The site was neat and tidy. Everything was satisfactory.

2.1.2 Results of discharge monitoring

Samples were collected of the combined discharge from the wellsite and production station (site STW002075, Figure 1) on four occasions during the period under review. Table 1 presents the results of these samples. Levels of suspended solids, hydrocarbons,

chloride and pH complied with the limits prescribed by consents 5997-1 and 6269-1 on all occasions.

Table 1 Results from samples of the combined stormwater discharge (STW002075)

Parameter		30-Aug-12	1-Nov-12	30-Apr-13	12-Jun-13	Consent limits
BOD ₅	g/m ³	-	-	3.2	< 0.5	-
Chloride	g/m ³	-	31.0	25.7	22.7	50
Conductivity	mS/m	27.2	35.0	26.4	17.2	-
Hydrocarbons	g/m ³	< 0.5	< 0.5	< 0.5	< 0.5	15
pH	pH	7.7	7.9	8.0	7.2	6.5 - 8.5
SS	g/m ³	2	2	12	10	100

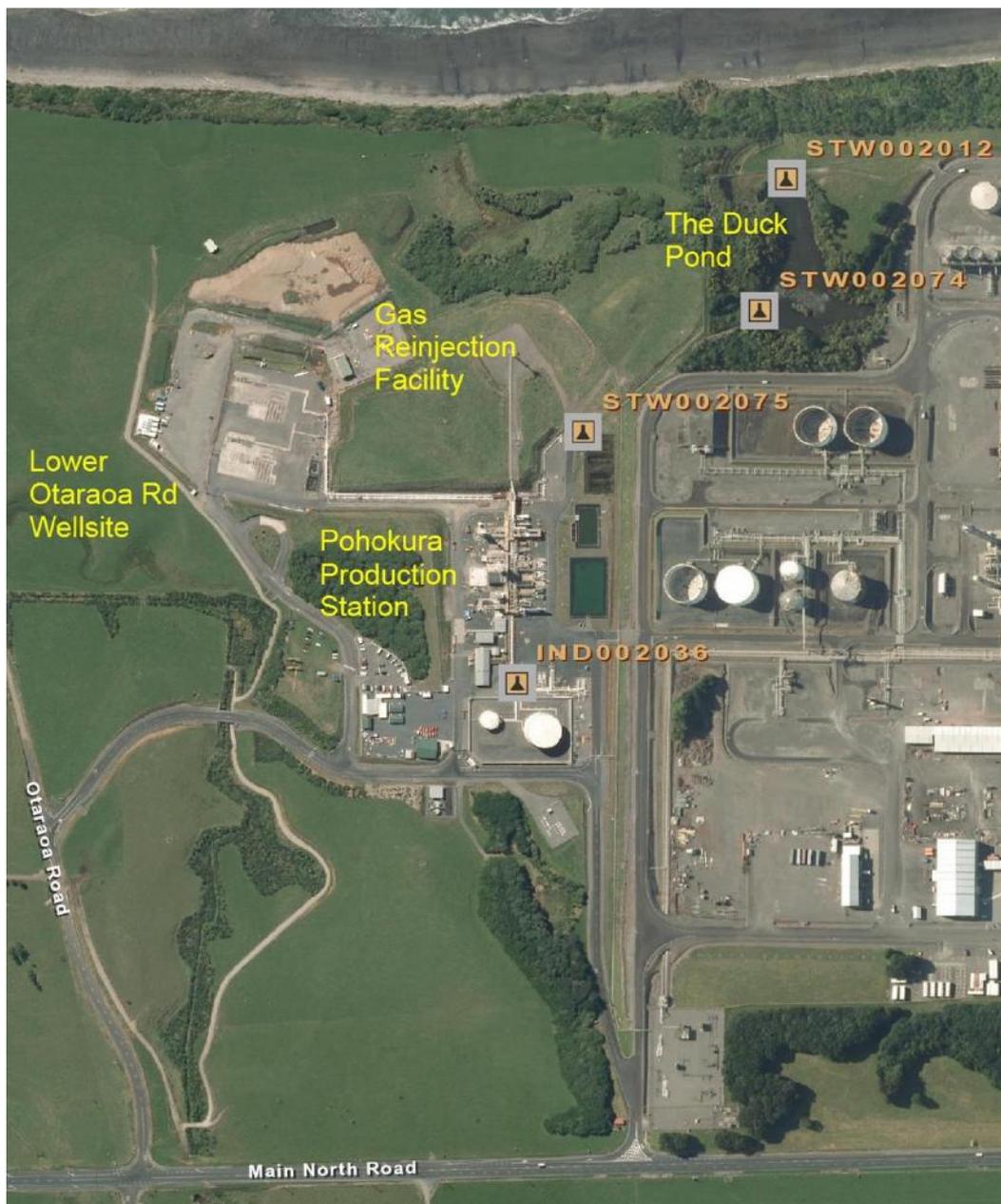


Figure 1 Pohokura onshore facilities and sampling sites

2.1.3 Results of consent holder monitoring

2.1.3.1 Stormwater monitoring by SENZL

SENZL monitors the combined stormwater discharge from the site on an approximately monthly basis. Table 2 below shows the results obtained during the 2012-2013 monitoring year.

The level of chloride exceeded the consent limit of 50 g/m³ on one occasion. This can be attributed to the drought conditions experienced in the summer of 2012/13 resulting in a build up of windborne salt spray on the site which was washed into the stormwater system by significant rainfall on 4 February. Chloride levels decreased over the subsequent months as further rainfall occurred. All other parameters were within/below those required by consents 5997-1 and 6269-1.

Table 2 Results of stormwater samples collected by SENZL during the 2012-2013 year

Date	BOD g/m ³	pH	Temp °C	HC g/m ³	Chloride g/m ³	SS g/m ³
17-Jul-12	< 5	7.58	19.1	< 0.5	< 2	60
21-Aug-12	4	6.77	19.0	0.6	< 2	30
17-Sep-12	< 5	7.32	21.3	< 0.5	< 2	3
23-Oct-12	< 5	7.16	18.6	0.6	< 2	1
20-Nov-12	8	7.56	21.0	< 0.5	< 2	3
19-Dec-12	< 5	7.80	23.3	< 0.5	< 2	3
23-Jan-13	< 5	7.81	20.6	0.5	< 2	3
18-Feb-13	-	8.11	23.2	< 0.5	120	2
27-Mar-13	-	8.30	20.8	< 0.5	33	2
9-Apr-13	36	7.20	20.0	< 0.5	25	1
21-May-13	-	7.34	20.0	1.4	25	12
19-Jun-13	-	7.40	19.6	4.7	19	5
Consent limits		6.5 – 8.5		15	50	100

2.1.3.2 Produced water monitoring and deep well injection by SENZL

Produced water is saline water, inherent in well-stream fluids with gas and liquid hydrocarbons. It is separated at the production station; stored in a dedicated tank and then pumped intermittently, as volume requires, down the injection well located at the Lower Otaraoa Road wellsite under consent 6176-1.

Deep well injection [DWI] is often utilised as liquid waste disposal technology and provides an alternative to the surface disposal of such material. The DWI process utilises specially designed injection wells to pump liquid waste into deep geological formations, hydrocarbon reservoirs or confined saline aquifers. The receiving formations generally contain water that is too saline to be of any potential use. Impermeable geological seals overlying the injection intervals restrict any potential vertical migration of injected wastes into shallow freshwater aquifers.

Condition 4 of consent 6176-1 requires the consent holder to monitor the injected wastes monthly for a variety of parameters (without setting any limits for these). Table 3 below shows the results obtained over the 2012-2013 monitoring year.

Table 3 Pohokura produced water analysis for July 2012 - June 2013

Date	SS g/m ³	HC g/m ³	Dissolved solids g/m ³	pH	Chloride g/m ³
17-Jul-12	20	5.2	-	6.45	789
21-Aug-12	9	14.7	2500	6.22	904
17-Sep-12	7	11.2	1970	6.31	863
23-Oct-12	8	13.8	3604	6.32	1617
20-Nov-12	28	11.0	2396	6.48	904
23-Dec-12	12	22.9	2466	6.46	861
17-Jan-13	24	156.3	2172	6.40	417
21-Feb-13	19	45.2	2812	6.46	1445
2-Apr-13	7	37	2758	6.35	1149
21-May-13	7	38.8	2916	6.28	1184
18-Jun-13	9	42.5	3206	6.40	1391

Condition 3 of consent 6176-1 requires the consent holder to also record the amount of material injected, including the injection pressure and rate. This data is provided to the Council by SENZL and is summarized in Table 4 below.

Table 4 Monthly summary of deep well injection under consent 6176-1 for July 2012 - June 2013

Month	Total volume injected m ³	Max injection pressure bar
Jul 2012	1677	86.7
Aug 2012	1820	82.8
Sep 2012	1885	82.1
Oct 2012	1992	87.4
Nov 2012	1693	93.0
Dec 2012	1669	91.1
Jan 2013	2063	88.2
Feb 2013	1702	90.4
Mar 2013	1631	90.3
Apr 2013	2217	101.0
May 2013	2612	90.4
Jun 2013	2679	91.9

The total volume of produced water disposed of by DWI in the period July 2012 to June 2013 was 23,640 m³, at a maximum injection pressure of 101 bar.

2.1.3.3 Groundwater monitoring by SENZL

Consent 6364-1 covers the discharge of soil previously mingled with sludge, resin and other petrochemical wastes to land between the Waipapa Stream and the Manu Stream. The land for which this consent applies was previously owned by Methanex Motunui and was purchased by SENZL (then Shell Todd Oil Services Ltd) as part of the development of the Pohokura Production Station. The area was used by Methanex to discharge river silt taken from their water treatment facilities and sludge that had been cleaned out of various process vessels. The sludge contained zeolite catalyst, ceramic balls and elevated levels of nickel, zinc and copper.

With the purchase of the land, the discharge permit held by Methanex Motunui for this soil and wastes was transferred to SENZL, including the requirement for SENZL to comply with the conditions of the consent originally held by Methanex Motunui. Significant works were undertaken in this area during the construction of the Pohokura facilities. Retention of any uncovered soil or sludge on site during the works and the subsequent reinstatement of the horizontal directional drilling pad to pasture mean that the contaminated soil layers are now contained beneath clean fill and topsoil in the disposal area.

Condition 5 of the consent requires SENZL to provide annual analyses of groundwater samples from monitoring wells in the vicinity of the disposal area. In order to comply with this condition, four new monitoring wells were drilled in January 2007. Sampling of these wells was carried out in July 2013. The results of this testing will be included in the Council's 2013-2014 monitoring report for Pohokura.

2.2 Air

2.2.1 Inspections

Inspection notes are included in section 2.1.1 above. No issues regarding air quality were noted during the monitoring period.

2.2.2 Flaring and fuel gas

In December 2004 the New Zealand Parliament passed the Resource Management (Energy and Climate Change) Amendment Act, which relieved Regional Councils from the obligation to consider the effects on climate change of discharges into air of greenhouse gases.

Holders of resource consents to discharge emissions to air were no longer required to provide any information on green house gas emissions, and consents were amended accordingly. However, some consent holders, including SENZL, are still required to provide reports on emissions from gas combustion.

There are a number of products of flaring that are of interest because of their potential effects upon local air quality. Combustion processes that are well controlled release nitrogen oxides, while incomplete combustion will emit carbon monoxide and volatile or semi-volatile organic compounds that cause smoke and odour, and these can be highly injurious to health in concentrated form. Information on volumes of gas combusted in the Taranaki region assists the Council and consent holders in determining whether this is a significant issue in the region.

Condition 4 of consents 6002-1 and 6003-1 requires SENZL to submit a report in May each year regarding emissions and flaring, while condition 11 of consent 6003-1 requires SENZL to keep a log of all flaring incidents. Emission data for the Pohokura Production Station were provided to the Council by SENZL on a monthly basis, expressed as total gas flared and total fuel gas over a one day period. These datasets are graphically presented in Figure 2 below.

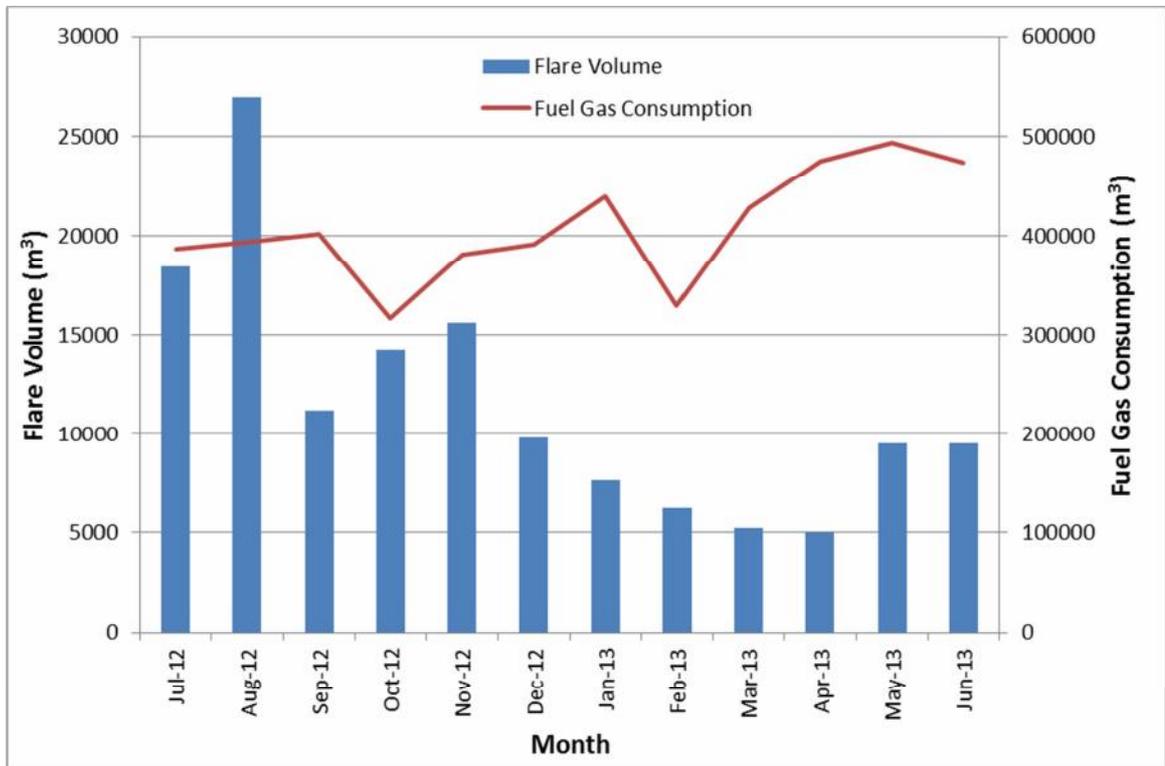


Figure 2 Monthly flare volumes and fuel gas consumption for July 2012 to June 2013

The spike in flare volume at the start of the monitoring year was due to tripping of the intermediate pressure compressors. Flare volumes remained low once this issue was resolved.

Part (b) of condition 4 on both air consents requires SENZL to detail any measures that have been undertaken to improve energy efficiency. SENZL is working internally to reduce its greenhouse gas emissions and improve energy efficiency as required by Shell's Global Environmental Standards.

Part (d) of condition 4 on the air consents requires SENZL to detail any measures to reduce flaring. Shell has an internal requirement to reduce flaring and it is no longer permitted to have continuous flaring in new installations. As natural gas is one of the products sold by SENZL from the Pohokura Production Station it is commercially sensible to recover as much gas as possible. The flare has been installed in the event the plant needs to be shutdown or depressurised in an emergency situation. The new gas reinjection facility also allows SENZL to increase condensate production without necessitating increased flaring of surplus gas.

2.2.3 Results of receiving environment monitoring

Ambient air quality monitoring at a number of sites around the boundary of the Pohokura Production Station has been undertaken by SENZL since June 2012 to assess offsite benzene levels. This monitoring has been carried out by URS Ltd using sorbent badges which are replaced on a 3-monthly basis.

Results obtained over the 2012-2013 year showed an elevated level of benzene at the east boundary compared to the other sites monitored. This is considered to reflect a combination of the predominantly westerly wind and the monitoring locations proximity to the two principle sources on site, which are the condensate and produced water storage tanks.

Ongoing investigations into the benzene emission sources, including boundary monitoring around the site, tank pressure monitoring and the deployment of a continuous monitoring station during October/November 2013, have indicated that emissions on site are also due to periodic emissions from the condensate tank, as well as tank filling operations. Areas where there are elevated benzene levels are limited to unoccupied industrial land, inaccessible to the public. Engineering work to investigate potential plant modifications to reduce these levels are currently underway as a priority.

2.3 Offshore

2.3.1 Marine and coastal monitoring

SENZL has committed to undertaking ongoing ecological assessments of the coastal area surrounding the Pohokura site to monitor the natural health of surrounding reefs as a means of operator and environmental best practise. These surveys will establish a data history and knowledge of the reefs as well as gaining an insight into how the reefs are affected by sand inundation.

During November 2012, a qualitative intertidal ecological survey was undertaken at three reefs during low tide. The reefs were: Otaraoa Reef on the western boundary of the Pohokura gas field consented area; Epiha Reef on the eastern boundary of the consented area; and Turangi Reef, which is 1.5 km east of Epiha Reef and is used as a control site for routine monitoring. These reef sites are used by the Council as part of the resource consent compliance monitoring programme. They have also been used by north Taranaki iwi and hapu as kaimoana monitoring sites in a programme established by iwi/hapu and Shell in 2001 which is carried out by an independent monitoring company.

The Taranaki coastline is a high energy environment and sand movement along the coast with natural littoral drift is a common occurrence. From the last three years of surveys, it has been determined that sand inundation greatly influences the species composition and abundance on all these reefs. However, the reefs can quickly recover when the sand recedes. The ecological assessments conducted by SENZL concluded that the health of these three reefs is comparable to other reefs around the Taranaki coastline that are subjected to sand inundation. Monitoring has indicated that SENZL activities in the area do not have any adverse effects on the coastal environment.

2.4 Investigations, interventions, and incidents

The monitoring programme for the year was based on what was considered to be an appropriate level of monitoring, review of data, and liaison with the consent holder. During the year matters may arise which require additional activity by the Council eg provision of advice and information, or investigation of potential or actual courses of non-compliance or failure to maintain good practices. A pro-active approach that in the first instance avoids issues occurring is favoured.

The Taranaki Regional Council operates and maintains a register of all complaints or reported and discovered excursions from acceptable limits and practices, including non-compliance with consents, which may damage the environment. The Unauthorised Incident Register (UIR) includes events where the company concerned has itself notified the Council. The register contains details of any investigation and corrective action taken.

Complaints may be alleged to be associated with a particular site. If there is potentially an issue of legal liability, the Council must be able to prove by investigation that the identified company is indeed the source of the incident (or that the allegation cannot be proven).

In the 2012-2013 period, it was not necessary for the Council to undertake significant additional investigations and interventions, or record incidents, in association with SENZL's conditions in resource consents or provisions in Regional Plans in relation to the Company's activities during the monitoring period.

3. Discussion

3.1 Discussion of site performance

Monitoring of the Pohokura Production Station during the period under review found that the site was well managed. All consent conditions relating to site operations and management were complied with. A highly proactive approach to environmental stewardship and best practice continues to be demonstrated by the Company.

3.2 Environmental effects of exercise of consents

Results of stormwater discharge sampling were within the limits prescribed by the consents for the wellsite and production station at all times, except for one exceedance of the chloride limit in self-monitoring reported to the Council. This can be attributed to the drought conditions experienced in the summer of 2012/13 resulting in a build up of windborne salt spray on the site which was washed into the stormwater system by significant rainfall prior to sampling. No adverse effects were noted on the receiving waters at the time of this discharge.

There were no adverse effects on the environment as a result of discharges to air at the Pohokura facility. Inspections showed that emissions to air from flaring and other sources were well controlled, producing no adverse offsite effects. Self-monitoring by the Company found elevated levels of BTEX at the eastern boundary of the site compared to other monitored sites. Investigations have linked this to vapour emissions that occur when the condensate tank is filling. Operational changes and engineering work to investigate potential plant modifications to reduce benzene emissions have been initiated.

Ongoing ecological assessments of the coastal area surrounding the Pohokura site have shown that the health of the three reefs in the vicinity is comparable to other reefs around the Taranaki coastline that are subjected to sand inundation. SENZL activities in the area do not appear to have had any adverse effect on the coastal environment.

3.3 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Tables 5-14.

Table 5 Summary of performance for Consent 5991-1 to occupy the coastal marine area around offshore wellhead platforms

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Survey and map position of completed platforms and pipeline within 90 days of completion of construction	Information supplied	Yes
2. Exercise of consent shall not limit public access to coastal marine area	Inspections and liaison with consent holder	Yes
3. Restriction of public access to Motunui foreshore during construction or maintenance kept to a minimum	Inspections and liaison with consent holder	Yes

Condition requirement	Means of monitoring during period under review	Compliance achieved?
4. BPO to prevent or minimise adverse environmental effects	Inspections	Yes
5. Notification to Council and Hapu of maintenance works	Notifications received	Yes
6. Lapse of consent	Consent exercised within lapse period	N/A
7. Optional review of consent	Next review scheduled for June 2015 if required	N/A
Overall assessment of consent compliance and environment performance in respect of this consent		High

N/A = not applicable

Table 6 Summary of performance for Consent 5992-1 to take produced water and heat from aquifers in the coastal marine area

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Activity undertaken in accordance with application	Inspections and liaison with consent holder	Yes
2. Consent lapse	Consent exercised within lapse period	N/A
3. Optional review of consent	Next review scheduled for June 2015 if required	N/A
Overall assessment of consent compliance and environment performance in respect of this consent		High

N/A = not applicable

Table 7 Summary of performance for Consent 5993-1 – to erect, place, use, reconstruct, alter, extend and maintain within the coastal marine area up to three offshore wellhead platforms and associated pipelines

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Written plans required at least one month prior to exercise of consent	Plans received	Yes
2. Schedule of proposed works provided to Council and Hapu	Schedule received	Yes
3. Contingency plan provided	Plan received	Yes
4. Structures constructed and maintained in accordance with application	Inspections and liaison with consent holder	Yes
5. Plans of proposed burial depth of pipelines	Plans received	Yes
6. Re-burial of pipelines if exposed	Pipeline surveys	N/A
7. Survey and map of location of platforms and pipelines	Provided to relevant parties – information on coastal map NZ 443	Yes

Condition requirement	Means of monitoring during period under review	Compliance achieved?
8. Notification to Council and Hapu of maintenance works	Notifications received	Yes
9. BPO to avoid or minimise adverse environmental effects	Inspections and liaison with consent holder	Yes
10. Compliance with noise standards	Inspections	Yes
11. Removal of structures and reinstatement of site		N/A
12. Lapse of consent	Consent exercised within lapse period	N/A
13. Optional review of consent	Next review scheduled for June 2015 if required	N/A
Overall assessment of consent compliance and environment performance in respect of this consent		High

N/A = not applicable

Table 8 Summary of performance for Consent 5994-1 to disturb the seabed and foreshore of the coastal marine area by the process of erection, placement, use, alteration, extension, maintenance, or removal of up to three offshore wellhead platforms and associated pipelines

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Written plans required at least one month prior to exercise of consent	Plans received	Yes
2. Recover and relocate kaimoana	N/A provided no excavation work required along shoreline	N/A
3. Contingency plan provided	Plan received	Yes
4. Preparation of wildlife management plan	Plan received	Yes
5. Artificial substrate for kelp re-seeding	Use of HDD under foreshore did not result in large area of kelp disturbance	N/A
6. Plan of proposed works to Council and Hapu	Plan received	Yes
7. No refuelling of land based machinery within coastal marine area	Inspections	Yes
8. Notification to Council and Hapu of maintenance works	Notifications received	Yes
9. Disturbance undertaken in accordance with application	Inspections and liaison with consent holder	Yes
10. BPO to avoid or minimise adverse environmental effects	Inspections, contingency plans, wildlife plan, intertidal and subtidal surveys	Yes
11. Foreshore and seabed disturbance kept to a minimum	Inspections, intertidal and subtidal surveys	Yes

Condition requirement	Means of monitoring during period under review	Compliance achieved?
12. No adverse ecological effects outside of disturbance corridor	Intertidal and subtidal surveys	Yes
13. Compliance with noise standards	Inspections	Yes
14. Works to cease if archaeological remains discovered		N/A
15. Hapu to have access in event of a significant archaeological find		N/A
16. Time limits for archaeological requirements		N/A
17. Works to recommence when advised by Council		N/A
18. Temporary structures removed and area reinstated when no longer required		N/A
19. Lapse of consent	Consent exercised within lapse period	N/A
20. Optional review of consent	Next review scheduled for June 2015 if required	N/A
Overall assessment of consent compliance and environment performance in respect of this consent		High

N/A = not applicable

Table 9 Summary of performance for Consent 5997-1 to discharge treated stormwater from Pohokura Production Station to the Duck Pond

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Contingency plan submitted prior to exercise of consent	Received and approved 15 April 2005	Yes
2. Details of stormwater planning submitted within 1 month of completion of site	Received and approved 27 January 2006	Yes
3. Exercised in accordance with application information, SC2, and to ensure consent conditions met at all times	Inspection, sampling and provision of information	Yes
4. Best practicable option to prevent or minimise adverse effects	Inspection and liaison with consent holder	Yes
5. Above ground hazardous substance storage areas drained to recovery systems not stormwater	Inspection and liaison with consent holder	Yes
6. Limits on contaminants in discharge	Sampling and results of self-monitoring	1 chloride level exceedance
7. Limits on temperature and BOD increase below the mixing zone	Not sampled during period under review	N/A

Condition requirement	Means of monitoring during period under review	Compliance achieved?
8. Effects on receiving water below the mixing zone	Inspection	Yes
9. Lapse of consent	Consent exercised within lapse period	N/A
10. Review provisions	Next review scheduled for June 2015 if required	N/A
Overall assessment of consent compliance and environment performance in respect of this consent		High

N/A = not applicable

Table 10 Summary of performance for Consent 6002-1 to discharge emissions to air from combustion of fuel gas and miscellaneous emissions at Pohokura Production Station

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Best practicable option to prevent or minimise adverse effects	Inspections and liaison with consent holder	Yes
2. Selection, operation and maintenance of equipment and processes to minimise emissions and impacts	Inspections and liaison with consent holder	Yes
3. Analysis of gas/condensate/crude stream	2012-2013 data received	Yes
4. Annual reporting during May of each year	2012-2013 reports received	Yes
5. Emission abatement equipment operated appropriately and well maintained at all times	Inspections	Yes
6. Consultation on alterations	Inspection and liaison with consent holder	Yes
7. Provision of final site lay-out plan	Received	Yes
8. Provision of report on BTEX abatement within 6 months of granting consent	Included in design documents and annual reports	Yes
9. Notification and reporting on incidents or potential incidents	Inspection and liaison with consent holder	Yes
10. Records kept of smoke, relief valve and complaints and made available to TRC	Records viewed at inspection	Yes
11. Dangerous levels of airborne contaminants not permitted	Inspection and monitoring	Yes
12. No objectionable odour, dust or smoke	Inspection and received complaints	Yes
13. No toxic contaminants beyond boundary	Inspection and sampling	Yes
14. Ground level carbon monoxide limit	Not monitored during period under review	N/A
15. Ground level nitrogen oxides limit	Not monitored during period under review	N/A

Condition requirement	Means of monitoring during period under review	Compliance achieved?
16. Ground level limit for any other contaminant	Results of self-monitoring for BTEX compounds received	Yes
17. Lapse of consent	Consent exercised within lapse period	N/A
18. Review provisions	Next review scheduled for June 2015 if required	N/A
Overall assessment of consent compliance and environment performance in respect of this consent		High

N/A = not applicable

Table 11 Summary of performance for Consent 6003-1 to discharge emissions to air from combustion involving flaring at Pohokura Production Station

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Best practicable option to prevent or minimise adverse effects	Inspection and liaison with consent holder	Yes
2. Selection, operation and maintenance of equipment and processes to minimise emissions and impacts	Inspection and liaison with consent holder	Yes
3. Analysis of gas/condensate/crude stream	2012-2013 data received	Yes
4. Annual reporting during May of each year	2012-2013 reports received	Yes
5. Emission abatement equipment operated appropriately and well maintained at all times	Inspection	Yes
6. Consultation on alterations	Inspection and liaison with consent holder	Yes
7. Provision of final site lay-out plan	Received	Yes
8. Notification of neighbours prior to commissioning	Inspection and liaison with consent holder	Yes
9. Notification and reporting on incidents or potential incidents	Notifications and reports received	Yes
10. Records kept of smoke, relief valve and complaints and made available to TRC	Records viewed at inspection	Yes
11. Maintenance of a flaring log	Monthly electronic log emailed to Council	Yes
12. Practicable steps to minimise flaring	Inspection and liaison with consent holder	Yes
13. Prevention of dense black smoke	Inspection and received complaints	Yes
14. Notification to TRC of extended flaring	Notifications received	Yes
15. No objectionable odour, dust or smoke	Inspection and received complaints	Yes
16. No toxic contaminants beyond boundary	Inspection and monitoring	Yes

Condition requirement	Means of monitoring during period under review	Compliance achieved?
17. Ground level carbon monoxide limit	Not monitored during period under review	N/A
18. Ground level nitrogen oxides limit	Not monitored during period under review	N/A
19. Ground level limit for any other contaminant	Results of self-monitoring for BTEX compounds received	Yes
20. Lapse of consent	Consent exercised within lapse period	N/A
21. Review provisions	Next review scheduled for June 2015 if required	N/A
Overall assessment of consent compliance and environment performance in respect of this consent		High

N/A = not applicable

Table 12 Summary of performance for Consent 6176-1 to discharge wastes and water by deep well injection at the Lower Otaraoa Road Wellsite

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Provision of well log and management plan prior to commencement	Received June 2005	Yes
2. Activity not to contaminate actual or potential freshwater aquifers	Inspection and sampling	Yes
3. Record keeping and reporting	Records received	Yes
4. Reporting of chemical analysis of wastes	Results for 2012-2013 received	Yes
5. Annual reporting during May of each year	2012-2013 reports provided	Yes
6. Lapse of consent	Consent exercised within lapse period	N/A
7. Review provisions	Next review scheduled for June 2015 if required	N/A
Overall assessment of consent compliance and environment performance in respect of this consent		High

N/A = not applicable

Table 13 Summary of performance for Consent 6269-1 to discharge treated stormwater from Lower Otaraoa Road Wellsite to the Duck Pond

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Best practicable option to prevent or minimise adverse effects	Inspection and liaison with consent holder	Yes
2. Exercised in line with application information	Inspection, monitoring and reporting	Yes
3. Contingency plan submitted prior to exercise of consent	Received	Yes

Condition requirement	Means of monitoring during period under review	Compliance achieved?
4. Seven days notice prior to commencement of work and of drilling	Notifications received	Yes
5. Limit on stormwater catchment area	Inspection	Yes
6. Treatment of all stormwater prior to discharge	Inspection	Yes
7. Above ground hazardous substance storage areas drained to recovery systems not stormwater	Inspection and liaison with consent holder	Yes
8. Limits on contaminants in discharge	Sampling and results of self-monitoring	1 chloride level exceedance
9. Limits on temperature and BOD increase below the mixing zone	Not investigated during period under review	N/A
10. Effects on receiving water below the mixing zone	Inspection	Yes
11. Lapse of consent	Consent exercised within lapse period	N/A
12. Review provisions	Next review scheduled for June 2015 if required	N/A
Overall assessment of consent compliance and environment performance in respect of this consent		High

N/A = not applicable

Table 14 Summary of performance for Consent 6364-1 to relocate previously contaminated soil onto and into land between the Waipapa and Manu Streams

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Prepare and maintain management plan	Received	Yes
2. Any updated management plan to provide no lesser level of protection	No updates in period under review	N/A
3. No further sludge or petrochemical waste disposal permitted	Inspection and liaison with consent holder	Yes
4. Sludge not to be relocated to within 25 metres of any property boundary except Methanex	Inspection and liaison with consent holder	Yes
5. Requirements for groundwater and soil sampling	Results received	Yes
6. Limit on effects on any water body	Inspection	Yes
7. Review provisions	Reviewed in 2009, expires June 2015	N/A
8. Exercised in accordance with application information	Inspection and liaison with consent holder	Yes
9. Disposal only within defined area	Inspection and liaison with consent holder	Yes

Condition requirement	Means of monitoring during period under review	Compliance achieved?
10. Relocation of soil out of the area only if shown to comply with Rule 29 of RFWP	No relocation	N/A
11. Prior Council approval for any change in land use that may release contaminants	No changes made in land use	N/A
Overall assessment of consent compliance and environment performance in respect of this consent		High

N/A = not applicable

During the period under review, the Company demonstrated a high level of environmental performance and compliance with the resource consents as defined in Section 1.1.4. The Pohokura facilities were well managed and maintained.

3.4 Recommendations from the 2010-2012 Monitoring Report

In the 2010-2012 Monitoring Report, it was recommended:

1. THAT monitoring of consented activities at the Pohokura Production Station and associated facilities in the 2012-2013 year continue at the same level as in 2010-2012.

This recommendation was implemented.

3.5 Alterations to monitoring programmes for 2013-2014

In designing and implementing the monitoring programmes for air/water discharges in the region, the Taranaki Regional Council has taken into account the extent of information made available by previous authorities, its relevance under the Resource Management Act, the obligations of the Act in terms of monitoring emissions/discharges and effects, and subsequently reporting to the regional community. The Council also takes into account the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere/discharging to the environment.

It is proposed that for 2013-2014, the monitoring programme is amended from that of 2012-2013 to replace the biannual Council sampling of the produced water tank with two additional samples of the combined stormwater discharge. Analysis of the produced water is undertaken by SENZL on monthly basis. There are no limits imposed by the Council on contaminants in this discharge. Additional monitoring of the stormwater discharge, which has limits on contaminants stipulated by consent conditions, would be more useful for assessing environmental performance and consent compliance. A recommendation to this effect is attached to this report.

4. Recommendation

1. THAT the monitoring programme for Pohokura Production Station and associated facilities in the 2013-2014 year is amended from that of 2012-2013 to replace the biannual sampling of the produced water tank with two additional samples of the combined stormwater discharge.

Glossary of common terms and abbreviations

The following abbreviations and terms are used within this report:

Al*	aluminium
As*	arsenic
Biomonitoring	assessing the health of the environment using aquatic organisms
BOD	biochemical oxygen demand. A measure of the presence of degradable organic matter, taking into account the biological conversion of ammonia to nitrate
BODF	biochemical oxygen demand of a filtered sample
bund	a wall around a tank to contain its contents in the case of a leak
CBOD	carbonaceous biochemical oxygen demand. A measure of the presence of degradable organic matter, excluding the biological conversion of ammonia to nitrate
cfu	colony forming units. A measure of the concentration of bacteria usually expressed as per 100 millilitre sample
COD	chemical oxygen demand. A measure of the oxygen required to oxidise all matter in a sample by chemical reaction
Condy	conductivity, an indication of the level of dissolved salts in a sample, usually measured at 20°C and expressed in mS/m
Cu*	copper
Cumec	A volumetric measure of flow- 1 cubic metre per second (1 m ³ s ⁻¹)
DO	dissolved oxygen
DRP	dissolved reactive phosphorus
<i>E.coli</i>	<i>escherichia coli</i> , an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre sample
Ent	enterococci, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre of sample
F	fluoride
FC	faecal coliforms, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre sample
fresh	elevated flow in a stream, such as after heavy rainfall
g/m ³	grams per cubic metre, and equivalent to milligrams per litre (mg/L). In water, this is also equivalent to parts per million (ppm), but the same does not apply to gaseous mixtures
iIncident	an event that is alleged or is found to have occurred that may have actual or potential environmental consequences or may involve non-compliance with a consent or rule in a regional plan. Registration of an incident by the Council does not automatically mean such an outcome had actually occurred
intervention	action/s taken by Council to instruct or direct actions be taken to avoid or reduce the likelihood of an incident occurring
investigation	action taken by Council to establish what were the circumstances/events surrounding an incident including any allegations of an incident
l/s	litres per second

MCI	macroinvertebrate community index; a numerical indication of the state of biological life in a stream that takes into account the sensitivity of the taxa present to organic pollution in stony habitats
mS/m	millisiemens per metre
mixing zone	the zone below a discharge point where the discharge is not fully mixed with the receiving environment. For a stream, conventionally taken as a length equivalent to 7 times the width of the stream at the discharge point
NH ₄	ammonium, normally expressed in terms of the mass of nitrogen (N)
NH ₃	unionised ammonia, normally expressed in terms of the mass of nitrogen (N)
NO ₃	nitrate, normally expressed in terms of the mass of nitrogen (N)
NTU	Nephelometric Turbidity Unit, a measure of the turbidity of water
O&G	oil and grease, defined as anything that will dissolve into a particular organic solvent (e.g. hexane). May include both animal material (fats) and mineral matter (hydrocarbons)
Pb*	lead
pH	a numerical system for measuring acidity in solutions, with 7 as neutral. Numbers lower than 7 are increasingly acidic and higher than 7 are increasingly alkaline. The scale is logarithmic i.e. a change of 1 represents a ten-fold change in strength. For example, a pH of 4 is ten times more acidic than a pH of 5
Physicochemical	measurement of both physical properties (e.g. temperature, clarity, density) and chemical determinants (e.g. metals and nutrients) to characterise the state of an environment
PM ₁₀	relatively fine airborne particles (less than 10 micrometre diameter)
resource consent	refer Section 87 of the RMA. Resource consents include land use consents (refer Sections 9 and 13 of the RMA), coastal permits (Sections 12, 14 and 15), water permits (Section 14) and discharge permits (Section 15)
RMA	Resource Management Act 1991 and including all subsequent amendments
SS	suspended solids
SQMCI	semi quantitative macroinvertebrate community index;
Temp	temperature, measured in °C (degrees Celsius)
Turb	turbidity, expressed in NTU
UI	Unauthorised Incident
UIR	Unauthorised Incident Register – contains a list of events recorded by the Council on the basis that they may have the potential or actual environmental consequences that may represent a breach of a consent or provision in a Regional Plan
Zn*	zinc

*an abbreviation for a metal or other analyte may be followed by the letters 'As', to denote the amount of metal recoverable in acidic conditions. This is taken as indicating the total amount of metal that might be solubilised under extreme environmental conditions. The abbreviation may alternatively be followed by the letter 'D', denoting the amount of the metal present in dissolved form rather than in particulate or solid form.

For further information on analytical methods, contact the Council's laboratory.

Bibliography and references

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Taranaki Regional Council (2009): Shell Pohokura Offshore Report 2007-2009. Technical Report 2009-23

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ANZECC (2000): National Water Quality Management Strategy: Australian and New Zealand Guidelines for Fresh and Marine Water Quality.

Appendix I

Resource consents held by SENZL



Coastal Permit
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

CHIEF EXECUTIVE
PRIVATE BAG 713
47 CLOTEN ROAD
STRATFORD
NEW ZEALAND
PHONE: 06-765 7127
FAX: 06-765 5097
www.trc.govt.nz

Please quote our file number
on all correspondence

Name of
Consent Holder: Shell Exploration NZ Limited
Shell (Petroleum Mining) Co Ltd
P O Box 1873
WELLINGTON

Consent Granted
Date: 16 June 2003

Conditions of Consent

Consent Granted: To occupy the coastal marine area within a corridor defined by the co-ordinates as WGS84 degrees, minutes, and seconds: 38 50 49.38 - 174 15 21.75; 38 51 45.50 - 174 12 59.67; 38 56 54.42 - 174 19 32.96; 38 56 57.28 - 174 16 32.98; 38 59 1.19 - 174 17 47.02; 38 59 12.30 - 174 16 15.30; for a radius of 50 metres around up to three offshore wellhead platforms situated at least 4 kilometres offshore, and also for a distance of 50 metres either side of the associated pipelines connecting the three offshore wellhead platforms to the foreshore at mean high water spring at or about GR: Q19:210-457

Expiry Date: 1 June 2033

Review Date(s): June 2004, June 2009, June 2015, June 2021, June 2027

Site Location: Offshore platforms, Coastal marine area from mean high water spring between Otaraoa Road, Waipapa, and Epiha Road, Motunui, Waitara, and extending up to 15 km offshore within a corridor defined by co-ordinates as above.

Legal Description: n/a

Catchment: Tasman Sea

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

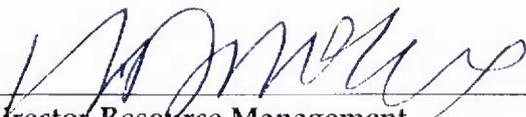
1. The consent holder shall survey and map the position of the platform[s] and the pipeline[s], within 90 days of the completion of their construction, and shall provide a copy of the plan showing the precise location [to within plus or minus 5 metres] of the structure[s] on the seabed, and the location of the occupied areas to the Taranaki Regional Council, the Hydrographic Office, Royal New Zealand Navy, and the Maritime Safety Authority.
2. With the exception a 50 metre radius of any platform, or as required for safety purposes during: construction, inspection, maintenance or removal, of the structure[s] licensed by coastal permit 5993; construction, use, inspection, maintenance or removal of the structure[s] licensed by coastal permit 6052; or the disturbance licensed by coastal permit 5994, the exercise of this consent shall not prevent the free passage of any member of the public through the coastal marine area.
3. The restriction of public access to the foreshore at Motunui shall be limited in time and space to the minimum required for the purpose of safety requirements related to: construction, inspection, maintenance or removal, of the structure[s] licensed by coastal permit 5993; construction, use, inspection, maintenance or removal of the structure[s] licensed by coastal permit 6052; or the disturbance licensed by coastal permit 5994. In any case the restriction shall be limited to a distance of 100 metres from the pipeline route and/or construction zone. When practicable provision will be made for public access through/past the construction zone with respect to the foreshore.
4. The consent holder shall adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any actual or potential effect on the environment arising from the occupation of the coastal marine area.

Consent 5991-1

5. The consent holder shall notify the Chief Executive and the Ngati Rahiri Hapu in writing at least 48 hours prior to commencement and upon completion of any subsequent maintenance works which would involve restriction of public access within the coastal marine area.
6. This consent shall lapse on the expiry of five years after the date of commencement of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.
7. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2004 and/or June 2009 and/or June 2015 and/or June 2021 and/or June 2027, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 14 March 2006

For and on behalf of
Taranaki Regional Council


Director-Resource Management



**TARANAKI
REGIONAL
COUNCIL**
CHIEF EXECUTIVE
PRIVATE BAG 713
47 CLOTEN ROAD
STRATFORD
NEW ZEALAND
PHONE: 06-765 7127
FAX: 06-765 5097
www.trc.govt.nz

**Coastal Permit
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council**

Please quote our file number
on all correspondence

Name of
Consent Holder: Shell Exploration NZ Limited
Shell (Petroleum Mining) Co Ltd
P O Box 1873
WELLINGTON

Consent Granted
Date: 16 June 2003

Conditions of Consent

Consent Granted: To take produced water and associated heat from aquifers
in the coastal marine area associated with hydrocarbon
exploration and production activities at or about GR:
Q19:210-457

Expiry Date: 1 June 2033

Review Date(s): June 2003, June 2009, June 2015, June 2021, June 2027

Site Location: Offshore platforms, Coastal marine area from mean high
water spring between Otaraoa Road, Waipapa, and Epiha
Road, Motunui, Waitara, and extending up to 15 km
offshore within a corridor defined by the co-ordinates as
WGS84 degrees, minutes and seconds:
38 50 49.38 – 174 15 21.75; 38 51 45.50 – 174 12 59.67;
38 56 54.42 – 174 19 32.96; 38 56 57.28 – 174 16 32.98;
38 59 1.19 – 174 17 47.02; 38 59 12.30 – 174 16 15.30

Legal Description: n/a

Catchment: Tasman Sea

Tributary: Tasman Sea

*For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document*

www.trc.govt.nz

Consent 5992-1

General conditions

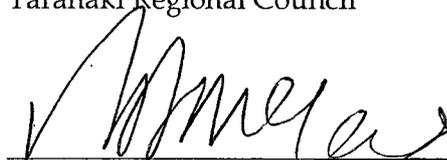
- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

- 1. The activity authorised by this consent shall be undertaken in general accordance with the documentation submitted in support of application 1782.
- 2. This consent shall lapse on the expiry of five years after the date of commencement of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.
- 3. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2003 and/or June 2009 and/or June 2015 and/or June 2021 and/or June 2027, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 14 March 2006

For and on behalf of
Taranaki Regional Council



Director Resource Management



Coastal Permit
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

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Please quote our file number
on all correspondence

Name of Consent Holder: Shell Exploration NZ Limited
Shell (Petroleum Mining) Co Ltd
P O Box 1873
WELLINGTON

Change To Conditions Date: 8 August 2005 [Granted: 12 July 2003]
[by the Minister of Conservation]

Conditions of Consent

Consent Granted: To erect, place, use, reconstruct, alter, extend and maintain within the coastal marine area up to three offshore wellhead platforms, 24 structures (being well casings) situated at least 4 kilometres offshore, and the associated pipelines connecting the three offshore wellhead platforms by horizontal directional drilling to the shore above mean high water spring, and the related occupation of the seabed at or about GR: Q19:210-457

Expiry Date: 1 June 2033

Review Date(s): June 2004, June 2009, June 2015, June 2021, June 2027

Site Location: Coastal marine area from mean high water spring between Otaraoa Road, Waipapa, and Epiha Road, Motunui, Waitara, and extending up to 15 kilometres offshore within a corridor defined by the co-ordinates as WGS84 degrees, minutes and seconds:
38 50 49.38 – 174 15 21.75; 38 51 45.50 – 174 12 59.67;
38 56 54.42 – 174 19 32.96; 38 56 57.28 – 174 16 32.98;
38 59 1.19 – 174 17 47.02; 38 59 12.30 – 174 16 15.30

Legal Description: n/a

Catchment: Tasman Sea

*For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document*

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Working with people • Caring for our environment

Consent 5993-1

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

Condition 1 - changed

1. At least one month prior to the exercise of this consent the consent holder shall provide, to the written satisfaction of the Chief Executive, detailed plans of the activity to confirm that the proposal is generally in accordance with the application and supporting documentation and will comply with all of the conditions of this consent. In addition (in the event of open trenching, but not for Horizontal Directional Drilling) the route of the pipeline bundle shall lie between 10 to 15 degrees east of true north from the position that it crosses Mean High Water Spring to the 5 metre depth contour. If Horizontal Directional Drilling is used the route of the pipeline shall lie between 28 to 36 degrees east of true north from the position that it crosses Mean High Water Spring to about the 10 metre depth contour.

Conditions 2 to 13 – unchanged

2. At least 10 working days prior to the commencement of works the consent holder shall provide the Taranaki Regional Council and the Ngati Rahiri Hapu with a programme for the installation/construction of the platform[s] and pipeline[s] including: a schedule of proposed start dates and an estimation of the duration of the works, and details of the contractor including contact information for the project manager.
3. Prior to the exercise of this consent the consent holder shall provide, to the satisfaction of the Chief Executive, a written construction contingency plan, outlining measures to be undertaken in the event of a spill as a result of works authorised by this consent. Further, prior to the exercise of this consent the consent holder shall provide to the Chief Executive, written confirmation of the acceptance by the Maritime Safety Authority of a New Zealand Offshore Installation Site Marine Oil Spill Contingency Plan. A copy of the approved written contingency plan shall be provided to the Ngati Rahiri Hapu within 5 working days.

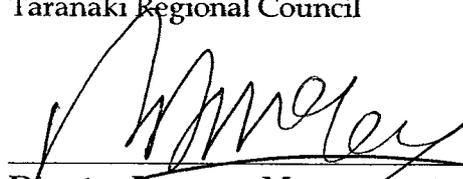
Consent 5993-1

4. The structures licensed by this consent shall be constructed and maintained in general accordance with the information submitted in support of the application, special condition 1 above, and to ensure that the conditions of this consent are met at all times.
5. At least one month prior to the exercise of this consent, the consent holder shall provide, to the written satisfaction of the Chief Executive, detailed plans of the proposed burial depth of the pipelines between Mean High Water Spring and the 5 metre depth contour, including any other sufficient technical information to demonstrate that the buried pipelines will not be exposed by erosion of the seabed.
6. If the pipeline[s] become exposed between Mean High Water Spring and the 5 metre depth contour, the consent holder shall immediately notify the Chief Executive and the Maritime Safety Authority. The consent holder shall rebury the pipeline[s] in accordance with the information supplied under special condition 5 above as soon as is practicable, and in any case within 30 days, unless this requirement is waived in writing by the Chief Executive.
7. The consent holder shall survey and map the position of the platform[s] and the pipeline[s], [including details of the pipeline[s] position in relation to the seabed], within 90 days of the completion of their construction, and shall provide a copy of the plan showing the precise location [to within plus or minus 5 metres] of the structure[s] on/in the seabed, to the Taranaki Regional Council, the Hydrographic Office, Royal New Zealand Navy, and the Maritime Safety Authority.
8. The consent holder shall notify the Chief Executive and the Ngati Rahiri Hapu in writing at least 48 hours prior to commencement and upon completion of any subsequent maintenance works which would involve significant disturbance of, or deposition, or discharge to, the coastal marine area.
9. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to avoid or minimise the discharge of any contaminants into coastal water or onto the foreshore or seabed and to avoid or minimise any adverse effects on coastal water quality or ecosystems.
10. The construction, use, maintenance and removal of the structure[s] authorised by this consent shall comply with the noise standards as outlined within section 4.4.3 of the Regional Coastal Plan for Taranaki.
11. Except with the written agreement of the Chief Executive, all structures [with the exception of well casings within the seabed], authorised by this consent shall be removed and the area[s] reinstated, if and when the structure[s] are no longer required. The consent holder shall notify the Chief Executive and the Ngati Rahiri Hapu in writing at least 1 month prior to any structure[s] removal. Reinstatement shall be to the satisfaction of the Chief Executive.
12. This consent shall lapse on the expiry of five years after the date of commencement of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

13. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete, or add to the conditions of this resource consent by giving notice of review during the month of June 2004 and/or June 2009 and/or June 2015 and/or June 2021 and/or June 2027, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 14 March 2006

For and on behalf of
Taranaki Regional Council



Director-Resource Management



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www.trc.govt.nz

Please quote our file number
on all correspondence

Coastal Permit
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder: Shell Exploration NZ Limited
Shell (Petroleum Mining) Co Ltd
P O Box 1873
WELLINGTON

Change To Conditions Date: 18 March 2005 [Granted: 12 July 2003]
[by the Minister of Conservation]

Conditions of Consent

Consent Granted: To disturb the seabed and foreshore of the coastal marine area by the process of erection, placement, use, alteration, extension, maintenance, or removal of up to three offshore wellhead platforms situated at least 4 kilometres offshore, and the associated pipelines connecting up to three offshore wellhead platforms to the foreshore above mean high water spring by the use of horizontal directional drilling at or about GR: Q19:210-457

Expiry Date: 1 June 2033

Review Date(s): June 2004, June 2009, June 2015, June 2021, June 2027

Site Location: Coastal marine area from mean high water spring between Otaraoa Road, Waipapa, and Epiha Road, Motunui, Waitara, and extending up to 15 kilometres offshore within a corridor defined by the co-ordinates as WGS84 degrees, minutes and seconds:
38 50 49.38 – 174 15 21.75; 38 51 45.50 – 174 12 59.67;
38 56 54.42 – 174 19 32.96; 38 56 57.28 – 174 16 32.98;
38 59 1.19 – 174 17 47.02; 38 59 12.30 – 174 16 15.30

Legal Description: n/a

Catchment: Tasman Sea

*For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document*

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Working with people • Caring for our environment

Consent 5994-1

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

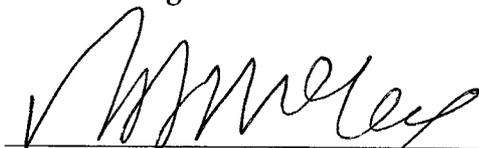
1. At least one month prior to the exercise of this consent the consent holder shall provide, to the written satisfaction of the Chief Executive, detailed plans of the activity to confirm that the proposal is generally in accordance with the application and supporting documentation and will comply with all of the conditions of this consent.
2. Prior to the exercise of this consent the consent holder in conjunction with the Taranaki Regional Council and tangata whenua shall endeavour as far as is practicable to recover and relocate all paua, kina, and other kaimoana from the area to be disturbed.
3. Prior to the exercise of this consent the consent holder shall provide to the satisfaction of the Chief Executive a written disturbance contingency plan outlining measures to be undertaken in the event of a spill as a result of works authorised by this consent. A copy of the approved written contingency plan shall be provided to the Ngati Rahiri Hapu within 5 working days.
4. Prior to the exercise of this consent the consent holder shall prepare, in consultation with the Department of Conservation and tangata whenua a wildlife management plan to the satisfaction of the Chief Executive setting out the mitigation and restoration methods proposed to minimise adverse effects on wildlife and blue penguin in particular.
5. Prior to the exercise of this consent the consent holder shall establish artificial substrate, so as to encourage the seeding of kelp onto the said substrate, to assist with kelp relocation and reinstatement.
6. At least 10 working days prior to the commencement of works the consent holder shall provide the Taranaki Regional Council and the Ngati Rahiri Hapu with a programme for the disturbance associated with installation/construction, [or removal], of the platform[s] and pipeline[s] including: a schedule of proposed start dates and an estimation of the duration of the works, and details of the contractor including contact information for the project manager.

7. There shall be no refuelling of land based machinery within the coastal marine area.
8. The consent holder shall notify the Chief Executive and the Ngati Rahiri Hapu in writing at least 48 hours prior to commencement and upon completion of any subsequent maintenance works which would involve disturbance of, or deposition, or discharge to, the coastal marine area.
9. The disturbance licensed by this consent shall be undertaken in general accordance with the information submitted in support of the application, special condition 1 above, and to ensure that the conditions of this consent are met at all times.
10. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to avoid or minimise the discharge of silt, sediments or any other contaminants into coastal water or onto the foreshore or seabed and to avoid or minimise the disturbance of the foreshore or seabed and any adverse effects on coastal water quality or ecosystems.
11. The consent holder shall ensure that the duration, area and volume of foreshore and seabed disturbance shall, so far as is practicable, be minimised and any areas which are disturbed shall, so far as is practicable, be reinstated to the satisfaction of the Chief Executive.
12. Outside of the disturbance corridor extending 50 metres either side of the pipeline the exercise of this consent shall not give rise to any significant adverse ecological effects including effects to kaimoana.
13. The disturbance authorised by this consent shall comply with the noise standards as outlined within section 4.4.3 of the Regional Coastal Plan for Taranaki.
14. In the event that any archaeological remains are discovered as a result of the exercise of this consent, the works shall cease immediately at the affected site. The on-site Ngati Rahiri Hapu representative, the on-site archaeologist and the Chief Executive of the Taranaki Regional Council shall be notified immediately, and be invited to inspect the site. The consent holder shall ensure that access is provided to the Ngati Rahiri Hapu representative and the archaeologist to carry out field work.
15. In the event of any find of significance, the Ngati Rahiri Hapu shall have all reasonable access to the site to carry out their specific requirements in terms of that find.
16. Unless otherwise agreed with the consent holder, the Ngati Rahiri Hapu shall complete their activities within the following times:
 - i) In areas where the seabed and foreshore has previously been disturbed as a result of previous works, the Ngati Rahiri Hapu shall have a maximum of two days to undertake their specific requirements in terms of the find;
 - ii) In areas where the seabed and foreshore has not previously been disturbed as a result of previous works, and there is a find of koiwi, the Ngati Rahiri Hapu shall have a maximum of 10 days to undertake their specific requirements in terms of that find; and

- iii) In areas where the seabed and foreshore has not previously been disturbed as a result of previous works, and where there is a find of taonga other than koiwi, the Ngati Rahiri Hapu shall have a maximum of five days to carry out their specific requirements in terms of that find.
17. Works may recommence at the affected area when advised to do by the Chief Executive. Such advice shall be given after the Chief Executive has considered: tangata whenua interest and values, the consent holder's interests, the interests of the public generally, and any archaeological or scientific evidence. The New Zealand Police, Coroner, and Historic Places Trust shall also be contacted as appropriate, and the work shall not recommence in the affected area until any necessary statutory authorisations or consents have been granted.
18. All temporary structure[s] including sheet piling and the like associated with the disturbance authorised by this consent shall be removed and the area[s] reinstated, if and when the structure[s] are no longer required. The consent holder shall notify the Chief Executive and the Ngati Rahiri Hapu in writing at least 48 hours prior to any structure[s] removal. Reinstatement shall be to the satisfaction of the Chief Executive.
19. This consent shall lapse on the expiry of five years after the date of commencement of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.
20. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2004 and/or June 2009 and/or June 2015 and/or June 2021 and/or June 2027, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 14 March 2006

For and on behalf of
Taranaki Regional Council



Director - Resource Management



Discharge Permit
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

CHIEF EXECUTIVE
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STRATFORD
NEW ZEALAND
PHONE: 06-765 7127
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www.trc.govt.nz

Please quote our file number
on all correspondence

Name of
Consent Holder: Shell Exploration NZ Limited
Private Bag 2035
NEW PLYMOUTH 4342

Decision Date
[Change]: 26 May 2011

Commencement
Date [Change]: 26 May 2011 [Granted: 16 June 2003]

Conditions of Consent

Consent Granted: To discharge treated stormwater from an Onshore Production Station to an existing stormwater control system, being a body of water commonly known as 'The Duck Pond' within the Manu Stream catchment at or about (NZTM) 1710824E-5683712N

Expiry Date: 1 June 2033

Review Date(s): June 2015, June 2021, June 2027

Site Location: Pohokura Production Station, Lower Otaraoa Road,
Motunui, Waitara

Legal Description: Pt Ngatirahiri 2A1 & Ngatirahiri 2A2
Lot 2 DP 324944 [Discharge source]
Pt Ngatirahiri 2B2B2 [Discharge site]

Catchment: Waipapa
Manu

*For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document*
www.trc.govt.nz

General conditions

- a) That on receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

- 1. Prior to the exercise of this consent, the consent holder shall provide for the written approval of the Chief Executive, Taranaki Regional Council, site specific details relating to contingency planning for the site.
- 2. Within one month of the completion of the development of the site the consent holder shall provide, to the satisfaction of the Chief Executive, Taranaki Regional Council, detailed plans of stormwater catchment and drainage pathways, including clean areas, potentially contaminated areas, and bunded areas, and the containment, treatment and discharge systems put into place.
- 3. The exercise of this consent shall be conducted in accordance with the information submitted in support of applications 1787 and 6768, special condition 2 above, and to ensure that the conditions of this consent are met at all times.
- 4. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects of the discharge on any water body.
- 5. Any above ground hazardous substances storage areas shall be bunded with drainage to sumps, or other appropriate recovery systems, and not to the stormwater catchment.
- 6. The following concentrations shall not be exceeded in the discharge:

Component	Concentration
pH (range)	6.5-8.5
suspended solids	100 gm ⁻³
total recoverable hydrocarbons [infrared spectroscopic technique]	15 gm ⁻³
chloride	50 gm ⁻³

This condition shall apply prior to the entry of the treated stormwater into the body of water known as 'The Duck Pond' at a designated sampling point approved by the Chief Executive, Taranaki Regional Council.

7. After allowing for reasonable mixing, within a mixing zone extending to the downstream end of the body of water known as 'The Duck Pond' the discharge shall not give rise to any of the following effects in the receiving waters of the Manu Stream:
 - a) an increase in temperature of more than 2 degrees Celsius;
 - b) an increase in biochemical oxygen demand of more than 2.00 gm⁻³.

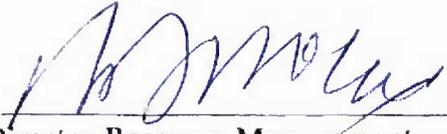
8. After allowing for reasonable mixing, within a mixing zone extending to the downstream end of the body of water known as 'The Duck Pond' the discharge point the discharge shall not give rise to any of the following effects in the receiving waters of the Manu Stream:
 - a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - b) any conspicuous change in the colour or visual clarity;
 - c) any emission of objectionable odour;
 - d) the rendering of fresh water unsuitable for consumption by farm animals;
 - e) any significant adverse effects on aquatic life.

9. This consent shall lapse on the expiry of five years after the date of commencement of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

10. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2009 and/or June 2015 and/or June 2021 and/or June 2027, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 26 May 2011

For and on behalf of
Taranaki Regional Council



Director-Resource Management



Land Use Consent
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

CHIEF EXECUTIVE
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NEW ZEALAND
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Please quote our file number
on all correspondence

Name of
Consent Holder: Shell Exploration NZ Limited
Shell (Petroleum Mining) Co Ltd
P O Box 1873
WELLINGTON

Consent Granted
Date: 16 June 2003

Conditions of Consent

Consent Granted: To erect, place, use and maintain a bridge over the bed of
an unnamed tributary of the Waipapa Stream for vehicle
access purposes at or about GR: Q19:205-450

Expiry Date: 1 June 2033

Review Date(s): June 2009, June 2015, June 2021, June 2027

Site Location: Onshore Production Station, Lower Otaraoa Road,
Motunui, Waitara

Legal Description: Pt Ngatirahiri 2A1 Block, 2A2 Block, 2B 3B1 Block, 2B 3A1
Block, 2B 3A2 Block, Lot 2 DP 9747, Ngatirahiri 2B 3A 3B
Block, Ngati Rahiri 2B 3A 3A Block, Lot 1 DP 9747 Pt Ngati
Rahiri 2B3A Block

Catchment: Waipapa 3 (Waipapa)

*For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document*

Consent 6000-1

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

1. At least one month prior to the exercise of this consent the consent holder shall provide, to the written satisfaction of the Chief Executive, detailed plans of a single span bridge to confirm that the proposal is generally in accordance with the application and supporting documentation and will comply with all of the conditions of this consent
2. The Chief Executive and the Ngati Rahiri Hapu O Te Atiawa (Taranaki) Society (Inc) shall be notified in writing at least 7 days prior to commencement of works, and again at least 48 hours prior to any maintenance that would involve any discharge to or disturbance of the unnamed tributary.
3. Prior to the exercise of this consent the consent holder shall provide, to the satisfaction of the Chief Executive a written contingency plan, outlining measures to be undertaken in the event of a spill as a result of works authorised by this consent. A copy of the approved written contingency plan shall be provided to the Ngati Rahiri Hapu O Te Atiawa (Taranaki) Society (Inc) within 5 working days.
4. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise the disturbance of the stream bed and to prevent or minimise any adverse effects on the unnamed tributary.
5. The structure[s] licensed by this consent shall be constructed and maintained in general accordance with the information submitted in support of the application, special condition 1 above, and to ensure the conditions of this consent are met at all times.
6. During the construction and any subsequent maintenance, the consent holder shall observe every practical measure to prevent the discharge or placement of silt and/or organics and/or any other contaminants into any waterway and to minimise the disturbance of the bed of the unnamed tributary.

Consent 6000-1

7. The consent holder shall ensure that disturbance of the bed of the unnamed tributary will be restricted to a practicable minimum and that areas disturbed from the exercise of this consent are to be reinstated to the satisfaction of the Chief Executive.
8. The exercise of this consent shall not restrict the passage of fish.
9. In the event that any archaeological remains are discovered as a result of works authorised by this consent, the works shall cease immediately at the affected site. The on-site Ngati Rahiri representative, the on-site archaeologist and the Chief Executive of the Taranaki Regional Council shall be notified immediately, and be invited to inspect the site. The consent holder shall ensure that access is provided to the Ngati Rahiri representative and the archaeologist to carry out field work.
10. In the event of any find of significance, particularly to the Ngati Rahiri Hapu O Te Atiawa (Taranaki) Society (Inc) shall have all reasonable access to the site to carry out their specific requirements in terms of that find.
11. Unless otherwise agreed with the consent holder, the Ngati Rahiri Hapu O Te Atiawa (Taranaki) Society (Inc) shall complete their activities with in the following times:
 - i) In areas where the earth has previously been disturbed as a result of previous earthworks (as defined on the Site Disturbance Plan attached ref Fig TRC1), the Ngati Rahiri Hapu O Te Atiawa (Taranaki) Society (Inc) shall have a maximum of two days to undertake their specific requirements in terms of the find;
 - ii) In areas where the earth has previously not been disturbed as a result of previous earthworks (as defined on the Site Disturbance Plan attached ref Fig TRC1), and there is a find of koiwi, the Ngati Rahiri Hapu O Te Atiawa (Taranaki) Society (Inc) shall have a maximum of 10 days to undertake their specific requirements in term of that find; and
 - iii) In areas where the earth has not previously been disturbed as a result of previous earthworks (as defined on the Site Disturbance Plan attached ref Fig TRC1), and where there is a find of taonga other than koiwi, the Ngati Rahiri Hapu O Te Atiawa (Taranaki) Society (Inc) shall have a maximum of five days to carry out their specific requirements in terms of that find.
12. Works may recommence at the affected areas when advised to do so by the Chief Executive. Such advice shall be given after the Chief Executive has considered: tangata whenua interest and values, the consent holder's interests, the interests of the public generally, and any archaeological or scientific evidence. The New Zealand Police, Coroner, and Historic Places Trust shall also be contacted as appropriate, and the work shall not recommence in the affected area until any necessary statutory authorisations or consents have been obtained.
13. The structure[s] authorised by this consent shall be removed and the area[s] reinstated, if and when the structure[s] are no longer required. The consent holder shall notify the Chief Executive in writing at least 48 hours prior to the removal of any structure[s]. Reinstatement shall be to the satisfaction of the Chief Executive.

Consent 6000-1

14. This consent shall lapse on the expiry of five years after the date of commencement of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.
15. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2009 and/or June 2015 and/or June 2021 and/or June 2027, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 14 March 2006

For and on behalf of
Taranaki Regional Council



Director Resource Management



Discharge Permit
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

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Please quote our file number
on all correspondence

Name of
Consent Holder: Shell Exploration NZ Limited
Shell (Petroleum Mining) Co Ltd
P O Box 1873
WELLINGTON

Change To
Conditions Date: 11 April 2005 [Granted: 16 June 2003]

Conditions of Consent

Consent Granted: To discharge contaminants to air as products of combustion from an Onshore Production Station involving equipment burning natural gas as fuel where the maximum heat release is in excess of 10 megawatts, together with miscellaneous emissions at or about GR: Q19:207-452

Expiry Date: 1 June 2033

Review Date(s): June 2009, June 2015, June 2021, June 2027

Site Location: Onshore Production Station, Lower Otaraoa Road, Motunui, Waitara

Legal Description: Pt Ngatirahiri 2A1 Block, 2A2 Block, 2B 3B1 Block, 2B 3A1 Block, 2B 3A2 Block, Lot 2 DP 9747, Ngatirahiri 2B 3A 3B Block, Ngati Rahiri 2B 3A 3A Block, Lot 1 DP 9747 Pt Ngati Rahiri 2B3A Block

Catchment: Waipapa 3 (Waipapa)

*For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document*

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Consent 6002-1

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

1. The consent holder shall at all times adopt the best practicable option [as defined in Section 2 of the Resource Management Act 1991] to prevent or minimise any actual or likely adverse effect on the environment associated with the discharge of contaminants into the environment arising from the emissions to air from the site.
2. The consent holder shall minimise the emissions and impacts of air contaminants discharged from the site by the selection of the most appropriate process equipment, process control equipment, emission control equipment, methods of control, supervision and operation, and the proper and effective operation, supervision, control and maintenance of all equipment and processes.
3. The consent holder shall make available to the Chief Executive upon request an analysis of a typical gas and/or condensate and/or crude oil stream from the Pohokura field, covering sulphur compound content and the content of carbon compounds of structure C₆ or higher number of compounds
4. The consent holder shall provide to the Taranaki Regional Council during May of each year, for the duration of this consent, a report:
 - a) detailing gas combustion at the production station;
 - b) detailing any measures that have been undertaken by the consent holder to improve the energy efficiency of the production station;
 - c) detailing any measures to reduce smoke emissions;
 - d) detailing any measures to reduce flaring,
 - e) addressing any other issue relevant to the minimisation or mitigation of emissions from the production station; and
 - f) detailing any complaints received and any measures undertaken to address complaints.
5. All equipment used to avoid, remedy or mitigate any effect on the environment from the discharge of emissions into the air shall be maintained in good condition and shall be operated within design parameters at all times that the plant is in operation.

Consent 6002-1

6. Prior to undertaking any alterations to the plant, processes or operations, which may significantly change the nature or quantity of contaminants emitted to air from the site, the consent holder shall first consult with the Chief Executive and shall obtain any necessary approvals under the Resource Management Act 1991.
7. Prior to the commencement of production, the consent holder shall supply to the Chief Executive, a final site lay-out plan, demonstrating configuration of the facilities and equipment so as to avoid or mitigate the potential effects of air emissions.
8. The consent holder shall within 6 months of the granting of this consent provide to the Chief Executive a report on options for the treatment and/or reduction of BTEX emissions from the production station.
9. Any incident having an environmental impact or potential environmental impact which has caused or is liable to cause substantiated complaint or a hazardous situation beyond the boundary of the property on which the production station is located, shall be notified to the Taranaki Regional Council, as soon as possible, followed by a written report to the Chief Executive within one week of the incident, with comment about the measures taken to minimise the impact of the incident and to prevent re-occurrence.
10. The consent holder shall keep and make available to the Chief Executive, upon request, a record of all smoke emitting incidents and all relief valve releases, noting time, duration and cause. The consent holder shall also keep, and make available to the Chief Executive, upon request, a record of all complaints received as a result of the exercise of this consent.
11. The discharges authorised by this consent shall not, whether alone or in conjunction with any other emissions from the site arising through the exercise of any other consent, give rise to any dangerous levels of airborne contaminants at or beyond the boundary of the property including but not limited to any risk of fire or explosion.
12. The discharges authorised by this consent shall not, whether alone or in conjunction with any other emissions from the site arising through the exercise of any other consent, give rise to any levels of odour or dust or smoke that are offensive or obnoxious or objectionable at or beyond the boundary of the property on which the production station is located in the opinion of an enforcement officer of the Taranaki Regional Council.
13. The consent holder shall not discharge any contaminant to air from the site at a rate or a quantity such that the contaminant, whether alone or in conjunction with any other emissions from the site arising through the exercise of any other consent, is or is liable to be hazardous or toxic or noxious at or beyond the boundary of the property where the production station is located, or at any dwellinghouse.

Consent 6002-1

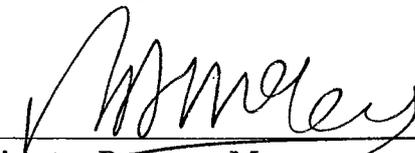
14. The consent holder shall control all emissions of carbon monoxide to the atmosphere from the production station, whether alone or in conjunction with any other emissions from the site arising through the exercise of any other consent, in order that the maximum ground level concentration of carbon monoxide arising from the exercise of this consent measured under ambient conditions does not exceed 10 mg m^{-3} [eight-hour average exposure], or 30 mg m^{-3} [one-hour average exposure] at or beyond the boundary of the property on which the production station is located.
15. The consent holder shall control all emissions of nitrogen oxides to the atmosphere from the production station, whether alone or in conjunction with any other emissions from the site arising through the exercise of any other consent, in order that the maximum ground level concentration of nitrogen dioxide arising from the exercise of this consent measured under ambient conditions does not exceed $200 \text{ } \mu\text{g m}^{-3}$ [one-hour average exposure] or $100 \text{ } \mu\text{g m}^{-3}$ [24-hour average exposure] or $30 \text{ } \mu\text{g m}^{-3}$ [annual average exposure] at or beyond the boundary of the property on which the production station is located.
16. The consent holder shall control emissions to the atmosphere from the production station of contaminants other than carbon dioxide, carbon monoxide, and nitrogen oxides, whether alone or in conjunction with any other emissions from the site arising through the exercise of any other consent, in order that the maximum ground level concentration for any particular contaminant arising from the exercise of this consent, measured under ambient conditions at or beyond the boundary of the property on which the production station is located, is not increased above background levels:
 - a) by more than 1/30th of the relevant Occupational Threshold Value-Time Weighted Average, or by more than the Short Term Exposure Limit at any time [all terms as defined in Workplace Exposure Standards and Biological Exposure Indices for New Zealand, 1992, Department of Labour]; or
 - b) if no Short Term Exposure Limit is set, by more than three times the Time Weighted Average at any time [all terms as defined in Workplace Exposure Standards and Biological Exposure Indices for New Zealand, 1992 Department of Labour].
17. This consent shall lapse on the expiry of five years after the date of commencement of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.
18. Subject to the provisions of this condition, the Council may within six months of receiving a report prepared by the consent holder pursuant to condition 4 of this consent, or in June 2009 and/or June 2015 and/or June 2021 and/or June 2027 serve notice that it intends to review the conditions of this resource consent in accordance with section 128(1)(a) of the Resource Management Act 1991 for the purposes of:
 - a) dealing with any significant adverse effect on the environment arising from the exercise of the consent which was not foreseen at the time the application was considered or which it was not appropriate to deal with at the time; and/or

Consent 6002-1

- b) requiring the consent holder to adopt the best practicable option to remove or reduce any adverse effect on the environment caused by the discharge; and/or
- c) to alter, add or delete limits on mass discharge quantities or discharge or ambient concentrations of any contaminant or contaminants; and/or
- d) taking into account any Act of Parliament, regulation, national policy statement or national environmental standard which relates to limiting, recording, or mitigating emissions of carbon dioxide and/or nitrogen dioxide, and which is relevant to the air discharge from the Pohokura Production Station.

Transferred at Stratford on 14 March 2006

For and on behalf of
Taranaki Regional Council



Director - Resource Management



CHIEF EXECUTIVE
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Please quote our file number
on all correspondence

Discharge Permit
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of
Consent Holder: Shell Exploration NZ Limited
Shell (Petroleum Mining) Co Ltd
P O Box 1873
WELLINGTON

Change To
Conditions Date: 11 April 2005 [Granted: 16 June 2003]

Conditions of Consent

Consent Granted: To discharge emissions to air from combustion involving the flaring of petroleum products incidental to the treatment of gas at an Onshore Production Station at or about GR: Q19:207-452

Expiry Date: 1 June 2033

Review Date(s): June 2009, June 2015, June 2021, June 2027

Site Location: Onshore Production Station, Lower Otaraoa Road, Motunui, Waitara

Legal Description: Pt Ngatirahiri 2A1 Block, 2A2 Block, 2B 3B1 Block, 2B 3A1 Block, 2B 3A2 Block, Lot 2 DP 9747, Ngatirahiri 2B 3A 3B Block, Ngati Rahiri 2B 3A 3A Block, Lot 1 DP 9747 Pt Ngati Rahiri 2B3A Block

Catchment: Waipapa 3 (Waipapa)

*For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document*

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

1. The consent holder shall at all times adopt the best practicable option [as defined in section 2 of the Resource Management Act 1991] to prevent or minimise any actual or likely adverse effect on the environment associated with the discharge of contaminants into the environment arising from the emissions to air from the flare.
2. The consent holder shall minimise the emissions and impacts of air contaminants discharged from the flare by the selection of the most appropriate process equipment, process control equipment, emission control equipment, methods of control, supervision and operation, and the proper and effective operation, supervision, control and maintenance of all equipment and processes.
3. The consent holder shall make available to the Chief Executive upon request an analysis of a typical gas and/or condensate and/or crude oil stream from the Pohokura field, covering sulphur compound content and the content of carbon compounds of structure C₆ or higher number of compounds
4. The consent holder shall provide to the Taranaki Regional Council during May of each year, for the duration of this consent, a report:
 - a) detailing gas combustion at the production station flare;
 - b) detailing any measures that have been undertaken by the consent holder to improve the energy efficiency of the production station;
 - c) detailing any measures to reduce smoke emissions;
 - d) detailing any measures to reduce flaring,
 - e) addressing any other issue relevant to the minimisation or mitigation of emissions from the production station flare; and
 - f) detailing any complaints received and any measures undertaken to address complaints.

Consent 6003-1

5. All equipment used to avoid, remedy or mitigate any effect on the environment from the discharge of emissions into the air shall be maintained in good condition and shall be operated within design parameters at all times that the flare is in operation.
6. Prior to undertaking any alterations to the plant equipment, processes or operations, which may substantially alter the nature or quantity of flare emissions other than as notified in this consent application, the consent holder shall first consult with the Chief Executive and shall obtain any necessary approvals under the Resource Management Act 1991.
7. Prior to the commencement of production, the consent holder shall supply to the Chief Executive a final site lay-out plan, demonstrating configuration of the facilities and equipment so as to avoid or mitigate the potential effects of air emissions.
8. At least 3 days before the commissioning of the plant, the consent holder shall undertake all practicable measures to notify owners or occupiers of properties within 1 kilometre of the boundary of the property on which the production station flare is located, of the possibility of flaring and smoke emissions. The consent holder shall include in the notification a 24-hour contact telephone number for a representative of the consent holder.
9. Any incident having an environment effect or potential effect which has caused or is liable to cause substantiated complaint or a hazardous situation beyond the boundary of the property on which the production station flare is located, shall be notified to the Taranaki Regional Council, as soon as possible, followed by a written report to the Chief Executive within one week of the incident, with comment about the measures taken to minimise the impact of the incident and to prevent re-occurrence.
10. The consent holder shall keep and make available to the Chief Executive, upon request, a record of all smoke emitting incidents, noting time, duration and cause. The consent holder shall also keep, and make available to the Chief Executive, upon request, a record of all complaints received as a result of the exercise of this consent.
11. The consent holder shall keep and maintain a log of all continuous flaring incidents longer than 5 minutes and any intermittent flaring lasting for an aggregate of 10 minutes or longer in any 60-minute period. Such a log shall contain the date, the start and finish times, the quantity and type of material flared, and the reason for flaring. This log shall be made available to the Chief Executive upon request, and summarised annually in the report required under condition 4.
12. All practicable steps shall be taken to minimise flaring.
13. Other than in emergencies, depressurisation of the plant, or sections of the plant, shall be carried out over a sufficient period of time to prevent dense black smoke from being discharged from the flare.
14. The consent holder shall, whenever practicable, notify the Chief Executive whenever the continuous flaring of hydrocarbons [other than purge gas] is expected to occur for more than five minutes in duration.

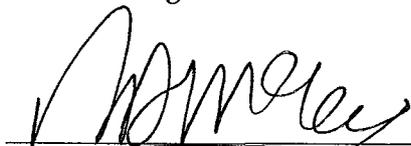
15. The discharges authorised by this consent shall not, whether alone or in conjunction with any other emissions from the site arising through the exercise of any other consent, give rise to any levels of odour or dust or smoke that are offensive or obnoxious or objectionable at or beyond the site boundary in the opinion of an enforcement officer of the Taranaki Regional Council.
16. The consent holder shall not discharge any contaminant to air from the site at a rate or a quantity such that the contaminant, whether alone or in combination with other contaminants, is or is liable to be hazardous or toxic or noxious at or beyond the boundary of the property where the production station is located, or at any dwelling house
17. The consent holder shall control all emissions of carbon monoxide to the atmosphere from the flare, whether alone or in conjunction with any other emissions from the site arising through the exercise of any other consent, in order that the maximum ground level concentration of carbon monoxide arising from the exercise of this consent measured under ambient conditions does not exceed 10 mg/m^3 [eight-hour average exposure], or 30 mg/m^3 [one-hour average exposure] at or beyond the boundary of the property on which the production station flare is located.
18. The consent holder shall control all emissions of nitrogen oxides to the atmosphere from the flare, whether alone or in conjunction with any other emissions from the site arising through the exercise of any other consent, in order that the maximum ground level concentration of nitrogen dioxide arising from the exercise of this consent measured under ambient conditions does not exceed $200 \text{ } \mu\text{g m}^{-3}$ [one-hour average exposure] or $100 \text{ } \mu\text{g m}^{-3}$ [24-hour average exposure] or $30 \text{ } \mu\text{g m}^{-3}$ [annual average exposure] at or beyond the boundary of the property on which the production station flare is located.
19. The consent holder shall control emissions to the atmosphere from the flare of contaminants other than carbon dioxide, carbon monoxide, and nitrogen oxides from the flare, whether alone or in conjunction with any other emissions from the site arising through the exercise of any other consent, in order that the maximum ground level concentration for any particular contaminant arising from the exercise of this consent, measured at or beyond the boundary of the property on which the production station flare is located, is not increased above background levels:
 - a) by more than 1/30th of the relevant Occupational Threshold Value-Time Weighted Average, or by more than the Short Term Exposure Limit at any time [all terms as defined in Workplace Exposure Standards and Biological Exposure Indices for New Zealand, 1992, Department of Labour]; or
 - b) if no Short Term Exposure Limit is set, by more than three times the Time Weighted Average at any time [all terms as defined in Workplace Exposure Standards and Biological Exposure Indices for New Zealand, 1992 Department of Labour].

Consent 6003-1

20. This consent shall lapse on the expiry of five years after the date of commencement of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.
21. Subject to the provisions of this condition, the Council may within six months of receiving a report prepared by the consent holder pursuant to condition 4 of this consent, or during the month of June 2009 and/or June 2015 and/or June 2021 and/or June 2027, serve notice that it intends to review the conditions of this resource consent in accordance with section 128(1)(a) of the Resource Management Act 1991 for the purposes of:
- a) dealing with any significant adverse effect on the environment arising from the exercise of the consent which was not foreseen at the time the application was considered or which it was not appropriate to deal with at the time; and/or
 - b) requiring the consent holder to adopt the best practicable option to remove or reduce any adverse effect on the environment caused by the discharge; and/or
 - c) to alter, add or delete limits on mass discharge quantities or discharge or ambient concentrations of any contaminant or contaminants; and/or
 - d) taking into account any Act of Parliament, regulation, national policy statement or national environmental standard which relates to limiting, recording, or mitigating emissions of carbon dioxide and/or nitrogen dioxide, and which is relevant to the air discharge from the Pohokura Production Station.

Transferred at Stratford on 14 March 2006

For and on behalf of
Taranaki Regional Council



Director-Resource Management



Discharge Permit
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

CHIEF EXECUTIVE
PRIVATE BAG 713
47 CLOTEN ROAD
STRATFORD
NEW ZEALAND
PHONE: 06-765 7127
FAX: 06-765 5097
www.trc.govt.nz

Please quote our file number
on all correspondence

Name of Consent Holder: Shell Exploration NZ Limited
Shell (Petroleum Mining) Co Ltd
P O Box 1873
WELLINGTON

Change To Conditions Date: 11 April 2005 [Granted: 16 June 2003]

Conditions of Consent

Consent Granted: To discharge emissions into the air from the flaring of hydrocarbons, together with miscellaneous emissions, arising from hydrocarbon exploration and production testing operations involving up to 48 zones at the Lower Otaraoa Road wellsite at or about GR: Q19:204-454

Expiry Date: 1 June 2033

Review Date(s): June 2004, June 2009, June 2015, June 2021, June 2027

Site Location: Lower Otaraoa Road wellsite, Lower Otaraoa Road, Motunui, Waitara [Property owner: Methanex New Zealand Limited] [Lessee: J & K Weston]

Legal Description: Pt Ngatirahiri 2A1 Blk, Ngatirahiri 2A2 Blk, Pt Ngatirahiri 2B 3B1 Blk, Pt Ngatirahiri 2B 3A1 Blk, Ngatirahiri 2B 3A2 Blk, Lot 2 DP 9747 (Ngatirahiri 2B 3B2A Blk), Ngatirahiri 2B 3B Blk, Ngatirahiri 2B 3A 3A Blk Lot 1 DP 9747 Pt Ngatirahiri 2B 3A Blk

Catchment: Waipapa 3 (Waipapa)

*For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document*

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

Duration

1. This consent shall not be exercised for more than an accumulated duration of 45 days [1080 hours] per zone, allowing up to forty-eight zones to be tested. The time interval specified in this condition refers to that period during which this consent is exercised and is not regarded as continuous elapsed time from the first exercise of this consent.

Information and notification

2. Prior to the commencement of testing, the consent holder shall supply to the Chief Executive a final site lay-out plan, demonstrating configuration of the facilities and equipment so as to avoid or mitigate the potential effects of air emissions.
3. The occupiers of any dwellinghouses within 1000 m of the wellsite and the Taranaki Regional Council shall be notified within 24 hours prior to the initial flaring of each well being commenced.
4. The consent holder shall keep and make available to the Chief Executive a record of all queries and/or complaints received.
5. No alteration shall be made to plant equipment or processes which may substantially alter the nature or quantity of flare emissions or other site emissions, including but not limited to the recovery of produced gas, other than as notified in this consent application, without prior consultation with the Chief Executive.

Flaring

6. Other than for the maintenance of a pilot flare flame, the consent holder shall have regard to the prevailing and predicted wind speed and direction at the time of initiation of any episode of flaring or other combustion of hydrocarbons.
7. All gas being flared, at any time during well clean-up, drill stem testing, initial testing, or production testing, or at any other time during any hydrocarbon exploration or production testing activities, must first be treated by effective liquid and solid separation and recovery, as far as is practicable, to ensure that smoke emission during flaring is minimised.
8. If separation cannot be implemented and/or maintained at any time while there is a flow from the well, whether natural or induced, then the consent holder shall notify the Chief Executive and shall in any case re-establish liquid separation and recovery within three hours.
9. No liquid or solid hydrocarbons shall be combusted through the gas flare system.
10. As soon as is practicable after flow commences, the separated gas shall be combusted so that emissions of smoke are minimised.
11. The consent holder shall adopt the best practicable option to prevent or minimise any actual or potential effect on the environment arising from the flare emission, emissions from the flare pit, or any other emissions from the site [including use of a separator during well clean-up]. This requirement applies in addition to any of the specific requirements set out in conditions 1, 6, 7, 8, 9 and 10.
12. Only substances originating from the well stream and treated as outlined by conditions 7, 8, 9, 10 and 11 are to be combusted within the flare pit.
13. The consent holder shall not discharge any contaminant to air from the site at a rate or a quantity such that the contaminant, whether alone or in combination with other contaminants, is or is liable to be hazardous or toxic or noxious at or beyond the boundary of the property on which the wellsite is located, or at any dwellinghouse.
14. There shall not be any offensive odour or smoke beyond the boundary of the property on which the wellsite is located, arising from activities at the wellsite.
15. The opacity of any smoke emissions shall not exceed a level of 2 as measured on the Ringelmann Scale for more than four minutes cumulative duration in any 60-minute period.

16. The consent holder shall control all emissions of carbon monoxide to the atmosphere from the flare, whether alone or in conjunction with any other emissions from the site arising through the exercise of any other consent, in order that the maximum ground level concentration of carbon monoxide arising from the exercise of this consent measured under ambient conditions does not exceed 10 mg/m³ [eight-hour average exposure], or 30 mg/m³ [one-hour average exposure] at or beyond the boundary of the property on which the wellsite is located.
17. The consent holder shall control all emissions of nitrogen oxides to the atmosphere from the flare, whether alone or in conjunction with any other emissions from the site arising through the exercise of any other consent, in order that the maximum ground level concentration of nitrogen dioxide arising from the exercise of this consent measured under ambient conditions does not exceed 200 µg m⁻³ [one-hour average exposure] or 100 µg m⁻³ [24-hour average exposure] or 30 µg m⁻³ [annual average exposure] at or beyond the boundary of the property on which the wellsite flare is located.
18. The consent holder shall control emissions to the atmosphere from the site of contaminants other than carbon dioxide, carbon monoxide, and nitrogen oxides, whether alone or in conjunction with any emissions from the flare, in order that the maximum ground level concentration for any particular contaminant arising from the exercise of this consent, measured at or beyond the boundary of the property on which the wellsite is located, is not increased above background levels:
 - a) by more than 1/30th of the relevant Occupational Threshold Value-Time Weighted Average, or by more than the Short Term Exposure Limit at any time [all terms as defined in Workplace Exposure Standards, 1994, Department of Labour]; or
 - b) if no Short Term Exposure Limit is set, by more than three times the Time Weighted Average at any time [all terms as defined in Workplace Exposure Standards, 1994, Department of Labour].

Recording and reporting information

19. The consent holder shall make available to the Chief Executive upon request, and in any case within four weeks of the first production test at the wellsite, an analysis of a typical gas and condensate/crude oil stream from the field, covering sulphur compound content and the content of carbon compounds of structure C₆ or higher number of compounds.
20. The consent holder shall keep and make available to the Chief Executive upon request a record of all smoke-emitting incidents noting time, duration and cause.

Consent 6005-1

21. The consent holder shall keep and provide to the Chief Executive on a monthly basis, logs of all flaring [other than the maintenance of a pilot flare] including time, duration and as far as is practicable volumes of substances flared.
22. The consent holder shall provide to the Taranaki Regional Council during May of each year, for the duration of this consent, a report:
 - i) detailing gas combustion in the flare;
 - ii) detailing smoke emissions as required under condition 20;
 - iii) detailing any measures to reduce smoke emissions;
 - iv) detailing any measure to reduce flaring;
 - v) addressing any other issue relevant to the minimisation or mitigation of emissions from the flare; and
 - vi) detailing any complaints received and any measures undertaken to address complaints.

Lapse

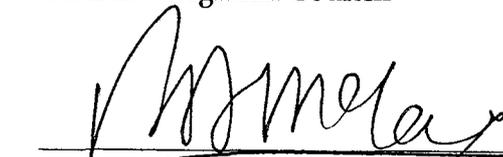
23. This consent shall lapse on the expiry of five years after the date of commencement of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

Review

24. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2004 and/or 2009 and/or June 2015 and/or June 2021 and/or June 2027, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 14 March 2006

For and on behalf of
Taranaki Regional Council



Director-Resource Management



Discharge Permit
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

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Please quote our file number
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Name of Consent Holder: Shell Exploration NZ Limited
Shell (Petroleum Mining) Co Ltd
P O Box 1873
WELLINGTON

Change To Conditions Date: 10 January 2005 [Granted: 23 May 2003]

Conditions of Consent

Consent Granted: To discharge waste drilling fluids, produced water and stormwater from hydrocarbon exploration and production operations by deepwell injection at the Pohokura-A [Epiha Road] Wellsite at or about GR: Q19:230-458

Expiry Date: 1 June 2033

Review Date(s): June 2009, June 2015, June 2021, June 2027

Site Location: Pohokura-A Wellsite, Lower Epiha Road, Motunui

Legal Description: Ngatirahiri 3F1 Blk II Waitara SD

Catchment: Parahaki

*For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document*

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

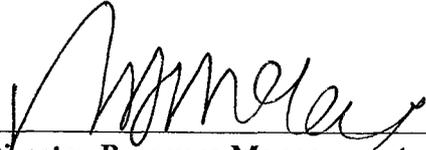
1. Prior to the exercise of this consent for each individual well to be used for deep well injection, the consent holder shall submit, to the written satisfaction of the Chief Executive, a log of the injection well, and an injection well operation management plan, to demonstrate that special condition 2 of this consent can be met. The report shall:
 - a) identify the injection zone, including a validated bore log and geophysical log,
 - b) detail the results of fluid sampled from the injection zone, and the proposed wastes to be injected for maximum and mean concentrations for pH, suspended solids, total dissolved solids, salinity, chlorides, and total hydrocarbons;
 - c) demonstrate the integrity of well casing; and
 - d) outline design and operational procedure to isolate the zone.
2. The resource consent holder shall ensure that injection will not contaminate or endanger any actual or potential useable freshwater aquifer.
3. The consent holder shall keep monthly records of the nature and amounts of all material injected, including injection pressure and rate, and shall make the records available to the Taranaki Regional Council on a 3 monthly basis, and when there has been a significant pressure change event.
4. The consent holder shall monitor the injected wastes monthly for maximum and mean concentrations of suspended solids, total dissolved solids, salinity, chlorides, and total hydrocarbons and shall make the records available to the Taranaki Regional Council every two months.
5. The consent holder shall provide to the Taranaki Regional Council during the month of May of each year, for the duration of the consent, a written report on all matters required under special conditions 1, 2, 3 and 4 above.

Consent 6175-1

6. This consent shall lapse on the expiry of five years after the date of commencement of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(b) of the Resource Management Act 1991.
7. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent, by giving notice of review during the month following receipt of information required under special condition 5 above, and the month of June 2009 and/or June 2015 and/or June 2021 and/or June 2027 required for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 14 March 2006

For and on behalf of
Taranaki Regional Council



Director-Resource Management



Discharge Permit
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

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Please quote our file number
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Name of Consent Holder: Shell Exploration NZ Limited
Shell (Petroleum Mining) Co Ltd
P O Box 1873
WELLINGTON

Change To Conditions Date: 9 June 2005 [Granted: 23 May 2003]

Conditions of Consent

Consent Granted: To discharge waste drilling fluids, produced water and stormwater from hydrocarbon exploration and production operations by deepwell injection at the Lower Otaraoa Road Wellsite at or about GR: Q19:204-454

Expiry Date: 1 June 2033

Review Date(s): June 2009, June 2015, June 2021, June 2027

Site Location: Lower Otaraoa Road Wellsite, Lower Otaraoa Road, Motunui

Legal Description: Pt Ngatirahiri 2A1 Blk;
Ngatirahiri 2A2 Blk;
Pt Ngatirahiri 2B 3B1 Blk;
Pt Ngatirahiri 2B 3A1 Blk;
Ngatirahiri 2B 3A2 Blk;
Lot 2 DP 9747 [Ngatirahiri 2B 3B2A Blk;
Ngatirahiri 2B 3A 3B Blk;
Ngatirahiri 2B 3A 3A Blk;
Lot 1 DP 9747;
Pt Ngatirahiri 2B 3A Blk
[Blks I & II Waitara SD]

Catchment: Waipapa 3 (Waipapa)

*For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document*

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

Condition 1 - changed

1. Prior to the exercise of this consent for each individual well to be used for deep well injection, the consent holder shall submit, to the written satisfaction of the Chief Executive, a log of the injection well, and an injection well operation management plan, to demonstrate that special condition 2 of this consent can be met. The report shall:
 - a) identify the injection zone, including a validated bore log and geophysical log,
 - b) detail the results of fluid sampled from wastes to be injected for maximum and mean concentrations of pH, suspended solids, total dissolved solids, salinity, chlorides, and total hydrocarbons;
 - c) demonstrate the integrity of well casing; and
 - d) outline design and operational procedure to isolate the zone.

Conditions 2 to 7 - unchanged

2. The resource consent holder shall ensure that injection will not contaminate or endanger any actual or potential useable freshwater aquifer.
3. The consent holder shall keep monthly records of the nature and amounts of all material injected, including injection pressure and rate, and shall make the records available to the Taranaki Regional Council on a 3 monthly basis, and when there has been a significant pressure change event.
4. The consent holder shall monitor the injected wastes monthly for maximum and mean concentrations of suspended solids, total dissolved solids, salinity, chlorides, and total hydrocarbons and shall make the records available to the Taranaki Regional Council every two months.

Consent 6176-1

5. The consent holder shall provide to the Taranaki Regional Council during the month of May of each year, for the duration of the consent, a written report on all matters required under special conditions 1, 2, 3 and 4 above.
6. This consent shall lapse on the expiry of five years after the date of commencement of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(b) of the Resource Management Act 1991.
7. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent, by giving notice of review during the month following receipt of information required under special condition 5 above, and the month of June 2009 and/or June 2015 and/or June 2021 and/or June 2027 required for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 14 March 2006

For and on behalf of
Taranaki Regional Council



Director-Resource Management



Land Use Consent
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

CHIEF EXECUTIVE
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Please quote our file number
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Name of
Consent Holder: Shell Exploration NZ Limited
Shell (Petroleum Mining) Co Ltd
P O Box 1873
WELLINGTON

Consent Granted
Date: 18 December 2003

Conditions of Consent

Consent Granted: To erect, place and maintain a culvert in an unnamed tributary of the Waipapa Stream for State Highway 3 road widening purposes at or about GR: Q19:205-447

Expiry Date: 1 June 2033

Review Date(s): June 2009, June 2015, June 2021, June 2027

Site Location: State Highway 3 [approximately 60 metres north of Otaraoa Road intersection], Motunui, Waitara

Legal Description: Lots 1 & 2 DP 9747 Ngatirahiri 2A2 2B3A3A 2B3A3B 2B3B1 Pt 2A1 2B3A1 Blks I & II Waitara SD

Catchment: Waipapa 3 (Waipapa)

*For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document*

Consent 6254-1

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

1. The consent holder shall notify the Chief Executive, Taranaki Regional Council in writing at least 48 hours prior to the commencement and upon completion of the initial installation and again at least 48 hours prior to and upon completion of any subsequent maintenance works which would involve disturbance of or deposition to the river bed or discharges to water.
2. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this resource consent.
3. The structure[s] authorised by this consent shall be constructed generally in accordance with the documentation submitted in support of the application and shall be maintained to ensure the conditions of this consent are met.
4. The consent holder shall adopt the best practicable option to avoid or minimise the discharge of silt or other contaminants into water or onto the riverbed and to avoid or minimise the disturbance of the riverbed and any adverse effects on water quality.
5. The consent holder shall ensure that the area and volume of riverbed disturbance shall, so far as is practicable, be minimised and any areas which are disturbed shall, so far as is practicable, be reinstated.
6. The structure[s] authorised by this consent shall be removed and the area reinstated, if and when the structure[s] are no longer required. The consent holder shall notify the Taranaki Regional Council at least 48 hours prior to structure[s] removal and reinstatement.

Consent 6254-1

7. The exercise of this consent shall not restrict the passage of fish.
8. This resource consent shall lapse on the expiry of five years after the date of issue of this resource consent, unless the resource consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.
9. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2009 and/or June 2015 and/or June 2021 and/or June 2027 for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 14 March 2006

For and on behalf of
Taranaki Regional Council



Director-Resource Management



Discharge Permit
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

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Please quote our file number
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Name of
Consent Holder: Shell Exploration NZ Limited
Shell (Petroleum Mining) Co Ltd
P O Box 1873
WELLINGTON

Consent Granted
Date: 10 November 2004

Conditions of Consent

Consent Granted: To discharge treated stormwater from hydrocarbon exploration and production operations at the Lower Otaraoa Road Wellsite to an existing stormwater control system, being a body of water commonly known as 'The Duck Pond' within the Manu Stream at or about GR: Q19:209-454

Expiry Date: 1 June 2033

Review Date(s): June 2009, June 2015, June 2021, June 2027

Site Location: Lower Otaraoa Road Wellsite, Lower Otaraoa Road,
Motunui, Waitara
[Property owner: Methanex New Zealand Limited]
[Lessee: Shell Todd Oil Services Limited]

Legal Description: Pt Ngatirahiri 2A1 Blk, Ngatirahiri 2A2 Blk, Pt Ngatirahiri 2B
3B1 Blk, Pt Ngatirahiri 2B 3A1 Blk, Ngatirahiri 2B 3A2 Blk,
Lot 2 DP 9747 (Ngatirahiri 2B 3B2A Blk), Ngatirahiri 2B 3B
Blk, Ngatirahiri 2B 3A 3A Blk, Lot 1 DP 9747, Part
Ngatirahiri 2B 3A

Catchment: Manu

*For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document*

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Consent 6269-1

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

1. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.
2. The exercise of this consent shall be undertaken generally in accordance with the documentation submitted in support of 2807. In the case of any contradiction between the documentation submitted in support of application 2807 and the conditions of this consent, the conditions of this consent shall prevail.
3. Prior to the exercise of this consent, the consent holder shall provide for the written approval of the Chief Executive, Taranaki Regional Council, site specific details relating to contingency planning for the wellsite.
4. The Chief Executive, Taranaki Regional Council, shall be advised in writing at least seven days prior to any site works commencing, and again in writing at least seven days prior to any well drilling operation commencing.
5. The maximum stormwater catchment area shall be no more than 25,000 square metres.
6. All site stormwater to be discharged under this consent shall be directed for treatment through the stormwater treatment system for discharge in accordance with the special conditions of this permit.

Consent 6269-1

7. Any above ground hazardous substances storage areas shall be bunded with drainage to sumps, or other appropriate recovery systems, and not to the stormwater catchment.
8. The following concentrations shall not be exceeded in the discharge:

Component	Concentration
pH (range)	6.5 - 8.5
suspended solids	100 gm ⁻³
total recoverable hydrocarbons [infrared spectroscopic technique]	15 gm ⁻³
chloride	50 gm ⁻³

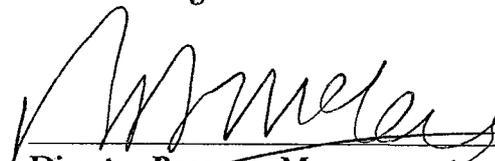
This condition shall apply prior to the entry of the treated stormwater into the body of water known as 'The Duck Pond' at a designated sampling point approved by the Chief Executive, Taranaki Regional Council.

9. After allowing for reasonable mixing, within a mixing zone extending to the downstream end of the body of water known as 'The Duck Pond' the discharge shall not give rise to any of the following effects in the receiving waters of the Manu Stream:
 - a) an increase in temperature of more than 2 degrees Celsius;
 - b) an increase in biochemical oxygen demand of more than 2.00 gm⁻³.
10. After allowing for reasonable mixing, within a mixing zone extending to the downstream end of the body of water known as 'The Duck Pond' the discharge shall not give rise to any of the following effects in the receiving waters of the Manu Stream:
 - a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - b) any conspicuous change in the colour or visual clarity;
 - c) any emission of objectionable odour;
 - d) the rendering of fresh water unsuitable for consumption by farm animals;
 - e) any significant adverse effects on aquatic life.
11. This consent shall lapse on the expiry of five years after the date of issue of this resource consent, unless the resource consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

12. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2009 and/or June 2015 and/or June 2021 and/or June 2027, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 14 March 2006

For and on behalf of
Taranaki Regional Council



Director-Resource Management



Discharge Permit
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

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Name of
Consent Holder: Shell Exploration NZ Limited
Shell [Petroleum Mining] Co Ltd
Pohokura Operations
Private Bag 2035
NEW PLYMOUTH 4342



Review Completed Date: 29 September 2009 [Granted: 2 April 2004]

Conditions of Consent

Consent Granted: To discharge soil previously mingled with sludge, resin and other petrochemical wastes, and recovered from land, onto and into land between the Waipapa Stream and the Manu Stream at or about (NZTM) 1710700E-5683720N

Expiry Date: 1 June 2015

Review Date(s): Within 3 months of providing an approval under special condition 10 or 11

Site Location: Adjacent to Motunui petrochemical plant, Main North Road, Waipapa, Waitara

Legal Description: Lot 2 DP 9747 Ngatirahiri Pt 2A1, 2A2, 2B3A1, Pt 2B3A2, Pt 2B3B1 & Pt 2B3A3B Blks I & II Waitara SD

Catchment: Manu
Waipapa

*For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document*

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General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.



Special conditions

Conditions 1 to 4 [unchanged]

- 1. The consent holder shall prepare and maintain to the satisfaction of the Chief Executive, Taranaki Regional Council, an updated management plan for the site showing how the conditions of this consent will be met and the site managed to prevent any use of the disposal areas, which may result in the release of contaminants to the environment.
- 2. Any updated management plan provided under Special Condition 1 above shall ensure a level of environmental management protection that is to no lower a standard than that which would be achieved by the programme and plan provided in support of application 3039.
- 3. No discharge of additional sludge, or other petrochemical wastes, other than that which was on the site covered by this consent at the time of the transfer provided by application 2963, is provided for by this consent.
- 4. As a result of earthworks, sludge shall not be relocated within 25 metres of any property boundary; excluding the boundary between the Methanex Motunui plant and the application area.

Condition 5 [changed]

5. The consent holder shall provide annual analyses of groundwater samples from monitoring wells in the vicinity of the disposal area to the satisfaction of the Chief Executive, Taranaki Regional Council. Samples shall be analysed for dissolved heavy metals [copper, zinc, nickel, arsenic, cadmium, chromium and lead] and total petroleum hydrocarbons. In the event that soil testing is deemed necessary by the Taranaki Regional Council due to the results from groundwater sampling or otherwise:
- a) With the exclusion of copper, zinc and nickel, the consent holder shall comply with the limits upon "heavy metal" concentrations in soil specified in Table C of "Public health guidelines for the safe use of sewage effluent and sewage sludge on land" [Department of Health 1992] and total petroleum hydrocarbon concentrations as outlined by Table 4.14 of the Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand, Ministry for the Environment 1999.
 - b) In respect of copper, zinc and nickel, the consent holder shall comply with the guidelines for industrial sites developed by the Australian National Environmental Protection Council's - [Assessment of Site Contamination] Schedule B(7a) Guideline on Health-based Investigation [1999] as given below:

copper	5,000	mg/kg dry weight
zinc	35,000	mg/kg dry weight
nickel	3,000	mg/kg dry weight

[Previous condition 6 deleted]

Condition 6 [unchanged – previously condition 7]

6. The discharge authorised by this consent shall not give rise to any of the following effects in any water body:
- a) the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - b) any conspicuous change in the colour or visual clarity;
 - c) any emission of objectionable odour;
 - d) the rendering of fresh water unsuitable for consumption by farm animals;
 - e) any significant adverse effects on aquatic life.

Condition 7 [changed – previously condition 8]

7. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review within 3 months of providing an approval under special condition 10 or 11, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

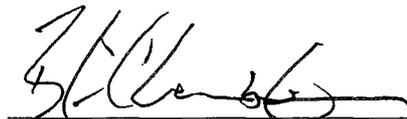
Consent 6364-1

Conditions 8 to 11 [unchanged – previously conditions 9-12]

8. The consent holder shall ensure that the discharge of co-mingled soil and waste to land and management of the disposal area takes place in accordance with the information submitted in support of applications 2032, 2963 and 3039.
9. No discharge shall occur outside the area specified in the application.
10. Any relocation of soil from within the defined disposal area to any other area not covered by this consent shall only occur if it can be shown to the satisfaction of the Chief Executive, Taranaki Regional Council, that the standards, terms, and conditions of Rule 29 of the Regional Freshwater Plan will be complied with.
11. Any change in land use that may result in a release of contaminants to the environment shall not occur without the prior written approval of the Chief Executive, Taranaki Regional Council.

Signed at Stratford on 29 September 2009

For and on behalf of
Taranaki Regional Council



Chief Executive



CHIEF EXECUTIVE
PRIVATE BAG 713
47 CLOTEN ROAD
STRATFORD
NEW ZEALAND
PHONE: 06-765 7127
FAX: 06-765 5097
www.trc.govt.nz

Please quote our file number
on all correspondence

Land Use Consent
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of
Consent Holder: Shell Exploration NZ Limited
Shell (Petroleum Mining) Co Ltd
P O Box 1873
WELLINGTON

Consent Granted
Date: 13 April 2005

Conditions of Consent

Consent Granted: To install, construct and maintain a water bore for
horizontal directional drilling purposes at or about GR:
Q19:207-450

Expiry Date: 1 June 2023

Review Date(s): June 2011, June 2017

Site Location: Lower Otaraoa Road wellsite, Lower Otaraoa Road,
Motunui

Legal Description: Lot 2 DP 324944 Ngatirahiri 2A2 Block Ngatirahiri 2B3A3B
Block Pt Ngatirahiri 2B3B1 Block Lot 2 DP 9747 Lot 1 DP
9747 Pt Ngatirahiri 2A1 Block Pt Ngatirahiri 2B3A1 Block

Catchment: Waipapa 3 (Waipapa)

*For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document*

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

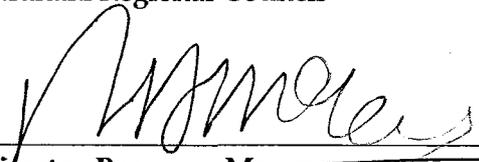
1. The exercise of this consent shall be undertaken in general accordance with the documentation submitted in support of application 3622. In the case of any contradiction between the documentation submitted in support of application 3622 and the conditions of this consent, the conditions of this consent shall prevail.
2. The consent holder shall, within 28 days of the completion of the bore, provide a bore completion log to the satisfaction of the Chief Executive, Taranaki Regional Council.
3. The bore shall be cased and sealed to prevent the potential for aquifer cross-contamination and/or leakage from the surface.
4. The consent holder shall take all reasonable steps to mitigate any adverse environmental effects that may be caused by structural failure of the bore.
5. This consent shall lapse on the expiry of five years after the date of commencement of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

Consent 6577-1

6. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2011 and/or June 2017, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 14 March 2006

For and on behalf of
Taranaki Regional Council



Director-Resource Management



