WestSide New Zealand Limited
Rimu Production Station
Monitoring Programme
Annual Report
2018-2019

Technical Report 2019-46

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Executive summary

WestSide New Zealand (WestSide) operates a petrochemical production station located on Mokoia Road at Mokoia, in the Manawapou catchment. This report for the period July 2018 to June 2019 describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess the Company's environmental and consent compliance performance during the period under review. The report also details the results of the monitoring undertaken and assesses the environmental effects of the Company's activities.

The Company holds two resource consents, which include a total of 26 conditions setting out the requirements that the Company must satisfy. The Company holds one consent to allow it to discharge treated stormwater onto and into land and into an unnamed tributary of the Manawapou River, and one consent to discharge contaminants into the air at this site.

During the monitoring period WestSide New Zealand demonstrated an overall high level of environmental performance.

The Council's monitoring programme for the year under review included six inspections, three water samples collected for physicochemical analysis, and three ambient air quality analyses.

The monitoring showed that the site was generally tidy and well managed and that the stormwater discharge was not having a significant adverse effect on the water quality of the unnamed tributary of the Manawapou River. There were no adverse effects on the environment found as a result of the exercise of the air discharge consent. Ambient air quality monitoring at the site showed that levels of carbon monoxide, combustible gases, PM_{10} particulates, nitrogen oxides and the volatile organic compounds benzene, toluene, ethylbenzene and xylenes were all below levels of concern at the time of sampling. No offensive or objectionable odours were detected beyond the boundary during inspections, and there were no complaints in relation to air emissions from the site.

During the monitoring period, the Company demonstrated a high level of both environmental performance and administrative compliance with respect to their resource consents. There was one Unauthorised Incident during the period under review relating to a small spill which was contained onsite and did not breach consent conditions.

For reference, in the 2018-2019 year, consent holders were found to achieve a high level of environmental performance and compliance for 83% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 13% of the consents, a good level of environmental performance and compliance was achieved.

In terms of overall environmental and compliance performance by the consent holder over the last several years, this report shows that the consent holder's performance remains at a high level.

This report includes recommendations for the 2019-2020 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 for the period July 2018 to June 2019 by the Taranaki Regional Council (the Council) on the monitoring programme associated with resource consents held by WestSide New Zealand (WestSide). WestSide operates a petrochemical production station situated on Mokoia Road at Mokoia, in the Manawapou catchment.

The report includes the results and findings of the monitoring programme implemented by the Council in respect of the consents held by the Company that relate to discharges of water within the Manawapou catchment, and the air discharge permit held by WestSide to cover emissions to air from the site.

One of the intents of the *Resource Management Act 1991* (RMA) 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 Council generally implements integrated environmental monitoring programmes and reports the results of the programmes jointly. This report discusses the environmental effects of the Company's use of water, land and air, and is the 18th combined annual report by the Council for the Rimu Production Station.

1.1.2 Structure of this report

Section 1 of this report is a background section. It sets out general information about:

- consent compliance monitoring under the RMA and the Council's obligations;
- the Council's approach to monitoring sites though annual programmes;
- the resource consents held by the Company in the Manawapou catchment;
- the nature of the monitoring programme in place for the period under review; and
- a description of the activities and operations conducted at the Rimu 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 2019-2020 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 RMA 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 an activity, 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 (for example recreational, cultural, or aesthetic); and

e. risks to the neighbourhood or environment.

In drafting and reviewing conditions on discharge permits, and in implementing monitoring programmes, the Council is recognising the comprehensive meaning of 'effects' inasmuch as is appropriate for each activity. Monitoring programmes are not only based on existing permit conditions, but also on the obligations of the RMA to assess the effects of the exercise of consents. In accordance with Section 35 of the RMA, 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 utilisation, to move closer to achieving sustainable development of the region's resources.

1.1.4 Evaluation of environmental and administrative performance

Besides discussing the various details of the performance and extent of compliance by the Company, this report also assigns them a rating for their environmental and administrative performance during the period under review.

Environmental performance is concerned with actual or likely effects on the receiving environment from the activities during the monitoring year. Administrative performance is concerned with the Company's approach to demonstrating consent compliance in site operations and management including the timely provision of information to Council (such as contingency plans and water take data) in accordance with consent conditions.

Events that were beyond the control of the consent holder and unforeseeable (that is a defence under the provisions of the RMA can be established) may be excluded with regard to the performance rating applied. For example loss of data due to a flood destroying deployed field equipment.

The categories used by the Council for this monitoring period, and their interpretation, are as follows:

Environmental Performance

High: No or inconsequential (short-term duration, less than minor in severity) breaches of consent or regional plan parameters resulting from the activity; no adverse effects of significance noted or likely in the receiving environment. 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 in relation to such impacts.

Good: Likely or actual adverse effects of activities on the receiving environment were negligible or minor at most. There were some such issues noted during monitoring, from self reports, or in response to unauthorised incident reports, but these items were not critical, and follow-up inspections showed they have been dealt with. These minor issues were resolved positively, co-operatively, and quickly. The Council was not obliged to issue any abatement notices or infringement notices in relation to the minor non-compliant effects; however abatement notices may have been issued to mitigate an identified potential for an environmental effect to occur.

For example:

- High suspended solid values recorded in discharge samples, however the discharge was to land or to receiving waters that were in high flow at the time;
- Strong odour beyond boundary but no residential properties or other recipient nearby.

Improvement required: Likely or actual adverse effects of activities on the receiving environment were more than minor, but not substantial. There were some issues noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent minor non-compliant activity could elevate a minor issue to this level. Abatement notices and infringement notices may have been issued in respect of effects.

Poor: Likely or actual adverse effects of activities on the receiving environment were significant. There were some items noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent moderate non-compliant activity could elevate an 'improvement required' issue to this level. Typically there were grounds for either a prosecution or an infringement notice in respect of effects.

Administrative performance

High: The administrative requirements of the resource consents were met, or any failure to do this had trivial consequences and were addressed promptly and co-operatively.

Good: Perhaps some administrative requirements of the resource consents were not met at a particular time, however this was addressed without repeated interventions from the Council staff. Alternatively adequate reason was provided for matters such as the no or late provision of information, interpretation of 'best practical option' for avoiding potential effects, etc.

Improvement required: Repeated interventions to meet the administrative requirements of the resource consents were made by Council staff. These matters took some time to resolve, or remained unresolved at the end of the period under review. The Council may have issued an abatement notice to attain compliance.

Poor: Material failings to meet the administrative requirements of the resource consents. Significant intervention by the Council was required. Typically there were grounds for an infringement notice.

For reference, in the 2018-2019 year, consent holders were found to achieve a high level of environmental performance and compliance for 83% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 13% of the consents, a good level of environmental performance and compliance was achieved.[1]

1.2 Process description

The Rimu Production Station (Photo 1) receives oil and gas recovered from the Rimu, Kauri and Manutahi wells and includes condensate, gas and LPG processing plants. The oil and gas are separated and treated to produce condensate suitable for export from the site; gas suitable for export into Vector's pipeline; and LPG suitable for sale and export. Construction started in May 2001 and the plant was commissioned between February and April 2002.

The Rimu Production Station is situated on Mokoia Road, between the coast and State Highway 3, south east of Hawera. The production station covers approximately 6 hectares on an area of 9.5 hectares of land leased by WestSide. The land is situated on top of a coastal terrace. The closest residential dwelling is approximately 800 metres from the production station. The surrounding land use is largely pastoral.

Stormwater from the production station, including potentially contaminated stormwater from the production area and tank storage area, is treated through an API separator and then directed into a

[1] The Council has used these compliance grading criteria for 15 years. They align closely with the 4 compliance grades in the MfE Best Practice Guidelines for Compliance, Monitoring and Enforcement, 2018

polyethylene lined storage pond located at the southern edge of the site. The pond has a storage capacity of 3,600 m^3 and it serves as a settlement pond and a fire water source in the event of an emergency. Water from the stormwater pond is discharged by pipe onto land to the east of the site where it flows into an unnamed tributary of the Manawapou River.

The production station and associated wellsites were divested to WestSide New Zealand Limited on 1 November 2016 from Origin Energy Resources NZ Limited.

Photo 1 Rimu Production Station

1.3 Resource consents

1.3.1 Production Station consents

WestSide holds two resource consents for the Production Station, the details of which are summarised in the table below. Summaries of the conditions attached to each permit are set out in Section 3 of this report.

A summary of the various consent types issued by the Council is included Appendix I, as are copies of all permits held by the Company during the period under review.

Table 1 Summary of consents held by WestSide for the Rimu Production Station

Consent number	Purpose	Granted	Review	Expires
5744-2	To discharge treated stormwater from the Rimu Production Station onto and into land and into an unnamed tributary of the Manawapou River	November 2016	June 2022	June 2034
5746-2	To discharge contaminants into the air from the Rimu Production Station, including flaring and miscellaneous emissions	November 2016	June 2022	June 2034

1.3.2 Related consents

WestSide also holds consents for production activities at wellsites associated with the Rimu Production Station. Details of these consents are summarised in Table 2.

Table 2 Consents for production activities at wellsites associated with the Rimu Production Station

Wellsite	Consent number	Purpose	Issue date	Expiry
Kauri-A	5730-1	To discharge treated stormwater and treated site water from hydrocarbon exploration and production operations at the Kauri Te Pakakohi-A wellsite onto and into land	01/12/2000	2022
	5731-1	To discharge emissions into the air from the flaring of hydrocarbons and miscellaneous emissions associated with hydrocarbon exploration and production testing operations involving up to 32 zones and from production flaring at the Kauri Te Pakakohi-A wellsite	01/12/2000	2022
Kauri-A & F	6129-1	To discharge emissions to air from flaring (at either the Kauri-F or Kauri Te Pakakohi-A wellsites) associated with production activities and miscellaneous emissions at the Kauri-F wellsite	06/03/2003	2022
Kauri-C	5928-2	To discharge treated stormwater from hydrocarbon exploration and production operations from the Kauri-C wellsite onto and into land	01/11/2016	2034
Kauri-D	5951-2	To discharge treated stormwater from hydrocarbon exploration and production operations at the Kauri-D wellsite onto and into land	01/11/2016	2034
Kauri-F	6130-1	To discharge emissions to air from flaring associated with production activities and miscellaneous emissions at the Kauri-F wellsite	26/02/2003	2022
Kauri-E	6140-1	To discharge treated stormwater, uncontaminated treated site water and uncontaminated treated production water from hydrocarbon exploration and production operations at the Kauri-E wellsite onto and into land and into the Waikaikai Stream	24/04/2003	2022

Wellsite	Consent number	Purpose	Issue date	Expiry
	6141-1	To discharge treated stormwater, uncontaminated treated site water and uncontaminated treated production water from hydrocarbon exploration and production operations at the Kauri-E Wellsite onto and into land and into the Mangaroa Stream	22/04/2003	2022
Manutahi-A	6299-1	To discharge emissions to air during flaring from well workovers and in emergency situations associated with production activities at the Manutahi-A wellsite	05/04/2004	2022
	6300-1	To discharge treated stormwater and treated produced water from hydrocarbon exploration and production operations at the Manutahi-A wellsite onto and into land in the vicinity of an unnamed tributary of the Mangaroa Stream	05/04/2004	2022
Manutahi-B	6305-1	To discharge emissions to air during flaring from well workovers and in emergency situations associated with production activities at the Manutahi-B wellsite	21/04/2004	2022
	6306-1	To discharge treated stormwater and treated produced water from hydrocarbon exploration and production operations at the Manutahi-B wellsite onto and into land in the vicinity of an unnamed tributary of the Mangaroa Stream	20/04/2004	2022
Manutahi-C	6311-1	To discharge emissions to air during flaring from well workovers and in emergency situations associated with production activities at the Manutahi-C wellsite	06/04/2004	2022
	6312-1	To discharge treated stormwater and treated produced water from hydrocarbon exploration and production operations at the Manutahi-C wellsite onto and into land in the vicinity of an unnamed tributary of the Mangaroa Stream	06/04/2004	2022
Manutahi-D	6317-1	To discharge emissions to air during flaring from well workovers and in emergency situations associated with production activities at the Manutahi-D wellsite	20/04/2004	2022
	6318-1	To discharge treated stormwater and treated produced water from hydrocarbon exploration and production operations at the Manutahi-D wellsite onto and into land in the vicinity of an unnamed tributary of the Mangaroa Stream	20/04/2004	2022
Manutahi-E	6323-1	To discharge emissions to air during flaring from well workovers and in emergency situations associated with production activities at the Manutahi-E wellsite	08/06/2004	2022

Wellsite	Consent number	Purpose	Issue date	Expiry
	6324-1	To discharge treated stormwater and treated produced water from hydrocarbon exploration and production operations at the Manutahi-E wellsite onto and into land in the vicinity of the Mangaroa Stream and Lake Kaikoura	13/07/2004	2022
Manutahi-F	6329-1	To discharge emissions to air during flaring from well workovers and in emergency situations associated with production activities at the Manutahi-F wellsite	09/06/2004	2022
	6330-1	To discharge treated stormwater and treated produced water from hydrocarbon exploration and production operations at the Manutahi-F wellsite onto and into land in the vicinity of the Mangaroa Stream and Lake Kaikoura	16/07/2004	2022
Manutahi-G	6335-1	To discharge emissions to air during flaring from well workovers and in emergency situations associated with production activities at the Manutahi-G wellsite	01/06/2004	2022
Manutahi-G	6336-1	To discharge treated stormwater and treated produced water from hydrocarbon exploration and production operations at the Manutahi-G wellsite onto and into land in the vicinity of an unnamed tributary of the Mangaroa Stream	01/06/2004	2022
Manutahi-H	6341-1	To discharge emissions to air during flaring from well workovers and in emergency situations associated with production activities at the Manutahi-H wellsite	02/06/2004	2022
	6342-1	To discharge treated stormwater and treated produced water from hydrocarbon exploration and production operations at the Manutahi-H wellsite onto and into land in the vicinity of an unnamed tributary of the Mangaroa Stream	02/06/2004	2022
Rimu-A	5322-2	To discharge treated stormwater from hydrocarbon exploration and production operations at the Rimu-A wellsite onto land and into an unnamed tributary of the Manawapou River	01/11/2016	2034
Rimu-A	5324-2	To discharge contaminants to air from hydrocarbon exploration at the Rimu-A wellsite, including combustion involving flaring or incineration of petroleum recovered form natural deposits, in association with well development or redevelopment and testing or enhancement of production flows	01/11/2016	2034
Rimu-B	5625-1	To discharge treated stormwater and treated site water from hydrocarbon exploration and production operations at the Rimu-B wellsite onto and into land and into an unnamed tributary of the Manawapou River	27/06/2000	2022

Wellsite	Consent number	Purpose	Issue date	Expiry
	5626-1	To discharge emissions into the air from the flaring of hydrocarbons and miscellaneous emissions associated with hydrocarbon exploration and production testing operations involving up to 10 zones and from production flaring at the Rimu-B wellsite	27/06/2000	2022
Pohutukawa-A	6749-1	To discharge treated stormwater and treated produced water from hydrocarbon exploration and production operations at the Pohutakawa-A wellsite onto and into land in the vicinity of the Waikaikai Stream	28/11/2005	2022
	6751-1	To discharge emissions to air during flaring from well workovers and in emergency situations and miscellaneous emissions associated with production activities at the Pohutakawa-A wellsite	28/11/2005	2022

1.4 Monitoring programme

1.4.1 Introduction

Section 35 of the RMA sets obligations upon the Council to gather information, monitor and conduct research on the exercise of resource consents within the Taranaki region. The Council is also required to assess the effects arising from the exercising of these consents and report upon them.

The 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 Rimu Production Station consisted of three primary components.

1.4.2 Programme liaison and management

There is generally a significant investment of time and resources by the Council in:

- ongoing liaison with resource consent holders over consent conditions and their interpretation and application;
- in discussion over monitoring requirements;
- preparation for any consent reviews, renewals or new consent applications;
- advice on the Council's environmental management strategies and content of regional plans; and
- consultation on associated matters.

1.4.3 Site inspections

The Rimu Production Station was visited six times during the monitoring period. With regard to consents for the 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 Company 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 Council undertook sampling of both the discharge from the site and the water quality upstream and downstream of the discharge point and mixing zone. The production station discharge was sampled on one occasion, and the sample analysed for chloride, hydrocarbons, conductivity, pH and suspended solids. The unnamed tributary of the Manawapou River was sampled upstream and downstream of the discharge on one occasion, and the samples analysed for the same constituents.

The Council undertook sampling of the ambient air quality outside the boundary of the site. A multi-gas meter was deployed on one occasion in the vicinity of the plant, with monitoring consisting of continuous measurements of gas concentrations for the gases of interest (carbon monoxide and combustible gases). A PM_{10} particulate monitor was deployed concurrently with the multi-gas meter. Two nitrogen oxide measuring devices were also deployed in the vicinity of the plant on one occasion during the year under review. Council also measured the concentrations of the volatile organic compounds benzene, toluene, ethylbenzene and xylenes (BTEX) on one occasion during the year as part of a regionwide monitoring programme.

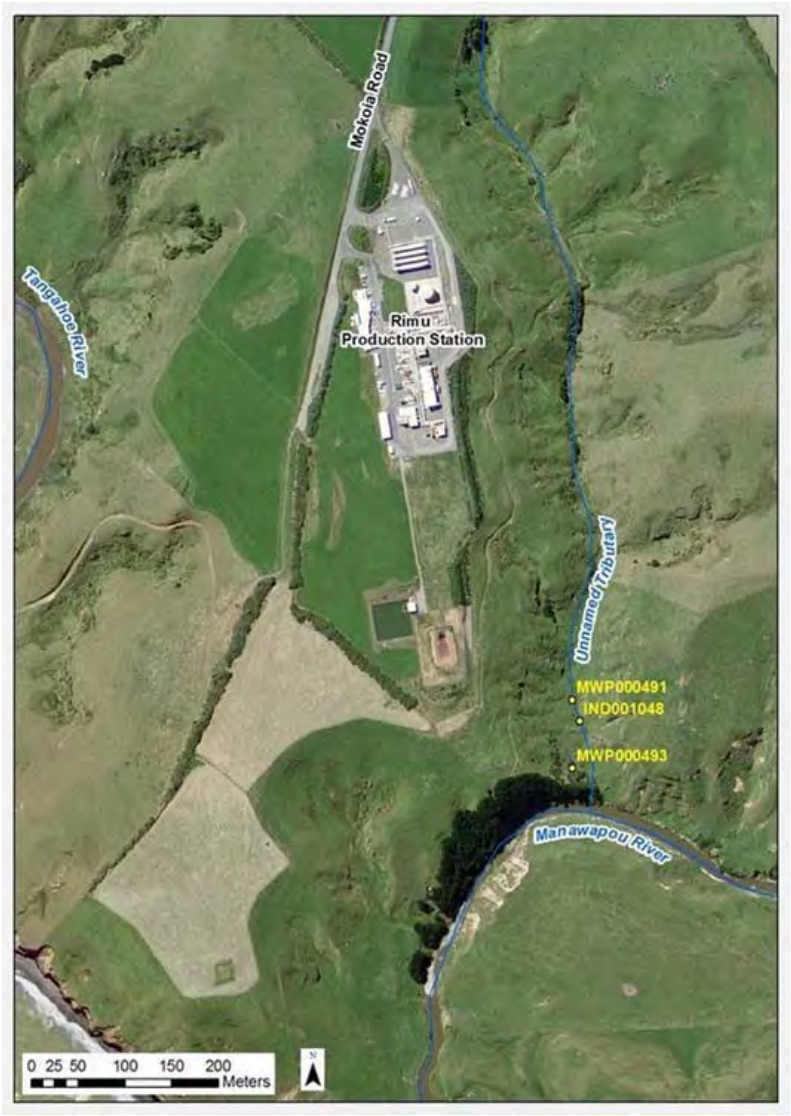

Figure 1 Location of the Rimu Production Station and associated sampling sites

2 Results

2.1 Water

2.1.1 Inspections

Six inspections were carried out at the Rimu Production Station and associated wellsites during the 2018-2019 monitoring period, on 23 July, 31 October, and 6 December 2018, and 24 January, 4 March and 30 May 2019. The following was found during inspections:

23 July 2018

The site was neat and tidy. The stormwater system, including all bunds, ring drains and separators was clean. Algae build up noted in the API separator during the previous inspection had been cleaned out.

Minimal flaring was occurring and the flare was very clean with no smoke or odours noted.

31 October 2018

An inspection of the site's stormwater and air discharge systems, including the measures in place to prevent, avoid and mitigate any effects offsite, was carried out to check for compliance against resource consent conditions. Those conditions that were assessed onsite were found to be compliant at the time of the inspection.

6 December 2018

It was noted that not all stormwater from the site was being captured, contained and released in a controlled manner (via the oily water separator and fire water pond). It was noted that a section of ring drain along the back fence (near the produced water load out pad) flowed under the fence and down into the valley. This was not best practice and leaves WestSide vulnerable in the event of a spill in this area. Discussion was held with the consent holder about redirecting flow to the stormwater system.

24 January 2019

The site was neat and tidy and no issues were noted.

4 March 2019

A discussion was held with the consent holder concerning the timing of onsite works to ensure all stormwater was captured. Also discussed were future programmes to check pipeline integrity.

30 May 2019

The inspection was carried out after notification from WestSide concerning a spill onsite. An inspection of the site and investigation into the cause of the spill found that residual water, from the cleaning of pipes, turned into steam once the pipes were put back online. This steam was being released through vents in the system, however an air block resulted causing oil to overflow a storage tank and flow onto the ground. The oil was cleaned up off the ground and hot water was being used to clean a stormwater pipe. The oil was contained onsite and no effects were observed. Works were being undertaken to improve the flow of stormwater to the nearest onsite drain in the vicinity of the spill. Works had already been undertaken onsite to improve the containment of stormwater onsite and direct it for treatment prior to discharging offsite. The works involved re-contouring the site and installing a sump and pipe to link in with existing infrastructure.

2.1.2 Results of discharge monitoring

A sample was collected of the stormwater discharge from the production station once during the period under review. Table 3 presents the results from this sample. The location of the sampling site (IND001048) is shown in Figure 1 above.

Levels of chloride, hydrocarbons, suspended solids and pH complied with the limits prescribed by consent 5744-2.

Table 3 Results for Rimu Production Station stormwater discharge (site IND001048)

	Chloride g/m^3	Conductivity mS/m@25°C	Hydrocarbons g/m^3	pH	Suspended solids g/m^3	Temperature Deg C
12 June 2019	20	11.9	< 0.7	7.2	4	12.8
Consent 5744-2 limits	230	-	15	6.0 – 9.0	100	-

2.1.3 Results of receiving environment monitoring

Chemical water quality sampling of the receiving waters of the unnamed tributary of the Manawapou River was undertaken in conjunction with the discharge monitoring on 12 June 2019. The results are presented in Table 4. The sampling sites are shown in Figure 1.

The results indicate that the discharge was having negligible effect on the water quality of the tributary of the Manawapou River. Chloride below the mixing zone was above the 50 g/m^3 specified in the consent, however this was also exceeded in the upstream sample (51 g/m^3). With a level of 20 g/m^3 in the discharge, high chloride levels in the stream were probably a result of wind-blown salt from the sea nearby.

Table 4 Results of receiving water sampling

	Units	12 June 2019		Consent 5744-2 limits
		Upstream site (MWP000491)	Downstream site (MWP000493)	
Chloride	g/m^3	51	52	50
Conductivity @ 25°C	mS/m	34.6	34.6	-
Hydrocarbons	g/m^3	< 0.7	< 0.7	-
pH	pH	7.8	7.8	-
Suspended solids	g/m^3	33	33	-
Temperature	°C	12.2	12.2	< 2°C increase

2.2 Air

2.2.1 Inspections

Air inspections were carried out in conjunction with site inspections as discussed in section 2.1.1 above. No issues regarding air quality were noted during the monitoring period.

2.2.2 Results of receiving environment monitoring

2.2.2.1 Carbon monoxide and combustible gases

During the monitoring year, a multi-gas meter was deployed on one occasion in the vicinity of the plant. The deployment lasted approximately 44 hours, with the instrument placed in a down-wind position at the start of the deployment. Monitoring consisted of continuous measurements of gas concentrations for the gases of interest (carbon monoxide and combustible gases). The monitoring sites used in the year under review are shown in Figure 2.

Figure 2 Air monitoring sites at Rimu Production Station for 2018-2019

Because of the nature of the activities on the site, it was considered that the primary information of interest in respect of gases potentially emitted from the site was the average downwind concentration, rather than any instantaneous peak value. That is, the long-term exposure levels, rather than short-term maxima, are of most interest. The gas meter was therefore set up to create a data set based on recording the average concentration measured during each minute as raw data.

The details of the sample run are summarised in Table 5 and the data from the sample run are presented graphically in Figure 3.

Table 5 Results of carbon monoxide and LEL monitoring at Rimu Production Station

Period		20 to 22 July November 2018 (44 hours)
Max	CO(ppm)	2.70
	LEL(%)	0.10
Mean	CO(ppm)	0.16
	LEL(%)	0.00
Min	CO(ppm)	0.00
	LEL(%)	0.00

Notes: (1) the instrument records in units of ppm. At 25°C and 1 atm, 1ppm CO = 1.145 mg/m^3
(2) because the LEL of methane is equivalent to a mixture of approximately 5% methane in air, then the actual concentration of methane in air can be obtained by dividing the percentage LEL by 20.

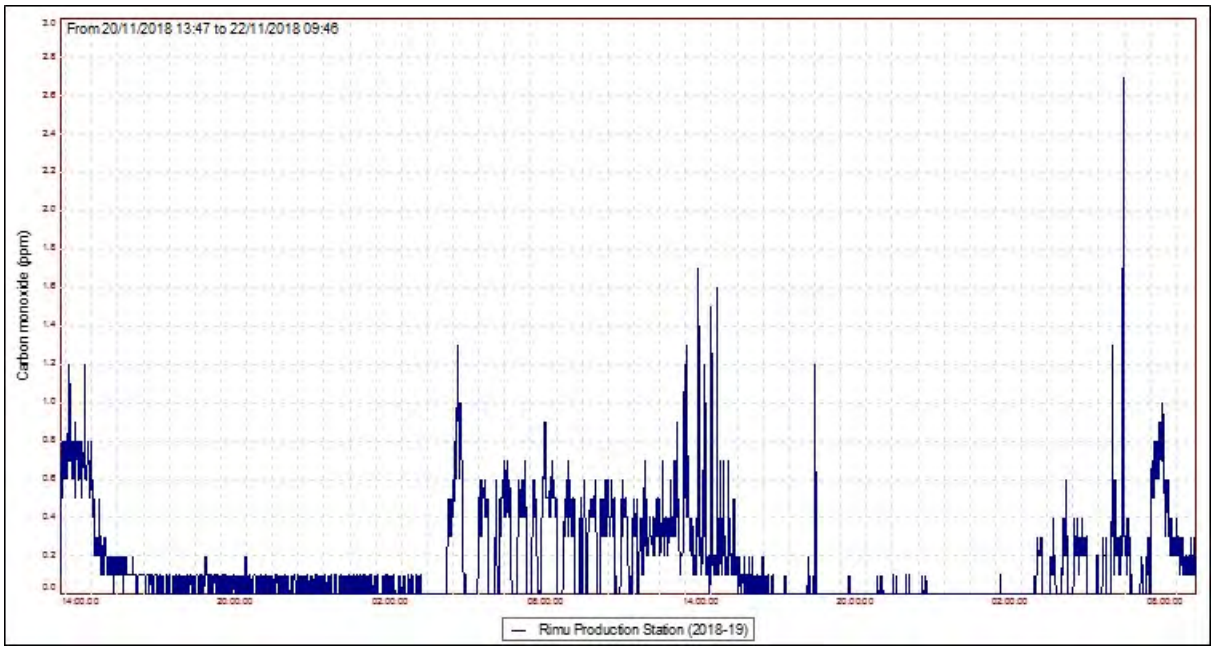

Figure 3 Ambient CO levels in the vicinity of Rimu Production Station

The consent covering air discharges from the Rimu Production Station has specific limits related to particular gases. Special condition 11 of consent 5746-2 sets limits on the carbon monoxide concentration at or beyond the production station's boundary. The limit is expressed as 10 mg/m^3 for an eight hour average. The maximum concentration of carbon monoxide found during the monitoring run was 3.1 mg/m^3 while the average concentration for the entire dataset was 0.11 mg/m^3, which comply with consent conditions.

Lower Explosive Limit (LEL) gives the percentage of the lower explosive limit, expressed as methane that is detected in the air sampled. The sensor on the instrument reacts to gases and vapours such as acetone, benzene, butane, methane, propane, carbon monoxide, ethanol, and higher alkanes and alkenes, with varying degrees of sensitivity. The Council's Regional Air Quality Plan has a typical requirement that no discharge shall result in dangerous levels of airborne contaminants, including any risk of explosion. At no time did the level of explosive gases downwind of the Sidewinder Production Station reach any more than a trivial level.

2.2.2.2 PM_{10} particulates

In September 2004 the Ministry for the Environment enacted National Environmental Standards (NESs) relating to certain air pollutants. The NES for PM_{10} particulates is 50 µg/m^3 (24 hour average). The same limit is imposed on consent 5746-2, in condition 11 that provides for the discharge of emissions to air from Rimu production station.

Particulates can be derived from many sources, including motor vehicles (particularly diesel), solid and oil-burning processes for industry and power generation, incineration and waste burning, photochemical processes, and natural sources such as pollen, abrasion, and sea spray.

PM_{10} particles are linked to adverse health effects that arise primarily from the ability of particles of this size to penetrate the defences of the human body and enter deep into the lungs, significantly reducing the exchange of gases across the lung walls. Health effects from inhaling PM_{10} include increased mortality and the aggravation of existing respiratory and cardiovascular conditions such as asthma and chronic pulmonary diseases.

During the reporting period, a "DustTrak" PM_{10} monitor was deployed on one occasion in the vicinity of Rimu Production Station. The deployment lasted approximately 32 hours, with the instrument placed in a

down-wind position at the start of the deployment. Monitoring consisted of continual measurements of PM_{10} concentrations. The location of the "DustTrak" monitor during the sampling run is shown in Figure 2.

The results of the sample run are presented in Figure 4 and Table 6.

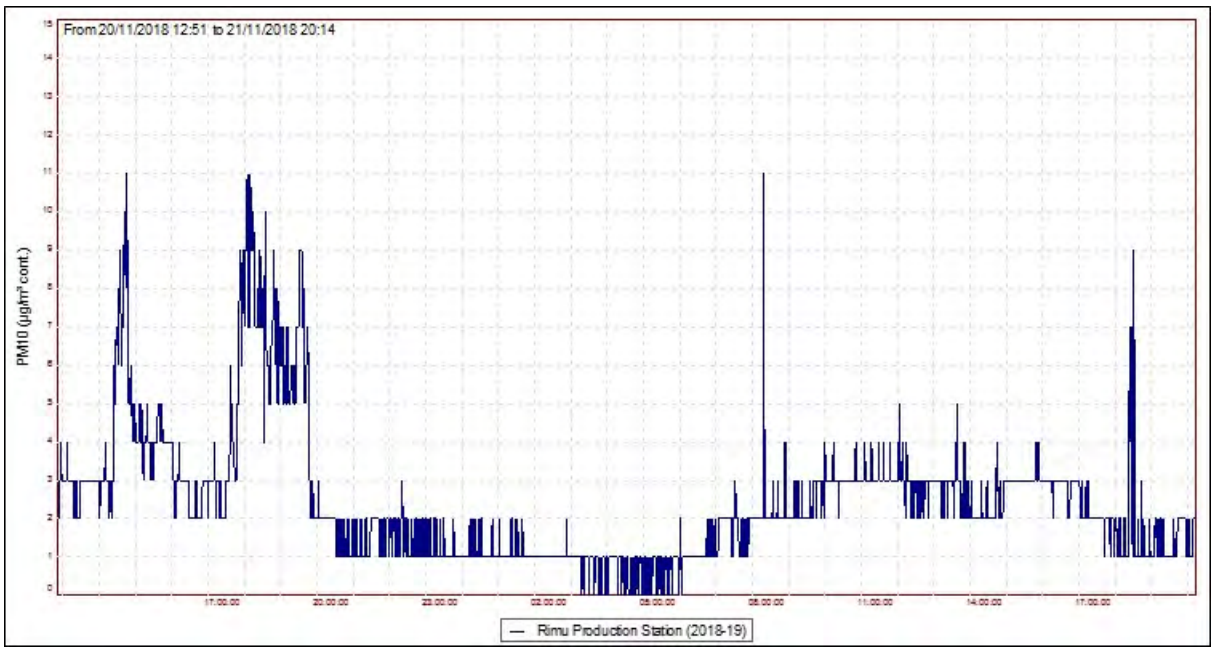

Figure 4 PM_{10} concentrations (µg/m³) at Rimu Production Station

During the 32 hour run, from 20 to 21 November 2018, the average recorded PM_{10} concentration was 2.5 µg/m³ for the first 24 hour period and 1.8 µg/m³ for the second 24 hour period. These daily means equate to 5% and 4%, respectively of the 50 µg/m³ value that is set by the NES and consent 5746-2. Background levels of PM_{10} in the region have been found to be typically around 11 µg/m³.

Table 6 Daily averages of PM_{10} results from monitoring at Rimu Production Station

	20 to 21 November 2018 (32 hours)	
24 hr. set	Day 1	Day 2
Daily average	2.5 µg/m³	1.8 µg/m³
NES	50µg/m³	

2.2.2.3 Nitrogen oxides

From 2014 onwards, the Council implemented a coordinated region-wide compliance monitoring programme to measure nitrogen oxides (NOx). The programme involves deploying measuring devices at 30 NOx monitoring sites (including two sites in the vicinity of Rimu Production Station) on the same day, with retrieval three weeks later. This approach assists the Council in further evaluating the effects of local and regional emission sources and ambient air quality in the region.

The consents covering air discharges from the Rimu Production Station have specific limits related to particular gases. Special condition 11 of consent 5746-2 sets a limit on the nitrogen dioxide concentration at or beyond the production station's boundary. The limit is expressed as 200 µg/m³ for a one hour average exposure.

NOx passive adsorption discs were place at two locations in the vicinity of the Rimu Production Station on one occasion during the year under review. The discs were left in place for a period of 21 days. The calculated one hour theoretical maximum NOx concentrations found at Rimu Production Station during the

year under review equates to 9.4 µg/m^3. The results show that the ambient ground level concentration of NOx is well below the limits set out by consent 5746-2.

2.2.2.4 BTEX

The volatile organic compounds (VOC) benzene, toluene, ethylbenzene and xylenes together are commonly refered to as BTEX. In New Zealand, benzene is the only member of the BTEX group subject to a national guideline value. The Ministry for the Environment (MfE) guideline for long-term exposure (annual average exposure), based on benzene's known mutagenic and carcinogenic properties, is 3.6 µg/m^3. There are no national ambient air quality guidelines for toluene, ethylbenzene or xylene. The MfE had prepared an internal technical document "Health Effects of Eleven Hazardous Air Contaminants and Recommended Evaluation Criteria" (October 2000) that suggested a short-term (1 hour) average value of 22 µg/m^3 for Benzene, 500 µg/m^3 for Toluene and 1000 µg/m^3 for Xylene as recommended guidelines values. However, these recommendations were not carried through to the final MfE guidelines published in 2002.

In January 2019 the Council implemented a coordinated monitoring programme to measure the concentrations of BTEX at 20 monitoring sites around the region (Figure 5).

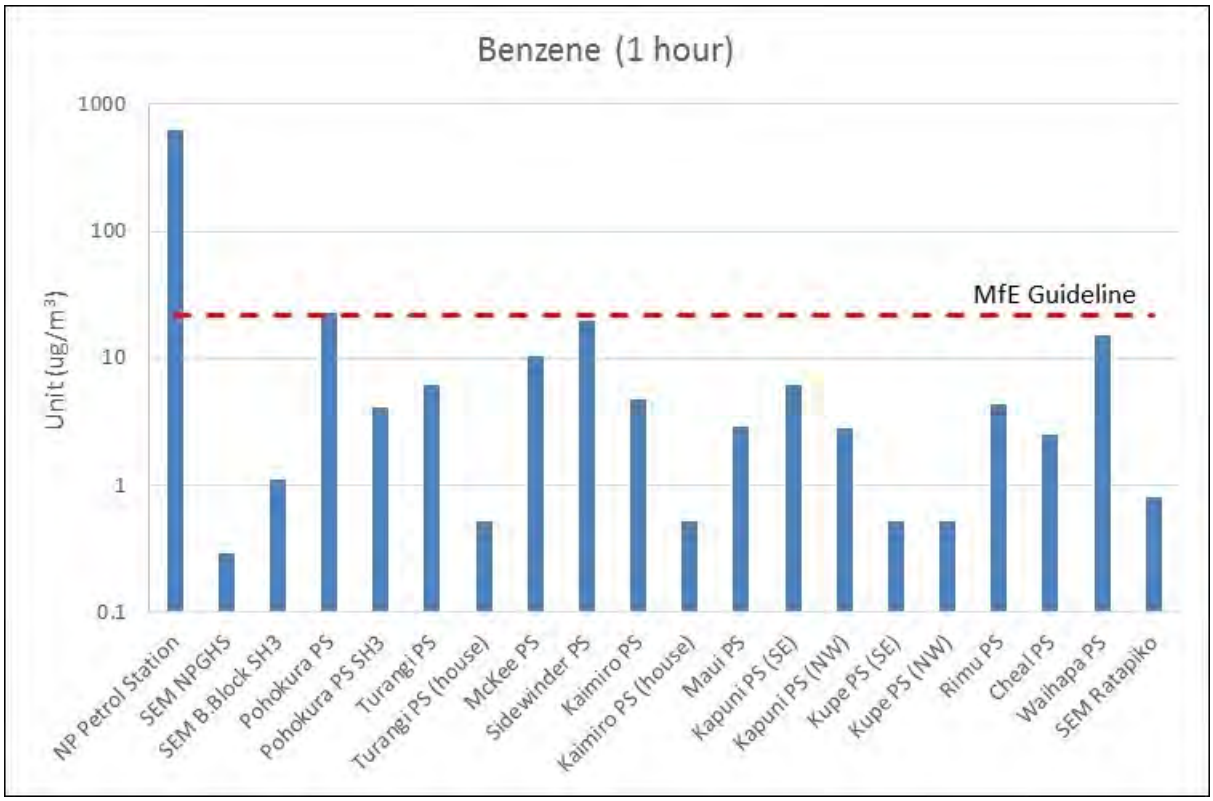

Figure 5 Regional benzene monitoring results 2019

The period of sampling was 503 hours (21 days). A conversion factor was applied to estimate an approximate peak short-term concentration that might have arisen during the full sampling period (assuming a steady-state source). These modelled concentrations are also presented in Table 7, alongside the actual concentrations as detected.

Table 7 Actual and recalculated (p0.2) BTEX results from Rimu Production Station, January 2019

Site ID / Where	Time total Min.	Benzene (µg/m³)		Toluene (µg/m³)		Ethyl Benzene	o,m,p – (µg/m³) Xylene Total	
		Lab. Results	1 hr. Calc.	Lab. Results	1 hr. Calc.	Lab. Results	Lab. Results	1 hr. Calc.
AIR012502 Rimu Production Station	503	1.25	4.3	0.85	2.9	<0.19	<0.43	<1.5
Blank**		<0.15	<0.5	<0.19	<0.7	<0.19	<0.43	<1.5
MfE recommended **guidelines** (2000), one -hour average. (µg/m³)			**22**		**500**			**1000**

Levels of benzene at the Rimu Production Station were well below the recommended guidelines. Toluene and was also below the recommended guidelines, while xylene and ethylbenzene were not detected at the site.

Copies of the air monitoring reports are available from Council upon request.

2.2.3 Summary of flaring volumes reported by the Company

WestSide provided the Council with an annual report on flaring and emissions as required by consent 5746-2. Emission data for the Rimu Production Station were provided to the Council, expressed as total gas flared and total fuel gas over a one day period. Monthly summaries of these datasets are graphically presented in Figure 6.

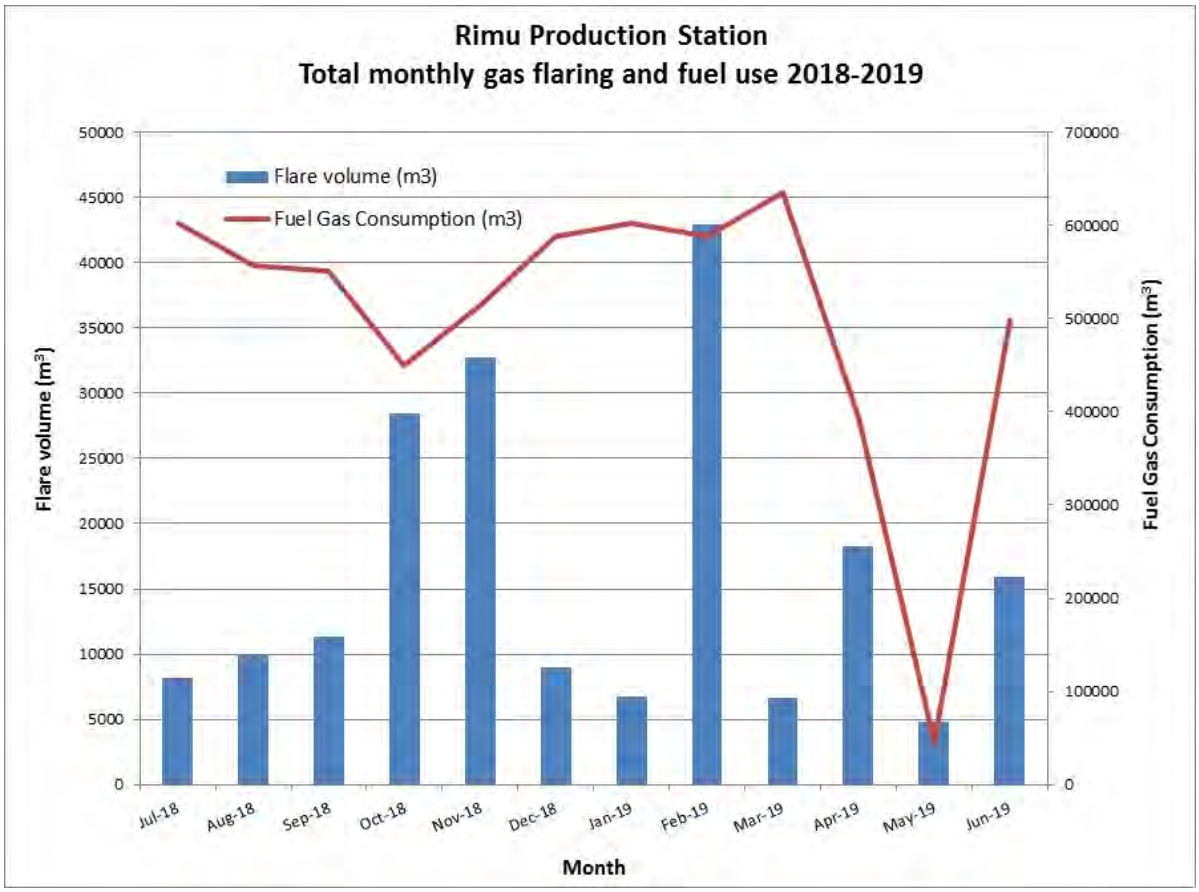

Figure 6 Monthly flare volumes for 2018-2019

Flaring events at the production station occurred intermittently. However, a pilot flare was maintained at all times for safety purposes, meaning a small amount of gas was continually flared.

The quantities flared each month varied depending on activity at the site, with increases due to events such as off-spec gas, pigging operations, issues with equipment, and plant shut-downs and restarts.

No complaints were received in relation to flaring or emissions to air at the Rimu Production Station during the reporting period.

2.3 Incidents, investigations, and interventions

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 Company. During the year matters may arise which require additional activity by the Council, for example provision of advice and information, or investigation of potential or actual causes of non-compliance or failure to maintain good practices. A pro-active approach, that in the first instance avoids issues occurring, is favoured.

For all significant compliance issues, as well as complaints from the public, the Council maintains a database record. The record includes events where the individual/organisation concerned has itself notified the Council. Details of any investigation and corrective action taken are recorded for non-compliant events.

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 individual/organisation is indeed the source of the incident (or that the allegation cannot be proven).

Table 8 below sets out details of any incidents recorded, additional investigations, or interventions required by the Council in relation to the Company's activities during the 2018-2019 period. This table presents details of all events that required further investigation or intervention regardless of whether these were found to be compliant or not.

Table 8 Incidents, investigations, and interventions summary table

Date	Details	Compliant (Y/N)	Enforcement Action Taken?	Outcome
12/06/2019	Self-notification was received from WestSide advising that an oil spill had occurred onsite during the process of restarting the plant following a shutdown.	Yes	No	A follow-up inspection of the site was undertaken. The oil had been cleaned up. All oil had been contained onsite and no effects were observed.

3 Discussion

3.1 Discussion of site performance

Monitoring of the Rimu Production Station in the 2018-2019 period found that, in general, the site was tidy and well managed.

During an inspection it was noted that not all of the site stormwater was being captured, contained and released in a controlled manner (via the oily water separator and fire water pond) as a section of ring drain was flowing under a fence and down into the valley. This would leave WestSide vulnerable in the event of a spill in this area. Work was undertaken to redirect any flow in this area to the stormwater system.

3.2 Environmental effects of exercise of consents

The monitoring showed that the stormwater discharge was not having a significant adverse effect on the water quality of the unnamed tributary of the Manawapou River.

There were no adverse effects on the environment found as a result of the exercise of the air discharge consent. The ambient air quality monitoring at the site showed that levels of carbon monoxide, combustible gases, PM_{10} particulates, nitrogen oxides and the volatile organic compounds benzene, toluene, ethylbenzene and xylenes were all below levels of concern at the time of sampling. No offensive or objectionable odours were detected beyond the boundary during inspections and there were no complaints in relation to air emissions from the site.

3.3 Evaluation of performance

A tabular summary of the consent holder's compliance record for the year under review is set out in Tables 9-10.

Table 9 Summary of performance for consent 5744-2.0

Purpose: ***To discharge treated stormwater from the Rimu Production Station onto and into land and into an unnamed tributary of the Manawapou River***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Adoption of best practicable option to minimise adverse effects	Site inspections	**Mostly - site stormwater not completely captured.**
2. Limit on stormwater catchment area	Site inspections	**Yes**
3. Preparation of contingency plan	Up-to-date as of 24 August 2016	**Yes**
4. Design and maintenance of stormwater system in accordance with information supplied	Site inspections	**Mostly - site stormwater not completely captured**
5. All discharges to flow to perimeter drain and skimmer pit	Site inspections	**Mostly - site stormwater not completely captured**

Purpose: *To discharge treated stormwater from the Rimu Production Station onto and into land and into an unnamed tributary of the Manawapou River*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
6. Skimmer pit to have capacity of at least 3,600m^3 and retain hydrocarbons	Site inspections	Yes
7. Skimmer pits and retention areas to be lined	Site inspections	Yes
8. Concentration limits upon potential contaminants in discharge	Water sampling	Yes
9. Limits on pH levels in skimmer pits and discharge	Water sampling	Yes
10. Effects not to occur in receiving waters beyond the established mixing zone	Water sampling	Yes
11. Effects not to occur in receiving waters beyond the established mixing zone	Water sampling and visual inspection	Yes
12. Notification prior to reinstatement of the site	Site in use	N/A
13. Optional review provision re environmental effects	Not scheduled for consideration during year under review. Next consideration June 2022	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**Good**
Overall assessment of administrative performance in respect of this consent		**High**

N/A = not applicable

Table 10 Summary of performance for consent 5746-2.0

Purpose: *To discharge contaminants into the air from the Rimu Production Station, including flaring and miscellaneous emissions*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Adoption of best practicable option	Site inspections	Yes
2. Maintain log of all flaring incidents longer than 5 minutes	Information received	Yes
3. Provision of monthly flaring information	Information received	Yes
4. Annual report on flaring due August	Report received	Yes
5. Record of smoke emitting incidents to be provided on request	Not requested	N/A
6. Analysis of typical gas and/or condensate stream to be provided on request	Not requested	N/A

Purpose: *To discharge contaminants into the air from the Rimu Production Station, including flaring and miscellaneous emissions*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
7. Notification to Council of alterations to plant equipment, processes or operations	Liaison with consent holder	Yes
8. Notification to Council of flaring expected to last more than 5 minutes	Notifications received	Yes
9. No offensive odour, dust or smoke beyond the site boundary	Site inspections	Yes
10. No noxious or toxic levels of airborne contaminants at or beyond the site boundary	Air monitoring	Yes
11. Limit on maximum ground level concentration of carbon monoxide, nitrogen dioxide, PM_{10} and sulphur dioxide	Air monitoring	Yes
12. Limit on maximum ground level concentration of other contaminants	Not monitored during period under review	N/A
13. Optional review provision re environmental effects	Not scheduled for consideration during year under review. Next consideration June 2022	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**High**
Overall assessment of administrative performance in respect of this consent		**High**

N/A = not applicable

Table 11 Evaluation of environmental performance over time

Year	Consent no	High	Good	Improvement req	Poor
2016-17	5744-2	1			
	5746-2	1			
2017-18	5744-2	1			
	5746-2	1			
Totals		4	0	0	0

During the monitoring period, WestSide demonstrated a high level of both environmental performance and administrative compliance with the resource consents as defined in Section 1.1.4. There was one Unauthorised Incident during the period under review relating to a small spill which was contained onsite and did not breach consent conditions.

3.4 Recommendations from the 2017-2018 Annual Report

In the 2017-2018 Annual Report, it was recommended:

1. THAT in the first instance, monitoring of consented activities at the Rimu Production Station in the 2018-2019 year continue at the same level as in 2017-2018.

2. THAT should there be issues with environmental or administrative performance in 2017-2018, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.

Recommendation one was implemented, while it was not considered necessary to carry out additional investigations or interventions.

3.5 Alterations to monitoring programmes for 2019-2020

In designing and implementing the monitoring programmes for air/water discharges in the region, the Council has taken into account:

- the extent of information already made available through monitoring or other means to date;
- its relevance under the RMA;
- the Council's obligations to monitor consented activities and their effects under the RMA;
- the record of administrative and environmental performances of the consent holder; and
- 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 exercising resource consents.

It is proposed that for 2019-2020 that the programme remains similar to that scheduled in 2018-2019, with a reduction in the number of inspections from six to four.

It should be noted that the proposed programme represents a reasonable and risk-based level of monitoring for the site in question. The Council reserves the right to subsequently adjust the programme from that initially prepared, should the need arise if potential or actual non-compliance is determined at any time during 2019-2020.

4 Recommendations

1. THAT in the first instance, monitoring of consented activities at the Rimu Production Station in the 2019-2020 year be amended from that undertaken in 2018-2019, with a reduction in inspections from six to four.
2. THAT should there be issues with environmental or administrative performance in 2019-2020, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.

Glossary of common terms and abbreviations

The following abbreviations and terms may be used within this report:

BTEX	Benzene, toluene, ethylbenzene and xylenes (BTEX).
Bund	A wall around a tank to contain its contents in the case of a leak.
Conductivity	Conductivity, an indication of the level of dissolved salts in a sample, usually measured at 25°C and expressed in mS/m.
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.
Incident	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.
Incident Register	The 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.
L/s	Litres per second.
m^2	Square Metres.
MfE	Ministry for the Environment.
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.
mS/m	Millisiemens per metre.
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).
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.
Pigging	Pigging is the practice of using devices known as pigs (or scrapers) to perform various maintenance operations. This is done without stopping the flow of the product in the pipeline. These operations include, but are not limited to, cleaning and inspecting the pipeline.
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.
UI	Unauthorised Incident.
VOC	Volatile organic compounds

For further information on analytical methods, contact a Science Services Manager.

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Tkachenko, V (2019): Air monitoring survey of hydrocarbon compounds (BTEX) in the Taranaki region 2019, August 2019.

Tkachenko, V. (2019): Ambient Gas (PM10, NOx, CO AND LEL) monitoring at Rimu Production Station during the 2018-2019 monitoring year.

Appendix I

Resource consents held by WestSide New Zealand Limited

(For a copy of the signed resource consent
please contact the TRC Consents department)

Consent number	Purpose	Granted	Review	Expires
5744-2	To discharge treated stormwater from the Rimu Production Station onto and into land and into an unnamed tributary of the Manawapou River	November 2016	June 2022	June 2034
5746-2	To discharge contaminants into the air from the Rimu Production Station, including flaring and miscellaneous emissions	November 2016	June 2022	June 2034

Water abstraction permits

Section 14 of the RMA 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. Permits authorising the abstraction of water are issued by the Council under Section 87(d) of the RMA.

Water discharge permits

Section 15(1)(a) of the RMA 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. Permits authorising discharges to water are issued by the Council under Section 87(e) of the RMA.

Air discharge permits

Section 15(1)(c) of the RMA 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. Permits authorising discharges to air are issued by the Council under Section 87(e) of the RMA.

Discharges of wastes to land

Sections 15(1)(b) and (d) of the RMA 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. Permits authorising the discharge of wastes to land are issued by the Council under Section 87(e) of the RMA.

Land use permits

Section 13(1)(a) of the RMA stipulates that no person may in relation to the bed of any lake or river use, erect, reconstruct, place, alter, extend, remove, or demolish any structure or part of any structure in, on, under, or over the bed, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations. Land use permits are issued by the Council under Section 87(a) of the RMA.

Coastal permits

Section 12(1)(b) of the RMA 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. Coastal permits are issued by the Council under Section 87(c) of the RMA.

Discharge Permit

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

Name of Consent Holder:	Westside New Zealand Limited Level 17 300 Queen Street Brisbane QLD 4000 Australia
Decision Date:	1 November 2016
Commencement Date:	1 November 2016

Conditions of Consent

Consent Granted:	To discharge treated stormwater from the Rimu Production Station onto and into land and into an unnamed tributary of the Manawapou River
Expiry Date:	1 June 2034
Review Date(s):	June 2022, June 2028
Site Location:	Rimu Production Station, Mokoia Road, Mokoia (Property owner: M & PD Hawken)
Grid Reference (NZTM)	1715980E-5610439N
Catchment:	Manawapou

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

General condition

a. The consent holder shall pay to the Taranaki Regional Council all the administration, monitoring and supervision costs of this consent, fixed in accordance with section 36 of the Resource Management Act 1991.

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 from the site.

2. Stormwater discharged shall be collected from a catchment area of no more than 6 Ha.

3. The consent holder shall maintain and regularly update a 'Contingency Plan' that details measures and procedures that will be undertaken to prevent, and to avoid environmental effects from, a spillage or any discharge of contaminants not authorised by this consent. The plan and any amended versions shall be provided to the Chief Executive of the Taranaki Regional Council.

4. Subject to the other conditions of this consent the design, management and maintenance of the stormwater system shall be undertaken in accordance with the information submitted in support of the application for this consent.

5. All discharges from the site, including from any containment pit or hydrocarbon combustion facility (e.g. flare pit, thermal oxidiser), shall flow to a perimeter drain and skimmer pit. Perimeter drains shall be designed, including by having a positive grade and low permeability, to ensure that runoff flows directly to a skimmer pit without ponding.

6. The skimmer pit system shall have a combined capacity of no less than 3600 m^3 including a 'freeboard' of no less than 1000 m^3, and be designed to retain any hydrocarbons that enter them.

7. All skimmer pits and any other stormwater retention areas shall be lined with an impervious material to prevent seepage through the bed and sidewalls, and the stormwater system shall be designed to prevent any discharge of contaminants from the site.

8. Subject to condition 9 the constituents in the discharge shall meet the standards shown in the following table.

Constituent	Standard
pH	Within the range 6.0 to 9.0
suspended solids	Concentration not greater than 100 gm^{-3}
total recoverable hydrocarbons	Concentration not greater than 15 gm^{-3} (as determined by infrared spectroscopic technique)
chloride	Concentration not greater than 230 gm^{-3}

This condition shall apply before the entry of the treated stormwater into the receiving environment at a designated sampling point approved by the Chief Executive, Taranaki Regional Council.

9. The pH may exceed 9.0 if the exceedance is a result photosynthetic activity within the skimmer pits, but in any case the discharge shall not result in the pH of the receiving water increasing by more than 0.5 pH units after allowing for a mixing zone of 25 metres.

10. After allowing for a mixing zone of 80 metres, the discharge shall not cause any of the following effects in the receiving water of the Manawapou River tributary:

    a) an increase in the temperature of more than 2 degrees Celsius;

    b) the filtered carbonaceous biochemical oxygen demand to exceed 2 gm^{-3}; or

    c) the chloride concentration to exceed 50 gm^{-3}.

11. After allowing for a mixing zone of 80 metres, the discharge shall not give rise to any of the following effects in the receiving water of the Manawapou River tributary:

    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.

12. The consent holder shall advise the Chief Executive, Taranaki Regional Council, in writing at least 48 hours prior to the reinstatement of the site and the reinstatement shall be carried out so as to minimise adverse effects on stormwater quality. Notification shall include the consent number and a brief description of the activity consented and be emailed to worknotification@trc.govt.nz.

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 2022 and/or June 2028, 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 and transferred at Stratford on 1 November 2016

For and on behalf of
Taranaki Regional Council

_____

A D McLay
Director - Resource Management

Discharge Permit

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

Name of Consent Holder:	Westside New Zealand Limited Level 17 300 Queen Street Brisbane QLD 4000 Australia
Decision Date:	1 November 2016
Commencement Date:	1 November 2016

Conditions of Consent

Consent Granted:	To discharge contaminants into the air from the Rimu Production Station, including flaring and miscellaneous emissions
Expiry Date:	1 June 2034
Review Date(s):	June 2022, June 2028
Site Location:	Rimu Production Station, Mokoia Road, Mokoia (Property owner: M & PD Hawken)
Grid Reference (NZTM)	1715953E-5610123N

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

General condition

a. The consent holder shall pay to the Taranaki Regional Council all the administration, monitoring and supervision costs of this consent, fixed in accordance with section 36 of the Resource Management Act 1991.

Special conditions

Exercise of consent

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 effects on the environment associated with the discharge of contaminants into the environment arising from the emissions to air from the flare.

Recording and submitting information

2. The consent holder shall keep and maintain a log of all continuous flaring incidents lasting longer than 5 minutes and any intermittent flaring lasting for an aggregate of 10 minutes or longer in any 60-minute period. The log shall contain the date, the start and finish times, the quantity and type of material flared, and the reason for flaring. The log shall be made available to the Chief Executive, Taranaki Regional Council, upon request, and summarised annually in the report required under condition 4. Flaring, under normal operation in the low pressure flare, of rich mono-ethylene glycol degasser vapour, condensate tank vapours, non-condensibles from tri-ethylene glycol/mono-ethylene glycol regeneration and purge gas shall be excluded from this requirement.

3. The consent holder shall supply to the Taranaki Regional Council each month a copy of flaring information comprising: the type and amount of material flared (including any gas used to maintain a pilot flame), the date this was flared, the reason why flaring was undertaken, and an indication of whether smoke was produced from such flaring events.

4. The consent holder shall provide to the Taranaki Regional Council during August of each year, for the duration of this consent, a report:

    a) detailing gas combustion at the production station flare, including but not restricted to routine operational flaring and flaring logged in accordance with condition 2.
    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.

5. The consent holder shall keep and make available to the Chief Executive, Taranaki Regional Council, 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.

Information and notification

6. The consent holder shall make available to the Chief Executive, Taranaki Regional Council upon request, an analysis of a typical gas and/or condensate stream from the Manutahi, Kauri and Tariki Formations, covering sulphur compound content and the content of compounds containing six or more carbon atoms in their molecular structure.

7. 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 described in the consent application, the consent holder shall first consult with the Chief Executive, Taranaki Regional Council, and shall obtain any necessary approvals under the Resource Management Act 1991.

8. The consent holder shall notify the Chief Executive, Taranaki Regional Council, as soon as practicable, whenever the continuous flaring of hydrocarbons (other than the flaring of rich mono-ethylene glycol degasser vapour, condensate tank vapours, non-condensibles from tri-ethylene glycol/mono-ethylene glycol regeneration and purge gas) is expected to occur for more than five minutes in duration.

Preventing and minimising emissions

9. The discharges authorised by this consent shall not, whether alone or in conjunction with any other emissions from the site arising, 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 site.

10. 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 site.

11. The consent holder shall control all emissions of carbon monoxide, nitrogen dioxide, fine particles (PM10) and sulphur dioxide to the atmosphere from the site, in order that the maximum ground level concentration of any of these contaminants arising from the exercise of this consent measured under ambient conditions does not exceed the relevant ambient air quality standard as set out in the Resource Management (National Environmental Standards for Air Quality Regulations, 2004) at or beyond the boundary of the property on which the wellsite is located.

12. The consent holder shall control discharges to the atmosphere from the flare of contaminants, other than those addressed by the *Resource Management (National Environmental Standards for Air Quality) Regulations, 2004*, whether alone or in conjunction with any other emissions from the site, 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 site, is not increased above background levels:

    a) by more than 1/30th of the relevant Workplace Exposure Standard-Time Weighted Average (exposure averaged over a duration as specified for the Workplace Exposure Standard-Time Weighted Average), or by more than 1/10th of the Workplace Exposure Standard-Short Term Exposure Limit over any short period of time (all terms as defined in Workplace Exposure Standards, 2002, Department of Labour); or
    b) if no Short Term Exposure Limit is set, by more than the General Excursion Limit at any time (all terms as defined in Workplace Exposure Standards, 2002, Department of Labour or any subsequent reviews).

    Advice Note:
    In exercising this consent the consent holder must also comply with any discharge standard required by Regulations. At the time of issuing this consent the 'Resource Management (National Environmental Standards for Air Quality) Regulations, 2004' set limits on discharge of carbon monoxide, nitrogen dioxide, fine particles (PM_{10}) and sulphur dioxide.

Review

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 2022 and/or June 2028, 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.

Signed and transferred at Stratford on 1 November 2016

For and on behalf of
Taranaki Regional Council

A D McLay
Director - Resource Management