Environmental Compliance Monitoring Report **2012-13**

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Environmental Compliance Monitoring Report

2012/13

Report by –
Environment Southland
Compliance Division

Environment Southland Publication No 2013/7

Foreword

The Compliance Division has undergone a comprehensive review over the past 12 months. While any review is time consuming and unsettling for staff, we are now seeing the benefit of reviewing the Division's purpose and operational plan, ensuring it operates effectively and efficiently, while focussing on the ethos of operating in an open, fair and consistent manner when dealing with the public.

As a result of the review, the Compliance Division has experienced an organisational culture change. A mix of new and experienced staff deliver the day to day functions of the division, combined with a greater focus on the environmentally high risk incidents and issues.

As well as the changes internally, we are also dealing with changes to some of the legal parameters that the Division operates under including the Resource Management Act, Search and Surveillance Act and the introduction of the Criminal Procedures Act.

A number of changes have also been made to Regional Plans which, combined with additional conditions being placed on various consents, are placing greater demands on staff for the future.

In the past 12 months, only one inspection per farm was completed, however from these, it is pleasing to see a continual improvement in compliance and in the uptake of good management practices.

It is also pleasing to note that reports of incidents to our Pollution Hotline have come down. Last year we received 814 calls, down from 960 in the previous year.

Working cooperatively with industries and consent holders continues to be a major focus. Staff continue to receive positive feedback to this approach from clients and customers, which has not changed the Division's response to major non-compliance incidents.

All things considered, the Compliance Division's workload is likely to remain busy in the foreseeable future as Environment Southland continues to focus on improving water quality, while enabling the sustainable growth of Southland's economy.

The Council thanks Simon Mapp and the members of the Compliance Division for their commitment to achieving that goal.

A M Timms
Chairman
Environment Southland

N G Horrell
Chairman
Environmental Management Committee

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Inspection and Audit Activities

1.0 Agricultural Audits

1.1 Dairy Inspection Overview

A national dairy audit of regional council monitoring is held each year to ensure that there is consistency in determinations of compliant and non-compliant inspections throughout New Zealand. The audit is also attended by dairy industry representatives who have some input into the group.

It was agreed at this forum that dairy inspections will be non-notified. Environment Southland abides by this agreement and does not pre-warn farms of discharge permit inspections. This offers the public of Southland, and the industry, confidence that when a dairy farm is inspected it is done so in the farm's normal state of operation.

In Southland, properties that milk more than 20 cows require a consent to discharge farm dairy effluent to land.

This approach differs from some other regional authorities that have made the discharge of dairy effluent to land a permitted activity through Regional Plan rules.

An inspection can have five possible outcomes:

1. Score of 1 means the farm is *Fully Compliant* – complies with all conditions of consent;

2. Score of 2 means the farm has *Minor Non-compliance* – has not complied with 'administrative' conditions of consent;

3. Score of 5 means the farm has some *Marginal Non-compliance* – there is evidence that an incident is likely, or has happened, but the environmental effect does not warrant a significant non-compliant rating;

4. Score of 7 means that the farm has some *Significant Non-compliance* – e.g. more than the consented number of cows;

5. Score of 10 means the farm has *Significant Non-compliance* – requires re-inspection.

1.1.1 Discharge Consent Inspections

During 2012/13, 887 effluent discharge consent inspections were completed (Figure 1).

The majority of consent holders inspected were fully compliant with consent conditions and were given a rating of 1.

The introduction of new technologies has been driven by the combination of industry wanting better performance and consent requirements. Recently converted properties, and those renewing their consent, are expected to operate at a higher standard than those with a consent that still has a few more years to run.

Renewed consents are resulting in an increase in workload, as more conditions are applied to consents.

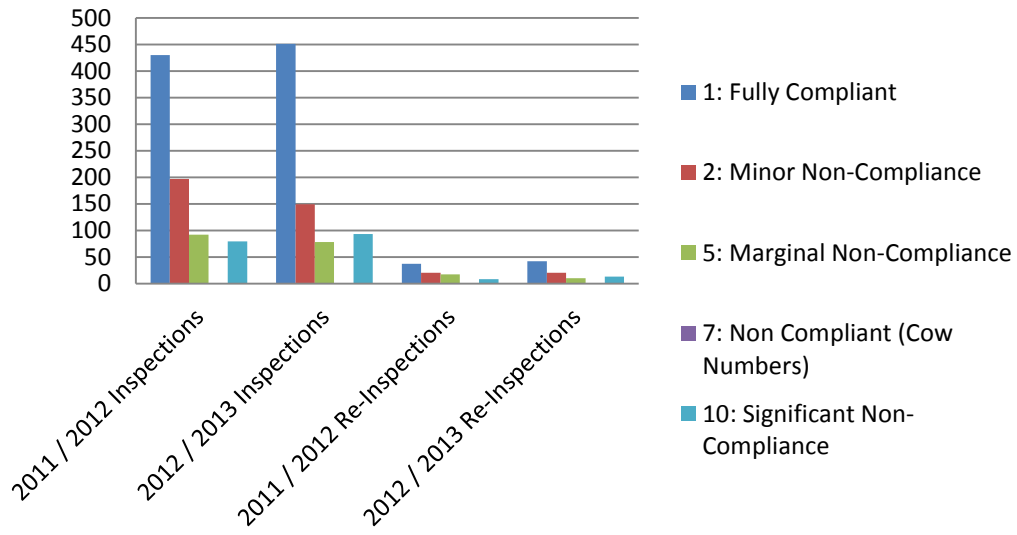

Figure 1 - Comparison of on-site dairy inspection outcomes over the last two years. Please note aerial inspections removed from 2011/12.

1.1.2 Wintering Pad Inspections

There are 87 current consented wintering pads in Southland. These are usually inspected annually, or as the consents require (Figure 2).

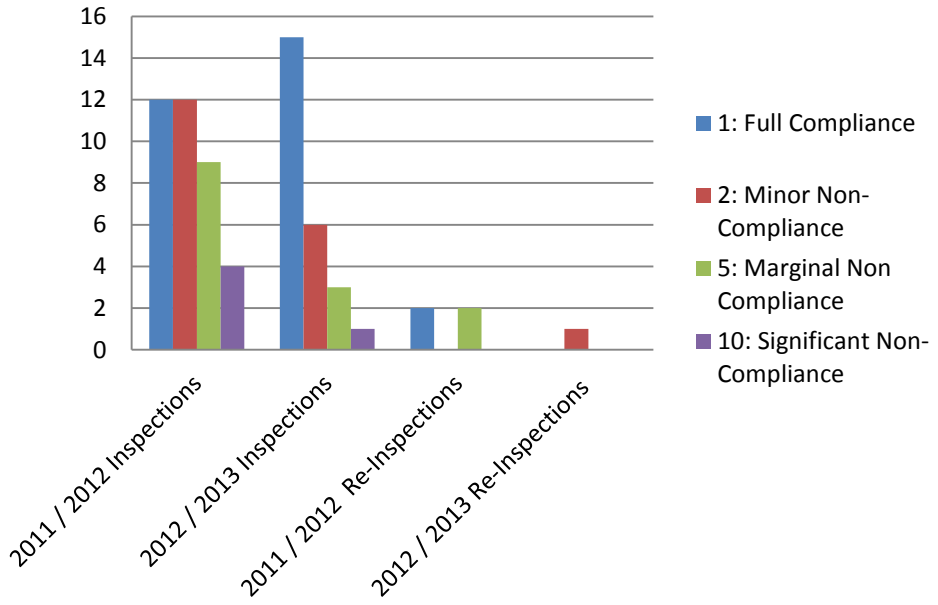

Figure 2 - Comparison of dairy wintering pad inspection outcomes during the past two years.

Note: wintering pads can only be inspected for compliance against consent conditions when in use. Many were not in use during inspections this winter.

1.2 Dairy Groundwater Quality Sampling

Groundwater sampling is a tool used to check compliance with dairy effluent discharge consents. The purpose is to look for measureable changes in the groundwater quality in the areas where effluent is applied.

Contamination of groundwater can occur when water containing contaminants passes through soil to underground aquifers. This can be a slow process; therefore groundwater contamination may not be detected for some time. Rapid contamination may also occur where bore heads are not adequately encased, or leaching from unsealed landfills.

Contamination may be the result of point source discharges from things like timber treatment plants, leaking septic tanks, or non-bunded chemical storage areas, or non-point source discharges such as fertiliser, effluent or pesticide applications to land which may percolate through the soil to groundwater.

Where groundwater monitoring is required as part of a consent, water samples are collected and analysed. The results from a three to five year period can give a reasonable indication of the effects effluent application is having on groundwater, despite interpretation often being difficult. If deterioration is noted, further investigation will be required to try to identify the possible cause of the changes and whether the change is associated with land use activities in the area.

In Southland there are 200 dairy discharge consents where groundwater inspection is a requirement. Samples are collected from sampling bores located in the shallow aquifers under the effluent disposal fields. This sampling typically occurs twice a year, in November and April. Groundwater quality does not change as frequently or as rapidly as surface water quality, so does not need to be sampled as often. The results for each sampling period are shown below.

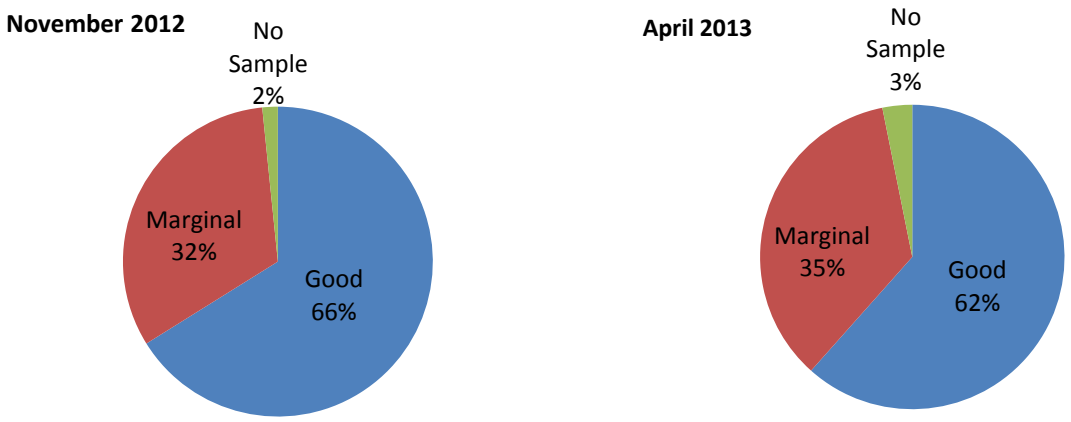

Figure 3 - Groundwater sampling results November 2012 and April 2013

Results are graded as good or marginal:

- ***Good*** - the *E coli* result must be at levels less than 1 MPN/100 mL OR Nitrate Nitrogen levels less than 9 g/m^3 OR a series of results that do not show an increasing trend in the level of Nitrate (an increasing trend is defined as: an initial Nitrate-Nitrogen concentration in the order of 6 g/m^3 and consistently increasing over a three to five year period);
- ***Marginal*** – any results exceeding the above criteria.

Note: Waters with Nitrate-Nitrogen results in excess of 3.5 g/m^3 are considered to be significantly impacted by human activities on land.

In November 2012, 32 samples were found to contain high levels of Nitrate-Nitrogen. This figure remained consistent for April 2013. The results were referred to the Environment Southland groundwater scientists, to determine which sites were reflections of the background aquifer levels and which required further investigation. All consent holders have been notified of their results and those with high Nitrate-Nitrogen levels have been advised of the potential risks to human health that Nitrogen inputs on their property need to be carefully managed to avoid them having an impact on groundwater.

Several of the high Nitrate-Nitrogen samples during November and April were also associated with *E.coli* results measuring greater than 1 MPN/100 ml. Insufficient well head protection is the most likely source of elevated *E.coli* levels. All consent holders with poor *E.coli* results from their bores have been requested to investigate this as a possible source of contamination. If well head protection appears sufficient, and future samples continue to return unsatisfactory results, the source of contamination will need to be investigated further. Sampling from a large diameter well, rather than a monitoring bore can also increase the likelihood of contamination. Consent holders with groundwater monitoring as a condition in their consents are encouraged to install monitoring bores.

1.3 Dairy Surface Water Quality Sampling

In 2012/13, 605 effluent discharge consents required surface water monitoring as a condition in their consent. The location of the sampling is variable and dependent on where the discharge is occurring on the day of the inspection and whether a waterway is likely to be at risk. Most discharge consents specify that samples may be collected up to three times a year. Where possible, samples are collected in conjunction with a routine inspection to minimise costs to the consent holder.

Water Quality Results

For the 605 discharge consents that required surface water monitoring, 827 site visits were made. Some properties were visited multiple times, depending on consent conditions.

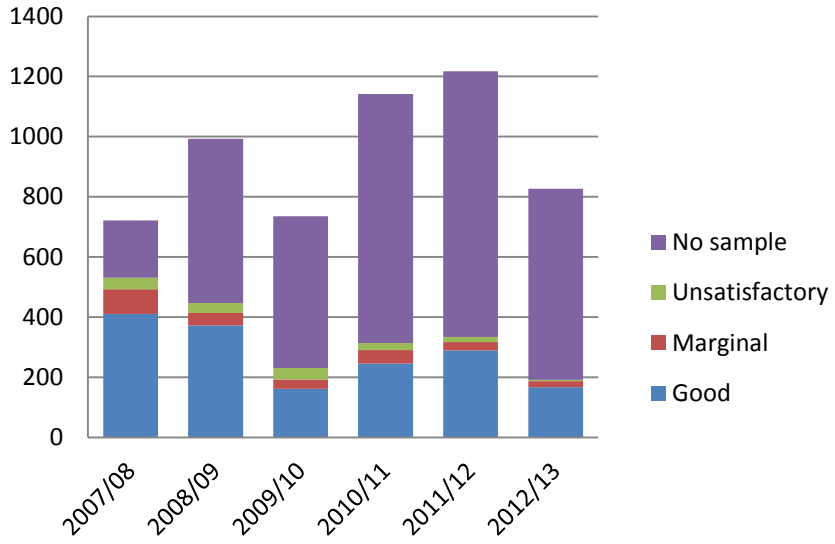

Figure 4 - Dairy surface water sample results

Of the 827 sites visited, 191 samples were taken, a decrease of 143 samples on the previous year. The results were interpreted with reference to national guidelines, trends over time for that particular property, the nature of the receiving waterway, soil types, the weather immediately prior to sampling and other relevant factors. The samples are then graded as either 'good', 'marginal' or 'unsatisfactory'. These grades are based solely on water quality.

Of the 191 samples taken:

- 87 per cent received a 'good' grade. This indicated that, on the day the samples were collected, the effluent discharge to land was having either no or minimal impact on surface water quality downstream of the effluent disposal field. This is equivalent to last year;
- 11 per cent received a 'marginal' grade, indicating there had been a change in water quality below the effluent disposal field when compared to the water quality above the disposal field; and

- two per cent received an 'unsatisfactory' grade, showing that activities on the farm appeared to be having an impact on surface water quality.

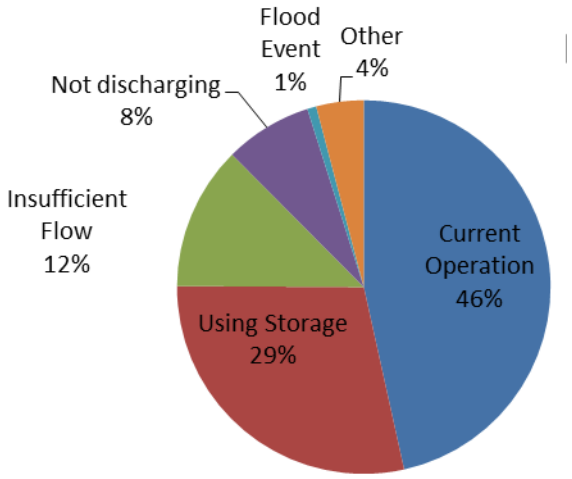

Figure 5 – Reasons why no samples were collected.

The number of properties where samples were not required (No Samples) was 74 per cent of the total properties visited. Almost half of these (46 per cent) were due to the farm manager locating the irrigator in a position where the field officer determined that the waterway would not be impacted by any discharge from the effluent system (see Figure 5 - Current Operation). This reflects good effluent management.

Other reasons why no samples were required to be collected were:

- insufficient flow to take a sample;
- consent holders were using storage facilities and had not irrigated for some time prior to the visit. This also reflects good effluent management.

1.4 Irrigation Water Permits

During the 2012/13 irrigation season, there were 109 current irrigation consents in Southland. Of these consents, 88 were abstractions from groundwater, 18 from surface water takes, one was a dam, and two were for diversion. Of these consents, six were to carry out pump testing (a one-off test on the capacity of a bore) and two were new consents, granted to replace an old consent (the old consent to remain current until the farm restructuring was finalised).

Consent holders were required to submit records specifying the volume of water taken each day, to show that they were compliant with their daily abstraction limit. It was also a condition for consent holders to contact Environment Southland with their intention to commence irrigation.

Irrigation in Southland is predominately for pasture growth, with 88 of the 109 consents required for pasture irrigation, 20 for crop production and five for horticultural activities. Four consents were for the purpose of both crop and pasture irrigation.

Compliance with Consent Requirements

The supply of full and accurate data is essential for effective management of the region's water resources. The information provided by consent holders is used during the review, renewal and granting of new consents. A lack of data, or the existance of a poor performance history for a site during this time may impact on the flexibility of conditions within the consent.

The Resource Management Regulations 2010 (Measurement and Reporting of Water Takes) require the measurement and recording of water use for all consumptive water takes greater than five litres per second (excluding permitted takes and permits for the abstraction of coastal or geothermal water). Specific requirements include:

a. *Installation of a water measuring device or system that is capable of continually measuring the rate of abstraction and which is:*
   - *suited to the qualities of water it is measuring*
   - *sealed and tamper proof*
   - *installed where water is taken*
   - *accurate to within +/- 5 per cent for water taken by a full (pressurised) pipe, or +/- 10 per cent for takes by open channel or partially full pipes*
   - *verified as accurate by a suitably qualified person*
   - *able to provide data in a form suitable for electronic storage;*

b. *Keeping of daily records of the volume of water taken including records specifying 'zero' when abstraction does not occur;*

c. *Keeping of water use records in an auditable form, with the supply of annual records to the Regional Council for each year of operation, covering all water taken between 1 July and 30 June that year.*

Within the regulations there was a transitional provision for existing water permits; this provision allowed for large, medium and small take consent holders to meet the metering, reporting and verification requirements by certain dates.

It is the intention of Environment Southland that all consent holders are made aware of the importance of ensuring their flow meters and monitoring systems meet their consent requirements, as well as the National Environmental Standard (NES) for water metering.

Environment Southland will require all consented irrigation takes to have their meters calibrated to standards required by their consent and the NES; and that the systems be recalibrated at five-yearly intervals. This will need to be conducted by an approved supplier.

All consented irrigation takes will be required to provide evidence that the meter and connecting systems are fully compliant with the NES, and are tamperproof.

Of the 109 irrigation water permits in place during the 2012/13 irrigation season, 80 were found to be compliant with returning information to Environment Southland.

The 80 consent reported to be compliant were:

- not exercising their consent 8
- new consents 11
- submitted data 56
- expired before data was due 5

- non-compliant 29

2.0 Industrial Audits – Major Industries

Liaison and Reporting Tables

In each of the major industry reports a table has been included to assess how well the company keeps Environment Southland informed of monitoring results and its responsiveness to issues. Elements considered are:

- Reporting:
  - completeness of the results;
  - quality of the results;
  - provision of results in a timely manner;
  - annual reports are complete, clear and understandable.

- Contingency planning.

- Prompt notification of requisite agencies in event of incidents.

- Completion of full and thorough investigations as required by the consent or to address non-compliance with consent conditions.

- Maintain good communication of issues with Environment Southland:
  - advising of plant, or discharge changes and improvements, etc;
  - responsiveness to enquiries.

- Proactive in addressing or highlighting potential issues.

- Responsiveness to the need for improvement and/or change.

- Environmental ethics.

The grading's used are:

- Excellent
- Very good
- Good
- Marginal
- Poor

2.1 Meat Industry

2.1.1 Alliance Group Limited

Alliance Group Limited operates three meat processing plants in Southland, at Lorneville, Makarewa and Mataura. The compliance performance for the three plants during 2012/13 was assessed against the current resource consents.

What We Look At

The consents issued for the Alliance Group's plants permit the discharge of treated nutrients or chemicals into nearby waterways, land and air. The quantity they can discharge is restricted by the consent, and compliance with these requirements is audited.

Lorneville

Consents

Alliance Group Limited holds nine resource consents for meat processing at its Lorneville plant.

They include:

- to discharge waste water to the Makarewa River;
- to take surface water from the Makarewa and Oreti River;
- to discharge sludge to land;
- to discharge contaminants to air;
- to discharge stormwater into an open drain.

The meat processing effluent quality at the Alliance Group's Lorneville plant marginally exceeded the quality standards set out in its consents on a few occasions. These occurred mostly during times of very low river flows, which limited the rivers ability to manage the discharge. On occasions when the routine monitoring identified a breach in the water quality, the company promptly reduced or ceased the discharge to the river, returning the water quality to that required in the consent.

Table 1 - Alliance Group Limited, Lorneville Plant – liaison and reporting

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent

Complaints and Self-reported Incidents

A number of odour investigations were conducted at this site. Only one complaint was confirmed during this period. This was neither objectionable nor offensive.

Makarewa

Consents

Alliance Group Limited holds seven resource consents for meat processing at its Makarewa plant.

They include:

- to discharge waste water to the Makarewa River;
- to take groundwater from a bore;
- to take surface water from the Makarewa River;
- to discharge waste water and effluent to land;
- to discharge contaminants to air;
- to discharge stormwater to the Makarewa River.

The meat processing effluent quality at the Alliance Group's Makarewa plant met all consent requirements.

Table 2 - Alliance Group Limited, Makarewa Plant – liaison and reporting

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent

Complaints and Self-reported Incidents

A number of odour investigations were conducted at this site. Only one complaint was confirmed to be objectionable. This was associated with the rendering plant. Alliance Group Limited has commissioned a new rendering plant at its Lorneville plant, which has resolved these issues at this site.

Mataura

Consents – Mataura

Alliance Group Limited holds eight resource consents for the purpose of meat processing at its Mataura plant.

They include:

- to discharge wastewater to the Mataura River;
- to discharge cooling water to the Mataura River;
- to discharge sludge to land on selected properties;
- to divert water.

The meat processing effluent quality at the Alliance Group's Mataura plant marginally exceeded the quality standards set out in the consent on three occasions.

Table 3 - Alliance Group Limited, Mataura Plant – liaison and reporting

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent

Complaints and Self-reported Incidents

There were no incidents involving Alliance Mataura for the reporting period.

2.1.2 Blue Sky Meats (NZ) Limited

Consents

Blue Sky Meats (NZ) Limited holds four resource consents for the purpose of meat processing at its Morton Mains plant.

They are:

- to discharge contaminants to the ground through the operation of offal pits;
- to take groundwater from a bore;
- to discharge wastewater to land via a spray irrigator;
- to discharge contaminants to air.

Blue Sky Meats Limited operates a meat processing plant at Morton Mains, near the Woodlands township. The compliance performance for the plant during 2012/13 was assessed against the current resource consents. Aside from some minor conductivity exceedances, Blue Sky Meats met all the requirements of its resource consents for the reporting period.

One key element that is measured is electrical conductivity. This is the ability of water to conduct electricity. This gives a conservative measure of the mineral content of water - the greater the conductivity of the water, the greater the mineral content of the water. This information is continuously recorded to provide the company with real time information which it responds to if the trigger level is exceeded.

Table 4 - Blue Sky Meats (NZ) Limited, Morton Mains Plant – liaison and reporting

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent

Complaints and Self-reported Incidents

There were no incidents involving Blue Sky Meats for the reporting period.

2.1.3 South Pacific Meats Limited

Consents

South Pacific Meats Limited holds three resource consents for the purpose of meat processing at its Awarua plant.

They are:

- to discharge stormwater containing contaminants into the New River estuary;
- to discharge contaminants to air from the rendering plant, wastewater treatment plant, boiler and associated processes;
- to discharge meat works effluent sludge to land (granted 20 February 2013).

South Pacific Meats Limited operates a meat processing plant at Awarua, approximately 10 km south of Invercargill. The compliance performance during 2012/13 was assessed against the current resource consents.

The plant was fully compliant with all standards set out in its consents.

Table 5 - South Pacific Meats Limited, Awarua plant – liaison and reporting

Issue	Score	Additional information
Provision of data/results	Good	
Responsiveness to issues	Marginal	This is changing. SPM is implementing procedures to allow it to be better able to manage issues as they arise.
Keeping Environment Southland informed of intentions, changes, etc.	Good	SPM is regularly providing updates on progress and intentions, etc.

Complaints and Self-reported Incidents

Environment Southland investigated one significant incident relating to an unauthorised discharge to land in circumstances where it may enter water. This incident was confirmed and an infringement notice was issued. There were two confirmed odour incidents, neither of which was assessed as "objectionable or offensive".

2.1.4 Prime Range Meats Limited

Consents

Prime Range Meats Limited is in the process of applying to renew its consent and is operating under Rights of Continuance under section 124 of the Resource Management Act (RMA) 1991.

The expired consent allowed:

- a discharge up to 1500 m^3/day of treated wastewater to the Waikiwi Stream, approximately 500 metres downstream of the West Plains Road Bridge.

The company also holds the following air discharge consent:

- to discharge contaminants to air from a meatworks and rendering plant, including a wastewater treatment system.

Prime Range Meats Limited (PRM) is a meat processing and rendering plant on the banks of the Waikiwi Stream in Invercargill. The compliance performance during 2012/13 was assessed against the current resource consents.

Table 6 – Prime Range Meats Limited – liaison and reporting

Issue	Score
Provision of data/results	Very Good
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent

Complaints and Self-reported Incidents

Environment Southland received no odour complaints from the public during the 2012/13 period.

Consent Performance Summary

PRM was fully compliant with all standards set out in its resource consent for the discharge of contaminants to water. However, it was technically non-compliant on one occasion with the air consent in April 2013, when monitoring and maintenance data for the bio filter was not provided.

2.2 Dairy Industry

2.2.1 Fonterra Co-operative Group Limited

Consents

Fonterra Co-operative Group Limited holds eight resource consents related to dairy processing at its Edendale Plant.

They include:

- to discharge wastewater to land;
- to take groundwater from bores;
- to discharge wastewater and stormwater to water;
- to discharge contaminants to air;
- to discharge sludge to land.

Fonterra Co-operative Group Limited operates a dairy processing facility in the Edendale township. The compliance performance for the plant during 2012/13 was assessed against the current resource consents.

Some key elements that are measured are:

- **Total Suspended Solid** – very small particles that have the potential to affect the colour and clarity of a water body and can potentially settle out onto a streambed smothering aquatic life in the waterways.

- **Total Phosphorus** – Phosphorus is an important element in the growth of plant material. Total Phosphorus is a measure of all phosphorus present, including all forms of phosphorous whether it is tightly bound to particulate matter or potentially available to plant life.

Table 7 Fonterra Co-operative Group Ltd, Edendale Plant – liaison and reporting

Issue	Score
Provision of data/results	Good
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent

Complaints and Self-reported Incidents

Environment Southland recorded two incidents relating to the Edendale plant. One was related to spreading whey on saturated paddocks, and one was a small milk spill. Both were self-reported by plant staff and resulted in no discharge of contaminants to waterways, or other environmental impacts.

Consent Performance Summary

The treated wastewater discharge to the river was found to have exceeded the Total Suspended Solids (TSS) quality standards set out in the consents on one occasion, and the Total Phosphorous limits on one occasion.

The stormwater discharge was found to exceed the Total Phosphorous loading limit on one occasion.

2.2.2 Open Country Dairy (NZ) Limited

Consents

Open Country Dairy holds two resource consents related to dairy processing at its Awarua Plant. They are:

- to discharge condensate to a farm drain;
- to discharge contaminants to the air from the milk processing plant and boiler.

Open Country Dairy (NZ) Limited operates a milk processing plant at Awarua, approximately 10 km south of Invercargill. The compliance performance during 2012/13 was assessed against the current resource consents.

Table 8 - Open Country Dairy, Awarua plant – liaison and reporting

Issue	Score
Provision of data/results	Very Good
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding operations at the Open Country Dairy plant.

Consent Performance Summary

The only issue reported at the plant was in August 2012, when Open Country Dairy advised Environment Southland that it had detected an issue with coal blend and clinker on the grate. This resulted in the bag-house having to be diverted, and repairs undertaken.

2.3 Energy Industry

2.3.1 Pioneer Generation Limited

Consents

Pioneer Generation Limited holds 20 resource consents for the ongoing operation and maintenance of the Monowai Power Station. They control the take, use and discharge of water for power generation, while maintaining minimum flows in all of the existing waterways.

These include:

- to take surface water;
- to use, maintain and alter an existing earth dam;
- to discharge to water;
- to discharge to land;
- to dam and divert.

The electricity generation station at Monowai, owned by Pioneer Generation Limited (Pioneer), is a community owned electricity provider and wholesaler. The company operates 13 power stations in Central Otago and Southland.

Table 9 - Pioneer Generation Limited, Monowai Power Station – liaison and reporting

Issue	Score
Provision of data/results	Good
Responsiveness to issues	Good
Keeping Environment Southland informed of intentions, changes, etc.	Good

Complaints and Self-reported Incidents

Environment Southland received no complaints from the public relating to Pioneer during the reporting period. Pioneer did not self-report any incidents to Environment Southland during that time.

Consent Performance Summary

Pioneer has achieved compliance with the operating guidelines for the management of Lake Monowai for the reporting period, and with the requirement to provide minimum flows.

In its consents, Pioneer has a guideline flow regime for the Upper Monowai River. At various stages throughout the reporting period Pioneer was non-compliant with this guideline, but the extent of these breaches was only minor.

The requirement for minimum flow from the diversion weir to the Lower Monowai River was not achieved early in the reporting period due to programming anomalies, but since then compliance with this requirement has been achieved.

2.3.2 Meridian Energy Limited

Consents

Meridian Energy Limited holds 33 resource consents related to the operation of Manapouri Power Scheme.

They include:

- to dam and divert the waters for hydro- electric power generation
- to take and use water for hydro-electric production
- to discharge treated sewage to land
- to discharge storm water to land
- to carry out bed disturbance
- to discharge contaminants to air
- to discharge water and contaminants to the coastal marine area.

Meridian Energy Limited operates a power scheme to generate electricity using water stored in lakes Te Anau and Manapouri. The stored water from the lakes is controlled using structures at the outlet of Lake Te Anau and the Waiau River. The water used to generate electricity is discharged through two tunnels to Deep Cove, Doubtful Sound. The compliance performance during the 2012/13 year was assessed against the current resource consents.

Table 10 - Meridian Energy Limited – liaison and reporting

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the Manapouri Power Scheme.

Consent Performance Summary

There were three events of non-compliance relating to flow control. This was due to malfunctioning of software systems and investigations into this issue are ongoing.

There were three events of minor non-compliance relating to ramping rate. One of these related to minimum flow limits. In terms of the number of consents held by Meridian, the scope and scale of the operation, and the environmental impact of these events, they are considered very minor.

At the time of writing this report Meridian Energy was compliant with the recreation flushing flows, as described in its consent.

2.4 Manufacturing Industry

2.4.1 New Zealand Aluminium Smelters Limited

Consents

NZ Aluminium Smelters Limited holds six discharge consents that require inspecting.

They include:

- discharge contaminants to land, including circumstances where they may enter coastal water from the north, south and west drains;
- discharge treated sewage to land;
- discharge treated effluent into Foveaux Strait;
- discharge contaminants to air from the aluminium smelter and related activities;
- discharge consent to land at the smelter's landfill site.

The New Zealand Aluminium Smelters Limited (NZAS) is located on the Tiwai peninsular at Awarua, Invercargill, and produces some of the purest aluminium in the world.

The compliance performance during 2012/13 was assessed against the current resource consents.

NZAS remained fully compliant with consent limits during the reporting period.

Table 11 - New Zealand Aluminium Smelters – liaison and reporting

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent

Complaints and Self-reported Incidents

Environment Southland received two complaints from the public; one in September 2012 and one in March 2013. The September 2012 complaint related to dust emissions from a ship unloading at the Tiwai wharf and the March 2013 complaint related to excessive smoke discharging from chimney stacks. Environment Southland could not confirm either incident.

NZAS has measures in place to minimise any dust emissions.

NZAS self-reported an incident in March 2013. It was reported that a spillage of approximately five litres of hydraulic fuel oil to the Tiwai wharf reached the harbour waters. As much of the spilt oil as possible was recovered by smelter staff. Environment Southland provided education and training to prevent any repeat incidents.

2.4.2 Dongwha Patinna New Zealand Limited

Consents

Dongwha Patinna New Zealand Limited holds five resource consents for the manufacture of MDF. They are:

- to discharge contaminants to the air from fibreboard processing, including the treatment of wastewater;
- to discharge effluent and treatment pond seepage to land;
- to discharge untreated stormwater and treated wastewater to water;
- to discharge stormwater to land;
- to discharge from a tile drain to a watercourse.

Dongwha Patinna New Zealand Limited (Dongwha) is a medium density fibreboard (MDF) manufacturing plant, located south of the Mataura township. The compliance performance during 2012/13 was assessed against the current resource consents.

Dongwha was fully compliant with all the standards set out in its resource consents.

To date Dongwha has not exercised the consent that allows the discharge of treated wastewater to the Mataura River, and has not indicated any intent to do so. Instead, all wastewater has been irrigated to land.

Table 12 – Donwha Patinna New Zealand Limited – liaison and reporting

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent

2.5 Fertiliser Industry

2.5.1 Balance Agri-Nutrients Limited

Consents

Ballance Agri-Nutrients Limited holds three resource consents for its fertiliser manufacturing plant at Awarua. They are:

- to discharge treated and untreated stormwater from a fertiliser manufacturing, storage and dispatch facility;
- to take groundwater from bores;
- to discharge contaminants to air.

Ballance Agri-Nutrients Limited operates a fertiliser production facility at Awarua, about 10 km south of Invercargill. The compliance performance during the 2012/13 year was assessed against the current resource consents.

The plant was fully compliant with all standards set out in its resource consents.

Table 13 - Ballance Agri-Nutrients Limited, Awarua Plant – liaison and reporting

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	N/A
Keeping Environment Southland informed of intentions, changes, etc.	Excellent

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the Ballance Agri-Nutrients facility at Awarua.

2.5.2 Ravensdown Fertiliser Co-operative Limited

Consents

Ravensdown Fertiliser Co-operative Limited holds two resource consents for the purpose of operating a limestone quarry at its Dipton site. They are:

- to discharge treated stormwater to water;
- to discharge contaminants to air from the Dipton lime works.

The company holds one resource consent for its Balfour site, which is:

- to discharge stormwater from a limestone quarry at Balfour.

Ravensdown Fertiliser Co-operative Limited (Ravensdown) operates two limestone quarries in Southland, at Dipton and Balfour. The compliance performance of the two quarries during 2012/13 was assessed against the current resource consents.

Table 14 - Ravensdown Fertiliser Co-operative Limited, Dipton Plant – liaison and reporting

Issue	Score	Comments
Provision of data/results	N/A	Environment Southland collects all information on performance.
Responsiveness to issues	N/A	No issues occurred during the reporting period.
Keeping Environment Southland informed of intentions, changes, etc.	N/A	No changes required reporting.

Table 15 - Ravensdown Fertiliser Co-operative Limited, Balfour Plant – liaison and reporting

Issue	Score	Comments
Provision of data/results	N/A	Environment Southland collect all information on performance.
Responsiveness to issues	N/A	No issues occurred during the reporting period.
Keeping Environment Southland informed of intentions, changes, etc.	N/A	No changes required reporting.

Complaints and Self-reported Incidents

No complaints from the public directly relating to the consents or operations at the limestone quarries were received by Environment Southland over the 2012/13 period.

Consent Performance Summary

The Ravensdown sites at Dipton and Balfour met all the requirements set out in the consents.

2.6 Mining Industry

2.6.1 Solid Energy New Zealand Limited

Solid Energy New Zealand Limited operates three mines in Southland at Ohai and Waimumu (New Vale, Goodwin). In Mataura it also operates one briquetting plant and manages one disused mine pit. The compliance performance of Solid Energy's sites during the 2012/13 year was assessed against the current resource consents.

What We Look At

The consents issued for Solid Energy's mines permit the discharge of treated sediment or chemicals into nearby waterways. The mines also hold consents for the discharge of contaminants to air and ash to land. The quantity that can be discharged is restricted by the consent and compliance with these requirements is audited.

One key element that is measured is:

- ***Total Suspended Solids (TSS)*** - very small particles that have the potential to affect the colour and clarity of a waterway and can potentially settle out onto a streambed, smothering aquatic life. In coal and lignite mine discharges, TSS may include coal fines and sediment.

Goodwin and New Vale Mine Sites

Consents

Solid Energy New Zealand Limited holds four consents for mining activity at the Goodwin and New Vale mine sites. They include:

- to discharge ash to land from the operation of a lignite mine into both mine sites;
- to discharge contaminants to the air from the mining, crushing, screening and stockpiling of lignite.

Presently, applications to renew expired consents are being processed.

The Goodwin and New Vale Mine sites at Waimumu have met all requirements set out in the consents.

Table 16 - Solid Energy New Zealand Limited, Goodwin and New Vale Mines – liaison and reporting

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes etc.	Excellent

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the sites at Waimumu.

Consent Performance Summary

The TSS concentration in one set of samples was found to be high. This was investigated and it was found that high rainfall immediately prior to sampling had most likely affected the water quality.

Ohai Mine Site

Consents

Solid Energy New Zealand Limited holds nine consents for mining activities at the Ohai site. They include:

- to discharge contaminants to air from mining, screening and stockpiling of coal;
- to discharge treated mine water and stormwater to Morley Stream.

Table 17 - Solid Energy New Zealand Limited, Ohai Mine – liaison and reporting

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the Ohai Mine.

Consent Performance Summary

The Ohai Mine site has met all requirements set out in the consents. Underground ventilation shaft 6 has been rehabilitated, returning it to a natural contour.

Mataura Sites

Consents

Solid Energy holds 10 consents in the Mataura area. Six are associated with the briquetting plant site and three with the dewatering of the disused mine pit. They include:

- to discharge contaminants to the air including boiler emissions;
- to take surface water from the Mataura mine pit
- to discharge water and boiler blow-down water to a former mine pit.

Two smoke related complaints and one self-reported incident were received regarding the Mataura briquetting plant. Neither smoke related complaint could be confirmed by Environment Southland.

Consent Performance Summary

In December 2012 Solid Energy self-reported that some diesel had spilt on site. This was confirmed by Environment Southland, and education and training was given.

Table 18 - Solid Energy New Zealand Limited, Matura, Demonstration Briquetting Plant – liaison and reporting

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent

2.6.2 Takitimu Coal Limited

Consents

Takitimu Coal Limited holds 13 consents for mining activities at the Company Road and Coal Dale sites at Nightcaps. They include:

- to discharge coal ash from industrial operations, mixed with overburden, to land at the Takitimu coal mine;
- to discharge treated site water to the Wairio Stream;
- to discharge contaminants to air from mining operations.

Takitimu Coal Limited operates two mines at Nightcaps – Company Road and Coal Dale. The Coal Dale site has only recently commenced operations and has yet to exercise its water discharge consents.

The compliance performance for Takitimu Coal during 2012/13 was assessed against the current resource consents.

What We Look At

The consents issued for Takitimu Coal's mines permit the discharge of treated site water into nearby waterways. The mines also hold consents for the discharge of contaminants to air and ash to land. The quantity they can discharge is restricted by the consent and compliance with these requirements is audited.

Some key elements that are measured are:

- ***Total Suspended Solids (TSS)*** - very small particles that have the potential to affect the colour and clarity of a water body and can potentially settle out onto a streambed smothering aquatic life in the waterways. In coal and lignite mine discharges, TSS may include coal fines and sediment.

- ***Turbidity*** - turbidity is a laboratory measurement to determine the clarity of the water. The higher the result, the more cloudy the water.

- ***Water Clarity*** - the distance that can be seen through the water. The higher the clarity, the greater the visibility in the water.

- ***Heavy Metals (coal ash)*** - a set of elements that exhibit metallic properties that typically have high atomic weights and that can damage living things and tend to accumulate in the food chain. Coal/lignite ash waste intended to be discharged to mine sites is analysed for a number of heavy metals prior to discharge.

Table 19 – Takitimu Coal Limited, Nightcaps Company Road site – liaison and reporting

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Very Good
Keeping Environment Southland informed of intentions, changes, etc.	Excellent

Complaints and Self-reported Incidents

Two complaints or self-reported incidents were received regarding the Nightcaps Company Road mine.

Consent Performance Summary

Consent condition breaches were found with regard to sample results for the discharge of treated stormwater to a tributary of the Wairio Stream during December 2012 and June 2013. Investigations revealed that the increase in TSS, electrical conductivity, clarity and turbidity during June 2013 were due to heavy snow and rainfall events.

A breach of consent conditions was found relating to discolouration of the Wairio stream during October 2012. Environment Southland recovered costs for this investigation.

2.7 Sawmill Industry

There are four sawmill companies in Southland that hold resource consents for discharge purposes. They are at Otautau, Winton, Ryal Bush and Tuatapere. Their compliance performance during 2012/13 was assessed against the current resource consents.

What We Look At

Some sawmills have, or have had, timber treatment facilities. As part of consent requirements for these timber treatment plants, Environment Southland audits the levels of metals, which in high concentrations can be toxic to aquatic life.

- ***CCA, Metals (timber treatment)*** - Arsenic (As), Chromium (Cr) and Copper (Cu) are the usual metals analysed for when taking the timber treatment process into consideration. High levels of metals can become toxic to aquatic life.

2.7.1 Bright Wood Sawmill

Consents

The Bright Wood Sawmill holds two discharge consents. They are:

- to discharge contaminants to the air from timber processing operation;
- to discharge treated stormwater to an unnamed tributary of the Aparima River.

The Bright Wood Sawmill at Otautau did not supply any monitoring data for the 2012/13 year, making it very difficult to assess consent compliance.

Table 20 - Bright Wood Sawmill – liaison and reporting

Issue	Score
Provision of data/results	Poor
Responsiveness to issues	N/A
Keeping Environment Southland informed of intentions, changes, etc.	Poor

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the Bright Wood facility.

Consent Performance Summary

No information relating to air or stormwater discharges for the 2012/13 period was forwarded to Environment Southland from the company.

2.7.2 Craigpine Timber

Consents

Craigpine Timber holds two discharge consents that require inspection. They are:

- to discharge contaminants to the air from timber processing activities;
- to discharge timber yard stormwater and condensate to water.

Craigpine no longer stores, or trades in, CCA timber products.

The discharge quality from the Craigpine Timber treatment plant at Winton exceeded the water quality standards set out in the discharge to water consent on two occasions (one of four samples). To overcome this Craigpine has applied to discharge stormwater to a newly planted forestry block.

Table 21 - Craigpine Timber – liaison and reporting

Issue	Score	Additional information
Provision of data/results	Excellent	
Responsiveness to issues	Very Good	Craigpine has been keen to work with Environment Southland to try and resolve issues that have arisen at the site.
Keeping Environment Southland informed of intentions, changes, etc.	Excellent	

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the Craigpine facility.

Consent Performance Summary

CCA concentrations in water were exceeded in one of the discharge samples (one of four) taken in December 2012.

2.7.3 Findlater Sawmilling

Consents

Findlater Sawmilling holds one discharge consent that requires inspection, that is:

- to discharge treated stormwater and wastewater to a wetland from a sawmilling operation.

The Findlater Sawmilling facility at Ryal Bush has met the quality requirements set out in its consent.

Table 22 - Findlater Sawmilling – liaison and reporting

Issue	Score	Additional information
Provision of data/results	Marginal	Results not supplied within timeframe - laboratory operation issue.
Responsiveness to issues	Very Good	Immediate action taken to resolve issue.
Keeping Environment Southland informed of intentions, changes, etc.	N/A	

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the Findlater facility.

Consent Performance Summary

No issues arose in the 2012/13 year.

2.7.4 Lindsay & Dixon Limited

Consents

Lindsay & Dixon Limited is located in Tuatapere and holds one discharge consent that requires inspection, that is:

- to discharge settling pond sludge to land from a sawmilling and timber processing site;
- to discharge stormwater to water.

The Lindsay & Dixon Limited facility at Tuatapere met all the requirements set out in its consent.

Table 23 – Lindsay & Dixon – liaison and reporting

Issue	Score	Additional information
Provision of data/results	Excellent	
Responsiveness to issues	Good	The responsiveness of the company to issues around incidents has been acceptable.
Keeping Environment Southland informed of intentions, changes, etc.	Good	

Complaints and Self-reported Incidents

Environment Southland investigated one incident related to nuisance discharge caused by large stockpiling of sawmill shavings/sawdust.

Consent Performance Summary

Monitoring information provided in April 2013 showed the level of Copper in the sediment in the stormwater drain discharge sample breached ANZECC guidelines.

3.0 Sewage Treatment Systems

3.1 Invercargill City Council

Consents

The Invercargill City Council holds 11 resource consents for treated sewage discharge. They include consents to:

- discharge treated wastewater to an estuary;
- discharge contaminants to air;
- discharge contaminants to land;
- discharge biosolids to land;
- discharge stormwater and wastewater to land;
- discharge processed wastewater to coastal water.

The Invercargill City Council (ICC) holds resource consents for discharging treated sewage at three locations: Clifton, Omaui and Bluff. The Council also discharges biosolids (dried sludges from the sewage system) to land at Station Road and Sandy Point. The compliance performance during 2012/13 was assessed against the current resource consents.

What We Look At

As part of the consent requirements for the ICC, the quantity of water being discharged and the quality of the effluent and its receiving waters were assessed.

Table 24 - Invercargill City Council – liaison and reporting

Issue	Score
Provision of data/results	Very Good
Responsiveness to issues	Very Good
Keeping Environment Southland informed of intentions, changes. etc.	Excellent

Complaints and Self-reported Incidents

Two complaints and three self-reported incidents were received relating to objectionable odours and sewage discharge between September 2012 and July 2013. The two complaints were investigated by Environment Southland, but were not confirmed. All of the self-reported incidents were dealt with in a timely and proactive manner by Invercargill City Council.

Consent Performance Summary

- ***Bluff Sewage*** - one incident was investigated. It was claimed that the treatment system was discharging an objectionable odour. This was not confirmed.

- ***Clifton Sewage*** - three sewage discharge incidents were self-reported by the ICC, relating to an overflow from blocked/broken pipework. Actions taken by ICC mitigated any environmental impacts.

- ***Omaui Sewage*** - one incident was investigated regarding the seepage of effluent from the treatment pond. This was not confirmed.

- ***Sandy Point Biosolids to Land*** - no issues arose during 2012/13.

- ***Station Road Biosolids to Land*** - no issues arose during 2012/13.

3.2 Southland District Council

Consents

The Southland District Council holds 19 resource consents for treated sewage discharge, including consents to:

- discharge processed wastewater to land;
- discharge processed wastewater to water;
- discharge contaminants to air;
- discharge processed wastewater to coastal water.

The Southland District Council (SDC) holds 19 resource consents for the purpose of treating and discharging sewage at 18 locations within the Southland region. The compliance performance during 2012/13 was assessed against the current resource consents.

What We Look At

As part of consents' requirements for the SDC, the quantity of water being discharged and quality of the effluent and receiving waters are assessed.

Some key elements that are measured are:

- ***Ammoniacal Nitrogen (NH_4N)*** - rarely found at high levels in natural waters, its presence is an excellent means of detecting pollution. It is a major component in urine excreted by mammals. High levels of ammoniacal nitrogen can potentially be toxic to aquatic life.

- ***Dissolved Inorganic Nitrogen (DIN)*** - Nitrate plus Nitrite Nitrogen plus Ammoniacal Nitrogen.

- ***Dissolved Oxygen (DO)*** - the amount of oxygen dissolved in water.

- ***Dissolved Reactive Phosphorus (DRP)*** - a form of phosphorus that is readily available to plants to sustain growth. High levels of Phosphorus and Nitrogen in receiving waters can promote the growth of nuisance weeds on water beds.

- ***Total Suspended Solids (TSS)*** - very small particles that have the potential to affect the colour and clarity of a water body and can potentially settle out onto a streambed smothering aquatic life in the waterways.

Table 25 - Southland District Council – liaison and reporting

Issue	Score
Provision of data/results	Good
Responsiveness to issues	Very Good
Keeping Environment Southland informed of intentions, changes, etc.	Good

Complaints and Self-reported Incidents

Environment Southland received one complaint regarding Winton, but this was not confirmed.

Consent Performance Summary

- ***Balfour*** - on one occasion the TSS quality of the effluent exceeded the consent limit.

- ***Browns*** - the system has recently been upgraded to improve the quality of the discharge.

- ***Edendale/Wyndham*** - the volume of effluent being discharged exceeded the maximum allowable rate on two occasions. The concentration of NH_4N in the effluent regularly exceeded the consent limit. There was a breach of the average daily flow limit and a breach of the maximum allowable limit on two occasions.

  In order to address performance issues Southland District Council is to install a fine screen, upstream of the bed, to remove the solid material, thus improving bed conditions.

  In addition, Southland District Council will carry out a complete replacement of the sawdust bed.

  Timeframes for the completion of this work are:
  - installation of screen and all ancillary works – end July 2013;
  - complete bed replacement (including removal of sawdust from site) – end September 2013;
  - compliance with ammonia discharge limit of 15 mg/l – end of December 2013.

- ***Gorge Road*** - no issues arose during the 2012/13 year.

- ***Lumsden*** - no issues arose during the 2012/13 year.

- ***Manapouri*** – no issues arose during the 2012/13 year.

- ***Monowai*** - the faecal coliform limits in the consent were exceeded on one occasion.

- ***Nightcaps*** - the maximum daily wastewater discharge exceeded the consent limit on six occasions and for a continuous period from 29 November to 8 December 2012.

- ***Ohai*** - the DO concentration in the receiving waters fell outside the consent limit on two out of four sampling events for the year. The processes have recently been reconfigured. Latest results show improved effluent quality.

- ***Otautau*** - no issues arose during the 2012/13 year.

- ***Riversdale*** - the maximum daily wastewater flow limit was exceeded on eight occasions.

- ***Riverton Rocks*** - the maximum daily wastewater flow limit was exceeded on seven occasions.

- ***Riverton Township*** - the maximum daily wastewater flow limit was exceeded on seven occasions.

- ***Stewart Island*** - the DIN limit in the receiving water was exceeded in two out of four samples for the year.

- ***Te Anau*** - the concentration of DIN in the lake water was exceeded on three occasions and the concentration of DRP in the lake was exceeded on one occasion.

- ***Tokonui*** - the maximum daily wastewater flow limit was exceeded on 13 occasions.

- ***Tuatapere*** - the maximum daily wastewater flow limit was exceeded on six occasions.

- ***Winton Sewage*** - SDC was compliant with its consent and is currently considering upgrades on the treatment system to better manage Ammonia levels.

Southland District Council has identified upgrades valued at $50M to be undertaken on a number of its waste water schemes over the next 10 years.

3.3 Gore District Council

Consents
The Gore District Council holds three resource consents for discharging treated sewage. They include consents to:

- discharge processed wastewater to water;
- discharge contaminants to air.

Sewage Treatment Systems

The Gore District Council (GDC) holds resource consents for the purpose of discharging treated sewage within the Gore area. The compliance performance during 2012/13 was assessed against the current resource consents.

What We Look At

As part of the consent requirements for GDC, the quantity of water being discharged and the quality of the effluent and receiving waters are assessed.

Some key elements that are measured are:

- ***Dissolved Reactive Phosphorus (DRP)*** - a form of phosphorus that is readily available to plants to sustain growth. High levels of Phosphorus and Nitrogen in receiving waters can promote the growth of nuisance weeds on water beds.

- ***Ammoniacal Nitrogen (NH_4N)*** - rarely found at high levels in natural waters. Its presence is an excellent means of detecting pollution. It is a major component in urine excreted by mammals. High levels of Ammoniacal Nitrogen can potentially be toxic to aquatic life.

- ***Total Suspended Solids*** - very small particles that have the potential to affect the colour and clarity of a waterway and can potentially settle out onto a streambed smothering aquatic life in the waterways.

- ***Escherichia coli (E. coli)*** - bacterium that is commonly found in the lower intestine of warm-blooded organisms. They are a subset of the Faecal Coliform group and are regarded as an indicator of faecal contamination and therefore the presence of pathogenic (harmful) bacteria.

Table 26 - Gore District Council – liaison and reporting

Issue	Score
Provision of data/results	Very Good
Responsiveness to issues	Very Good
Keeping Environment Southland informed of intentions, changes, etc.	Excellent

Complaints and Self-reported Incidents

One complaint or self-reported incident was received regarding the GDC's community sewage system.

Consent Performance Summary

- ***Gore Sewage*** - the consent contains an *E.coli* rolling 80 percentile limit condition. This was exceeded in two out of seven samples. The quality in the receiving water was fully complied with during the reporting period.

- ***Mataura Sewage*** - the NH_4N concentration in the effluent exceeded the consent limit on two out of five sampling occasions. The DRP concentration in the effluent exceeded the consent limit on four out of five sampling occasions. The TSS concentration in the effluent exceeded the consent limit on one out of seven sampling occasions. GDC is currently addressing these issues. The quality in the receiving water was fully compliant during the reporting period.

- ***Waikaka Sewage*** - the data logger which was replaced in August 2012 was found to have an incorrect factory setting, consequently no information was provided for 2012/13.

4.0 Quarrying

4.1 Gravel Extraction

An audit was recently completed on the current land use consents to extract gravel. The audit found that 114 consent holders were compliant with their consent conditions, while 31 were found to be non-compliant.

Of the 114 consents that were compliant with consent conditions:

- 25 had yet to commence extraction;
- 14 were not currently exercising their consents;
- two had exhausted their consented limit and a letter was posted to them in February 2013 to advise them of this, and request a surrender form be completed and returned. As yet no surrender forms have been received from either consent holder.

Of the 31 non-compliant consents:

- 10 required a reminder letter to be sent;
- 20 required further follow-up action;
- one consent had failed to submit monthly returns, yet the inspecting officer advised the site had been worked and gravel extracted.

During 2012/13 a total of 155,569m^3 of gravel was extracted, as allowed in the 293 current consents.

This year 27 new consents were granted.

Figure 6 – Gravel extraction on the Oreti River

5.0 Landfills

5.1 S J Timpany Cleanfill

Consents

S J Timpany holds two resource consents, however only the second consent requires inspection. They are:

- to discharge cleanfill to land;
- to discharge solid waste to land.

S J Timpany operates a cleanfill and a limited-scope landfill accepting solid waste from the demolition of housing and commercial buildings, asbestos and some contaminated soils at its Otatara site. The level of compliance during 2012/13 was assessed against the current resource consents.

Table 27 - S J Timpany – liaison and reporting

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the S J Timpany Cleanfill.

Consent Performance Summary

S J Timpany was fully compliant with all the standards set out in its discharge consents.

Figure 7 – Side view (top) and front tipping face view (bottom) of disposal area at the cleanfill.

5.2 AB Lime Landfill

Consents

AB Lime Limited holds three resource consents. They are:

- to discharge stormwater to a tributary of the Lochiel Stream;
- to discharge solid waste onto or into land;
- to discharge contaminants to air from a landfill.

AB Lime Limited (AB Lime) operates an agricultural fertiliser and lime business and a Class A landfill business, located about 4 km east of the Winton township. The compliance performance during 2012/13 was assessed against the current resource consents.

AB Lime was fully compliant with all standards set out in its resource consents for discharges to land, air and water.

Table 28 – AB Lime Landfill – liaison and reporting

Issue	Score	Additional information
Provision of data/results	Very Good	Delays in receiving some results because of monitoring equipment issues.
Responsiveness to issues	Excellent	
Keeping Environment Southland informed of intentions, changes, etc.	Excellent	

Complaints and Self-reported Incidents

AB Lime received five odour complaints regarding the operation of the landfill from January to July 2013. On two occasions the presence of an odour was confirmed by AB Lime and a new deodorising unit is to be installed to resolve the issue.

Consent Performance Summary

A peer review was conducted in May 2013, with no major issues identified. Weather conditions have led to a delay in the lining of Area 13, but it is expected that this will be operational within the next few months.

6.0 Coastal Marine Area

6.1 South Port and New Zealand Aluminium Smelter Coastal Plan Agreements

The main area of shipping for the Southland region is the Bluff Port Zone. The port is separated into two separate operations:

- the import and export operations based in Bluff township, managed by South Port;
- the import and export operations based on the Tiwai Peninsula servicing the New Zealand Aluminium Smelter (NZAS), managed by the New Zealand Aluminium Smelter.

Activities on these sites are managed by means of individual agreements, as allowed for in the Regional Coastal Plan for Southland. The agreements describe a series of systems which each party has agreed to abide by to ensure that the management of the port activities are compliant with the Resource Management Act (1991).

Issues arising out of the agreements are addressed as they arise with an annual meeting held to address any outstanding matters.

At both the NZAS and the South Port meetings all of the following are tabled and/or discussed:

- on site incidents and remedial action taken;
- maintenance programmes for the coming 12 months;
- monitoring conducted over the previous 12 months;
- any procedural issues that may have arisen out of the agreement over the previous 12 months.

6.2 Whitebait Stands

Figure 8 – An example of a typical whitebait stand

There are 650 consented whitebait stands in Southland. In the 2012/13 year most stands were inspected and a high rate of compliance was found. However, unconsented bank protection work is still occurring, which (as well as being unpermitted), can also lead to erosion elsewhere and affect the natural character of the river.

The 2012/13 year saw Compliance staff checking on toileting facilities in and around the whitebaiting rivers. It was found that many of the whitebaiters had taken note of the issues and were using portable toilets, allowing them to remove the waste and dispose of it correctly.

6.3 Coastal Surface Water Activities in Fiordland

Coastal permits are required for undertaking commercial activities on surface water bodies in Fiordland.

Environment Southland is responsible for ensuring compliance with conditions of coastal permits that have been issued according to the Resource Management Act 1991 and rules in the Regional Coastal Plan for Southland.

This is achieved, firstly, by monitoring activity logs submitted by permit holders. There has been a high level of compliance with this requirement during the past year.

This year two patrols were conducted; one in Chalky and Paterson's inlet and the other in conjunction with the Ministry of Fisheries and the Department of Conservation. The purpose of these patrols was to provide a physical 'on the water' presence in Fiordland and also an opportunity for face to face interaction with consent holders, recreational and other commercial users of the marine environment.

One of the patrols was completed during March this year. During this visit:

- seven coastal structures were inspected;
- eight non-commercial private vessels were spoken to;
- nine commercial vessels were spoken to;
- one commercial fishing vessel was spoken to.

Of the vessels spoken to, staff gave advice and education to the owners and noted no non-compliance during this visit.

7.0 Crown Agencies

7.1 Department of Conservation

Consents

The Department of Conservation holds the following types of resource consents:

- coastal - 16
- discharge - 33
- land use - 27
- water - 18

The Department of Conservation (DOC) holds 94 current resource consents. The majority of these consents have either not been exercised during the 2012/13 year, or do not have inspection conditions attached to them.

The main consents exercised were for discharge along the Milford and Kepler tracks. These consents relate to the disposal of sewage and wastewater from the huts along the tracks.

Consent Performance Summary

No issues arose during the 2012/13 year at any of the following locations:

- Clinton Hut
- Mintaro Hut
- Dumpling Hut
- Sandfly Point
- Luxmore Hut
- Iris Burn Hut
- Motorau Hut
- Pit or containment toilets - these were effectively operated.

Table 29 - Department of Conservation – liaison and reporting

Issue	Score
Provision of data/results	Good
Responsiveness to issues	Good
Keeping Environment Southland informed of intentions, changes, etc.	Good

8.0 Small Consented Activities

8.1 Truck Washes

Truck washes are inspected annually, unless otherwise stated in the resource consent. There are 26 consented truck washes in Southland. Of these, 12 were found to be compliant, four were found to be non-compliant and three were no longer operating. Seven truck washes are still to be inspected.

Figure 9 - Wash water from the cleaning pad (left) flows to a stone trap (centre) to collect the larger solids then out to the settling pond (far right).

Figure 10 - Truck wash layout viewed from the settling pond, looking back at the cleaning pad.

8.2 Cleanfill Sites

Cleanfill sites are spread throughout Southland. There are 28 consented sites in total, with seven not currently in use.

During 2012/13, 14 inspections were completed. Of these, 11 were compliant and the remaining three had some minor non-compliance.

Figure 11 - Example of material allowed to be discharged to a cleanfill.

Part B

Incident Response

9.0 Incidents

During 2012/13, 814 incidents were recorded. This is a decrease on the previous three financial years (see Figure 12). Although the reason for the decrease is unknown, a large amount of incidents are weather dependant so good weather can mean fewer incidents.

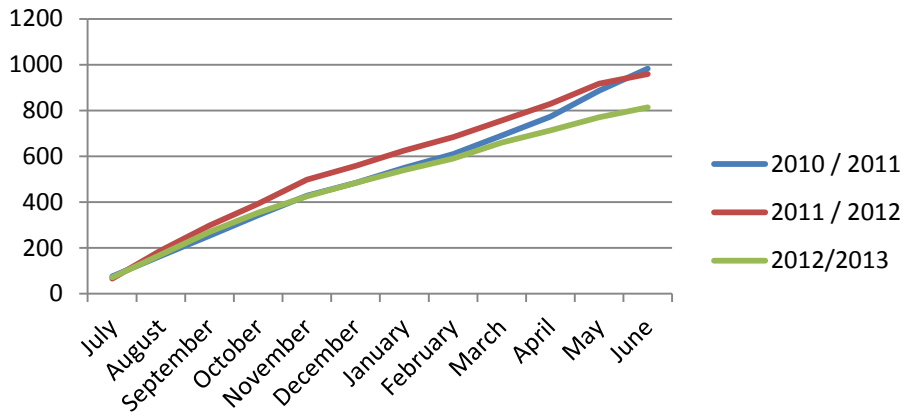

Figure 12 – Incidents per month for last three years.

Environment Southland's Compliance Division receives incidents from many different sources, including the public, self-reports, other agencies and internal staff.

Once received, an incident is assigned a priority anywhere from one hour to six months. Priorities are based on several influencing factors, such as potential harm to the environment, changeability of evidence and receiving environment.

Over the past three years the major decrease in reported incidents related to the low and medium incident response times.

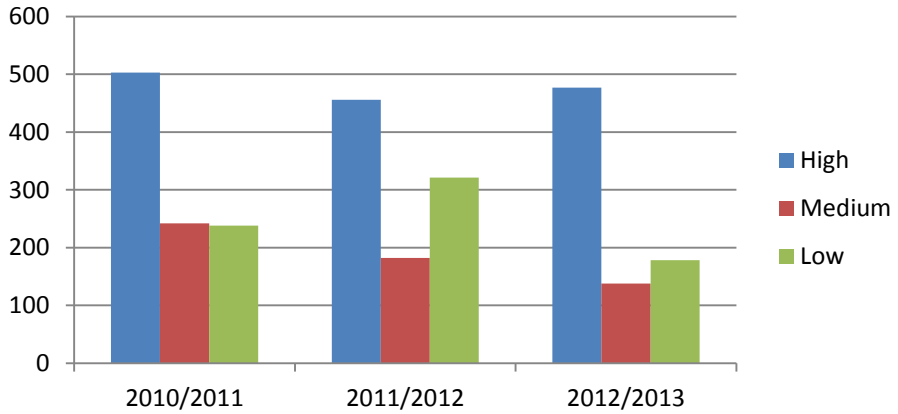

Figure 13 – Incident response times

Incidents such as odours or industrial air complaints can receive a high priority and faster response time because odours and other air complaint

evidence can change or disappear quickly. Other incidents, such as clean fill plan rule breaches may receive a lower priority and longer response time as the evidence remains in place for longer periods.

Airborne incidents, such as odour and dust complaints, continue to be the most frustrating for complainants and staff alike. There are many reasons for this, including the difficulty of proving the origins of the problem and the intermittent nature of the evidence.

Part C

Enforcement

10.0 Enforcement

Enforcement is a necessary, albeit regrettable, part of the administration and implementation of the law. In the minds of the general public enforcement is more closely associated with the police and law courts, however other organisations (including Environment Southland) have statutory roles and responsibilities with regard to the enforcement of specific laws.

For Council, success in addressing our resource management responsibilities is dependent upon the timely and effective implementation and enforcement of the policies and rules.

The enforcement tools available to the Compliance Division range from official warnings, infringement notices, abatement notices, enforcement orders and prosecution.

In most cases where investigations occur, the costs associated with the investigation are recovered from the offender.

During 2012/13 the Compliance Division dealt with 115 of the reported incidents by way of advice and/or education. There were 42 warning letters sent, 34 infringement notices and 16 abatement notices issued, and 11 individuals or companies were prosecuted.

10.1 Infringement Notices

Environment Southland considers the scale and nature of the offending when deciding whether to prosecute, or to issue an infringement notice. Evidence of adverse effects and/or likely adverse effects are collected and considered carefully.

Penalties, in general, are a punishment for an offence. They are intended to act as a deterrent for further offending. An infringement notice imposes a relatively minor penalty and does not result in a conviction. Hence, it provides less deterrence, and should be used for less serious offending.

The advantages of the infringement notice procedure are that it is swift, efficient and inexpensive. However, the penalty able to be imposed is relatively small ($300-$1,000).

During the 2012/13 year, 34 infringement notices were issued under the Resource Management Act 1991 for the following offences:

- **Section 9** restrictions on use of land;
- **Section 13** restriction on certain uses of beds of lakes and rivers;
- **Section 15(1)(b)** discharge of contaminant onto or into land in circumstances which may result in that contaminant entering water;
- **Section 15 (1)(c) & (d)** contaminant from any industrial or trade premises into air; or contaminant from any industrial or trade premises onto or into land;
- **Section 15(2A)** discharge of a contaminant into the air, or into or onto land, from a place or any other source, whether moveable or not, in a manner that contravenes a regional rule.

No infringement notices were issued in relation to Section 15 (1)(a) – discharge of contaminant or water into water (Figure 14).

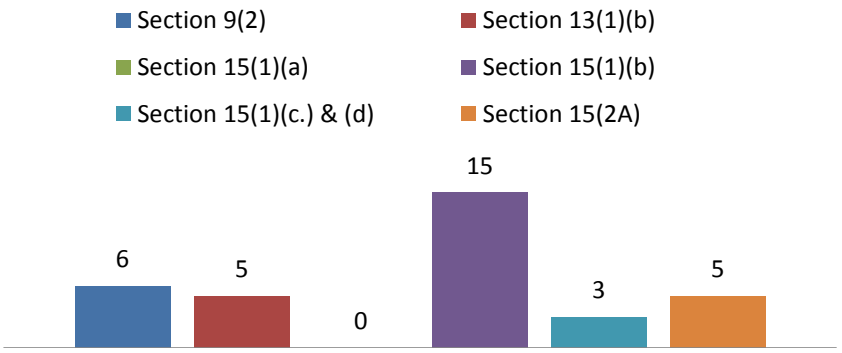

Figure 14 – Reasons for infringement notices issued during 2012/13.

10.2 Abatement Notices

Abatement notices are given to people who breach a rule in the Resource Management Act 1991 (the Act), a regulation, or a resource consent. Unlike enforcement orders they do not require an application to be made to the Environment Court first.

Abatement notices are a very efficient way of obtaining compliance with the Act. Anecdotally, the majority of abatement notices issued are complied with, so it is usually the cheapest option.

During the 2012/13 year, 16 abatement notices were issued.

10.3 Prosecutions

Southland Regional Council v HKT Holdings Limited

HKT Holdings Limited (HKT), pleaded guilty to a charge brought by Environment Southland that HKT contravened an enforcement order relating to a dam in the bed of an unnamed stream at HKT's property at Feldwick, in Western Southland. HKT had been previously sentenced on charges relating to the construction of the dam. At the time of the previous sentencing, the Court had issued an enforcement order requiring HKT to either satisfy the council that the dam was a permitted activity, or alternatively apply for resource consent for its placement. Neither of these actions had been done by the Court-appointed date.

Southland Regional Council v Watt

G Watt was sentenced after being found guilty in a defended hearing to one charge laid by Environment Southland of discharge of dairy effluent to land. Watt's family owned two adjoining farms at Riversdale. The offending was the result of a faulty irrigator hose from which effluent had flowed across a farm paddock and into Sandstone Creek.

Southland Regional Council v South Pacific Meats Limited

South Pacific Meats Limited (SPM) pleaded guilty to four charges relating to the discharge of meat processing effluent, stock effluent and silage leachate at its AFFCO plant in Awarua. Environment Southland had received notice that effluent from the plant was flowing into the New River Estuary via the open drainage system on the company's land. An investigation by the council found a bright green discharge from the dissolved air flotation unit and screens. Wastewater had flowed from an effluent treatment pond due to erosion of an earth bank. Effluent from a temporary stock holding area had ponded. A pile of silage had been left on the internal roadways and leachate was pooling on the ground. The company explained that there had been management lapses, describing them as "bad housekeeping", but the Court found that there was a systemic failure in the management of the site.

Southland Regional Council v Belling

Mr Belling was charged with discharging contaminants, being animal carcasses, into land in circumstances where those contaminants might enter water, and also with breaching the rules of the Southland Regional Solid Waste Management Plan.

Southland Regional Council v Cleanways (2003) Limited
Southland Regional Council v L Phillips
Southland Regional Council v B Neas

Cleanways (2003) Limited, L Phillips and B Neas were sentenced after pleading guilty to charges laid by Environment Southland relating to the

unlawful discharge of ash and clinker dust onto land at Drysdale Road, Invercargill. Cleanways operated a waste disposal business, and Phillips was a director of Cleanways. Neas owned the site, which was in a semi-rural area containing lifestyle blocks and residences. Over the two years of the offending, Cleanways deposited coal boiler residue transported from a dairy factory onto the site and Neas spread and compacted the material to create a hard stand area for his heavy vehicles. Cleanways had a contract with the dairy company to remove and dispose of the waste, but no resource consent was held for the discharge to the site.

Southland Regional Council v South Pacific Meats Limited
Southland Regional Council v Provincial Drainage Limited

Following a defended hearing after which they were found guilty, South Pacific Meats Limited (SPM) and Provincial Drainage Limited were sentenced on a charge of unlawfully discharging meat processing effluent onto land. The discharge occurred at SPM's processing plant near Invercargill. Waste was treated in a dissolved air flotation ("DAF") unit which was blocked, causing waste to overflow into a bunded area until the bund wall collapsed, allowing waste to escape. In the defended hearing the Court found that the wall's collapse was caused by SPM's failures in deciding to use a certain unsuitable product to construct the bund, lack of design, failure to supervise the construction of the bund and failure to install a warning device to detect overflow, despite council advice to do so; and Provincial Drainage's failures in installing the bund panels without securing them to the concrete base, wrongly constructing the panels and failing to inform SPM of these faults.

10.4 Enforcement Orders

An enforcement order is similar in some respects to an abatement notice, in that it is used to require a person to cease doing something that contravenes a rule in a plan, a requirement in the Resource Management Act 1991, or that is dangerous, noxious, or offensive. It can also be used to require an offender to do something necessary to ensure compliance or avoid, remedy or mitigate adverse effects.

Unlike abatement notices, enforcement orders are issued by the Environment Court. Enforcement orders offer more options than an abatement notice, including the ability to recover clean-up costs in avoiding, remedying or mitigating any adverse effect on the environment. The Court may also order restoration of a natural or physical resource. Where the offender has failed to comply with an order the local authority, with the Court's consent, may go ahead and comply on the respondent's behalf (and recover the cost of doing so).

It can be useful to begin enforcement order proceedings to alert offenders to the seriousness of their actions and highlight solutions. If a problem or the options to resolve it are complex, enforcement proceedings provide a Court-supervised procedure for bringing about a conclusion, and if problems are encountered during the implementation of the solution, the parties can return to Court for direction.

One enforcement order was applied for and granted during the 2012/13 year.

Southland Regional Council v Coppus

This decision recorded the making, by consent, of enforcement orders against J and A Coppus concerning the storage of dairy effluent on a property at Winton. After some discussion J and A Coppus had agreed that an improved effluent system was required immediately, rather than waiting for the expiry of their consent and that a detailed farm management plan was required. The Court made the order accordingly, while costs were agreed amongst the parties and set out in the order.

Part D

Education and Outreach

11.0 Pollution Prevention

Environment Southland's Pollution Prevention staff have worked closely with other Councils, contractors and industries to ensure compliance with Regional Plan rules and regulations.

Industrial areas near waterways were audited with Invercargill City Council staff, to identify potential discharges to stormwater. As a result several vehicle wash bays have been plumbed to the wastewater system and disconnected from the stormwater system.

Figure 15 - Vehicle yard wastewater is treated and plumbed to sewer.

Mainfreight Invercargill won the Commercial Award at this year's Southland Environment and Conservation Awards, for setting an example of what can be done to minimise an industry's impact on the environment. The wash bay design at its new building uses recycled rainwater collected from the roof through the wash pad, with automatic shutoff values to discharge wastewater to the sewerage treatment station.

Figure 16 – Mainfreight's new building.

11.1 Education

Education material was produced on best management practices for burning, car washing, waste management and balage wrap recycling. Industry best practice action sheets are also now available on Environment Southland's website.

Figure 17 – It's good practice to wash your car on the grass.

11.2 Chemical Collection in Southland

Agrecovery provide collection facilities for plastic containers, unwanted or expired chemicals, steel or plastic drums, silage plastics and crop protection nets.

In March 2013 Agrecovery members collected 1250 kg of this material. This figure was below previous collection volumes, which was disappointing.

11.3 Land Use Register

Since the release of the National Environmental Standards (NES) in January 2012, enquiries relating to Hazardous Activities and Industries List (HAIL) sites identified on the Environment Southland's Land Use Register (SAHS database) have increased dramatically. There were over 500 queries during 2012/13.

Environment Southland continues to develop a land use register of properties that have currently or historically been associated with hazardous activities, or with the storage and use of hazardous substances. The project is an initiative by the Ministry for the Environment (MfE) and is designed to support the operation of the NES.

During 2012/13, Environment Southland identified and registered a total of 415 properties. The sites that were registered were associated with chemical and fuel storage, vehicle workshops, power substations and depots, transport depots, cemeteries, timber treatment plants, historical sheep dips, scrap metal yards and closed landfills.

Environment Southland will continue to add to and amend the register as information is received.

Builders, consultants, valuers, real estate agents, developers, solicitors and the general public are becoming more aware of the Hazardous Activities and Industries List (HAIL) and their responsibilities to consider the potential contamination of land. As a consequence, they are more inclined to investigate the previous use of properties, prior to applying for land use consents with the local authorities.

This has resulted in a significant increase in emails and phone calls to Pollution Prevention staff, who manage the land use register database, with more than 30 queries per month seeking HAIL information.

11.4 Contaminated Land Consents

In December 2012 new rules associated with contaminated land became operative which now require consents for the discharge of contaminants to groundwater or surface water, if contaminant concentrations exceed certain thresholds. Environment Southland is currently processing a number of these applications.

A total of 20 intrusive site investigation consents were granted during the year. Many of the investigations were associated with soil baseline investigations on fuel stations, truck stops and other underground storage tank decommissioning work.

In addition, the NES has required a number of investigations associated with subdivision activity in industrial land. Figure 18, below, shows an investigation undertaken to support a subdivision consent application in the vicinity of a closed landfill adjacent to the Waihopai River.

Figure 18 - Site investigation, Tweed Street, west Invercargill.

11.5 Other Contaminated Land Responsibilities

In 2012 Environment Southland sent letters out to all the major oil and gas companies in an attempt to update its records on all site investigations undertaken at service stations and bulk fuel facilities. During 2012/13 Environment Southland received reports for 25 fuel stations across the region, from Mobil, BP and Chevron. Environment Southland has reviewed all these reports, which has resulted in some follow up work requesting that discharge consents are obtained.

In addition, Environment Southland regularly receives site investigation reports from the territorial authorities for comment on consent applications.

Glossary

Ammoniacal Nitrogen (NH_4N)	Ammoniacal nitrogen is rarely found at high levels in natural waters. Its presence is an excellent means of detecting pollution. It is a major component in urine excreted by mammals. High levels of ammoniacal nitrogen can potentially be toxic to aquatic life.
ANZECC	The Australia New Zealand Environmental Conservation Council. This organisation is developing guidelines similar to the USEPA but applicable to the Australian and New Zealand situations.
Black Water	Wastewater containing human faeces and urine. Generated from toilets.
$CBOD_5$	Carbonaceous Biochemical Oxygen Demand – a measure of the ability of contaminants to adversely remove oxygen from water
CCA	Copper (Cu), Chromium (Cr) and Arsenic (As) are the usual metals analysed for when taking the timber treatment process into consideration. High levels of metals can become toxic to aquatic life.
Clarity	The distance that can be seen through the water. The higher the clarity the greater the visibility in the water.
Chl *a*	Chlorophyll *a* – the pigment in plant cells which captures light energy for photosynthesis.
DAF Unit	Dissolved Air Flotation unit. This is an effluent treatment system whereby air is pumped into the effluent under pressure. When the air is discharged into the tank containing effluent, it returns to atmospheric pressure, the dissolved air comes out of suspension and forms bubbles on the particulate matter. These bubbles then float to the surface to be removed as sludge.
DIN	Dissolved Inorganic Nitrogen – Nitrate + Nitrite Nitrogen plus Ammoniacal Nitrogen.
DO	Dissolved Oxygen – Oxygen is important to sustain life. DO is the amount of oxygen dissolved in water.
DRP	Dissolved Reactive Phosphorus – a form of phosphorus that is readily available to plants to sustain growth. High levels of Phosphorus and Nitrogen in receiving waters can promote the growth of nuisance weeds on water beds.

E. coli	Escherichia coli - E.*coli* is a bacterium that is commonly found in the lower intestine of warm-blooded organisms. They are a subset of the Faecal Coliform group and are regarded as an indicator of faecal contamination and therefore the presence of pathogenic (harmful) bacteria.
EC	Electrical Conductivity – the ability of water to conduct electricity. This gives a conservative measure of the mineral content of water. Generally, the greater the conductivity of the water, the greater the mineral content of the water.
Faecal Coliforms (FC)	These are organisms that are present in the gut and faeces of warm-blooded animals and are used as indicators of the presence of pathogenic organisms.
g/m^3	Grams of material in 1 cubic metre of water – A measure of concentration in a liquid or gas.
Grey Water	Wastewater that is generated from domestic activities like clothes washing, dishwashing and bathing.
Heavy Metals	A set of elements that exhibit metallic properties that typically have high atomic weights and that can damage living things and tend to accumulate in the food chain.
Loading	The quantity of contaminates discharged over a set period of time.
LTP	Long-Term Plan. This is a document projecting Council activities, as required by the Local Government Act 2002.
mg/kg	Unit to measure concentration in a solid (equivalent to ppm (parts per million) or g/m^3 the unit used to measure concentrations in liquids).
MPN	Most Probable Number – a statistical estimate of the mean density of bacteria in a water sample.
N	Nitrogen – An important element in the growth of plant material. It is required for protein formation and consequently animals have a significant N content.

Nitrate-N	An oxidised form of Nitrogen – Nitrate Nitrogen is soluble and is therefore readily available to plant life to sustain growth.
Odour Units (OU)	This is the unit for measuring odour. This unit does not refer to weight or volume as with g/m^3 etc, it is essentially based on the group of people being used, to establish the number of dilutions required before an odour cannot be detected.
PAH	Polycyclic Aromatic Hydrocarbons – A class of over 100 different organic molecules composed of only carbon and hydrogen. PAHs are flat molecules with each carbon having three adjacent carbon atoms similar to the structure of graphite. The USEPA has listed 16 of these as priority chemicals due to their potential health effects.
PM_{10} Particulate Matter	The unburnt material that is commonly discharged with the gas or smoke from a fire or boiler. This is measured as $PM_{10,}$ meaning a particle size of 10 micrometers or less.
Sewage	A mixture of black and grey water.
TP	Total Phosphorus – Phosphorus is an important element in the growth of plant material. Total Phosphorus is a measure of all phosphorus present, including all forms of phosphorous whether it is tightly bound to particulate matter or potentially available to plant life.
TSS	Total Suspended Solid – Very small particles that have the potential to affect the colour and clarity of a water body and can potentially settle out onto a streambed smothering aquatic life in the waterways.
Turbidity	Turbidity is a laboratory measurement to determine the clarity of the water. The higher the result the more cloudy the water.
$\mu g/m^3$	A measure of concentration in a liquid or gas. Micrograms of material in 1 cubic metre of water. 1 gram = 1,000,000 micrograms.

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