LYTTELTON PORT COMPANY

RESOURCE CONSENTS APPLICATIONS IN RESPECT OF:

CAPITAL EXTENSION WORKS AND MAINTENANCE DREDGING

WRITTEN STATEMENT

20 May 2017

CRC172455 – a coastal permit to dredge and deposit seabed material, CRC172522 – a discharge permit to discharge contaminants into water CRC172456 – a coastal permit to dredge and deposit material for maintenance dredging CRC172523 - a discharge permit to discharge contaminants associated with maintenance dredging.

Submitter: Banks Peninsula Marine Farmers

and

Submitter: Sanford Limited

This submission represents the views of the Banks Peninsula Marine Farmers (**BPMF**) and Sanford Limited (**Sanford**) (collectively **the Submitters**).

PBMF was set up in mid-2016, specifically to respond to a request by Lyttelton Port Company (**Port Company**) for consultation with local marine farming interests concerning its capital extension works and maintenance dredging project. BPMF represents most of the marine farmers farming in Banks Peninsula and Pegasus Bay. These farmers produce salmon, Greenshell mussels and other marine products.

For its part, Sanford is a majority shareholder in three marine farms growing Greenshell mussels in Banks Peninsula and one in Pegasus Bay.

Written submission

The Submitters lodged different, but similar submissions opposing the Port Company's capital extension works and the maintenance dredging.

However, the Submitters agreed to work collaboratively to both consult with the Port Company and present this oral submission.

While the Submitters stated in their submissions that they wanted to be heard at the hearing, they have since notified Environment Canterbury and the Port Company that they would be lodging further written comments in lieu of attending in person - the reason being that the Submitters' concerns have been satisfactorily resolved via prehearing mediation and the amendment of proposed consent conditions.

Pre Hearing Meeting

At the Environment Canterbury pre-hearing meeting on the 28 February 2017, our planning advisor (Dr Phil Mitchell - Mitchell Daysh Ltd) indicated that our concerns could, in all likelihood, be addressed by amendments to the Port Company's resource consent conditions.

The Submitters subsequently met with the Port Company and their legal representatives with that objective in mind.

Mediation

The mediation meeting was held on 14 March, at the Chapman Tripp offices in Christchurch. The meeting lasted the better part of a full day.

In attendance was Ms Jo Appleyard, the Port Company's legal counsel, the Port Company's consultant project manager, Mr Jared Pettersson and their consultant planner, Mr Andrew Purves.

The submitters were represented by Dr Mitchell and marine farmer representatives Ms Alison Undorf-Lay, Mr Edward Atiken and Mr Hamish Menzies.

After clarifying our areas of concern, subsequent discussions resulted in changes being made to both the proposed conditions for both the Capital Extension and the Maintenance Dredging resource consents. These changes were agreed by all present, to the extent that the concerns of the Submitters have now been addressed.

These changes were substantial and can be grouped into four main areas:

- Establishing an Aquaculture Liaison Group (ALG)
- Requiring on-going consultation with the ALG during the preparation of key management plans
- Requiring the implementation of adaptive management measures and use of environmental "triggers" during the life of the consents that require intervention in certain circumstances, as well as the on-going analysis of monitoring data as it relates to aquaculture.
- The process by which the ALG links into the work of both the Technical Advisory Group and the Peer Review Group, and how differences of views will be addressed.

Both the Port Company and the Submitters have agreed the changed conditions.

Oral hearing

The Port Company's planning consultant Mr Purves has included the revised consent conditions with his evidence that is to be submitted by him at this hearing.

Copies of these documents are also attached to this statement.

Relief sought

The Submitters request that the revised consent conditions, as agreed by us and the Port Company, be imposed on any consents granted.

Sincerely

Mr Philip Helps

Ms Alison Undorf-Lay

Banks Peninsula Marine Farmers Group

Sanford Limited

23 PROPOSED CONSENT CONDITIONS (CHANNEL DEEPENING)

Agreed Conditions

-: Between the Lyttelton Port Company (Applicant) and Sanford Ltd (Submitter - SUB031297) and Banks Peninsula Marine Farmers (Submitter - SUB031294)

CRCXX	a) To dredge (disturb) seabed material for purposes of
Coastal Permit	deepening, extending and widening a shipping
	(navigation) channel that includes a ship-turning basin,
	and berth pockets; and to dredge (disturb) seabed
	material for the purposes of construction of a
	reclamation in Te Awaparahi Bay;
	b) To discharge contaminants (dredge spoil and water)
	into water;
	c) To discharge contaminants (seabed material and
	water) into water associated with dredging described
	in (a) above
	d) To deposit seabed material on the seabed associated
	with (a) to (c) above

Term of Consent

The duration of consent shall be 35 years.

Definitions

For the purposes of this consent the following definitions shall apply:

"ADCP" means an acoustic doppler current profiler;

"ALG" means the Aquaculture Liaison Group

"**Authorised Marine Farm**" means any marine farm that, as at the date this consent is first exercised, exists or which holds an existing but unimplemented resource consent. Authorised marine farming activity has the same meaning.

"BMP" means the Biosecurity Management Plan;

"Certification" means that the EMMP contains all information specified in the EMMP

condition(s) and the EMMP meets all the requirements set out in the conditions of the relevant resource consent(s);

"CHPT" means the Consent Holder Project Team;

"Consent Authority" means the Canterbury Regional Council or any successor;

"Consent Authority Manager" means the Canterbury Regional Council, Attention: RMA

Compliance and Enforcement Manager;

"CRMS" means Craft Risk Management Standard;

"DMP" means the Dredge Management Plan;

"**Dredge Spoil**" means seabed material that has been removed by a dredge and is to be disposed of at the designated spoil disposal ground;

Agreed Conditions – dated 26 March 2017 "Dredging" means dredging and disposal activities;

"**Dredging Stage**" means the period when a dredge is deployed at Lyttelton for channel deepening and deepening for reclamation (identified on XXX) to a specified design depth for that stage.

"EMMP" means the Environmental Monitoring and Management Plan;

"IHS" means Import Health Standard;

"MMMP" means the Marine Mammal Management Plan;

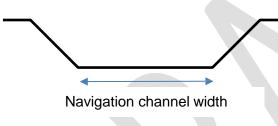
"Northern Banks Peninsula" (in the context of marine farms) means those marine farms that are authorised at the date of the first exercise of this consent and are located to the west of a line between Motunau and Steep Head;

NTU" means nephelometric turbidity unit;

"PRG" means the Peer Review Group;

"Shipping Channel" means the navigation channel (see diagram below), ship turning basin, and berthage areas;

Edge to edge channel width (not including batter slope)



Cut view of channel

"TAG" means the Technical Advisory Group;

"Tangata Whenua" means Te Hapū o Ngāti Wheke (Rāpaki), Te Rūnanga o

Koukourārata and Te Rūnanga o Ngāi Tahu.

CONDITIONS OF CONSENT

1. LOCATION, VOLUME AND STAGING

- 1.1 Dredging operations shall occur within the Shipping Channel and area subject to future reclamation marked on CRCXX attached to and forming part of this consent.
- 1.2 The discharge of Dredge Spoil shall occur within the area marked on CRCXX attached to and forming part of this consent.
- 1.3 The maximum volume of seabed material discharged by the dredge vessel at the offshore capital disposal ground shall not exceed 18 million cubic metres of in situ sediment.
- 1.4 Dredge Spoil shall not be concentrated in any one part of the offshore disposal ground; and it shall, to the extent practicable, be distributed evenly across the offshore disposal ground.
- 1.5 If Dredging is carried out to allow a 14.5m draught vessel to enter Lyttelton Port across all tides the Dredging shall be completed in no fewer than two Dredging Stages.
- 1.6 Prior to the commencement of a Dredging Stage a copy of this consent shall be given to all persons undertaking activities authorised by this consent.

2. **ADMINISTRATION**

- 2.1 The Consent Authority may, on any of the last 5 working days of May and November serve notice of its intention to review the conditions of this consent for the purposes of:
 - 2.1.1 Dealing with any adverse effect on the environment which may arise from the exercise of this consent and which is appropriate to deal with at a later stage;
 - 2.1.2 Amending the monitoring programmes required by this consent, including adding or deleting monitoring site locations and adding or deleting specific monitoring parameters.
 - 2.1.3 Amending the real-time turbidity monitoring, turbidity triggers and the management response measures after a Dredging Stage should the assurance monitoring reveal an unforeseen effect that is attributable to Dredging; and
 - 2.1.4 Requiring the consent holder to adopt the best practicable option to remove or reduce any adverse effect on the environment.
- 2.2 The lapsing date for the purpose of section 125 shall be 10 years after the commencement of the consent.

3. NOTIFICATION AND RECORDS

- 3.1 Prior to a Dredging Stage, the consent holder shall provide a programme of intended Dredging, including the timing of the Dredging Stage and the areas and depth of proposed Dredging. The programme shall be submitted to the Consent Authority Manager not less than one month prior to the commencement of the Dredging Stage.
- 3.2 The consent holder shall keep records detailing the timing, quantities and location of seabed material dredged, and also of the Dredge Spoil disposed of within the offshore disposal ground. These records shall be submitted to the Consent Authority Manager within one month of cessation of a Dredging Stage or at any time upon request from the Consent Authority.

4. DREDGE MANAGEMENT PLAN (DMP)

- 4.1 Two months prior to the commencement of the first Dredging Stage, the consent holder shall provide to the Consent Authority Manager a DMP. A copy of the DMP shall be provided to the Tangata Whenua and the ALG.
- 4.2 The purpose of the DMP shall be to specify Dredging practices and procedures that ensure that any actual or potential adverse effects on the marine receiving environment are avoided or otherwise mitigated to the greatest extent practicable.
- 4.3 The DMP shall include, but not be limited to, the following:
 - 4.3.1 A description of the number types of dredges to be used;
 - 4.3.2 A description of dredging methodology typically used;
 - 4.3.3 A description of how the location and quantities of Dredge Spoil are recorded;
 - 4.3.4 A description of the maintenance of equipment and systems;
 - 4.3.5 A description of the outdoor lighting being used in order to reduce the potential for bird strike such as the targeting of luminaries and the use of shields or baffles;

4.3.6 A description of all other necessary measures to avoid or mitigate to the greatest extent practicable any actual or potential other adverse effects on the receiving environment during the operation of the dredge; including biofouling, management of waste, and refueling procedures.

CERTIFICATION OF DMP

- 4.4 The DMP shall be approved in writing by the Consent Authority Manager acting in a technical Certification capacity prior to Dredging authorised by this consent first commencing and the consent holder shall undertake all activities authorised by this consent in accordance with the approved DMP.
- 4.5 Any amendment of the DMP shall be approved in writing by the Consent Authority Manager acting in a technical Certification capacity and the consent holder shall undertake all activities authorised by this consent in accordance with the amended DMP.
- 4.6 A copy of the DMP and all amended DMPs shall be provided to Tangata Whenua and the ALG immediately following certification.

5. MARINE MAMMAL MANAGEMENT PLAN (MMMP)

- 5.1 Two months prior to the commencement of the first Dredging Stage, the consent holder shall provide a MMMP to the Consent Authority. A copy of the MMMP shall be provided to Tangata Whenua.
- 5.2 The purpose of the MMMP shall be to reduce the risk of vessel collision with a marine mammal.
- 5.3 The MMMP shall include, but not be limited to, the following:
 - 5.3.1 A requirement for a regular crew member on the dredge to be a designated marine mammal observer, which includes record keeping;
 - 5.3.2 Details of the training to be provided to the designated observer, which is to be delivered by a suitably qualified marine mammal

Agreed Conditions – dated 26 March 2017 expert;

- 5.3.3 Detailed guidelines for the vessel, including speed limits, to reduce any chances of mortality from vessel strikes with whales, particularly the southern right whales; and
- 5.3.4 Provision of information protocols with the Department of Conservation during Dredging to help anticipate any potential seasonal interactions with any whale species sighted.
- 5.4 The MMMP shall be prepared by a suitably qualified person who is experienced in managing potential effects on marine mammals.

CERTIFICATION OF MMMP

- 5.5 The MMMP shall be approved in writing by the Consent Authority Manager acting in a technical Certification capacity prior to Dredging authorised by this consent first commencing and the consent holder shall undertake all activities authorised by this consent in accordance with the approved MMMP.
- 5.6 Any amendment of the MMMP shall be approved in writing by the Consent Authority Manager acting in a technical Certification capacity and the consent holder shall undertake all activities authorised by this consent in accordance with the amended MMMP.
- 5.7 A copy of the MMMP and all amended MMMPs shall be provided to Tangata Whenua.

6. **BIOSECURITY MANAGEMENT PLAN (BMP)**

- 6.1 One month prior to the arrival of the dredge vessel in New Zealand, the consent holder shall provide a BMP to the Consent Authority. A copy of the BMP shall be provided to Tangata Whenua and the ALG.
- 6.2 The purpose of the BMP shall be to reduce the risk of a biosecurity incursion to the greatest extent practicable.
- 6.3 The BMP shall include, but not be limited to, the following:
 - 6.3.1 A description of the dredge vessel and its attributes that affect risk, including key operational attributes (e.g. voyage speed,

periods of time idle), maintenance history (including prior inspection and cleaning undertaken), and voyage history since last dry-docking and antifouling (e.g. countries visited and duration of stay);

- 6.3.2 A description of the key sources of potential marine biosecurity risk from ballast water, sediments and biofouling. This should cover the hull, niche areas, and associated equipment, and consider both submerged and above-water surfaces;
- 6.3.3 An assessment of the biosecurity risks to authorised marine farming activities from activities authorised by this consent and the methods to be used to minimise those risks to the greatest extent practicable.
- 6.3.4 Findings from previous inspections;
- 6.3.5 A description of the risk mitigation taken prior to arrival in New Zealand, including but not limited to:
 - Routine preventative treatment measures and their efficacy, including the age and condition of the antifouling coating, and marine growth prevention systems for sea chests and internal sea water systems;
 - Specific treatments for submerged and above-water surfaces that will be undertaken to address Import Health Standard (IHS) and CRMS (Craft Risk Management Standard) requirements prior to departure for New Zealand. These could include, for example, in-water removal of biofouling, or abovewater cleaning to remove sediment;
 - Additional risk mitigation planned during transit to New Zealand, including expected procedures for ballast water management;
 - Expected desiccation period of above-water surfaces on arrival to New Zealand (i.e. period of air exposure since last dredging operations);
- 6.3.6 The nature and extent of pre-border inspection that will be undertaken (e.g. at the overseas port of departure) to verify compliance with IHS and CRMS requirements; and
- 6.3.7 Record keeping and documentation of all mitigation undertaken

(i.e. prior to and during transit to New Zealand) to enable border verification if requested by Ministry for Primary Industries or its successor, and to facilitate final clearance.

6.4 The BMP shall be prepared by a suitably qualified person who is experienced in managing the risk of biosecurity incursions and shall be appointed by the consent holder following consultation with the ALG.

CERTIFICATION OF BMP

- 6.5 The BMP shall be approved in writing by the Consent Authority Manager acting in a technical Certification capacity prior to Dredging authorised by this consent first commencing and the consent holder shall undertake all activities authorised by this consent in accordance with the approved BMP.
- 6.6 Any amendment of the BMP shall be approved in writing by the Consent Authority Manager acting in a technical Certification capacity and the consent holder shall undertake all activities authorised by this consent in accordance with the amended BMP.
- 6.7 A copy of the BMP and all amended BMPs shall be provided to Tangata Whenua and the ALG immediately following certification.

7. ENVIRONMENTAL MONITORING AND MANAGEMENT PLAN (EMMP)

- 7.1 Two months prior to the commencement of the first Dredging Stage, the consent holder shall provide an EMMP to the Consent Authority Manager.A copy of the EMMP shall be provided to Tangata Whenua and the ALG.
- 7.2 Within one year after the first Dredging Stage has been completed the CHPT shall complete a formal written review of the EMMP in consultation with the TAG. The review shall examine the implementation of the EMMP during Dredging, any potential gaps in the EMMP and otherwise confirm the EMMP is in compliance with the conditions of this consent.
- 7.3 The EMMP shall at all times be generally in accordance with the draft EMMP dated XXXX, except where modified by these conditions, in which

case the conditions shall prevail.

- 7.4 The purpose of the EMMP is to detail how:
 - 7.4.1 Turbidity monitoring and management response measures are implemented to minimise the risk of elevated turbidity, attributed to Dredging, causing any unforeseen effects on the receiving environment and any adverse effects on authorised marine farms;
 - 7.4.2
 Assurance monitoring is implemented to evaluate actual

 effects and compare them with those predicted in the

 information filed in support of the application.
 - Assurance monitoring is implemented so as to:
 - Evaluate modelling predictions and the recovery of benthic communities;
 - Evaluate the predicted absence of effects on sub-tidal and intertidal communities, on mahinga kai and aquaculture, and on the physical shoreline.
- 7.5 The EMMP shall at a minimum address the following topics:
 - 7.5.1 The monitoring of turbidity plumes;
 - 7.5.2 Management measures to be undertaken in response to an exceedance of a trigger value;
 - 7.5.3 Assurance monitoring, including in respect of Authorised Marine Farms;
 - 7.5.4 Reporting requirements;
 - 7.5.5 Roles and responsibilities of groups involved in monitoring and any management responses; and
 - 7.5.6 Other management plans and protocols.

Monitoring of Turbidity

- 7.6 As part of an EMMP, the consent holder shall detail how the turbidity plumes are to be monitored to:
 - 7.6.1 Confirm whether or not turbidity plumes exceed the specified trigger values provided for the implementation of each management response tier;

- 7.6.2 Assess the relative contributions of Dredging and non-Dredging sources to observed turbidity; and
- 7.6.3 Classify the turbidity observations using a 'tiered approach' with each tier having its own set of management response measures.
- 7.6.4 The EMMP shall include, but not be limited to, the following details:
- 7.6.5 The monitoring equipment to be used, including the use of a nephelometer and ADCPs;
- 7.6.6 The location of the monitoring equipment;
- 7.6.7 The setting up and maintenance of monitoring equipment;
- 7.6.8 The establishment of real-time monitoring so it can be made readily accessible to the TAG and PRG through reporting or notification emails and a summary of the real-time monitoring is readily accessible on the web for the community generally;
- 7.6.9 Data management;
- 7.6.10 The identification of three turbidity triggers derived using the methodology referred to in Condition 9; and
- 7.6.11 The rationale for the three turbidity triggers identified.

Management Measures in Response to Turbidity Plumes

- 7.7 As part of an EMMP, the consent holder shall detail the management response measures to be carried out in response to elevated turbidity as defined by the trigger values.
- 7.8 The EMMP shall include procedures on:
 - 7.8.1 Notifying the TAG and ALG, and where relevant notifying the PRG, of an exceedance;
 - 7.8.2 Investigating whether the exceedance of the trigger is caused by Dredging or by other environmental factors; and
 - 7.8.3 Increasing monitoring effort where necessary;

- 7.9 The EMMP shall also include a suite of management response measures where the exceedance of a trigger has been attributed to Dredging, including, but not limited to:
 - 7.9.1 A change of the disposal location with the spoil grounds;
 - 7.9.2 A change in the location of dredging;
 - 7.9.3 A change in the dredging process, including timing of dredging within the tidal phase;
 - 7.9.4 The ceasing of Dredging until conditions are determined to be appropriate for re-commencement of operations in a location.

Assurance Monitoring

- 7.10 As part of the EMMP, the consent holder shall detail the assurance monitoring to be carried out to evaluate predicted effects and compare them with those predicted in the information filed insupport of the application.
- 7.117.10 The consent holder shall monitor the marine receiving environment:
 - 7.11.17.10.1 Before Dredging operations commence so a baseline of information is established against which subsequent changes can be referenced; and
 - 7.11.27.10.2 During and after Dredging to evaluate how ecology and the physical environment are responding to Dredging, and confirm that dredging related suspended solids are not adversely affecting Authorised Marine Farms.
- 7.127.11 The EMMP shall include, but not be limited to, the following:
 - 7.12.17.11.1 Subtidal, intertidal and benthic ecological surveys which are to carried out prior to, during and after Dredging activities;
 - 7.12.27.11.2 Water quality monitoring which is to carried out prior to, during and after Dredging;
 - 7.12.37.11.3 Sediment quality monitoring;
 - 7.12.47.11.4 Physical beach shore monitoring; and
 - 7.12.57.11.5 Bathymetric surveys
 - 7.12.67.11.6 Inspections of marine farms, where necessary...

Reporting Requirements

7.137.12 As part of the EMMP, the consent holder shall detail the reporting requirements specified in the conditions of consent and otherwise needed to achieve the purpose of the EMMP.

Other Management Protocols

7.147.13 As part of the EMMP, the consent holder shall acknowledge the other Plans being prepared under this consent and shall detail an accidental discovery protocol.

CERTIFICATION OF EMMP

- 7.157.14 The EMMP shall be approved in writing by the Consent Authority Manager acting in a technical Certification capacity prior to Dredging authorised by this consent first commencing and the consent holder shall undertake all activities authorised by this consent in accordance with the approved EMMP.
- 7.167.15 Any amendment of the EMMP shall be approved in writing by the Consent Authority Manager acting in a technical Certification capacity and the consent holder shall undertake all activities authorised by this consent in accordance with the amended EMMP.
- 7.177.16 A copy of the EMMP and all amended EMMPs shall be provided to Tangata Whenua and the ALG immediately following certification.

8. MONITORING

- 8.1 The consent holder shall prepare and undertake a monitoring programme in accordance with these conditions.
- 8.2 The purpose of the monitoring programme is to:
 - 8.2.1 Provide baseline information sufficient to enable the effects of dredging activities to be determined;
 - 8.2.2 Monitor during Dredging so that any management response measures can be carried out in a timely manner;

- 8.2.3 Monitor during and after each Dredging Stage to evaluate the predicted effects and compare them with those predicted in the information filed in support of the application.
- 8.3 The consent holder shall carry out baseline monitoring over the period of at least one year prior to the first commencement of Dredging authorised by this consent;
- 8.4 There shall be no fewer than 14 stations monitoring water quality and this shall include not less than 13 stations that carry out telemetered monitoring of turbidity (NTU).
- 8.5 The water quality stations shall be located in the Instrumentation Zones shown on Plan CRC XX as follows:
 - 8.5.1 There shall be no fewer than 6 stations within the Channel zone;
 - 8.5.2 There shall be no fewer than 3 stations within the Inshore zone, one purpose of which is to provide representative water quality data for the areas where Authorised Marine Farms occur;
 - 8.5.3 There shall be no fewer than 3 stations within the Spoil Ground zone
 - 8.5.4 There shall be no fewer than 2 stations within the Offshore zone.
- 8.6 There shall be no fewer than 19 ecological stations monitoring¹ the benthic communities as shown on Plan CRC XX.
- 8.7 There shall be no fewer than 6 ecological stations monitoring sub-tidal communities as shown on Plan CRC XX.
- 8.8 There shall be no fewer than 4 ecological stations monitoring inter-tidal communities as shown on Plan CRC XX.
- 8.9 There shall be no fewer than 15 physical beach shore stations as shown on Plan CRC XX.
- 8.10 There shall be no fewer than **4** instruments measuring the acoustics from marine mammals.
- 8.11 The consent holder shall monitor for, but be not limited to, the parameters listed in Tables 1 and 2. Each parameter shall be monitored at the

frequency set out Tables 1 and Table 2. The specific location of the water quality monitoring stations, the parameters to be monitored at each station, and the methodology and equipment to be used is to be detailed in the EMMP. The methodology and equipment to be used at the other monitoring stations is to be detailed in the EMMP.

8.12 The monitoring programme contained in the EMMP shall be designed and carried out by a suitably experienced person(s) in the monitoring of the marine environment.

¹ 14 benthic stations during dredging and 18 stations during the baseline and after a Dredging Stage

Reporting

- 8.13 The CHPT shall prepare a baseline monitoring report. The report shall:
 - 8.13.1 Present and discuss the results of baseline monitoring; and
 - 8.13.2 Recommend any amendments to the EMMP to change location of a station or stations within the relevant zone or the monitoring parameters at each station, provided that the amended locations or monitoring parameters at the station better achieve the purpose and objectives of the EMMP.
- 8.14 The baseline monitoring report shall be provided to the TAG, PRG, ALG and the Consent Authority at least 2 months prior to the first commencement of Dredging.
- 8.15 During and after a Dredging Stage, the CHPT shall provide to the TAG and ALG, no later than the end of the third working week of the month, a monthly report that summarises the monitoring data from the previous month and any monitoring or equipment issues that occurred during that period.
- 8.16 During and after a Dredging Stage, the CHPT shall provide to the TAG, PRG, ALG and the Consent Authority no later than the end of the third working week of the month, a quarterly report that reviews the monitoring and management response measures carried out during the previous 4months and shall include, but not be limited, to the following:
 - 8.16.1 Collation of all the monitoring undertaken; and
 - 8.16.2 Details of any triggers being exceeded, the management response measures carried out and the results of monitoring after the management response measures have been completed.

Table 1: Type of parameters to be monitored and the	
frequency of monitoring	

Parameter	Monitoring Frequency	Collection Frequency		
Turbidity (NTU)	At least every 30 minutes	Telemetered ¹ or Logged and collected monthly		
TSS mg/L	Monthly	Monthly		
Benthic PAR (Mol/m ² /d)	At least every 30 minutes	Monthly		
Bed Level (altimeter)	At least every 30 minutes	Monthly		
рН	At least every 30 minutes	Telemetered or Logged and collected monthly		
TemperatureConductivityDissolved Oxygen	At least every 30 minutes	Telemetered or Logged and collected monthly		
Nutrients (phosphorus and nitrogen) and chlorophyll <i>a</i> (µg/L)	Monthly	Monthly		
Total and dissolved metals (µg/L)	Monthly	Monthly		
Organic chemicals - 22 individual acid herbicides - 179 individual multiresidue pesticides - Total petroleum hydrocarbons and BTEX	6-Monthly	6-Monthly		
Water dynamics (current speeds and direction and waves)	At least every 30 minutes	Telemetered Sent 6-hourly		
Soft-Sediment Benthic	4-Monthly Survey (subject to whether conditions)	4-Monthly Survey (subject to whether conditions)		
Shoreline Ecology - Sub-tidal - Inter-tidal	4-Monthly Survey (subject to whether conditions)	4-Monthly Survey (subject to weather conditions)		
Bed Level (Bathymetric Survey)	Monthly	Monthly		
Underwater Acoustic Monitoring	Continuously	4-Monthly		

¹ For the purposes of this table "telemetered" means the delivering of the monitoring data electronically to LPC as the data is recorded unless otherwise specified in the table.

Table 2: Type of shoreline parameters to be monitored and thefrequency of monitoring

Name	Frequency ¹		Method	
	Baseline	During	After	
Photo-point monitoring	Quarterly	Quarterly	Quarterly for first 2 years 6-monthly for the following 3 years	To visually assess beach level change or fine sediment deposition from fixed locations and aspects.
Sediment size analysis	6-monthly	6-monthly	6-monthly for first 2 years Annually for the following 5 years	To quantify sediment size on beach to determine changes in texture and composition
Beach profile survey	6-monthly	6-monthly	6-monthly for 5 years	To quantify changes in profile geometry and/or location from an established benchmark ^{2,3}
Shoreline analysis	Baseline assessment of historical shoreline (Lyttelton harbour only)	Annually for five years as aerial photographs/satellite imagery become available		To determine changes in shoreline position using aerials photographs or satellite imagery ³

¹Monitoring frequency is broken into three stages:

- Baseline before Dredging begins
- During Dredging
- After Dredging

²Survey requirements:

- Survey using staff and level, total station or RTK GPS
- Survey during spring low tide, pick up all changes in grade
- Required horizontal accuracy +/- 0.1m, vertical accuracy +/- 0.05m

³An Unmanned Aerial Vehicle (UAV) survey may be used in place or augment photo-point monitoring, beach profile survey and shoreline.

- 8.17 The 1-month and 4-monthly reports may cease 6-months after each Dredging Stage has ended except that the shoreline monitoring shall continue for the period specified in Table 2 and shall be reported to the Consent Authority annually after each Dredging Stage has ceased.
- 8.18 Where any subsequent Dredging Stage is to commence five or more years after the completion of the final 4-monthly monitoring report prepared under Condition 8.17 then CHPT must:

- 8.18.1 Prepare, after consultation with the TAG and ALG, a written report that evaluates whether any further pre-stage baseline monitoring is required; and
- 8.18.2 Where further baseline monitoring is considered necessary then a monitoring programme shall be prepared.
- 8.19 The report prepared under condition 8.18 shall be provided to the PRG and the Consent Authority in sufficient time to enable monitoring to be undertaken before the next Dredging Stage.
- 8.20 Within one month of receiving the written report prepared under condition 8.19 the PRG shall prepare a response report that either accepts or rejects the recommendations contained in the CHPT Report or provides recommended changes. The report shall be provided to the CHPT and the Consent Authority.

9. TURBIDITY TRIGGERS {TO BE AMENDED}

- 9.1 Following the completion of baseline turbidity monitoring described in Condition 8.3, the turbidity trigger values shall be incorporated into the EMMP for certification by the Consent Authority prior to the first commencement of Dredging.
- 9.2 The turbidity trigger values, to be incorporated in the EMMP under condition 9.1, shall be established in accordance with the methodology contained in the Environmetrics Australia Report attached in Appendix X.
- 9.3 The measurement of turbidity at the turbidity monitoring stations set out in conditions 8.4 and 8.5 shall use the statistical measures set out in the Econometrics Australia Report attached in Appendix 1 to determine whether turbidity trigger values set out in defined in the EMMP have been exceeded.
- 9.4 The consent holder must initiate any one or more of the management response measures set out in the EMMP should any of the turbidity trigger values contained in the EMMP be exceeded.
- 9.5 Notwithstanding the actions required under condition 9.4, if a tier-3 trigger

has been exceeded for a duration of **X** then the consent holder shall move the Dredging from the locality that has resulted in the exceedance and may only return to the same locality when the monitoring station(s) observing the exceedance has fallen below the tier-3 trigger value.

- 9.6 Notwithstanding condition 9.5, Dredging may continue in the same locality provided that the consent holder provides the Consent Authority a written report which demonstrates that the elevated turbidity is not attributable to Dredging.
- 9.7 The consent holder at the same time shall provide a copy of the report prepared under condition 9.6 to the TAG and the PRG and place it on its web-site.

Advice Note: Other events that could cause a tier-3 trigger exceedance include a Tsunami, an extreme weather event causing flooding, large off-shore swells, or a land slip, or an event causing a shift in the background turbidity.

10. CONSENT HOLDER PROJECT TEAM (CHPT)

- 10.1 The consent holder shall employ or otherwise engage person(s) to manage the project and implement the conditions of this consent, which includes ensuring that all monitoring information is gathered and disseminated consistent with the EMMP and in compliance with the conditions of this consent.
- 10.2 The CHPT shall have the necessary expertise to carry out the following:
 - 10.2.1 Prepare the 1-monthly and 4-monthly monitoring reports and circulate them to the TAG and the PRG and the Consent Authority, as required;
 - 10.2.2 Prepare any other report required under Condition 8;
 - 10.2.3 Continually examine the monitoring data to ensure the appropriate information is being gathered;
 - 10.2.4 Ensuring the dredging contractor has all monitoring information so any management response measures are completed in a timely manner.

Agreed Conditions – dated 26 March 2017 11. TECHNICAL ADVISORY GROUP (TAG)

- 11.1 The consent holder shall establish, at its own cost, a TAG, which is to review the monitoring reports and provide technical advice to the CHPT on whether the monitoring programme at 8.1 is fit for purpose.
- 11.2 The consent holder shall establish a TAG at least 3-months prior to the first commencement of dredging.
- 11.3 The TAG shall comprise no more than eleven members as detailed below.

Tangata Whenua

- 11.4 The consent holder shall offer Tangata Whenua the opportunity to have up to three members consisting of the following expertise:
 - 11.4.1 A suitably qualified and experienced specialist in mahinga kai;
 - 11.4.2 A suitably qualified and experienced specialist in marine ecology and/or water quality, including turbidity; and
 - 11.4.3 A suitably qualified and experienced person in tikanga Māori.

Marine Farming Technical Representative

- 11.5 The consent holder shall offer the opportunity to have two technical representatives of the local marine farms consisting of the following expertise:
 - 11.5.1 A suitably qualified person that has direct experience in operating a marine farm and is currently managing or operating a marine farm in the vicinity of the project;
 - 11.5.2 A suitably qualified person, experienced in assessing environmental effects of or on aquaculture activities or one of the disciplines referred to in condition 11.6.

Consent Holder

11.6 The consent holder may have up to six members consisting of the following expertise:

<u>11.6.1</u> A suitably qualified and experienced specialist in marine ecology:

11.6.1 11.6.2 A suitably qualified and experienced specialist in or aquaculture;

<u>11.6.211.6.3</u> A suitably qualified and experienced specialist in monitoring the marine environment;

<u>11.6.311.6.4</u> A suitably qualified and experienced specialist in hydrodynamic modeling;

<u>11.6.411.6.5</u> A suitably qualified statistician having experience in natural resource management; and

<u>11.6.5</u><u>11.6.6</u> No more than two other members of the CHPT.

11.7 The TAG shall:

- 11.7.1 Review the 1-monthly and 4-monthly monitoring reports prepared by the CHPT and where necessary provide advice to the CHPT in writing on whether the monitoring programme detailed in the EMMP requires amendment (including the location of monitoring stations and the parameters monitored for);
- 11.7.2 Review any exceedances of the trigger values contained in the EMMP and where necessary provide written advice to the CHPT on whether the monitoring programme detailed in the EMMP needs to be amended to better understand whether exceedances are attributed to Dredging or other environment parameters.
- 11.7.3 The consent holder shall provide any administrative support necessary for the TAG to carry out its functions.
- 11.8 Where the TAG does not have the expertise in any of the areas it is required to report on, it may engage the services of an appropriate expert to advise on a relevant matter to the TAG.

12. AQUACULTURE LIAISON GROUP (ALG)

- 12.1 Not more than 3 months following the commencement of this consent and not less than three months prior to exercising this consent, the consent holder shall invite representative of the aquaculture industry to participate in an ALG.
- 12.2 The purposes of the ALG are:
 - 12.2.1 To enable the consent holder and the aquaculture industry to share information relating to the exercising of these consents,
 - 12.2.2 To discuss the monitoring required by this consent, insofar as it relates to the effects of exercising this consent on Authorised Marine Farming activities, including but not limited to the matters covered in conditions 7.1<u>0</u>4.2, 8.5.2, 11.7.1 and 11.7.2.
 - 12.2.3 To ensure that any effects on Authorised marine farming activities, are avoided or remedied.
- 12.3 Invitations to participate in the ALG shall be extended to:
 - 12.3.1 Sanford Limited; and
 - 12.3.2 Authorised Marine Farmers from Northern Banks Peninsula.
- 12.4 Sanford Limited shall each be entitled to appoint 1 representative to the ALG
- 12.5 The Authorised Marine Farmers from Northern Banks Peninsula shall be entitled to appoint 3 representatives to the ALG
- 12.6 The consent holder shall be entitled to appoint up to 3 representatives to the ALG
- 12.7 Once established, the consent holder shall offer to hold meetings of the ALG at least once prior to first exercising this consent, every three months thereafter until Dredging first commences, at least 3monthly in the first 12 months after the commencement of each Dredging Stage and at least every 6 months at all other times.
- 12.8 The costs of participation in the ALG shall lie where they fall, except that all administration costs will be the responsibility of the consent holder
- 12.9 The consent holder shall provide not less than two week's notice of all ALG meetings and shall keep minutes of these meetings and distribute them within 5 working days.
- 12.10 The consent holder shall ensure that the ALG is given an opportunity to provide input into the preparation of the management plans required under conditions 4, 6 and 7. Any written recommendations from the aquaculture representatives on the ALG that are not included in the final management plans shall be provided to the consent authority at the same time as the plan is lodged under conditions 4.1, 6.1 and 7.1.

13. PEER REVIEW GROUP (PRG)

- 13.1 The consent holder shall establish, at its own cost, a PRG for the following purposes:
 - 13.1.1 To review the EMMP and any amendments to the EMMP and provide written advice to the Consent Authority as to its suitability for certification;
 - 13.1.2 Provide written advice to the Consent Authority after a Dredging Stage on whether any particular condition(s) should be subject to review; and
 - 13.1.3 Provide written advice to the Consent Authority on whether the monitoring-related reports have been prepared in accordance with the EMMP and in compliance with the conditions of this consent:
- 13.2 The PRG shall comprise three persons:
 - 13.2.1 who shall be independent of the consent holder (and without restricting the generality of that requirement, shall not be an employee of the consent holder or a related company, nor a person regularly contracted to research and write for the consent holder through another company);
 - 13.2.2 shall be scientists who, between them, have experience across the following scientific areas:
 - marine ecology, including aquaculture and other seafood resources;
 - coastal processes;
 - hydrodynamic modeling;

-: and are recognised by their peers as having such experience, knowledge and skill;

-: and who must be approved in writing by Consent Authority before they commence any of the functions required by this consent.

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- 13.3 Where the PRG does not have the expertise in any of the areas it is required to report on, it may, following consultation with the CHPT, engage the services of an appropriate expert to report on the relevant matter to the PRG. Any report from such an expert shall form part of a report provided by the PRG as required by these conditions.
- 13.4 The PRG must be established at least 2 months prior to the commencement of Dredging.
- 13.5 As part of undertaking its functions, the PRG shall provide an opportunity for the CHPT and TAG to meet or submit to them on any matter the PRG is required to consider.
- 13.6 The PRG shall:
 - 13.6.1 Prepare a written report on whether the EMMP or amendments thereof have been completed in accordance with conditions 9 and 11 and include a recommendation to the Consent Authority whether the EMMP or amendment can be certified.
 - 13.6.2 Where certification is not recommended, explain the reasons why and provide recommendations on what, in the opinion of the PRG, needs to be changed in order for the EMMP or an amendment thereof to be certifiable.
 - 13.6.3 Provide written advice to the Consent Authority on whether the following reports have been prepared in accordance with the EMMP, and in compliance with the conditions of this consent:
 - Baseline monitoring report prepared under condition 8.3;
 - The 4-monthly monitoring reports prepared under condition 8.16;
 - The pre-Dredging Stage report prepared under condition 8.18; and
 - Receive any report on the exceedance of a tier-3 trigger prepared under condition 9.6.

- 13.6.4 The PRG shall, after receiving the final report prepared under condition 8.16 for a completed Dredging Stage, prepare a review for the consent holder and the Consent Authority. The review shall assess the 4-monthly monitoring reports together with the EMMP, to determine whether the existing conditions of consent are appropriate or whether a change to one more of conditions is required, and the reasons why. The PRG must consult with the CHPT and the TAG before making its recommendations to the consent holder and the Consent Authority.
- 13.6.5 If the PRG review prepared under condition 13.6.4 recommends a change to one more of existing conditions then the consent holder shall consider applying for a change or cancellation of consent condition pursuant to s127 of the Resource Management Act 1991. The consent holder shall within two months of receiving the review from the PRG prepare a report to the Consent Authority that states whether a change or cancellation of consent condition is to be applied for or not and provide detailed reasons for its decision.
- 13.7 The consent holder shall ensure all written communications from the PRG to the Consent Authority are placed on the consent holder's website required under condition 14.
- 13.8 The consent holder shall provide any administrative support necessary for the PRG to carry out its functions.

14. WEB-SITE OBLIGATIONS

- 14.1 The consent holder shall maintain a web-site that is accessible to, and readily usable by, the public at least 6-months prior to the first commencement of Dredging;
- 14.2 The web-site shall include but not be limited to the following information:
 - 14.2.1 A summary of real-time data collected from the telemetered stations required under conditions 8.4, 8.5 and 8.11 of this consent;
 - 14.2.2 Monthly monitoring reports prepared under condition 8.15 of this consent;
 - 14.2.3 4-Monthly monitoring reports prepared under condition 8.16 of this consent;
 - 14.2.4 Any tier-3 exceedance report prepared under condition 9.6 of this consent;
 - 14.2.5 The DMP, MMMP, BMP and the EMMP or amendments thereof; and
 - 14.2.6 All written reports and reviews prepared by the TAG or PRG under conditions 12 and 13 respectively.

15. **COMPLAINTS**

- 15.1 A record of complaints relating to any activity associated with Dredging shall be maintained. Each record, where practicable, shall include:
 - 15.1.1 The location of the reported nuisance or effect;
 - 15.1.2 The date and time of the complaint;
 - 15.1.3 A description of the weather conditions at the time of complaint, if relevant;
 - 15.1.4 Any possible cause of the nuisance or effect; and
 - 15.1.5 Any management actions undertaken to address the cause of the complaint; and the name of complainant, if offered.
- 15.2 The record of complaints shall be provided to the Consent Authority Manager every 4-months or on request.
- 15.3 An aggregated summary of the complaints received for each month shall be provided to the TAG not later than the end of the following month.

PROPOSED CONSENT CONDITIONS (MAINTENANCE DREDGING)

CRCXX	a)	To dredge (disturb) seabed material for purposes
Coastal Permit		of maintaining the depth of a shipping (navigation)
		channel that includes a ship-turning basin, and
		berth pockets;
	b)	To discharge contaminants (dredge spoil and
		water) into water;
	c)	To discharge contaminants (seabed material and
		water) into water associated with dredging
		described in (a) above
	d)	To deposit seabed material on the seabed
		associated with (a) to (c) above

Term of Consent

The duration of consent shall be **35** years.

Definitions

For the purposes of this consent the following definitions shall apply:

"ALG" means the Aquaculture Liaison Group;

"**Authorised Marine Farm**" means any marine farm that, as at the date this consent is first exercised, exists or which holds an existing but unimplemented resource consent. Authorised Marine Farming Activity has the same meaning;

"Authorised Marine Farmer" means any person who operates an Authorised Marine Farm;

"BMP" means the Biosecurity Management Plan;

"**Certification**" means that the DMP, BMP, and EMMP contains all information specified in the relevant Plan condition(s) and the Plans meet all the requirements set out in the conditions of the relevant resource consent(s);

"CHPT" means the Consent Holder Project Team;

"Consent Authority" means the Canterbury Regional Council or any successor;

"**Consent Authority Manager**" means the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager;

"DMP" means the Dredge Management Plan;

"**Dredge Spoil**" means seabed material that has been removed by a dredge and is to be disposed of at the designated spoil disposal ground;

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"Dredging" means dredging to maintain depths of the Shipping Channel;

"**Dredging Campaign**" means the period when a dredge is deployed at Lyttelton to carry out maintenance dredging;

"EMMP" means the Environmental Monitoring and Management Plan;

"Northern Banks Peninsula" (in the context of marine farms) means those marine farms that are authorised at the date of the first exercise of this consent and are located to the west of a line between Motunau and Steep Head;

"NTU" means nephelometric turbidity unit;

"Shipping Channel" means the navigation channel, ship-turning basin, and berthage areas; and includes all batter slopes;

"TAG" means the Technical Advisory Group;

"Tangata Whenua" means Te Hapū o Ngāti Wheke (Rāpaki), Te Rūnanga o

Koukourārata and Te Rūnanga o Ngāi Tahu.

CONDITIONS OF CONSENT

1. **GENERAL**

1.1 Prior to the commencement of a Dredging Campaign a copy of this consent shall be given to all persons undertaking activities authorised by this consent.

2. LOCATION

2.1 Dredging operations shall occur within the Shipping Channel excluding the Inner Harbour, as marked on CRCXXX attached to and forming part of this consent.

Advice Note: Dredging of the Inner Harbour is authorised under CRC135318

- 2.2 The discharge of Dredge Spoil shall occur within the area of the offshore maintenance disposal ground or the Godley Head maintenance disposal ground marked on CRCXXX attached to and forming part of this consent.
- 2.3 The Godley Head maintenance disposal ground shall only receive Dredge Spoil in the following circumstances:
 - 2.3.1 The offshore maintenance disposal ground cannot be used due to rough sea-state conditions; or
 - 2.3.2 The vessel used to transport Dredge Spoil is insufficiently sea worthy to dispose of sediment outside the head.
- 2.4 Notwithstanding condition 2.3, the maximum *in situ* volume of Dredge Spoil disposed of at the Godley Head maintenance disposal ground shall not exceed XX cubic metres per annum.

3. ADMINISTRATION

- 3.1 The Consent Authority may, on any of the last 5 working days of May and November serve notice of its intention to review the conditions of this consent for the purposes of:
 - 3.1.1 Dealing with any adverse effect on the environment which may arise from the exercise of this consent and which is appropriate to deal with at a later stage;
 - 3.1.2 Amending the monitoring programmes required by this consent, including adding or deleting monitoring site locations and adding or deleting specific monitoring parameters;
 - 3.1.3 Amending the real-time turbidity monitoring, turbidity triggers and the management response measures after a Dredging Campaign should the monitoring reveal an unforeseen effect that is attributable to Dredging;
 - 3.1.4 Require the consent holder to adopt the best practicable option to remove or reduce any adverse effect on the environment.

4. NOTIFICATION AND RECORDS

4.1 The consent holder shall keep records detailing the timing, quantities and location of seabed material dredged, and also of the Dredge Spoil disposed of within the offshore and Godley Head maintenance disposal grounds. These records shall be submitted to the Consent Authority Manager within one month of cessation of a Dredging Campaign.

5. DREDGE MANAGEMENT PLAN (DMP)

- 5.1 Three months prior to the commencement of the first Dredging Campaign the CHPT shall provide the TAG a copy of a Draft DMP.
- 5.2 One month prior to the commencement of the first Dredging Campaign the consent holder shall provide to the Consent Authority Manager a DMP. A copy of the DMP shall be provided to the Tangata Whenua and the ALG.
- 5.3 The purpose of the DMP shall be to specify Dredging practices and procedures that ensure that any actual or potential adverse effects on the marine receiving environment are avoided or otherwise mitigated to the greatest extent practicable.
- 5.4 The DMP shall include, but not be limited to, the following:
 - 5.4.1 A description of the dredge to be used;
 - 5.4.2 A description of dredging methodology typically used;
 - 5.4.3 A description of how the location and quantities of Dredge Spoil are recorded;
 - 5.4.4 A description of the maintenance of equipment and systems;
 - 5.4.5 A description of the storage and handling of hazardous substances;
 - 5.4.6 In relation to marine mammals, details on:
 - The requirement for a regular crew member on the dredge to be a designated marine mammal observer, which includes record keeping;
 - The training to be provided to the designated observer, which is to be delivered by a suitably qualified marine mammal expert;

- Guidelines for the vessel, including speed limits, to reduce any chances of mortality from vessel strikes with whales, particularly the southern right whales;
- Provision of information protocols with the Department of Conservation during Dredging to help anticipate any potential seasonal interactions with any whale species sighted;
- 5.4.7 A description of all other necessary measures to avoid or mitigate to the greatest extent practicable any actual or potential adverse effects on the receiving environment during the operation of the dredge, including:
 - management of biofouling;
 - management of waste;
 - refueling procedures;
 - management of overflow; and
- 5.4.8 Those matters in condition 5.4.6 shall be prepared by a suitably qualified person who is experienced in managing potential effects on marine mammals.

CERTIFICATION OF DMP

- 5.5 The DMP shall be approved in writing by the Consent Authority Manager acting in a technical Certification capacity prior to Dredging authorised by this consent first commencing and the consent holder shall undertake all activities authorised by this consent in accordance with the approved DMP.
- 5.6 Any amendment to the DMP shall be approved in writing by the Consent Authority Manager in a technical Certification capacity and the consent holder shall undertake all activities authorised by this consent in accordance with the amended DMP.

5.7 A copy of the DMP and all amended DMPs shall be provided to Tangata Whenua and the ALG immediately following Certification.

6. **BIOSECURITY MANAGEMENT PLAN (BMP)**

- 6.1 If the consent holder deploys the maintenance dredge vessel directly from overseas then a BMP is required to be prepared and implemented in accordance with conditions 6.2 to 6.8.
- 6.2 One month prior to the arrival of the dredge vessel in New Zealand, the consent holder shall provide a BMP to the Consent Authority. A copy of the BMP shall be provided to Tangata Whenua and the ALG.
- 6.3 The purpose of the BMP shall be to reduce the risk of a biosecurity incursion to the greatest extent practicable.
- 6.4 The BMP shall include, but not be limited to, the following:
 - 6.4.1 A description of the dredge vessel and its attributes that affect risk, including key operational attributes (e.g. voyage speed, periods of time idle), maintenance history (including prior inspection and cleaning undertaken), and voyage history since last dry-docking and antifouling (e.g. countries visited and duration of stay);
 - 6.4.2 A description of the key sources of potential marine biosecurity risk from ballast water, sediments and biofouling. This should cover the hull, niche areas, and associated equipment, and consider both submerged and above-water surfaces;
 - 6.4.3 An assessment of the biosecurity risks to Authorised Marine Farming Activities from activities authorised by this consent and the methods to be used to minimise those risks to the greatest extent practicable.
 - 6.4.4 Findings from previous inspections;

- 6.4.5 A description of the risk mitigation taken prior to arrival in New Zealand, including but not limited to:
 - Routine preventative treatment measures and their efficacy, including the age and condition of the antifouling coating, and marine growth prevention systems for sea chests and internal sea water systems;
 - Specific treatments for submerged and above-water surfaces that will be undertaken to address Import Health Standard (IHS) and Craft Risk Management Standard (CRMS) requirements prior to departure for New Zealand. These could include, for example, in-water removal of biofouling, or above-water cleaning to remove sediment;
 - Additional risk mitigation planned during transit to New Zealand, including expected procedures for ballast water management;
 - Expected desiccation period of above-water surfaces on arrival to New Zealand (i.e. period of air exposure since last dredging operations);
- 6.4.6 The nature and extent of pre-border inspection that will be undertaken (e.g. at the overseas port of departure) to verify compliance with IHS and CRMS requirements; and
- 6.4.7 Record keeping and documentation of all mitigation undertaken (i.e. prior to and during transit to New Zealand) to enable border verification if requested by Ministry for Primary Industries or its successor, and to facilitate final clearance.
- 6.5 The BMP shall be prepared by a suitably qualified person who is experienced in managing the risk of biosecurity incursions and shall be appointed by the consent holder following consultation with the ALG.

CERTIFICATION OF BMP

- 6.6 The BMP shall be approved in writing by the Consent Authority Manager acting in a technical Certification capacity prior to Dredging authorised by this consent first commencing and the consent holder shall undertake all activities authorised by this consent in accordance with the approved BMP.
- 6.7 Any amendment of the BMP shall be approved in writing by the Consent Authority Manager acting in a technical Certification capacity and the consent holder shall undertake all activities authorised by this consent in accordance with the amended BMP.
- 6.8 A copy of the BMP and all amended BMPs shall be provided to Tangata Whenua and the ALG immediately following Certification.

7. ENVIRONMENTAL MONITORING AND MANAGEMENT PLAN (EMMP)

- 7.1 Three months prior to the commencement of the first Dredging Campaign the CHPT shall provide the TAG a copy of a Draft EMMP.
- 7.2 One month prior to the commencement of the first Dredging Campaign, the consent holder shall provide an EMMP to the Consent Authority Manager. A copy of the EMMP shall be provided to Tangata Whenua and the ALG.
- 7.3 The EMMP shall at all times be generally in accordance with the draft EMMP dated XXX, except where modified by these conditions, in which case these conditions shall prevail.

- 7.4 The purpose of the EMMP is to detail how:
 - 7.4.1 Turbidity monitoring and management response measures are implemented to minimise the risk of elevated turbidity, attributed to Dredging, causing any unforeseen effects on the receiving environment and any adverse effects on Authorised Marine Farms;
 - 7.4.2 Assurance monitoring is implemented to evaluate actual effects and compare them with those predicted in the information filed in support of the application; and
 - 7.4.3 The circumstances when turbidity and management response requirements may cease and the frequency of the assurance monitoring maybe reduced.
- 7.5 The EMMP shall at a minimum address the following topics:
 - 7.5.1 The monitoring of turbidity plumes;
 - 7.5.2 Management measures to be undertaken in response to an exceedance of a trigger value;
 - 7.5.3 Reporting requirements;
 - 7.5.4 Roles and responsibilities of groups involved in monitoring and any management responses; and
 - 7.5.5 Other management plans and protocols.

Monitoring of Turbidity

- 7.6 As part of the EMMP, the consent holder shall detail how turbidity plumes are to be monitored to:
 - 7.6.1 Confirm whether or not turbidity exceeds the specified trigger values provided for the implementation of each management response tier;

- 7.6.2 Assess the relative contributions of Dredging and non-Dredging sources to observed turbidity; and
- 7.6.3 Classify the turbidity observations using a 'tiered approach' with each tier having its own set of management response measures.
- 7.7 The EMMP shall include, but not be limited to, the following details:
 - 7.7.1 The turbidity monitoring equipment to be used;
 - 7.7.2 The location of the monitoring equipment;
 - 7.7.3 The setting up and maintenance of monitoring equipment;
 - 7.7.4 The establishment of real-time monitoring so it can be made readily accessible to the TAG through reporting or notification emails and a summary of the real-time monitoring is readily accessible on the web for the community generally;
 - 7.7.5 Data management;
 - 7.7.6 The identification of three turbidity triggers derived using the methodology referred to in condition 9; and
 - 7.7.7 The rationale for the three turbidity triggers identified.

Adaptive Management

- 7.8 As part of an EMMP, the consent holder shall detail the management response measures to be carried out in response to elevated turbidity as defined by the trigger values.
- 7.9 The EMMP shall include procedures on:
 - 7.9.1 Notifying the TAG and ALG of an exceedance;
 - 7.9.2 Investigating whether the exceedance of the trigger is caused by Dredging or by other environmental factors; and
 - 7.9.3 Increasing monitoring effort where necessary.

- 7.10 The EMMP shall also include a suite of management response measures where the exceedance of a trigger has been attributed to Dredging, including, but not limited to:
 - 7.10.1 A change of the disposal location within the offshore maintenance disposal grounds; and
 - 7.10.2 The ceasing of the disposal of Dredge Spoil until conditions are determined to be appropriate for re-commencement of the disposal of Dredge Spoil in the offshore maintenance disposal ground.

Assurance Monitoring

- 7.11 The consent holder shall monitor the receiving environment to evaluate how the marine ecology and the physical environment is responding to Dredging Campaigns and confirm that dredging related suspended solids are not adversely affecting Authorised Marine Farms.
- 7.12 The EMMP shall include, but not be limited to, the following:
 - 7.12.1 Sub-tidal and benthic ecological surveys that will be carried out after a Dredging Campaign;
 - 7.12.2 Water quality monitoring that will be carried out during a Dredging Campaign;
 - 7.12.3 Bathymetric surveys and physical shoreline monitoring that will be carried out after a Dredging Campaign.

Reporting Requirements

7.13 As part of the EMMP, the consent holder shall detail the reporting requirements specified in the conditions of consent and otherwise needed to achieve the purpose of the EMMP.

CERTIFICATION OF EMMP

- 7.14 The EMMP shall be certified in writing by the Consent Authority Manager acting in a technical Certification capacity prior to Dredging authorised by this consent first commencing and the consent holder shall undertake all activities authorised by this consent in accordance with the approved EMMP.
- 7.15 Any amendment of the EMMP shall be certified in writing by the Consent Authority Manager acting in a technical Certification capacity and the consent holder shall undertake all activities authorised by this consent in accordance with the amended EMMP.
- 7.16 A copy of the certified EMMP and all amended EMMPs shall be provided to Tangata Whenua and the ALG immediately following Certification.

8. MONITORING

- 8.1 The consent holder shall prepare and undertake monitoring programmes in accordance with these conditions.
- 8.2 The monitoring programmes shall be designed and carried out by a suitably experienced person(s) in the monitoring of the marine environment.

Five Yearly Monitoring of Lyttelton Harbour (including Godley Head Area)

- 8.3 The consent holder shall carry out surveys to monitor the effects of the disposal of Dredge Spoil at the Godley Head and the offshore maintenance disposal grounds (shown on Plan CRCXXX) on the benthic and inter-tidal communities in Lyttelton Harbour/Whakaraupō.
- 8.4 The monitoring surveys shall be carried out by the consent holder at five yearly intervals with the first survey being completed no later than 2020 and the subsequent monitoring surveys shall be carried out at five yearly intervals thereafter.

- 8.5 If no Dredging Campaign is performed during the year when the five yearly monitoring survey is due under condition 8.4, the monitoring survey shall be carried out in the next year that a Dredging Campaign is undertaken, and the subsequent monitoring survey shall be carried out at 5-yearly intervals thereafter.
- 8.6 The consent holder shall complete the monitoring survey between four and six months after the cessation of a Dredging Campaign.
- 8.7 The monitoring survey shall include, but not be limited to, the benthic stations DD01, DD02b, DD03, DD04b, DD05, DD06b, DD07b, DD08b, DD09, DD10, DD11, DD12, DD10, inter-tidal stations DD03-Int and DD12-Int and two bioaccumulation stations at Gollans Bay and Rapaki Bay shown on Plan CRCXXX attached to and forming part of this consent.
- 8.8 The monitoring survey shall include, but not be limited to, sampling for the following:
 - 8.8.1 Sediment physico-chemical characteristics (including trace contaminants);
 - 8.8.2 Presence and abundance of benthic macrofauna; and
 - 8.8.3 Presence and abundance of inter-tidal flora and fauna.

Advice Note: The five yearly monitoring survey required under this consent mirrors the five yearly monitoring survey required under CRC135318. In other words each five yearly survey required to be undertaken pursuant to this consent will also satisfy the requirements under CRC135318.

Baseline Turbidity applied for the Offshore Maintenance Disposal Ground

8.9 The baseline turbidity conditions at the offshore maintenance disposal ground shall be established using the baseline turbidity information required to be obtained under condition 8.3 and reported on under condition 8.13 of CRCXXX (channel deepening consent).

8.10 The consent holder shall prepare a report setting out the baseline turbidity conditions for the offshore maintenance disposal ground in accordance with condition 8.9 and the report shall be provided to the TAG and the Consent Authority no less than three months prior to commencement of the first Dredging Campaign authorised by this consent.

Turbidity and Associated Water Quality Monitoring of the Offshore Maintenance Disposal Ground during a Dredging Campaign

- 8.11 The consent holder shall monitor for turbidity plumes generated from the disposal of spoil at the offshore maintenance disposal ground, and shall monitor for water quality, for the duration of each Dredging Campaign.
- 8.12 There shall be no fewer than two stations carrying out the telemetered monitoring of turbidity (NTU) and the monitoring of water quality. The stations shall be located in the Instrumentation Zone shown on Plan CRC XXX.
- 8.13 There shall be not less than one station measuring currents.
- 8.14 The consent holder shall monitor for turbidity and monitor for water quality during a Dredging Campaign at the frequency set out in Table 1. The specific location of the monitoring stations, and the methodology and equipment to be used is to be detailed in the EMMP.
- 8.15 The turbidity and water quality monitoring required under conditions 8.11 to 8.14 may cease in the following circumstances:
 - 8.15.1 After a period of five years from the commencement of the first Dredging Campaign; and
 - 8.15.2 After three continuous years of compliance with condition 9.XX.

Table 1: Turbidity and water quality to be monitored and the frequency ofmonitoring during a Dredging Campaign

Parameter	Monitoring Frequency	Collection Frequency
Turbidity (NTU)	At least every 30 minutes	Telemetered ¹ or Logged and collected monthly
TSS mg/L	Monthly	Monthly
Current speeds and	At least every 30 minutes	Telemetered
direction		Sent 6-hourly
рН	At least every 30 minutes	Telemetered or Logged
Temperature	At least every 30 minutes	Telemetered or Logged
Conductivity		
Dissolved Oxygen		
Nutrients (phosphorus	Sampled once during a dredging campaign	
and nitrogen) and		
chlorophyll <i>a</i> (µg/L)		
Total and dissolved		-
metals (µg/L)		

¹ For the purposes of this table "telemetered" means the delivering of the monitoring data electronically to LPC as the data is recorded unless otherwise specified in the table.

Ecological, Seabed level and Physical Shoreline Monitoring Associated with the Offshore Maintenance Disposal Ground

- 8.16 The consent holder shall monitor the presence and abundance of benthic macrofauna at the five benthic ecological stations labeled DD01, DD02b, DD03, DD13, DD14 and DD15 as shown on Plan CRC XXX
- 8.17 The consent holder shall monitor the presence and abundance of subtidal flora and fauna at the three sub-tidal ecological stations labeled BP02, BP13 and BP14 as shown on Plan CRC XXX.
- 8.18 The monitoring surveys required under condition 8.16 and 8.17 shall be carried out between 4 and 6 months after a Dredging Campaign. No survey is required if no Dredging Campaign is carried out in a particular year.
- 8.19 The consent holder shall carry out a bathymetric survey to measure seabed levels annually at and immediately adjacent to the Godley Head and offshore maintenance disposal grounds shown on Plan CRC XXX. The surveys shall be carried out between 1 and 2 months after a Dredging Campaign. No survey is required if no Dredging Campaign is carried out in a particular year.
- 8.20 The frequency of benthic, sub-tidal and bathymetric monitoring required under conditions 8.16, 8.17 and 8.19 may be reduced by the consent holder to five yearly monitoring surveys if condition 8.15 is invoked.
- 8.21 If condition 8.20 takes effect, then the benthic, sub-tidal and bathymetric survey monitoring required under conditions 8.16, 8.17 and 8.19 shall be completed at the same time as the Lyttelton Harbour monitoring required under conditions 8.3 to 8.8. This may entail an additional monitoring survey to enable it to align with the due date of the Lyttelton Harbour survey.

8.22 The consent holder shall carry out the physical shoreline monitoring at the stations shown on Plan CRC XXX. The consent holder shall carry out physical shoreline monitoring at the frequency set out in Table 2, and the methodology and equipment to be used is to be detailed in the EMMP.

Shoreline Parameter	Monitoring Frequency	
Photo-point monitoring ¹	Annually	
Beach profile survey ²	Annual	
Shoreline analysis ³	Five Yearly	

Table 2: Type and frequency of physical shoreline monitoring

¹ To visually assess beach level change or fine sediment deposition from fixed locations and aspects

² To quantify changes in profile geometry and/or location from an established benchmark. Assumes profiles at Bright and Sumner will continue to be monitored at 6-month intervals by the Consent Authority

³ To determine changes in shoreline position using aerials photographs or satellite imagery

Notes

Survey requirements to achieve beach profile:

- Survey using staff and level, total station or RTKGPS
- Survey during spring low tide, pick up all changes in grade
- Required horizontal accuracy +/- 0.1m, vertical accuracy +/- 0.05m

Reporting

- 8.23 The CHPT shall provide to the TAG and the Consent Authority at the end of June each year an annual report detailing the monitoring of the disposal of Dredge Spoil at the offshore maintenance disposal ground required under conditions 8.11 to 8.19 and condition 8.22. The report shall include, but is not limited, to the following:
 - 8.23.1 A summary of the monitoring information from the previous year and any monitoring or equipment issues that occurred during period;
 - 8.23.2 An evaluation of the turbidity data collected during a Dredging Campaign;
 - 8.23.3 A review of any triggers being exceeded during a Dredging Campaign, the management response measures carried out and the results of monitoring after the management response measures have been completed;
 - 8.23.4 An evaluation of the benthic and sub-tidal communities surveyed and whether any adverse effects are attributed to disposal activities;
 - 8.23.5 An evaluation of the changes to the seabed level and to the physical shoreline to confirm they are consistent with the predictions made by the hydrodynamic model.
- 8.24 The annual reporting requirements under condition 8.23 shall cease if the turbidity monitoring and management response requirements cease in accordance with condition 8.15. The exception is the photo-point and the beach profile survey set out in Table 2 of condition 8.22. These parameters shall continue to be reported on at the end of June of each year.

- 8.25 The CHPT shall provide to the Consent Authority a report of the five yearly monitoring survey required under conditions 8.3 to 8.8 and the benthic, sub-tidal and bathymetric monitoring survey required under condition 8.20 (if annual reporting has ceased). The report shall be completed within three months of the survey and the report shall:
 - 8.25.1 Describe the sampling methodology and the rationale for the sampling methodology;
 - 8.25.2 Detail the results;
 - 8.25.3 Provide an interpretation of the results in terms of any actual or potential effects of depositing maintenance Dredge Spoil on the benthic and inter-tidal communities surveyed;
 - 8.25.4 An evaluation of the benthic and inter-tidal communities surveyed and whether any adverse effects could be attributed to disposal activities; and
 - 8.25.5 An evaluation of the bathymetric data collected to examine any changes in the seabed and an analysis of the shoreline measurements.
- 8.26 A copy of the monitoring reports prepared under conditions 8.23 and 8.25 shall be provided to the Tangata Whenua and the ALG.

9. TURBIDITY TRIGGERS (TO BE AMENDED)

- 9.1 Following the completion of baseline turbidity monitoring described in condition 8.9, the turbidity trigger values applying to the disposal of Dredge Spoil at the offshore maintenance disposal ground shall be incorporated into the EMMP for Certification by the Consent Authority prior to commencement of the first Dredging Campaign.
- 9.2 The turbidity trigger values to be incorporated in the EMMP under condition 9.1 shall be established following the methodology contained in the Environmetrics Australia Report attached in Appendix X.

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- 9.3 The measurement of turbidity at the turbidity monitoring stations required under condition 8.12 shall use the statistical measures set out in the Econometrics Australia Report attached in Appendix X to determine whether turbidity trigger values set out in the EMMP have been exceeded.
- 9.4 The consent holder must initiate any one or more of the management response measures set out in the EMMP should any of the turbidity trigger values contained in the EMMP be exceeded.
- 9.5 Notwithstanding the actions required under condition 9.4, if a tier-3 trigger has been exceeded for a duration of X then the consent holder shall move from the disposal locality that has resulted in the exceedance and may only return to the same locality when the monitoring station(s) observing the exceedance has fallen below the tier-3 trigger value.
- 9.6 Notwithstanding condition 9.5, disposal of Dredge Spoil at the offshore maintenance disposal ground may continue in the same locality provided that the consent holder provides the Consent Authority with a written report which demonstrates that the elevated turbidity is not attributable to the deposition of Dredge Spoil.
- 9.7 The consent holder at the same time shall provide a copy of the report prepared under condition 9.6 to the TAG and place it on its web-site.

Advice Note: Other events that could cause a tier-3 trigger exceedance include a Tsunami, an extreme weather event causing flooding, large off-shore swells, a land slip, or an event causing a shift in the background turbidity.

9.8 The management response measures set out in condition 9.4 to 9.7 shall cease if turbidity monitoring ceases in accordance with condition 8.15.

10. CONSENT HOLDER PROJECT TEAM (CHPT)

- 10.1 The consent holder shall employ or otherwise engage person(s) to manage the project and implement the conditions of this consent, which includes ensuring that all monitoring information is gathered and disseminated consistent with the EMMP and in compliance with the conditions of this consent.
- 10.2 To achieve condition 10.1, the consent holder shall establish a CHPT which has the necessary expertise to carry out the following:
 - 10.2.1 Prepare monitoring reports required under conditions 8.10, 8.23 and 8.25 and circulate it to the TAG and the Consent Authority as required;
 - 10.2.2 Continually examine the monitoring data to ensure the appropriate information is being gathered;
 - 10.2.3 Ensuring the dredging contractor has all turbidity monitoring information so any management response measures are completed in a timely manner.

11. TECHNICAL ADVISORY GROUP (TAG)

- 11.1 The consent holder shall establish, at its own cost, a TAG, which is to:
 - 11.1.1 Review the Draft EMMP and DMP and provide technical advice to the CHPT as to whether these plans are fit for purpose; and
 - 11.1.2 Review the monitoring reports and provide technical advice to the CHPT on whether the monitoring programmes required under condition 8 are fit for purpose.
- 11.2 The consent holder shall establish a TAG at least 3-months prior to the commencement of the first Dredging Campaign.

- 11.3 The consent holder may elect to cease the TAG if the turbidity monitoring and management response requirements cease in accordance with conditions 8.15 and 9.8.
- 11.4 The TAG shall comprise no more than eleven members as detailed below.

Tangata Whenua

- 11.5 The consent holder shall offer Tangata Whenua the opportunity to have up to three members consisting of the following expertise:
 - 11.5.1 A suitably qualified and experienced specialist in mahinga kai;
 - 11.5.2 A suitably qualified and experienced specialist in marine ecology and/or water quality, including turbidity; and
 - 11.5.3 A suitably qualified and experienced person in tikanga Māori.

Marine Farm Representative

- 11.6 The consent holder shall offer the opportunity to have up to two technical representatives of the local Authorised Marine Farms consisting of the following expertise:
 - 11.6.1 A suitably qualified person that has direct experience in operating a marine farm and is currently managing or operating an Authorised Marine Farm in the vicinity of the project;
 - 11.6.2 A suitably qualified person, experienced in assessing environmental effects of or on aquaculture activities or one of the disciplines referred to in condition 11.7.

Consent Holder

- 11.7 The consent holder may have up to six members consisting of the following expertise:
 - 11.7.1 A suitably qualified and experienced specialist in marine ecology
 - 11.7.2 A suitably qualified and experienced specialist in aquaculture;

- 11.7.3 A suitably qualified and experienced specialist in monitoring the marine environment;
- 11.7.4 A suitably qualified and experienced specialist in hydrodynamic modeling;
- 11.7.5 A suitably qualified statistician having experience in natural resource management; and
- 11.7.6 No more than two other members of the CHPT.
- 11.8 The TAG shall:
 - 11.8.1 Review and provide initial technical advice on the DMP and the EMMP;
 - 11.8.2 Review the annual monitoring report prepared by the CHPT and meet to discuss the report and where necessary provide advice to the CHPT in writing on whether the monitoring programme detailed in the EMMP requires amendment (including the location of monitoring stations); and
 - 11.8.3 Review any exceedances of the trigger values contained in the EMMP and where necessary provide written advice to the CHPT on whether the monitoring programme detailed in the EMMP needs to be amended to better understand whether exceedances are attributed to Dredging or other environment parameters.
- 11.9 The consent holder shall provide any administrative support necessary for the TAG to carry out its functions.
- 11.10 Where the TAG does not have the expertise in any of the areas it is required to report on, it may engage the services of an appropriate expert to advise on a relevant matter to the TAG.

12. AQUACULTURE LIAISON GROUP (ALG)

- 12.1 Not less than three months prior to the first Dredging Campaign, the consent holder shall invite representatives of the aquaculture industry to participate in an ALG.
- 12.2 The purposes of the ALG are:
 - 12.2.1 To enable the consent holder and the aquaculture industry to share information relating to the exercising of this consent;
 - 12.2.2 To discuss the monitoring required by this consent, insofar as it relates to the effects of exercising this consent on Authorised Marine Farming Activities, including but not limited to the matters covered in conditions 7.4.1, 7.11 and 8.23; and
 - 12.2.3 To ensure that any effects on Authorised Marine Farming Activities are avoided or remedied.
- 12.3 Invitations to participate in the ALG shall be extended to:
 - 12.3.1 Sanford Limited; and
 - 12.3.2 Authorised Marine Farmers from Northern Banks Peninsula.
- 12.4 Sanford shall be entitled to appoint 1 representative to the ALG.
- 12.5 The Authorised Marine Farmers from Northern Banks Peninsula shall be entitled to appoint 3 representatives to the ALG.
- 12.6 The consent holder shall be entitled to appoint up to 3 representatives to the ALG.
- 12.7 Once established, the consent holder shall offer to hold meetings of the ALG at least once prior to the first Dredging Campaign and thereafter within two months of the completion of the annual monitoring report required under condition 8.23.
- 12.8 The costs of participation in the ALG shall lie where they fall, except that all administration costs will be the responsibility of the consent holder.

- 12.9 The consent holder shall provide not less than two week's notice of all ALG meetings and shall keep minutes of these meetings and distribute them within 5 working days.
- 12.10 The consent holder shall ensure that the ALG is given an opportunity to provide input into the preparation of the management plans required under conditions 5, 6 and 7. Any written recommendations from the aquaculture representatives on the ALG that are not included in the final management plans shall be provided to the Consent Authority at the same time as the plan is lodged under conditions 5.2, 6.2 and 7.2.
- 12.11 The consent holder may elect to cease the ALG if the turbidity monitoring and management response requirements cease in accordance with conditions 8.15 and 9.8.

13. WEB-SITE OBLIGATIONS

- 13.1 The consent holder shall maintain a web-site that is accessible to, and readily usable by, the public during each Dredging Campaign.
- 13.2 The web-site shall include but not be limited to the following information:
 - 13.2.1 A summary of real-time data collected from the telemetered stations required under conditions 8.11 to 8.14 of this consent;
 - 13.2.2 Annual monitoring reports prepared under condition 8.22 of this consent;
 - 13.2.3 Any tier-3 exceedance report prepared under condition 9.6 of this consent;
 - 13.2.4 The DMP and the EMMP or amendments thereof; and
 - 13.2.5 All written reports and reviews prepared by the TAG under condition 11.

13.3 The consent holder may elect to cease the web-site if the turbidity monitoring and management response requirements cease in accordance with conditions 8.15 and 9.8.

14. COMPLAINTS

- 14.1 A record of complaints relating to any activity associated with Dredging shall be maintained. Each record, where practicable, shall include:
 - 14.1.1 The location of the reported nuisance or effect;
 - 14.1.2 The date and time of the complaint;
 - 14.1.3 A description of the weather conditions at the time of complaint, if relevant;
 - 14.1.4 Any possible cause of the nuisance or effect; and
 - 14.1.5 Any management actions undertaken to address the cause of the complaint; and the name of complainant, if offered.
- 14.2 The record of complaints shall be provided to the Consent Authority Manager every year or on request.
- 14.3 An aggregated summary of the complaints shall be incorporated into the annual monitoring report prepared in accordance with condition 8.23.