

APPENDIX 9E

DRAFT AIR QUALITY MANAGEMENT PLAN (AQMP)



Air Quality Management Plan – Northland Shipyard and Dry Dock Facility at Marsden Point, Whangārei Harbour

✦ Prepared for

Ministry of Business, Innovation and Employment

✦ July 2026

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PATTLE DELAMORE PARTNERS LTD
Level 2, 109 Fanshawe Street,
Auckland Central 1010
PO Box 9528, Auckland 1149, New Zealand

Tel +64 9 523 6900
Web www.pdp.co.nz



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DOCUMENT CONTRIBUTORS

Prepared by

SIGNATURE

Cameron Brown

Reviewed by

Approved by

SIGNATURE

Shanon Lim

Andrew Curtis

Limitations:

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1.0 Introduction

This Air Quality Management Plan (AQMP) has been developed in accordance with Condition XX of the Northland Regional Council (NRC) consent XXXXXXX (the consent) by Pattle Delamore Partners Limited (PDP) on behalf of Ministry of Business, Innovation & Employment (MBIE).

1.1 Purpose

The purpose of this AQMP is to ensure that all discharges to air from the operation of the Shipyard and drydock facility at Marsden Point, Whangārei Harbour (the site) are kept to a practicable minimum and remain in compliance with all consent conditions.

To achieve this purpose, the AQMP provides a framework for the operations within the maintenance facility to:

- ✧ avoid or mitigate any adverse effects of discharges of dust and overspray generated from surface cleaning, profiling and coating activities;
- ✧ avoid or mitigate any adverse effects of discharges of odour generated from coating activities;
- ✧ promote proactive solutions to the control of dust and odour discharges from the site; and
- ✧ comply with the conditions of consent XXXXXX.

The structure and content of this AQMP incorporates guidance from both the Ministry for the Environment's (MfE's) Good Practice Guide for Managing Dust (GPG Dust) and Good Practice Guide for Managing Odour (GPG Odour).

A copy of this management plan shall be kept on site and will be available for use by site personnel at all times.

1.2 Environmental Performance Indicator

The key environmental performance indicator of this AQMP is that the site activities will not result in dust, overspray, or odour that is objectionable or causes an adverse effect beyond the boundary of the site.

1.3 Site Location and Receiving Environment

Figure 1 shows the general location of the site with receptors deemed to be representative of the receiving environment within 1.4 kilometres (km) plotted. Details of each identified receptor are summarised in Figure 1.

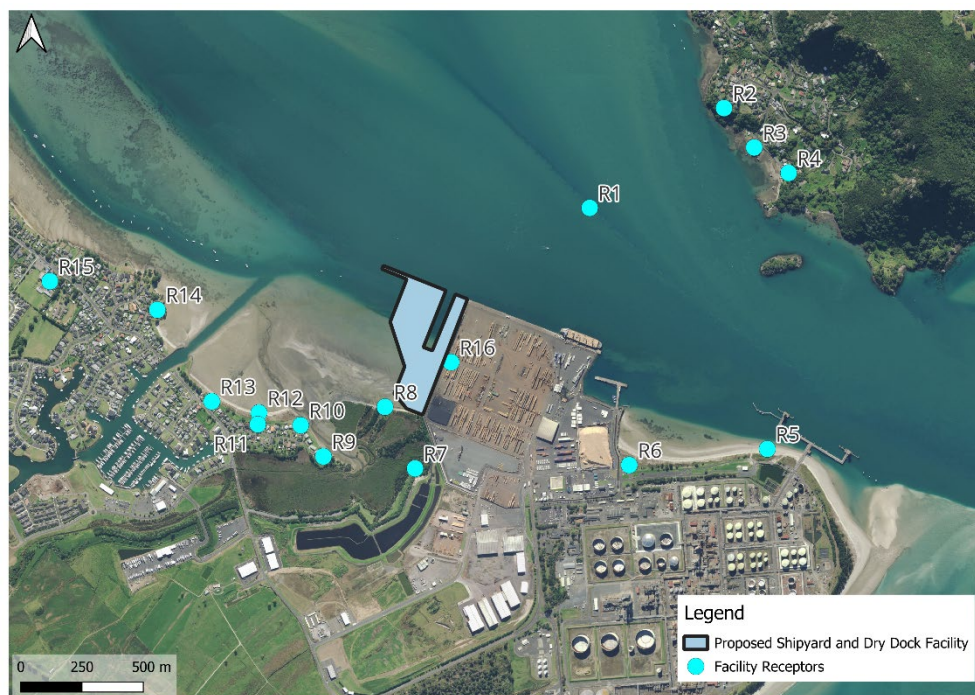


Figure 1: Nearby Receptors

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Table 1: Location of Receptors Close to the Shipyard and Dry Dock Site					
Receptor Name	Address/Location	Receptor Type	Receptor Sensitivity	Closest Distance to the Proposed Site (m)	Direction Relative to Site
R1	Whangarei Harbour	Fishing/Recreation	Low	Adjacent	Northeast
R2	136 Reotahi Road	Residential	High	1,300	Northeast
R3	134 Reotahi Road	Residential	High	1,310	Northeast
R4	23 Beach Road	Residential	High	1,400	Northeast
R5	Beach East of Site	Public Space/Recreation	Moderate	1,100	East
R6	Car Park and Beach Access	Public Space/Recreation	Moderate	870	Southeast
R7	Blacksmith Creek Walkway	Public Space/Recreation	Moderate	200	South
R8	Beach West of Site and Wetlands	Public Space/ Recreation/CMA	Moderate	Adjacent	Southwest
R9	38 Albany Road	Residential	High	375	Southwest
R10	26 Albany Road	Residential	High	400	Southwest
R11	8 Albany Road	Residential	High	550	Southwest
R12	Marsden Bay Beach	Public Space/Recreation	Moderate	450	Southwest
R13	138 Marsden Bay Drive	Residential	High	725	Southwest
R14	56 One Tree Point Road	Residential	High	940	Southwest
R15	One Tree Point School	Kura/School	High	1,350	Southwest
R16	Northport	Industrial	Low	Adjacent	East

2.0 Process Overview

The proposed operation consists of two primary activities: preparation of the surface of the vessel and coating the surface.

2.1 Surface Preparation

Marine fouling and old coatings are removed from the surface. If the surface profile (roughness) is too smooth to hold the coating, the surface will be roughened using an abrasive blaster prior to coating.

Surface preparation will occur by:

- ✧ Hydro blasting, either high-pressure water blasting (HPWB) or ultra-high-pressure water jetting (UHPWJ);
- ✧ Wet abrasive blasting with wet media; or,
- ✧ In very rare occasions, dry abrasive blasting with dry media – encapsulated only.

2.2 Coating

Once surfaces have been prepared, the vessel will be coated to protect the metal surfaces while at sea. Each vessel may have different requirements, but generally, surfaces will require a mix of primers, intermediate coats, and topcoats.

Coatings may be applied by hand (brush or roller) or via a spray gun.

3.0 Emission Sources

There are three classes of air contaminants discharged from site activities:

- ✧ Dust and coating overspray:

The most significant potential adverse effects of the discharge of these contaminants will be on amenity values which may be affected by deposited dust, deposited coating particles and/or potentially visible dust plumes.

- ✧ Odour:

Spray coating is the key source of odour. The coatings used in spray coating contain solvents which thin the coating so it can be applied using spray equipment. Solvents evaporate from the coating once it has been applied to the surface. Xylene and toluene are the most common solvents present in marine coatings. The solvent content of the coating typically ranges between 10% and 50%.

✧ Hazardous air pollutants:

The activities undertaken have the potential to discharge fine particles, di-isocyanates and volatile organic compounds (VOCs) such as xylene and toluene.

With any dry abrasive blasting being encapsulated, there are limited sources of fine particulate matter.

VOCs are discharged from the coating as it dries. Xylene is the most common VOC in the coatings expected to be used in the facility.

4.0 High Risk Meteorological Conditions

High risk meteorological conditions for **dust and overspray** are higher windspeeds where particles are able to be picked up and transported further from the site.

- ✧ Low Dust Risk: Wind speed < 5 m/s or 9.7 knots.
- ✧ Medium Dust Risk: Wind speed = 5 to 7.5 m/s or 9.7 to 14.5 knots.
- ✧ High Dust Risk: Wind speed > 7.5 m/s or 14.5 knots.

High risk meteorological conditions for **odour effects** are lower windspeeds where dispersion is poorer, and odours are likely to linger instead of being rapidly dispersed. The threshold used for this site is windspeeds below 3 m/s.

- ✧ High Odour Risk: Wind speed < 3 m/s or 5.8 knots.
- ✧ Low Odour Risk: Wind speed > 3 m/s or 5.8 knots.

5.0 Mitigation Measures

This section sets out the mitigation measures to be adopted to control discharges to air.

5.1 Contaminated Paint Controls

Table 2 contains controls for managing the effects of contaminated paints. Each tier corresponds with an action that will be implemented if further mitigation is required.

Table 2: Contaminated Paint Controls		
Tier	Action	Description
T1	Review paint history	Prior to blasting, review paint history. Identify if tri-butyl tin (TBT) , lead or mercury containing products are included in the paint history.
T1	Testing	If no history, or there is a possibility of these contaminants in paint, undertake testing: ✧ Patch testing (screening); and/or ✧ Laboratory analysis.
T2	Blasting	Coatings containing lead, TBT, or mercury shall be vacuum blasted using filtration removing at least 99.9% of mass by particulate matter from the discharge, prior to discharge into air.

5.2 Abrasive Blasting

The following types of abrasive blasting may occur at the Site:

- ✧ HPWB or UHPWJ: The majority of surface preparation is undertaken using HPWB or UHPWJ which will result in emissions of paint flecks, metal particles, salt and marine deposit which will be encapsulated in water droplets which are heavy and are unlikely to travel far beyond the work area if not contained.
- ✧ Wet abrasive blasting: Occasionally, wet abrasive blasting (using garnet) will be used.
- ✧ Dry blasting: In the rare occasions dry blasting is to be undertaken, the area that will be blasted should have scaffolding placed around it and wrapped. This will encapsulate any emissions from this activity.

Table 3 contains controls for managing the effects of surface preparation, noting dry abrasive blasting has been excluded from these controls due to these activities being encapsulated if the need for use arises.

Table 3: Surface Preparation Controls		
Tier	Action	Description
T1	Lower Risk Methods	Prefer water blasting or wet abrasive blasting over dry abrasive blasting where practicable.
T1	Regular monitoring	Monitor windspeed (visually and on phone) to ensure site limits not exceeded and gauge risk of transport of dust beyond site boundary. Automated notifications will be sent based on readings from the site's met station. Make regular visual checks to see if dust is at risk of leaving the site, adjust controls as necessary.
T1	Site Tidiness	Regular site clean-up to remove dust from surfaces.
T1	Operation	Angle abrasive blasters downwards.
T1	Media	Only garnet media used if needed.
T2	Vacuum Blasting	Use blasters fitted with vacuum heads for flat areas, attached to a sucker truck.
T2	Barriers	If emissions are observed as excessive, use wrapped scaffolding to contain emissions from abrasive blasting of the superstructure.

5.3 Surface Coating

Surface coating within the site has the potential to generate particulate and VOC emissions. Table 4 and Table 5 contains tiered controls for managing the effects of coating.

In addition to Table 4, any coating containing the following compounds will only be hand-coated (i.e. by brush or roller) to eliminate the potential for high concentration levels from overspray:

- ✧ Copper oxide (CAS: 1317-38-0);
- ✧ Copper(I) oxide (CAS: 1317-39-1);
- ✧ Pyrrithione zinc (CAS: 13463-41-7);
- ✧ Silica crystalline – Quartz (CAS: 14808-60-7);
- ✧ Titanium dioxide (CAS: 13463-67-7); and,
- ✧ Zinc oxide (CAS: 1314-13-2).

Alternatively, coatings containing the six compounds identified above can be sprayed provided the vessel is encapsulated and air from the encapsulation is appropriately treated before being discharged.

For any coatings containing Hexamethylene diisocyanate (monomer) (CAS: 822-06-0), encapsulation is required, with an extractor and a two-stage filter, to prevent the discharge of this pollutant to the atmosphere.

Table 4: Surface Coating Controls		
Tier	Action	Description
T1	Lower Risk Methods	Prefer brush and hand rolling over spray coating where practicable.
T1	Regular monitoring	Monitor windspeed (visually and on phone) to ensure wind conditions are favourable and gauge risk of transport of overspray beyond site boundary. Automated notifications will be sent based on readings from the site's met station. Make regular observations of site, look to see if overspray is at risk of leaving site boundary, adjust controls as necessary.
T1	Operation	Narrow items (handrails) which have a high potential for overspray are hand coated. Spray guns are not fired in an upwards direction (above 90°)
T1	Coating Application Rates	Monitor cumulative coating application rate across all entities working on a vessel. Ensure cumulative application rate doesn't exceed consent limits (60 L/hr).
T3	Physical Screening, Encapsulation or Cessation	If T1 measures are not controlling particulate deposition, coating works are to be physically screened, encapsulated or ceased.

Table 5 contains controls for managing the effects of odour from spray coating.

Table 5: Spray Coating Controls – Odour		
Tier	Action	Description
T1	Regular monitoring	Make regular observations of site to see if odour is at risk of leaving site boundary, adjust controls as necessary.
T2	Reduce Rates	If significant odour detected at sensitive receptors, reduce coating application rates until wind direction shifts away from sensitive receptors.
T3	Encapsulation or Cessation	Coating to be encapsulated or ceased if persistent odour detected at downwind sensitive receptors.

6.0 Roles and Responsibilities

6.1 MBIE and Operator

MBIE, as the consent holder, has the general responsibility to implement all consent conditions and manage the site in accordance with this AQMP. As MBIE does not operate the site, the day-to-day management of the site is the responsibility of the Operator.

6.2 Site Manager

A nominated **Site Manager** will have the day-to-day responsibility for the implementation of the AQMP and for all Site operations. This responsibility includes ensuring that all contractors operating on Site are familiar with the requirements of this document and are undertaking their activities in accordance with their requirements. The **Site Manager** will have the following responsibilities in respect of the management of air emissions.

They shall ensure:

- ✧ That the conditions of all relevant resource consents are complied with at all times;
- ✧ That the air discharge control and mitigation measures and procedures outlined in the AQMP are implemented effectively;
- ✧ That there are adequate personnel and equipment on site at all times to enable the prescribed air discharge controls;
- ✧ That the meteorological and dust monitoring programmes are carried out as required, including recording of daily observations;
- ✧ That any complaints received are investigated and resolved as far as practicable;

- ✧ That all records are kept and are available to the relevant regulatory authorities; and,
- ✧ That all personnel working on the project understand the requirements of the consent conditions and AQMP.

All personnel working on the Project have responsibility for following the requirements of the air discharge consent conditions and the AQMP and reporting to the Site Manager on these issues.

6.3 Contractors

Contractors will from time to time work on the site. They must have an understanding of consent conditions and this AQMP, as well as all other Management Plans relevant to the operation of the Site.

7.0 Staff Training

Successful dust and odour management depends on appropriate actions by site personnel in day-to-day operations of the site. Training for all staff will be undertaken as part of the site induction programme. The environmental induction will include the following information specific to this AQMP:

- ✧ Information about the activities that may cause discharges within the site with the potential to impact neighbouring areas;
- ✧ Consent requirements;
- ✧ Dust and overspray mitigation procedures;
- ✧ Description of dust and meteorological monitoring for the site; and
- ✧ Complaints management procedures.

Staff training records will be maintained on site. The records will include:

- ✧ Who was trained;
- ✧ When the person was trained; and
- ✧ General description of training content and whether follow up/refresher training is required, and when.

8.0 Monitoring

Visual and instrumental monitoring of dust and overspray will be undertaken during the operation of the site to assess the level of dust and overspray emissions on the site and beyond its boundary.

8.1 Visual Dust Monitoring

The visual dust monitoring will include the activities undertaken at the frequency described in Table 6.

Table 6: Visual Dust Monitoring	
Monitoring Activity	Frequency
Check weather forecasts for strong winds and rainfall to plan appropriate activities and dust management response.	Daily
Inspect the site, access roads and adjoining roads for the presence of dust deposition.	Twice daily
Observe weather conditions including wind and rain via observations and data inputs from the site weather stations.	Daily and as conditions change
Inspect all exposed surfaces for dampness and to ensure that the exposed un-stabilised area is minimised.	Daily and as conditions change
Observe vehicle movements to ensure dust generated is kept to a minimum.	Daily and as conditions change
Monitor dust generating activities to ensure dust emissions are effectively controlled.	Daily and as new activities commence
Inspect watering systems (water carts and any other spray systems) to ensure equipment is maintained and functioning to effectively dampen exposed areas.	Weekly

The **Site Manager** or delegate shall undertake a site walkover and visual dust monitoring at least once per day, to assess the overall effectiveness of the AQMP and assess compliance with the requirements of the resource consent conditions.

Site observations will be recorded in a daily log form, an example of which is provided as Appendix A. The daily log forms will be kept for at least 5 years.

Recording relevant inspection results, as well as the conditions of external and internal factors on the log forms, will help to assess if control measures are effective and to define appropriate corrective or preventative actions in case any adverse effects occur.

8.2 Instrumental Dust Monitoring

Three portable real-time TSP monitors are used to provide responsive monitoring of dust generated. The monitors are to be deployed near the site boundary. One is to be located upwind of works, with the other two downwind of active work areas. This monitoring is connected to a data telemetry system capable of sending email alerts when the parameters in Table 9 are exceeded. This is to enable fast identification of elevated dust levels and supports quick implementation of additional dust management measures.

Installation of three units provides redundancy and flexibility, allowing simultaneous coverage of different activity areas or receptors as site operations change while still having one upwind of the activities.

8.3 Instrumental Wind Monitoring

One real-time wind sensor is located on the site at a height of between 5 to 10 m. This wind sensor is connected to a telemetry system which is capable of sending email and/or text alerts and a cloud-based system for remote storage, viewing, and download of data.

8.3.1 Particulates

Table 7 sets out the alerts that will be adopted to inform site staff of the particulate risk conditions.

Table 7: Particulate Risk Wind Alerts			
Tier	Alert Type	10-min Average Wind Speed	Actions
Low-Risk	No alert	< 5 m/s	No additional action required. Continue to implement routine particulate controls and checks.
Medium-risk	Email alert	5 to 7.5 m/s	Check particulate mitigation measures are operating effectively. Check downwind TSP concentrations from real-time monitor and implement additional mitigation if required.
High-risk	Email alert	> 7.5 m/s	In addition to medium-risk actions, cease particulate generating activities if winds are blowing towards residential receptors identified in Table 1.

8.3.2 Odour

Odour monitoring is based on wind risk conditions (as recorded by the on-site weather station discussed in Section 8.3) and if required, field observations from site staff. Table 8 details the odour risk conditions and the actions required for each risk category.

Table 8: Odour Wind Alerts			
Odour Risk	Alert Type	10-min Average Wind Speed	Actions
Low-Risk	No alert	> 3 m/s	No additional action required. Undertake general site odour monitoring and alert the Site Manager if significant odours are observed near the southern or southwestern boundary of the site.
High-risk	Email alert	Calm to 3 m/s and winds blowing from North to Northeast	Where possible, avoid non-encapsulated coating. If non-encapsulated coating is to occur, one staff member is to undertake odour observations downwind on the boundary. If odours of a strong intensity (4) are observed, confirm this observation with another staff member and cease coating. See Appendix B for Odour Intensity Scale

8.4 Monitoring Trigger Levels

Three real-time portable TSP monitors are used on site of particulate discharging activities. Each of these are to be connected to a telemetry system which sends out alerts to the **Site Manager** or delegate. The alerts align with those recommended by the MfE GPG Dust are correlated with the tier levels as found in Table 9. Each tier corresponds with an action that will be implemented once the trigger is exceeded.

Table 9: Instrumental Monitoring Trigger Levels			
Tier	1-hour Average TSP Concentration ($\mu\text{g}/\text{m}^3$)	Level Type	Action
T1	150	Warning	Check wind direction visually and via telemetry system from on-site sensor. Identify likely source of trigger and apply mitigation to found source if on-site.
T2	200	Action	In addition to T1 action – reduce works that are causing particulate discharges.
T3	250	Cessation	Cease all particulate discharging works.

8.5 Reporting of Monitoring Programme

The following information will be recorded in a daily log or equivalent system (an example of the type of detail that may comprise the daily log is provided in Appendix A of this AQMP):

- ✧ Results of the daily site inspections of visible dust emissions;
- ✧ Likely source(s) of any observations of dust;
- ✧ Weather conditions during the day (i.e., windy, calm, warm, rain etc.);
- ✧ Volumes of coatings and garnet media used;
- ✧ Equipment malfunctions and any remedial action(s) taken;
- ✧ Any unusual on-site activities; and
- ✧ Records of any complaints or other community feedback.

The log forms will be collated and stored on site and will be made available to NRC staff as required by consent conditions.

9.0 AQMP Review

This AQMP will be reviewed by a suitably qualified and experienced expert once per year. Any recommended updates to the AQMP will be provided to NRC for recertification.

The review will take into consideration:

- ✧ Any significant changes to dust management activities or methods;
- ✧ Key changes to roles and responsibilities;
- ✧ Changes in industry best practice standards or recommended dust controls;
- ✧ Results of inspection and maintenance programmes, logs of incidents, corrective actions, internal or external assessments.
- ✧ The outcome of investigations into complaints, discharges of dust or other air pollutants; and
- ✧ The outcomes of resource consent compliance audits.

Reasons for making changes to the AQMP will be documented. A copy of the original AQMP document and subsequent versions will be kept for the project records and marked as obsolete. Each new/updated version of the AQMP documentation will be issued with a version number and date.

10.0 Instrumental Monitoring Maintenance, Servicing, and Calibration

In the event that an issue with any of the instrumental monitors or weather station arises, the **Site Manager** or delegate will contact the **Dust and Weather Monitor Maintenance and Service Provider** to arrange repair/remediation of the monitor(s) to minimise data loss.

Calibrations on all instrumental TSP monitors and the weather station are undertaken by the **Dust and Weather Monitor Maintenance and Service Provider** at the frequency recommended in the manufacturer's instructions.

11.0 Complaints

11.1 Receipt Procedure

It is important to ensure that any complaints are recorded and promptly investigated to identify and resolve the cause of the complaint. Requirements and procedures for complaints are detailed below.

The **Site Manager** is responsible for responding to and following up all complaints regarding dust, overspray or odour, and to ensure that suitable trained personnel are available to respond to complaints at all times.

Actions to be taken as soon as possible, following the receipt of a complaint, by the **Site Manager** include:

- ✧ Undertake a site inspection. Note activities taking place and the mitigation methods being used, take photographs for reference as appropriate. If the complaint was related to an event in the recent past, where possible, note any activities taking place at that time;
- ✧ Initiate any remedial action necessary, which may include a stop work period;
- ✧ Note the time and date of the complaint/s and (unless the complainant refuses to provide them) the identity and contact details of the complainant. Ask the complainant to describe the discharge:
 - Is it constant or intermittent?
 - How long has it been going on for?
 - Is it worse at any time of day?
 - Does it come from an identifiable source?
- ✧ Meteorological and dust data from the on-site station shall be downloaded;
- ✧ Note if the complaint has been referred to the NRC;
- ✧ As soon as possible (within 1 hour, where practicable), visit the area from where the complaint originated to ascertain if dust/odour is still a problem;
- ✧ If it becomes apparent that there may be a source of dust/odour other than from the facility, it is important to verify this. Photograph the source and emissions;
- ✧ As soon as possible after initial investigations have been completed, contact the complainant to explain any problems found and remedial actions taken. Initiate a damage assessment if required; and
- ✧ If necessary, update any relevant procedures to prevent any recurrence of problems and record any remedial action taken.

11.2 Response Procedure

Following the receipt of the complaint, the following actions will be undertaken:

- ✧ Complete the appropriate complaint form. Example forms are attached as Appendices C and D;
- ✧ Advise the Site Manager and the NRC within 48 hours that a complaint has been received, what the findings of the investigation were, and any remedial action taken;

- ✧ Advise site personnel as soon as is practicable that a complaint has been received, what the findings of the investigation were, and any remedial action taken; and,
- ✧ Call or visit the complainant to update them on the actions taken and to check that the issue has been resolved.

12.0 Contact Details

Internal contacts for the site in the event of an emergency are provided in Table 10 and Table 11 below.

Table 10: Internal Environmental Emergency Contact Details				
Role	Name	Organisation	Phone	Email
Site Manager	TBC	TBC	TBC	TBC

Table 11: External Contact Details				
Role	Name	Organisation	Phone	Email
Consents Compliance Team	TBC	Northland Regional Council	TBC	TBC
Dust and Weather Monitor Service and Maintenance	TBC	TBC	TBC	TBC

13.0 References

Ministry for the Environment. (2016). *Good Practice Guide for Assessing and Managing Odour*. Available at www.mfe.govt.nz.

Ministry for the Environment. (2016). *Good Practice Guide for Assessing and Managing Dust*. Available at www.mfe.govt.nz.

Appendix A: Daily Log Form

Toolbox Talk													
Item	Comments												
Scope of work for the day. Identify dust or odour generating tasks.	<i>Details:</i>												
What is the current and forecast wind speed? Are high risk conditions occurring or forecast for dust and overspray? What mitigation measures are proposed? <i>3 m/s = 5.8 knots</i> <i>5 m/s = 9.7 knots</i> <i>7.5 m/s = 14.5 knots</i> <i>10 m/s = 19.4 knots.</i>	<i>Tick all that apply:</i> <table border="1"> <tbody> <tr> <td><5 m/s ☐</td> <td>am ☐</td> <td>pm ☐</td> </tr> <tr> <td>5 to 7.5 m/s ☐</td> <td>am ☐</td> <td>pm ☐</td> </tr> <tr> <td>>7.5 m/s ☐</td> <td>am ☐</td> <td>pm ☐</td> </tr> <tr> <td>>10 m/s ☐</td> <td>am ☐</td> <td>pm ☐</td> </tr> </tbody> </table> <i>Mitigation measures:</i>	<5 m/s ☐	am ☐	pm ☐	5 to 7.5 m/s ☐	am ☐	pm ☐	>7.5 m/s ☐	am ☐	pm ☐	>10 m/s ☐	am ☐	pm ☐
<5 m/s ☐	am ☐	pm ☐											
5 to 7.5 m/s ☐	am ☐	pm ☐											
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>10 m/s ☐	am ☐	pm ☐											
What is the current and forecast wind direction (blowing from)? Orange highlighted boxes are higher risk.	<i>Tick all that apply:</i> <table border="1"> <tbody> <tr> <td>S ☐</td> </tr> <tr> <td>SW ☐</td> </tr> <tr> <td>W ☐</td> </tr> <tr> <td>NW ☐</td> </tr> <tr> <td>N ☐</td> </tr> <tr> <td>NE ☐</td> </tr> <tr> <td>E ☐</td> </tr> <tr> <td>SE ☐</td> </tr> </tbody> </table>	S ☐	SW ☐	W ☐	NW ☐	N ☐	NE ☐	E ☐	SE ☐				
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NE ☐													
E ☐													
SE ☐													
What is the current condition of the site?	Clean ☐ Needs a Clean ☐												
Are there other operators on the same vessel?	Y ☐ N ☐ N/A ☐ <i>Method of control of application rates:</i>												

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Toolbox Talk	
Item	Comments
How will coating application rates be controlled for compliance with consent conditions?	
Daily Observations	
Are there any signs of dust or overspray going beyond the site boundary as a result of site activities?	Y ☐ N ☐ N/A ☐ <i>Details:</i>
Were additional inspections, restrictions or mitigation measures implemented as a result of site observations?	Y ☐ N ☐ N/A ☐ <i>Details:</i>
Note any control equipment malfunctions (and remedial actions taken as appropriate).	<i>Details:</i>
Note any unusual on-site activities today.	<i>Details:</i>
Note any complaints received or community feedback.	<i>Details:</i>
Coating Used	<i>Type, volume:</i>
Garnet Used	<i>Volume:</i>

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Appendix B: Odour Intensity Scale

Scale of Odour Intensity		
No.	Intensity Level	Description
0	No odour	No odour.
1	Very weak	Odour is difficult to smell and there is doubt as to whether the odour is actually present. The character cannot be discerned.
2	Weak	An odour is discernible, and the observer is just able to define its character.
3	Distinct	The odour is present, and the character/source of the odour is easily apparent to the assessor.
4	Strong	The odour has a strong intensity but is not at the point which causes discomfort to the assessor.
5	Very strong	The odour is sufficiently strong enough for you to consider leaving the area to avoid exposure, however it is at a level in which the assessor can stay for a period.
6	Extremely strong	The odour is exceptionally strong and may make you feel nauseous or require you to leave the area immediately. Observer experiences clear relief when distanced from the odour.

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Appendix C: Dust Complaints Records

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DUST COMPLAINT & ASSESSMENT FORM

PART A: Complaint Details

Date: _____	Time: _____	Complaint Received By: _____
Name: _____		Address: _____
Contact phone numbers: _____		Possible source: _____
Anonymous: Y/N _____		Is dust occurring now? _____
Complaint details (include impacts/effects experienced by complainant): _____		

PART B: Complainant Location Assessment

Date: _____	Time: _____	Assessors Name: _____
Person spoken to at complaint location: _____		Reason for investigation: COMPLAINT/PROACTIVE
Complaint details (include impacts/effects experienced by complainant): _____		

INITIAL IMPRESSIONS:	Type of dust _____
Time of the initial impression: _____	
Any visible dust deposits: Y/N _____	Plume width (if known): _____

VISIBLE DUST DEPOSITS

Describe approximate quantities and extent

When was surface last cleaned? _____	Frequency of cleaning: _____
Describe the appearance of the deposits:	
Colour _____	Any odour _____
Shape _____	Water soluble _____
Size _____	Other _____
Crystalline or powdery _____	
Hard, soft _____	

Weather Data (see over)

Wind direction: _____
Wind velocity: _____
Cloud cover: _____
Temperature: _____
Rainfall in past 24 hrs: _____

Photos Taken: Y/N _____ Samples taken Y/N _____

Diagram/description of where photos were taken.

Diagram/description of where samples were taken:

Sample collection: Use a small paintbrush (clean) to sweep samples of the dust onto a sheet of paper and then into a clean plastic bag. At least half a teaspoonful will be required for analysis. Lesser amounts may be collected on strips of clear cello tape, which should then be stuck onto sheets of clear plastic to preserve the samples. Label all samples and record date, time, location, etc on a separate sheet of paper if required.

DRAFT

MINISTRY OF BUSINESS, INNOVATION AND EMPLOYMENT - AIR QUALITY MANAGEMENT PLAN
- NORTHLAND SHIPYARD AND DRY DOCK FACILITY AT MARS DEN POINT, WHANGĀREI HARBOUR

Based on your assessment on this occasion, which of the following applies:

- ☐ I did not find any dust
☐ I did find dust and consider it would not be objectionable at any location for any duration or frequency
☐ I did find dust and consider it would be objectionable if it became continuous
☐ I did find dust and consider it would be objectionable if it occurred on a regular or frequent basis
☐ I did detect dust and consider it to be objectionable even in periods of short duration.

FINAL CHECKLIST

- ☐ Upwind assessment completed. Record details below. If not, detail reason: _____
☐ Aerial photo/sketch showing location of assessment and upwind assessment attached
☐ Are there potential witness statements to obtain YES/NO

REMARKS

PART C: Off-site dust and 360° assessment

Assess the dust upwind of the suspected source and if possible conduct a 360° sweep around the source assessing the odour at different points

OTHER POTENTIAL SOURCES

Check for road works, ploughing, construction activities, burn-offs, unsealed roads, unsealed sites

Time: _____

Site 1:

Wind direction: _____ Wind strength: _____ Wind stability: _____ GPS Loc: _____
Visible dust: _____ Description of dust: _____
Comment: _____

Site 2:

Wind direction: _____ Wind strength: _____ Wind stability: _____ GPS Loc: _____
Visible dust: _____ Description of dust: _____
Comment: _____

Site 3:

Wind direction: _____ Wind strength: _____ Wind stability: _____ GPS Loc: _____
Visible dust: _____ Description of dust: _____
Comment: _____

Diagram of Suspected source, dust assessment sites and dust plume:



COMMENTS

PART D: Source On-site Investigation

If source of dust identified, visit site, identify yourself and show warrant. Explain the findings of your investigation to staff.

Date: _____ Time: _____ Source Identified: _____
Staff spoken to: _____ Position: _____
Staff contact phone number: _____
Current site operations: _____
Reason/explanation given for dust: _____
Other Comments: _____

Monitoring results/samples/other records

Site Sketch (If Required)

SIGNED BY ASSESSOR _____

DATE: _____

PART E: Dust Reference Sheet

Definitions

Objectionable

The term objectionable is the term used in consent conditions and is an ingredient of any subsequent enforcement action. It is a subjective term and is open to interpretation. There is guidance from case law which defines objectionable as: unpleasant or offensive or repugnant; open to objection or undesirable or disapproved of; noxious or dangerous. A test will be applied by the court that the term objectionable will be as it applies to "the minds of a significant cross section of reasonable people in the community". The assessor must bear this test in mind when completing their assessment.

Frequency

How often an individual is exposed to dust nuisance events

Intensity

As indicated by dust quantity/concentration and the degree of nuisance

Duration

The length of the particular dust event

Character

How objectionable the dust is, having regard to the nature of the dust

Land Beaufort Wind Scale

B. No.	Description	How to Recognise
0	Calm	Smoke rises straight up
1	Light Air	Smoke drifts
2	Light Breeze	Wind felt on face; leaves rustle
3	Gentle Breeze	Flags flap; twigs move all the time
4	Moderate Breeze	Papers blow; small branches move
5	Fresh Breeze	Small trees sway
6	Strong Breeze	Large branches move, wind whistles
7	Near Gale	Whole trees sway

Measuring Temperature

Use descriptions below or obtain local meteorological data, especially temperature from websites such as www.metservice.govt.nz

Cold
Cool
Mild
Warm
Hot

Measuring Cloud Cover

Okta No.	Description
0	Clear Sky
1	Sunny
2	Mostly sunny
3	
4	Half the sky is covered in cloud
5	
6	Mostly cloudy
7	Considerable cloudiness
8	Overcast
F	Fog / Mist

During the day the sun is always shining, so the amount of sunshine reaching the ground depends on the amount and duration of any cloud cover. The amount of cloud cover is usually given in units called oktas. Each okta represents one eighth of the sky covered by cloud.

Appendix D: Odour Complaints Records

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ODOUR COMPLAINT & ASSESSMENT FORM

PART A: Complaint Details

Date: _____	Time: _____	Complaint Received By: _____
Name: _____	Address: _____	
Contact phone numbers: _____	Possible source: _____	
Anonymous: Y/N _____	Is odour occurring now? _____	
Complaint details (include impacts/effects experienced by complainant): _____		

PART B: Complainant Location Assessment

Date: _____	Time: _____	Assessors Name: _____
Person spoken to at complaint location: _____	Reason for investigation: COMPLAINT/PROACTIVE	
Complaint details (include impacts/effects experienced by complainant): _____		

INITIAL IMPRESSIONS:	Character: _____
Time of the initial impression: _____	Initial general hedonic tone: _____
Initial odour intensity: _____	Plume width (if known): _____

Odour samples every ten seconds. The time between the ten seconds is disregarded (interval method). Breathe normally rather than sniffing.

Intensity Character/notes			Intensity Character/notes		
1st min	0		6th min	0	
	10			10	
	20			20	
	30			30	
	40			40	
	50			50	
2nd min	0		7th min	0	
	10			10	
	20			20	
	30			30	
	40			40	
	50			50	
3rd min	0		8th min	0	
	10			10	
	20			20	
	30			30	
	40			40	
	50			50	
4th min	0		9th min	0	
	10			10	
	20			20	
	30			30	
	40			40	
	50			50	
5th min	0		10th min	0	
	10			10	
	20			20	
	30			30	
	40			40	
	50			50	

Start time: _____

Weather Data (Part C)

Wind direction:
Wind velocity:
Cloud cover:
Precipitation:
Temperature:

General Hedonic Tone

Record at the end of the survey as an overall impression

Based on your assessment on this occasion, which of the following applies:

- ☐ I did detect odour and consider it would not be objectionable at any location for any duration or frequency
- ☐ I did detect odour and consider it would be objectionable, if it became continuous
- ☐ I did detect odour and consider it would be objectionable if it occurred on a regular or frequent basis
- ☐ I did detect odour and consider it to be objectionable even in periods of short duration.

FINAL CHECKLIST

- ☐ Upwind assessment completed. Record details below. If not, detail reason: _____
- ☐ Aerial photo/sketch showing location of assessment and upwind assessment attached
- ☐ Are there potential witness statements to obtain YES/NO

REMARKS

PART C: Off-site odour plume and 360° assessment

Assess the odour upwind of the suspected source and if possible conduct a 360° sweep around the source assessing the odour at different points

Site 1:

Wind direction: Wind strength: Wind stability: GPS Loc:
Odour intensity: Odour character:
Comment:

Site 2:

Wind direction: Wind strength: Wind stability: GPS Loc:
Odour intensity: Odour character:
Comment:

Site 3:

Wind direction: Wind strength: Wind stability: GPS Loc:
Odour intensity: Odour character:
Comment:

Site 4:

Wind direction: Wind strength: Wind stability: GPS Loc:
Odour intensity: Odour character:
Comment:

Site 5:

Wind direction: Wind strength: Wind stability: GPS Loc:
Odour intensity: Odour character:
Comment:

Site 6:

Wind direction: Wind strength: Wind stability: GPS Loc:
Odour intensity: Odour character:
Comment:

OTHER POTENTIAL SOURCES: Note any other potential sources and any odour include character, intensity, hedonic tone

Diagram of Suspected source, odour assessment sites and odour plume:



PART D: Source On-site Investigation

If source of odour identified, visit site, identify yourself and show warrant. Explain the findings of your investigation to staff.

Date: _____	Time: _____	Source Identified: _____
Staff spoken to: _____		Position: _____
Staff contact phone number: _____		
Current site operations: _____		

Reason/explanation given for odour _____

Other Comments _____

Monitoring results/samples/other records _____

Site Sketch (if Required) _____

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PART E: Odour Reference Sheet

Definitions

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Intensity The strength of the odour (e.g. 3 'distinct')

Character What the odour smells like - describe the smell (e.g. fishy)

Hedonic Tone The degree to which an odour is perceived as pleasant or unpleasant (e.g. -4 'extremely unpleasant')

Scale of Intensity

6	Extremely Strong
5	Very strong
4	Strong
3	Distinct
2	Weak
1	Very weak
0	No odour

General Hedonic Tone

-4	Extremely unpleasant
-3	
-2	
-1	
0	Neutral
1	
2	
3	
4	Extremely pleasant

Measuring Temperature

Use descriptions below or obtain local meteorological data, especially temperature from websites such as www.metservice.govt.nz

Cold
Cool
Mild
Warm
Hot

Measuring Cloud Cover

Okta No.	Description
0	Clear Sky
1	Sunny
2	Mostly sunny
3	
4	Half the sky is covered in cloud
5	
6	Mostly cloudy
7	Considerable cloudiness
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During the day the sun is always shining, so the amount of sunshine reaching the ground depends on the amount and duration of any cloud cover. The amount of cloud cover is usually given in units called oktas. Each okta represents one eighth of the sky covered by cloud.

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3	Gentle Breeze	Flags flap; twigs move all the time
4	Moderate Breeze	Papers blow; small branches move
5	Fresh Breeze	Small trees sway
6	Strong Breeze	Large branches move, wind whistles
7	Near Gale	Whole trees sway

Odour character descriptors	
Code	Descriptor
1	Fragrant
2	Perfumy
3	Sweet
4	Fruity
5	Bakery (fresh bread)
6	Coffee-like
7	Spicy
8	Meaty (cooked)
9	Sea/marine
10	Herbal, green, cut grass
11	Bark-like
12	Woody, resinous
13	Medicinal
14	Burnt, smoky
15	Soapy
16	Garlic, onion
17	Cooked vegetables
18	Chemical
19	Etherish, anaesthetic
20	Sour, acrid, vinegar

Odour character descriptors	
Code	Descriptor
21	Like blood, raw meat
22	Rubbish
23	Compost
24	Silage
25	Sickening
26	Musty, earthy, mouldy
27	Sharp, pungent, acid
28	Metallic
29	Tar-like
30	Oily, fatty
31	Like gasoline, solvent
32	Fishy
33	Putrid, foul, decayed
34	Paint-like
35	Rancid
36	Sulphur smelling
37	Dead animal
38	Faecal (like manure)
39	Sewer odour
40	Other - please describe