IN THE MATTER OF	The Resource Management Act 1991
AND	
IN THE MATTER OF	An application by Lyttelton Port Company to discharge contaminants to air from coal stockpiles, coal transfer and loading within an area of approximately 23.5 hectares at Te Awaparahi Bay.
BETWEEN	**LYTTELTON PORT COMPANY** **Applicant**
AND	**CANTERBURY REGIONAL COUNCIL** **Consent Authority**

REPORT AND DECISION OF HEARING COMMISSIONER

John Iseli

24th August 2023

Heard on 19th to 21st July 2023 at Wigram Hotel

Representations and Appearances

Applicant:

Ms Jo Appleyard, Counsel
Mr Phil de Joux, Chief Corporate Affairs Officer, LPC
Mr Joe Smedley, Head of Container and Coal Terminal Operations, LPC
Mr Samuel Johnstone, GM Marketing and Logistics, BT Mining Ltd
Dr Nigel Newman, Geologist and Laboratory Analyst
Dr Perry Davy, Atmospheric Chemist
Mr Richard Chilton, Air Quality Consultant
Dr Lyn Denison, Health Risk Assessor
Mr Andrew Purves, Planner
Ms Stephanie Angove-Emery, Terrestrial Ecologist (evidence tabled)
Ms Olivia Johnston, Marine Biologist (evidence tabled)
Dr Leigh Bull, Ecologist (evidence tabled)
Mr Mike Copeland, Economist (evidence tabled)

Submitters:

Te Mana Ora
- Dr Cheryl Brunton, Medical Officer of Health
- Mx Lou Wickham, Air Quality Consultant
Mr Andrew Shaw (document tabled)
Mr Mark Penn (document tabled)

Section 42A Reporting Officers:

Ms Victoria Watt, Consents Planner, Environment Canterbury
Mr Andrew Curtis, Air Quality Consultant

Decision Summary

Consent to discharge contaminants to air is granted for a term of 20 years, subject to conditions. The conditions imposed are comprehensive and require additional mitigation and monitoring of the existing particulate matter discharge from the coal yard at Lyttelton Port.

BACKGROUND AND PROCEDURAL MATTERS

1. This is the report and decision of Hearing Commissioner John Iseli. I have been appointed by the Canterbury Regional Council (also known as **Environment Canterbury** or **ECan**) to hear and decide the application by Lyttelton Port Company (**LPC** or 'the applicant') pursuant to the Resource Management Act 1991 (**RMA** or 'the Act') for a resource consent to discharge contaminants to air from coal stockpiles, coal transfer and loading at Te Awaparahi Bay, Lyttelton Port ('the port').

2. LPC holds an existing air discharge permit for the proposed activity, CRC940431 (the 'existing consent') which expired on 19 February 2022. Because the current application was lodged more than six months prior to the existing resource consent expiring, the continued operation of the activity is provided for in accordance with section 124 of the RMA.

3. The Applicant seeks to continue the activities on the site previously authorised under resource consent CRC940431. In summary:

    a. The coal stockyard operates 24 hours each day, seven days per week. Since the coal storage and handling operation was established in 1976, the annual throughput has varied depending on overseas demand. Annual throughput has peaked at 2.5 million tonnes/year and is currently less than 1.5 million tonnes per year. A maximum throughput of 2 million tonnes per year is proposed, with further mitigation to be applied above 1.75 million tonnes per year.

    b. At present approximately 35 ships per year arrive at the port to load coal for export. The amount of coal taken by a ship varies from 38,000 to 65,000 tonnes. The time taken

to load the ship depends on the load rate and the amount of coal the ship is receiving, but usually takes no longer than three days.

c. The yard can accommodate up to 335,000 tonnes at any one time although in recent times it is in the order of 150,000 to 180,000 tonnes.

4. Coal is delivered to the stockyard by rail from the West Coast. The base of each coal wagon contains a trap door which opens and releases the coal into an underground hopper. Trains carrying up to 1,500 tonnes of coal typically take just over an hour to unload and take up to three hours to both unload from the train and place the coal on designated stockpiles. Coal is conveyed from the underground hopper to a gantry stacker. The majority of coal is taken from this initial coal stockpile by front-end loaders and redeposited on the other stockpiles beyond the reach of the stacker.

5. At any one time there are usually five stockpiles in the stockyard. The stockpiles range from 10,000 tonnes to 65,000 tonnes in size and up to 20m in height. Each stockpile contains a grade of coal ready for the destination market.

6. The ships receiving coal moor at Cashin Quay 1. The coal is loaded out to the ship in two ways. If accessible, the coal is reclaimed from the stockpiles using a bucket wheel reclaimer that runs east-west along rails, parallel to the gantry stacker. Most coal cannot be reached by the bucket reclaimer and instead is loaded out using the front-end loaders. A bulldozer pushes coal down the side of the stockpile so it can be picked up safely by the loader. The front-end loaders place the coal into one of the three load-out hoppers and onto the load-out conveyor.

7. The coal load-out rate onto a ship is typically approximately 1,100 tonnes per hour but can be up to a maximum of 1,650 tonnes per hour.

8. Based on the outcome of consultation with local iwi, the applicant has requested that consent be granted for a duration of 20 years.

9. Prior to the hearing, a report was produced on behalf of the BOPRC pursuant to section 42A by Ms Victoria Watt, ECan Consents Planner. This ‘s42A Report’ included a technical review of the application by Mr Andrew Curtis, Air Quality Consultant.

10. During the hearing, in accordance with my directions, conferencing occurred between planning and air quality experts for LPC, ECan and Te Mana Ora. This caucusing refined areas of agreement and disagreement concerning suggested conditions of consent.

11. The hearing to decide the application occurred in Christchurch on 19th to 21st July 2023. The hearing was adjourned on the 21st July to allow the applicant to provide a reply in writing by 31st July 2023.

SITE VISITS

12. I visited affected areas adjacent to the coal stockpiles during the afternoon of Wednesday 19th July. These areas included Gilmour Terrace, the Timeball Station and the Windy Point viewing platform above the stockpiles. On the afternoon of Thursday 20th July I visited the site and viewed the areas of relevance, accompanied by Mr Darrin Rhodes of LPC. I was shown the water cart and given a demonstration of the sprinkler system used to apply water to the stockpile area. Water was not being routinely applied at the time of the visit due to the damp winter conditions.

NOTIFICATION AND SUBMISSIONS

13. The application was publicly notified, as requested by LPC. Specific notice was served on the following:
    a. Te Rūnanga o Ngāi Tahu - Te Ao Tūroa;
    b. Te Rūnanga o Rāpaki c/-Mahaanui Kurataiao Limited;
    c. Community & Public Health Public Health Unit (Te Mana Ora);
    d. Christchurch City Council District Planner; and
    e. Owners and occupiers of properties centring on Gilmour, Reserve and Randolph Terraces and Sumner Road. These properties were identified as either having previously been affected by coal dust or could be potentially affected by coal dust.

14. A total of ten submissions were received within the specified time period in the RMA. Five submitters requested to be heard. The concerns expressed by submitters are detailed in the s42A report. I have read the submissions and taken the matters raised into account in reaching a decision on the application.

THE HEARING

15. The hearing was conducted over three days and I have heard and read a substantial amount of evidence and submissions from the parties. I do not intend to detail that material here. Rather, my focus is on the key matters in contention between the parties. My determination regarding evidence and submissions received in relation to these key matters will be detailed in the evaluation of effects. Copies of written material provided at the hearing are publicly available.

ASSESSED EFFECTS

16. Based on the application documents and all the submissions and evidence received, I determine that the following key actual and potential effects on the environment require assessment:
    (a) Nuisance effects of coal dust;
    (b) Adverse effects of coal dust on human health;
    (c) Ecological effects;
    (d) Effects on cultural values; and
    (e) Positive effects of the proposal.

17. I record that I have considered all these actual and potential effects in relation to the proposal.

18. In addition, submitters have raised the issue of alternative mitigation options, including enclosing the stockpile area. I have considered the various alternative options as part of the evaluation under section 105 of the Act.

ASSESSMENT OF THE APPLICATION

19. In assessing the application, I have considered all the application documentation and assessments, the s42A Report and supporting technical review, all submissions and evidence received. Following expert caucusing during the hearing, the remaining areas of disagreement are limited. My evaluation focusses on the key matters in contention.

Status of the Application

20. The starting point for my assessment of the application is to determine the status of the proposed activity.

21. Ms Watt concluded that the discharge of coal dust from the stockpiles at the port is classified as a discretionary activity under Rule 7.63 of the Canterbury Air Regional Plan (**CARP**). Mr Purves for the applicant accepted her analysis.

22. I determine that the application is to be considered as a discretionary activity.

Statutory Considerations

23. In terms of my responsibilities for giving consideration to the application, I am required to have regard to the matters listed in sections 104, 104B and 105 of the Act.

24. In terms of section 104(1), and subject to Part 2 of the Act, which contains the Act's purpose and principles, I must have regard to-

(a) Any actual and potential effects on the environment of allowing the activity;
(ab) Any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity;
(b) Any relevant provisions of a national environmental standard, other regulations, a national policy statement, a New Zealand coastal policy statement, a regional policy statement or a proposed regional policy statement, a plan or proposed plan; and
(c) Any other matters the consent authority considers relevant and reasonably necessary to determine the application.

25. Section 104(2) states that when forming an opinion for the purposes of section 104(1)(a), I may disregard an adverse effect of the activity on the environment if a national environmental standard or the plan permits an activity with that effect. This is referred to as consideration of the 'permitted baseline'. I determine that there are no relevant permitted baseline considerations in this case.

26. In terms of section 104B for a discretionary activity, I may grant or refuse the application, and if granted I may impose conditions under section 108.

27. In terms of section 105, when considering section 15 (discharge) matters, I must, in addition to section 104(1), have regard to-

    (a) The nature of the discharge and the sensitivity of the receiving environment to adverse effects; and
    (b) The applicant's reason for the proposed choice; and
    (c) Any possible alternative methods of discharge, including discharge to any other receiving environment.

28. I consider each of these sections of the RMA in reaching my decision on the application.

Section 104(1)(a) Actual and potential effects on the environment

Nuisance Effects of Coal Dust

29. Deposition of coal dust has potential to cause visible soiling of properties. The existing consent has required LPC to maintain numerous dust deposition gauges and undertake monthly monitoring of the rate of coal dust deposition. It is proposed that such deposition monitoring would continue at a reduced number of sites focussing on the most affected area, supplemented by additional suspended particulate matter monitoring.

30. Several submitters have raised concerns regarding the nuisance effects of deposited coal dust. Mr Shaw, who resides at 4 Randolph Terrace, noted the visual impact of coal dust and the need for regular house cleaning. He also expressed concerns regarding potential corrosive effects.

31. Mr and Mrs Penn, residents at 2 Gilmour Terrace for 33 years, tabled evidence that noted that coal dust soiling has varied over the years but was particularly noticeable in 2010. This coincided with peak coal throughput at the port, in the order of 2.5 million tonnes per year. The Penns noted that they hose down the east and south walls of their house every 3-4 weeks during October to March and undertake an annual wash down with soap and water. They suggested additional mitigation measures to control coal dust emissions.

32. Some submitters requested that an annual house and roof clean be undertaken by LPC, as a condition of consent.

33. Ms Watt's s42A report outlined the complaints history relevant to the discharge. The report noted that 16 coal dust complaints were received by ECan between 2010 and 2020. Only one incident was recorded during the last 5 years. That incident in February 2021 involved identification of coal dust on a deck attached to a dwelling, after analysis of deposits by Verum Group. The outcome of that investigation is unclear. Mr Chilton stated that coal dust complaints received in the 2010 to 2012 period coincided with peak coal throughput (up to 2.5 million tonnes/year) and wind conditions that would place the complainant's location downwind.

34. I am conscious that complaint records do not always provide a reliable indication of adverse effects. For example, Mr Shaw considers that he has been affected by dust deposition, even though he never officially complained.

35. Dr Newman of Verum Group stated that he had responded to the majority of coal dust complaints received and had undertaken numerous investigations, on behalf of LPC, to determine the proportion of coal dust in samples. He considered that visual observations of reported dust deposits rarely included obvious coal dust. Dr Newman's evidence was that few of the incidents investigated were determined to have a significant coal dust component. He observed that other contributing factors, such as road works or construction sites, were often present.

36. The coal dust monitoring results presented by Mr Chilton showed that deposition rates in residential areas in recent years were mainly below the limit set by the current air consent (2.4g/m^2/30-days coal dust) but have exceeded it on rare occasions. He stated that the highest deposition rates have tended to occur in years when coal imports were high. The deposition rates were also highest from October to March, when the weather is dryer and strong winds are more frequent from the northeast.

37. Mr Chilton stated that a detailed analysis was carried out to examine whether there is a relationship between coal dust deposition and the rate of coal imports. He considered that this analysis showed a strong correlation for the nearest residential monitoring sites, from

which he determined that a coal throughput of greater than 1,750,000 tonnes per annum could be used as a threshold for the introduction of additional dust mitigation measures.

38. There was some debate between the air quality experts regarding the appropriate dust deposition limit to apply to any consent. Mr Curtis considered that the existing consent limit is "quite lenient" and that a coal dust deposition limit of $2g/m^2/30$ days would be appropriate if consent is granted. He noted that the Ministry for the Environment had suggested a total dust deposition limit of $2g/m^2/30$ days could be applied to sensitive sites. Mr Curtis further noted that the NSW Environmental Protection Authority advises that the source contribution from any source should be less than 50% of the guideline. Given a commonly applied dust deposition guideline of $4g/m^2/30$ days, he considered that a coal dust deposition limit of $2g/m^2/30$ days would be appropriate.

39. In response to questioning, Mr Chilton referred to research[1] that indicated that deposition rates of more than $80mg/m^2/day$ ($2.4g/m^2/30$ days) have potential to cause complaints. In the right of reply, LPC proposed that the lower limit of $2g/m^2/30$ days be included in consent conditions as an investigative trigger level, with corrective actions to reduce dust emissions implemented if the trigger is exceeded. I determine that this approach is acceptable to ensure that coal dust deposition at the most affected residences is adequately controlled.

40. Additional mitigation and monitoring measures have been proposed to control PM emissions from the coal yard. The additional mitigation primarily involves replacement of the sprinkler tower network with fog cannons when throughput exceeds 1.75 million tonnes per year coal. Continuous monitoring of PM_{10} at the coal yard boundary is also proposed, using a nephelometer with trigger levels set to enable timely response to elevated PM concentrations downwind of the stockpiles. I find that this type of monitoring is consistent with good practice for such large scale dust discharges and is expected to result in an improvement to dust control at the site.

41. A second PM_{10} nephelometer is now proposed to be operated for a year at a site nearby the most affected dwellings. The evidence is that this second monitor will assist in determining impacts at adjacent dwellings and in setting suitable trigger levels for the proposed nephelometer at the coal yard boundary.

[1] Vallack, H.W. and Shillito, D.E. 1998. Suggested Guidelines for Deposited Ambient Dust. *Atmospheric Environment,* Vol. 32, No. 16, pp. 2737—2744.

42. In response to my questions, Mr Purves presented a revised condition detailing the methodology LPC would use to respond to any complaints of coal dust soiling from residents. The procedure includes the following tools: visual inspection, examination of supplied photographs, review of meteorological data, dust gauge monitoring results, nephelometer monitoring results, and swab tests on the exterior of the house. This process would be used to determine when LPC will engage a company to undertake cleaning of the exterior of any house where there is evidence of soiling caused by coal dust. I determine that, subject to minor amendments, the proposed condition is appropriate.

43. A Dust Management Plan (DMP) is proposed, detailing mitigation, monitoring and complaints response procedures. An appropriate process for certification of the DMP by ECan has been added by Mr Purves to the relevant proffered condition. Based on the evidence, I expect that the proposed mitigation, site management and monitoring will be sufficient to prevent nuisance soiling of residential properties by coal dust.

Adverse Effects of Coal Particles on Human Health

44. The discharge of coal dust includes a component of fine particles, described as PM_{10} and $PM_{2.5}$. These particles have potential to cause adverse health effects and have been the focus of the assessment of health effects of the discharge from the coal yard. In 2021 the World Health Organisation (**WHO**) published new air quality guidelines for PM_{10} and $PM_{2.5.}$ These guidelines and supporting information have been discussed in the evidence of Dr Denison. The assessment has been updated to take into account the 2021 WHO guidelines.

45. The discharge includes a small component of Respirable Crystalline Silica (**RCS**). Potential effects of RCS were discussed in the evidence of Dr Denison. The air quality experts were in agreement that the health effects of RCS at affected dwellings is likely to be negligible. I accept that evidence.

46. Mr Chilton described the ambient monitoring programme for PM_{10} and $PM_{2.5}$ undertaken by LPC over the summer months of 2020/2021. The monitoring focused on the community location assessed as being representative of the most impacted area (the property at 1 Gilmore Terrace). This location was identified using dispersion modelling.

47. The ambient monitoring programme was carried out from 25 December 2020 to 3 May 2021. Mr Chilton explained that this period was when dust emissions from the coal stock yard were expected to be greatest, as confirmed by dust deposition monitoring and complaint records. The monitoring was undertaken by Mote Limited on behalf of LPC using Beta Attenuation Monitors (BAMs – one monitor for PM_{10} and another for $PM_{2.5}$), which are reference standard instruments.

48. Mr Chilton considered that the monitoring period is expected to give rise to conservative results as it coincided with a relatively high frequency of northeasterly wind conditions (blowing generally from the stockpiles to the monitor) and also a period of lower-than-average monthly rainfall. However, I note that coal throughput during the ambient monitoring period was well below the 2 million T/year limit proposed and the 1.75 million T/year limit sought for additional mitigation. Overall, I find that the monitoring results are not conservative but are indicative of the approximate magnitude of PM concentrations likely to occur if consent is granted, bearing in mind the mitigation now proposed.

49. As part of the 2020-2021 ambient monitoring programme, source-apportionment monitoring was undertaken by GNS to quantify the contribution of different source types to measured PM_{10} and $PM_{2.5}$ concentrations. This helps quantify the overall contribution of coal dust to measured ambient PM concentrations. This monitoring is discussed in the evidence of Dr Davy. He found that on average 27% of the PM_{10} particles and 7% of the $PM_{2.5}$ particles measures at the Gilmore Terrace site consisted of coal dust.

50. Mr Chilton stated that the coal dust contribution to PM_{10} at the monitoring site, measured during the 2020-2021 summer period of approximately 4 months, is estimated to be approximately 3.1µg/m^3. Taking into account the lower expected contribution from the coal yard emissions during the winter period (wetter and less windy conditions), Mr Chilton stated that the contribution from the coal stockpiles to PM_{10} concentrations in the most affected area is expected to be in the order of 1.5 µg/m^3 (annual average).

51. Background ambient PM concentrations in the Lyttelton area require consideration, in order to estimate cumulative PM_{10} and $PM_{2.5}$ concentrations. In response to questions, Mr Chilton discussed ambient PM_{10} monitoring undertaken in Lyttelton by ECan in 2003 and 2016. He stated that the monitoring undertaken in 2003 was indicative only, using four low-volume samplers every third day during June. Highest concentrations of approximately

45µg/m^3 (24-hour average) were measured at the centre of the township, with recorded concentrations in the more elevated periphery locations in the order of 20-25 µg/m^3 (24-hour average). Mr Chilton noted that the 2016 monitoring was located to assess the impact of vehicle and port emissions and was not expected to be representative of typical concentrations at the most impacted area around Gilmore Terrace.

52. Based on the limited monitoring data available for Lyttelton, Mr Chilton estimated that total PM_{10} concentrations in the Gilmore Street area are expected to be below the WHO PM_{10} guideline of 15 µg/m^3 (annual average). Bearing in mind the steep topography of the harbour basin and the elevated location of the most affected receptors, I accept his evidence in this regard.

53. Mr Chilton concluded that PM_{10} and $PM_{2.5}$ concentrations, including the contribution from coal yard emissions, are predicted to be within the relevant WHO 2021 guidelines. Dr Denison, a health risk assessment expert, relied on the evidence of Mr Chilton in reaching her conclusions regarding health risks associated with the discharge. She also took into account the 2020-21 ambient monitoring data collected at Gilmore Terrace.

54. Mx Wickham, air quality expert engaged by Te Mana Ora, noted that the Gilmore Terrace ambient monitoring was only for a four month period, not a full year, and indicated a significant contribution from the coal yard discharge to total PM_{10} and $PM_{2.5}$ concentrations. They considered that the evidence is uncertain regarding long-term PM concentrations at the affected areas. Mx Wickham recommended that the discharge should be limited using good practice dust control measures and that, if consent is granted, ambient PM_{10} and $PM_{2.5}$ monitoring using a reference instrument should occur for at least a further full year.

55. Dr Denison stated that the WHO 2021 guidelines have been set at levels to protect against the most sensitive health outcomes and most vulnerable groups within the population. Her evidence was that "compliance with the guidelines as defined by WHO means that there is minimal or zero health risk associated with that exposure"[2]. She concluded that the monitoring data from the Gilmore St site demonstrates compliance of PM_{10} and $PM_{2.5}$ with the 2021 WHO guidelines, indicating that coal stockyard emissions are not having an adverse impact on the health of the local community.

[2] Evidence of Dr Denison, para 76.

56. Dr Denison disputed the verbal comment of Mx Wickham that long term (annual average) health impacts of PM_{10} and $PM_{2.5}$ are an order of magnitude higher than short term (24-hour) health effects. She explained that the difference in relative risks are calculated per 1µg/m^3 unit of PM_{10} and are not based on an absolute value. The order of magnitude assumption of Mx Wickham assumes equal daily and annual average concentrations, whereas in fact annual averages are much less than daily averages. Dr Denison reiterated that the WHO 2021 guideline definition indicates that there is minimal risk of health effects below the guideline levels.

57. The ambient monitoring at Gilmore Terrace and the evidence of Dr Davy indicate that the contribution of the coal yard discharge to $PM_{2.5}$ concentrations is relatively small. In terms of the significance of effect, Dr Denison considered that the annual average PM_{10} contribution from the coal stockyard of well below 3µg/m^3 is small relative to the WHO guideline of 15 µg/m^3 (annual average). I accept the evidence of Dr Denison in this regard, but also accept the evidence of Mx Wickham that there is no safe threshold for PM_{10} and $PM_{2.5}$ and that it is therefore appropriate to minimise source contributions to the extent practicable.

58. Mr Curtis advised that he accepts Dr Denison's evidence and considers that a Health Risk Assessment is no longer required. He considered that it is unlikely that 24-hour average PM_{10} concentrations at affected areas would exceed the WHO guideline.

59. I find that the mitigation and monitoring proposed are expected to achieve effective PM control that is generally consistent with good practice for discharges of this type. The evidence of Mr Chilton is that fog cannons are likely to provide improved mitigation, as would the use of surfactants and a second water cart under specified conditions. I accept that the boundary monitoring of PM_{10} with trigger levels requiring reactive site management is appropriate and is likely to achieve improved emissions control during strong easterly wind conditions. Subject to the comprehensive conditions now proferred, I consider that any adverse health effects of fine particulate matter discharged from the site are expected to be minor.

Ecological Effects

60. I have reviewed the evidence of Ms Angove-Emery (Terrestrial Ecologist), Ms Johnston (Marine Biologist) and Dr Bull (Ecologist). They concluded that the ecological effects of the existing coal dust discharge from the port are less than minor and are expected to continue to be so if consent is granted on the terms proposed. Their expert opinion was not disputed by the parties.

61. I accept the evidence that the discharge of coal dust is not expected to cause any adverse ecological effects that are more than minor.

Effects on Cultural Values

62. The proposed activity is in the rohe of Te Hapū o Ngāti Wheke (Rāpaki) Rūnanga. Based on information held by ECan, Te Awaparahi Bay is within a Rūnanga Sensitive Area, with the cultural significance being identified as Ngā Tūranga Tūpuna. The site is also located adjacent to the Banks Peninsula Coastal Statutory Acknowledgement area, and a Mahinga Kai sensitive area for the local Rūnanga.

63. The Applicant informed Te Hapū o Ngāti Wheke in August of 2020 of the need to renew the discharge to air permit for the coal stockyard and sought advice on how best to engage. After a site visit at the beginning of October 2020, Ngāti Wheke determined a cultural impact assessment report was not required. Rather, a process was proposed whereby the Manawhenua Advisory Group (**MAG**) contributed directly to the scope and nature the assessment of effects process early in the planning stages. The process was assisted by an appointed MAG coordinator. The outcome of this engagement resulted in agreement that the applicant would seek a 20-year consent duration and volunteer a consent condition to enable the collective consideration of monitoring results via the MAG at least annually.

64. The terms agreed with Ngāti Wheke have been proffered by the applicant. On this basis Te Hapū o Ngāti Wheke chose not to submit on the consent application. I consider that effects on cultural values have been appropriately addressed during the consent application process.

Positive Effects

65. Mr Copeland concluded that the renewal of the air discharge permit would enable the residents and businesses of Christchurch and the West Coast to provide for their economic well-being; is consistent with the efficient use and development of natural and physical resources; and will provide opportunities for economic growth and employment. His evidence was that the value to LPC of its investment in the coal stockyard is significant in terms of either LPC's investment in the facilities ($109 million) or the foregone future earnings of the coal stockyard if it was forced to close ($2.9 million per annum on the basis of the forecast financial returns in the year ending 30 June, 2023).

66. The economic assessment of Mr Copeland was not disputed by the parties and I accept his conclusions. I recognise that there are significant economic benefits associated with ongoing coal storage and transfer operations at the port. I have taken these positive effects into account in evaluating the proposal under section 104(1) of the Act.

Other Matters

Fire Risk

67. The issue of fire risk associated with the coal stockpiles was raised by Te Mana Ora. The evidence of Mr Johnstone was that the large majority of coal delivered to the port is coking coal. He stated that coking coal is significantly less combustible than thermal coal. Mr Smedley stated that the thermal coal throughput is currently in the order of 30,000 to 66,000 tonnes per year. Mr Johnstone noted that measures can be applied to prevent the combustion of thermal coal stockpiles, and this is routinely achieved for mining operations on the West Coast.

68. Ms Appleyard submitted that as a functioning port with many different hazardous activities occurring across the site, including other operations which also present (arguably greater) fire risks, LPC has procedures in place to manage fires across the port. Given the volume of thermal coal stored at the port and the lack of coal fire incidents during the existing consent term, I conclude that LPC has appropriate measures in place to control fire risk associated with coal storage and handling at the site.

69. Te Mana Ora also questioned the potential for coal dust deposition within the nearby Urumau Reserve to increase fire risk. Mr Chilton placed the risk of coal dust generating a fire in the reserve within context of the existing combustible material associated with the pine trees. He stated that the amount of coal dust deposited is negligible relative to the dry biomass under the pine trees. I conclude that no credible evidence has been provided that the discharge is likely to significantly increase the existing fire risk associated with Urumau Reserve during the summer period.

Effects on Climate Change

70. Ms Appleyard submitted that the transitional provisions of the RMA relating to the climate change amendments prevent me from taking into account the effects of the discharge on climate change. She stated that the effect on climate change is not an "other matter" that the consent authority can take into account under s 104(1)(c) of the Act. In any case, she considered that effects on climate change, such as burning coal in other countries, are too remote to be considered a relevant factor to be taken into account when determining the outcome of an application under s 104.

71. I accept the submissions of Ms Appleyard that effects on climate change are not a relevant consideration in this case.

Corrosion Effects

72. Mr Shaw expressed concern regarding potential corrosive effects of coal dust on paint and iron surfaces, which could shorten the design life of building materials. In response, Mr Chilton stated that he is not an expert on material corrosivity effects that may arise from coal dust. Notwithstanding this, he was not aware of coal dust giving rise to corrosive effects for discharges of this nature. It is accepted that the Port is a coastal location that has exposure to sea spray which can cause corrosive effects. The source apportionment work described by Dr Davy identified marine aerosols (sea salt) as contributing to approximately 37% of PM_{10} concentrations measured at the most affected residential area.

73. Taking into account the coal dust deposition limit proposed, the PM_{10} and deposited dust trigger levels also proposed, and the soiling investigation and house cleaning procedure detailed by Mr Purves, I find that corrosive effects of coal dust are not likely to be significant.

Section 104(1)(b) National Environmental Standards

74. The National Environmental Standards for Air Quality (**NESAQ**) include regulations applicable to the processing of resource consents. The Lyttelton area has not been designated as a polluted airshed in terms of the NESAQ requirements. I accept the evidence that the limitations specified in the NESAQ are unlikely to be breached by the discharge and find that the NESAQ does not prevent granting of consent in this case.

Section 104(1)(b) Relevant objectives and policies

75. Ms Watt has assessed the application against the relevant objectives and policies of the regional planning instruments, specifically the Canterbury Regional Policy Statement (**RPS**), the CARP and the Mahaanui Iwi Management Plan 2013.

76. Ms Watt concluded that, based on the mitigation proffered by the applicant, the proposal is generally consistent with the objectives and policies of the RPS , CARP and Mahaanui Iwi Management Plan. The parties did not dispute her conclusions regarding the relevant planning instruments.

77. Mr Purves examined the planning instruments identified by Ms Watt. In addition, he considered the provisions of the NZ Coastal Policy Statement (**NZCPS**) and the Coastal Plan. Overall, he agreed with the assessment provided by Ms Watt. He concluded that based on the further commitments to manage coal dust emissions, and on evidence and technical assessments prepared in support of the application, the continuance of this discharge is consistent with (and is certainly not contrary to) the objectives and policies contained in the relevant planning documents.

78. With regard to the Best Practicable Option (**BPO**), Mr Purves noted that Policy 6.13 of the CARP seeks to minimise the cumulative effects of discharges of contaminants into air by requiring resource consents to apply the best practicable option. The BPO is an examination of the best method for preventing or minimising adverse effects on the environment having regard, among other things, to:

    (a) the nature of the discharge or emission and the sensitivity of the receiving environment to adverse effects;

(b) the financial implications, and the effects on the environment, of that option when compared with other options;
(c) and the current state of technical knowledge and the likelihood that the option can be successfully applied.

79. Mr Purves stated that the BPO is the optimum combination of methods (a)-(c) to prevent or minimise adverse effects to the greatest extent practicable. He considered that in relation to this application, the effects on the environment are well known and the use of water as the method to prevent or minimise adverse effects continues to be the BPO. In his view a careful review had been undertaken of the water-based options to prevent or minimise adverse effects to the greatest extent practicable while having regard to the financial implications for the Applicant.

80. Mr Purves concluded that the BPO is achieved by a combined approach of: introducing continuous monitoring to better manage fugitive dust emissions; introducing additional mitigation measures should the annual throughput exceed the 1.75 million tonnes; introducing a cap on annual throughput to avoid prevalent fugitive emissions; and applying continued limits on depositional dust as measured by a network of monitoring gauges.

81. Based on the measures I intend to require as conditions of consent, including fixed PM_{10} monitoring for at least one year to inform the boundary monitoring trigger levels, I accept the evidence of Mr Purves that the proposal is consistent with the BPO.

82. I conclude that, taking into account the conditions I intend to impose, the proposal is consistent with the relevant objectives and policies of the RPS, CARP, NZCPS, Coastal Plan and Mahaanui Iwi Management Plan.

Section 105(1) Consideration of Alternatives

83. The applicant and Ms Watt have appropriately addressed section 105 matters. I record that I have had regard to the nature of the discharge and sensitivity of the receiving environment, the applicant's reasons for the proposed choice, and possible alternative methods of discharge in reaching my decision.

84. Te Mana Ora submitted that full enclosure of the coal stockpiles should be required. Mx Wickham cited the coal storage facility at the Port of Tauranga as an example where this had been achieved. In response, Ms Appleyard noted the substantially different scale of coal transfer operations at the two ports. Mr de Joux stated that the capacity of coal storage at Tauranga is approximately 70,000, compared to 335,000 tonnes at Lyttelton. Ms Appleyard submitted that the cost of full enclosure would be disproportionate to the scale of assessed effects.

85. I have given this matter careful regard in determining compliance with the BPO. Given the effects indicated by the monitoring and complaints record relevant to the existing discharge, I am satisfied that application of water (sprinklers/fog cannons and water cart) informed by continuous PM monitoring, is sufficient to ensure that adverse effects are appropriately controlled. Full enclosure of the coal facility would not be practical in this case, nor necessary given predicted effects.

Part 2 of the Act

86. I agree with Ms Watt and Mr Purves that there is no specific reason to revert back to consideration of Part 2 matters in this case, as relevant considerations are encapsulated in the competently prepared regional planning documents. Nevertheless, I record my findings that granting the application would be in accord with Part 2 and would achieve the purpose of the RMA and the principles of sustainable management of natural and physical resources, as defined in Section 5.

Duration of Consent

87. Ms Appleyard stated that the applicant seeks a consent duration of 20 years. This term had been agreed with iwi during the consultation process. Te Mana Ora sought a maximum term of 10 years if consent is granted. They submitted that a shorter duration would allow uncertainties to be addressed, including in relation to long-term PM_{10} and $PM_{2.5}$ concentrations at affected areas.

88. Ms Watt had regard to several factors developed through case law that are relevant to the determination of the duration of a resource consent. Taking these factors and policy guidance into account, she concluded that a duration of 20 years would be appropriate.

89. Ms Appleyard submitted that limited expenditure on mitigation at the coal yard since 2010 should be viewed in context of challenges for the Port posed by the aftermath of the earthquakes and by the COVID-19 pandemic. She stated that the annual throughput of coal has declined significantly with few complaints in recent years. In terms of the capital expenditure budget for the coal stockyard, she noted that LPC have a planned spend of $4.25 million for upgrading and replacing various aspects of the coal stockyard over the next 5 years. I have concluded that the mitigation proposed, as required by the conditions I intend to impose, can achieve effective control of PM emissions and is consistent with the BPO.

90. In this case I find that the effects of the discharge are relatively well known. Comprehensive monitoring has occurred during the term of the existing consent. This included a period of ambient PM_{10} and $PM_{2.5}$ monitoring at the most affected area, with source apportionment of particles. Whilst this monitoring was for only one summer period, I conclude that there is sufficient evidence that the WHO 2021 guidelines are likely to be met. Fixed PM_{10} monitoring is proposed for a period of one year and expert review of the results will be required at the end of that period, along with expert review and updating of the DMP at least every two years.

91. I accept that the term of consent should allow for security of LPC's investment in the coal yard and associated dust controls. Taking this into account, along with the factors noted above and the policies of the relevant planning documents, I determine that a 20 year duration is appropriate.

Conditions

92. Following expert conferencing during the hearing, the parties reached agreement on most conditions. My findings on conditions focus on the remaining matters in contention.

Timing and implementation of fog cannon trials

93. Mx Wickham considered the proposed additional mitigation, notably the fog cannons, should be required immediately rather than being subject to a coal throughput threshold. In the applicant's reply, Ms Appleyard proffered a condition requiring that the fog cannon trial occur during the 2024-25 summer. I find that this approach is reasonable.

94. The evidence of Mr Chilton is that dust impacts are well correlated to coal throughput. Bearing in mind the mitigation and monitoring now proposed, I determine that replacement of the sprinkler networks with fog cannons at the 1.75 million tonnes/year throughput threshold is acceptable. LPC will be required to implement various dust controls to meet the proposed trigger levels and limits. In addition, an Air Quality Expert will be required to review the DMP at least every two years. It is therefore possible that the fog cannons or alternative mitigation might be required in any case to achieve ongoing compliance with the conditions now proposed.

Wind speed limit for triggering sprinkler towers

95. Submitters expressed concern that the 7m/s (1-hour average) wind speed trigger for activating sprinkler towers is too high. I have confirmed that wind speed on site is measured at a height of 30m above ground and proposed conditions have been amended to take this into account. I accept the evidence of Mr Chilton that wind speed at ground level will be substantially less than recorded on the tower and that the trigger limit is therefore appropriate to ensure water application when necessary to control dust emissions.

Trigger levels for continuous dust monitoring at the coal stockyard boundary

96. The experts agreed that PM_{10} trigger levels measured at the proposed nephelometer on the western site boundary of 100µg/m^3 (1-hour average) and 150µg/m^3 (1-hour average) are appropriate limits for the instigation of specified dust control actions. I accept that these trigger levels are appropriate as a starting point, but could be subject to change based on expert review and the results of PM_{10} monitoring at the Gilmore Terrace area fixed nephelometer.

97. I have carefully considered if the proposed trigger levels should be Included in the conditions of consent, or in the management plan to allow variation of the trigger levels based on expert review. I have decided the latter approach proposed by the applicant is acceptable, given that the DMP will be subject to expert review at least every 2 years. However, I determine that the initial 100µg/m^3 and 150µg/m^3 (1-hour average) trigger values should be specified in the first iteration of the DMP and I have amended Condition 36 accordingly.

98. Mx Wickham recommended an additional 12-hour average rolling trigger value for PM_{10}. In this case, I accept the opinions of Mr Chilton and Mr Curtis that the primary purpose of the boundary monitoring is to trigger prompt dust control actions in response to elevated short-term PM concentrations. I consider that 1-hour average triggers are sufficient for this purpose.

Need for a second water cart

99. Based on my observations during the site visit, I questioned whether a second water cart might be appropriate to achieve adequate water coverage for dust control. Mx Wickham recommended that a second water cart should be available at the site for dust control immediately, rather than as a potential future measure if fog cannons are not implemented. The applicant has now proposed an amendment to Condition 6(a) to require a second "water cart used for roads and other tracked areas as required". Taking into account the full suite of condition now proposed, I determine that this is sufficient.

Fixed ambient PM_{10} monitoring site

100. During the hearing I asked the experts to make recommendations regarding fixed PM_{10} monitoring at the most affected residential area, should consent be granted. The experts agreed that monitoring in the Gilmore Terrace area would be appropriate.

101. Mr Chilton considered that PM_{10} monitoring for one year by nephelometer at the fixed monitoring site would be adequate. Ms Wickham recommended that such monitoring should occur for the duration of consent and be according to an approved reference method. Mr Curtis stated that he is neutral on this issue but noted he is generally comfortable with the wording proposed by the applicant, provided "site management practices are achieving the desired outcome in the community in terms of dust control".

102. The available data concerning PM_{10} concentrations in the Lyttelton area is limited, but I accept the opinions of Mr Chilton and Mr Curtis that there is sufficient evidence to indicate that the 2021 WHO guidelines are not likely to be exceeded at the most affected areas. I therefore determine that monitoring by nephelometer is sufficient in this case. This monitoring will be useful in adjusting the PM_{10} trigger levels at the site boundary monitor and also provide an indication of concentrations over a full year. I find that the condition proposed by the applicant is adequate, subject to review of the collected data by an AQE at

the end of the one year period to determine if any ongoing monitoring is appropriate. I have amended proffered Conditions 29 ad 30 accordingly.

Number of dust deposition gauges

103. The experts agreed that the number of dust deposition gauges could be reduced to five gauges targeted at the areas most likely to be affected by coal dust deposition. Mx Wickham noted that agreement on reduced dust deposition was dependant on the nature of additional fixed PM_{10} monitoring proposed. Taking into account the proposed fixed nephelometer, with expert review of results after one year required, I find that the proposed targeted dust deposition monitoring is appropriate.

Backup water for dust control and firefighting

104. Mr and Mrs Penn and Mx Wickham submitted that that an emergency water supply should be available at the stockyard. The applicant has now proposed a condition requiring at least 44,000 litres of water storage at the coal yard to provide emergency supply. I determine that the proposed condition is acceptable.

Cleaning of any houses affected by coal dust deposition

105. In response to my questions, Mr Purves proposed a condition setting out the procedure to be undertaken by the applicant in response to any reports of coal dust soiling. This condition was not disputed by the experts and I consider it to be generally appropriate. I determine that the term "significant soiling" is too subjective and uncertain and have therefore deleted reference to "significant" in the condition. I have also specified (new condition 54) the minimum methods to be used when conducting an investigation of reported coal dust soiling. This condition will ensure that relevant PM and meteorological monitoring is taken into account, in addition to visual inspection of reported soiled surfaces.

Appropriate limit for the rate of coal dust deposition

106. There was some debate between the air quality experts regarding the coal dust deposition limit that should apply. As discussed in my evaluation of dust nuisance effects, I find that the current 2.4g/m^2/30 days limit should be imposed and the lower limit of 2g/m^2/30 days can be included in consent conditions as an investigative trigger level, with corrective

actions to reduce dust emissions implemented if any results exceed the trigger value at the affected residential area.

Certification of DMP and inclusion of PM_{10} trigger levels

107. Mr Purves proposed an amended condition requiring certification of the DMP that I consider to be appropriate. I determine that the initial proposed Tier 1 and Tier 2 trigger levels should be specified in the DMP at the outset and could later be modified and recertified based on expert review.

Decision

108. For the above reasons, it is the decision of the Canterbury Regional Council, pursuant to sections 104, 104B and 105, and subject to Part 2 of the Resource Management Act 1991, to grant the application by Lyttelton Port Company for Discharge Permit CRC220756 to discharge contaminants into air, for a duration of 20 years and subject to the conditions attached.

Dated this 24th day of August 2023.

John Iseli
Hearing Commissioner

Conditions of Consent CRC220756

For the purposes of these consent conditions the following definitions shall apply:

"**AQE**" means a suitably qualified and experienced expert in the field of monitoring and assessment of air quality;

Calendar Year means from the 1st of July through to the 30th June the following year;

"**Coal Operations Supervisor"** means the Coal Operations Supervisor or other nominated person(s) who has the responsibility of managing dust effects in the coal stockyard as detailed in the DMP;

"**CRC Manager**" means Canterbury Regional Council, Attention: Regional Leader - Monitoring and Compliance;

"**DMP**" means the Dust Management Plan;

"**PM_{10}**" means particulate matter with a diameter of 10 micrometres (µm) or less;

"**Site**" means land owned by the Lyttelton Port Company shown on Plan CRC220756C; and

"**Tangata Whenua**" means Te Hapū o Ngāti Wheke and Te Rūnanga o Ngāi Tahu.

1 The discharge of contaminants to air shall be from activities associated with the coal stockyard operation at Lyttelton Port centred on reference NZTM E1578750:N5172060 as shown on Plan CRC220756A and also from activities associated with loading the coal onto a vessel at Cashin Quay 1.

2 The contaminants authorised by this discharge to air consent shall only be generated from activities associated with the operation of the coal stockyard), including:

(a) The handling of coal, including the unloading of coal from trains and the loading of coal onto vessels;

(b) The storage of coal;

(c) The use of conveyors and machinery to transport coal; and

(d) Movement of vehicles and machinery associated with the above activities, including machinery used for dust mitigation measures.

LIMITS

3 The annual throughput of coal shall not exceed two million tonnes over an annual rolling average.

4 The discharge shall not cause suspended or deposited particulate matter, which has a noxious, dangerous, offensive or objectionable effect, beyond the boundary of the Site.

5 Coal dust deposited from coal stockyard activities shall not exceed 2.4 grams per square metre per thirty day (2.4 g/m^2/30 day) at those sites containing dust monitoring gauges 10, 11 and 13 shown on Plan CRC220756B attached to the conditions of this consent.

MITIGATION MEASURES

General Mitigation

6 The consent holder shall undertake all practicable measures to reduce coal dust emissions from the coal stockyard to ensure compliance with conditions 4 and 5 of this consent. Measures shall include but not be limited to:

(a) Applying water to the stockpiles, roads and other unconsolidated surfaces as necessary, to minimise coal dust emissions during or forecasted dry and windy conditions using:
   i. a network of sprinkler towers;
   ii. one water cart with a water gun capable of reaching the tops of stockpiles and;
   iii. one water cart used for roads and other tracked areas as required;

(b) Taking current and forecasted wind conditions into account in planning and carrying out work to minimise dust discharge;

(c) Installing and maintaining covers on load-out conveyors as far as practicable;

(d) Installing and maintaining covers on the transfer points between the conveyor belts other than the transfer point to the jet slinger which is used to load onto the vessels;

(e) Minimising coal drop-height onto stockpiles and conveyors;

(g) Spraying water onto the load-in conveyor at a nominated point;

(h) Using scrapers to clean conveyor belts;

(i) Sweeping sealed surfaces and the wharf to remove any spillage;

(j) Ensuring machinery operating within the stockpile area do not exceed 15 km/hour and all other vehicles on the boundary roads do not exceed 30 km/hour;

(k) Applying a veneer or surfactant to the coal stockpiles as required;

(l) Ensuring not less than 44,000 litres of water is stored on consent holder's land, which is accessible for coal dust suppression purposes at the coal stockyard.

Visual Emissions Beyond the Boundary

7 If coal dust is visually observed in the air beyond the boundary of the Site the Coal Operations Supervisor shall take immediate actions to reduce coal dust emissions and investigate why the emissions occurred.

Sprinkler Towers

8 Sprinkler towers around the perimeter of the coal stockpile area in the direction that the wind is coming from shall be activated when:

(a) The wind speed exceeds 7 m/s as a 1-hour rolling average measured in accordance with condition 27 (a); and

(b) Less than 2 mm of rain has fallen in the previous 24 hours; or

(c) The continuous dust monitoring instrument required by condition 28 exceeds the tier one PM_{10} concentration specified in the DMP;

Continuous Monitoring Triggers and Response Actions

9 When the continuous dust monitoring instrument required by condition 28 exceeds the tier one PM_{10} concentration specified in the DMP the Coal Operations Supervisor shall:

(a) Ensure that the sprinkler towers are activated in accordance with condition 8 (c);

(b) Take any other immediate actions as necessary to reduce dust emissions; and

(c) Investigate why the emissions occurred.

10 When the continuous dust monitoring instrument required by condition 28 exceeds tier two PM_{10} concentration specified in the DMP the Coal Operations Supervisor shall carry out requirements set out in condition 9 and either:

(a) Ensure all working on the stockpiles and transporting coal to or from the stockpiles using the bulldozers or frontend loaders ceases immediately; or alternatively

(b) Introduces a surfactant to the water discharged by the sprinkler towers or the water cart immediately.

11 The mitigation measure used in either condition 10 (a) or (b) shall remain in place until the 1-hour average concentrations fall back to or below the tier one PM_{10} concentration specified in the DMP.

Depositional Monitoring Response Actions

12 If coal dust deposited from coal stockyard activities exceeds 2.0 grams per square metre per thirty day (2.0 g/m^2/30 day) at those sites containing dust monitoring gauges 10, 11 and 13 shown on Plan CRC220756B, the Coal Operations Supervisor shall:

(a) Review the continuous monitoring results and otherwise investigate why any emissions occurred; and

(b) Take corrective actions as necessary to reduce coal dust emissions; and

(c) Advise the consent authority and Tangata Whenua in writing of the result, the reasons for the result and whether any corrective actions are needed to reduce coal dust emissions.

Fog Cannon Trial

13 The consent holder shall engage an AQE to carry out a trial on the effectiveness of using fog cannons as a mitigation measure. The trial shall be carried out for a period of time between the 1st of November 2024 and the 30th of April 2025, and shall be conducted as follows:

(a) The AQE recommends the number, layout and type of fog cannons needed for the trial and how they are to be used;

(b) The AQE recommends the duration of the trial;

(c) The consent holder installs and uses the fog cannons in accordance with the recommendations made by the AQE under condition 13 (a) and (b);

(d) At the conclusion of the trial the AQE prepares a written report that:

i. Discusses the effectiveness of using the fog cannons, which includes an analysis of the results of the air quality monitoring collected in accordance with conditions 28 and 31;

ii. Describes any practical issues associated with the use of the cannons, and

iii. Makes a recommendation on whether fog cannons are an appropriate mitigation measure; and, if so, makes recommendations on the number, layout and type of the fog cannons to be used.

14 The consent holder shall provide the CRC Manager a copy of the report prepared under condition 13 (d) by 1st July 2025.

Additional Mitigation Measures Due to a Predicted Increase in Annual Throughput

15 The consent holder shall on the 1st of July each year forecast the annual throughput for the following Calendar Year.

16 If the forecast of the annual throughput of coal made in accordance with condition 15 is to exceed 1.75 million tonnes, and the AQE recommended fog cannons be adopted as a mitigation measure under condition 13 (d) (iii), then the consent holder shall install and operate the fog cannons from the 1st of November in the year of the forecasted exceedance unless:

(a) There are reasons provided in writing to the CRC Manager by the consent holder as to why it would be inappropriate to adopt the recommendation: and

(b) The CRC Manager agrees that the recommendation should not be adopted for the reasons provided by the consent holder.

17 In the event that the fog cannons are not adopted as a mitigation measure pursuant to condition 16, the consent holder shall routinely use a second water cart from the 1st of November in the year of the forecasted exceedance.

18 The consent holder shall engage an AQE to make recommendations on how the second water cart is to be routinely used at the coal stockyard pursuant to condition 17. The recommendations shall include but not be limited to:

(a) The type and capacity of the second water cart to be used; and

(b) The circumstances when the second water cart is be used, including:

i. Months of the year;

ii. Meteorological conditions or forecasted conditions; and

iii. The results of the monitoring carried out in accordance with conditions 28 and 31.

19 A copy of the recommendations prepared under condition 18 shall be forwarded to the CRC Manager.

20 Notwithstanding Condition 16, if the annual throughput exceeds 1.75 million tonnes prior to a forecasted exceedance, the consent holder shall immediately employ a second water cart as an interim measure; and, as soon as practicable:

(a) Install and operate the fog cannons pursuant to condition 16; or

(b) Routinely use a second water cart pursuant to condition 17.

21 The consent holder may cease to use some or all of the sprinkler towers, and may remove some or all of the sprinkler towers, provided that the fog cannons have been introduced in accordance with condition 16.

22 If the fog cannons are installed and operated pursuant to condition 16 then the requirements for the sprinkler towers to operate under conditions 8 and 9 shall cease and instead conditions 8 and 9 shall apply to the operation of the fog cannons,

23 Where the annual throughput of coal falls below 1.75 million tonnes and is forecast to remain below 1.75 million tonnes for the following Calendar Year, the consent holder may cease using the mitigation measures invoked under either condition 16 or condition 17.

24 If conditions 16 or condition 20 are invoked more than once then the requirements under conditions 16, 17 or condition 20 will again apply.

25 The consent holder shall install and operate a spray bar on the bucket wheel reclaimer or associated conveyor as a means to dampen the coal before load-out prior to a forecasted annual throughput exceeding 1.75 million tonnes or as soon as practicable if condition 20 is invoked..

MONITORING

26 At the commencement of this consent, instruments capable of continuously monitoring and providing representative meteorological data for the coal stockyard shall be installed. The instruments shall be capable of measuring the following:

(a) Wind speed;

(b) Wind direction;

(c) Rainfall; and

(d) Temperature.

27 The meteorological monitoring instruments shall be installed and used in accordance with the following:

(a) The anemometer shall be installed at a height of at least thirty metres above natural ground level and in accordance with AS/NZS 3580.14:2014 ‘Methods for sampling and analysis of ambient air – Part 14: Meteorological monitoring for ambient air quality monitoring’;

(b) The meteorological monitoring results shall be continuously recorded using an electronic data logging system with an averaging time for each parameter of not more than two minutes. The logging system shall alert the Coal Operations Manager immediately when condition 8(a) together with condition (8)(b) are triggered;

(c) The wind speed and direction shall be used to activate relevant sprinkler towers in accordance with condition 8;

(d) The meteorological data shall be retained in the form of an electronic record for the duration of this resource consent and copies provided to the CRC Manager on request;

(e) The meteorological monitoring instruments shall at all times be maintained in order to achieve the conditions of this consent; and

(f) A report shall be prepared by the 1st July each year that details the number of times the meteorological parameters set out in condition 8 have been exceeded for the previous year and detail the maintenance of the instruments carried out in the previous year.

28 Within three months of the commencement of this consent, the consent holder shall install and operate a nephelometer that continuously monitors

for PM_{10} in real time as a means to manage coal dust emissions in accordance with condition 9 and 10. The continuous monitor shall:

(a) Be located within Area C shown on Plan CRC220756B attached with this consent;

(b) Be installed, calibrated, operated and maintained in general accordance with the AS/NZS 3580.12.1:2015 guidelines; and

(c) Alert the Coal Operations Supervisor immediately when the triggers specified under conditions 8, 9 and 10 have been exceeded.

29 Subject to identifying a property that is deemed suitable by an AQE, and subject to an access agreement being obtained from the property owner, the consent holder shall within 6 months of commencement of consent install and operate a nephelometer within Area A shown on Plan CRC220756B attached with this consent. The nephelometer shall be operated in accordance with condition 28 (b) for a period of at least one year.

30 At the completion of continuous monitoring carried out in accordance with condition 29, the consent holder shall engage an AQE to prepare a written report which reviews the data from the monitors required by conditions 28 and 29 and provides recommendations on whether the 1-hour average PM_{10} trigger concentration values set out in the DMP, as required by conditions 8, 9 and 10 are appropriate. The report prepared by the AQE shall also recommend whether ongoing fixed PM_{10} monitoring should occur for a specified time period, based on the monitoring results collected for the initial one year time period. A copy of the report shall be forwarded to the CRC Manager.

31 At the commencement of this consent, the consent holder shall install and operate five dust deposition gauges located at the monitoring stations shown Plan CRC220756B attached to these conditions. The method of sample collection and analysis shall be in accordance with Australian Standard 3580.10.1-1991 to the extent that compliance with topographic constraints is reasonably achievable. The laboratory carrying out the analyses shall be accredited to ISO/IEC 17025:2017 by IANZ. The amount of coal dust deposited at each monitoring station shall be measured at least every 30 days (+ or - 2 days).

32 Notwithstanding condition 31, the consent holder may relocate the dust deposition gauges shown on Plan CRC220756B as follows:

(a) Within Area A for monitoring stations numbered 10, 11, 13;

(b) Within Area B for monitoring station 18; or

(c) At another location which is agreed to in writing by the CRC Manager.

33 A report presenting a summary of the results of the continuous monitoring and deposition gauge monitoring required by conditions 28 and 31 shall be provided to the Canterbury Regional Council by the 1st of July each year.

DUST MANAGEMENT PLAN

34 Within three months after commencement of this consent, the consent holder shall submit a DMP to the CRC Manager and to the Tangata Whenua.

35 The purpose of DMP is to set out the practices and/or procedures and mitigation measures to be adopted to ensure compliance with consent conditions and otherwise to minimise adverse effects beyond the boundary of the Site from the discharge of coal dust.

36 The DMP shall be prepared by an AQE and shall include but to be limited to:

(a) A description of the coal stockyard operation and surrounding environment;

(b) A description of the dust sources and their risk of creating an off-Site dust nuisance;

(c) Details of the mitigation measures to be carried out;

(d) Details of the dust and meteorological monitoring to be carried out;

(e) Details of meteorological and PM_{10} dust parameters that are monitored for and used to activate mitigation measures under conditions 8, 9 and 10, including the trigger values and the rationale for the trigger values used;

(f) Initial one hour average PM_{10} trigger values for the purposes of conditions 9 and 10 of 100µg/m^3 Tier 1 and 150µg/m^3 Tier 2, subject to adjustment on the recommendation of an AQE when the DMP is reviewed;

(g) A description on how complaints are to be recorded and responded to by the consent holder;

(h) A description of the record keeping to be performed;

(i) A description of any new technologies that could be used to avoid, remedy or mitigate fugitive emissions of coal dust;

(j) Identifying the persons responsible for carrying out all actions in relation to meeting the requirements of this consent; and

(k) Auditing and review of the DMP.

37 Where there is an inconsistency between the DMP and the conditions of this consent the conditions of this consent shall prevail.

38 The DMP shall engage an AQE to review the DMP at least once every two years from the first certification date of the DMP. The review shall examine those matters set out in auditing and review section of the DMP.

39 The review by the AQE caried out under condition 38 must recommend whether or not the DMP should be amended and the consent holder shall amend the DMP in accordance with those recommendations.

40 A copy of the at least two-yearly reviews of the DMP carried out in accordance with condition 38 shall be provided to the CRC Manager and to the Tangata Whenua.

41 Notwithstanding condition 38, the DMP must be amended if either condition 16 or condition 20 is invoked.

Certification of DMP

42 The DMP shall be certified in writing by the CRC Manager acting in a technical certification capacity authorised by this consent and the consent holder shall undertake all activities authorised by this consent in accordance with the certified DMP.

43 Any amendment of the DMP shall be certified in writing by the CRC 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.

44 A copy of the DMP and all amended DMPs shall be provided to Tangata Whenua immediately following certification.

RECORDS AND REPORTING

45 The consent holder shall keep a record of coal stockyard throughput in tonnage to show compliance with Condition 3. This record shall be provided to the CRC Manager by the 1st of July each year for the previous year, for the duration of this consent.

46 The consent holder shall provide the CRC Manager a copy of the forecast made under condition 15 and shall inform the CRC Manager if conditions 16, 17 or 20 apply.

47 A record of all complaints made to Lyttelton Port Company shall be maintained and shall include:

(a) The location where the coal dust was detected by the complainant;

(b) The date and time when the coal dust was detected;

(c) A description of the wind speed, wind direction and measured PM_{10} concentration when the coal dust was detected by the complainant;

(d) The most likely cause of the discharge of contaminants detected; and

(e) Any corrective actions undertaken by the consent holder to avoid, remedy, or mitigate the effects of the contaminants detected by the complainant.

48 The record shall be provided to the CRC Manager by the 1st July each year for the duration of this consent.

ENGAGEMENT WITH TE HAPŪ O NGĀTI WHEKE

49 The consent holder shall organise a hui at least annually, or at another mutually agreed time, with Te Hapū o Ngāti Wheke. The purpose of the hui is to:

a. To discuss the results of monitoring information collected pursuant to conditions 28, 30 and 31;

b. To discuss any adverse effects that may have arisen from the discharge of coal dust during the previous year and the actions taken to avoid or mitigate those effects;

c. To discuss any amendments to the Dust Management Plan and the reasons why the amendments are necessary; and

d. To receive and respond as necessary to matters raised from Te Hapū o Ngāti Wheke about the discharge of coal dust from the coal stockyard operation.

50 The consent holder shall keep minutes of the hui and distribute them to Te Hapū o Ngāti Wheke within five working days.

51 All administration costs of a hui will be the responsibility of the consent holder.

RESPONSE TO AN OWNER OR OCCUPIER'S CONCERNS ABOUT COAL DUST IN AREA A

52 Where an owner or occupier of a property that is located partially or completely within Area A shown on Plan CRC220756B informs the consent holder that there is visual evidence of soiling to the exterior of the house that appears to be caused by coal dust, the consent holder shall respond as follows:

(a) If the consent holder is satisfied that there is visual evidence of soiling to the exterior of the house that is caused by coal dust, the consent holder shall as soon as practicable offer, in writing, to the owner or occupier the opportunity for a reputable company to clean the exterior of the house at the cost to the consent holder, at a mutually suitable time with the owner or occupier of the house.

(b) If the consent holder is not satisfied that there is visual evidence of soiling to the exterior house caused by coal dust then the consent holder shall as soon as practicable, in writing, to the owner or occupier set out the reasons why.

53 Subject to the minimum requirements set out in condition 54, the consent holder shall use the following methods as necessary to decide whether condition 52 (a) or condition 52 (b) applies:

(a) Carry out a visual inspection of the house;

(b) Photograph areas considered affected by the owner or occupier;

(c) Review previous meteorological conditions;

(d) Examine the amount of depositable dust collected from dust monitoring gauge 10 established and monitored in accordance with condition 31;

(e) Examine the concentration of measured PM_{10} from the continuous monitors established and monitored in accordance with conditions 28 and 29;

(f) Examine whether the PM_{10} trigger levels set out in the DMP were exceeded;

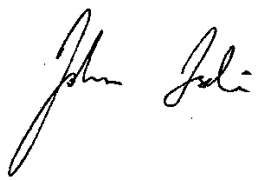
(g) Carry out a swab test on the affected exterior of the house to determine the proportion of coal dust to total dust.

54 In conducting an investigation of reported coal dust soiling in accordance with condition 53 the consent holder shall, as a minimum, use methods (a), (c), (d), (e) and (f) described in condition 53.

ADMINISTRATION

55 The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.

56 The lapsing date for the purposes of section 125 shall be 5 years from the date of commencement of this consent.

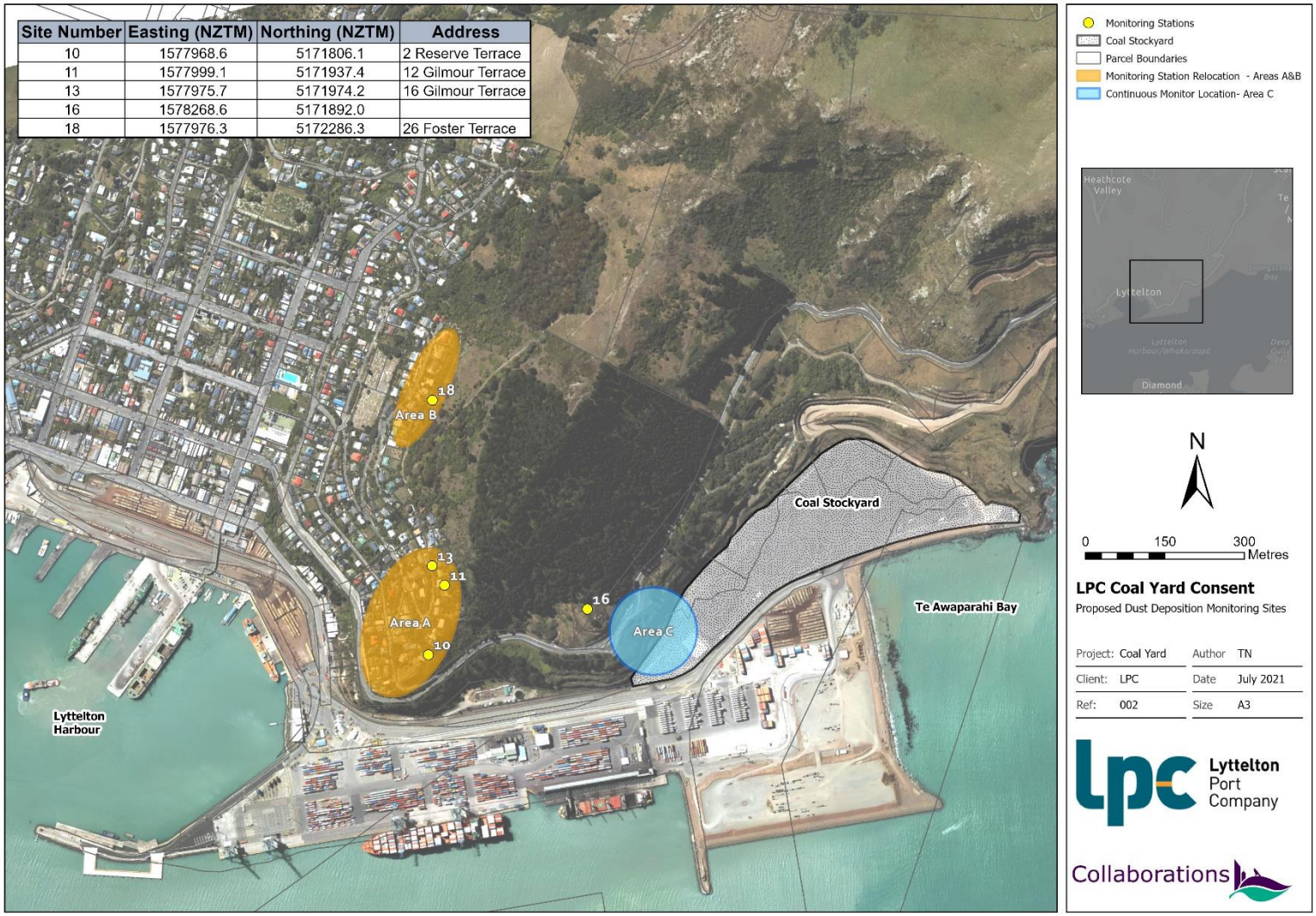


John Iseli

Hearing Commissioner

Proposed Plan CRC220756A

Proposed Plan CRC220756B



Proposed Plan CRC220756C