



The Old Guardhouse, Incline Road, Portland Port, Castletown, Portland, DT5 1PH, United Kingdom

TEL: + [REDACTED]

05 October 2023

To whom it may concern,

Objection to the Planning application of Powerfuel Limited, to build a waste Incinerator in Portland Port and next to our existing Bunker facilities.

I am the CEO of Portland Bunkers UK Limited (PBUK), a UK company that operates a Bunker Terminal on leasehold land and facilities leased on a long-term basis from Portland Port.
(www.portlandbunkersuk.com)

PBUK is an Upper tier COMAH site and as such we employ Advisian Limited, a division of Worley Parsons Engineering, to maintain and modify our Safety Case documentation on behalf of ourselves and the competent authority (HSE/EA).

In order to fully assess the potential impact to our business that the construction and operation of a large incinerator might have, we commissioned Advisian to undertake a full Impact Study on our behalf. Due to their intimate knowledge of our operation, equipment, and safety procedures, they were the ideal choice for such a task.

We enclose their Impact Study for your information.

Summary: -

If the Incinerator is constructed and operated in accordance with the Powerfuel documents available in the public domain, this would have a very negative impact on our ability to maintain a safe and efficient working environment. The design of the actual plant shows it to be dangerously close to our hot oil pipelines. For example, our lack of access in case of an accident from Powerfuel equipment, would be in breach of our COMAH safety case.

We would require Powerfuel to completely modify their footprint/facility layout, as the land they have leased or intend to lease from the Port is too small to contain such a unit and allow us the unrestricted access, we must have, to our facilities, pipelines and equipment.

PBUK are the nearest leasehold tenant to the proposed Incinerator, and this proximity is not restricted to one point where the plots "touch" but in actuality, there are many such points throughout the site.

We would also need more information on the refuse that will be stored in close proximity to our workshops and stores and how our staff will be protected from health and safety issues.

PBUK has tried without success to interface with the Port and Powerfuel, but they have refused to discuss anything in detail, as they stated it is too early for such discussions. We do not agree.

If you need any further information, please reach out to us. If you need further input or clarification from Advisian, we can arrange this.

Kind Regards

Simon Escott

CEO

Portland Bunkers UK Ltd



Impact Study Report

Portland Bunkers UK Ltd.

5 Oct 2023

305301-09511 009-PBUK

Advisian
Worley Group

advisian.com

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PROJECT 305301-09511 - 009-PBUK: Impact Study Report

Rev	Description	Author	Review	Advisian approval	Revision date	Client approval	Approval date
A	For Client Comment	S.R. Parsons	J. Assem	J. Assem	28 Sept. 2023		
B	Issued for Approval	S.R. Parsons	J. Assem	J. Assem	04 October 2023		
C	Approved for Use	S.R. Parsons	J. Assem	J. Assem	05 October 2023	Initial. Surname	

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Executive summary

Portland Bunkers UK (PBUK) operates a bunkering facility within Portland Harbour, located on the north-eastern side of the Isle of Portland, occupying land owned/leased by the commercial port and Statutory Harbour Authority known as Portland Port Limited.

Powerfuel Portland Ltd. (Powerfuel) have proposed the installation of an Energy Recovery Facility (ERF) that will burn refuse adjacent to the PBUK facilities (see: Powerfuel Proposed ERF Layout within Appendix 1). PBUK want to understand the impact of the ERF development on their COMAH regulated facilities including health and wellbeing of their workforce.

This report summarises an assessment of potential impacts to the PBUK facility based on the publicly available Powerfuel documents lodged within the Dorset Council planning application (WP/20/00692/DCC), the environmental permit application (EPR/AP3304SZ/A001) and against the previous PBUK COMAH submission and their supporting documents. The technical assessment can be found within Appendix 2.

This report contains 23 recommendations (see: section 2) which should be addressed through discussion with a combination of the ERF developer (Powerfuel's nominated representative), Portland Port Ltd. (PBUK's lease holder) and the Planning Authority.

Based on the available Powerfuel documents lodged within the Dorset Council planning application (WP/20/00692/DCC) and the environmental permit application (EPR/AP3304SZ/A001) it is concluded that the introduction of the Powerfuel ERF local to the existing PBUK facilities will result in an increased likelihood of MAH ^[4] or MATTE ^[2] events and therefore design measures should be taken to ensure that the additional risk remains tolerable if ALARP.

Additionally, it is reasonable to expect that some PBUK site personnel will be exposed to an increased level of airborne contaminants from the Powerfuel ERF facility that may be detrimental to their health, and it is important that the expected exposure level of these personnel is determined to be within the legal limits and is monitored both in advance of the commissioning of the facility and on an agreed frequency during the operating life of the facility.

Acronyms and abbreviations

Acronym/abbreviation	Definition
Advisian	Consultancy
AEA Technology	Consultancy
AQ	Air Quality
AQAL	Air Quality Assessment Level
AQMAU	Air Quality Modelling & Assessment Unit
ARUP	Consultancy
AWM	Consultancy
BAT	Best Available Technology
CHP	Combined Heat and Power
COMAH	Control Of Major Accident Hazard
COPC	Compound Of Particular Concern
Defra	Department for Environmental, Food and Rural Affairs
Dioxin	Dioxin
EA	Environment Agency
EfW	Energy from Waste
ERF	Energy Recovery Facility
ERM	Consultancy
Fichtner	Consultancy
Groundsure	Consultancy
HAZID	Hazard Identification
HGV	Heavy Goods Vehicle
HMIP	His Majesty's Inspectorate of Prisons
HMP	His Majesty's Prison
LPG	Liquified Petroleum Gas
MAH	Major Accident Hazard
MAR	Major Accident Risk (i.e., the risk of a MAH or MATTE being realised)
MATTE	Major Accident To The Environment
NDM	Noise Data Measurement

Acronym/abbreviation	Definition
NO ₂	Nitrogen Dioxide
PBUK	Portland Bunkers UK Ltd.
PM _{2.5}	2.5 Microns
PM ₁₀	10 Microns
RDF	Refuse Derived Fuel
RPS	RPS group
SCA	Safety Critical Activity
SO ₂	Sulphur Dioxide
SW	Southwest
TDI	Tolerable Daily Intake
UHF	Ultra-High Frequency
UXB	Unexploded Bomb
WWII	World War 2

1 Introduction

1.1 Overview

Portland Bunkers UK (PBUK) operates a bunkering facility within Portland Harbour, located on the north-eastern side of the Isle of Portland, occupying land owned/leased by the commercial port and Statutory Harbour Authority known as Portland Port Limited.

The Portland Bunkers storage facility is an ex-Navy fuel storage site, and is now used for the commercial storage, loading, and unloading of marine fuel. The site falls under the Control of Major Accident Hazard (COMAH) Regulations 2015, primarily owing to the potential environmental hazards associated with the site.

Powerfuel Portland Ltd. (Powerfuel) have proposed the installation of an Energy Recovery Facility (ERF) that will burn refuse adjacent to the PBUK facilities. PBUK are concerned that the ERF will impact the health and wellbeing of their workforce, disrupt their business, and pose a threat to their COMAH regulated facilities.

1.2 Document Purpose

The purpose of this document is to review the publicly available documents on the Powerfuel development from:

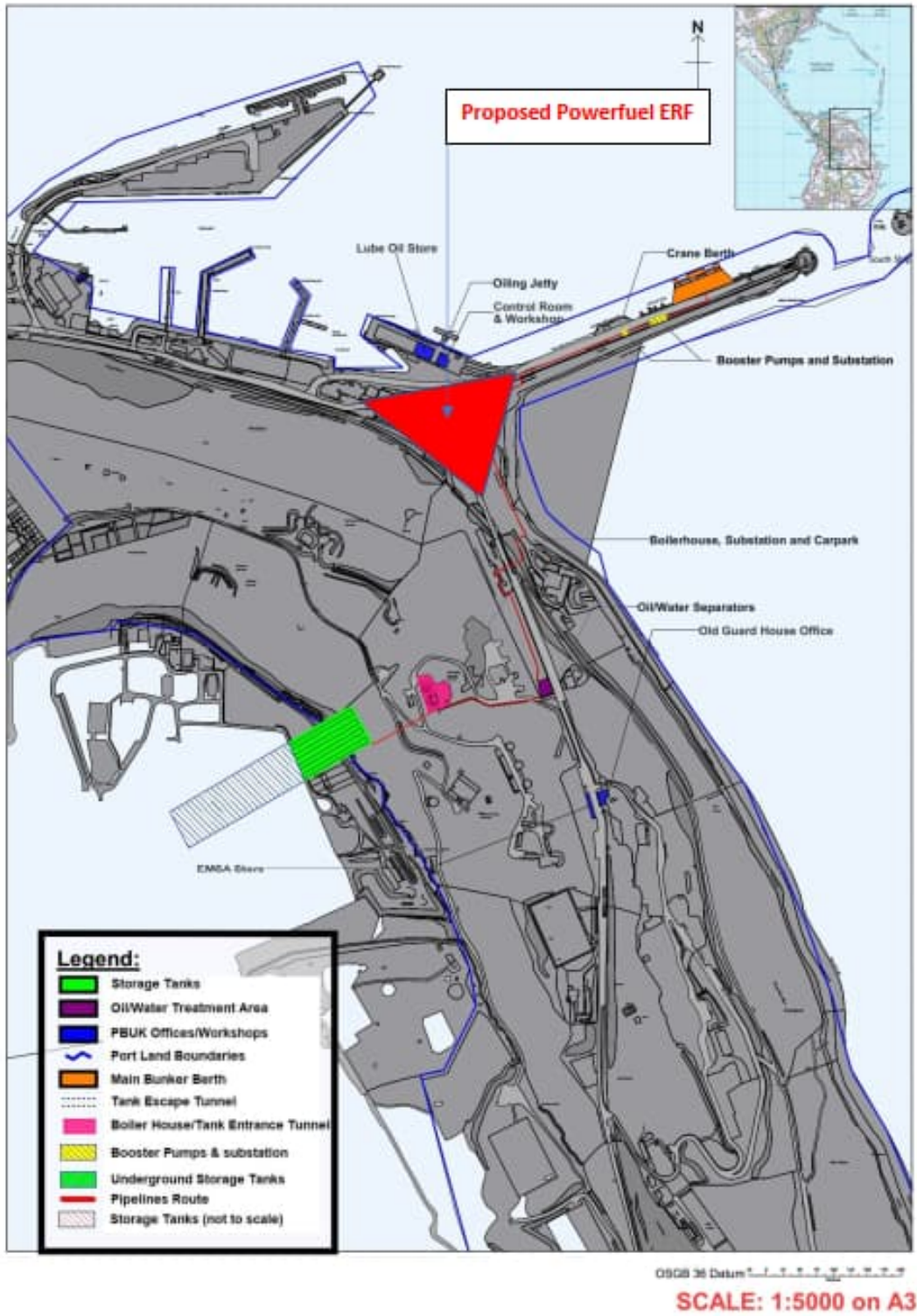
- the planning application lodged with Dorset Council (WP/20/00692/DCC);
- environmental permit application (EPR/AP3304SZ/A001);
- PBUK 2021 COMAH submission and supporting documents; and
- in conjunction with the impacts already identify by PBUK, produce a consolidated list of potential impacts along with a qualitative assessment of how these may affect the facilities of PBUK and offer recommendations concerning how they should be addressed.

1.3 Site Information

Criteria	Detail
Site Address	The Old Guardhouse, Incline Road, Portland Port, Castletown, Portland, DT5 1PH
Site Area	The total area occupied by the constructed components of the site is: 36,400 m ² . The majority of this area (23,870 m ²) is currently occupied by the existing underground storage tanks, tunnel entrances and land immediately adjacent to the tunnel entrances.
Site Location & Setting	The facility is located in the East Weare part of the Portland Port Estate in the north-eastern side of the Isle of Portland. The operational port occupies a flat coastal area at the foot of a steep embankment which rises to a level of approximately 110m at the cliff top. The hillside rises in a series of steep slopes between a

Criteria	Detail
	number of relatively level terraces that mark the location of former development areas. The site situation and location of proposed Powerfuel ERF is shown in Figure 1.
Site Ownership	Portland Port Ltd, Leased to Portland Bunkers UK
Current Site Use	Bunkering services (Shipping/Marine fuel loading and unloading) Marine Fuel Storage
Site Access	The site is accessible from mainland by the A354 from Dorchester. The harbour lies approximately 20 nautical miles north from the main English Channel shipping lanes and is in close proximity to other European ports.
Site Boundaries	The facility is located at Portland Port and as such is surrounded by Port facilities and other lease holders. It is bordered to the north by Portland Harbour itself. The east boundary is formed by Incline Road. The fuel tanks lie directly under the HMP Verne.

Figure 1- Location and Layout of the Portland Bunker Facilities and Proposed Power Fuel ERF



1.4 Some Photos of PBUK's facilities



Figure 2– PBUK control room, lube oil store, and workshop



Figure 3 – PBUK fuel bunkering lines and hot oil lines along the jetty.

PBUK facilities



Figure 4 – PBUK fuel bunkering berth



Figure 5 – PBUK fuel bunkering lines, hot oil lines and control next to Balaclava Bay.

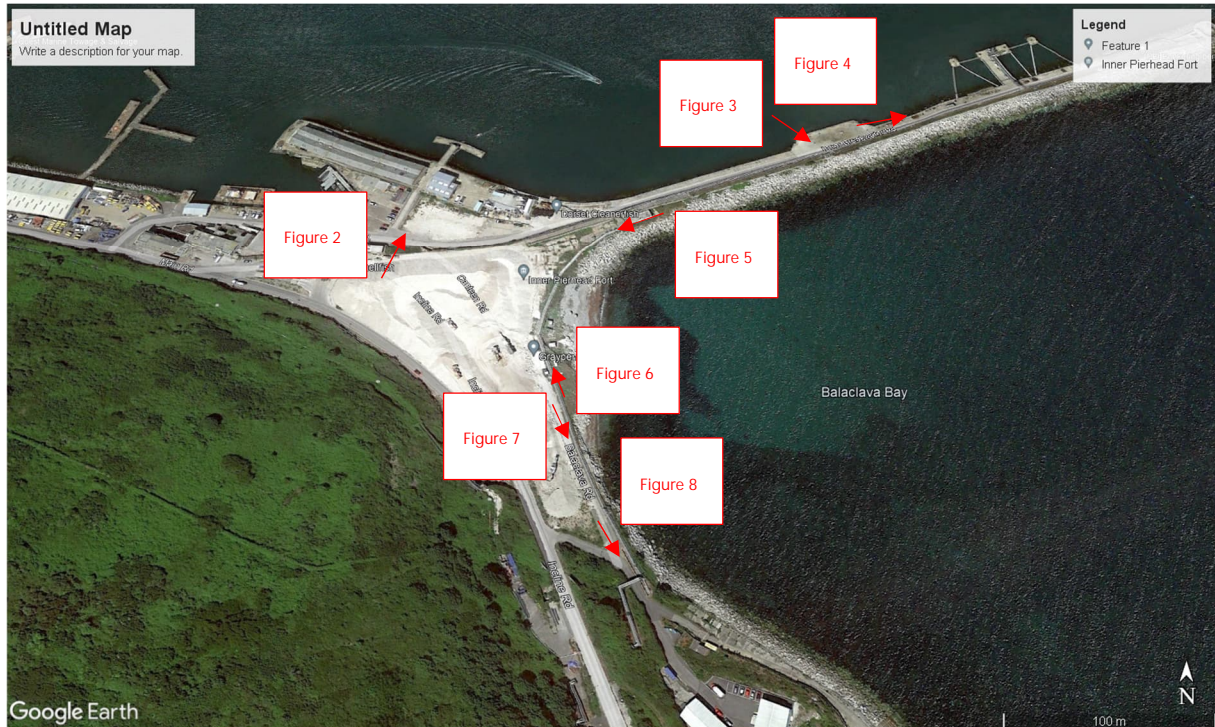
PBUK facilities



Figure 6 – PBUK fuel bunkering lines, hot oil lines, controls and sump next to Balaclava Road (PBUK control room, lube oil store and workshop in the background).



Figure 7 – PBUK fuel bunkering lines and hot oil lines next to Balaclava Road.



1.5 Documents used for the Impact Review

As part of this study the following documents were obtained from the Environment Agency website covering the DT5 1PP, Powerfuel Portland Limited, EPR/AP3304SZ/A001: environmental permit consultation. These documents were last updated November 2022:

Table 1 – Documents obtained from Environment Agency website.

Ref. Doc.	Document Title
1	S2953-8000-0002 Sht1 of 1 Rev.0 Installation Boundary – 29-09-20
2	EA notification – About this consultation
3	Additional Document – 2 nd ES Addendum Appx 5 1 Impact of Dioxins using the TDI Approach -13-05-2022 - Fichtner
4	Appendix A Modelling results at discrete receptor locations – Added 10-8-2021 - Fichtner
5	Adapting to climate change risk assessment worksheet SW England.
6	Geo-environmental and Geotechnical desk study GEO-REP001 Rev. A 23 June 2020 - ARUP
7	Environmental Statement Ground Conditions Technical Assessment. GEO-REP003 Rev. B 14 th July 2020. – ARUP
8	Enviro + Geo Insight Report. Groundsure Location Intelligence. 30/3/2020 Ove Arup & Partners International Ltd.
9	Human Health Risk Assessment. 25 th August 2020 - ERM
10	Indicative Water Flow Diagram
11	Proposed Ground Investigation Locations Figure 2 – rev. F1 – ARUP
12	Site location plan – S2953-8000-0011 Rev.1 - Fichtner
13	Sensitive receptors – S2953- 8000-0012 Rev.1 - Fichtner
14	Additional Information for Duly Making – Response to Information Request by EA. – 23-12-2020 Fichtner.
15	Application for an environmental permit Part A
16	Application for an environmental permit Part B2
17	Application for an environmental permit Part B3
18	Application for an environmental permit Part F1
19	RPS Port of Portland – Phase 2 Site Investigation report – W4B renewable Energy Ltd. May 2009
20	Portland Energy recovery facility – CHP heat plan (including RI) – 267701-00/Heat report September 2020 - ARUP
21	Portland Energy Recovery Facility – Environmental Statement - 8 Ground Conditions and Water Quality

Ref. Doc.	Document Title
22	Portland Energy Recovery Facility – BS4142 Noise Impact Assessment – AAC/267701-/R03a Issue 2 21 st May 2021 - ARUP
23	Portland Energy Recovery Facility – BS4142 Noise Impact Assessment – AAC/267701-15/R01 Rev A 26 th August 2020 - ARUP
24	Portland Energy recovery Facility – Shadow Appropriate Assessment – September 2020
25	Portland Energy Recovery Facility – BAT Assessment Report. 21-12-2020 Fichtner
26	Portland Energy recovery Facility – Supporting Information. Rev.02 20-12-2020 Fichtner
27	Portland Energy Recovery facility – Environmental Risk Assessment. Rev.01 21-12-2020 - Fichtner
28	Portland Energy Recovery Facility – Fire Prevention Plan. Rev. 2 21-12-2020 Fichtner
29	Portland Energy Recovery Facility – Non-Technical Summary Rev.01 21-12-2020 Fichtner
30	Portland Energy Recovery Facility – CHP ready Assessment – Rev.0 – 29-9-2020 Fichtner
31	Drawing S2953-8000-0003 rev.0 29-9-2020 Emissions Points - Fichtner
32	Drawing S2953-8000-0004 Rev.0 29-9-2020 Access points - Fichtner
33	Drawing S2953-8000-0005 Rev.0 29-9-2020 Material Storage Areas - Fichtner
34	Drawing S2953-8000-0006 Rev.0 29-9-2020 Indicative Fire Hydrants - Fichtner
35	Drawing S2953-8000-0007 Rev.0 29-9-2020 Indicative Fire Walls - Fichtner
36	Drawing S2953-8000-0008 Rev.0 29-9-2020 Indicative Quarantine Area - Fichtner
37	Sankey Diagram Rev.01
38	Application Bespoke NDM Response – attended measure data spreadsheet
39	Application Bespoke NDM Response – unattended logged data spreadsheet
40	Dorset Council Planning Documents Link
41	Environment Agency Website – permit consultation
42	Environmental Permit Application Privacy Notice
43	H1data file
44	Environment Agency Notice of request for more information. 4-11-2021
45	Portland ERF – response to AQMAU Query on Schedule 5 Response
46	Portland ERF Appendix D.1 – Baseline Analysis Revision 1 14-8-2020 Fichtner
47	Portland ERF Appendix D.2 Process Emissions Modelling Revision 2 25-8-2020 Fichtner
48	Portland Energy recovery Facility – Greenhouse Gas Assessment – revision 2 21-12-2020 – Fichtner.
49	Portland Energy recovery Facility – Site Conditions Report – Revision 02 21-12-2020 - Fichtner

Ref. Doc.	Document Title
50	Portland Energy Recovery Facility – Abnormal Emissions Assessment – Revision 0 17-9-2020 Fichtner
51	Air Quality Analysis for EP Application - Portland Energy recovery facility - Fichtner
52	Portland ERF – Schedule 5 response No.1 – Rev.02 – 03-12-2021 - Fichtner
53	S2953-8000-0009 revision 0 29-9-2020 Firewater supplies and Firewater Containment - Fichtner
54	Environment Agency. Notice of request for more information 9-9-2022
55	Portland Energy recovery Facility – Fire Prevention Plan – Revision 4 - Fichtner
56	S2953-800-002 Rev.01 10-10-22 Installation boundary - Fichtner
57	S2953-800-003 Rev.01 10-10-22 Emission Points - Fichtner
58	Drawing S2953-8000-0004 Rev.1 10-10-22 Access points - Fichtner
59	Drawing S2953-8000-0005 Rev.1 10-10-22 Material Storage Areas - Fichtner
60	Drawing S2953-8000-0006 Rev.1 10-10-22 Indicative Fire Hydrants - Fichtner
61	Drawing S2953-8000-0007 Rev.1 10-10-22 Indicative Fire Walls - Fichtner
62	Drawing S2953-8000-0008 Rev.1 10-10-22 Indicative Quarantine Area - Fichtner
63	Drawing S2953-8000-0009 Rev.1 10-10-22 Firewater supplies and Firewater Containment - Fichtner
64	Drawing S2953-8000-0010 Rev.1 10-10-22 Areas of natural or Unmade Ground - Fichtner
65	AQ modelling files
66	Modelling files
67	Noise modelling files

Additional documents obtained from the Planning Register of Dorset Council linked to Powerfuel Portland Limited planning application WP/20/00692/DCC:

Table 2 – Documents obtained from Dorset Council Planning register website

Ref. Doc.	Document Title
68	Drawing 1081-02-32 Rev. 5, Shore Power Layout
69	Drawing 1081-02-33 Rev. 5, Shore Power Details
70	Portland Energy recovery Facility – Environmental Statement – 11 Traffic and Transport
71	Portland Energy recovery Facility – Environmental Statement – Traffic and Transport – Technical Appendix L (Part 1 of 2) – 27 Aug 2020 AWP
72	Portland Energy Recovery Facility – Environmental Statement – Traffic and Transport – Technical Appendix L (Part 2 of 2) – 27 Aug 2020 AWP

Ref. Doc.	Document Title
73	Portland Energy Recovery Facility – Environmental Statement – Traffic and Transport – Technical Appendix B Traffic Data - AWP
74	Design & Access Statement part 1
75	Design & Access Statement part 2
76	Design & Access Statement part 3
77	Design & Access Statement part 4
78	Design & Access Statement part 5
79	Design & Access Statement part 6
80	Portland Energy Recovery Facility – Lighting Statement – PP-ARUP-ZZ-XX-L-REP-001 Rev. B Aug/Sept 2020 - ARUP
81	Portland Energy Recovery Facility – Shore power strategy report – Issue 4 - 3 Sept 2020 ARUP

2 Recommendations

A detailed impact assessment, assessing the ERF design documents against PBUK's operating documents is provided in Appendix B (Impact Study Worksheet). The following recommendations are the outcome of the assessment:

Recommendation Number	Recommendation
1	The release of fluid from the bunkering lines along Balaclava Rd. is classified as a source of MAH and MATTE under the COMAH regulations 2015. The ERF proposed development restricts access to these lines. PBUK should raise the matter of loss of direct access to their facilities with the ERF developer, Portland Port Ltd. and Planning Authority and request a modified design that resolves the issue.
2	PBUK should request the ERF developer to offer legal guidance on their liabilities to PBUK and their employees should PBUK personnel and equipment need to operate within the boundary of the ERF.
3	The release of fluid from the bunkering lines along Balaclava Rd. is classified as a source of MAH and MATTE under the COMAH regulations 2015. The ERF proposed development restricts access to these lines. PBUK should define their expectations for operation and maintenance access for personnel and equipment to their facilities along Balaclava Rd. and make the request (to the ERF developer, Portland Port Ltd., and Planning Authority) that the design is modified in order to accommodate these requirements.
4	The release of fluid from the bunkering lines along Balaclava Rd. is classified as a source of MAH and MATTE under the COMAH regulations 2015. The ERF proposed development significantly increases vehicle movements in the vicinity of these lines. PBUK should raise the matter of how the design can be modified to remove the potential of vehicle impact with their facilities (resulting in potential release of bunkering fuel oil and consequential fire and environmental impacts), with the ERF developer, Portland Port Ltd., and Planning Authority.
5	The release of fluid from the bunkering lines along Balaclava Rd., the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should raise the matter of the potential increased fire risk from vehicles, LPG storage and ERF facilities on their bunkering pipelines (resulting in potential release of bunkering fuel oil and consequential fire escalation and environmental impacts) and other facilities, with the ERF developer, Portland Port Ltd., and Planning Authority and request that a detailed fire risk assessment be carried out, covering PBUK work locations.
6	PBUK should raise the matter of the need for the ERF design to include safe personnel access (with respect to ERF moving vehicles and operations) to their bunker loading lines, sumps, jetty and general access between their operating locations etc. in order to carry-out their daytime and night operations and maintenance, with the ERF developer, Portland Port Ltd. and Planning Authority.
7	PBUK should raise the matter of asbestos hazard management during ground disturbance, with the ERF developer, Portland Port Ltd., and Planning Authority in

Recommendation Number	Recommendation
	order to obtain clear agreement on how their personnel will be protected from asbestos health risks.
8	The release of fluid from the bunkering lines along Balaclava Rd., the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should raise the matter of UXB hazard management during ground disturbance, with the ERF developer, Portland Port Ltd. and Planning Authority in order to obtain clear agreement on how their personnel and property will be protected from UXB risks.
9	PBUK should raise the matter of contaminated ground hazard management during ground disturbance, with the ERF developer, Portland Port Ltd. and Planning Authority in order to obtain clear agreement on how their personnel will be protected from health risks.
10	The ERF Developer and Planning Authority should be requested to carry-out a baseline survey for air quality at the various working locations for PBUK personnel (including but not limited to: outside locations, lube oil store, control room and workshop, in the storage tunnels or at the old guard house office.). These locations should form the basis for future monitoring receptors and also further consequence modelling in order to determine the probable level and health impact of short term and long-term exposure to airborne contaminants from the new ERF during normal and abnormal operation.
11	PBUK should raise the matter of airborne ash that may impact the health of their personnel and possibly their facilities at the jetty with the ERF developer, Portland Port Ltd. and Planning Authority and request that further details of how this issue will be mitigated within the proposed design.
12	The release of fluid from the bunkering lines on the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should discuss with Portland Port Ltd. how berthing of RDF ships will be carried-out and any changes required for the berthing of ships on the bunkering jetty.
13	PBUK should request the ERF developer and Planning Authority to extend the receptors for baseline and monitoring noise surveys and the noise assessment to cover the PBUK work locations during ERF construction and operation.
14	PBUK should request the ERF developer and Planning Authority to make a safety and health assessment of the potential impact of airborne litter at the PBUK work locations and commit to implement a monitoring regime in order to ensure that litter is managed.
15	PBUK should request the ERF developer and Planning Authority to define odour receptors and a future monitoring regime, carry-out a baseline survey and conduct a technical assessment of the potential for odour to impact the PBUK work locations.
16	The release of fluid from the bunkering lines along Balaclava Rd., the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should request the ERF developer and Planning Authority to extend the accident risk evaluation (considering worst credible

Recommendation Number	Recommendation
	consequence) for incidents emanating from the ERF to cover the work locations of the PBUK personnel and facilities.
17	Due to the prevailing wind direction and extreme topography (wind is mostly from the west and above or around the cliff that sit to the west of the ERF). The ERF Developer and Planning Authority should evaluate the accuracy and appropriateness of the modelling tool(s) that are being used to evaluate the airborne exposure of PBUK personnel at their work locations and suitable sensitivity bands should be applied to any exposure values reported.
18	The release of fluid from the bunkering lines on the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should request the ERF developer and Planning Authority to supply an update of the risk assessment covering the 50tonne berth operation and HGV movements from the berth to the ERF in order to demonstrate that the risks for PBUK facilities remain within the tolerable if ALARP region.
19	PBUK should request the ERF developer and Planning Authority to extend the accident risk evaluation (considering worst credible consequence) for incidents emanating from the ERF to cover the possible impairment of emergency escape from the PBUK work locations.
20	The release of fluid from the bunkering lines along Balaclava Rd., the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should raise the matter of reduced UHF radio coverage for their facilities, with the ERF developer, Portland Port Ltd. and Planning Authority and request that a proposed solution is provided.
21	The release of fluid from the bunkering lines along Balaclava Rd. is classified as a source of MAH and MATTE under the COMAH regulations 2015. The increased number of large vehicles stopped at the access gate on what was Canteen Rd. and also potentially extending into Incline Rd. may result in serious delays for PBUK personnel and vehicles that may need to attend an incident with the bunkering system. Unimpeded road access to all PBUK operating areas should be agreed with the ERF developer, Portland Port Ltd., and Planning Authority.
22	The fluids being shipped between the jetty and storage (and vice versa) are flammable and under pressure. A loss of containment of these fluids from the bunkering pipelines may typically be ignited by vehicles, ships, electrical systems or naked flames within the ERF. This is an increased risk that the ERF Developer, Portland Port Ltd., and Planning Authority should include within a fire assessment.
23	If the Powerfuel ERF development is to be implemented, PBUK will need to update their facility hazard assessment documentation to take account of the proposed 3 rd party changes and reassess and report the changes required within their Safety Case to the Competent Authority.

3 Conclusion

Based on the available Powerfuel documents lodged within the Dorset Council planning application (WP/20/00692/DCC) and the environmental permit application (EPR/AP3304SZ/A001) it is concluded that the introduction of the Powerfuel ERF local to the existing PBUK facilities will result in an increased likelihood of MAH ^[4] or MATTE ^[2] events and therefore design measures should be taken to ensure that the additional risk remains tolerable if ALARP.

Additionally, it is reasonable to expect that some PBUK site personnel will be exposed to an increased level of airborne contaminants from the Powerfuel ERF facility that may be detrimental to their health. It is important that the expected exposure level of these personnel is determined to be within the legal limits. Air quality should be monitored both in advance of the commissioning of the facility and on an agreed frequency during the operating life of the facility.

4 PBUK reference documents

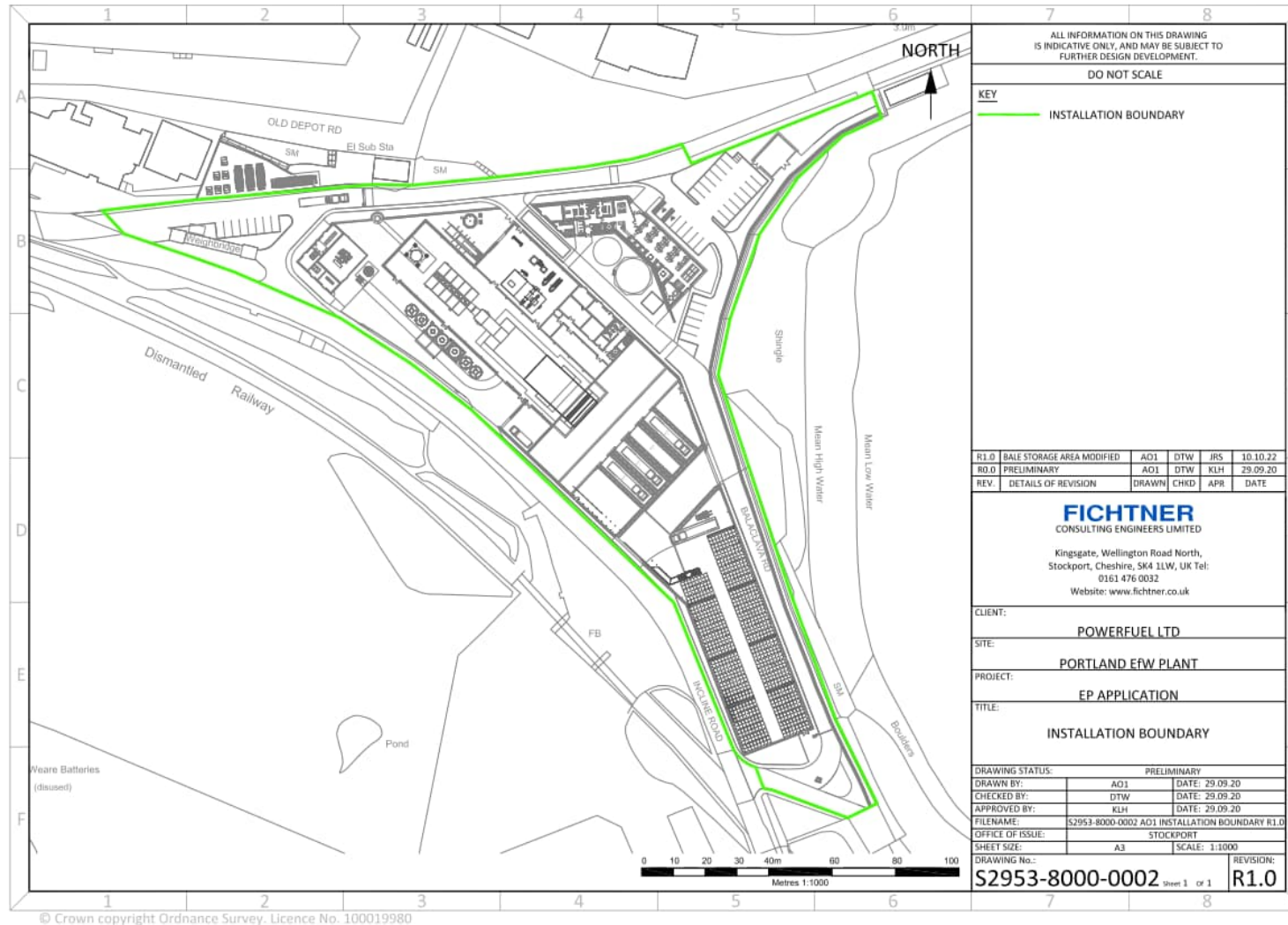
PBUK Reference documents



- [1] Portland Bunker Facility, re-HAZID, 305301-0911-51894-00/002 - Rev. B 25-2-2026 - Advisian
- [2] Environmental Risk Assessment, Portland Bunker Facility, 305301-09511-51894-00/003 Rev. H 18-6-2021 – Advisian
- [3] Quantitative Risk Assessment, Portland Bunker Facility, 305301-09511-51894-00-004 Rev. C 2-2-2017 – Advisian
- [4] Safety Case, Portland Bunker Facility, 305301-09511-51894-00\005 Rev. G 18-6-2021



Appendix A
Powerfuel Ltd. Proposed ERF Layout

Figure A1 – Powerfuel Ltd. Proposed ERF Layout





Appendix B
Impact Study Worksheet

Table B1 – Impact Study Worksheet

Ref. Doc.	Powerfuel Document Reviewed	Quotations/comments & observations linked to the documents reviewed	General Implication to PBUK and Recommendations	Specific impacts to PBUK existing hazard assessments ^{[1][2][4]}
1	S2953-8000-0002 Sht1 of 1 Rev.0 Installation Boundary – 29-09-20.	<ol style="list-style-type: none"> PBUK pipelines along Balaclava Road are shown within the Powerfuel ERF installation boundary 	<p>This seems to be an infringement on PBUK's leased property.</p> <p>PBUK needs to have access control around these lines as they form part of the COMAH regulated facilities for which they are responsible.</p> <p>Recommendation 1: The release of fluid from the bunkering lines along Balaclava Rd. is classified as a source of MAH and MATTE under the COMAH regulations 2015. The ERF proposed development restricts access to these lines. PBUK should raise the matter of loss of direct access to their facilities with the ERF developer, Portland Port Ltd. and Planning Authority and request a modified design that resolves the issue.</p> <p>Recommendation 2: PBUK should request the ERF developer to offer legal guidance on their liabilities to PBUK and their employees should PBUK personnel and equipment need to operate within the boundary of the ERF.</p>	New hazard - due to potential interference by non-PBUK personnel.

Ref. Doc.	Powerfuel Document Reviewed	Quotations/comments & observations linked to the documents reviewed	General Implication to PBUK and Recommendations	Specific impacts to PBUK existing hazard assessments ^{[1][2][4]}
		<p>2. Balaclava Rd. is shown within the installation boundary.</p> <p>The intention is that large transport vehicles will be using Balaclava Rd. (it will be made single directional and will have a road barrier installed on the southern end). (information concerning the purpose of these roads was obtained from Appendix A – Geo-environmental and Geotechnical desk study GEO-REP001 Rev. A 23 June 2020 – ARUP).</p>	<p>PBUK need access to the bunkering pipelines, hot oil lines, troughs, sumps and supporting structures along the shore side of Balaclava Rd. for general visual review of these lines during day-to-day operations, in the event of emergencies, for general inspection and maintenance of pipelines and supporting structures.</p> <p>Recommendation 1: The release of fluid from the bunkering lines along Balaclava Rd. is classified as a source of MAH and MATTE under the COMAH regulations 2015. The ERF proposed development restricts access to these lines. PBUK should raise the matter of loss of direct access to their facilities with the ERF developer, Portland Port Ltd. and Planning Authority and request a modified design that resolves the issue.</p> <p>Recommendation 2: PBUK should request the ERF developer to offer legal guidance on their liabilities to PBUK and their employees should PBUK personnel and equipment need to operate within the boundary of the ERF.</p>	<p>Increase to safety and environmental likelihood with respect to existing HAZID ^[1] causes: 19/WP:4/1/16 24/WP:4/1/16</p> <p>Spill from the pipelines along Balaclava Rd. has been classified as a source of MAH ^[4] and MATTE ^[2]. Operation, inspection and maintenance of these lines and the sumps, troughs and other support structures are safety critical activities (SCA's) and form part of the safety barriers that reduce the likelihood of this MAH and MATTE.</p>
			<p>Suitable access for maintenance equipment as defined by PBUK (<i>PBUK should specify equipment access that may be needed to</i></p>	<p>Spill from the pipelines along Balaclava Rd. has been classified as a source of MAH ^[4] and MATTE ^[2].</p>

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			<p><i>carry-out maintenance</i>) needs to be afforded along Balaclava Rd.</p> <p>Recommendation 3: The release of fluid from the bunkering lines along Balaclava Rd. is classified as a source of MAH and MATTE under the COMAH regulations 2015. The ERF proposed development restricts access to these lines. PBUK should define their expectations for operation and maintenance access for personnel and equipment to their facilities along Balaclava Rd. and make the request (to the ERF developer, Portland Port Ltd., and Planning Authority) that the design is modified in order to accommodate these requirements.</p>	<p>Operation, inspection and maintenance of these lines and the sumps, troughs and other support structures are safety critical activities (SCA's) and form part of the safety barriers that reduce the likelihood of this MAH and MATTE.</p>
			<p>The large vehicle movements pose a threat to the bunkering pipelines that run next to Balaclava Road.</p> <p>Recommendation 4: The release of fluid from the bunkering lines along Balaclava Rd. is classified as a source of MAH and MATTE under the COMAH regulations 2015. The ERF proposed development significantly increases vehicle movements in the vicinity of these lines. PBUK should raise the matter of how the design can be modified to remove the potential of vehicle impact with their facilities (resulting in</p>	<p>Increase to safety and environmental likelihood with respect to existing HAZID ^[1] causes: 19/WP:4/1/16 24/WP:4/1/16</p> <p>Spill from the pipelines along Balaclava Rd. has been classified as a source of MAH ^[4] and MATTE ^[2] and impact by road vehicles is a potential initiating cause.</p>

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			potential release of bunkering fuel oil and consequential fire and environmental impacts), with the ERF developer, Portland Port Ltd., and Planning Authority.	For MAH-005 & 006 There will be an increase in the loss of containment frequency, probability of ignition, number of personnel potentially impacted by the event and hence risk of fatality.
		3. A road barrier is shown on what was Canteen Rd. this road (see Appendix A – Geo-environmental and Geo-technical desk study GEO-REP001 Rev. A 23 June 2020 – ARUP).	PBUK need to have access to their facilities at the Balaclava rd. in order to ensure that they can carry-out their day-to-day operations and conduct emergency response actions as required. Recommendation 3: The release of fluid from the bunkering lines along Balaclava Rd. is classified as a source of MAH and MATTE under the COMAH regulations 2015. The ERF proposed development restricts access to these lines. PBUK should define their expectations for operation and maintenance access for personnel and equipment to their facilities along Balaclava Rd. and make the request (to the ERF developer, Portland Port Ltd., and Planning Authority) that the design is modified in order to accommodate these requirements.	Spill from the pipelines along Balaclava Rd., has been classified as a source of MAH ^[4] and MATTE ^[2] .
		4. Car parking is shown (5C) as an extension of Balaclava Rd. and all new parking at the	This means that vehicles will be entering and leaving parking spaces next to the bunkering pipelines and very frequently travelling along Balaclava Rd. with increased	Increase to safety and environmental likelihood with respect to existing HAZID ^[1] causes: 19/WP:4/1/16

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		<p>north end of the facility will need to pass along Balaclava Rd. in order to exit the site (see Drawing S2953-8000-0004 Rev.0 29-9-2020 Access points Fichtner).</p>	<p>potential of impact with PBUK personnel or bunkering lines.</p> <p>There is a potential risk of vehicle fires at these new car parks.</p> <p>Recommendation 4: The release of fluid from the bunkering lines along Balaclava Rd. is classified as a source of MAH and MATTE under the COMAH regulations 2015. The ERF proposed development significantly increases vehicle movements in the vicinity of these lines. PBUK should raise the matter of how the design can be modified to remove the potential of vehicle impact with their facilities (resulting in potential release of bunkering fuel oil and consequential fire and environmental impacts), with the ERF developer, Portland Port Ltd., and Planning Authority.</p> <p>Recommendation 5: The release of fluid from the bunkering lines along Balaclava Rd., the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should raise the matter of the potential increased fire risk from vehicles, LPG storage and ERF facilities on their bunkering pipelines (resulting in potential release of bunkering fuel oil and consequential fire escalation and environmental impacts) and other facilities,</p>	<p>17/WP:4/1/16 24/WP:4/1/16</p> <p>New hazard - risk to PBUK personnel from moving vehicles associated with the ERF.</p> <p>Spill from the pipelines along Balaclava Rd. has been classified as a source of MAH ^[4] and MATTE ^[2] and impact by road vehicles is a potential initiating cause.</p> <p>For MAH-005 & 006 There will be an increase in the loss of containment frequency, probability of ignition, number of personnel potentially impacted by the event and hence risk of fatality.</p>

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			<p>with the ERF developer, Portland Port Ltd. and Planning Authority and request that a detailed fire risk assessment be carried out covering PBUK work locations.</p> <p>Recommendation 6: PBUK should raise the matter of the need for the ERF design to include safe personnel access (with respect to ERF moving vehicles and operations) to their bunker loading lines, sumps, jetty and general access between their operating locations etc. in order to carry-out their daytime and night operations and maintenance, with the ERF developer, Portland Port Ltd. and Planning Authority.</p>	
		<p>5. There is a new carpark and at the north end of Balaclava Bay within the installation boundary. There will be a pipe maintenance road included within the design road. (see: Drawing S2953-8000-0004 Rev.0 29-9-2020 Access points Fichtner).</p>		

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		<p>6. There is a proposed LPG store at the top of balaclava bay (information concerning the purpose of this building was obtained from Appendix A – Geo-environmental and Geotechnical desk study GEO-REP001 Rev. A 23 June 2020 – ARUP).</p>	<p>This LPG store building may pose a threat to the PBUK facilities and personnel working in the area.</p> <p>Recommendation 5: The release of fluid from the bunkering lines along Balaclava Rd., the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should raise the matter of the potential increased fire risk from vehicles, LPG storage and ERF facilities on their bunkering pipelines (resulting in potential release of bunkering fuel oil and consequential fire escalation and environmental impacts) and other facilities, with the ERF developer, Portland Port Ltd. and Planning Authority and request that a detailed fire risk assessment be carried out covering PBUK work locations.</p>	<p>Increase to safety and environmental likelihood with respect to existing HAZID ^[1] cause: 17/WP:4/1/16</p> <p>Spill from the pipelines along Balaclava Rd., the jetty, ship loading/unloading system or ship has been classified as a source of MAH ^[4] and MATTE ^[2] and an LPG explosion within the ERF is a potential initiating cause.</p> <p>For MAH-005 & 006 There will be an increase in the loss of containment frequency, probability of ignition, number of personnel potentially impacted by the event and hence risk of fatality.</p>
		<p>7. The proposed location of the ERF building, and air draft of the incinerator building is between the control room, the</p>	<p>UHF radio is used during normal operation and emergency events and is blocking of the signal due to the new ERF may have an adverse safety impact.</p> <p>Recommendation 20: The release of fluid from the bunkering lines along Balaclava</p>	<p>New Hazard - unavailable communications</p> <p>Spill from the pipelines along Balaclava Rd., the jetty, ship loading/unloading system or ship has been classified as a source of</p>

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		PBUK facilities along Incline Rd., the tunnels, the boiler house and Old Guard House office. This new structure may block the existing PBUK UHF radio communications.	Rd., the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should raise the matter of reduced UHF radio coverage for their facilities, with the ERF developer, Portland Port Ltd. and Planning Authority and request that a proposed solution is provided.	MAH ^[4] and MATTE ^[2] . The safety case takes credit of the UHF radios during normal and emergency events. For MAH-001 to 006 there will not be any quantifiable increase in the risk but there may be a reduction in the effectiveness in the emergency response following an incident.
2	EA notification – About this consultation.	No specific comments.		
3	Additional Document – 2 nd ES Addendum Appx 5 1 Impact of Dioxins using the TDI Approach -13-05-2022 – Fichtner. Appendix A Modelling results at discrete receptor locations – Added 10-8-2021 – Fichtner. Adapting to climate change risk assessment worksheet SW England. Geo-environmental and Geotechnical desk study	Table 3 states that Emissions release rate calculated by multiplying the normalised volumetric flow rate (39.07 N/m ³ /s) by the emissions concentration. The report concludes that: it can be concluded that the impact is 'negligible' and the effect is not significant. Table 7.2a of the HMIP document risk assessment of dioxin releases from municipal	Recommendation 10. The ERF Developer and Planning Authority should be requested to carry-out a baseline survey for air quality at the various working locations for PBUK personnel (including but not limited to: outside locations, lube oil store, control room and workshop, in the storage tunnels or at the old guard house office). These locations should form the basis for future monitoring receptors and also further consequence modelling in order to determine the probable level and health impact of short term and long-term exposure to airborne contaminants from the new ERF during normal and abnormal operation.	New Hazard – exposure of PBUK personnel to airborne contaminants during ERF operation (normal and abnormal).

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	GEO-REP001 Rev. A 23 June 2020 – ARUP.	<p>waste incineration processes <i>HMIP/CPR2/41/1/181.</i></p> <p>It appears that the dioxin assessment is primarily based on typical emissions data from within HMIP document table 7.2a and using a preliminary normalised volumetric flow rate. <i>Actual release rate may be different – so conclusions may be different.</i></p>		
4		<p>This addendum to the original report covers the modelling of emissions impacts at 5 receptors. All of these are west of the new facility and hence upwind and do not cover the PBUK facilities which are to the south and east (predominant wind direction).</p>	<p>Recommendation 10. The ERF Developer and Planning Authority should be requested to carry-out a baseline survey for air quality at the various working locations for PBUK personnel (including but not limited to: outside locations, lube oil store, control room and workshop, in the storage tunnels or at the old guard house office). These locations should form the basis for future monitoring receptors and also further consequence modelling in order to determine the probable level and health impact of short term and long-term exposure to airborne contaminants from the new ERF during normal and abnormal operation.</p>	<p>New Hazard – exposure of PBUK personnel to airborne contaminants during ERF operation (normal and abnormal).</p>

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5		General EA requirements – not applicable to PBUK impact assessment		
6		<p>Page 7 – demolition of twentieth century buildings may have resulted in asbestos presence in fill materials.</p> <p>Page 14 – No asbestos testing was undertaken by RPS in 2009 although no asbestos was found within the demolition rubble at the time.</p>	<p>During ground clearance and ground preparation PBUK personnel may be exposed to asbestos</p> <p>Recommendation 7: PBUK should raise the matter of asbestos hazard management during ground disturbance, with the ERF developer, Portland Port Ltd., and Planning Authority in order to obtain clear agreement on how their personnel will be protected from asbestos health risks.</p>	New Hazard – exposure of PBUK personnel to airborne asbestos during new facility ground clearance activities.
		Page 9 - There are two existing underground outfalls on the coastline of Balaclava Bay	This may impact the coastal waters but there is no indication that these would have a direct impact on PBUK Operations.	
		<p>Page 10 - There is a moderate risk of unexploded bombs (UXB) from WWII bombing of the area.</p> <p>The report recommends that mitigating measures should be employed during any ground investigations, excavations or piling works</p>	<p>This may pose a risk to PBUK personnel and facilities during the initial site clearance and groundworks.</p> <p>Recommendation 8: The release of fluid from the bunkering lines along Balaclava Rd., the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should raise the matter of UXB hazard management during ground disturbance, with the ERF developer, Portland Port Ltd., and Planning Authority in</p>	<p>Increase to safety and environmental likelihood with respect to existing HAZID ^[1] causes: 17/WP:4/1/16</p> <p>Spill from the pipelines along Balaclava Rd., the jetty, ship loading/unloading system or ship has been classified as a source of MAH ^[4] and MATTE ^[2] and a UXB</p>

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			<p>order to obtain clear agreement on how their personnel and property will be protected from UXB risks.</p>	<p>explosion within the ERF is a potential initiating cause.</p> <p>For MAH-001 to 006 there may be an increase in cause of the loss of containment frequency (due to new cause of UXB disturbance and explosion), probability of ignition (due to UXB explosion), number of personnel potentially impacted by the event (due to increased occupancy of construction personnel) and hence risk of fatality.</p> <p><i>(Note that this Hazard may presently exist but is unrevealed)</i></p>
		<p>Page 13 – there may be some contaminated land that may contain hydrocarbons at previous boreholes WS13 & WS 14 and at RT2.</p> <p>Page 14 - RPS concluded that a moderate risk to human health will exist on the site during the construction works.</p>	<p>During site preparation and facility operation PBUK facilities may be impacted by contaminated groundwater and airborne contaminants and PBUK personnel may face some health risks.</p> <p>Recommendation 9: PBUK should raise the matter of contaminated ground hazard management during ground disturbance, with the ERF developer, Portland Port Ltd., and Planning Authority in order to obtain clear agreement on how their personnel will be protected from health risks.</p>	<p>New Hazard – exposure of PBUK personnel to contaminated groundwater and airborne contaminants during new facility site preparation.</p>

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		<p>Table 3 on Page 18 – due to the history of the site there may be potential contaminants present.</p> <p>Page 19 – typical pathways that may be present during redevelopment and operation include:</p> <ul style="list-style-type: none"> • Human Health – ingestion of soils and dust, • Human Health – inhalation of dust, vapour or ground gas, • Human health – dermal contact with soils, surface water and groundwater, • Controlled waters – leaching of contaminants from soils, surface water and groundwater, • Controlled waters – migration of dissolved phase contamination within groundwater, • Controlled waters – transport of non- 		

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		<p>aqueous phase contaminants,</p> <ul style="list-style-type: none"> • Ground gas – ingress of ground gas and/or vapours into buildings, and • Buried services and structures – direct contact with soils and/or groundwater <p>Receptors both during construction and after completion of the development include:</p> <ul style="list-style-type: none"> • Construction workers and site neighbours during development, • Visitors, site workers and maintenance workers of the proposed commercial development, • Coastal waters (Balaclava Bay and Portland Harbour), and • Groundwater within the Tidal Flat Deposits (secondary aquifer). <p>On page 20 it states: "There is also a possible risk to site</p>		

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		<p>neighbours during construction via dust/fibre inhalation exposure pathways".</p> <p>Table 4 Page 22 - contains a number of further work recommendations that should be applied in order to mitigate against the ground contamination risks.</p>		
7	Environmental Statement Ground Conditions Technical Assessment. GEO-REP003 Rev. B 14 th July 2020. – ARUP.	Generally covering the same as the Geo-environmental and Geotechnical desk study GEO-REP001 Rev. A 23 June 2020 – ARUP.		
		<p>A risk assessment due to contaminated land (page 20) of the construction phase has been conducted and indicates that the risks are considered negligible or slight.</p> <p>Mitigations for the risks are shown in table 12, page 25</p>	<p>During site preparation PBUK facilities may be impacted by contaminated groundwater and airborne contaminants and PBUK personnel may face some health risks.</p> <p>Recommendation 9: PBUK should raise the matter of contaminated ground hazard management during ground disturbance, with the ERF developer, Portland Port Ltd., and Planning Authority in order to obtain clear agreement on how their personnel will be protected from health risks.</p>	New Hazard – exposure of PBUK personnel to contaminated groundwater and airborne contaminants during new facility site preparation.

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		<p>The risk of unexploded ordnance during construction is shown as substantial (page 20).</p> <p>Mitigations for the risks are shown in table 12 page 25.</p>	<p>This may pose a risk to PBUK personnel and facilities during the initial site clearance and groundworks.</p> <p>Recommendation 8: The release of fluid from the bunkering lines along Balaclava Rd., the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should raise the matter of UXB hazard management during ground disturbance, with the ERF developer, Portland Port Ltd., and Planning Authority in order to obtain clear agreement on how their personnel and property will be protected from UXB risks.</p>	<p>Increase to safety and environmental likelihood with respect to existing HAZID ^[1] cause: 17/WP:4/1/16</p> <p>Spill from the pipelines along Balaclava Rd., the jetty, ship loading/unloading system or ship has been classified as a source of MAH ^[4] and MATTE ^[2] and a UXB explosion within the ERF is a potential initiating cause.</p> <p>For MAH-001 to 006 there may be an increase in the loss of containment frequency (due to new cause of UXB disturbance and explosion), probability of ignition (due to UXB explosion), number of personnel potentially impacted by the event (due to increased occupancy of construction personnel) and hence risk of fatality.</p> <p><i>(Note that this Hazard may presently exist but is unrevealed)</i></p>
		<p>The risk assessment due to contaminated land (page 22)</p>	<p>During site operation PBUK facilities may be impacted by contaminated groundwater</p>	<p>New Hazard – exposure of PBUK personnel to contaminated</p>

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		during the operate phase are considered negligible.	<p>and airborne contaminants and PBUK personnel may face some health risks.</p> <p>Recommendation 9: PBUK should raise the matter of contaminated ground hazard management during ground disturbance, with the ERF developer, Portland Port Ltd., and Planning Authority in order to obtain clear agreement on how their personnel will be protected from health risks.</p>	groundwater and airborne contaminants during new facility site preparation.
8	Enviro + Geo Insight Report. Groundsure Location Intelligence. 30/3/2020 Ove Arup & Partners International Ltd.	No new impacts identified.		
9	Human Health Risk Assessment. 25 th August 2020 – ERM.	On page 2 there is a general reference from Public Health England, the Environment Agency for England and the UK Government (through Defra) jointly state: “modern, well-managed incinerators, make only a small contribution to local concentrations of air pollutants... while it is possible that such small additions could have an impact on health, such effects, if they exist, are likely to be very small and not detectable”. They	<p>It should be noted that this is a generalised statement covering the whole population of the UK and does not necessarily address the actual exposure of PBUK personnel.</p> <p>Recommendation 10. The ERF Developer and Planning Authority should be requested to carry-out a baseline survey for air quality at the various working locations for PBUK personnel (including but not limited to: outside locations, lube oil store, control room and workshop, in the storage tunnels or at the old guard house office). These locations should form the basis for future</p>	New Hazard – exposure of PBUK personnel to airborne contaminants during ERF operation (normal and abnormal).

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		<p>also state “well run and regulated modern Municipal Waste Incinerators are not a significant risk to public health”.</p>	<p>monitoring receptors and also further consequence modelling in order to determine the probable level and health impact of short term and long-term exposure to airborne contaminants from the new ERF during normal and abnormal operation.</p>	
		<p>Figure 2.2 page 12 shows the predicted PM_{2.5} plot.</p> <p>Note that there is no explanation as to how and on what basis this plot has been generated.</p>	<p>The plot shows an increased PM_{2.5} concentration significantly above normal background values for the area of the PBUK jetty. The implication of this is that personnel that regularly work on the jetty will be exposed to an increased health risk.</p> <p>Since the basis of this plot has not been stated it is not possible to ascertain whether PBUK personnel that work at the lube oil store, control room and workshop, in the storage tunnels or at the old guard house office will be adversely affected either in the long term or short term (note that the EA asked for more specific data concerning Dioxin concentrations in relation to TDI around the domestic receptors to the west (up wind) but not for the PBUK worker locations).</p> <p>Recommendation 10. The ERF Developer and Planning Authority should be requested to carry-out a baseline survey for air quality</p>	<p>New hazard – airborne particles from the new ERF stack.</p>

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			<p>at the various working locations for PBUK personnel (including but not limited to: outside locations, lube oil store, control room and workshop, in the storage tunnels or at the old guard house office). These locations should form the basis for future monitoring receptors and also further consequence modelling in order to determine the probable level and health impact of short term and long-term exposure to airborne contaminants from the new ERF during normal and abnormal operation.</p>	
		<p>Figure 2.3 page 14 shows the predicted PM₁₀ plot.</p> <p>Note that there is no explanation as to how and on what basis this plot has been generated.</p>	<p>The plot shows an increased PM₁₀ concentration above normal background values for the area of the PBUK jetty. The implication of this is that personnel that regularly work on the jetty will be exposed to an increased health risk.</p> <p>Since the basis of this plot has not been stated it is not possible to ascertain whether PBUK personnel that work at the lube oil store, control room and workshop, in the storage tunnels or at the old guard house office will be adversely affected either in the long term or short term (note that the EA asked for more specific data concerning Dioxin concentrations in relation to TDI around the domestic receptors to the west (up wind) but not for the PBUK worker locations).</p>	<p>New hazard – airborne particles from the new ERF stack.</p>

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		<p>Figure 2.4 page 16 shows the predicted NO₂ plot.</p> <p>Note that there is no explanation as to how and on what basis this plot has been generated.</p> <p>The Conclusion (page 19 states): "The health effects associated with emissions of NO₂, SO₂, PM₁₀ and PM_{2.5} from the ERF are shown to be very small and could reasonably be described as negligible, especially in comparison to the health effects associated with the existing exposure to atmospheric pollutants and the existing background events for the effects considered". However, this is refereeing to the population to the west of the facility and ignores the personnel to the east of the facility. It also does not clearly quantify how the analysis has been conducted or whether personnel will be exposed to short term exposures that may be damaging to health.</p>	<p>The plot shows an increased NO₂ concentration significantly above normal background values for the area of the PBUK jetty. The implication of this is that personnel that regularly work on the jetty will be exposed to an increased health risk.</p> <p>Since the basis of this plot has not been stated it is not possible to ascertain whether PBUK personnel that work at the lube oil store, control room and workshop, in the storage tunnels or at the old guard house office will be adversely affected either in the long term or short term (note that the EA asked for more specific data concerning Dioxin concentrations in relation to TDI around the domestic receptors to the west (up wind) but not for the PBUK worker locations).</p> <p>Recommendation 10. The ERF Developer and Planning Authority should be requested to carry-out a baseline survey for air quality at the various working locations for PBUK personnel (including but not limited to: outside locations, lube oil store, control room and workshop, in the storage tunnels or at the old guard house office). These locations should form the basis for future monitoring receptors and also further consequence modelling in order to determine the probable level and health impact of short term and long-term</p>	<p>New hazard – NO₂ releases from the new ERF stack.</p>

Ref. Doc.	Powerfuel Document Reviewed	Quotations/comments & observations linked to the documents reviewed	General Implication to PBUK and Recommendations	Specific impacts to PBUK existing hazard assessments ^{[1][2][4]}
			<p>exposure to airborne contaminants from the new ERF during normal and abnormal operation.</p>	
		<p>Figure 2.4 page 16 shows the predicted SO₂ plot.</p> <p>Note that there is no explanation as to how and on what basis this plot has been generated.</p>	<p>The plot shows an increased SO₂ concentration significantly above normal background values for the area of the PBUK jetty. The implication of this is that personnel that regularly work on the jetty will be exposed to an increased health risk.</p> <p>Since the basis of this plot has not been stated it is not possible to ascertain whether PBUK personnel that work at the lube oil store, control room and workshop, in the storage tunnels or at the old guard house office will be adversely affected either in the long term or short term (note that the EA asked for more specific data concerning Dioxin concentrations in relation to TDI around the domestic receptors to the west (up wind) but not for the PBUK worker locations).</p> <p>Recommendation 10. The ERF Developer and Planning Authority should be requested to carry-out a baseline survey for air quality at the various working locations for PBUK personnel (including but not limited to: outside locations, lube oil store, control room and workshop, in the storage tunnels</p>	<p>New hazard – SO₂ releases from the new ERF stack.</p>

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			<p>or at the old guard house office). These locations should form the basis for future monitoring receptors and also further consequence modelling in order to determine the probable level and health impact of short term and long-term exposure to airborne contaminants from the new ERF during normal and abnormal operation.</p>	
		<p>The Conclusion (page 19 states): "The health effects associated with emissions of NO₂, SO₂, PM₁₀ and PM_{2.5} from the ERF are shown to be very small and could reasonably be described as negligible, especially in comparison to the health effects associated with the existing exposure to atmospheric pollutants and the existing background events for the effects considered".</p>	<p>This statement is referring to the population to the west of the facility and ignores the personnel to the east of the facility. It also does not clearly quantify how the analysis has been conducted or whether personnel will be exposed to short term exposures that may be damaging to health.</p> <p>Recommendation 10. The ERF Developer and Planning Authority should be requested to carry-out a baseline survey for air quality at the various working locations for PBUK personnel (including but not limited to: outside locations, lube oil store, control room and workshop, in the storage tunnels or at the old guard house office). These locations should form the basis for future monitoring receptors and also further consequence modelling in order to determine the probable level and health impact of short term and long-term exposure to airborne contaminants from the</p>	<p>New hazard – airborne particles from the new ERF stack.</p> <p>New hazard – NO₂ releases from the new ERF stack.</p> <p>New hazard – SO₂ releases from the new ERF stack></p>

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			new ERF during normal and abnormal operation.	
		<p>The evaluation of Emissions concentrations for compounds of particular concern (COPC) (page 22) have only considered receptors to the west and north of the facility and have not considered inhalation pathways for toxic effects for adults.</p>	<p>The emissions concentrations of COPC's have not been assessed for receptors that cover the PBUK workforce that typically work at: the jetty, the lube oil store, control room and workshop, the storage tunnels or at the old guard house office and it is not possible to know whether personnel who work in these locations will suffer adverse health effects (long or short term) from airborne contaminants.</p> <p>Recommendation 10. The ERF Developer and Planning Authority should be requested to carry-out a baseline survey for air quality at the various working locations for PBUK personnel (including but not limited to: outside locations, lube oil store, control room and workshop, in the storage tunnels or at the old guard house office). These locations should form the basis for future monitoring receptors and also further consequence modelling in order to determine the probable level and health impact of short term and long-term exposure to airborne contaminants from the new ERF during normal and abnormal operation.</p>	<p>New hazard – airborne particles from the new ERF stack.</p> <p>New hazard – NO₂ releases from the new ERF stack.</p> <p>New hazard – SO₂ releases from the new ERF stack.</p>

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10	Indicative Water Flow Diagram	Does not add any specific impacts to PBUK		
11	Proposed Ground Investigation Locations Figure 2 – rev. F1 – ARUP	Does not add any specific impacts to PBUK		
12	Site location plan – S2953-8000-0011 Rev.1 - Fichtner	Does not add any specific impacts to PBUK		
13	Sensitive receptors – S2953-8000-0012 Rev.1 - Fichtner	<p>Sensitive receptors have been shown at some PBUK locations. R3 & R2 Lube Oil store, Control room and workshop R1 Jetty head and R13 Boiler house.</p> <p>However, it's not clear how or what fire impacts have been considered at these sensitive receptors.</p>	<p>Recommendation 5: The release of fluid from the bunkering lines along Balaclava Rd., the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should raise the matter of the potential increased fire risk from vehicles, LPG storage and ERF facilities on their bunkering pipelines (resulting in potential release of bunkering fuel oil and consequential fire escalation and environmental impacts) and other facilities, with the ERF developer, Portland Port Ltd. and Planning Authority and request that a detailed fire risk assessment be carried out covering PBUK work locations.</p> <p>Recommendation 22: The fluids being shipped between the jetty and storage (and vice versa) are flammable and under pressure. A loss of containment of these fluids from the bunkering pipelines may typically be ignited by vehicles, ships,</p>	<p>Increase to safety and environmental likelihood with respect to existing HAZID ^[1] cause: 17/WP:4/1/16</p> <p>Spill from the pipelines along Balaclava Rd., the jetty, ship loading/unloading system or ship has been classified as a source of MAH ^[4] and MATTE ^[2] and a fire within the ERF may be a potential initiating cause.</p> <p>For MAH-001 to 006 there may be an increase in cause of the loss of containment frequency, probability of ignition, number of personnel potentially impacted by the event and hence risk of fatality.</p>

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			electrical systems or naked flames within the ERF. This is an increased risk that the ERF Developer, Portland Port Ltd., and Planning Authority should include within a fire assessment.	
14	Additional Information for Duly Making – Response to Information Request by EA. – 23-12-2020 Fichtner	<p>The fire prevention plan sensitive receptors R3 & R2 Lube Oil store, Control room and workshop R1 Jetty head and R13 Boiler house have been listed.</p> <p>However, it's not clear how or what fire impacts have been considered at these sensitive receptors.</p>	<p>Recommendation 5: The release of fluid from the bunkering lines along Balaclava Rd., the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should raise the matter of the potential increased fire risk from vehicles, LPG storage and ERF facilities on their bunkering pipelines (resulting in potential release of bunkering fuel oil and consequential fire escalation and environmental impacts) and other facilities, with the ERF developer, Portland Port Ltd. and Planning Authority and request that a detailed fire risk assessment be carried out covering PBUK work locations.</p> <p>Recommendation 22: The fluids being shipped between the jetty and storage (and vice versa) are flammable and under pressure. A loss of containment of these fluids from the bunkering pipelines may typically be ignited by vehicles, ships, electrical systems or naked flames within the ERF. This is an increased risk that the ERF Developer, Portland Port Ltd., and</p>	<p>Increase to safety and environmental likelihood with respect to existing HAZID ^[1] cause: 17/WP:4/1/16</p> <p>Spill from the pipelines along Balaclava Rd., the jetty, ship loading/unloading system or ship has been classified as a source of MAH ^[4] and MATTE ^[2] and a fire within the ERF may be a potential initiating cause.</p> <p>For MAH-001 to 006 there may be an increase in cause of the loss of containment frequency, probability of ignition, number of personnel potentially impacted by the event and hence risk of fatality.</p>

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			Planning Authority should include within a fire assessment.	
15	Application for an environmental permit Part A.	Does not add any specific impacts to PBUK.		
16	Application for an environmental permit Part B2.	Powerfuel are asking for an environmental permit for the next 40 years.		
17	Application for an environmental permit Part B3.			
18	Application for an environmental permit Part F1.			
19	RPS Port of Portland – Phase 2 Site Investigation report – W4B renewable Energy Ltd. May 2009.	This report was commissioned in 2009 and covers a very different site development that is no longer applicable other than the borehole logging – and is therefore not applicable to the impact assessment for PBUK.		
20	Portland Energy recovery facility – CHP heat plan (including RI) – 267701-00/Heat report September 2020 – ARUP.	Section 3.1.1 item 7. Bottom ash will fall from the end of the grate into a discharger, comprising a water bath. The water will act as an ash quench and make it possible to remove cooled bottom ash without dust generation. The Ash will then be transferred to a dedicated	The impact airborne ash is an issue that may impact the health of PBUK personnel and PBUK operating facilities. The export route and export transportation and handling method of the ash should be explained further in order that any impacts on PBUK can be determined. Recommendation 11. PBUK should raise the matter of airborne ash that may impact	New hazard – airborne ash particles due to ash handling and transport.

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		Incinerator Bottom Ash (IBA) storage area.	the health of their personnel and possibly their facilities at the jetty with the ERF developer, Portland Port Ltd. and Planning Authority and request that further details of how this issue will be mitigated within the proposed design.	
21	Portland Energy Recovery Facility – Environmental Statement - 8 Ground Conditions and Water Quality.	Para 8.63 The risk of spillages from vehicles will be managed by operational measures such as speed limits and road markings and implementing procedures for delivery and movement of materials. All vehicles carrying RDF and other materials into or out of the facility will be covered or sheeted, minimising the potential for litter to escape.		
		<p>Para 8.64 As discussed in Chapter 2, under the worst-case scenario of all deliveries and removal of ash being undertaken by road, the proposed development is forecast to generate up to 80 HGV movements per day (40 each way).</p> <p>Note that in Portland Energy Recovery Facility – BS4142 Noise Impact Assessment – AAc/267701-/R03a Issue 2 21st</p>	<p>These road movements will increase the risk of PBUK personnel injury and road traffic impacts on the PBUK bunker fuel lines.</p> <p>Recommendation 4: The release of fluid from the bunkering lines along Balaclava Rd. is classified as a source of MAH and MATTE under the COMAH regulations 2015. The ERF proposed development significantly increases vehicle movements in the vicinity of these lines. PBUK should raise the matter of how the design can be modified to remove the potential of vehicle impact with their facilities (resulting in</p>	<p>Increase to safety and environmental likelihood with respect to existing HAZID ^[1] causes:</p> <p>11/WP:4/1/16 14/WP:4/1/16</p> <p>Spill from the pipelines along Balaclava Rd. has been classified as a source of MAH ^[4] and MATTE ^[2] and impact by road vehicles is a potential initiating cause.</p>

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		<p>May 2021 – ARUP section 2.1 it states that site speed limit will be 20mph</p>	<p>potential release of bunkering fuel oil and consequential fire and environmental impacts), with the ERF developer, Portland Port Ltd., and Planning Authority.</p> <p>Recommendation 6: PBUK should raise the matter of the need for the ERF design to include safe personnel access (with respect to ERF moving vehicles and operations) to their bunker loading lines, sumps, jetty and general access between their operating locations etc. in order to carry-out their daytime and night operations and maintenance, with the ERF developer, Portland Port Ltd. and Planning Authority.</p> <p>Recommendation 21: The release of fluid from the bunkering lines along Balaclava Rd. is classified as a source of MAH and MATTE under the COMAH regulations 2015. The increased number of large vehicles stopped at the access gate on what was Canteen Rd. and also potentially extending into Incline Rd. may result in serious delays for PBUK personnel and vehicles that may need to attend an incident with the bunkering system. Unimpeded road access to all PBUK operating areas should be agreed with the ERF developer, Portland Port Ltd., and Planning Authority.</p>	<p>For MAH-005 and 006 there will be an increase in the loss of containment frequency, probability of ignition, number of personnel potentially impacted by the event and hence risk of fatality.</p> <p>For MAH -001 to MAH-006 there may be an increase in emergency response time following an incident.</p>
		<p>Para 8.65 "The delivery of RDF to the plant by ship will increase</p>	<p>Ship impact risk from ship carrying RDF with PBUK ship or jetty will increase and</p>	<p>Increase to safety and environmental likelihood with</p>

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		<p>ship movements in the area, potentially affecting coastal waters</p>	<p>occupational risk to personnel working on the jetty will increase.</p> <p>Recommendation 12: The release of fluid from the bunkering lines on the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should discuss with Portland Port Ltd. how berthing of RDF ships will be carried-out and any changes required for the berthing of ships on the bunkering jetty.</p>	<p>respect to existing HAZID ^[1] causes: 9/WP:4/1/16 11/WP:4/1/16 13/WP:4/1/16 14/WP:4/1/16 23/WP:4/1/16</p> <p>Spill from the pipelines on the jetty, ship loading/unloading system or ship has been classified as a source of MAH ^[4] and MATTE ^[2] and impact by road vehicles carrying RDF is a potential initiating cause.</p> <p>For MAH-001 to 004 there will be an increase in the loss of containment frequency, probability of ignition, number of personnel potentially impacted by the event and hence risk of fatality.</p>
22	<p>Portland Energy Recovery Facility – BS4142 Noise Impact Assessment – AAC/267701-/R03a Issue 2 21st May 2021 - ARUP</p>	<p>Section 2.2 – page 6. Calculation of noise impact at noise sensitive receptors did not take any account of PBUK work locations.</p>	<p>PBUK may be impacted by noise during construction and plant operation and an assessment should be conducted in order to demonstrate that the plant noise will not result in any adverse effect on health and quality of life of PBUK personnel.</p>	<p>New hazard –noise during construction and operation of the ERF.</p>

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			<p>Recommendation 13: PBUK should request the ERF developer and Planning Authority to extend the receptors for baseline and monitoring noise surveys and the noise assessment to cover the PBUK work locations during ERF construction and operation.</p>	
23	<p>Portland Energy Recovery Facility – BS4142 Noise Impact Assessment – AAc/267701-15/R01 Rev A 26th August 2020 - ARUP</p>	<p>Figure 5 - Estimated Noise Emission from Operational Site</p> <p>Note that this figure was removed from the later revision (Issue 2 21st May 2021) of this report.</p>	<p>The noise level map indicates that many of the PBUK normal working locations will experience an increase in noise coming from the new facility. This may be detrimental to the health and quality of life of PBUK employees.</p> <p>Recommendation 13: PBUK should request the ERF developer and Planning Authority to extend the receptors for baseline and monitoring noise surveys and the noise assessment to cover the PBUK work locations during ERF construction and operation.</p>	<p>New hazard –noise during construction and operation of the ERF.</p>
		<p>Table 9 page 18 – Initial assessment of construction noise has been made but does not cover the locations of the PBUK workers which will be much closer than any of the chosen receptors.</p>	<p>The effects of construction noise may result in an adverse impact on the health and quality of life of PBUK employees.</p> <p>Recommendation 13: PBUK should request the ERF developer and Planning Authority to extend the receptors for baseline and</p>	<p>New hazard –noise during construction and operation of the ERF.</p>

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		Note that this figure was removed from the later revision (Issue 2 21 st May 2021) of this report.	monitoring noise surveys and the noise assessment to cover the PBUK work locations during ERF construction and operation.	
24	Portland Energy recovery Facility – Shadow Appropriate Assessment – September 2020	No direct bearing on impacts at PBUK		
25	Portland Energy Recovery Facility – BAT Assessment Report. 21-12-2020 Fichtner	This report quantifies the emissions before and after the abatement processes have been applied. This data is used in the impact assessments – but otherwise has no direct bearing on the impacts on PBUK.		
26	Portland Energy recovery Facility – Supporting Information. Rev.02 20-12-2020 Fichtner	<p>Para 1.4.1 (page 9) Raw Materials and Reagents</p> <p>“Waste will be delivered to the Facility as both baled waste and ‘loose’ RDF”</p> <p>“Incoming baled waste which is delivered by ship will be offloaded at the 50tonne berth on the Inner Breakwater, to the northeast of the Facility (or other</p>	<p>Baled waste may be delivered by ship and offloaded onto HGV at the 50tonne berth. This may impact access to PBUK facilities either along the berth or when ships are arriving departing.</p> <p>Unbaled waste will be delivered by road and will be tipped into a waste bunker.</p> <p>In either case there is potential for airborne litter (the ERF and 50tonne berth are upwind of the jetty area) to enter PBUK</p>	<p>Increase to safety and environmental likelihood with respect to existing HAZID ^[1] causes:</p> <p>6/WP:4/1/16 9/WP:4/1/16 11/WP:4/1/16 13/WP:4/1/16 14/WP:4/1/16 19/WP:4/1/16 23/WP:4/1/16</p>

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		<p>berthing locations as directed by the Port) and transferred to the Facility by HGV.”</p> <p>“Incoming waste which is delivered via road will be tipped into the waste bunker.”</p>	<p>facilities and pose a general nuisance (pipeline troughs and sumps) and possible fire risk around electrical equipment or health risk to PBUK personnel on the jetty.</p> <p>Recommendation 18: The release of fluid from the bunkering lines on the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should request the ERF developer and Planning Authority to supply an update of the risk assessment covering the 50tonne berth operation and HGV movements from the berth to the ERF in order to demonstrate that the risks for PBUK facilities remain within the tolerable if ALARP region.</p> <p>Recommendation 14: PBUK should request the ERF developer and Planning Authority to make a safety and health assessment of the potential impact of airborne litter at the PBUK work locations and commit to implement a monitoring regime in order to ensure that litter is managed.</p>	<p>Spill from the pipelines along Balaclava Rd., on the jetty, ship loading/unloading system or ship has been classified as a source of MAH ^[4] and MATTE ^[2] and impact by RDF road vehicles is a potential initiating cause.</p> <p>For MAH-001 to 006 there will be an increase in the loss of containment frequency, probability of ignition, number of personnel potentially impacted by the event and hence risk of fatality.</p>
		<p>Page 9.</p> <p>Calcium hydroxide will be supplied to site by tankers, transferred pneumatically by compressor and stored in silos.</p>		

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		<p>There will be fabric filters on the outlet vents of the silo.</p> <p>Powdered activated carbon will be delivered by truck and transferred pneumatically by compressor and stored in a silo. There will be fabric filters on the outlet vents of the silo.</p> <p>The report states that: "Ammonia will be delivered to site by tanker and stored in designated tanks with secondary containment" (note that this is incorrect – it is a 25% Ammonium Hydroxide solution – not ammonia – see: Portland Energy recovery Facility – Site Conditions Report – Revision 02 21-12-2020 - Fichtner).</p> <p>Gasoil will be stored on-site.</p> <p>Other unspecified liquid chemicals will be stored.</p>		
		<p>Page 28 Emissions of Odour</p>	<p>PBUK personnel may be subjected to odour nuisance when at their workplace.</p>	<p>New hazard – odour nuisance from the ERF.</p>

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		The report states: "The storage and handling of waste is considered to have potential to give rise to odour."	Recommendation 15: PBUK should request the ERF developer and Planning Authority to define odour receptors and a future monitoring regime, carry-out a baseline survey and conduct a technical assessment of the potential for odour to impact the PBUK work locations.	
27	Portland Energy Recovery facility – Environmental Risk Assessment. Rev.01 21-12-2020 – Fichtner.	<p>Section 2 table 1- Odour Risk Assessment and Management Plan.</p> <p>Odour risk has only been considered for residential receptors.</p>	<p>PBUK may be subjected to odour nuisance when at their workplace.</p> <p>Recommendation 15: PBUK should request the ERF developer and Planning Authority to define odour receptors and a future monitoring regime, carry-out a baseline survey and conduct a technical assessment of the potential for odour to impact the PBUK work locations.</p>	New hazard – odour nuisance from the ERF.
		<p>Section 3 Table A2- Noise and Vibration Risk Assessment & Management.</p> <p>The selected noise receptors do not cover the work locations for PBUK personnel.</p>	<p>PBUK may be impacted by noise during construction and plant operation and therefore the baseline noise survey should be conducted in order to demonstrate that the plant noise will not result in any adverse effect on health and quality of life of PBUK personnel.</p> <p>Recommendation 13: PBUK should request the ERF developer and Planning Authority to extend the receptors for baseline and monitoring noise surveys and the noise assessment to cover the PBUK work</p>	New hazard –noise during construction and operation of the ERF.

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			locations during ERF construction and operation.	
		Section 4 Table A3- Fugitive Emissions Risk Assessment and Management Plan		
		<p>Section 5 Table A4 – accidents Risk Assessment and Management Plan.</p> <p>There are several causes of impacts.</p>	<p>Since many of the PBUK personnel work downwind of this new facility the assessment of accidents should be expanded to cover the potential impacts on their personnel and business and the possible impairment of existing emergency escape routes of PBUK personnel.</p> <p>Recommendation 16: The release of fluid from the bunkering lines along Balaclava Rd., the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should request the ERF developer and Planning Authority to extend the accident risk evaluation (considering worst credible consequence) for incidents emanating from the ERF to cover the work locations of the PBUK personnel and facilities.</p> <p>Recommendation 19: PBUK should request the ERF developer and Planning Authority to extend the accident risk evaluation (considering worst credible consequence) for incidents emanating from the ERF to cover the possible impairment of</p>	<p>New Hazard – presently undefined hazard(s) emanating from ERF site.</p> <p>Spill from the pipelines on the jetty, ship loading/unloading system or ship has been classified as a source of MAH ^[4] and MATTE ^[2] and any potential initiating causes from the ERF should be assessed.</p> <p>For MAH-001 to 006 there may be an increase in the loss of containment frequency, probability of ignition, number of personnel potentially impacted by the event and hence risk of fatality.</p>

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			emergency escape from the PBUK work locations.	
		<p>Section 5 Table A4 – accidents Risk Assessment and Management Plan</p> <p>The risk assessment has not adequately considered the potential ultimate consequence (harm potential) of chemical release during road transport, offloading and plant operation – but these are unlikely to impact PBUK personnel.</p>	<p>Recommendation 16: The release of fluid from the bunkering lines along Balaclava Rd., the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should request the ERF developer and Planning Authority to extend the accident risk evaluation (considering worst credible consequence) for incidents emanating from the ERF to cover the work locations of the PBUK personnel and facilities.</p>	<p>New Hazard – presently undefined hazard(s) emanating from ERF site.</p> <p>Spill from the pipelines on the jetty, ship loading/unloading system or ship has been classified as a source of MAH ^[4] and MATTE ^[2] and any potential initiating causes from the ERF should be assessed.</p> <p>For MAH-001 to 006 there will be an increase in the loss of containment frequency, probability of ignition, number of personnel potentially impacted by the event and hence risk of fatality.</p>
28	Portland Energy Recovery Facility – Fire Prevention Plan. Rev. 2 21-12-2020 Fichtner.	Page 8 - location of gas cylinders is still to be finalised.	<p>There is a possible risk of personnel injury and infrastructure damage on the bunkering pipeline from an LPG event (presently unspecified).</p> <p>There is a possibility of personnel injury and infrastructure damage due to blast overpressure at the control room from an LPG event (presently unspecified).</p> <p>Recommendation 5: The release of fluid from the bunkering lines along Balaclava Rd., the jetty, ship loading/unloading</p>	<p>Increase to safety and environmental likelihood with respect to existing HAZID ^[1] cause: 17/WP:4/1/16</p> <p>New Hazard – exposure of PBUK personnel (at workplace or within occupied buildings) to blast overpressure from ERF LPG storage.</p>

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			<p>system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should raise the matter of the potential increased fire risk from vehicles, LPG storage and ERF facilities on their bunkering pipelines (resulting in potential release of bunkering fuel oil and consequential fire escalation and environmental impacts) and other facilities, with the ERF developer, Portland Port Ltd. and Planning Authority and request that a detailed fire risk assessment be carried out covering PBUK work locations.</p> <p>Recommendation 22: The fluids being shipped between the jetty and storage (and vice versa) are flammable and under pressure. A loss of containment of these fluids from the bunkering pipelines may typically be ignited by vehicles, ships, electrical systems or naked flames within the ERF. This is an increased risk that the ERF Developer, Portland Port Ltd., and Planning Authority should include within a fire assessment.</p>	<p>Spill from the pipelines along Balaclava Rd., the jetty, ship loading/unloading system or ship has been classified as a source of MAH ^[4] and MATTE ^[2] and an LPG fire or explosion within the ERF may be a potential initiating cause.</p> <p>For MAH-001 to 006 there may be an increase in the loss of containment frequency, probability of ignition, number of personnel potentially impacted by the event and hence risk of fatality.</p>
		<p>No evaluation of how potential fire scenarios that could impact neighbouring facilities has been carried out.</p> <p>See Drawing S2953-8000-0005 Rev.0 29-9-2020 Material</p>	<p>An evaluation of the impact on PBUK work locations of significant fire events from the facility should be conducted.</p> <p>Recommendation 5: The release of fluid from the bunkering lines along Balaclava Rd., the jetty, ship loading/unloading system or ship is classified as a source of</p>	<p>Increase to safety and environmental likelihood with respect to existing HAZID ^[1] cause: 17/WP:4/1/16</p>

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		Storage Areas – Fichtner for location of LPG and other chemical storage facilities.	MAH and MATTE under the COMAH regulations 2015. PBUK should raise the matter of the potential increased fire risk from vehicles, LPG storage and ERF facilities on their bunkering pipelines (resulting in potential release of bunkering fuel oil and consequential fire escalation and environmental impacts) and other facilities, with the ERF developer, Portland Port Ltd. and Planning Authority and request that a detailed fire risk assessment be carried out covering PBUK work locations.	<p>Spill from the pipelines along Balaclava Rd., the jetty, ship loading/unloading system or ship has been classified as a source of MAH ^[4] and MATTE ^[2] and a fire within the ERF may be a potential initiating cause.</p> <p>For MAH-001 to 006 there may be an increase in the loss of containment frequency, probability of ignition, number of personnel potentially impacted by the event and hence risk of fatality.</p>
29	Portland Energy Recovery Facility – Non-Technical Summary Rev.01 21-12-2020 Fichtner.	No new information in relation to impacts to PBUK.		
30	Portland Energy Recovery Facility – CHP ready Assessment – Rev.0 – 29-9-2020 Fichtner.	No new information in relation to impacts to PBUK.		
31	Drawing S2953-8000-0003 rev.0 29-9-2020 Emissions Points – Fichtner.	Stack (emission point A1) is only 60m from the PBUK lube oil store, control room and workshop.		

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32	Drawing S2953-8000-0004 Rev.0 29-9-2020 Access points – Fichtner.	No new information in relation to impacts to PBUK.		
33	Drawing S2953-8000-0005 Rev.0 29-9-2020 Material Storage Areas – Fichtner.	LPG building is <5m from the bunkering pipelines, 70m from the PBUK control room.	<p>There is a possible risk of infrastructure damage on the bunkering pipeline from an LPG fire in the ERF storage area (building).</p> <p>There is a possibility of a high blast overpressure and infrastructure and personnel impact at the control room if LPG is being stored within a building that could be the source of a fully constrained explosion.</p> <p>Recommendation 5: The release of fluid from the bunkering lines along Balaclava Rd., the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should raise the matter of the potential increased fire risk from vehicles, LPG storage and ERF facilities on their bunkering pipelines (resulting in potential release of bunkering fuel oil and consequential fire escalation and environmental impacts) and other facilities, with the ERF developer, Portland Port Ltd. and Planning Authority and request that a detailed fire risk assessment be carried out covering PBUK work locations.</p>	<p>Increase to safety and environmental likelihood with respect to existing HAZID ^[1] cause: 17/WP:4/1/16</p> <p>New Hazard – exposure of PBUK personnel (at workplace or within occupied buildings) to blast overpressure from ERF LPG storage.</p> <p>Spill from the pipelines along Balaclava Rd., the jetty, ship loading/unloading system or ship has been classified as a source of MAH ^[4] and MATTE ^[2] and a LPG fire or explosion within the ERF may be a potential initiating cause.</p> <p>For MAH-001 to 006 there may be an increase in the loss of containment frequency, probability of ignition, number of personnel potentially impacted by the event and hence risk of fatality.</p>

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		<p>Chemical storage is approximately 80 to 100m from the PBUK control room, workshop & lube store – but chemicals are unlikely to be airborne and should not impact PBUK personnel.</p> <p>Fuel Oil will be present (unspecified quantity) and will probably be 80 to 100m from PBUK control room, workshop, and lube store (shielded by new facility building). It therefore seems unlikely that this material will pose any immediate threat to PBUK personnel.</p>		<p>New hazard – exposure of PBUK personnel to airborne chemicals from the ERF</p>
34	Drawing S2953-8000-0006 Rev.0 29-9-2020 Indicative Fire Hydrants – Fichtner.	No new information in relation to impacts to PBUK.		
35	Drawing S2953-8000-0007 Rev.0 29-9-2020 Indicative Fire Walls – Fichtner.	The RDF pit (which will have firewalls on their sides) is 10m from the PBUK bunkering fuel lines.	<p>An evaluation of the impact on PBUK work locations of significant fire events from the facility should be conducted.</p> <p>Recommendation 5: The release of fluid from the bunkering lines along Balaclava Rd., the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should raise the</p>	<p>Increase to safety and environmental likelihood with respect to existing HAZID ^[1] cause: 17/WP:4/1/16</p> <p>Spill from the pipelines along Balaclava Rd., the jetty, ship loading/unloading system or ship has been classified as a source of</p>

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			matter of the potential increased fire risk from vehicles, LPG storage and ERF facilities on their bunkering pipelines (resulting in potential release of bunkering fuel oil and consequential fire escalation and environmental impacts) and other facilities, with the ERF developer, Portland Port Ltd. And Planning Authority and request that a detailed fire risk assessment be carried out covering PBUK work locations.	MAH ^[4] and MATTE ^[2] and a fire within the ERF may be a potential initiating cause. For MAH-005 & 006 there may be an increase in the loss of containment frequency, probability of ignition, number of personnel potentially impacted by the event and hence risk of fatality.
36	Drawing S2953-8000-0008 Rev.0 29-9-2020 Indicative Quarantine Area – Fichtner.	No new information in relation to impacts to PBUK.		
37	Sankey Diagram Rev.01.	No new information in relation to impacts to PBUK.		
38	Application Bespoke NDM Response – attended measure data spreadsheet.	No new information in relation to impacts to PBUK.		
39	Application Bespoke NDM Response – unattended logged data spreadsheet.	No new information in relation to impacts to PBUK.		
40	Dorset Council Planning Documents Link.	Link is not working.		
41	Environment Agency Website – permit consultation.	No new information in relation to impacts to PBUK.		

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		Again, the Dorset Council Planning Documents Link is not working.		
42	Environmental Permit Application Privacy Notice.	No new information in relation to impacts to PBUK.		
43	H1data file	H1 file appears to be air emissions data but unable to interpret it.		
44	Environment Agency Notice of request for more information. 4-11-2021.	The document states: "Software validation documents, the Environment Agency's own check modelling, sensitivity analysis, and interpretation of uncertainties indicate that the applicant's predictions are likely to underestimate potential impacts at sensitive receptors. As a result of our audit, we found that the applicant's conclusions cannot be used for permit determination."	Recommendation 17. Due to the prevailing wind direction and extreme topography (wind is mostly from the west) and above or around the cliff that sit to the west of the ERF). The ERF Developer and Planning Authority should evaluate the accuracy and appropriateness of the modelling tool(s) that are being used to evaluate the airborne exposure of PBUK personnel at their work locations and suitable sensitivity bands should be applied to any exposure values reported.	
45	Portland ERF – response to AQMAU Query on Schedule 5 Response.	No new information in relation to impacts to PBUK.		
46	Portland ERF Appendix D.1 – Baseline Analysis Revision 1 14-8-2020 Fichtner.	No new information in relation to impacts to PBUK.		

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47	Portland ERF Appendix D.2 Process Emissions Modelling Revision 2 25-8-2020 Fichtner.	<p>Figure 6.4 to 19 show plots of emissions from the vent stack of the facility and their impact on the jetty area.</p> <p>The report has taken no cognisance of this fact and there is no assessment of potential impacts to PBUK personnel that work local to the jetty.</p>	<p>PBUK personnel may be exposed to increased airborne chemicals that cause adverse health effects due to stack emissions from the facility.</p> <p>Recommendation 10. The ERF Developer and Planning Authority should be requested to carry-out a baseline survey for air quality at the various working locations for PBUK personnel (including but not limited to: outside locations, lube oil store, control room and workshop, in the storage tunnels or at the old guard house office). These locations should form the basis for future monitoring receptors and also further consequence modelling in order to determine the probable level and health impact of short term and long-term exposure to airborne contaminants from the new ERF during normal and abnormal operation.</p>	New Hazard – airborne toxic materials from the ERF stack (normal operation and abnormal operation).
48	Portland Energy recovery Facility – Greenhouse Gas Assessment – revision 2 21-12-2020 – Fichtner.	No new information in relation to impacts to PBUK.		
49	Portland Energy recovery Facility – Site Conditions Report – Revision 02 21-12-2020 – Fichtner.	No new information in relation to impacts to PBUK.		

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50	Portland Energy Recovery Facility – Abnormal Emissions Assessment – Revision 0 17-9-2020 Fichtner.	<p>Page 5 states. “In relation to the magnitude of dioxin emissions during plant start-up and shutdown, research has been undertaken by AEA Technology on behalf of the EA. Whilst elevated emissions of dioxins (within one order of magnitude) were found during shutdown and start-up phases where the waste was not fully established on the grate, the report concluded that:</p> <p>“The mass of dioxin emitted during start-up and shutdown for a 4-5 day planned outage was similar to the emission which would have occurred during normal operation in the same period. The emission during the shutdown and restart is equivalent to less than 1% of the estimated annual emission (if operating normally all year).”</p>	<p>During facility start-up and shutdown the PBUK personnel may be at particular risk of increased exposure to dioxins and consequential health effects due to their location. This should be assessed taking account of the work locations and work patterns of the PBUK personnel.</p> <p>This impact will increase during times of high shutdown and start-up activities (possibly during initial facility commissioning).</p> <p>Recommendation 10. The ERF Developer and Planning Authority should be requested to carry-out a baseline survey for air quality at the various working locations for PBUK personnel (including but not limited to: outside locations, lube oil store, control room and workshop, in the storage tunnels or at the old guard house office). These locations should form the basis for future monitoring receptors and also further consequence modelling in order to determine the probable level and health impact of short term and long-term exposure to airborne contaminants from the new ERF during normal and abnormal operation.</p>	New Hazard – airborne toxic materials from the ERF stack (normal operation and abnormal operation).
		See table 1 “plausible Abnormal Emissions from an EfW” and table 2 “Predicted Abnormal Metal Emissions from an EfW”. It	During facility start-up and shutdown the PBUK personnel may be at particular risk of increased exposure to airborne emissions and consequential health effects and	New Hazard – airborne toxic materials from the ERF stack

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		<p>is plausible that during start-up and shutdown that some airborne emissions from the facility may exceed (possibly by significant amounts) the permitted emissions limits.</p>	<p>nuisance due to their location. This should be assessed taking account of the work locations and work patterns of the PBUK personnel.</p> <p>This impact will increase during times of high shutdown and start-up activities (possibly during initial facility commissioning) or unusual weather conditions that result in increased low-level impacts.</p> <p>Recommendation 10. The ERF Developer and Planning Authority should be requested to carry-out a baseline survey for air quality at the various working locations for PBUK personnel (including but not limited to: outside locations, lube oil store, control room and workshop, in the storage tunnels or at the old guard house office). These locations should form the basis for future monitoring receptors and also further consequence modelling in order to determine the probable level and health impact of short term and long-term exposure to airborne contaminants from the new ERF during normal and abnormal operation.</p>	<p>(normal operation and abnormal operation)</p>
51	Air Quality Analysis for EP Application - Portland Energy recovery facility – Fichtner.	Table 1, 2, 3 contains the AQAL's for air quality at any point & residential.	PBUK personnel may be exposed to increased airborne chemicals (above environmental standards) that cause adverse health effects due to stack	New Hazard – airborne toxic materials from the ERF stack (normal operation and abnormal operation).

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		<p>The report indicates that the long term AQAL environmental standard requirement is achieved at the residential receptors – but fails to be met at “any point”.</p> <p>For plots of the air quality levels see: Portland ERF Appendix D.2 Process Emissions Modelling Revision 2 25-8-2020 Fichtner.</p> <p>Note that this assessment is during normal operation and weather conditions – However, under abnormal operation or weather these values may vary significantly. See: Portland Energy Recovery Facility – Abnormal Emissions Assessment – Revision 0 17-9-2020 Fichtner.</p>	<p>emissions from the normal operation of the facility.</p> <p>In addition, during facility start-up and shutdown the PBUK personnel may be at particular risk of increased exposure to airborne emissions and consequential health effects and nuisance due to their location. This should be assessed taking account of the work locations and work patterns of the PBUK personnel.</p> <p>This impact will increase during times of high shutdown and start-up activities (possibly during initial facility commissioning) or unusual weather conditions that result in increased low-level impacts.</p> <p>Recommendation 10. The ERF Developer and Planning Authority should be requested to carry-out a baseline survey for air quality at the various working locations for PBUK personnel (including but not limited to: outside locations, lube oil store, control room and workshop, in the storage tunnels or at the old guard house office). These locations should form the basis for future monitoring receptors and also further consequence modelling in order to determine the probable level and health impact of short term and long-term exposure to airborne contaminants from the</p>	

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			new ERF during normal and abnormal operation.	
		<p>Table 4 contains the short term AQAL's for air quality at any point and residential.</p> <p>The report indicates that the short term AQAL environmental standard requirement is achieved at the residential receptors – but may not always be met at “any point”.</p> <p>For plots of the air quality levels see: Portland ERF Appendix D.2 Process Emissions Modelling Revision 2 25-8-2020 Fichtner.</p> <p>Note that this assessment is during normal operation and weather conditions – However, under abnormal operation or weather these values may vary significantly. See: Portland Energy Recovery Facility – Abnormal Emissions Assessment – Revision 0 17-9-2020 Fichtner.</p>	<p>PBUK personnel may be exposed to increased airborne chemicals (above environmental standards) that cause adverse health effects due to stack emissions from the normal operation of the facility.</p> <p>In addition, during facility start-up and shutdown the PBUK personnel may be at particular risk of increased exposure to airborne emissions and consequential health effects and nuisance due to their location. This should be assessed taking account of the work locations and work patterns of the PBUK personnel.</p> <p>This impact will increase during times of high shutdown and start-up activities (possibly during initial facility commissioning) or unusual weather conditions that result in increased low-level impacts.</p> <p>Recommendation 10. The ERF Developer and Planning Authority should be requested to carry-out a baseline survey for air quality at the various working locations for PBUK personnel (including but not limited to: outside locations, lube oil store, control room and workshop, in the storage tunnels or at the old guard house office). These locations should form the basis for future</p>	<p>New Hazard – airborne toxic materials from the ERF stack (normal operation and abnormal operation).</p>

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			<p>monitoring receptors and also further consequence modelling in order to determine the probable level and health impact of short term and long-term exposure to airborne contaminants from the new ERF during normal and abnormal operation.</p>	
		<p>Paragraph 3.5 heavy metals. Table 18 & 19 show that heavy metals will be emitted from the stack of the facility (albeit that these are no worse than a currently permitted facility).</p>	<p>PBUK personnel may be exposed to airborne heavy metals (possibly above environmental standards) that cause adverse health effects due to stack emissions from normal operation of the facility.</p> <p>In addition, during facility start-up and shutdown the PBUK personnel may be at particular risk of increased exposure to airborne emissions and consequential health effects and nuisance due to their location. This should be assessed taking account of the work locations and work patterns of the PBUK personnel.</p> <p>This impact will increase during times of high shutdown and start-up activities (possibly during initial facility commissioning) or unusual weather conditions that result in increased low-level impacts.</p> <p>Recommendation 10. The ERF Developer and Planning Authority should be requested to carry-out a baseline survey for air quality at the various working locations for PBUK</p>	<p>New Hazard – airborne toxic materials from the ERF stack (normal operation and abnormal operation).</p>

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			<p>personnel (including but not limited to: outside locations, lube oil store, control room and workshop, in the storage tunnels or at the old guard house office). These locations should form the basis for future monitoring receptors and also further consequence modelling in order to determine the probable level and health impact of short term and long-term exposure to airborne contaminants from the new ERF during normal and abnormal operation.</p>	
		<p>The accuracy of the modelling tool at ground level in the location of PBUK workers should be challenged as there is a high steep cliff directly upwind of the facility.</p> <p>There has been some discussion concerning the accuracy of the modelling, but this did not specifically address the location of PBUK workers. See: Portland ERF – response to AQMAU Query on Schedule 5 Response.</p>	<p>Since PBUK personnel may suffer increased airborne chemical exposure at their workplace, it would be reasonable to expect that a best-in-class modelling tool is used to assess the potential emissions levels for normal and abnormal facility operations.</p> <p>Recommendation 17. Due to the prevailing wind direction and extreme topography (wind is mostly from the west) and above or around the cliff that sit to the west of the ERF). The ERF Developer and Planning Authority should evaluate the accuracy and appropriateness of the modelling tool(s) that are being used to evaluate the airborne exposure of PBUK personnel at their work locations and suitable sensitivity bands should be applied to any exposure values reported.</p>	<p>New Hazard – airborne toxic materials from the ERF stack (normal operation and abnormal operation).</p>

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52	Portland ERF – Schedule 5 response No.1 – Rev.02 – 03-12-2021 – Fichtner.	No new information in relation to impacts to PBUK.		
53	S2953-8000-0009 revision 0 29-9-2020 Firewater supplies and Firewater Containment – Fichtner.	No new information in relation to impacts to PBUK.		
54	Environment Agency. Notice of request for more information 9-9-2022.	Based on the questions asked it is not expected that this will add new information in relation to impacts to PBUK.		
55	Portland Energy recovery Facility – Fire Prevention Plan – Revision 4 – Fichtner.	No new information in relation to impacts to PBUK.		
56	S2953-800-002 Rev.01 10-10-22 Installation boundary – Fichtner.	No new information in relation to impacts to PBUK.		
57	S2953-800-003 Rev.01 10-10-22 Emission Points – Fichtner.	No new information in relation to impacts to PBUK.		
58	Drawing S2953-8000-0004 Rev.1 10-10-22 Access points – Fichtner.	No new information in relation to impacts to PBUK.		
59	Drawing S2953-8000-0005 Rev.1 10-10-22 Material Storage Areas – Fichtner.	No new information in relation to impacts to PBUK.		

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60	Drawing S2953-8000-0006 Rev.1 10-10-22 Indicative Fire Hydrants – Fichtner.	No new information in relation to impacts to PBUK.		
61	Drawing S2953-8000-0007 Rev.1 10-10-22 Indicative Fire Walls – Fichtner.	The RDF bale store is 10m from the PBUK bunkering lines along Balaclava Road (and has fire walls).	Recommendation 5: The release of fluid from the bunkering lines along Balaclava Rd., the jetty, ship loading/unloading system or ship is classified as a source of MAH and MATTE under the COMAH regulations 2015. PBUK should raise the matter of the potential increased fire risk from vehicles, LPG storage and ERF facilities on their bunkering pipelines (resulting in potential release of bunkering fuel oil and consequential fire escalation and environmental impacts) and other facilities, with the ERF developer, Portland Port Ltd. and Planning Authority and request that a detailed fire risk assessment be carried out covering PBUK work locations.	<p>Increase to safety and environmental likelihood with respect to existing HAZID ^[1] cause: 17/WP:4/1/16</p> <p>Spill from the pipelines along Balaclava Rd., the jetty, ship loading/unloading system or ship has been classified as a source of MAH ^[4] and MATTE ^[2] and a fire within the ERF may be a potential initiating cause.</p> <p>For MAH-005 & 006 there may be an increase in the loss of containment frequency, probability of ignition, number of personnel potentially impacted by the event and hence risk of fatality.</p>
62	Drawing S2953-8000-0008 Rev.1 10-10-22 Indicative Quarantine Area – Fichtner.	No new information in relation to impacts to PBUK.		
63	Drawing S2953-8000-0009 Rev.1 10-10-22 Firewater	No new information in relation to impacts to PBUK.		

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	supplies and Firewater Containment – Fichtner.			
64	Drawing S2953-8000-0010 Rev.1 10-10-22 Areas of natural or Unmade Ground – Fichtner.	No new information in relation to impacts to PBUK.		
65	AQ modelling files.	Not reviewed.		
66	Modelling files.	Not reviewed.		
67	Noise modelling files.	Not reviewed.		
68	Drawing 1081-02-32 Rev. 5, Shore Power Layout.	New power switchgear will be 60m from PBUK control room – no significant impact envisage.		
69	Drawing 1081-02-33 Rev. 5, Shore Power Details.	New power switchgear will be 60m from PBUK control room – no significant impact envisage.		
70	Portland Energy recovery Facility – Environmental Statement – 11 Traffic and Transport.	No new data in relation to direct impacts on PBUK.		
71	Portland Energy recovery Facility – Environmental Statement – Traffic and Transport – Technical Appendix L (Part 1 of 2) – 27 Aug 2020 AWP.	No new data in relation to direct impacts on PBUK.		

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72	Portland Energy Recovery Facility – Environmental Statement – Traffic and Transport – Technical Appendix L (Part 2 of 2) – 27 Aug 2020 AWP.	No new data in relation to direct impacts on PBUK.		
73	Portland Energy Recovery Facility – Environmental Statement – Traffic and Transport – Technical Appendix B Traffic Data – AWP.	No new data in relation to direct impacts on PBUK.		
74	Design & Access Statement part 1.	No new data in relation to direct hazard or business-related impacts on PBUK.		
75	Design & Access Statement part 2.	No new data in relation to direct hazard or business-related impacts on PBUK.		
76	Design & Access Statement part 3.	No new data in relation to direct hazard or business-related impacts on PBUK.		
77	Design & Access Statement part 4.	No new data in relation to direct hazard or business-related impacts on PBUK.		
78	Design & Access Statement part 5..	No new data in relation to direct hazard or business-related impacts on PBUK.		

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79	Design & Access Statement part 6	No new data in relation to direct hazard or business-related impacts on PBUK.		
80	Portland Energy Recovery Facility – Lighting Statement – PP-ARUP-ZZ-XX-L-REP-001 Rev. B Aug/Sept 2020 – ARUP.	May improve lighting in the area.		
81	Portland Energy Recovery Facility – Shore power strategy report – Issue 4 - 3 Sept 2020 ARUP.	No new data in relation to direct hazard or business-related impacts on PBUK.		