



Application for Licence Amendment

Division 3, Part V *Environmental Protection Act 1986*

Licence Number	L5245/1967/14
Licence Holder	Alcoa of Australia Ltd
ACN	004 879 298
File Number	2010/007402-1
Premises	<p>Kwinana Alumina Refinery Hogg Road Naval Base, WA 6165</p> <p>Legal description - Public Transport Authority Lease No. 2641 (MTL Pipeline), Easement No. 3134B/996 on Crown Reserve 24901 (Jetty Easement), Lot 102 on Plan 18242, Lot 171 on Plan 180286, Lot 99 on Plan 17761, Lot 51 on Plan 20582, Lot 164 on Plan 174095, Landcorp Lease MTL Pipeline on Lot 114 on Plan 29392, Part Lot 304 on Diagram 72808, MTL Pipeline (Bayardo Pty Ltd lease) Lot 115 on Plan 48295, MTL Pipeline (DPI Lease) Lot 214 on Plan 184629, Lot 200 on Diagram 61086, North MTL Pipeline Lot 113 on Plan 20587, Part Lot 501 on Plan 72707</p>
Date of Report	10/12/2019
Status of Report	Final

Table of Contents

1. Definitions of terms and acronyms	4
2. Amendment description	6
2.1 Purpose and scope of assessment.....	6
2.2 Consultation	6
2.3 Works approval and licence history	6
3. Premises information	7
3.1 Background.....	7
3.2 Amendment application	8
4. Location and receptors	8
4.1 Siting context.....	8
4.2 Residential and sensitive receptors	9
4.3 Specified ecosystems.....	9
5. Risk assessment.....	10
5.1 Identification and general characterisation of the emission	10
5.2 Description of potential adverse impact from the emission	10
5.3 Risk assessment table.....	10
6. Decision.....	14
7. Licence Holder’s comments	14
8. Conclusion	14
8.1 Summary of amendments	14
Appendix 1: Key documents	16
Appendix 2: Summary of applicant’s comments on risk assessment and draft conditions	17
SCHEDULE 1	19
Figures for proposed works.....	19
ATTACHMENT 1	21
Amended Licence L5245/1967/14.....	21

Table 1: Definitions	4
Table 2: Works approval and licence history	7
Table 3: Prescribed premises Categories in the Existing Licence	7
Table 4: Receptors and distance from activity boundary	9
Table 5: Environmental receptors and distance from activity boundary	9
Table 6: Identification of emissions, pathway and receptors during construction	11
Table 7: Identification of emissions, pathway and receptors during operation	12

1. Definitions of terms and acronyms

In this Amendment Report, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
ACN	Australian Company Number
Annual Exceedance Probability	the probability that a particular flood value will be exceeded in any one year
Amended Licence	the amended Licence issued under Part V, Division 3 of the EP Act following the finalisation of this assessment.
Amendment Report	refers to this document
ANCOLD	Australian National Committee On Large Dams
Category/ Categories	Categories of Prescribed premises as set out in Schedule 1 of the EP Regulations
CO ₃	carbonate
Cooling Pond	means the ponds containing process water from the Kwinana Alumina Refinery and as depicted in Attachment of Licence L5245/1967/14;
Delegated Officer	an officer under section 20 of the EP Act.
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DJTSI	Department of Jobs, Tourism, Science and Innovation
DMIRS	Department of Mines, Industry Regulation and Safety
DPIRD	Department of Primary Industries and Resource Development
DWER	Department of Water and Environmental Regulation
EC	Electrical Conductivity
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EP Regulations	<i>Environmental Protection (Kwinana) (Atmospheric Wastes) Regulations 1987 (WA)</i>
Existing Licence	The Licence issued under Part V, Division 3 of the EP Act and in force prior to the commencement of, and during this amendment
ICOLD	International Commission On Large Dams

Term	Definition
Kwinana EPP	<i>Environmental Protection (Kwinana Atmospheric Waste) Policy (1999)</i>
Licence Holder	Alcoa of Australia Limited
PMP	Probable Maximum Precipitation – the theoretical greatest depth of precipitation for a given duration that is physically possible over a particular catchment area, based on generalised methods
Prescribed premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Amendment Report applies, as specified at the front of this Amendment Report.
Residue	refers to process tailings from the Bayer process of extracting alumina from bauxite.
Risk event	as described in <i>Guidance Statement: Risk Assessment</i>
ROWS	Run Off Water Storage
RSA	Residue Storage Area
SO ₄	Sulfate
Spillway	a structure to provide the controlled discharge from a dam or Residue Storage Area.
Wet Winter	means rainfall from 1 May to 30 September in each calendar year that is greater than or equal to 810mm as measured by the Bureau of Meteorology Anketell meteorological weather station.

2. Amendment description

This amendment is made pursuant to section 59 of the *Environmental Protection Act 1986* to amend licence L5245/1967/14 granted to Alcoa of Australia Ltd for its Kwinana alumina refinery.

The guidance statements that have informed the assessment and decision outlined in this amendment report are listed in Appendix 1.

2.1 Purpose and scope of assessment

Alcoa of Australia Limited (Alcoa) holds licence L5245/1967/14 for the operation of the Kwinana alumina refinery. Alcoa lodged an application to amend the Existing Licence on 4 September 2019 (Alcoa 2019). The application sought to construct a Spillway on the Cooling Pond within the RSA. In a recent review of the design and management of their RSAs against ANCOLD and ICOLD standards, Alcoa identified that best practice of these dam facilities should include the installation of a Spillway to manage any overtopping risk. ANCOLD also recommends the installation of Spillways on “no spill” designed facilities such as the Cooling Pond at the premises. While only likely to occur under extreme weather conditions, uncontrolled overtopping could result in a major loss of containment event through embankment failure. The Licence Holder is therefore seeking assessment and inclusion of a Spillway to the licence.

The establishment of a Spillway on the Cooling Pond is considered by the Delegated Officer to present a potential change to the risk profile of emissions and discharges from the premises and, as such, has been considered in a risk assessment (Tables 6 and 7) in accordance with DWER’s published Regulatory Framework.

This Amendment Report only considers emissions associated with the proposed changes outlined above. Emissions associated with operation of existing premises infrastructure have been previously subject to risk assessment through the premises licence assessment and therefore are not considered in this assessment.

Appendix 1 contains a list of the documents that were submitted during the assessment process.

2.2 Consultation

The Delegated Officer referred the application to City of Kwinana, DMIRS, DJTSl, and DPIRD (Department of Agriculture and Food). DMIRS, DJTSl and DPIRD did not provide comment.

(a) City of Kwinana

In correspondence dated 31 October 2019, City of Kwinana provided advice which has been taken into consideration by the Delegated Officer. The summary points raised are:

- City of Kwinana supports the installation of the proposed Spillway;
- the management of potential offsite impacts to groundwater quality that may arise post-controlled discharge episodes is critical; and
- given the proximity of adjacent land uses at Lots 221 and 2129 McLaughlin Road, City of Kwinana have suggested groundwater quality monitoring downstream of the Spillway be implemented after a discharge event as a precautionary measure to identify any possible degradation.

2.3 Works approval and licence history

Table 2 provides the recent works approval and licence history for the Premises.

Table 2: Works approval and licence history

Instrument	Issued	Details
W4353/2007/1	20/12/2007	Works approval for construction of Residue Area N.
L5245/1967/14	03/09/2014	Licence issued for a Category 5, 46, 52, 58, 64 and 67 premises.
W5757/2014/1	30/05/2015	Works approval for a filtration project that alters the way Residue tailings are handled and stored.
L5245/1967/14	29/04/2016	Licence amendment to change expiry date from 02 September 2016 to 02 September 2022.
L5245/1967/14	15/05/2017	<i>Amendment Notice 1</i> – Alter the date of submission from 1 April to 1 May for the Annual Groundwater Monitoring Report (AGMR), the addition of a physical address to the CEO address for correspondence, the creation of two new landfill cells within Area F of the existing RSA, and administrative amendment to correct an error in numbering of Attachment 5 of the licence.
L5245/1967/14	02/10/2019	Licence amendment to relocate Residue North East dust monitoring station and four administrative changes to the licence. The amendment includes a CEO initiated amendment as per section 59 of <i>Environmental Protection Act 1986</i> to amalgamate the separately issued amendment notice to the licence.
L5245/1967/14	10/12/2019	Licence Holder initiated Licence amendment to include construction and operation of a Spillway on the Cooling Pond.

3. Premises information

3.1 Background

Alcoa holds licence L5245/1967/14 for a Category 5, 46, 52, 58, 64 and 67 premises under the EP Act for the Kwinana alumina refinery as detailed in Table 3, with bauxite refining being the main activity. The Premises, located within the Kwinana industrial area has been operational since 1963 and is subject to the Kwinana EPP and *Environmental Protection (Kwinana) (Atmospheric Wastes) Regulations 1992*.

Bauxite is supplied from the Huntly Mine near Pinjarra by overland conveyor to the Pinjarra refinery and then on to the Kwinana refinery via a railway. Alumina is extracted at the Kwinana refinery by extracting the bauxite with caustic soda using the Bayer process. This refining process produces Residue. The Residue is transported via a pipeline easement that links the refinery to the RSA approximately five kilometres east. The RSA has base and surface drainage systems whereby residue leachate and rainfall runoff is collected in ponds (surge and Run Off Water (ROWS)) which report together with recycled process water to the Lake Water Return Pond or the Cooling Pond.

Table 3 lists the Prescribed premises Categories that are included on the Existing Licence.

Table 3: Prescribed premises Categories in the Existing Licence

Classification of Premises	Description
Category 5	Processing or beneficiation of metallic or non-metallic ore: premises on which — (a) metallic or non-metallic ore is crushed, ground, milled or otherwise processed; or

Classification of Premises	Description
	(b) tailings from metallic or non-metallic ore are reprocessed; or (c) tailings or residue from metallic or non-metallic ore are discharged into a containment cell or dam.
Category 46	Bauxite refining: premises (other than premises within paragraph (b) of Category 5) on which alumina is produced from bauxite refining.
Category 52	Electric power generation: premises (other than premises within Category 53 or an emergency or standby power generating plant) on which electrical power is generated using a fuel.
Category 58	Bulk material loading or unloading: premises on which clinker, coal, ore, ore concentrate or any other bulk granular material (other than salt) is loaded onto or unloaded from vessels by an open materials loading system.
Category 64	Class II or III putrescible landfill site: premises (other than clean fill premises) on which waste of a type permitted for disposal for this Category of prescribed premises, in accordance with the <i>Landfill Waste Classification and Waste Definitions 1996</i> , is accepted for burial.
Category 67	Fuel burning: premises on which gaseous, liquid or solid fuel is burnt in a boiler for the supply of steam or in power generation equipment.

3.2 Amendment application

The Licence Holder has requested to be able to construct and operate (as a result of a Wet Winter) a Spillway on the Alcoa Kwinana Cooling Pond. This request has been made as ANCOLD and ICOLD requirements specify best practice management of dam facilities, such as those within the Kwinana RSA, should include the installation of a Spillway. This is so, should overtopping occur under exceptional circumstances, it occurs in a controlled manner and significantly reduces the risk of a major loss of containment event through embankment wall failure.

Based on the ANCOLD standard and hydraulic modelling, a Spillway has been recommended for installation at the southwestern corner of the Cooling Pond. The proposed Spillway will be a concrete structure superimposed over the existing liner. Should the Spillway be engaged, the primary source of water to be discharged would be stormwater contaminated by alkaline process fluids and sediments containing some trace metals from the RSA. The proposed Spillway is designed to provide for controlled discharge in the event of a greater than 1:100,000 Annual Exceedance Probability rainfall event. Design for such an event is likely to reduce risk to sensitive receptors by minimising the potential for an embankment wall failure and potential major loss of containment event occurring as a result of extreme rainfall events.

4. Location and receptors

4.1 Siting context

The refinery is located on the western margin of the Swan Coastal Plain, approximately 28 kilometres south of Perth within the Kwinana industrial area. The RSA is located approximately five kilometres to the east of the refinery on land owned by Alcoa. The refinery is in an area zoned “general industry” and the RSA in an area zoned “Rural B” under the City of Kwinana’s Town Planning Scheme No. 2. To the west of the refinery is Cockburn Sound and to the south is the Kwinana Power Station. The RSA is surrounded by Rural A and B zoned areas to the north, east and south, and general industry to the west.

4.2 Residential and sensitive receptors

Table 4 below lists the relevant sensitive land uses in the vicinity of the Prescribed premises which may be receptors to the proposed amendment.

Table 4: Receptors and distance from activity boundary

Sensitive Land Uses	Distance from the proposed Spillway
Residential premises (suburbs Orelia and Medina)	Approximately 870m south (Orelia) and 1km southwest (Medina).
Jandakot Underground Water Pollution Control Area	Approximately 4km east.
Kwinana City Centre	Approximately 1.8km south.

4.3 Specified ecosystems

Table 5 below lists the relevant environmental receptors in the vicinity of the Prescribed premises which may be receptors to the proposed amendment.

Table 5: Environmental receptors and distance from activity boundary

Specified ecosystems	Distance from proposed Spillway
Ramsar Sites in Western Australia	Thomsons Lake is approximately 6.5km north.
Important wetlands – Western Australia	<ul style="list-style-type: none"> Multiple use category wetland (Mandogalup Swamp South) is 3km northeast; Conservation category wetland (The Spectacles) is approximately 1.3km east; Resource enhancement category wetland (Wattleup Lake) is 3.9km north; Conservation category wetland (Long Swamp) is approximately 2.5km northwest.
Parks and Wildlife Managed Lands and Waters	Wandi Nature Reserve is approximately 5km northeast.
Bush Forever: Regional open space or proposed regional open space	Bush Forever site no. 269 is approximately 780m east.
Regional Parks	Beeliar Regional Park is approximately 760m east.
Threatened Ecological Communities and Priority Ecological Communities	<ul style="list-style-type: none"> Priority 3 Threatened Ecological Communities (Banksia woodland) within the proposed site; Endangered Threatened Ecological Communities (SCP26a) approximately 570m northwest; Critically Endangered Threatened Ecological Communities (SCP19b) approximately 3.5km southwest.
Biological component	Distance from proposed Spillway
Threatened/Priority Flora	Priority 4 flora approximately 2.3km east.
Threatened/Priority Fauna	South-western Brush-tailed Phascogale or Wambenger (<i>Phascogale tapoatafa</i> subsp. <i>Wambenger</i>) approximately 1.2km north.

	Southern brown bandicoot or Quenda (<i>Isodon fusciventer</i>) approximately 1.5km west and 2.5km east.
Other relevant ecosystem values	Distance from proposed Spillway
<i>Environmental Protection (Kwinana Atmospheric Waste) Policy 1999</i>	The Premises is within the Kwinana EPP area.

5. Risk assessment

DWER has undertaken its risk assessment following the guidance in 'Guidance Statement: Risk Assessment (February 2017)'. This guidance provides a risk rating to determine Risk events and risk criteria to determine the likelihood and consequence of Risk events. The rating of Risk events will determine their acceptability and treatment.

5.1 Identification and general characterisation of the emission

In the event where rainfall is greater than or equal to 810 mm between 1 May and 30 September in a calendar year as measured by the onsite weather station, the Spillway may be activated causing the discharge of contained water to adjacent land. Process water generated from day to day operations discharged via the Spillway may cause an adverse impact on nearby waterways and local catchment area. The discharge released from the Spillway is expected to flow to a depression south of the Cooling Pond (approximately 2,000,000 m³) and it is expected to pool, rather than flow in this area.

Process water that is discharged could potentially contaminate surface water and groundwater in the local catchment area (east of the Cooling Pond) up to 15 km². The potential contaminants are elevated pH, EC, alkalinity and trace metals. The frequency of discharge via the Spillway is expected to be low as the RSAs, ROWS Pond and Cooling Pond systems are designed to contain run-off and stormwater from a 1:100 Annual Exceedance Probability. When considering rainfall across the 15 km² catchment under a 1:100,000 Annual Exceedance Probability, hydrological modelling determined that the contribution of discharge from the Cooling Pond ranges between 2.1 and 2.5% of the overall volume in the catchment.

5.2 Description of potential adverse impact from the emission

Elevated pH, EC, alkalinity and trace metals can potentially reduce water quality in waterways closest to the Spillway such as The Spectacles to the southeast and Long Swamp to the west of the RSA. The impact is expected to be localised due to the low volumes and frequency of contaminants being released by the activated Spillway. In the event the Spillway is activated, released water will be greatly diluted by saturated soils and wetlands which would be inundated with rainwater.

5.3 Risk assessment table

Table 6 and 7 below describe the Risk events associated with the amendment consistent with the *Guidance Statement: Risk Assessments* (DER 2017). These tables identify whether the emissions present a material risk to public health or the environment, requiring regulatory controls.

Table 6: Identification of emissions, pathway and receptors during construction

Risk event				Consequence rating ¹	Likelihood rating ¹	Risk ¹	Reasoning	Regulatory controls (refer to condition of the granted instrument)
Source/ Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Vehicle movement and Spillway construction	Noise	Air/windborne pathway potentially causing impacts to health and amenity of closest human receptors (residential suburb of Orelia) approximately 870 m south from the proposed Spillway location.	Scheduling of construction works where practicable to avoid noise emissions at sensitive times.	Slight	Rare	Low	The Delegated Officer considers that the separation distance from the proposed Spillway to the closest residence is sufficiently large for there to be no adverse impact from noise or dust emissions from the construction of the Spillway. Additionally, the construction is expected to be of short duration. The Noise Regulations apply to noise emissions.	The Delegated Officer considers that the potential risks associated with the construction of the Spillway are consistent with those from operational activities and will be sufficiently managed through the regulatory controls in the Existing Licence. Therefore, regulatory controls associated with noise and dust from vehicle movement and Spillway construction have not been included in the Amended Licence.
	Dust		Construction Dust Management Plan					

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's Guidance Statement: Risk Assessments (February 2017).

Table 7: Identification of emissions, pathway and receptors during operation

Risk event				Consequence rating ¹	Likelihood rating ¹	Risk ¹	Reasoning	Regulatory controls (refer to condition of the granted instrument)
Source/ Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Activation of Spillway	Alkaline process water containing elevated levels of CO ₃ , Fluoride, SO ₄ , EC and trace metals	Alkaline process water discharging from the Spillway may flow overland. Contaminants in the water, including increased EC and trace metals could potentially reach The Spectacles 1.3 km east of the discharge point, causing degraded water quality, increased salinity and loss of vegetation. This could result in secondary impacts on Threatened/ Priority fauna that are known to occur in the area, such as habitat and food loss.	Residue monthly tracking of pond capacity. Manage ponds to balance water volumes.	Minor	Rare	Low	<p>There is a large depression within an area approximately 1 km south of the Cooling Pond. Based on the contour data and the size of the depression (approximately 2,000,000 m³), hydraulic modelling predicts that in the event of the Spillway being activated, discharged water will likely accumulate in this area, preventing it from reaching sensitive receptors (The Spectacles Wetland).</p> <p>In the event of an extreme rainfall event, activation of the Spillway will allow for a controlled release of water. There is a risk of the Cooling Pond overtopping when such a rainfall event occurs which could impact the integrity of the embankment wall, potentially causing further uncontrolled releases that cannot be directed to areas of low impact in the absence of a Spillway.</p> <p>The proposed Spillway is only to be activated when rainfall exceeds the defined Wet Winter event. As this has only occurred once in the 36 years of available meteorological data, a discharge event during the life of the operation is considered unlikely.</p>	<p>Condition W13 has been included in the Amended Licence to specify the emission point (Spillway) and potential pollutants which have been assessed and are authorised to be discharged.</p> <p>Condition W14 has been included in the Amended Licence to ensure the Cooling Pond is managed such that the Spillway is not activated other than a result of a Wet Winter.</p> <p>A definition for a Wet Winter has been included in the Amended Licence in order to define the trigger for when the Spillway has been assessed and authorised to be activated. The definition for a Wet Winter was determined by calculating the total rainfall (mm) between 1 May and 30 September for the</p>

Risk event				Consequence rating ¹	Likelihood rating ¹	Risk ¹	Reasoning	Regulatory controls (refer to condition of the granted instrument)
Source/ Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
		<p>Process water may infiltrate through the soil profile potentially contaminating groundwater with elevated levels of alkalinity, EC and trace metals. Groundwater in the region flows in a westerly direction, and given that sensitive receptors are located east of the discharge point, there are no other impacts other than to the groundwater itself.</p>	<p>Residue monthly tracking of pond capacity. Manage ponds to balance water volumes.</p>	Minor	Rare	Low	<p>The direction of groundwater flow in the region of the proposed discharge point is generally westwards. Therefore, it is unlikely that contaminated groundwater will impact The Spectacles, Threatened Ecological Communities, Priority flora or Bush Forever sites located east of the proposed Spillway.</p> <p>The proposed Spillway is only to be activated when rainfall exceeds the defined Wet Winter event. If the Spillway is activated, elevated levels of pH and EC released water will be diluted by large volumes of rainwater received in the catchment area therefore contamination is unlikely to occur.</p>	wettest year on record at the Medina weather station (810 mm).

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's Guidance Statement: Risk Assessments (February 2017).

6. Decision

The Delegated Officer has reviewed the Risk events associated with the construction of a Spillway at the Cooling Pond, and discharge of process water via the Spillway during emergency situations, and has determined to amend licence L5245/1967/14 by inserting additional conditions to the licence.

The Licence Holder proposes to construct a Spillway on the existing Cooling Pond to control discharge from the Cooling Pond in the event of a Wet Winter (810 mm or above rainfall between 1 May and 30 September in a calendar year). The use of a Spillway to manage water discharge from 'no spill' designed dam facilities as a result of extreme weather events is recommended in the ANCOLD and ICOLD guidelines. These guidelines are considered best practice management for all dams. Controlled discharge reduces the risk of embankment wall failure and a major uncontrolled loss of containment. The Delegated Officer has therefore determined to authorise discharge of process water and stormwater, via the Spillway in the event a Wet Winter has occurred.

The Delegated Officer determined that a works approval is not required due to the minor nature of the works. It is considered that the potential risks associated with these works are consistent with those from operational activities and will be sufficiently managed through the regulatory controls in the Amended Licence.

The amended conditions take into consideration comments provided by the City of Kwinana outlined in the section 2.2. The Delegated Officer has also noted that the RSA and the proposed Spillway have been reviewed against ANCOLD and ICOLD guidelines. Impacts from a Spillway discharge have been assessed with reference to ANCOLD guidelines and within the Departments risk-based Regulatory Framework.

The Delegated Officer has amended licence L5245/1967/14 in accordance with section 59(1) of the EP Act. The amendments to the licence are described in Section 8.1.

7. Licence Holder's comments

The Licence Holder was provided with the draft Amendment Report and draft Amended Licence on 14 November 2019. The Licence Holder provided comments on 6 December 2019 which are summarised, along with DWER's response, in Appendix 2.

8. Conclusion

Based on this assessment, it has been determined that the Amended Licence will be granted subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

8.1 Summary of amendments

Table 8 provides a summary of the proposed amendments and will act as a record of implemented changes. All proposed changes have been incorporated into the Amended Licence as part of the amendment process.

Table 8: Licence amendments

Condition No.	Proposed amendments
Definitions	ANCOLD definition added ICOLD definition added Engineer definition added

	Spillway definition added Wet Winter definition added
W13 and W14	Conditions relating to the location of Spillway discharge points, maintenance and operation of the Spillway in accordance with corresponding operational requirements added.
AW1, AW2 and AW3	Conditions relating to the design and construction requirements of the spillway, including the submission of an audit report added.
Attachment 7	Map illustrating the location of authorised works relating to the Spillway on the southwest corner of the Cooling Pond added.
Attachment 8	Design drawing of authorised works regarding the Spillway added.

Caron Goodbourn
Manager, Process Industries
Delegated Officer
under section 20 of the *Environmental Protection Act 1986*

Appendix 1: Key documents

	Document title	Availability
1.	Licence L5245/1967/14 and Amendment Report	accessed at www.der.wa.gov.au
2.	Licence L5245/1967/14 amendment application	DWER records DWERDT196851
3.	DER, July 2015. <i>Guidance Statement: Regulatory principles</i> . Department of Environment Regulation, Perth.	accessed at www.dwer.wa.gov.au
4.	DER, October 2015. <i>Guidance Statement: Setting Conditions</i> . Department of Environment Regulation, Perth.	
5.	DER, November 2016. <i>Guidance Statement: Environmental Siting</i> . Department of Environment Regulation, Perth.	
6.	DER, February 2017. <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.	
7.	DWER, June 2019. <i>Guideline: Decision Making</i> . Department of Environment Regulation, Perth.	

Appendix 2: Summary of applicant’s comments on risk assessment and draft conditions

Condition	Summary of Licence Holder comment	DWER response
Licence Definitions: <i>Spillway</i>	Alcoa suggested that Attachment 8 not be referenced in the definition of a Spillway, noting that Attachment 8 is the design drawing relating to the authorised works under the Licence Amendment.	Change has been made.
Licence and Amendment Report Definitions: <i>Wet Winter</i>	The weather station used to determine rainfall contributing to a Wet Winter is the Bureau of Meteorology (BOM) Anketell weather station, and so Alcoa requested the rewording of the Wet Winter definition to reflect this. Alcoa also requested that the definition does not make reference to the weather station referred to in the Licence as the meteorological weather station referred to in the Licence is not the BOM station.	Change has been made.
W13	Alcoa proposed the addition of the authorised emission in Table 14 to include potentially contaminated stormwater.	No change made. The Delegated Officer considers that stormwater that enters process ponds then becomes in effect process water.
	Alcoa also recommended changing the discharge point location reference from Attachment 8 to Attachment 7, noting that Attachment 8 is the Spillway design, not location.	Change has been made.
W14	Alcoa proposed removing the operational requirement in Table 15 “ <i>Only water from the Cooling Pond may be discharged from the Spillway</i> ” as drainage, process water and rainfall runoff from the residue areas and ponds reports to the Cooling Pond either directly or via the Lake Water Pond as part of the process water system.	Comment accepted. The Delegated Officer acknowledges that water originating from sources within the RSA other than the Cooling Pond may report to the Cooling Pond, and therefore the wording that has been requested to be deleted may be misleading. The Delegated Officer also notes that the Spillway is to be installed on the Cooling Pond and therefore only water within the Cooling Pond (despite where it originated from) at time of Spillway activation can be discharged.
	Alcoa provided the date after which the Spillway shall not be activated in	Operational requirement added to stipulate the

Condition	Summary of Licence Holder comment	DWER response
	each calendar year (21 December), with justification using water modelling calculations and historical rainfall data as requested by DWER.	Spillway shall not be activated after 21 December in each calendar year.
AW1	Alcoa provided the date at which the authorised works for the Spillway must be completed before as requested by DWER.	Timeframe for design and construction requirements in Table 16 added (before 31 December 2020).
Licence Attachment 8	Alcoa provided design drawings for the proposed Spillway as requested by DWER.	Design drawings of the Spillway added as Attachment 8 of the Licence.
Amendment Report: <i>Section 3.1</i>	Alcoa clarified the alumina refining process and the pond system at the Kwinana Premises, and suggested some rewording to more accurately reflect this.	Change has been made.
Amendment Report: <i>Section 5.1</i>	Alcoa requested the removal of reference to a 15 km ² catchment in describing the extent of possible discharge as this does not accurately reflect the effect of the Spillway being activated. Instead, Alcoa suggested the addition of a sentence explaining the context of the effect of the Spillway being activated as stated in the hydrological modelling report completed by Talis Consultants Pty Ltd.	Change has been made.
Amendment Report: <i>Section 5.3</i>	In response to DWER's request for further information regarding applicant controls in Table 7, Alcoa advised that the controls in place to manage the ponds with a Spillway are the same as the controls for the ponds without a Spillway.	Comment accepted. The Licence Holder currently tracks the pond capacities and manages water balances so as to minimise probability of overfill, and will continue to do so under this Amendment.
	As requested by DWER, Alcoa provided the distance from the proposed Spillway to the large depression referred to in Table 7.	Distance added.
Amendment Report <i>Section 6</i>	The RSA and proposed Spillway have been reviewed against ANCOLD and ICOLD standards, not necessarily designed to those standards, as the RSAs and ponds have been installed over a number of years and were installed to the standards of the day. Therefore, Alcoa requested rewording to reflect this.	Change has been made.

SCHEDULE 1

Figures for proposed works

Figure 1: Location of Cooling Pond Spillway

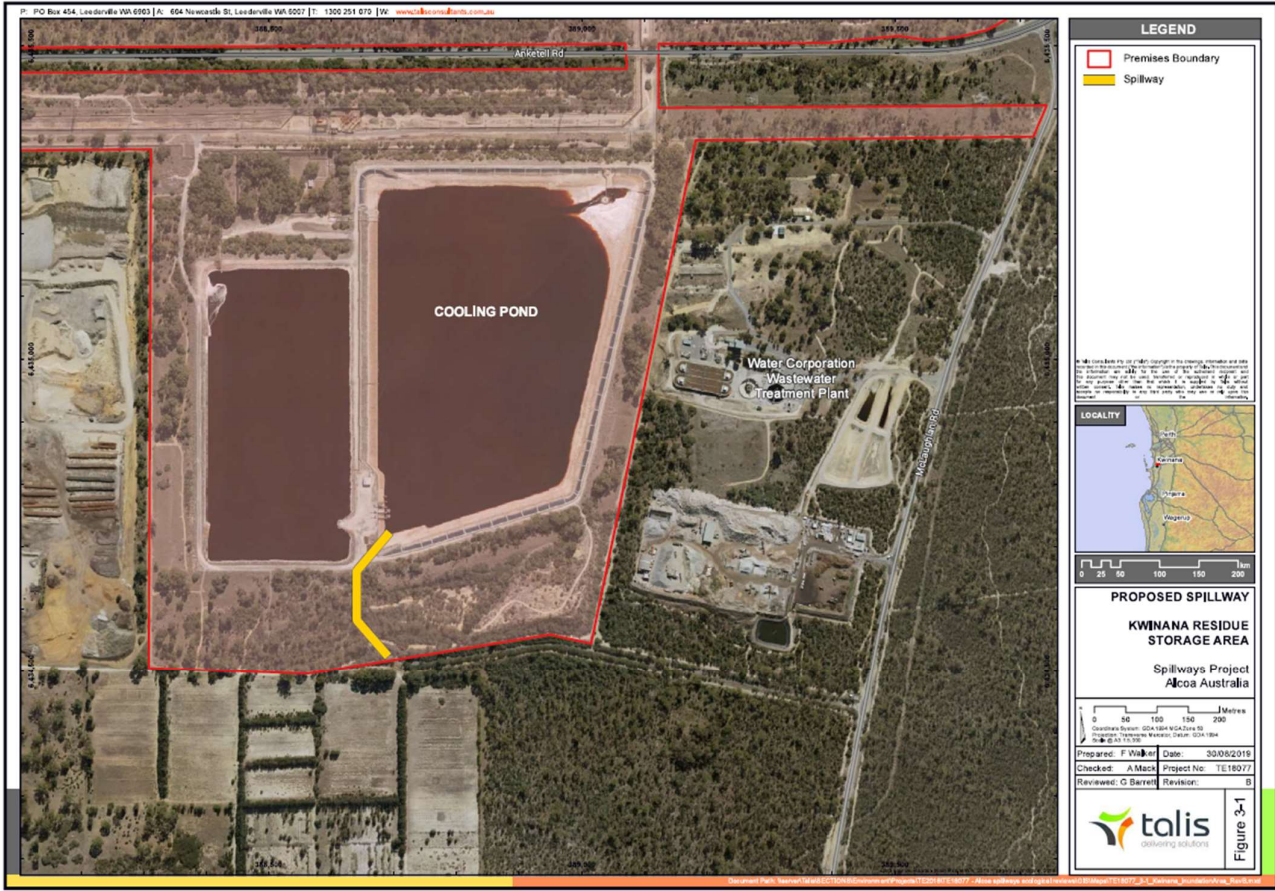
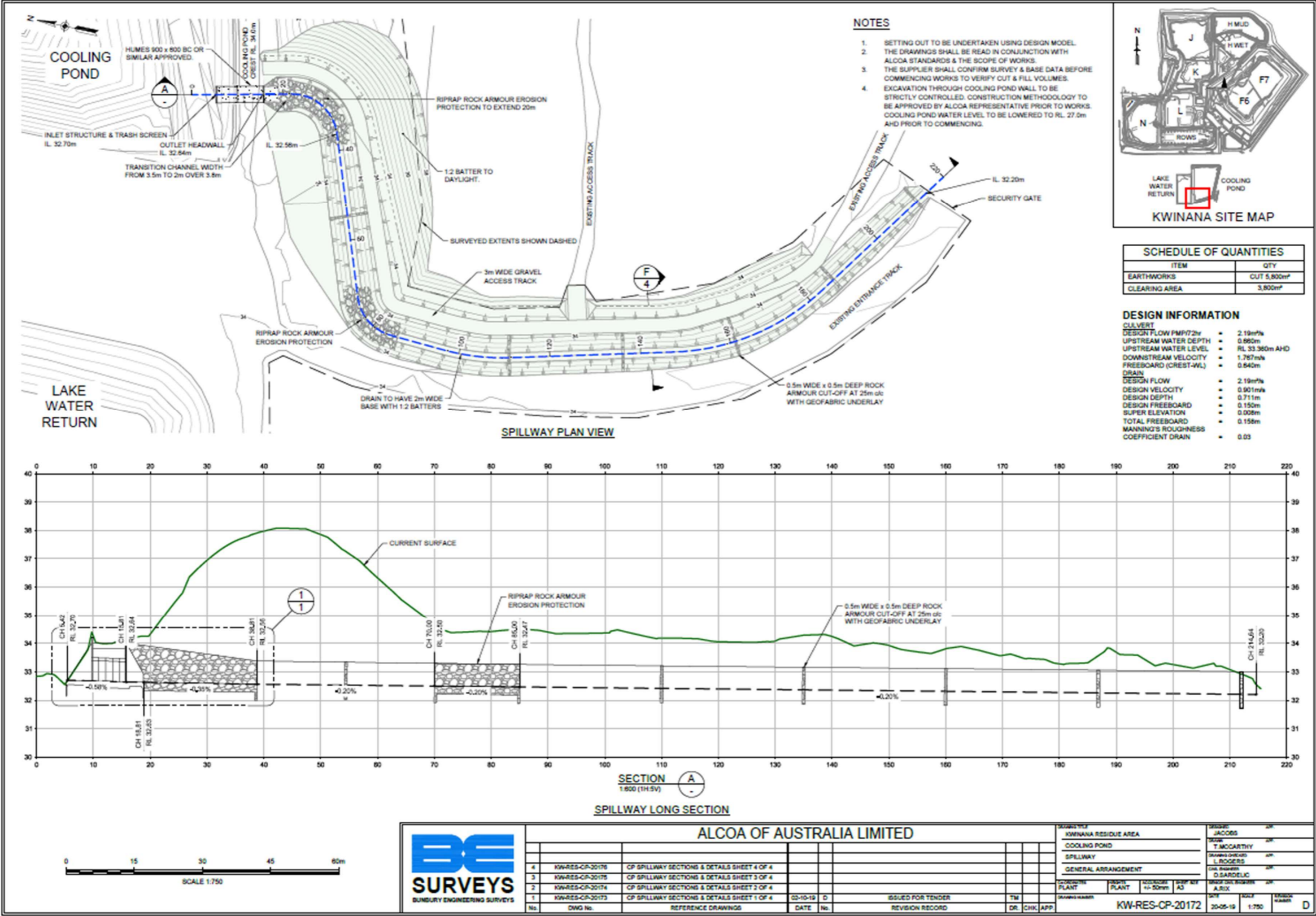


Figure 2: Spillway design



ATTACHMENT 1

Amended Licence L5245/1967/14